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Competition and Collusion in the British Railway Track Fittings Industry: the case of the Anderston Foundry, 1800-1960.

Volume 1 of 2

A thesis submitted to the University of Durham for the degree of Doctor of Philosophy

by

James Flanders Hargrave, B.A., D.A.A.
Departments of Economic History and History

1991

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18 AUG 1992

"Competition and Collusion in the British Railway Track Fittings Industry: The Case of the Anderston Foundry, c.1800-1960. J.F. Hargrave, Ph.D., 1990/91.

Abstract

This thesis is a study in detail of the Anderston Foundry in Glasgow and on Teesside from its inception to its closure, placing particular emphasis on its methods of doing business. A rich store of archives has allowed an examination to be made of the web of business and social connexions of the firm's principals and the supplanting of this nineteenth century form of business by connexion, before the turn of the twentieth century, by business through collusion. The mechanics of price fixing and its pervasive nature in the iron trades are exhibited.

Unlike many studies, this one deals with a firm of medium size, unknown to the world at large manufacturing obscure products, once successful but now extinct, subject to a long period of atrophy-and possibly not untypical of many of the businesses within Britain's staple industries. The nature of ownership and control of the business and the diverging interests of the proprietors, the managers and the firm are studied to shew how an unstable equilibrium was achieved in which it was absolutely essential to do nothing until it become absolutely essential to do something.

An absence of archives rendered impossible a full comparison of the Anderston Foundry with its rivals, competitors and collaborators, but brief details of these firms, most of them as obscure as Anderston, have been appended together with detailed statistics covering Anderston's production, performance and ownership, and biographical sketches of its leading personalities.

"People of the same trade seldom meet together, even for merriment and diversion, but the conversation end in a conspiracy against the public."

Adam Smith.

Preface

I should, perhaps, thank James Clark Bunten of Dunalastair - after which the Caledonian Railway named a class of locomotive - without whom there would have been no Anderston Foundry in the form in which it was best known. Insofar as I knew of him before embarking upon this study, because of those locomotives, he was a spur to my undertaking it.

Ranald Michie was presented with his first and, to date, only research student. He has survived the ordeal and to him, his wife Dinah and to St. Cuthbert's Society where we have often talked shop late into the night, I give my thanks.

My former colleagues in the Durham Record Office have survived my enthusiasm, though one was driven to enter a monastery. They, indirectly, encouraged me to take up this challenge.

I offer my sincere thanks to the various libraries and record offices who have helped me along the way. Richard Childs of the Sheffield Record Office and the staff of the Registrar of Companies in Edinburgh were particularly enthusiastic in their assistance. Mrs. Elizabeth Green helped find useful references amongst the records of the then British Steel Corporation at its Records Centre in Middlesbrough. She is an old friend whose own researches have marched upon mine.

Many other individuals responded willingly to the letters of a total stranger. I cannot hope to repay my debt to: Sir Alastair Blair, late senior partner of Davidson and Syme; Capt. I.C. de Sales La Terriere, great grandson of J.C. Bunten; Arthur Gracie, last surviving partner of Macnee and Company; K.N.L. Harvey, son of Kenneth Harvey; Norman Hanlon, once assistant works manager at Port Clarence; Cyril Needham, formerly secretary of the Anderston Foundry Co. Ltd. Ernest Curtis, the secretary of Evans of Leeds PLC granted me access to the private book and private ledger of Marchington Properties Ltd. as Anderston has now become. Without his help the final years of the Anderston business would have remained unclear.

I should also like to record my debt to the late Walter Batty, who kindled my interest in history, and the late E.R. Hanby Holmes, who, in - directly, maintained it.

My typist, Beverley Bryan, has struggled successfully with my handwriting. I wish her well in her new career.

Magni esse mereamur

J.F. Hargrave

Rhodes House Library
Oxon., 1991

TABLE OF CONTENTS

VOL. 1

(N.B. Footnotes follow the individual chapters to which they relate).

		Page
Lists of tables, figures and plates		iii
List of abbreviations		vii
Introduction		1
Part 1: 1790s - 1914		
Chapter 1	1790s - 1850s	19
Chapter 2	1850s - 1880s	37
Chapter 3	Ownership and control, 1884 - 1914	66
Chapter 4	Manufactures and Manufacturing, 1890s - 1914	119
Part 2: c.1914 - 1940 Introduction		205
Chapter 5	Manufactures and Manufacturing, 1914 - 1930	207
Chapter 6	Manufactures and Manufacturing, 1930s	301
Chapter 7	Ownership and Control, 1918 - 1940	369
Part 3: c.1940 - 1963		
Chapter 8		441
Conclusion		553
Bibliography		572

VOL. 2

Appendix 1	Brief notes on other companies	1
Appendix 2	Biographical notes	77
Appendix 3	Statistical tables	121

LIST OF TABLES (vol. 1)

		page
1.1	Descent of the Houldsworth family and shareholding	29
2.1	Production, Glasgow Foundry, 1853 - 1860	42
2.2	Analysis of costs, specimen years, 1869 - 1885	47
2.3	Distribution of partnership interests in the Anderston Foundry Co.	50
3.1	Analysis of specimen South American orders, 1881 - 1890	92
3.2	Orders booked through Foundry Order Books from export customers enjoying a special relationship with Anderston, 1880 - 1914	93
3.3	Listing of railways employing Livesey and Henderson as Consulting Engineers, 1900s	103
3.4	Railway mileage in Britain, India, Argentina and S. Africa	104
3.5	Mileage of B.A.G.S. and G.I.P.R.	104
4.1	Chair production for Caledonian Railway, 1884 - 1909	129
4.2	Sleeper Production, select figures, 1879 - 1914	129
4.3	Orders (overall) of friendly railways, 1886 - 1890	130
4.4	Comparison of output of Anderston Foundry and the Patent Nut and Bolt Company, 1896	141
4.5	Division of sleeper orders between iron and steel, 1889 - 1929	153
4.6	Orders for bolts: Caledonian, India, S. America, 1886 - 1904	158
4.7	Sales, profits and wages of the Machine Shop, Glasgow, 1884 - 1914	160
5.1	Output of northern chair makers, 1921 - 1930	223
5.2	Anderston's Indian orders for chairs, sleepers and fencing, 1919-31	229
5.3A	Steel Sleeper Association tonnage, 1927 - 1929	241
5.3B	Steel Sleeper Association production, 1921 - 1926	241
5.3C	Steel sleeper production by Colville's	241
5.4	Switch and crossings production by Anderston, 1924 - 1930	246
5.5	Rail anchors produced and supplied by Anderston, 1921 - 1935	258
5.6	Output of pipes and gratings, 1926 - 1932	262
6.1	Net revenue and expenditure on maintenance by main line railways, 1925 - 1937	310
6.2	Chair orders and capacity, 1936 - 1940	317
6.3	Cast Iron Segments, orders, 1934 - 1946	320
6.4	Anderston's output of pipes and gratings	322
6.5	Anderston's deliveries to the B.I.A.	325
6.6	Steel Sleeper Output, 1929 - 1939	326
6.7	Bolts production for export, 1937 - 1939 (Anderston and overall)	340
7.1	Accounts, 1927/8	371
7.2	Management salaries, 1910 - 1930	379
7.3	Higher management salaries, 1901 - 1940	380
7.4	Steel Industry costs, 1929 - 1938	403
8.1	Index of chair output and those employed in chair making by Anderston, 1951 - 1959	456

		page
8.2	Division of British Railways orders between chairs and base plates, 1948 - 1951 (All chair makers)	456
8.3	Allocation, delivery and capacity, all chair makers, 1948 - 1952	457
8.4	Chair deliveries (British Railways and others), all makers, 1946 - 1951	457
8.5	Chair output and employment, all makers compared: 1937; 1945; at full capacity	460
8.6	Allocation of chair orders, actual and proposed, all makers, 1947 - 1950	461
8.7	Specimen analysis of S.S.A. orders, 1945 - 1960	471
8.8	Anderston sleeper sales divided between principal markets, 1945-60	471
8.9	Overall business of S.A.X.A., 1943 - 1950	475
8.10	Comparative assets and sales, 1914, 1939, 1959	497
8.11	Anderston departmental profits, 1957 - 1962	508

LIST OF FIGURES (vol. 1)

		page
3.1	Diagram of relationships between customers, intermediaries and suppliers	68
4.1	Diagramatic representation of the supply of railway chairs	128
8.1	The Structure of the Anderston Foundry, 1950s	445

LIST OF PLATES (vol.1)

page

1. Design of railway track and fittings
(G. Findlay, The Working and Management of an English Railway 6th ed., (1899)) 30

2. Bullhead and flat bottom rail sections
(Railway Materials Handbook, United Steel Companies Ltd., (1953)) 31

Abbreviations Used

A.B.M.	Associated Builders' Merchants Ltd.
B.I.A.	British Ironfounders' Association
B.I.S.F.	British Iron and Steel Federation
C.F.A.	Council of Ironfoundry Associations
C.I.C.A.	Cast Iron Chair Association
C.I.S.A.	Council of Segment Associations
F.B.I.	Federation of British Industry
I.N.C.	Ironfounders' National Council/Committee
I.S.C.O.R.	(South African) Iron and Steel Corporation
J.F.P.A.	Junction & Fishplate Association
N.F.I.S.M.	National Federation of Iron and Steel Manufacturers (precessor of B.I.S.F.)
N.L.C.A.	National Light Castings Association (predecessor of B.I.A.)
R.T.A.E.G.	Rail and Telegraph Accessories Export Group
S.I.A.	Scottish Ironfounders' Association
S.S.A.	Steel Sleeper Association
S.A.X.A.	Switches and Crossings (Export) Association
T.I.S.C.O.	Tata'sIron and Steel Company

B.A.G.S.	Buenos Ayres Great Southern Railway
B.A.P.	Buenos Ayres and Pacific Railway
B.A.R.	Beunos Ayres and Rosario Railway
G.I.P.R.	Great Indian Peninsula Railway
G.E.R.	Great Eastern Railway
G.W.R.	Great Western Railway
L.N.E.R.	London & North Eastern Railway
L.M.S.	London Midland & Scottish Railway
N.E.R.	North Eastern Railway
S.R.	Southern Railway

D/AF	Anderston Foundry Co., papers in Durham County Record Office
GD 282	Davidson and Syme, papers in Scottish Record Office
S.C.	Sheriff Court papers, Scottish Record Office

No part of this work has previously been submitted for a degree in this or any other university.

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INTRODUCTION

The justification for this study has been stated by Steven Tolliday in the opening chapter of Business, Banking and Politics:

> "Like the contemplation of imminent death, the study of the decline of the British economy has wonderfully concentrated the minds of economists and economic historians. In contrast, however, leading business historians have devoted their most intensive efforts to the study of the rise of large and successful companies and paid much less attention to the experience of crisis and decline that has been so prominent a feature of recent British industry...".[1]

Whatever the typical British firm has been over the last centuries, it has been neither large nor successful: most have faded away. Company biographies have accumulated but they have grown up in a void, separated from analytical and theoretical approaches to economic performance and economic history, where the neo-classical and Keynesian theoretical frameworks have as little to say at the level of the individual firm as the cliometricians.

Elbaum and Lazonick,[2] who have accepted the Schumpeterian framework which divides "entrepreneurial" from "managerial" activity, argue that the root of British industry's failure to modernise was the prolonged delay in moving from the competitive capitalist firm to Chandler's[3] "corporate capitalist firm". The subject of this work long pursued a pattern of behaviour which helps explain that delay: sufficient of the advantages of the latter form were available to a business ostensibly keeping the former shape through the embracing of collusive practices. The managerial and entrepreneurial elements became trapped in a constricting embrace: it was fully part of the "nineteenth century legacy of atomistic economic organisation"[4] but that inheritance was far less geared to competition than is commonly realised.

The Anderston Foundry, for long periods, was not a profit

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maximiser nor, necessarily, were many of its competitors - to the despair of some theories of the behaviour of the firm. Why this was so owes much to the internal power structure of the company, an area which has proved more resistant than most to theoretical analysis. Inverting Chandler "structure persistently determined strategy"[5] - in so far as the Anderston Foundry possessed a strategy for much of its lifetime.

It has been possible through the chance survival of a great bulk of the firm's records to produce a study of a long lived and once successful firm - it is extinct,[6] whereas most histories are of survivors. There are dangers to attempting to generalise on the basis of a single firm; there are dangers in drawing generalisations from an aggregation of case studies for the sample is not a random one. As Hutchinson and Nicholson observe

> "However, business history research precludes the selection of a random sample of firms. the writing of non-commissioned histories of less successful firms is seriously limited by access to source material. The business records of failed firms are seldom preserved".[7]

Large, well-known and successful companies such as I.C.I., Unilever or Courtaulds,[8] have felt sufficiently self assured to sponsor serious official histories whose underlying trend is to celebrate the achievements of the sponsors. The authors of such works might have to tread warily. As the businesses continue there is no clear point at which to close the narrative. In no circumstance could the authors hope to digest more than the cream of the companies' records whose bulk might defy investigation.

This work has the advantage of dealing with a smaller business whose unusually rich store of records could be examined fully and freely. Large firms are quite untypical of British industry in the 19th century and even into the post war period; some would regard successful firms as quite untypical during the 20th century. Where

failures have been investigated these are of the heroic and sometimes, fraudulent variety - Beardmores, the Royal Mail Group,[9] the steel industry[10]; or the investigation has been limited to the failings of management structure and financial structure[11] - the Bleachers' Association or the Sperling combine respectively. Many of the early mergers (from the 1880s to the 1900s) failed, or did not attempt, to rationalise their productive capacity, their strategy guided by the strong and competing family influences in the board room, their aim oligopolistic market power. Such mergers may have behaved little differently from the collusive trade associations central to the business practices of Anderston, indeed the English Sewing Cotton Co. (1897)[12] was nought but the Assocation of English Sewing Cotton Makers re-jigged.

Generalisations based upon the supposed rise of a corporate economy using, for ease of examination, the actions of small numbers of large companies as evidence can provide but a partial explanation of what was going on in British industry, when the predominant form of enterprise was a small, anonymous concern, dominated by an individual or family, whose name and products meant nothing to the world at large. Others have sought explanations for the relative decline of the British economy in the apparent short-comings of British entrepreneurship from the late 19th century and the cultural climate which relegated industrial activity to low esteem.[13] To study such decline in the particular, rather than generalising about it, is ill served by the bulk of business histories dealing with stories of success. Those firms which declined are, if not extinct, unlikely to commission detailed studies to parade their decline more widely. Many small, trans ient firms, the most typical class, have left few records behind them.

This thesis deals with a firm which in its obscurity is more

typical of the pack. Like the majority it is defunct. It neither bought other companies nor was bought by them.[15] It had been dynamic and successful before sticking in one particular groove and, as times and circumstances changed, fading away. More evidence of its decline survives than of its development. Its particular interest lies in its longevity and that of its dynamic phase (from 1800 to c.1890). In the middle 19th century it moved from dependence on the textile industry, as a machine maker, to dependence on the railways, as a supplier of track fittings. A generation later it begat a branch plant, several hundred miles from its Glasgow base, which became the new centre of the business, expanding the coverage of railway products. The original machine shop and the Glasgow foundry gradually withered and died.

The size of those plants, c.200-500 employees, was much closer to the twentieth century norm for all firms, and for larger firms to whose rise increased plant size contributed little.[16]

Paradoxically the modernisation of the firm's structure through incorporation under the limited liability laws and the supplanting of manager-proprietors by separate managers and proprietors narrowly preceded the firm's decline. Entrepreneurship was the victim of this separation of powers. A child of its time, the company was one of many in the staple industries not to survive the 1960s. It was swallowed, when about to die, by an industrial property developer which re-used its shell.

Most of Anderston's competitors and collaborators are also extinct; few of their records survive. Small scale histories of such companies might be written (see Appendix 1) as larger scale histories of large companies have been - from minute books, annual accounts and annual returns - but the essential detail of how business was conducted would be absent. A history of Anderston based on similar

records would misrepresent developments - for long periods the minutes barely mention manufacturing activities whilst lists of shareholders do not permit one to see the web of connexion which is the reality behind nominee holdings. In small companies, and private ones, most directors enjoyed daily contact with one another and had little need to formalize and record decisions.

The history of a single firm is not the history of an economy, least of all one comprised of a myriad of small firms. The study of one firm can provide much valuable detail and insight without forming the basis for a comprehensive judgement of "the firm" within the British economy as a whole.

Maintaining a narrow focus and concentrating upon bulky records of quotations, orders and production (which in many cases do not survive, their worth understimated by historians and archivists alike), a task physically beyond the historians of large enterprises[17] with an embarrassment of less intractible material to hand, has permitted the nuts and bolts of the business to be revealed amongst the orders for nuts and bolts. The few histories of firms in Anderston's line of business,[18] those of G.K.N. and of Stanton and Staveley, fail to address the scope of collusive competition which permeates the whole of the iron, steel and engineering trades. Many may mention trade associations in passing: few consider either their modus operandi or their importance. In histories of the iron and steel industry the International Railmakers cartel is one of the few regularly to be mentioned as existing pre-1914.[19]

Despite (or because) of the prevalence of small firms, primitive industrial organisations were flourishing far earlier than has been conceded. Through the history and records of Anderston the pervasive nature of collusion, the fine details and sophistication of its arrangements, the loyalty of many firms to it and the changing

public and official perceptions of it, may be unmasked.

As attitudes have changed further since the early 1960s, it is possible that tracks have elsewhere been covered.[20] Further studies of collusion in other branches of industry may cause generalisations about industrial structure to be modified; studies of firms such as Anderston will allow better generalisations based more upon industry's unknown foot soldiers, their aspirations and attitudes, than upon its captains.

Outside the world of relatively specialised producers, consumers and intermediaries, few would have heard of firms such as Anderston, and few of its products, which were never sold to the general public. It seldom advertised - it had no need to. Orders would be allocated to it through trade associations (from the 1880s, if not earlier) and by personal contacts with intermediaries such as agents, consulting engineers and railway managers to whom, in the 19th century, the firm and its proprietors were no mere anonymities. The twentieth century would find such personal contacts broken, with larger and more bureaucratic customers and rivals to the fore, and Anderston with no novelty to its products and few specialities: anonymity reigned.

Large firms having been pushed to prominence by ambitious and talented individuals were obliged by their size and complexity to adopt, frequently grudgingly and belatedly, managerial structures and management by managers. Subsequently the founding families, shareholders and capital became an anonymous, amorphous element whilst 'their' companies and 'their' directors became better known. In a firm such as Anderston, family management, family ownership and, particularly, family influence, persist late into its career. Shareholders, managers and directors were hopelessly intermixed as centres of power and influence. Although the firm had been large by

19th century standards - a thousand employees, two plants, the origin or a major prop to several important industrial fortunes - it was relatively and absolutely small in the changed circumstances of this century, its leading figures of no importance on the industrial stage at large. External change was kept at bay as far as possible by reliance upon collusive trade associations which sought to fossilize industrial structure even where they adopted the more modern camouflage of rationalisation. Internally an oligarchy of managers and shareholders formed a charmed circle of inside knowledge and influence but the firm could not be conducted by the management for the management, as has been alleged to be the case in modern corporations.[21]

The changing relationship between ownership and control, and of the nature of shareholders and shareholdings, the structure of collusive competition and its evolution, and, tentatively, the links between it and the structure of ownership and control in firms such as Anderston are at the heart of this work. The richness of the sources and the scale of the business make it possible to see how industry, markets, sales and personal contacts worked in practice. Most of industry still comprises anonymous firms making anonymous products. Specialised linkages between producers, customers and intermediaries arise almost from the outset of the industrial era as the all-purpose mechanic's shop concentrated upon some lines to the exclusion of others.

A study of the Anderston Foundry from its rapid advance to its slow decay touches generally upon the history of Britain as an industrial nation over a century and a half. Whereas in the 19th century a unity of power, ownership and control had allowed a singleness of purpose to be translated into action, and opportunities had been sought or seized; the balance of interests and priorities in

the 20th century may be seen as a constraint to the further development of the business and a brake to any decisive action. Circumstances might vary but it may be conjectured that many other long established firms faced potentially similar difficulties as ownership interests and management interests bifurcated. The cultural and group ethoses explored by Wiener could condition individuals' perceptions of their interests. Small companies could be subject to the whims of major shareholders which had nothing to do with the business and which would influence strongly the courses of action which it was practicable to pursue. Much company history, because of the predominance of family companies, cannot be understood apart from the history and personalities of the family. Only thus may the introduction of professional managers, the adoption of the limited liability and/or public status, the decision, to sell out or not to do so, the re-organisation of "capital", the company's dividend policy and so forth, be understood. Is entrepreneurial decline a problem or is it that the changes in outlook and priorities of the small group of owners, (part of the evolution of the society those owners inhabited, itself an environmental constraint upon their attitudes of mind), required a management which would administer a business within the limited range of options allowed it(by owners who sought stability above dynamism) not one exhibiting entrepreneurship.

With the increased specialisation of industry, managers and companies knew fewer people outside their own narrow specialism, bringing inbreeding and a narrowing of horizons. Managers with broader interests and restless ambitions were not such as would feel comfortable with Anderston, or Anderston with them. Perhaps Anderston and similar firms got the calibre of management they deserved; smaller firms, satisfied with their lot, did not require specialised, skilled managers. Britain's lack of such managers came,

in part, not from the low esteem for industry, but because an industry dominated by small firms provided few opportunities. The further development of individual established businesses was inhibited by the framework of collusion and fossilised market sharing arrangements in which they operated. Managing the status quo was now the first requirement.

When Anderston and its later competitors are compared, their different stages in the cycle of development and decline of a business must be considered. The early start theory of Britain's industrial decline (or underperformance) may be taken down to the level of the firm. Anderston, by the First World War, was the possessor of old fashioned plant suffering from newly equipped competitors in an expansionist frame of mind, run by entrepreneurs. It had become a satisfied firm run by managers and already locked into a particular trading structure.

Trade associations can be seen as evidence of the decline of personal connexion between supplier and customer and its supplanting by a fluid form of allocation, but their successful creation, maintenance and operation relied upon personal contacts between the leading figures of the member businesses. Small firms were dominated by individuals and partook of their character; latterly individuals might be dominated by the ethos of the firm and take on its inherited character, unhelpful in keeping up with changing times. Personal friendships were both a basis for, and by-product of, the contacts established through Associations. Personal contacts might enhance business opportunities; external friendships and emnities might hinder the taking of rational business decisions. Group loyalty formed via the Associations could hamper business development if, as with Anderston, too much store was set by it and too great a personal commitment invested in it. Elsewhere the history of associations has

been seen as "the record of efforts at combination being combated by vigorous individualism" and their activities regarded as of "doubtful value and importance".[22] The contacts necessary for collusion were an outgrowth of the specialisation of industry. The relationship of business through collusion with business through family, friends and connexions is complex; so is that between collusion and amalgamation. The two seem to develop together from the late 19th century, the latter attracting more contemporary notice than the former. Were they competing solutions to the problem of organising industry in the manufacturers' interests or were they complementary? Was collusion but a stopping off period on the road to merger? Many mergers were defensive, like trade associations, not dynamic.[23] Without governments and large firms to manage or manipulate markets, the relatively small numbers of specialists throughout the bye-ways of engineering could come together with little formal organisation to similar ends. Alternatively, a cartel might have provided the means of keeping together competitors with divergent but not incompatible aims.

Where associations have attracted the attention of economists the theoretical framework is as defective as that mentioned in the first paragraph of this work. Group maximisation of monopoly profits is seen as the aim - a gross simplification as will be shewn in later chapters.[24]

Mergers, successful or chaotic are easier to chart than "trade associations", as the British called their cartels, of which little direct evidence may survive due both to secrecy and informality. Through Anderston the activities of these obscure but pervasive organisations, well known in some circles but hidden from the public eye and, in theory from the customers, may be uncovered. So too can the changing official attitude to them - by the 1930s and 1940s, they

were encouraged as respectable and valuable forms of industrial organisation. Anderston's view is, however, that of a loyal adherent and pioneer to whom associations are a natural and desirable means of limiting competition and side stepping pressure for economies of scale. The usually unexplained mechanics of price fixing are shewn up in detail.[25]

Others have pointed out that the family needs of the middle classes required safe returns on capital before profit maximisation. It has been suggested that informal social controls acted against maximising profits.[26] The rôle of collusion in which the colluders, team players, sought to balance collective improvement of prices and profit margins (not individual profit maximisation) against making their industry too attractive to new capital and competition, has not been proffered to explain changes in industrial practice. Safety first through collusion appealed to sluggish managements and provided the means of fulfilling the desires and needs of rentier shareholders. Associations might, moreover, be managed to institutionalise and prolong special relationships with customers first established through contacts and forge further links between the managers of suppliers and of customers. Whatever the mechanism of collusion, personalities remained important - hence the need to investigate the biography of a business as well as its history. The needs, preferences and interests of managers and the separate but interlocking ones of the shareholders obstructed the rational development of the company if that can be defined as growth, profit maximisation and survival.

Development of this and other businesses owed much to the family influence not just as a source of finance but as a clearing house of contacts, information, connexion and influence. Until financial markets matured and financial information flowed more

freely how else could private investment be guided and business made but on the basis of contacts in which each party sought to exploit, and profit from, the other's knowledge. How far this could be pursued legitimately, how far it could be used as a tool of business policy in an age when business ethics were other than they now are (supposed to be) can be explained in detail through examination of Anderston. Inside information and friends at court were pillars of its later 19th century development. Retreat from active involvement in manufacturing by families whose contacts had fuelled the business in the 19th century, and their consequent and changed needs and perceptions hampered it in the twentieth. They did not relinquish ownership. The involvement of a new generation of prominent business men was not encouraged by a company obsessed with privacy. The firm followed its owners to become, by the 1920s, itself a rentier with more capital invested in securities than manufacturing.

Continuity of ownership was matched by continuity of management - a strong feature of small firms. The apprentice and the office boy stayed on, stepping into dead men's shoes, moulded to conform, their horizons limited. Excessive loyalty to the firm and reverence for its ways hindered timely response to changing circumstances. The particular and personal circumstances of Anderston may be unique but its experience is surely typical of a certain class of business – the private interests of the proprietors and the balancing of conflicting interests within the business in a shifting, unstable equilibrium underpin change or inanition.

The institutionalisation of old capital through incorporation and of old connexions through collusion created a framework from which Anderston could not break free; it was imprisoned by its past. Forces which had helped Anderston maintain its dynamics during the 19th century - the expansion of railways, of British capital

investment and political control overseas - evaporated during the 20th century as railways and empire declined and domestic investment replaced the export of capital. The 1960s witnessed more than the passing of Anderston and its rivals: the industrial revolution of coal and iron had finally run its course.

Anderston had changed the basis and location of its business in an atmosphere of rising demand, sales and profits. In its subsequent pursuit of safety first, it was a child of its time: change would be disruptive. There was no external pressure for change and, perhaps, little ability to organise it. Its own continuance became the prime objective of a business in which the urge to conquer new markets and to make money was, during the present century, displaced by an urge to make foundry products. Where management and capital remained in the same hands more adventurous policies could be, and were, pursued than by the rentier/manager mixture at Anderston.

What follows is primarily the history of the Anderston Foundry; secondly it is the history of various nineteenth century business families and twentieth century managerial ones; thirdly it is the history of a large swathe of the railway fittings industry, its little known products and firms, its organisation and internal arrangements. These latter considerations are dealt with partly in the text and partly in appendices, one biographical, the other sketching the history of individual rivals. The broader history of the various Associations is touched upon in the body of the work. The anatomy of Scottish capital in the later 19th century is examined in detail as Scott and Hughes have, not in a concrete example of what Payne hoped might be done more widely when he investigated early Scottish limited companies.[27]

In an expanding market, Anderston was dynamic and sought to shape its environment: in more difficult circumstances it drifted in

uncertainty. Its dominance of various Associations reflected the position it had built up, by competition and influence, in the 19th century; its subsequent adherence to such alliances marked and masked its decline and inefficiences. Anderston's history may be viewed as a paradigm for that of Britain's first industrial revolution and of British power in the world. Ultimately Anderston was supplying products for which demand was declining, to a declining portion of the world's markets, driven back by tariffs, foreign and native competition and a domestic regime of high costs and an overpriced currency. In the changed circumstances of business (and politics) it was too small to influence events and unable to call upon sources of influence.

The study aims to shew business as it was, with the continuance of those essentially Victorian values of collusion, connexion and, possibly, corruption into the mid 20th century, the details of which may, elsewhere, be hard to find, and for which few have looked. Others may be encouraged to ask different questions about business behaviour as a result. It is divided into four naturally occurring sections; to c.1880; from the 1880s, to 1914; from 1914 to 1939; and after 1939. There is little to offer the labour historian. This is business élite history.

Footnotes: Introduction

1. (Cambridge, Mass., 1987), p.11-Mu.ch of the succeeding paragraphs drawn from pp.11-17. Diane Hutchinson and Stephen Nicholas "Modelling the Growth Strategy of British Firms", Business History, vol.29, no.4 (1987), particularly pp.46-48 offer various viewpoints of business history, its relationship to economic history and the problems of generalising both from single firm histories as also from "aggregate business history".

2. B. Elbaum and W. Lazonick eds. The Decline of the British Economy (1986) particularly their article "An Industrial Perspective on British Decline" and that by S. Tolliday.

3. Alfred D. Chandler, The Visible Head: The Managerial Revolution in American Business (Cambridge, Mass., 1977). L.E. Hannah, The Rise of the Corporate Economy (1976) and L.E. Hannah ed. Management Strategy and Business Development (1976) is perhaps too keen to assume that such a movement happened. Tolliday is more sceptical as are D.C. Coleman, T.R. Gourvish, R.P.T. Davenport-Hines and Geoffrey Jones in their contributions to Business History vol.29, no.4 (1987).

4. Tolliday, pp.16-17.

5. Tolliday, p.159.

6. P.L. Payne British Entrepreneurship in the 19th Century (1974).

7. The firm was ultimately taken over by an industrial property group which had no reason to destroy the evidence, having no connexion with the Anderston Foundry as a manufacturing entity; and Hutchinson and Nicholas, Business History (1987), p.47 quoted.

8. W.J. Reader, Imperial Chemical Industries, A History, 2 vols. (Oxford 1970 - 1975); C. Wilson, The History of Unilever, 2 vols. (1954); D.C. Coleman, Courtaulds: An Economic and Social History, 3 vols. (Oxford, 1969-1981).

9. J.R. Hume and M. Moss, Beardmore: the History of a Scottish Industrial Great (1979); E. Green and M. Moss, A Business of National Importance (1982); see also Tolliday, and Hutchinson and Nicholas in Business History, (1987).

10. D.L. Burn, The Economic History of Steelmaking (Cambridge, 1940).

11. P.L. Payne, "Emergence of the Large-scale Company in Great Britain, 1870-1914", Economic History Review, vol.20, 1967, pp.519-542. Stefanie Diaper "The Sperling Combine and the shipbuilding industry" in J.J. Van Helten and Y. Cassis, ed., Capitalism in a Mature Economy, (Aldershot, 1990).

12. Payne ibid and P.L. Payne "Industrial Entrepreneurship and Management in Great Britain" in P. Mat hias and M. Postan eds., The Cambridge Economic History of Europe, vol.7, pp.204-220 (Cambridge, 1978).

13. Martin Wiener, English Culture and the Decline of the Industrial Spirit (Cambridge, 1981). With what could earlier entrepreneurs be compared when Britain was the sole industrial nation?

14. P.L. Payne (1974).

15. Its ultimate purchase by Evans and its absorption of Daniel Macnee's plant does not, I feel, invalidate this.

16. Both median and average. S.J. Prais A Study of the Growth of Concentration in Manufacturing Industry in Britain, 1909-70, (Cambridge, 1976), pp.51-62.

17. The possiblities of using computers to analyse such things, to analyse the ownership of shares in companies, the shareholdings of individuals (particularly in Scotland where probate inventories abound) and to seek patterns and connexions is an area virtually untouched. See also note 23 below.

18. H.E. Jones, A History of G.K.N., vol.1 (1987); S.D. Chapman, Stanton and Staveley: A Business History (Cambridge, 1981).

19. e.g. by Burn (1940) and J.C. Carr and W. Taplin, History of the British Steel Industry (1962); or R.H. Campbell, The Carron Company (1961). Although P. Wardley The Lincolnshire Iron Industry, 1859-1914, Ph.D. thesis, University of Wales (Swansea), 1984, investigates iron cartels from the perspective of econometric modelling.

20. D.F. Channon, The Strategy and Structure of British Enterprise (1973), pp.22-27, hints that many agreements went underground or were modified to fall outwith the scope of legislation on restrictive practices.

21. e.g. Alex Rubner, The Ensnared Shareholder, directors and the modern corporation, (1965).

22. J.P. Addis, The Heavy Iron and Steel Industry in South Wales, 1870-1950, (Ph.D. thesis, Wales, 1957), pp.74-76.

23. Payne (1967), Payne in Mathias and Postan (1978), Tolliday etc.

24. Wardley, pp.33-34 citing W.D. Reekie, Industry, Prices and Markets, (Oxford, 1979).

25. Political and Economic Planning, Industrial Trade Associations (1957) is the fullest study of the phenomenon listing hundreds of associations but missing several of those, e.g. Steel Sleepers and Points and Crossings, in which Anderston was concerned. This book deals, principally, with the position post-1945 to the Restrictive Practices Act of 1956 and fails to stress the coverage of the less formal associations of the late 19th century.

26. For both see M.J. Daunton "Inheritance and Succession in the City of London in the 19th Century", Business History, vol.30, no.3 (1988) and sources cited therein.

27. J.P. Scott and M. Hughes, The Anatomy of Scottish Capital (1980); R.C. Michie, Money, Mania and Markets, (Edinburgh, 1981); P.L. Payne, The Early Scottish Limited Companies, 1856-95: an historical and analytical survey (Edinburgh, 1980).

PART I

The Rise of the Anderston Foundry, c.1800 - 1914

CHAPTER 1

1790s - 1850s[1]

The origins of the Anderston Foundry lie in the extraordinary business talents and activity of the Houldsworth family. The family was native to Nottinghamshire where William (1770-1854) succeeded his uncle as a yeoman farmer at Farnesfield; he also inherited a fortune accumulated by his uncle as a planter in Jamaica. Thomas, younger brother of William, was a journeyman stocking weaver in Nottingham where his next brother, Henry, joined him in 1787/8. The brothers moved to Manchester in 1792 to acquire knowledge of spinning, where in 1793, with £100 advanced by William, they bought a mule spinning machine. A further advance of capital, in September 1793, allowed them to take up a partnership in a mill.

In 1794, W., T. and H. Houldsworth, fine spinners was established with William as sleeping partner. From Manchester Henry Houldsworth regularly visited Clydeside to sell yarn; in 1795 he married the daughter of a Glasgow businessman. Meanwhile one of his sisters had married a McConnel of McConnel and Kennedy, spinning machine manufacturers. The McConnels were one of several families of Scots, who, like the Fairbairns, had migrated to Lancashire and, with a little capital, set up as machine makers. The chance failure of a customer left some machinery on their hands thus they diversified into spinning. Henry Houldsworth's progress was the converse. Using the connexions he had developed in Glasgow, he moved there in 1799 to teach fine spinning at Gillespie's Woodside Mill in Bishopton of which he became proprietor in 1801.[2]

Close family links continuing for several generations, were immediately evident. As Henry moved north his place in Manchester

was taken by his youngest brother John (d.1808). During the Napoleonic Wars the Manchester business prospered greatly. The rise of the family in society was marked: Thomas became an M.P. in 1808 and was granted arms in 1816. The Glasgow business also prospered; in 1804/5 Henry built a steam powered mill said to be the largest power loom factory in Glasgow. This was located in the growing industrial suburb of Anderston. By 1831, with 45,000 spindles at Woodside and Anderston and with a partnership in a further mill at Airdrie, the Houldsworths were proprietors of the second largest cotton enterprise in Scotland.[3]

The Scottish cotton industry, second in importance only to that of Lancashire, had developed upon the foundations of the existing linen industry.[4] Between 1755 and 1830 the population of the west of Scotland increased three and a half fold and the area became increasingly industrialised. In 1796 there were 39 mills in Scotland; in 1812, 120; by 1833, 134 - over half of them in Glasgow.[5] Whilst the technology had come from England, local proficiency in building and maintaining all forms of textile machinery had increased. Technologically and entrepreneurially, between the 1790s and 1820 Scotland held its own against the Lancashire cotton industry.

Henry Houldsworth had been unable to obtain the textile machinery he wanted in Glasgow - he bought some from the McConnels in Manchester.[6] To solve his problem he established a workshop for making and repairing machinery, adjacent to his mill in Cheapside Street, Anderston.[7] As the local cotton industry flourished, so did the machine shop.[8] Its staff came to be used by other millowners to erect machinery and, in due course, a considerable reputation as a machine maker was forged resting, in particular, upon the manufacture

of mill gears such as Houldsworth's differential gear. Originally a manufacturer of spinning machines, Anderston turned to making power looms as the demand for them increased. No doubt the Houldsworths' own experience of using such machinery at their Anderston mill proved valuable.[9]

As a prominent manufacturer, Henry joined in the public affairs of the textile industry. Even as he testified before the Select Committee on Manufactures, Commerce and Shipping (1833), he viewed the prospects of the Scottish textile industry with pessimism. A long period of low profits in the industry had caused a shortage of the internal finance needed to invest in innovatory technology. From this time, capital and enterprise left the cotton industry for more profitable fields - many mills destroyed by fire between 1838 and 1843 were not rebuilt.[10]

Henry alone of the brothers, had married. His sons were heirs to the Nottinghamshire farms and the Manchester business as well as to the Anderston enterprises, a circumstance which helped bind a physically dispersed family together. When, in 1836, Henry used the inside knowledge which he possessed as a director, to outbid the Shotts Iron Company for the Coltness estate,[11] his purchase money (£80,000) was largely advanced by Thomas[12] of Manchester. The purposeful and persistent restlessness which had driven Henry from Nottingham to Glasgow now drove him, aged 62, into his most ambitious and lucrative venture. With the "true insight of a business genius" he seized the opportunity: "if a branch of trade languished they (the Houldsworths) cut their losses and dashed to more promising new lines".[13]

At Anderston operational control had passed from Henry, fully engaged at Coltness, to his sons John and William. As textiles

stagnated from the 1840s, iron and iron manufactures began to change the local physical and business landscape and the dynamic of the local economy shifted from Glasgow to Lanarkshire. Capital was to leave the textile industry for pastures new throughout the ensuing generation; the perspicacious Houldsworths were the first to start moving their eggs into other baskets.[14]

Anderston had come to make and repair machines of all sorts with textile machinery its mainstay. As iron supplanted wood as the principal constituent of such machinery a small foundry was established to fabricate the castings required and to undertake jobbing work.[15] The high suitability of Scottish ores for foundry use[16] had no direct influence upon Henry Houldsworth. Despite appearances he was not interested in Coltness simply as a source of supply for the foundry, nor had he consciously created a text book example of backward vertical integration. The move from textiles to machine shop to foundry was one thing, that into iron at Coltness and later into coal, and to more iron at Dalmellington, was another. Overall the grouping of businesses was fortuitous and transitory. Coltness, by the late 19th century, more heavily involved in coal than in iron, was at the core of the family holdings of which the Manchester textile business was next in importance. A substantial holding was retained in the Dalmellington Iron Company but in the first two enterprises the family's active business role was concentrated. The Scottish textile interests and the foundry were more peripheral; active family involvement all but ceased and financial involvement diminished.

What existed in the 1850s was not a single business group but a series of overlapping family partnerships and overlapping interests; Those Houldsworths financially interested in Anderston in the 1850s

(John and William) were interested in other family concerns whereas those Houldsworths primarily interested in the Manchester business or the iron works, were not financially interested in Anderston. All had a stake in Coltness.[17] Although lacking a dominant figure to compare with Sir J.W. Pease, the Houldsworth enterprises and the Pease businesses in the north east of England had much in common: a confederacy of family firms, both lacking sufficient internal coherence to remain united in the longer term. J. Houldsworth and Company, formed by Walter and John, acted as a managing agency or holding company for their interests, akin to J. & J.W. Pease. There were shared offices, cashiers and clerks in Glasgow - Carvel believes that the firm acted as a merchant bank to the iron companies.[18] The Manchester textile business had no need of Anderston's products when it could buy similar, and possibly more advanced, machinery from firms close to hand. A mixture of sentiment and rational business dealings led the Scottish textile companies to be numbered amongst Anderston's customers and for Anderston to buy iron from Coltness and Dalmellington. By the 1850s it also bought extensively from other Scottish iron companies; no doubt the Houldsworth textile companies bought from other machine makers.[19]

The Houldsworths, having produced a chain of businesses gradually severed the links. They lacked the numbers and the capital to be sole manager-proprietors of all the concerns for more than a limited time and concentrated where their investment was greatest, allowing Anderston and Dalmellington to fall, eventually, under other managerial and financial influences.

Improved rail and canal access to the Monklands was both a precondition for the further exploitation of the iron field there and a result of the demand for transport facilities fuelled by the

existing success of the iron workings. To secure the completion of the Coltness and Wishaw Railway Henry Houldsworth had provided free land, a £20,000 guarantee and a contribution towards promotion expenses. Unconnected with their involvement at Coltness the Houldsworths had shewn interest in early railway schemes: in 1826 they had invested in the Garnkirk and Glasgow, ten years later in the Edinburgh, Leith and Newhaven.[20]

In 1842 Scotland's first trunk line, the Edinburgh and Glasgow, opened and the prospectus for the North British Railway (Berwick to Edinburgh) was issued. That of the Caledonian followed in early 1844 for lines from Carlisle to Glasgow and Edinburgh.[21] With a sound sense of timing Anderston, already a chair maker, built in 1843 a large foundry on an adjoining site, specifically to manufacture cast iron railway chairs.[22] Another unit was added to the agglomeration of businesses, more as the dynamic and flexible response of the Houldsworths to a particular opportunity in a developing area of business than in fulfilment of a pre-planned strategy. Railway schemes were coming thick and fast: once the railway mania was underway all manner of Anglo-Scottish trunk lines and a host of less plausible schemes were promoted. Few were built. The move into railway equipment was similar to those into cotton and iron: there was proven demand and great potential in each case spiced with some inside knowledge,[23] e.g. Coltness was acquired in the wake of Neilson's perfecting the hot blast and transforming the prospects of the local iron and coal industry. Between 1844 and 1851 home demand for iron for use in railways surged: c.18% of British pig was used for permanent way materials. The Houldsworths expanded their iron interests by the formation of the Dalmellington Iron Company, in Ayrshire, whose plant opened in 1849.[24] Scottish makers had little

success in rail making but Scottish iron was used elsewhere for this and railways, as we shall see, required iron for many other purposes: bridges, train sheds, couplings and brake blocks, wagon frames and axle boxes, signalling etc. The future direction of the Anderston foundry was arranged through the good judgement and useful connexions which had assisted the rise of other family enterprises.

The Caledonian Railway, from the outset, was intended to absorb various minor railways in the Monklands including the Coltness and Wishaw and the Garnkirk. Thus, John Houldsworth's membership of the Caledonian's Glasgow Committee alongside other local merchants and business men should cause no surprise. From 1845 to 1850 he was a director - as later were other Houldsworths and Anderston, luminaries.[25] The Caledonian hoped to benefit from recruiting a name such as Houldsworth; the Houldsworths hoped to benefit from orders. Although the cheap costs and existing skills of English and Welsh rail makers allowed them, using Scottish iron, to undercut Scottish manufacturers upon the price of finished rails delivered back to Scotland, chairs, spikes and other track fittings were bought locally. The Caledonian was soon buying chairs from Anderston. Domestic demand overall for chairs ran at roughly half that for rails and peaked at 85,000 tons p.a., 1846-50 compard with 27,000 tons p.a. in the previous decade.[26]

Anderston's diversification was timely. John Houldsworth was, in 1846, on Scottish railway subscription lists to the extent of £89,000[27] whereas only two other iron makers were named, and they for smaller, although significant, sums. Others may have required all their spare funds to reinvest in developing their businesses to supply the increased demand the railways were bringing; the Houldsworths, from their diverse activities, could find spare capital

and use it.[28]

In the early years of the railway system large numbers of firms in diverse locations tendered to supply chairs. Many could have been contractors and merchant firms and few, it may be conjectured, had new plant specialising in the business. In the late 1840s over twenty firms commonly tendered;[29] with the specialisation and consolidation of the industry over the next 30 years fewer than ten principal makers remained active. Anderston had pioneered new production methods; the aftermath of the railway mania had brought a sharp, albeit temporary, drop in business. The shake out of locomotive builders in the 1850s as various frrms specialised and others, such as T. Eddington and Sons of Glasgow, a chairmaker, fell back into general engineering, provides a model for such behaviour.[30]

Anderston'e new niche was not to prove the means for further expansion of the Houldsworth empire. Only £20,000 of Houldsworth capital was invested in Anderston in the 1850s increasing, with the development of the business, to £60,000 in the 1880s. The two iron company partnerships composed entirely of Houldsworths and their relations such as James Hunter were capitalised at £120,000 (1857) and £360,000 (1872) for Coltness, and £150,000 (1861) and £310,000 (1874) for Dalmellington.[31] The foundry remained a useful customer for iron but, except perhaps as a generator of profits to be reinvested elsewhere, lay outside the main thrust of the family's business interests.[32]

John Houldsworth had been forced, through the illness of his brother William, to take over much of the foundry's management whilst being committed to the iron companies (especially Dalmellington)[33] and to maintaining the family's local position as Provost of Anderston. His preoccupations brought M.A. Muir (1812-80)[34], who had

entered the business in the 1830s, either through relationship or contacts, and became manager of the machine shop by 1840, into partnership in 1853. Before John's death (1859) Muir had taken over active management of Anderston.[35]

The demise in quick succession of Henry, Thomas, William and William of Belvedere[36] during the early 1850s occasioned a reorganisation. Not for the last time would external family considerations more than internal[37] logic shape Anderston's development.

Henry II retained an interest in Coltness but, having inherited his uncle's mills, was primarily based in Manchester. William junior was trained at and worked in the Anderston business but he too became increasingly involved in Coltness.[38] No subsequent Houldsworth worked for Anderston. The family's management talent was now thinly spread and, as indicated, was concentrated where capital exposure was greatest. The feuing of the Cranston Hill estate[39] during the 1850s, to provide jointures for Willam's daughters, cut the family's residential links with Anderston where the further industrialisation and urbanisation precluded expansion of the foundry on its existing site.[40]

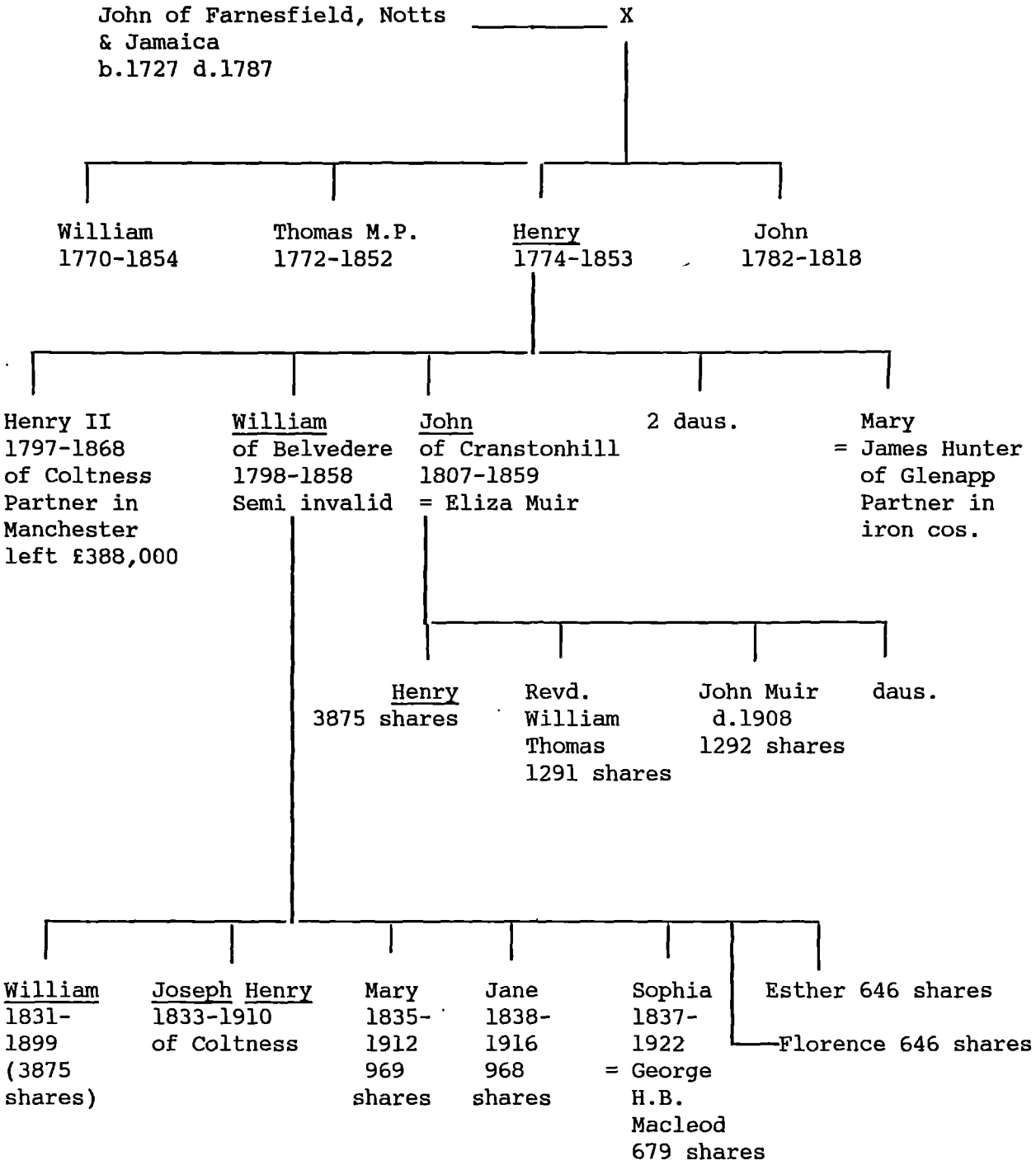
When John Houldsworth died some 80% of his personal estate of £110,600 was invested in family concerns: £47,865 in the two iron companies; £31,463 in the holding company; only £10,244 in the Anderston Foundry.[41] Whereas the Houldsworths continued to provide management as well as ownership to their iron businesses, at Anderston their capital recruited talent in the shape of Muir who could be left to run the business and recruit his successors from within his own extended family. Contrary to some impressions, the Houldsworths did not quit the Anderston business, nor their textile

interests; their involvement, managerially and financially, gradually diminished.[42]

By the 1850s the Anderston business was no longer primarily a machine shop tied to the textile trade. Led by the market it had expanded in an adhoc way much like other Houldsworth enterprises. Despite its continued sharing of various offices and officials with them for another generation, it was decreasingly one of those enterprises. Who had set it upon its path of concentrating upon railway fittings is uncertain but John Houldsworth seems, with his connexions and his family's history of inspired entrepreneurship, a more likely candidate than the junior Muir.

From 1853 and Muir's assumption to the partnership certain records survive. This may be chance; it seems to point to the recognition of the Anderston Foundry as a distinct business.

TABLE 1.1 DESCENT OF THE HOULDSWORTHS AND THEIR SHAREHOLDING



Underlining = Partnership in Anderston Foundry/Directorship of Anderston Foundry Co. Ltd.

Sources : Houldsworth and Macleod. Burke's Landed Gentry

PLATE 1 RAILWAY TRACK AND FITTINGS

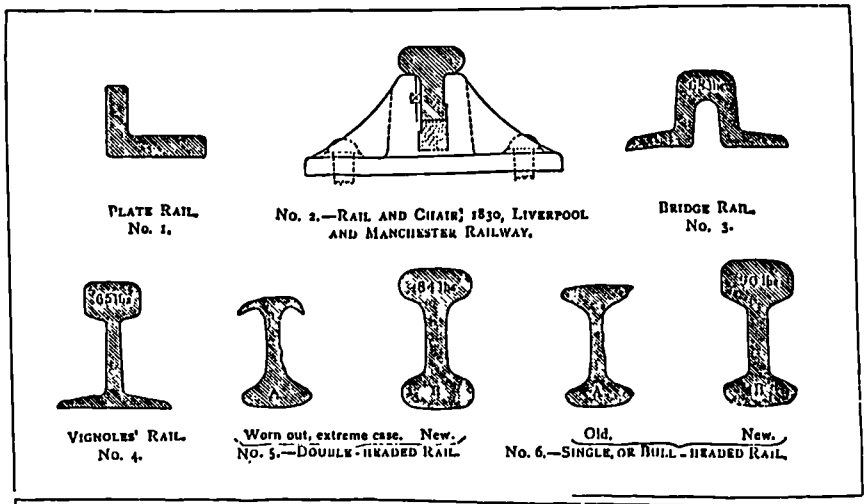


PLATE RAIL. No. 1.

No. 2.—RAIL AND CHAIR, 1830, LIVERPOOL AND MANCHESTER RAILWAY.

BRIDGE RAIL. No. 3.

VIGNOLES' RAIL. No. 4.

Worn out, extreme case. New.
No. 5.—DOUBLE-HEADED RAIL.

Old. New.
No. 6.—SINGLE, OR BULL-HEADED RAIL.

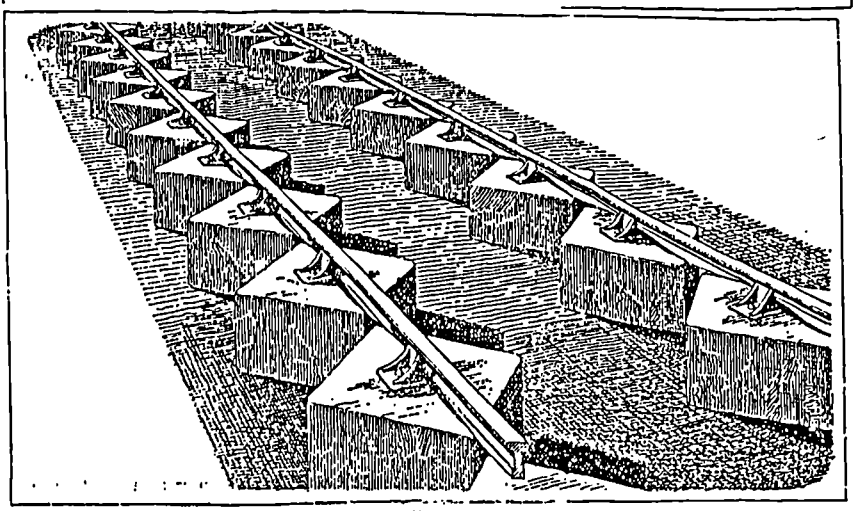


FIG. 3.
PERMANENT WAY OF LIVERPOOL AND MANCHESTER RAILWAY, 1830.

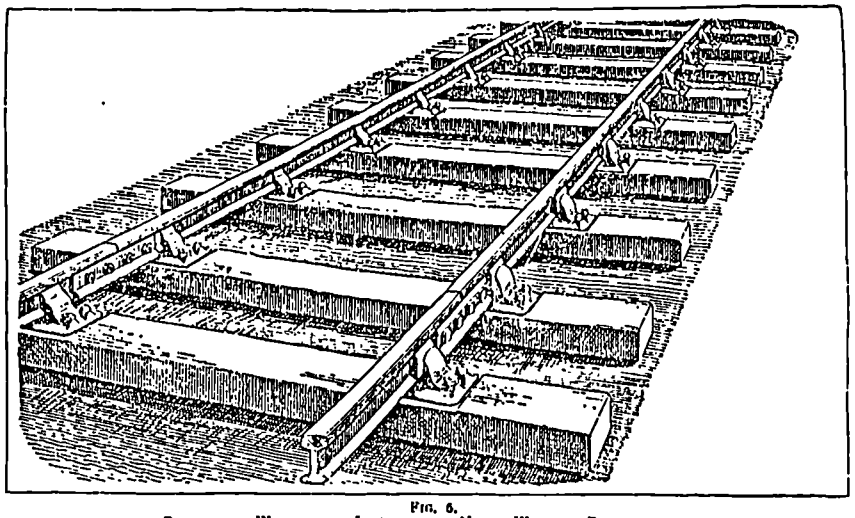


FIG. 6.
PERMANENT WAY OF THE LONDON AND NORTH-WESTERN RAILWAY, 1894.

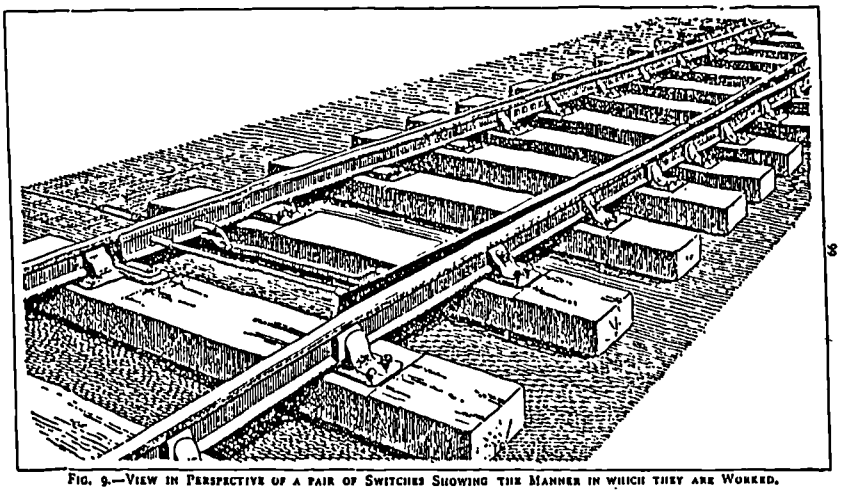
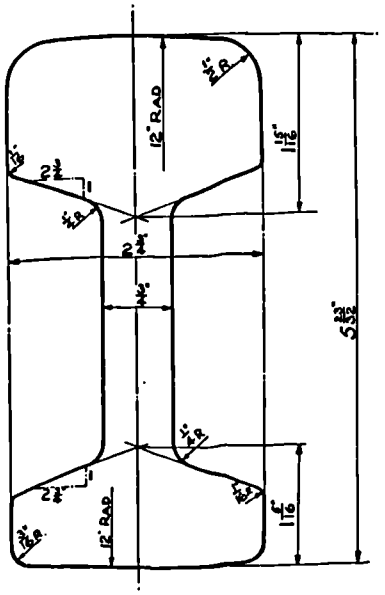


FIG. 9.—VIEW IN PERSPECTIVE OF A PAIR OF SWITCHES SHOWING THE MANNER IN WHICH THEY ARE WORKED.

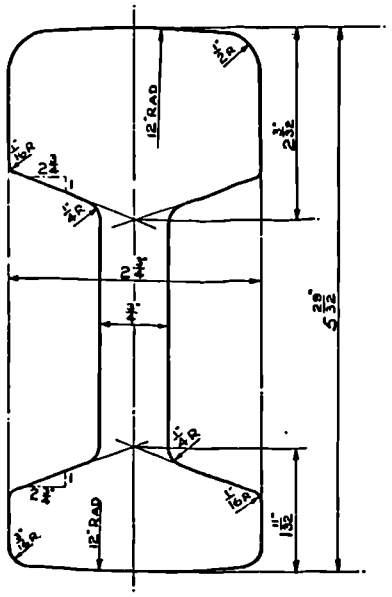
WORKINGTON IRON & STEEL COMPANY



95lb B.H Rail
B.S Section No.95

134

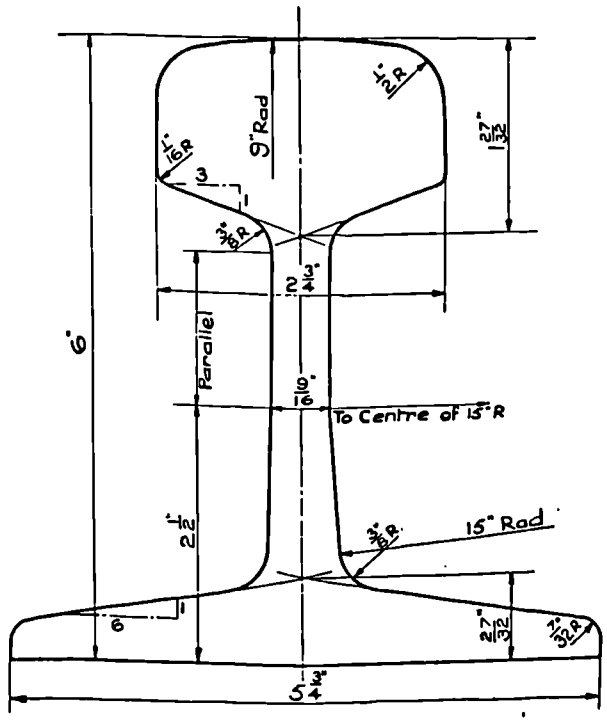
WORKINGTON IRON & STEEL COMPANY



100lb B.H Rail
B.S Section No.100

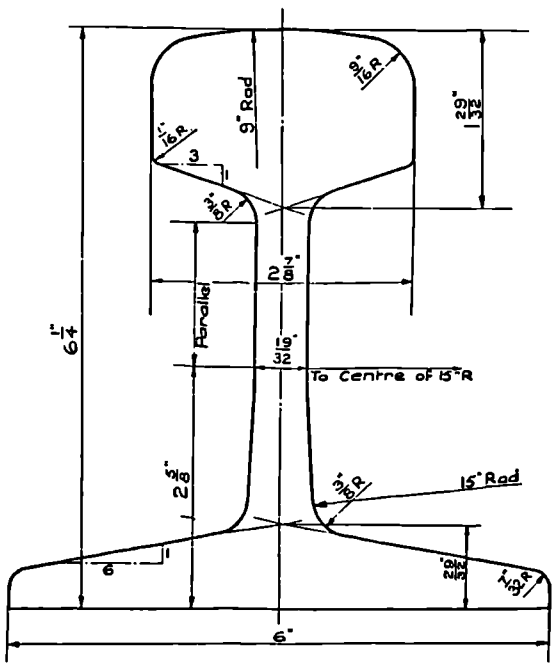
135

WORKINGTON IRON & STEEL COMPANY



100lb F.B Rail
B.S Section No.100R

WORKINGTON IRON & STEEL COMPANY



110lb F.B Rail
B.S Section No.110R

Footnotes: Chapter 1

1. No records of the business survive for this period. This chapter draws mainly upon J.L. Carvel The Coltness Iron Company (Edinburgh 1948) especially pp.6-14 and W.H. Macleod and H.H. Houldsworth The Beginnings of the Houldsworths of Coltness (Glasgow, 1937), pp.38-145, neither of which can be considered objective. The former is an official history; the latter was written by two family members. Neither work gives sources. A brief typescript history of the Anderston business, Durham County Record Office, Anderston Foundry papers D/AF 628 (c.1930) supplements them. Hereafter D/AF.

2. Carvel loc cit; Report of Select Committee on Artisans and Machinery, 1824, evidence of H. Houldsworth vol.5, p.278ff; C.H. Lee A Cotton Enterprise, 1795-1840: a history of McConnel and Kennedy (Manchester 1972), pp.11-12, p.43ff. Scotland was McConnel's main market from 1800-1830 and they had agents established there. Various other individuals came north - a symptom of the close ties between the two principal cotton areas - . . . greater in significance than in number. A. Slaven, The Development of the West of Scotland, 1750-1960 (1975), chapter 4, especially pp.91-92.

3. H. Hamilton The Industrial Revolution in Scotland (Oxford 1932) pp.128 and 144; Evidence of H. Houldsworth to the Select Committee on Manufactures, Commerce and Shipping, 1833, vol.6 pp.35-45, 70-77, 309-337; Carvel loc cit; J. Butt "The Scottish Cotton Industry during the Industrial Revolution", 1780-1840 in L.M. Cullen and T.C. Smout eds. Comparative Aspects of Scottish and Irish Economic and Social History, 1600-1900 (Edinburgh 1977); A.J. Robertson, "The Decline of the Scottish Textile Industry, 1860-1914" in Business History, 12, 1970.

4. R.H. Campbell Scotland since 1707 The Rise of an Industrial Society 2nd ed. (Edinburgh, 1985), p.92ff; Lee p.6; Hamilton, (1932), pp.104-150 and Hamilton, An Economic History of Scotland in the 18th Century, (Oxofrd, 1963) pp.160-184 on the background.

5. J.R. Hume and M.S. Moss Workshop of the British Empire, (1977), A.J. Robertson p.117.

6. Hamilton (1932), p.209. Lee p.12.

7. Carvel loc cit. The firm's letterhead claimed 1796 as its date of foundation but Houldsworth in his 1824 testimony states that he did not move to Scotland until 1799.

8. Progress was not trouble free. Peter Fairbairn a partner in the foundry, joined his brother in Manchester (1818/19) disappointed with his prospects. Later he moved to Leeds and founded his own textile machinery business: later Fairbairn Lawson. David J. Jeremy ed Dictionary of Business Biography (1984) volume 2, pp.311-313.

9. To regulate the speed of bobbing, Carvel loc cit. Hamilton (1932) p.213. British Association, Notices of some of the principal Manufactures of the West of Scotland (Glasgow 1876) pp.119-121.

10. A.J. Robertson especially p.118 for the preceding paragraph. Kirkman Finlay, head of James Finlay & Co. put its mill up for sale in 1844. The Muir family, see below, were subsequently involved with Finlays.

11. J.Butt "Capital and Enterprise in the Scottish Iron Industry, 1780-1840" in J. Butt and J.T. Ward Scottish Themes (Edinburgh 1976), p.76.

12. Carvel, p.12.

13. T.J. Byres "Entrepreneurship in Scottish Heavy Industries, 1879-1900" in P.L. Payne ed. Studies in Scottish Business History (1967). Article on John Houldsworth in Memoirs and Portraits of 100 Glasgow Men (Glasgow 1886) Vol.1, p.165: this describes Henry Houldsworth and the Houldsworth family. Both Carvel and Houldsworth and Macleod are as laudatory.

14. A.J. Robertson passim; A. Slaven (1975) pp.105-110; R.H. Campbell The Rise and Fall of Scottish Industry, 1707-1939 (Edinburgh 1980) Chapter 3.

15. Carvel pp.9-11, D/AF 628.

16. Butt, p.73. A. Slaven (1975) pp.115-122; Hume and Moss p.13; R.H. Campbell (1985), pp.95-102.

17. Carvel and Houldsworth and Macleod. Analysis of personal estates of J.H. Houldsworth, J.M. Houldsworth and William Houldsworth from Sheriff Court Records, Scottish Record Office.

18. Carvel p.33. Houldsworth and Macleod passim. For the Peases: M.W. Kirby, Men of Business and Politics (1984) passim. The family groups shared many features: in each case a textile business was the first industrial involvement and one which escaped from family management and ownership as energy was concentrated elsewhere. Each was involved in local politics (Anderston or Darlington), property development (Anderston or Middlesbrough), coal and iron, railways and engineering, a family merchant bank (which is how Carvel saw J. Houldsworth & Co.) and shared central offices.

19. D/AF 22 - half-yearly balances and D/AF 11 - private ledger (iron accounts therein) provide some detail but not consistently nor in consistent form.

20. C.J.A. Robertson The Origins of the Scottish Railway System 1830-1844 (Edinburgh 1983) pp.50, 71-75, 81, 93, 152. The Houldsworths were prepared to spend £31,000 in an attempt to get rail access to Dalmellington. Wray Vamplew ,"The Railways and the Iron Industry, a study of their

relationship in Scotland" in M.C. Reed Railways in the Victorian Economy, (Newton Abbot 1969), pp.33-76.

21. C.J.A. Robertson Chapter 5.

22. D/AF 628. The machine shop had also recently been rebuilt. For the importance of chairs as a component of the demand for iron for railway use see note 24; D/AF 629 Lecture by T.P. Cargill on the development of iron and steel sleepers hints at Anderston's having made chairs since the 1830s.

23. Slaven (1975) pp.116-118. The hot blast (1838) gave Scottish producers an immediate advantage over their English competitors - local coal did not now need to be converted into coke before use. This, with small royalty payments and an abundance of cheap Highland and Irish labour, helped increase Scottish pig iron production from 25,000t. c.1825 to 40,000t in 1830, 240,000t. in 1840, and 564,000t. in 1848. It peaked at 1.2m tons c.1870. C.K. Hyde Technological Change in the British Iron Industry, 1700 - 1870. (Princeton, N.J., 1977) pp.146-152.

24. G.R. Hawke Railways and Economic Growth in England and Wales (Oxford 1970) p.213 and Appendix for demand for sleepers; Carvel op cit for Dalmellington; A. Slaven and S.G. Checkland ed. Dictionary of Scottish Business Biography (Aberdeen 1986) vol.1, pp.51-53.

25. C.J.A. Robertson Chapter 5 especially pp.282-287. Anderston was supplying the Caledonian by the mid-1850s (D/AF 22). Later reminiscences at the time of the railway grouping suggest a connexion from the outset, e.g. D/AF 407, 24 April 1921, Letter from T.P. Cargill to the British Hydraulic Foundry. Scottish Record Office BR/CAL 4/5 lists directors and officers of the Caledonian Railway.
Nothing was more natural than that local would-be customers, suppliers and business interests should be recruited and drawn together in railway promotion. Subscription lists to impress Parliament and future investors needed to shew quality. It was in a supplier's own interest to become involved. The Houldsworths were, however, not simply lending their name - in view of the Caledonian's interest in acquiring Monklands railways they would have become involved willy nilly. In East Anglia the Ipswich firm of agricultural machinery makers Ransomes and May were the favoured suppliers of chairs, spikes, wagons etc. in the 1840s to the Eastern Union Railway, which was dominated by Ipswich business circles. In due course a Ransome joined the board of one of its subsidiary lines. Ransomes soon reverted to their established range of products. One can see, however, a similar seizing of opportunity complementing connexions within a provincial business elite. Hugh Moffat East Anglia's First Railways (Lavenham 1987), Chapter 10. See also chapter 3 below.

26. Vamplew especially pp.45-46. 57 of 81 broken rails on the Caledonian during 1871/2, i.e. laid earlier, came from manufacturers in the north east of England. A similar

pattern emerges from the North British. This may have been a minor and incidental influence upon Anderston's subsequent relocation. G.R. Hawke Chapter 9 estimates demand for chairs for England and Wales at 39000 tons p.a. 1851-60, 56000 tons p.a. 1861-70.
The pattern of permanent way of British railways and of many British-owned or British-influenced railways abroad settled down, after experiments in the 1830s, to one in which double headed rail (1840s-60s) and, thereafter, the not dissimilar bull headed profile - with a more squat lower lobe - predominated. Both types had to sit in cast iron chairs which were secured to transverse sleepers by bolts or spikes. Chairs were of many different patterns and tended to increase in weight with the increased weight of the rails - particularly after the 1870s when steel rail predominated - and as track work was upgraded by later generations. Flat bottom 'Vignoles' pattern rails - which could be spiked directly to the sleeper or could sit in base plates, lighter in weight than chairs - although popular abroad, found few domestic adherents until the 1940s.

27. Vamplew, p.60

28. Vamplew. The iron companies (see Carvel) were at various stages very hungry for capital but the profits of the textile business and the cross fertilisation of capital between iron and textiles and Glasgow and Manchester placed the Houldsworths in a stronger position than most.

29. Hawke pp.237-238. The Midland Railway, in 1845, received 20 tenders: the Great Northern Railway in 1849 received 24 - 6 from Scotland, 6 from North East England, 2 each from East Midlands, West Midlands and South Wales and 6 others. J. Thomas The Springburn Story (Dawlish, 1964), pp.82-84; Catalogue of Narrow Gauge Locomotives, North British Locomotive Company, 1912 pp.2-3 (reprinted by Augustus M. Kelley, New York, 1970); M. W. Kirby "Product Proliferation in the British Locomotive Building Industry", Business History, Vol.30, No.3 July 1988, indicates that locomotive building had settled down. A core of (largely) specialist builders was supplemented in times of great demand by firms who were general engineers or primarily manufacturers of another engineering product - S.B. Saul, "The Engineering Industry" in Derek H. Aldcroft ed. The Development of British Industry and Foreign Competition, 1875-1914 (1968).

30. Hamilton (1932) pp.131,212; and Hume and Moss pp.19-23 and 43-44 with particular reference to Edingtons.
Sharp Roberts the textile machinery makers in Manchester diversified into locomotive building as Sharp Stewart's who, as locomotive builders, migrated to Glasgow. Generally see S.B. Saul (1968).

31. Coltness's capital had reached £500,000 by 1881. The Houldsworths still owned £180,080 of Dalmellington's capital but its management was increasingly in other hands. Carvel pp.38-43, 47-49.

32. D/AF 11 Iron Account, D/AF 22 Half-yearly balance sheets.

Carvel op cit. Memoirs and Portraits loc cit.

33. Carvel pp.22-23, Memoirs and Portraits loc cit.

34. John Houldsworth had married a Miss Muir whose family firm Muir Brown & Co, Calico printers were customers of Anderston in the 1850s. (Carvel; D/AF 22). Matthew Muir lived at Tradeston (1851-52 Glasgow Directory) where the mills of Matthew Muir & Son were. I do not know of a connexion between the two sets of Muirs. If M.A. Muir was not recruited from family connexion he was recruited from business connexion. His brother's firm (James Finlays) was reducing its heavy investment in local textiles (Hamilton 1932, p.148) to concentrate on India, tea and jute. It was one of Anderston's customers in the mid 1850s (D/AF 22). M.A. Muir's family was, perhaps, like the Houldsworths, and others, running down its commitment to textiles. Many of the same families followed or led the movement from one phase of the industrial revoluation to the next. See also chapter 2. His brother John Muir was, with Henry Houldsworth, on the Committee of Management of the Glasgow Royal Exchange.

35. He was receiving a management salary from 1857. See Chapter 2 below.

36. For example see below in Chapter 3 for events in 1884, 1890 and 1913.

37. See pedigree, Table 1.1

38. D/AF 628 and obituary in Glasgow Herald 26 September 1899

39. 17 acres of land was developed. Carvel pp.22-23, 34-35; Houldsworth and Macleod passim.

40. First edition 25 inch to 1 mile Ordnance Survey of Glasgow.

41. Scottish Record Office, Sheriff Court Records (Glasgow/Lanarkshire) SC 36/48/45 Inventory

42. For example A. Slaven ed. (1986), vol.1, pp.51-53.

CHAPTER 2

1850s-1880s

In this period the Anderston business continued to evolve and separate itself from the Houldsworth empire under Muir and, latterly, Bunten. The primacy of the railway business of the foundry over the traditional business of the machine shop was reinforced. The wider connexion of business linkages complemented and supplemented the family connexions which had seen the firm established and thrive. The specialisation of the firm was paralleled by the establishment of links with specialist intermediaries. Both were facets of a maturing economy and a maturing market for railway products.

Whereas in 1853/4 the business comprised two foundries, a machine shop and a brass foundry with partners' capital some £25,000[1] by 1883/4 that capital was £156,000 and the total capital employed in the business about £284,000. A tiebar yard and wrought iron shop had been added in Glasgow, an entirely new plant had been constructed on Teesside. The brass foundry, which had barely covered costs, closed at the end of the 1850s.

The Houldsworths had owned the bulk of the business (see Table 2.3). At the years end June 1854 to June 1858 c.80% of bills payable were due to either the two family iron companies or to J. Houldsworth and Company with which Anderston shared Glasgow offices. By the 1880s none of this was so. Glasgow in the 1850s, with a newly established iron market, was the greatest centre for the stockholding of iron in Britain.[2] The same decade witnessed the discovery of the Eston ironstone on Teesside and the beginning of the pre-eminence of the iron and steel industry based thereabouts. Anderston marched with the times: the changed balance within its business reflected

that of the British ore fields. How typical a firm was Anderston? By mixing individuals with capital (the Houldsworths) and those possessing expertise (Muir and Bunten) in its partnership and growing largely through the retention of profits, it followed a standard pattern.[3]

Employment in textiles continued to exceed that in the coal, iron and engineering industries in the West of Scotland until after 1870,[4] but the textile industry was in gradual decline. Stagnation predated the disruption caused by the American Civil War. From the 1840s to the 1860s capital and expertise deserted cotton for more profitable areas. The pessimism of Henry Houldsworth in the 1830s had proved prescient. Other cotton families followed the Houldsworths in concentrating on newer industries, e.g. the Scotts in shale oil.[5]

The lag in technology behind that of Lancashire, and the related phenomenon of low profits in the industry, continued through the 19th century.[6] By the 1850s all the major manufacturers of textile machinery were in Lancashire, reflecting this development.[7] Scottish firms might dominate their local market but their fortunes were tied to its prosperity. Although machinery was sold outside the locality, lack of an adequate home market inhibited expansion.[8] The number of mills in Scotland declined (168 in 1850, 98 in 1871) as did the number of spindles (2m in 1856, 1.5m in 1871) although the quantity of looms (c.24,000) remained relatively constant.[9]

Amidst general stagnation specific incidents could be expected to effect the machine shop's performance. The sudden collapse of the decorated muslin market (1857) which brought down several prominent Glasgow firms and, in their wake, the Western Bank[10] was, typically,

reflected in low machinery sales for 1857-59. The cotton famine, resulting from the American war, abruptly reversed the recovery in orders from 1861/2 but, in the aftermath of war, orders of £100,000 were received compar..ed with £30,000-£40,000 p.a. common during the previous decade. From 1873 to 1884 machinery orders settled back to £30,000 p.a. The local spinning industry continued to decline. Heavy investment in power looms after the war had not eradicated the incipient low profit margins; technological backwardness reasserted itself.

In 1853/4 Anderston took out a patent for check looms to be followed in the ensuing years by a string of foreign patents for these. Patents were secured in the late 1850s and early 1860s for winding and moulding machinery - evidence of some attempt to reduce dependence on declining textiles." With other firms Anderston shifted the balance of production from spinning to weaving machinery after the American war,[12] but this was, in part, due to competition from the Lancashire firms supplying spinning machines. The rapid growth in turnover from 1865 to 1872, when business peaked at £155,000 of sales, seems to justify these moves; the more rapid collapse (to £36,500 in 1872/3) may owe less to trade cycles than to the looming patent case brought by Harrison and Harrison of Blackburn against Anderston in respect of compound or shuttle boxes in looms. This proceeded from the Court of Session (1874) through the appeal courts to the House of Lords (1876) with Anderston consistently defeated and forced to pay costs of some £3,500 by 1876.[13] In the last decade of the partnership the sales of the machine shop fell to 16% of the company's Glasgow business, compared with c.37% during the previous decase. Machine shop business sank back to the levels of the 1850s albeit with improved profit margins.

Meanwhile foundry sales leapt from £27,000 (1853/4) to £162,000, five years later, and a peak of £246,500 in 1870. Despite a fall to £47,000 in 1872/3 the overall level of business had shifted to a higher plane: from the middle 1850s sales infrequently fell below £100,000 p.a. At the foundation of this expansion lay the railway chair which was to remain a staple product for a century. Anderston became one of Britain's principal chair makers through perfecting a technique for their mass production - a simple repetitive casting process. Patents taken out between 1854 and 1864 secured its position.[14]

Coincidentally domestic railway building recovered from the slump that had succeeded the railway mania to increase demand for Anderston's products, which was further enhanced by the establishment of export markets in British possessions whose railways were British owned and built. Improvements to the navigation and port facilities of the Clyde, the strong links of Glasgow trading firms, such as James Finlays (where M.A. Muir's elder brother ruled), with India, and Glasgow's long history of international trading contacts, form a back-cloth to Anderston's move into exports.[15]

The incorporation of the Great Indian Peninsula and East Indian railways in 1849 marked the beginnings of an Indian railway system constructed to broad gauge and on substantial lines, the first part of which opened in 1853: 838 miles had opened by 1860. The East Indian was a customer by 1854; the G.I.P.R. and various other lines by 1856/7; most Indian main lines were supplied in due course.[16] By 1868 India railway mileage was 3600 with 2000 more under construction, for which most material and supplies were imported from Britain. Railway stores imported by 'guaranteed' lines, i.e. government subsidised but not government owned, increased from

£2.372m (1852/3 - 57/8) to £7.519m in the 5 years after the mutiny.[17] India was to be the principal export market for the next seventy years.

No complete figures are available for Anderston's business but commissions were paid on 7677 tons of material for India (1856/7), on 9520 tons the next year, and on 14500 tons in 1858/9.[18] Indian concerns accounted for c.70% - 90% of the railway debtors to the foundry at most half-years between 1862 and 1870.[19] The range of products expanded with the market. Coiled keys were made for the G.I.P.R. from 1869 or earlier.[20] Certain other Indian lines bought them in due course. Metal fencing posts, chiefly for Indian railways, were made from the early 1860s. Cast iron pot sleepers, proof against the Indian climate and fauna came to be made in large quantities from 1857: these were analogous to chairs - repetitive iron castings made by many of the same firms. As chairs were the basis of Anderston's domestic success and expansion, iron sleepers and their derivatives formed the core of a successful and expanding export business.[21]

At home the Glasgow-based Caledonian Railway with its sometime Houldsworth connexions (see chapter 1) was to be the most natural and regular of chair customers, with other lowland railways and northern Irish ones.[22] Only fragmentary details of the output of the foundry survive: these are nevertheless sufficient to indicate the rapid expansion of it and the preponderance of railway work :

TABLE 2.1 GLASGOW PRODUCTION

OUTPUT IN TONS GLASGOW FOUNDRY	Iron for foundry	Commission Account chairs	sleepers	SALES	MAKE chairs	other
1853-4	3192 6mos.	n/a		+3464 6mos.		
1854-5	n/a	n/a		6063		
1855-6	8566	5978	-	14940	7941 6mos.	899 6mos.
1856-7	15935	7677	-	16508		
1857-8	20122	7712	1741	6177 6mos.		
1858-9	24079	3385	10200	10027 6mos.	10508 6mos.	476 6mos.
1859-60	22431	2273	6220	n/a		

Source D/AF 11

+ N.B. 1853/4 sales were 2802t chairs and 661t other castings

The Caledonian had greater indirect value through linking Anderston to James Livesey who had worked on building it.[23] In the mid 1860s Anderston had manufactured a specimen cast iron sleeper to Livesey's design.[24] Livesey in 1869/70 became engineer to the Buenos Ayres Great Southern Railway, which, from a line of less than 100 miles[25] was to expand rapidly to become the principal British-owned railway in South America.[26] Livesey from this base created a firm of consulting engineers which was to act for most British-owned railways in Latin America and for miscellaneous lines elsehwere.[27] In his engineering work Livesey was closely associated with the Hendersons, whose stockbroking firm, Greenwoods, arranged finance for many of these lines. Personal links between the Liveseys, Hendersons and Anderston would fructify (see chapter 3). At this early stage Livesey seems to have been the means of Anderston's establishing itself in the South American markets: the first evidence of an order from the Buenos Ayres Great Southern (1870) and the beginning of regular commission payments from Anderston to Livesey e.g. c.£3,000 in 1870/71, coincide.[28] Such payments might represent either commercial commissions on orders received through Livesey, royalties paid for the manufacture of sleepers to his design, or both. During

the 1880s Livesey pattern sleepers were all but universal on the railways of Argentina, be they lines engineered by him[29] - which would naturally, under his guidance, order and standardise upon his designs - or otherwise.

Although the Great Eastern laid a short demonstration track of Livesey sleepers and other home main lines such as the North Eastern and London and North Western made small experiments with metal sleepers later in the 19th century, the cheapness of wooden sleepers on these and subsequent occasions proved conclusive. In India, South America, Egypt and, in due course, the rest of Africa,[30] the climate and insect life prevented the use of soft-wood sleepers. Native hard woods became available only after the railways had opened up the countries concerned to provide easy access to forests remote from the coast and main centres of population.[31]

The business by 1884, differed much in size, scope and location from that of 1854, but the foundations on which it was built had existed from the late 1840s with the move to supply railway track fittings. Development was not planned: it represented a consistent response to a broadening of opportunities within areas of business already known to the firm. It was not trouble free. During the 1850s the partners accepted, of necessity, various Irish railway debentures in payment for goods: some of these were sold but the rest were taken into their private accounts and out of the company's books.[32] During the late 1860s sums up to £73,000 remained owing from the Egyptian Railway administration, funded by bonds, as that country suffered one of its financial crises. £49,000 was lost in the late 1870s through the failure of the Vienna Elevated Railway. Risk might bring ultimate reward[33]: the £1,000 invested and lost in

the Argentine Prospecting Syndicate in the 1870s may have helped establish the contacts in that country which were to prove so valuable and profitable in the 1880s.[34] The shares taken by the company in the Buenos Ayres and Campana Railway and the investment in it by Muir[35] may well have brought long term gains, once the Campana was reconstructed as the more ambitious and successful Buenos Ayres and Rosario, outweighing short term losses.

The pattern of sales and profits within the Glasgow business had changed from the 1850s to the 1880s. The diminishing contribution of the machine shop to profits reflected its declining sales. No calculation of the return upon capital employed in the individual activities of Anderston can be made: to apportion the capital invested between the various sections of the manufacturing plant is impossible. Both machine shop and foundry had average profit margins of 10-12%, 1853-63 which improved until the end of the 1870s. In the final five or six years of the partnership, the machine shop achieved 24% on its diminished turnover and the foundry 15% on its greatly expanded business, where, if the volume was right, profits would look after themselves - an attitude spurned later in the firm's history.[36]

With the prospect of much work for Livesey a separate department was established in Glasgow during 1870/71 to manufacture wrought iron tiebars for the sleepers.[37] This department's turnover doubled from £19,000 p.a. (1873/4 - 77/8) to £40,000 p.a. (1878/9 - 82/3) making it a more significant business than the original machine shop. To accommodate extra orders between 1869 and 1871 a temporary foundry was operated at 'South Dock' at which £131,000 (c.30,000 tons) of business was done.[38] The solution lay in constructing a new plant on a virgin site: the heavy industrialisation of Anderston

rendered expansion thereabouts impossible.[39] In preference to a new site in the west of Scotland a tract of reclaimed mud flats at Port Clarence, on the north bank of the Tees opposite Middlesbrough, was acquired in 1875. By the end of 1876 £20,000 had been spent on this new foundry from retained profits.[40]

The wisdom of expanding to meet opportunities is clear: in June 1875 the partners' capital invested in the Glasgow business was £69,000 as it was 8 years later when a further £87,000 capital was represented as invested in the Port Clarence business. No full records of sales from Port Clarence exist but in its first full year (1876/7) these amount to £61,286, compared with £103,733 from the Glasgow Foundry and £40,000 apiece from the machine and sleeper shops.[41]

The decision to set up on Teesside was J.C. Bunten's[42] whose motives must remain conjectural. Whereas the Scottish iron industry in the 1840s had achieved a near monopoly on the supply of foundry (pig)iron, shipping much to England and for export, by the 1860s the Cleveland ores had taken away much of the latter two businesses and, with the exhaustion of the best Scottish ores, were pressing into the Scottish domestic market. As Scotland's share of British pig iron production fell from 24.5% (1860) to 20.55% (1870) and 13.5% (1880) that of the North East rose from 17.2% to 31.2%. Output in Scotland fell from 1.164m tons in 1865 to 0.808m in 1874 whereas in the North East it surged from 486000t. to 1158000t.[43] The price of Cleveland ore delivered to Scotland undercut that at which it was profitable to produce much of the domestic ore. Cleveland had a reputation for technical leadership; Scotland for technical backwardness e.g. by 1870s it required c.50% more coke to produce a ton of pigiron in Scotland than in the North East.[44] Scottish blast furnaces were

smaller, giving a lower output; plant layout and working practices all lagged behind.[45]

As ties with the Houldsworths weakened, the pull to the new centre of the British iron industry increased. There could be found a variety of iron, engineering and shipbuilding enterprises and various of Anderston's principal competitors who could not be allowed the competitive advantage of cheaper raw materials. Head Wrightson and Gilkes Wilson Pease were long established on the south bank of the Tees; Summersons and Frys, and other firms with complementary lines in railway fittings, were in business in Darlington; Smith Patterson had recently been established at Blaydon on the south bank of the Tyne.[46] Middlesbrough and the Tees had undergone a similar expansion of cargo handling facilities and improvements to navigation to those of Glasgow and the Clyde.[47] Teesside offered: abundant local supplies and suppliers of cheap iron; coal and coke to hand in large quantities in Durham; a local business infrastructure based upon and led by iron; good coastal and export shipping links; a pool of local labour used to simple foundry tasks (which could be reinforced by foremen and managers sent from Glasgow).[48] Port Clarence offered room for expansion, direct rail access, a pig iron producer next door, wharfage for the delivery of raw materials and for lightering finished products to Middlesbrough Docks if they were too bulky to be despatched directly. A presence in Cleveland could bring beneficial and regular contacts with suppliers and competitors.[49] The location of the plant far from head office need be of no consequence with the proper managerial arrangements: the Patent Nut and Bolt Company, one of Anderston's principal competitors, albeit through acquisition, operated an iron works and colliery at Cwmbran, Monmouthshire from a base in several bolt works

in the Black County.[50] No Scottish site could offer comparable advantages. The siting of the works had little consequence for export business and opened up new possibilities in the home market: the North Eastern Railway could be supplied at the works gates and eastern and southern companies better supplied (by coaster) than from Glasgow.

As iron formed over 70% of the costs of production of the company's railway business, the opportunity had to be taken to join its competitors close to the best available supply of pig to maintain and enhance the prospects of the business.

TABLE 2.2 SPECIMEN ANALYSIS OF COSTS

% of production costs	Glasgow Foundry			Glasgow Sleeper Shop		
	PIG	COKE	WAGES	PIG	COKE	WAGES
1869-70	71.5	2.5	20.5	-	-	-
1874-75	73.8	4.1	10.1	93	0	1.2
1879-80	58.1	3.1	10.3	72	0	1.8
1884-85	57.9	3.6	13.7	83.2	0	2.7
Port Clarence						
1884-85	58.9	2.3	16.7			

Source: D/AF 11-13

The partnership, reconstituted in 1853/4, did not remain static. Initially Muir, John Houldsworth and William Houldsworth the younger held equal shares (31.67%) in the profits of the business with the balance of 5% going to J. Houldsworth and Company. This last named had put £8,000 of extra capital into Anderston during 1855

and 1856 to the credit of the two Houldsworth partners all of whose drawings from Anderston, until 1857, were paid to J. Houldsworth and Co. Thereafter, William and Henry (son of John) maintained a parity of drawings and capital one with the other, and J. Houldsworth and Company ceased to participate. Muir retained part of his partnership income in the business to build up his capital stake, which soon came to equal that of each of his partners.[51]

Muir's receiving a management salary (£400 p.a. from July 1857, £800 p.a. from January 1861) reflected his increased importance. From 1866 it rose to £1,000 p.a. and his share of the profits to 50%.[52] The trend was for average drawings from the business to increase with profits until the early 1870s - £5,500 p.a., 1853-8, £18,500 p.a., 1858-63; £35,000 p.a., 1863-68, £54,000 p.a., 1868-73, but from year to year the overall amount, its relation to the profits of the current year and past year and the proportion drawn by the individual partners varied dramatically. In the decade 1858/9 - 1867/8 annual drawings varied from £1,425 (1861/2) to £92,408 (1867/8), i.e. from 18.6% of the profits in the former case to 150.8% in the latter. Absolutely and proportionately drawings were lowest in one of the poorest years (1861/2) refuting the theory that the drawings by partners, especially by inactive ones such as the Houldsworths, would settle to a plateau which bore little relationship to the firm's performance. Muir's share of the drawings varied from 6.7% in 1859/60 to 100% in 1861/2: the Houldsworths could afford not to draw on the business in a poor year.[53]

Partners' capital, £25,000 in 1853/4, despite fluctuations particularly apparent in the late 1860s, settled to a level approximately double that[54] where it remained until the development of Port Clarence after 1875. Muir's stake rose from c.25% in the

mid-1850s to 32%, a figure more consistent with his share of the profits, a decade later. After the mid-1870s, Muir's capital exceeded that of the combined Houldsworth interest. Business profits varied greatly from year to year, for example from £10,500 to £61,300 in the quinquennium 1863-8 with an average of £34,800. From a decade of comparative steadiness, 1853-63, profits roughly trebled in the next decade, falling back in the late 1870s and peaking in the early 1880s as Port Clarence came fully into production.

After the 1850s the boom in business which required expansion of the plant and development of the new works on Teesside also provided the money necessary for such expansion. From time to time money was borrowed short term to provide extra working capital. In prosperous years, money drawn from the business greatly exceeded the partners' likely requirements for income allowing Muir to establish an independent fortune containing diversified investments.[55] The Houldsworths' drawings from Anderston, provided variously a means to diversify their investments like Muir, and of assuaging the appetite of their iron companies for capital.[56] Partners' capital invested in the Anderston foundry - £179,000 when, in 1884, it was incorporated - was, despite a three fold increase over the previous decade, small compared with that of the iron companies.[57] As Muir and Bunten took centre stage, the Houldsworth share of Anderston's capital diminished. A partnership allowed those whose talent provided the profits of the firm to benefit from their labours. Houldsworth money and effort concentrated upon Coltness: Bunten money grew from its concentration in Anderston.

Extra capital was not required but, with the Houldsworth's largely inactive and Muir lacking children of a suitable age, management talent was. Muir, who had married in 1851, brought his

brother in law James Clark Bunten (1837/8-1901), son of a deceased iron merchant, into the business in 1855.[58] Bunten was grounded thoroughly in all aspects of the business, before his assumption as a partner in January 1869. Muir was old enough to be Bunten's father and their relationship verged more towards that than a conventional one between brothers in law.[59] When the Anderson partnership was renegotiated in January 1869 Muir was empowered to transfer any portion of his share in Anderston to any of his sons who might come to be involved in the business and to Bunten.[60] One sixth of Muir's half share in the firm's profits was duly transferred to Bunten, to whom Muir advanced £5,000 to give him a proper stake in the firm's capital. £3,892 was repaid to Muir within a year from Bunten's partnership drawings.[61] Bunten's gradual supersession of Muir as the effective manager of the business was marked in the next revision of the partnership by granting him 25% of the profits.[62]

TABLE 2.3 PARTNERSHIP

Division of profits %	1 July 1853-30 June 1859	1 July 1859-30 June 1866	1 July 1866-31 Dec. 1868	1 Jan. 1869-30 June 1874	1 July 1874 30 June 1884
Houldsworths	68.33	66.67	50	50	33.33
Muirs	31.67	33.33	50	41.67	41.67
Bunten	-	-	-	8.33	25

Source D/AF 11-13

All correspondence with Davidson and Syme, the firm's legal advisers, relative to the loom patent litigation, was conducted by Bunten.[63] It was he, through his personal contacts with John Blair, the senior partner,[64] who had brought in Davidson and Syme, an Edinburgh firm, to act for Anderston. Bunten's initial partnership

had coincided with the operation of South Dock; his advance with the patent litigation and the preliminaries to the move to Port Clarence. Whereas family connexion had provided Bunten with his opportunity, his talents, for which he was duly rewarded, made the most of that opportunity.

Muir's phased retirement continued - he cut his management salary to £450 from January 1879[65] - leaving Bunten in an unassailable position as the only partner employed in the business. As one of Muir's trustees he inherited, upon Muir's death in January 1880, effective control of another quarter share in the partnership to add to his own.[66] Bunten had drawn £51,500 from the business in the first ten years as a partner (net of his repayments to Muir) and, as with Muir, the foundation of his own substantial fortune lay in the Anderston[67] foundry. His rising importance in the Glasgow business world and his abilities were recognised by his appointment to the board of the Caledonian Railway (1881).[68]

J.G. Muir, eldest son of M.A. Muir, had succeeded to a one sixth share of the business during the last year of his father's life.[69] His involvement was soon curtailed by Bunten.[70] Of more importance was the recruitment from within the extensive Bunten/Muir cousinhood of Alexander Tertius Harvey, Bunten's nephew,[71] who was apprenticed at Anderston in 1876. He moved to an appointment in the Caledonian Railway's drawing office in the early 1880s before returning to Anderston at Port Clarence in August 1884 at the moment of Bunten's achieving total domination of the business.[72]

The Harveys, albeit on a smaller scale than the Houldsworths, had diversified their own family's business interests from textiles into machinery and engineering in a way typical of many families involved in several of the different stages of the industrialisation

of the west of Scotland. The Muirs had, via Anderston and James Finlays, moved from textiles into other lines. The practical workings of the family relationship may be illustrated. Apart from recruiting relatives into their existing business, Muir and Bunten had advanced £3,000 on mortgage prior to 1880 to G. and A. Harvey of Govan, engineers and machine tool makers, in which A.T. Harvey's father and an uncle were partners. Harvey's grandfather had established Alex Harvey and Sons of Govanhaugh, dyers, whose partners overlapped with those of the engineering business of which another of Bunten's brothers in law was to become a partner.[73] Members of this extended family with capital to spare through the success of their own business ventures would help other members with a legitimate need for capital. The altruism of self help within the family was backed by realism. Financial intermediaries to link funds requiring an outlet with investment opportunities, had not matured. In the absence of the free-flow of information, decisions respecting investment were guided by family influences, family connexions, trusted business contacts and their further connexions to provide an informal, informed web linking capitalists and entrepreneurs.[74]

At Davidson and Syme, which was long connected with the Bank of Scotland, Blair built up a large business and financial clientage.[75] The firm was based in Charlotte Square, centre of Edinburgh's financial and investment trust businesses.[76] Blair later became a director of the Bank of Scotland; Bunten was to become an extraordinary director of it. Both he and Anderston banked with the Bank. Whereas Bunten's prominence in Glasgow business circles was based purely on his position at Anderston, his entree to Edinburgh financial circles was effected, it appears, by and through Blair. The Edinburgh connexion continued for 90 years, latterly exerting a

stronger influence upon Anderston than ought deriving from Glasgow.

Bunten was creating his family firm within the Anderston Foundry and setting it in a mould which survived, in many respects, until the 1960s. From the 1850s the firm had progressed from one in which the Houldsworths predominated, via Muir and the Houldsworths predominating to one in which Muir and Bunten, latterly Bunten alone, did so. Influence, and inertia, may have underscored Anderston's continued purchase of Coltness and Dalmellington iron[77] and the purchases from it by Muir and Houldsworth companies. Machinery, if not manufactured by Anderston for itself, was bought from the Harveys.[78] However, Anderston purchased large quantities of iron from Bairds and Shotts, rivals of the Houldsworths, long before the dominance[79] of Cleveland ores broke the usefulness of their connexion and it sold its machinery widely enough that family purchasers, although important, did not predominate.

Glasgow offices were shared with the iron companies and J. Houldsworth and Company until the early 1880s[80] when, as Bunten refashioned Anderston to his liking, offices and a counting house were set up in Cheapside Street in Anderston under the direction of Thomas Robertson, employed by the Houldsworths since 1863 and one of Muir's executors.[81] Until the late 1860s, and despite Anderston's dealings with the Bank of Scotland, large sums regularly appeared in the firm's accounts due to or from J. Houldsworth and Company on cash account as well as in respect of bills drawn,[82] confirming that company's role as the institutional link between the various family enterprises.

As we have seen, many of those involved in transforming the industrial make up of the west of Scotland in the mid 19th century towards iron and engineering enjoyed family connexions with those who

had previously transformed the area into a leading textile producer: business was business. Families for whom business was textiles might rise and fall with the one industry: others used the capital accumulated in one industry to establish themselves in another, shifting emphasis like the Houldsworths and Harveys, without cutting themselves off from their former concerns. Various industrial activities were encompassed within distinct business units in the hands of various family groupings of overlapping membership similar to the skein of which Anderston's Teesside rival, Wilsons Pease, was part.[83] Coltness was at the core of the Houldsworth's interests by the 1850s - Anderston, with its increased concentration on railway materials was peripheral, although very profitable. Older money could recruit to run the business new men who continued to adapt it in large measure independently of the transformations of the other businesses and affairs of the founding family.

There was nothing but a lack of broad horizons to limit the Anderston Foundry to producing textile machinery. The Houldsworths had not felt constrained to be forever textile manufacturers.[84] A natural diversification from general engineering and manufacturing textile machinery was towards specialising in machine tools - a path followed by the Fairbairns and Greenwood and Bat. ley in Leeds, both of whom descended from the Anderston Foundry.[85] Anderston's course was almost the reverse. The Houldsworths possessed a talent for moving into new activities - not into untried ones, but those which had shewn their practicability yet still offered considerable scope for development. They followed business opportunities of whatever sort, wherever they appeared. Anderston by moving into railway equipment and into Teesside exhibited a similar ethos and certainty of touch, neither of which would survive Bunten.

Those in charge of the business inherited through the Houldsworths a position in the business élite of the west of Scotland which they consolidated through their own actions. A web of connexions within and between family, family firms, their suppliers, customers and professional advisers in conjunction with shared membership of the boards of banks, insurance companies and railway companies locally domiciled, of the iron exchange, the town council, a church, a club or a committee, ensured that, within a relatively small industrial elite everyone who was anyone was likely to know, or have dealings with, everyone else.[86] On Teesside iron men might know other iron men but the unusual depth and range of industrial activity in different phases of development within the west of Scotland, buttressed by the existence of locally based financial institutions, ensured that people with wider interests would meet. In industrial suburbs such as Anderston or Tradeston a large number of varied firms existed cheek by jowl. The concentration of Houldsworths, Muirs, Buntens and Harveys in the superior dwellings around Park Circus in the latter half of the 19th century completes a picture of business, social and informal inter relatedness. Whereas London's money market was reaching anonymity, the Scottish financial scene remained intimate with Glasgow men investing in Glasgow based concerns, be they local railways or land and cattle companies operating in the United States.[87]

By the 1880s, the Anderston Foundry has "grown into one of the greatest in the kingdom".[88] The later phase of that growth under Bunten, will be considered in chapter 4. The scale, location and balance of production of the business in the 1880s differed significantly from that of the 1850s but all flowed naturally from the building of the chair foundry in the 1840s. The foundry had

displaced the machine shop as the centre of a business whose fate rested on the health of the domestic and, particularly, foreign railway markets, not on that of the Scottish textile industry. The business was thus liberated from its need to be located in Glasgow; development in the iron industry almost forced it to move elsewhere. Thus the Glasgow foundry which had risen to prominence in the 1850s was edged aside by the Port Clarence one in the 1880s. Railway sleepers were vying to displace railway chairs as the principal product during the 1880s, but both foundries' prosperity rested on the continuance of orders for each of the products.

Despite the already obvious paramountcy of Port Clarence as the manufacturing heart of the enterprise it was, and remained, a branch plant in the charge of less important individuals. Not until the 1930s would the cumbersome administrative practices predicated upon this, be abandoned even though the most important managers had come south a generation earlier.

In the current century Anderston might appear to be an obscure, middle sized firm making specialist products which, like the company itself, were unknown to outsiders. The amalgamations and concentration of industry dwarfed it: it never manufactured for the consumer. It failed to adapt its 19th century persona, when smaller, family firms were typical. Despite its obscurity it formed the basis for some portion of the fortune of the Houldsworths, one of the more prominent of Scotland's industrial dynasties and made in Muir and Bunten two half millionaires. They remain obscure because neither of them established an industrial dynasty and their fortunes were dissipated in anonymous hands. If their obscurity is shared by many industrialists the extent of their wealth was not.[89] In their day they, and the Houldsworths, belonged in the top ranks of the Scottish

industrial élite at the time of Scotland's greatest industrial prosperity with wealth on a scale far beyond that of the typical successful businessman.

Footnotes: Chapter 2

1. All figures are taken from the Private Ledgers, 1853-84, D/AF 11-13 and the half-yearly Balance sheets, 1854-1883, D/AF 22-23 unless otherwise stated. See Statistical Appendix for more detailed figures. All years run from 1 July to 30 June. Capital had increased from £25,000 to £71,000 by June 1858.

2. Alan Birch, The Economic History of the British Iron and Steel Industry, 1784-1879 (1967), pp.237-243.

3. Hume and Moss Workshop of the British Empire (p.6 ff.) regard profit retention and this form of ownership as the norm.

4. A.Slaven The Development of the West of Scotland, 1750 - 1960 (1975) p.165ff.

5. A.J. Robertson "The Decline of the Scottish Textile Industry, 1860-1914". Robertson gives some details of other families who shifted their industrial interests from textiles. Campbell (1980) chapter 2 discusses entrepreneurial families.

6. R.H. Campbell The Rise and Fall of the Scottish Economy (1980) p.47ff. A.J. Robertson passim

7. A.J. Robertson. Low profits brought less investment in new technology; and S.B. Saul "The Engineering Industry" in D.H. Aldcroft ed. The Development of British Industry and Foreign Competition (1968); S.B. Saul "The Machine Tool Industry in Britain to 1914", Business History, Vol.10, No.1, 1968. Fairbairns, largely a manufacturer of textile machinery employed 2400 in 1875. The principal Lancashire firms had more (Platts, 11,000; Howard and Bullough 6000). Anderston with a few hundred employees could not hope to keep up except, perhaps, by finding a particular niche or speciality. It did not move into machine tools as did Fairbairns in Leeds or the latter's offspring Greenwood and Batley. The classic machine tool makers of the 19th century were all general engineers in origin.

8. R.H. Campbell Scotland since 1707, the rise of an industrial society, (1985) pp.90-91 points to the penetration of the Glasgow market by Lancashire machinery.

9. A.J. Robertson passim; and A. Slaven and S.G. Checkland ed. Dictionary of Scottish Business Biography, vol.1 (1986) pp.297-304.

10. A.J. Robertson; and S.G. Checkland Scottish Banking, a history, 1695-1973 (1975) pp.66-69.

11. D/AF 11, D/AF 22

12. H. Hamilton The Industrial Revolution in Scotland (1932) p.212; A.J. Robertson; British Association Some of the Leading Industries of Glasgow and the Clyde Valley (1876) loc cit; D/AF 628.

13. Sir Alastair Blair, Davidson and Syme W.S. - two centuries of law (Edinburgh c.1980). Scottish Record Office: GD 282/3/12, and following, Davidson and Syme out letter books, 1874-75 for letters between John Blair and J.C. Bunten. D/AF 22, 1874-76. Sums recorded in half-yearly balance sheets.

14. D/AF 529, letter, T.P. Cargill to Dowson and Dobson, Johannesburg, 15 January 1936. Figures calculated from D/AF 11-13. Patents are valued and listed in both these ledgers and the half-yearly balances D/AF 22-23.

15. G.R. Hawke Railways and Economic Growth in England and Wales, 1840-1870 Chapters 9 and 13. His calculations for the revival in demand for rails for renewal and new construction and his tables on the raising of new capital for railways point to this.
Bradshaw's Railway Shareholders Manual and Guide (various editions) shews the general revival in railway dividends. For Glasgow as a trading port see Slaven (1975) and Campbell.

16. D/AF 22, especially balances for 30 June 1854 to 30 June 1857. D/AF 11, especially the "Commission Accounts" - those for 30 June 1857 feature the Madras and Scinde railways.

17. A.K. Banerji Aspects of Indo-British Economic Relations (Bombay 1982) p.67ff. His table 13:

1852/3-7/8 £2.372m; 1858-63 £7.519m; 1867-68 £7.943m; 1868-73 £5.12m; 1873-78 £3.18m; 1878-83 £5.39m; 1883-88 £9.26m; 1888-93 £8.82m; 1893-98 £2.64m
These are aggregate figures not averages.
Bradshaw's . and Universal Directory of Railway Officials (various editions) e.g. 1935/6, p.396, for mileages

18. D/AF 11 "Commission Accounts".

19. D/AF 22. The level of information and its presentation varies from half-year to half-year.

20. D/AF 12, 1869. D/AF 22, 1869-. To secure track and chairs to the (metal) sleepers.

21. Fencing appears first at D/AF 11, 1864 commission accounts. For statistics of sleeper production see Statistical Appendix.

22. D/AF 22, 30 June 1854. List of Anderston's debtors is the first definite evidence of supplying the Caledonian but business, by repute, had existed since the 1840s. (see above chapter 1)

23. David J. Jeremy ed. Dictionary of Business Biography vol.3 (1985), pp.819-821. Livesey (1833-1925) was born in Lancashire and apprenticed to the Manchester locomotive builders Beyer Peacock. Through his inventions for the newspaper industry he achieved financial independence at an early age. Through connexions forged when he was working on the construction of the Caledonian, Livesey became manager of a Spanish Railway. From 1862 to 1869 he was in London as an engineering agent forging links with the great contractor Brassey and with

Owens, a Rotherham-based maker of railway wheels and axles.

24. David J. Jeremy ed. (1985) loc cit. and pp.153-158.

25. Bradshaw's Railway Shareholders Manual and Guide, 1869.

26. Argentine railway mileage grew to 1563 in 1880 of which the Buenos Ayres Great Southern represented 22%, and to 5860 miles by 1890. C.M. Lewis British Railways in Argentina 1857-1914 (1983), Tables 7 and 33. The Buenos Ayres Great Southern grew into a system of 5000 miles and, still with Livesey and Henderson its consulting engineers, still contained 21 1/2% of the Argentine railway network in the 1930s. (Universal Directory 1935/6; Bradshaw's; Stock Exchange Year Books etc.)

27. A list of lines for which the Livesey and Henderson firm acted, c.1900 is appended to chapter 3.

28. D/AF 12 and D/AF 22 - Commissions accounts. £3,150 was due to Livesey in June 1870, £4,305 in December 1870 when the Buenos Ayres Great Southern is one of Anderston's debtors.

29. Order books D/AF 365 and following. Quotation books D/AF 342 and following.

30. D/AF 629. The East Indian, Indian State, Buenos Ayres Great Southern and Buenos Ayres and Rosario were purchasers of iron sleepers from the Glasgow Works, D/AF 365-. The Egyptian railways owed £42,000-£65,000 at the year ends 1866-68 (D/AF 22 and D/AF 12).

31. For example the Argentine pampas had nothing by way of raw materials to offer the railway builder but the forests beyond it contained hard woods suitable for sleepers. Only the opening up of the country by the railways allowed these forests to be reached. (D/AF 629; Lewis passim).

32. D/AF 22, D/AF 11. £5,283 Londonderry and Enniskillen debentures and £1,100 of those of the Londonderry and Coleraine during the 1850s. Direct investment in customers and/or the acceptance of shares in part payment to secure business was largely avoided, although it was a not uncommon practice generally. See Harold Pollins, "Railway Contractors and the Finance of Railway Development" in M.C. Reed ed. Railways in the Victorian Economy, pp.212-229. The Londonderry and Enniskillen stock was sold in April 1858 (D/AF 22) at a profit; the Coleraine stock was partly transferred to the partners' private accounts.

33. E.g. £72,700 at 31 December 1867 (D/AF 22) was due from Egypt. The sums due from Vienna hung around the accounts D/AF 12-13, 22-23 until the end of the partnership in 1884. The bad debt was not taken over by the limited company - see D/AF 1 and D/AF 14.

34. D/AF 12-13, 22-23.

35. See chapter 3 for details of the future relationship with the

Rosario. Scottish Record Office SC 36/48/91, Muir's probate inventory of 1880 values his £8,640 in the Campana at one shilling in the pound. The reconstruction greatly enhanced the value.

36. All calculated from D/AF 11-13. See Appendix 3.

37. D/AF 22 and D/AF 12-13.

38. Tonnage calculated from iron accounts, 1869-71, D/AF 12. True output unknown. Sales from D/AF 12.

39. J.L. Carvel, The Coltness Iron Company, a study in private enterprise pp.22-23, 34-35.

40. D/AF 22-23.

41. D/AF 22-23 and D/AF 12-13.

42. D/AF 628.

43. A. Birch, Chapter 7, especially pp.131-136. T.J. Byres in P.L. Payne ed., Studies in Scottish Business History (1967) p.251. Campbell (1985) p.179.
Paradoxically Bolckow Vaughan had been established on Teesside (1839) to use Scottish ores but their explorations in the vicinity led, in the 1850s, to the discovery of the Eston ironstone - G.A. North Teesside's Economic Heritage. (Middlesbrough 1975) Chapter 2. Also C.A. Hempstead ed. Cleveland Iron and Steel, Background and 19th Century History (British Steel Corporation, 1979) especially chapter 5.

44. R.H. Campbell (1985), pp.95-102.

45. Campbell (1985) pp.175-179. By the 1880s Cleveland ore with the benefit of reduced transport costs could undercut Scottish ores by 20% and Glasgow was flooded with it. Carvel p.43; Byres op cit.

46. North, especially pp.30-33 and Appendix to that work and J.S. Jeans Pioneers of the Cleveland Iron Trades (Middlesbrough 1875), Chapter 15 on Jeremiah Head.

47. North Chapter 2 and Table 40, p.313, which shews the tonnage cleared through the Tees - 657,000t, 1870; 1206,000t., 1880; 2081,000t., 1890; 3866,000t., 1910.
The Docks were 12a. in 1859 and 25a.in 1898.

48. Which seems to have happened.

49. Bell Brothers' iron works at Port Clarence, a prospective supplier of pig iron, adjoined Anderston's.

50. H. Edgar Jones Guest Keen and Nettlefolds vol.1, (1987), pp.168-176.

51. D/AF 11, Capital accounts and individual partners' drawing accounts.

52. D/AF 11-12.

53. D/AF 11-12. The highest percentage drawn was 171.1% (1860/61).

54. D/AF 11-12. £46,640 average at year ends June 1855 to June 1859; £53,920 average 30 June 1860 - 1864; £72,360 average 30 June 1864 - 1869; £50,980 average 30 June 1869 - 1874.

55. At 1880s Muir's personal estate was valued at £407,400 of which his holding in Anderston represented 10%, compared with 21% in Glasgow area mortgages and local authority loans, 32.5% in land, mortgage and investment companies operating in North America, Australasia etc., 16% in home railway shares and 11% in foreign ones. Scottish Record Office SC 36/48/91, SC 36/51/79, SC 36/52/26 - Muir's will and related papers.

56. See Carvel generally for the expansion of the iron companies; of John Houldsworth's personal estate Coltness Iron Co. represented 25%, Dalmellington 18.3%, J. Houldsworth and Company 28.5% and Anderston 9.3%. Very little was invested outside the family concerns. See Chapter 1 note 41.

57. See chapter 1 in respect of the iron companies.

58. D/AF 628; and see chapter 1 above.

59. D/AF 11 Partners' drawings. Muir was 67 at death (24 January 1880), thus some 24 years older than Bunten. Glasgow Herald obituary 10 July 1901.

60. SC 36/51/79 Will of Muir and related papers. The copartnery contracts were executed between 11 and 14 January 1867 to take effect from 1 July 1866.

61. SC 36/51/79 and D/AF 11.

62 SC 36/51/79. The new copartnery negotiated in January 1875 took effect from July 1874.

63. Scottish Record Office GD 282/3/12 and following. Letter books of Davidson and Syme, 1874.

64. Blair, Davidson and Syme. Davidson and Syme had been law agents to the Bank of Scotland from 1814 to 1869. John Blair (1839-1903), of an age with Bunten, had been articled to Wilkie and Faulds., W.S., in Glasgow and the two had become acquainted. Blair joined the Bank as a legal official in 1864 and left in 1871 to revive Davidson and Syme following the recent death of its partners. Davidson and Syme continued to act for the Buntens and for Anderston throughout and their successors, Dundas and Wilson, in which the Blair family continued to be prominent, still act for Bunten's heirs.

65. D/AF 13.

66. SC 36/51/79.

67. Calendars of Confirmations, Scottish Record Office. Bunten's

father left £3,354 (1848) and his mother £5,880 (1876). See Biographical Appendix. J.C. Bunten's estate was c.£600,000.

68. BR/CAL 4/5; D/AF 628; Blair, Davidson and Syme.
The Caledonian was unlikely to have talent-spotted the coming men. They were recognising someone whose leading business position had arisen over the previous decade, not just since Muir's withdrawal in 1879.

69. SC 36/51/79 - two separate one twelfth shares during 1879.
70. See chapter 3.

71. See Appendix 2 for pedigree. Harvey was some 20 years younger than Bunten and was sponsored by him much as Bunten had been by Muir. Muir lacked a son of a suitable age and temperament to take over the business. Bunten had an only daughter.

72. D/AF 628.

73. SC 36/48/91. Muir's probate inventory (1880). Bunten's probate inventory and will of 1901 (copy held by Dundas and Wilson).
A.T. Harvey's father Alex junior was partner, with his elder brother George in G. & A. Harvey who were mill wrights and factory architects as well as machine tool makers. George Harvey was also a partner in Alex Harvey and Sons, "one of the most notable of many Glasgow dyers established in the 1830s". (Industries of Glasgow (1888)) which employed 100 workers. Another of George's brothers, his brother-in-law and Alex Harvey senior were, or had been, partners in the dye works. The Bunten family included dyers and all manner of merchants. One Robert Harvey, engineer, [connexion unknown] had a works in Anderston in 1851.
Industries of Glasgow (1888) - S.B. Saul "The Machine Tool Industry" in Business History 10, 1968; Private information K.N.L. Harvey, 1984; Electoral registers for Glasgow 1862-64, Glasgow Post Office Directories 1851/2, 1861/2, 1871/2 and census returns, 1851, 1861, 1871 - All Mitchell Library, Glasgow. For the Muirs see A. Slaven ed. (1986) vol.1, pp.373-375.

74. P.L. Payne The Early Scottish Limited Companies, 1856-95 (Edinburgh 1980), pp.49-52 and R.C. Michie Ph.D Thesis University of Aberdeen 1979 cited there.

75. Blair Davidson and Syme Sir Alastair himself was a director of the Bank, 1948-78.
G.A. Jamieson a leading Edinburgh accountant and moneyman was to be involved in the 1890 scheme to refloat Anderston. Based in Charlotte Square the firm of Davidson and Syme was in the heart of Edinburgh's financial quarter. For Jamieson see A. Slaven and S.G. Checkland ed. Dictionary of Scottish Business Biography (Aberdeen, 1990), vol.2, pp.409-412.

76. I have not attempted to investigate the Muir/Bunten/Houldsworth investments in Investment Trusts and similar new investment mediums as, in chapter 3, I have their holdings of railway shares. I suspect that various streams of influence could be

detected. Other leading lawyers in Glasgow and Edinburgh enjoyed comparable connexions to those of Blair. The Anatomy of Scottish Capital (1980) has been studied superficially by J. Scott and M. Hughes, but putting flesh on the bones requires much further work.

77. D/AF 161- and after. Furnishings, 1876; D/AF 11-13, 22-23.

78. Dalmellington, the Muir Browns and Finlays can be numbered amongst the purchasers - D/AF 11, 22. For Harvey machinery supplied to Anderston see Furnishings' Books D/AF 161-, e.g. D/AF 163 p.262, 1882 or, for example, letter of 1 November 1918, D/AF 434.

79. D/AF 22, 1850s, Lists of creditors and debtors and bills received and due. After 1872 there are no details of individual suppliers until the commencement of D/AF 161 which probably relates only to the Port Clarence works and hence cannot be expected to shew purchases of Scottish iron.

80. D/AF 628; Glasgow Directories. The offices were at 124 St. Vincent Street.

81. D/AF 628; SC 36/51/79.

82. D/AF 22 e.g. £21,000 due to J. Houldsworth and Company, 1865; £23,300 due from it, 1869. Thereafter the details given in the balance sheet are insufficient.

83. See M.W. Kirby Men of Business and Politics (1984) passim, for this and for the parallel rôle of J. and J.W. Pease to that of J. Houldsworth and Co.

84. Their Lancashire textile business flourished and, with McConnel and Kennedy was one of the major constituents of the merger which produced Fine Cotton Spinners and Doublers (FSD) at the turn of this century.
David Jeremy ed. Volume 3, (1984) p.359ff.

85. S.B. Saul "The Machine Tool Industry" in Business History 10, 1968; Hume and Moss Workshop chapter 3. See chapter one above.

86. Charles B. Bewsher, The Royal Exchange Glasgow 1827-1927, (Glasgow 1927); Henry Houldsworth and John Muir were members of its committee of management at the same time. Kirkman Finlay and Archibald McLellan (connected with an iron foundry business long a friendly rival of Anderston's) were on its general committee.

87. Trade directories of Glasgow, 1860s - 1880s; Payne (1980), Chapter 2.

88. Memoirs and Portraits of 100 Glasgow Men (1886), vol.1, p.165.

89. W.D. Rubinstein "The Victorian Middle Class" in Economic History Review No.4, 1977. A successful business man of the later 19th century might leave estate of a mere £100,000. More a Cowan or Watt (see chapter 3) than a Muir or Bunten.

M = Millionaires ½M = Half millionaires

	Total		Engineering		Metals		Clydeside		Teesside	
	M	½M	M	½M	M	½M	M	½M	M	½M
1880-99	69	177	4	6	3	7	4	11	1	2
1900-14	89	206	6	6	1	13	8	13	1	2

CHAPTER 3

Ownership & Control, 1884-1914

Whereas the Anderston Foundry of the 1880s differed significantly in its location, size and balance of production from that of the 1840s far less change occurred thereafter. A burst of energy, from the mid-1870s to the late 1880s, coincided with Bunten's close attention to the business; little then changed by way of products, markets, manufacturing methods and sales techniques until the demise of the business in the 1960s.

Port Clarence continued its rise relative to Glasgow as the power house and manufacturing base of the company - there was room to expand and all new departments were added there. Managerial arrangements failed to reflect this: the company's legal and spiritual home remained in Glasgow, its complexion in Middlesbrough remained, resolutely emigré - Scottish. From 1901 the chairman/managing director was based at Port Clarence but the annual meetings, and the formal meetings of the board, took place in Glasgow where the secretary, auditors, stockbrokers and patent agents remained. The non-executive directors reflected Scottish business interests: very few shares were held in Middlesbrough.[1]

A web of business links was established with other northern makers of railway products both buttressed by and buttressing the collusive arrangements which began to flourish (see Chapter 4). Similar arrangements existed with Scottish competitors for Anderston, uniquely manufacturing in two locations, was in a pivotal position between these two manufacturing areas; its status as one of Britain's principal manufacturers underscored. Only in the west of Scotland were connexions between Anderston, its customers and the wider business community evident through the existence of a body of well

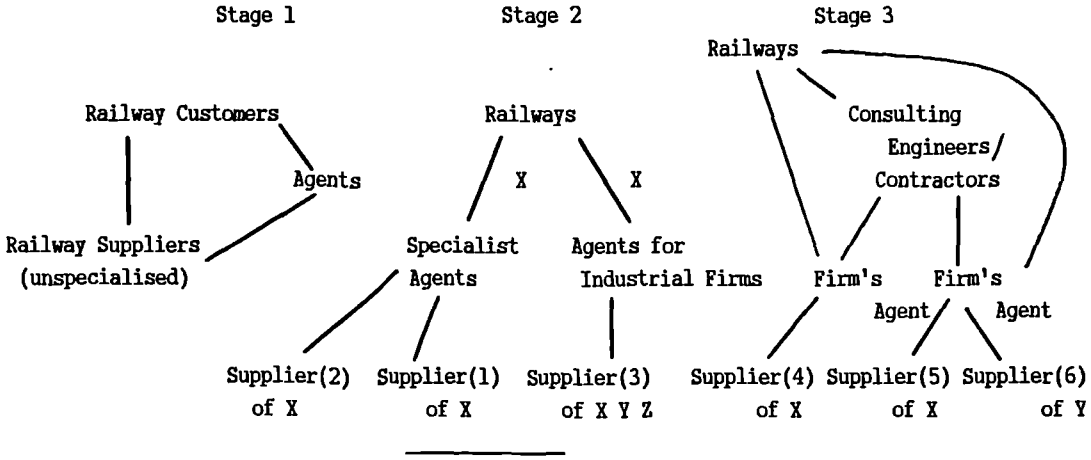
connected local shareholders with business experience who complemented the various involvements of the Houdsworths, Muir and Bunten in banking, insurance, railways, heavy industry and manufacturing.[2] The Houldsworths had had eighty years to establish connexions to which their successors fell heir. Glasgow and Edinburgh provided great scope for such links being far more than provincial centres. In England only Liverpool and Manchester might offer comparison with a variety of major companies, financial institutions and railways based in them. Teesside, of recent bubble growth, had little but iron, coal and engineering companies, dominated by families, Quakers or both. The region's banks, such as they were, operated from Newcastle; its railway company from York. Insurance companies or investment trusts were unknown. Anderston's personnel put down few roots. Business friendships were established with other similar firms; Middlesbrough was a one industry town.

Within the west of Scotland Anderston was rooted in a broad, varied but integrated business community, with other established firms, families, and institutions. The balance in that local economy changed from tobacco to textiles to engineering in the century from 1770 to 1870. Friendship and connexion provided investment opportunities and a foundation on which cross pollenization between industries might occur. On Teesside equivalent friendships and contacts provided the foundations for collusion within one industry.

Maturation and specialisation marched together. Anderston's concentration on railway products brought it stable long-term contacts with a limited group of customers, contractors, engineers, agents and competitors. Where a small group of suppliers predominated, and methods of tendering and ordering had settled into a pattern, collusion could flourish. The retreat into expertise as

the industrial economy developed and segmented encouraged the development of specialist intermediaries and linkages. As the mould set, diversification into completely new areas became more difficult - existing linkages would be ineffective, new ones would have to be established. If diversification were not into virgin territory, another self-contained world with its own established pattern of connexions would have to be confronted. Simultaneously the business horizons of those in charge of firms such as Anderston seemed to narrow: as the weight of tradition of the existing business and its practices increased so it became more difficult mentally to break with the past, its products and methods. When, in the 1870s and 1880s, Anderston added to its product range, it confined itself to areas of business it knew and where it was known, building upon existing connexions and buying in further connexions ready-formed.

FIGURE 3.1



The Companies Acts of 1856 and 1862 made incorporation with limited liability a very simple procedure. Over 20000 companies had been incorporated by 1884,[3] roughly one thousand of them in Scotland.[4] It had been neither anticipated nor intended that the limited company would or should be used by private partnerships or

sole traders, but it could be and was. From the early 1870s, private company registrations regularly outnumbered those of public ones. Both Dalmellington and Coltness took this path.[5]

Neither the need for extra capital nor the desire of the partners to withdraw portions of the existing capital brought the Anderston Foundry Co. Ltd. into being.[6] A limited company was formed as the best means of reconciling differences and re-arranging family interests in the firm.

The copartnery of 1867 revised in 1875[7] was due to expire on 30 June 1884, although certain provisions for continuing it subsisted. J.G. Muir who had sojourned in America and Australia had been admitted to the partnership months before his father's death: the balance of the Muir interest in the partnershp (three twelfths) had passed, under M.A. Muir's will, to Bunten and J.G. Muir[8] upon trust to transfer all or part of it to M.A. Muir's younger sons, at a fair price to be determined by the trustees, should those sons be suitable.[9] M.A. Muir junior had entered the business by 1884; R.B. Muir was not yet old enough to follow him.

Bunten had views upon his role as de facto managing partner and the rewards for it. There had been "an understanding"[10] that he would be placed in the same position as M.A. Muir had enjoyed: 5/12ths of the profits plus salary and expenses. The Muirs may have expected him to keep the business warm for them to succeed fully to their father's interest; they may have resented Bunten's dominance. Disagreement boiled over with Bunten expelling the Muirs and their supporters from the premises in April 1884 and bringing matters into the hands of the lawyers within the month. Bunten and Blair were thinking of establishing a limited company but did not wish to be seen as the originators of the proposal. Blair in conversation with

McGrigor (the Muirs' solicitor) allowed the matter to be raised as though the idea were McGrigor's.[11] As no basis for continuing the partnership could be confected, the scheme for a company was accepted. Dispute now centred upon terms: should Bunten receive one seventh of the profits as Blair proposed, or a high fixed salary e.g. £4,000, as Spens preferred, for his managerial services. What share of the company's capital should he receive? From the various combinations of salary, commissions and dividends he was to receive £16,000-£17,000 p.a. from assumed profits of £40,000 - underlining his central position.

Bunten refused to consider[12] either the Muirs' claim to a seat on the board, despite proclaiming his kindly intentions towards them "if they would behave themselves",[13] or the reinstatement of those excluded with them. The Houldsworths would allow their share of the capital to be reduced to let in some of the managers whose efforts could directly benefit the business, but not to enhance the share of the younger Muirs. Bunten intended "to retain absolute control in [his] own hands without a right to any one to question". He hinted that R.B. Muir might be brought into the business if he "would yet turn out well" but otherwise offered few concessions.[14]

A referee, and subsequently a brace of arbitrators, worked to see which, if either, of the factions had the right to carry on the business.[15] Their verdict was that the partnership had been dissolved.[16] Bunten's fear of litigation, and the spectre (raised by Blair before McGrigor) that the business must close if the Muirs would not agree to its sale, concentrated minds. In early August the company had been registered to take over from July 1st; the transfer to it was not completed until late 1885.

In public announcements the limited company was "the most

convenient way of re-arranging the interests of our partners, our contract [of co-partnery] having expired".[17] Bunten was appointed managing director for five years at £1,500 p.a. and one eighth of net profits. He secured 9500 of the 30,000 shares, compared with a maximum of 10,500 mentioned in negotiations. The company was capitalised at £300,000 of which £180,000 (£6 per share) was called up (not until November 1885), a sum very close to the partners' capital in the business at June 1884[18]. Bunten compromised his opposition to the Muirs' desire for a payment for the goodwill of the old company. £30,000 was paid by the Bunten, Muir and Houldsworth shareholders pro rata to their shareholding and received back by them pro rata to their interest in the partnership,[19] thereby benefitting the Muirs, chiefly at the expense of Bunten.

The three Muirs held 7750 shares in unequal portions; the two Houldsworths the same number in moieties. Thomas Robertson, the cashier and now company secretary, and Edward Dawson, the manager at Port Clarence, each received 1200 shares and joined the board.[20]

The company stated[21] that it would in reality remain a private concern, which it did - until 1913 in fact and for longer in practice. The only attempt radically to alter its nature was made in 1890. Profitability had been greatly underestimated in 1884. The coincidental booms in railway building in India and S. America allowed Anderston to pay dividends averaging 50% for its first seven years[22] and gave Bunten an income of £47,000 p.a. from dividends, commission and salary. His business commitments outside the foundry increased[23]; his five-year contract had expired; he had no son to succeed him at Anderston. For some years he had rented Monzie Castle in Perthshire and was negotiating to buy the Dunlastair estate near Kinloch Rannoch.[24] His desire to reduce his commitment to the

company coincided with the possibility of selling the business at a high price.

A new company, of the same name, was to be formed with a capital of £300,000 in 6% cummulative preference shares and £500,000 in ordinary stock[25] of which £180,000 was to be taken by the existing owners. Difficulties with underwriting the issue caused prolonged negotiation between Blair and G.A. Jamieson, the Edinburgh accountant and financier, whose fee was £30,000 to underwrite £150,000 of each stock.[26] Blair proposed that Bunten and Houldsworth underwrite the balance for 5% commission. The cost of underwriting the whole issue[27] was deemed prohibitive and a partial underwriting using the existing company's reserve fund (£25,000) and levying 10/- a share on existing holders was agreed to. The return to the holders from a successful flotation would be £20 13s. 4d. per £6 share, plus a nominal holding of £6 in new ordinary stock.

Spens, the Muirs' solicitor, in accepting the scheme proposed that another director be appointed. Bunten was unenthusiastic: he suggested Daniel Macnee but felt that they would be "as well without him"; Blair considered John Cowan or Sir James King.[28] The company was under no obligation to submit the scheme to the shareholders as a body and it did not intend to do so. The scheme fell upon the requirement of the Registrar of Companies, that every shareholder should assent to the proposals before he would register a new company with the same name.[29] News of the reconstruction had leaked to the Revd. W.T. Houldsworth;[30] his opposition was irreconcilable.

After reconstruction the company would have continued under the same general control. Bunten had upset the prospective underwriters by not guaranteeing to stay in office for more than another year. Finally he, Dawson and Robertson all agreed to stay for a year and

promised not to set up rival businesses upon quitting Anderston.[31] The preference shares would have no vote under ordinary circumstances[32] but the new ordinary shareholders would soon have become restive as profits declined rapidly in the aftermath of the Baring crisis (1890) and the collapse of S. American business. The water of five years purchase price for goodwill introduced into the balance sheet of the new company would drown their dividends; few over 5% would have been paid before 1914 compared with 20% in 1890/91[33] and from 1908/09 preference dividends would have fallen into arrears. In such circumstances a change of management, direction or control would have been likely and the later history of the business and its trading practices possibly far different. A tightening up of management would have been a boon.

The board usually comprised two full-time directors (one in Glasgow, one in Middlesbrough), one shareholders' director and the combined chairman and managing director.[34] Bunten as largest shareholder and chief manager was equivalent to the managing partner. Robertson and Dawson each paid £400 p.a., each holding 1200 shares, with no discernible business interests outside Anderston were dwarfed by Bunten in salary, shareholding and wealth. His personal estate at his death in 1901 was £450,000; Robertson's £40,000.[35] He had collected railway, bank and insurance directorships and was latterly Chairman of the Caledonian Railway, the premier line in Scotland. His increased outside commitments, his foregoing his 12.5% share in Anderston's profits (March 1895)[36] and the events of 1890 point to his disengaging from the daily affairs of Anderston but represent no diminution of his control.[37]

The Muirs, excluded in 1884, remained so; Robertson, although

one of Muir's executors was one of Bunten's managers, not their representative. William Houldsworth (1831-99) slid easily from inactive partner to non-executive director. He was a man of similar wealth to Bunten, he had been trained as an engineer at Anderston, his external directorships were comparable with Bunten's, but his principal business interest were in the Coltness and Dalmellington iron companies, where a great portion of the Houldsworth fortune was committed. The first board possesed wide business experience, external connexions, fortified by those of their lawyer and confidante Blair, and controlled or influenced a large portion of the share capital.[38]

The increased importance of Dawson (and Port Clarence) was reflected in his increased emoluments - £800 p.a. in the late 1890s - and he was Bunten's natural successor as managing director in 1901[39] when the balance of the board began more closely to reflect the balance of the business. Drennan, Assistant Secretary since 1896, succeeded Roberton as Secretary and became a director a few months later. Neither was as substantial a man as his predecessor; their Anderston shares formed their only considerable investment.[40]

Bunten's successors were primarily home-grown professional managers who never enjoyed the undisputed power which wealth, connexion and a large shareholding had given him. Businessmen in charge of an iron foundry were replaced by iron founders in charge of a business. Declining profits would not, even had the managers been employed on terms similar to those first enjoyed by Bunten, have allowed them to accumulate substantial fortunes. Salaries of £2,000 (Dawson) and £1,000 (Drennan)[41] offered modest and respectable prosperity.

Joseph Henry Houldsworth was appointed to fill the gap caused

by the deaths of William Houldsworth and Bunten in view of his family's large shareholding, but also to forestall[42] the Muirs. Houldsworth was presented to the shareholders as a "valuable acquisition"[43] in view of his (family) connexion with the iron trade in Spain and at Coltness, whereas the brothers Muir had retreated to London and the hunting shires and taken to rural pursuits.[44] In practice all of Houldsworth's directorship had been acquired on the strength of his family position and he inhabited the same circles as the Muirs. "He had never taken an active interest in business matters but lived the life of a country gentleman. He was a prominent member of the turf".[45] In September 1901 J.G. Muir's attempt to join the board was repulsed on the grounds that he was now out of touch and could be little help to a business which had changed substantially over the previous 20 years.[46]

The election of A.T. Harvey, long Dawson's deputy at Port Clarence and general manager there since 1901, completed the new board. Harvey had been marked out for a high position for a decade;[47] his being Bunten's nephew cannot have hindered his progress. Other family members were brought into the business: one nephew, J.C. Bunten junior, had become one of Drennan's principal technical assistants at Glasgow; another, Guy Liddell, worked at Port Clarence from 1890 to 1896 before making a career in railway engineering abroad. G.W. Dawson, son of Edward, had entered the business by 1903; A.T. Harvey's son, Kenneth[48], by 1913. Continuity of management at all levels seemed assured: the Glasgow works provided engineering apprentices who, when qualified, might move to Port Clarence; the Glasgow offices provided a ladder of promotion from humble clerk to company secretary. This pattern of internal recruitment persisted largely until 1945.

Angus Murray, who had served as draughtsman and engineer and latterly works manager under Drennon at Glasgow left the company in 1904: he had been with it for over 20 years.[49] His career had marched very closely behind that of Harvey, but with Dawson and Harvey before him[50] and their sons and Bunten junior behind him, he can have seen no substantial future at Anderston. He established his own firm[51] in competition with Anderston which was becoming a place for the loyal and stolid, not for the ambitious.[52] Murray's resignation and Drennan's ill health and death (1905/06) weakened the management in Glasgow. Bunten junior came to premature prominence; the new secretary, William Hardie, another product of the counting house, was never to join the board. He had less experience than his predecessors, he was painstaking, thorough and competent rather than incisive or decisive.[53]

The recruitment (October 1906) of T.P. Cargill, the chief engineer of Greenings of Warrington, wire weavers reinforced the engineering strength in Glasgow and brought to the firm its most important latter-day figure.[54] His modest background typified the change in character of Anderston from Scottish business baronial on the moors of Dunalastair to suburban respectability in the purlieus of Pollockshields. The new men were successful scholarship boys imbibing a strong and increasing sense of company tradition, competently continuing with the products, methods and customers they had inherited, seldom enjoying sufficient outside experience in the light of which to view Anderston's methods and performance.

There was little scope for recruiting outside talent to the boardroom due to the narrow holding of Anderston shares and the high qualification (£3,000) for a seat, as the death of J.H. Houldsworth (1910) revealed. The Muirs[55] were unwelcome. Neither they nor

Bunten's son in law de Sales La Terriere had business experience or connexions. The Houldsworth shareholding, now being reduced, had passed largely into the hands of spinsters and clergymen, domiciled far away.[56] Cowan's shareholding was fragmented and largely in the hands of trustees; T.R. Watts' heir was in Australia; the young Drennans were too young and not involved in business; the Tubbys would have been unable to obtain the requisite holding; the Liveseys and Hendersons could not be seen to be associated with the company. The only individual with a reasonably sized holding, the money to expand it and a Glasgow business background (quarrying and contracting) was John Faill.[57] Despite his being "a very fine gentleman of a most retiring disposition [who] doesn't like company meetings",[58] he was felt to be reliable, and in March 1912 accepted a seat. Like J.H. Houldsworth he appeared more impressive on paper than in reality: he was not one of the family; he was not going to question the management and thus help revitalise it. His unadventurousness[59] was probably a recommendation to his colleagues.

The causes of the resignation (1912) of Bunten junior will be considered in the next chapter as will the efforts of Cargill, his successor as general manager at Glasgow, to reorganize and revitalise that works, its products and methods. The removal of the principal managers to Middlesbrough seems to have assisted the decline of the Glasgow operation which saw little capital spending, poor financial returns, poor industrial relations and low productivity. Rational in terms of the balance of the business, this eroded links with the West

of Scotland business community without forging fresh ones on Teesside where Anderston conscious of its origins, was never entirely at home. Centralising its administration there was not considered. Decisions were taken by exiled Scots located in a large branch plant whose financial[60] and legal affairs were handled in Glasgow and Edinburgh, causing a great deal of papers to pass around the business from day to day. The smaller main plant had become de facto a branch in the charge of the junior director (1901-12) or of a general manager (1912-20) with the secretary (from 1906 not a director) handling other business in Glasgow.

Such division and imbalance could not restore the sense of direction which the business had enjoyed under Bunten's despotism. His successors had been too long under his influence to break free from his shadow and stamp a new personality on the business.[61] Those successors did not enjoy his freedom to take radical action having to be mindful of large shareholdings in the hands of persons, increasingly of a rentier mentality, averse to speculation and risk - but they were not minded to be radical. The dynamics of the Bunten regime of the 1870s and 1880s did not filter down to them, only the dead hand of the business as he left it, a perpetual, unchanging legacy.

The three partnership families held 83% of the shares in 1884; they still held 60% in 1914 by which time their active involvement in business had largely ceased.[62] From an initial dozen the number of shareholders increased to 26 by 1908 and over 50 by 1916 due, in many cases, to the subdivision of family holdings - there were ten

Houldsworth shareholders in 1912, only two in 1885. Most shares for sale were bought in by the company for existing holders or changed hands with the change in management personnel. Despite the gradual dilution of individual shareholdings,[63] large shareholdings predominated. Only Dawson outside the partnership families, built up a holding of the first rank and he did so piecemeal over 30 years. The shareholders were mostly individuals of substance: the small shareholder does not appear before 1910 whereas shares in many of Anderston's small competitors were much more widely held.[64]

Anderston shareholders in the 1880s and 1890s were in three distinct groups: partnership families; the principal managers (8%); invited outsiders of potential usefulness (9%).[65] The Muirs, despite rebuffs, retained their holding undiminished into the 1920s: Anderston shares account for c.38% of the personal estates of M.A. Muir junior (1894) and J.G. Muir (1913),[66] an overcommitment which explains their persistent attempts to obtain influence over the running of the firm. The departure of the last Houldsworth from the board coincided with the reduction of the family's interest (7750 shares, 1885-1908; 3102 by 1916) by the trustees and beneficiaries of J. Muir Houldsworth and J.H. Houldsworth. Paradoxically the Houldsworths thereby exerted more influence on the company's behaviour than did those whose share holdings remained intact.

Irrespective of its precise legal status, Anderston remained obsessively private - once the 1907 Act introduced the legal entity of the "private company" Anderston became one. It had no desire to publish its accounts and all of the large shareholders, who were consulted in advance, agreed to the move. Only J.G. Muir was unenthusiastic.[67] Shares sold during the 1900s were largely absorbed by existing holders and their families. The sale of 4500 of Bunten's

shares after his death was arranged with Dawson taking 2200, Drennan 1300, Harvey, Murray and Bunten junior 850, and Tubby, the firm's London agent, 150. Shares remained within the business. Rising managers reinforced their position by reinvesting their enhanced salaries in equity. Bunten junior built up a holding of 1042 shares by 1911, Harvey of 1342 by 1914. The sale of the first tranche of Houldsworth shares (1292 in 1908/9) was similarly absorbed.[68]

Drennan and the Dawson family put all their eggs in the Anderston basket[69] with Dawson borrowing from his bankers to finance his large purchase[70] in 1902 and thereafter buying few more. Dawson could not emulate Bunten's dominance over the shareholders but he could outface the shareholdings of other full time staff and strengthen his ownership position in the firm in a way that would have been unnecessary had he enjoyed family ties with the partners. Bunten's large interest in Anderston formed the basis for establishing a large fortune not dependent on the foundry. The accrual of capital as in a partnership[71] was impossible for Bunten's salaried successors who had to buy their stake of a fixed capital and received income from that stake pro rata with other, inactive, shareholders. Insofar as the share price reflected the earnings and capital reserves of the company, the managers gained from their success, but only in respect of their share of the capital. The bulk of any gain passed to the holders of embedded capital: the partnership families. Bunten and his predecessors had used the foundry as a milch cow to finance other businesses and speculations; Dawson and his successors recycling income to build up an ownership interest in it, had little money left over for outside investment. Their interest as much as that of rentier shareholders heavily invested in Anderston, was for steady safe returns.

On a more modest scale the management families began to behave as the partnership ones. Drennan's executors sold 1000 shares into the charmed circle,[72] (300 to his successor, just as Drennan had acquired shares from Robertson) and retained 900 for beneficiaries who had not pursued business careers and were not locally domiciled.[73] Transfers usually resulted from death with executors as willing sellers in sales arranged, in the absence of a market in the shares, through the company. Angus Murray, seeking the highest price from his shares to finance his new business, and aware of Anderston's methods and value, turned down the company's offer and made the first hostile transfer by selling 300 shares to John Faill in 1907.[74] Murray claimed the shares were worth £11 - £12 and received £9 per share compared with £7[75] at which other recent transfers had taken place. Faill's son-in-law Grierson took 250 shares at the first Houldsworth sale (1909) and from 1913 introduced various local businessmen such as J.B. Couper, the shipowner,[76] to help absorb further Houldsworth shares.[77]

New shareholders had not been welcome: the directors sought details of Faill before accepting him and Bunten junior opposed the allocation of 100 Houldsworth shares to a Coltness employee and Houldsworth executor as needlessly increasing the number of holders.[78] Murray's disposal of his remaining 150 shares (1910) brought in three outsiders, two of them employed at Port Clarence, the third a Middlesbrough physician to whom it was felt no objection could legitimately be raised.[79] Once the shares became quoted on the stock market a rudimentary body of local investors was established on Teesside the most prominent of whom was James Campbell, an iron broker who subsequently migrated to London and became associated with Bairds, the Scottish iron company, through the Northern Mercantile

and Investment Company.[80]

Until 1913 the balance sheet, profit and loss account and directors' and auditors' reports (none erring towards needless disclosure) were available only to those few attending the annual meeting (the board, the secretary, the firm's lawyer - who also acted for the La Terrieres) or to holders of 500 or more shares who visited the Glasgow[81] office during the week preceding it. Outsiders were largely debarred from obtaining information; insiders had no need of it. The shareholders able in practice to be involved in the company's affairs numbered few more than the 14 who attended the 1912 AGM[82], not the 34 on the share register. Those unable to visit Glasgow were, if they complained at the lack of information, treated brusquely.[83] With experience of past difficulties, Blair had suggesting altering the company's articles of association to give the directors power compulsorily to acquire the shares of a deceased holder.[84] In exercising their right to first refusal of shares to be sold inter vivos[85], the board had to balance its desire to limit the number of shareholders against limiting the accumulation of new holdings over 500 shares - but 500 shares were needed to qualify as a director and there was a marked shortage of candidates.

Frequently shares had passed to trustees or executors to whom no information was divulged unless their names were put on the share register in which case, until 1910, a personal liability for the £4 uncalled on each share would arise. This could scare away the inquisitive and was often coupled with an offer to relieve them of their shares. Even the trustees of erstwhile insiders were likely to receive this treatment.[86] Exceptionally, the trustees of M.A. Muir junior and of the late secretary Robertson were given privileged access to the accounts. In the former case it was soon withdrawn; in

the latter the trustees were co-operating in the sale of the shares to insiders. Holdings otherwise qualified to receive information were thereby kept in the dark.[87]

Financial difficulties (1910-12), with further sales of shares by the Houldsworths impending, upset the equilibrium, and foreshadowed later intrusions by a few of the major shareholders. Mrs. La Terriere's[88] questioning of the unpaid capital provoked discussion of the desirability of Anderston's becoming a public company and reducing the qualification for directors, and led to meetings between the board and representatives of the Muirs, La Terriere and Houldsworths, at the behest of Revd. W.T. Houldsworth,[89] to "discuss present and future prospects". Having absorbed so many shares in the past decade, no insiders were willing to purchase the shares which J.H. Houldsworth's trustees intended to sell.[90] The continuing links between the shareholders and managers were shown as Bunten junior, following his enforced resignation over his management of the Glasgow works, circularised his cousins with details of the disagreement and of his proposed alternative future for those works. Dawson privately persuaded W.T. Houldsworth and J.G. Muir, that Bunten's reinstatement was impossible without losing most of the management of the Glasgow works.[91] Simultaneously Watt, the lawyer shared by the company with Mrs. La Terriere, convinced her. In public those (14) shareholders attending the 1912 AGM had been told that Bunten's reinstatement would be "considered".[92]

The major shareholders had to be considered but they were incapable of running the business. Dawson, now a considerable proprietor, had received their backing in 1911[93] and was receiving that of A.T. Harvey, the senior "family" manager. Their needs and desires had to be noted, they should be informed of developments but

their suggestions, once considered, could be rejected - as were Mrs. La Terriere's proposals (1913), for equal numbers of full time directors and shareholders' directors, and for prior consultation of shareholders (no doubt only the principal ones) before new appointments were made to the board.[94] Usually minor shareholders could be and were ignored.

The principal proprietors, although from families once engaged in business, were now principally rentiers, pensioners and land owners[95] to whom steady, unspectacular income, secured by a managerial policy of safety through caution, was preferrable to speculation which might bring great losses as readily as great profits. If they sought higher returns they could have sold their Anderston shares or shewn more insistent attention to the company's activities. By maintaining a steady course the managers avoided any incident which might point to the divergence of the interests of the firm and its management from those of its owners[96]:an incompatability of interests interwars was foreshadowed.

Anderston's becoming a public company was as unplanned as its initial incorporation, forced on it by the impending sale of more Houldsworth shares (April 1913) which could not be absorbed internally. The limited number of shareholders allowed a private company might soon prove inhibiting. With regret, the power to veto transfers was surrendered,[97] but no change in the company's outlook occurred. This public company continued to be selective in its dealings with the public: it did not see the change as an opportunity either to modify its ways, or to raise capital and expand. Shares were to be quoted only in Glasgow, where Moore and Snodgrass could watch over them; the published accounts were to disclose the minimum of detail;[98] larger numbers of smaller shareholders, smaller

shareholdings and smaller share transfers were unwelcome and remained so for 40 years, thus the recurring proposal to split the £6 shares into more marketable £1 units, made first by Mrs. La Terriere, was discussed with Davidson and Syme but rejected. Even the proposal to reduce the directors' qualification to £1000 or £1200, when most companies required less, despite the support of Mrs. La Terriere and Davidson and Syme and Anderston's experience of recent difficulties, was left in abeyance.[99]

The ease with which family holdings could be subdivided and rearranged was but a minor advantage of incorporation.[100] Favoured managers could be offered shares as a reward. Bunten advanced Dawson the money to buy his first 1200 shares much as Muir had advanced money to Bunten to establish him as a partner fifteen years before: in each case the high return on capital enabled the borrower to repay his debt from income within a few years.[101]

It was common in the half century before the First World War for shipbuilders to secure their relationship with their customers by taking a financial stake in them or by accepting shares in part payment for ships delivered. To "quantify these relationships is difficult as they were usually covert...".[102] Thomas Summerson's, Darlington based makers of railway points and crossings, stated in a 1901 prospectus the intention of allotting a proportion of debenture and preference stocks to customers to give them a direct interest in Summersons' continued prosperity.[103] Contemporaneously the Railway and General Engineering Co. Ltd. packed its board with current and former engineers, directors and contractors of the main line railways serving its home town, Nottingham.[104] Bunten successfully merged these diverse practices.

Anderston's first outside shareholder was John Cowan[105] who took £3000 in shares. Only those whom Bunten wished to particpate were invited to subscribe. Cowan had been a director of the Caledonian Railway since 1868[106] and was chairman of its Stores Committee when Bunten joined the Caledonian board in 1881,[107] continuing in office into the 1890s. This committee (of four) supervised the purchase of commodities such as chairs: from 1884 Bunten was a member of it and immediately before taking the chair of the Caledonian (1897), he was chairman of the committee.[108] The presence of Bunten and Cowan helped secure for Anderston the position of a leading supplier to the Caledonian. Anderston had long enjoyed Caledonian custom but the 1880s and 1890s[109] were its most fruitful period. Cowan was a confidante of Bunten's: he acted with Blair as frontman for the nominee holdings shortly to be discussed; his descendants, who lacked usefulness, were relegated immediately from Anderston's inner circle.[110]

When Anderston sought a short-term investment for spare money it, naturally, lent it to the Caledonian, e.g. £40,000 at the end of 1884, the better to secure its friendships at court, just as the Tharsis Company, in which Sir James King, the Caledonian's deputy chairman, was prominent, advanced £50,000 in 1901.[111] King was a director of the Coltness Iron Company and one of the Coltness Houldsworths was a director at the turn of the century of the Caledonian Railway. Neither was involved in Anderston but these connexions would not have been unhelpful.

Bunten's position in the Caledonian cemented an established business relationship which long outlasted him and outlasted the links between the two boardrooms.[112] The attitudes of the Caledonian Stores Superintendents (and perhaps its Stores Committee) moulded by

Bunten and Cowan in the 1880s and 1890s remained set until after the First World War, assisted by the continuity of personnel and the conservatism which flourished in the railway companies as in Anderston.[113] Bunten had brought Cowan into Anderston through the Caledonian connexion, more innocently Bunten, through the same connexion, came to invest (£6,075) in the Sumerlee and Moss End Iron and Steel Company, the family firm of James Neilson, a fellow Caledonian director and ultimately one of his executors.[114] What was more natural than to invest in a firm managed by an acquaintance operating in an industry not far removed from his own? Such an investment might result from little more than the exchange of commercial information and tips for investment which were the likely small change of the conversation of the Caledonian directors as of other groups of businessmen. The connexion between supplier and railway customer has echoes elsewhere in the presence of a regular quota of iron masters (and railmakers) upon the North Eastern Railway's board and the presence of H.J. Kennard (a leading figure in the Blaenavon iron and steel works in south Wales, a prominent member of the Rail Makers' Association and a major shareholder in a bridge building firm) as deputy chairman of the Great Eastern[115]

Bunten's investment in Dugald Drummond's railway engineering concerns was without any intention to benefit Anderston. It may have arisen through the innocent cross fertilisation of investments and exchange of opportunities for investment just described. However, the financial involvement of Bunten, King and Daniel Macnee in a business established by the Caledonian's former mechanical engineer, and whose lawyers were Davidson and Syme, points to another web of connexion designed to make friends, and influence people and orders. It is impossible to discern whether Drummond sought backers, through

the Caledonian connexion or whether one of the backers and, if so, which one, sought to establish Drummond in business. Nevertheless light is cast on developments involving Anderston under Bunten's direction.[116]

The allotment of 750 shares to Thomas Rossiter Watt, managing director of the Great Indian Peninsular Railway, long its secretary and from 1888 its chairman, recognised established ties and strengthened them for the future. Watt had just taken up the managing directorship of the Indian Midland Railway,(an associate of the G.I.P.R. with which it shared engineers and certain directors) from whose rapid expansion large orders could be expected. With shares that paid for themselves out of dividends within two years an invitation to subscribe was an invitation to make money little short of a bribe.[117]

Nominees held the remaining 1350 shares; an advantage to owners who could feel embarrassed by public disclosure and to the company in deterring outsiders, however useful, from participation in its affairs. Charles Oxtoby Barker,[118] secretary and subsequently managing director of the Buenos Ayres Great Southern Railway (B.A.G.S.), largest British-owned line in South America, received 250 shares temporarily paid for by Bunten. Simultaneously he was asked to influence a sleeper order from the Buenos Ayres Western Railway. The rival Patent Nut and Bolt Company had "that brute Martinez" under its control and Bunten and Anderston were unsuccessful.[119] 500 shares were offered to James Livesey, consulting engineer to the B.A.G.S. and an established Anderston customer. He paid for them from royalties due by Anderston to him upon various designs of metal sleeper he had patented which Anderston manufactured for use by client railways and others.[120] Orders from the B.A.G.S. during its

great expansion of the 1880s had involved Barker, Livesey and Bunten in direct negotiations, cementing and utilising their personal contacts[121] without formal or rival quotations being sought.

Between October 1888 and January 1889 the remaining shares were allotted: 250 more to Barker coinciding with an order for 37,500t of sleepers.[122] Anderston's London agent Daniel Macnee received 150[123] under an agreement to re-sell them to Anderston should his connexion with the firm cease, so that they might be recycled to further useful individuals. 100 passed, on easy payment terms, to J.B. Davison, Barker's son-in-law, and secretary, later managing director of the Buenos Ayres and Rosario Railway[124] which had been a customer of Anderston since the 1870s. Davison was not Bunten's first choice.[125] It is difficult to consider these shares other than as an immediate incentive and reward for the large orders the Rosario was then placing. The final hundred passed to H.W. Henderson, a partner in the stockbrokers Greenwoods, whom Barker had suggested as likely "to be of assistance to us".[126] Henderson's eldest brother Alexander, a senior member of Greenwoods, was a noted capitalist and principal financial backer for the many South American railways engineered by Livesey. Greenwoods had been brokers to the B.A.G.S. from its inception.[127] Brodie Henderson, another brother, worked for Livesey before becoming his partner in 1891.[128] Meanwhile Bunten and Barker were assisting in underwriting an issue of North Eastern Uruguay railway securities[129] - a Livesey and Henderson line.

The deaths of Barker and Macnee (1893) provided further opportunity to recruit "some one who would be of use to the business".[130] The repurchase of Barker's share, albeit at a 25% premium, was not well received by his executor J.B. Davison; the three purchasers Davison suggested were not well received by

Anderston.[131] Bunten offered shares to Harvey and Murray, advancing them the purchase money, on the understanding that should more useful takers appear, their holdings would be adjusted. Harvey thus received only 200 shares and Murray 150, all subject to resale to the board at their purchase price (£7 10/-) should either leave the business and all held by Cowan and Blair[132] as nominees. Bunten had found suitable recipients: Brodie Henderson received 100 shares and Harry Livesey, son of James, 200. James had[133] just retired from full-time involvement in what was now Livesey, Son and Henderson and Bunten was seeking to forge links with the new generation and continue business as usual. Tubby, the new proprietor of Macnee and Company had no valuable[134] contacts of his own, unlike Macnee, and was not thought worthy of an approach. Harvey was being shewn that his services were valued and given a further incentive to remain in the business.[135]

The shares of Watt and Cowan passed on their deaths (1895) to heirs, none of whom was of use to Anderston. Bunten had no purchasers in view.[136] The effectiveness of his method had declined and, with falling dividends, the attractiveness of the shares diminished. South America, where much of this effort had been concentrated, contracted sharply as a market after the Baring crisis never to recover its former prominence. New and expanding customers were the state owned lines of the colonial empire which placed contracts through the Crown Agents, a body not susceptible to influence, and Rhodesia Railways and its associates, tied to large mineral-finance houses in which the Hendersons had no place.[137]

Liveseys had concentrated their engineering work in Latin America (see Table 3.3). Even here the relationship began to unravel as the railways in their charge grew up and having opened up the

interior could now tap native hard wood forests for their sleepers.[138] The new generation of partners in Liveseys may have been more suffused with a bureacratic, public service, public school ethos than their predecessor; the railways might have less need of financial and engineering expertise once they had reached a plateau of consolidation. The newer generation of managers of the railways as of Anderston were simply professional managers.

Only upon the death of Robertson (1900) were shares again allocated as they had been in the past.[139] Robertson had felt his own 'usefulness' was over; he was happy that his shares be used to give Dawson the much larger holding he deserved and to qualify newcomers for directorships. His executors readily co-operated in disposing of half the shares to Dawson and half to Drennan, the new secretary.[140]

The web of relationships spun by Bunten is difficult to quantify and overlaps with the workings of the Cast Iron Chair Association (C.I.C.A.) described in Chapter 4. Quotations to the Central Argentine Railway, an established concern outwith Livesey's consultancy and Henderson's financing, were conducted through C.I.C.A., with Patent Nut and Bolt and Head Wrightson taking many of the orders, whereas those to the B.A.G.S. and the Rosario were, until 1889, often arranged verbally between Bunten and Barker, or Davison.[141] In general the treatment of business for Livesey and Henderson companies in South America differed from that accorded to their rivals.[142]

TABLE 3.1 SPECIMEN SOUTH AMERICAN ORDERS

1881 - 1890	A Orders without matching quotation	B Quotations No prices of other firms	C Ordinary Quotation	Unknown
Buenos Ayres Great Southern	5	2	0	0
Buenos Ayres Rosario	1	4	0	3
Livesey & Henderson	4	0	2	1
Clarks, contractors	9	2	0	1
Central Argentine	1	0	22 (+5 orders)	0
Buenos Ayres Pacific	n/a	n/a	n/a	n/a

Based on D/AF 241-4, 265-6

+N.B. Quotations of 7/5/88 seems to have been ordered from Anderston in Glasgow. Most Buenos Ayres and Pacific Orders are included with Clarks, although not all of Clarks' orders and quotations are for the Buenos Ayres and Pacific.

A. No entries in quotations books.

B. Quotations but none of the usual evidence of prices arranged through associations. Possibly only select quotations invited.

C. Usual evidence of arranged prices and commissions.

TABLE 3.2 FOUNDRY ORDERS FROM EXPORT CUSTOMERS WITH WHOM ANDERSTON (HAD) ENJOYED SPECIAL RELATIONSHIPS (tons)

	Gt Indian Pen. Indian Midland	Livesey & Henderson	Buenos Ayres Great Southern	Buenos Ayres & Rosario	Messrs. Clark
1.4.1880-31.3.1881	-	3507	-	-	-
1881- 1882	-	-	-	-	-
1882- 1883	6500	51	-	-	22000
1883- 1884	3348	872	-	23000	22000
1884- 1885	27611	18029	20772	-	5500
1885- 1886	11515	1958	-	23280	1000
1886- 1887	96437	715	-	158	15300
1887- 1888	42576	-	-	37270	20000
1888- 1889	19829	65	37580	31275	n/a
1889- 1890	1455	-	37580	5200	205
1890- 1891	9900	-	-	-	n/a
1891- 1892	5015	B	B	B	B
1892- 1893	9174				
1893- 1894	12958				
1894- 1895	19937				
1895- 1896	33576				
1896- 1897	15731				
1897- 1898	11790				
1898- 1899	20316				
1899- 1900	4002				
1900- 1901 A	1598				
1901- 1902 A	404				
1902- 1903 A	572				
1903- 1904	9581				
1904- 1905	6924				
1905- 1906	23909				
1906- 1907	17938				
1907- 1908	5446				
1908- 1909	237				
1909- 1910	8563				
1910- 1911	2774				
1911- 1912	1937				
1912- 1913	15023				
1913- 1914	11000				

A Patent Nut and Bolt in open competition.

B Buenos Ayres and Rosario and Central Argentine merge after 1902. No significant orders are received from B.A.R. after 1890. None at all from the others listed, Clarks having gone out of business.

Source: D/AF 265-268, Order Books

N.B. ORDERS BOOKED DIRECTLY BY GLASGOW WORKS WILL NOT NECESSARILY APPEAR HEREIN.
SEE ALSO STATISTICAL APPENDIX.

Clarks, a contracting firm principally engaged in South America, failed in the 1890 financial crisis. It had worked for railways within and without the Livesey circle but had an extensive Livesey connexion. Anderston mirrored the Clydeside shipbuilders by taking a temporary investment in the Venezuela Central Railway under Clarks' indemnity, and advancing Clarks £15,000 secured upon £30,000 Argentine Great Western Railway 2nd debentures[143] when the crisis came. This was exceptional. Shares had on past occasions been accepted in part payment for goods supplied to assist illiquid customers.[144] Only when the private finances of Anderston's leaders are examined is the extent of the financial linkages revealed.

M.A. Muir left personal estate of £407,400 in 1880.[145] The foundry, which had made this fortune, formed 10% of this sum. His investments in South American railways were valued at £14,500, all in lines associated with Livesey.[146] Increasingly customers and suppliers took shares in one another on their private account. Innocent explanations of suppliers, aware of their customers' prospects through regular business dealings, investing in them are in this case unconvincing. A supplier might seek a closer association with a customer the better to ensure that, with a slight application of influence, business would flourish. To the Liveseys and Hendersons, their Anderston shareholding was an insignificant portion of their fortunes[147]: Anderston was making a claim to a relationship. In contrast T.R. Watt's investment in Anderston comprised 5.3% of his personal estate of £85,221; Barker's investment 9% of his estate of £41,530.[148] Barker, for an initial stake of £3,000, in part lent by Bunten, received, over 8 years, £9,500 in dividends and £750 in capital profit, i.e. some 32% of the value of his personal estate accrued from an investment in Anderston, taking no account of income

from dividends reinvested, which had come to him a little better than a free gift. For Watt Anderston shares, dividends etc. were equivalent to 28% of his personal estate.[149] In both cases a strong temptation existed for self interest to influence judgement.

There is evidence that the Liveseys and Hendersons helped shape the investment portfolios of Anderston's principal figures who, it seems, were keen to invest disproportionately in concerns associated with them. The Houldsworths were heavily invested in the family iron and textile companies and in Anderston. Of William Houldsworth's personal estate £379,657(1899)[150], 30.4% was invested in these family enterprises and 33.6% in Latin American railways. Of the latter the B.A.G.S., Rosario, Buenos Ayres Western and Central Uruguay, systems which shared many directors and were within the Livesey and Henderson orbit, absorbed two thirds. These same companies accounted for a large proportion of the foreign railway investment (£10,767 of c.£18,000)[151] of William's Cousin, John Muir Houldsworth, (d.1908) and two (Central Uruguay and Buenos Ayres Western) for 80% (£20,000) of Joseph Henry Houldsworth's[152] foreign railway investment. A well balanced portfolio would naturally reflect the £200m[153] of British money invested in S. American railways; it would not necessarily produce such concentration on a few.

Bunten's personal estate (1901) of £452,000[154] comprised shares in Anderston, £57,000; shares in the Caledonian Railway, £81,000; shares in the Bank of Scotland and in the Liverpool, London and Globe Insurance Company, where he held directorships, £16,800; mortgages £77,000; miscellaneous equities, £35,000. His investments in foreign railways totalled £116,000 of which £5,350 was in Indian lines but £98,000 was in Latin American ones, with £92,000 of it in Livesey and Henderson concerns. Of this last sum, half was in the B.A.G.S. and a

quarter in the Rosario. Neither Bunten nor his colleagues had invested in those major railways in Argentina such as the Buenos Ayres and Pacific which were outside the Livesey and Henderson sphere, despite supplying them. Conversely, Bunten and J.M. Houldsworth had large but worthless holdings in the Algeceiras Railway in Spain, one of the Liveseys' more obscure ventures, which shared in J.R. Todd, a director with the Buenos Ayres Western.[155]

The make up of Bunten's estate is quite unlike that of J.C. Bolton, another former chairman of the Caledonian Railway who died in the same year and left a similar sum, except for their large holdings of Caledonian stock.[156]

Had Anderston's personnel invested in their customers' shares simply to obtain and influence orders, or had they invested in new issues to bring forth new purchases and purchasers of their wares (to increase Anderston's business and profits, hence their wealth and their ability to make further such investments) their portfolios should have included substantial holdings of Indian and African railway securities, and a wider spread of Latin American ones. But investment was concentrated in a few companies, principally those associated with Livesey and Henderson (thus floated through Greenwoods, stockbrokers and audited by Deloitte's) and also with Barker and Davison. Managers, engineers, financiers and the Anderston board were interlocked in a web of business and financial relationships. The marriage in 1894 of Livesey's daughter into the Bunten-Muir-Harvey cousinhood[157] marked the culmination of contacts stretching over a generation but coincided with the supersession of business through contacts by business through cartels. A community and mutuality of interests and self interest had for a decade coalesced with a community and mutuality of investment. Each party

opened up complementary business opportunities for the other. The extent and pattern of Bunten's investments and those of William Houldsworth, a long-term colleague whom he might have influenced, indicate a deliberate decision to make friends and influence people. Bunten, as the dominant force at Anderston, was its principal architect in opening up alternative investment possibilities in Anderston to complement his investments in the client railways of Livesey and Henderson which would, in conjunction with its long association with James Livesey, have given Anderston a favoured position.

As the partipants died or retired the web unravelled: investments ceased to influence events. Argentine business was slight in the aftermath of the 1890 crisis. Despite Liveseys and Hendersons continuing as engineers and directors of Latin American railway companies until the 1940s and continuing to hold Anderston shares, there is no evidence of Anderston's receiving preferential treatment once business began to revive: new ways of doing business and new attitudes supplanted the old. No attempt was made to construct relationships with the generation of managers who succeeded Barker and Watt. Collusive arrangements would secure Anderston its share of business. It would prove increasingly difficult to find shares to be recycled - none of Bunten's successors could finance such an operation and none possessed the connexions to make it possible. New railway construction had diminished. There were few new railway administrations arising of a type which might prove susceptible to influence. As the railways in Latin American matured they became more self sufficient, less dependant on the Liveseys, less in need of Henderson finance.

What had worked in a particular market at a particular time lacked universal applicability. For example, Indian railways were largely built, equipped and financed by British capital, but they were either owned or supervised by the government (which largely guaranteed their capital from public funds). Scope for financiers such as the Hendersons was limited; other consulting engineers predominated and Anderston relied on existing business relationships and the operation of collusive practices which recognised its special interests. There was little investment by Bunten and colleagues in India.[158] The deep foundations of Anderston's relationship with the G.I.P.R. required less financial cement than did the consolidation of Latin American business. George Berkeley, the G.I.P.R. consulting engineer, despite his having previously received commissions on orders[159] placed by the railway with Anderston and his being close enough to Anderston's network to be named as one of Macnee's executors,[160] was never offered shares in Anderston. The state railways in the colonial empire could not be bought. Bunten, Cowan, Bolton and the Houldsworths were some of the many British investors in railways in Canada and the United States,[161] from which British manufacturers seldom received orders due to the development of local suppliers.

Despite these limitations it may be doubted that the Bunten-Livesey-Henderson connexion was unique in inspiration. The considerable difficulty in examining the mass of material relating to the ownership and control of incorporated companies has been pointed out by Peter Payne[162] whilst others have attempted to create an anatomy of Scottish capital without putting flesh on the bones.[163] The above may illustrate some of the means used to channel the stream of investment. When Scottish capital was invested abroad it relied

upon a network of local, personal and business relationships and the recognition of opportunities by Scottish expatriates to direct at thither. The investors trusted such means rather than[164] high interest rates promised by anonymous foreigners. When joint stock companies were promoted in one of the Scottish centres local connexions and credibility were near imperative: promoters, business men and investors were likely to be acquainted, whether the company operated locally or was formed to invest abroad. The use by Bunten and others of the Hendersons for investment advice is entirely consistent with the above; the tangled web involving Barker, Livesey and others forms a less commonly seen illustration of how business was done.

The Anderston Foundry Co. Ltd. was the creature of Bunten who, having engineered its accidental birth, made full use of the opportunities presented to shape it to his liking. He dominated it for a generation; his influence pervaded it long after his death. Through methods nowadays considered unethical, verging upon the illegal, he masterminded the use of friendship and influence to secure work. Individuals could be useful only for a limited time; friendly purchasers could absorb only so much of the company's products. With the increased importance of new customers differently organised, the controlled use of Anderston's shares fell into desuetude. There were no longer useful and influential people to be used and influenced as the happy coincidences of the 1880s passed away. Impersonal arrangements, discussed in the next chapter, came to succeed personal contacts.

Once the opportunity to refloat the company (1890) was lost, the dynamic and adventuresome spirit deserted Anderston. Purposeful

vitality subsided into oppressive continuity. In middle age Anderston grew flabby and lacked direction. The urge to innovate diminished as, in a maturing market, did the opportunities to do so. A stock market quotation was, like initial incorporation, an accidental effect of the private affairs of one of the partnership families. With no one of Bunten's calibre to hand, the reaction to it was completely different. It was apprehended as an inconvenience which should not disturb the concern's privacy not as an opportunity to address the recently manifested problems of recruiting and retaining the right type of managers and directors. The path to the boardroom was not eased by lowering the qualification; from the broadening base of shareholders[165] none was recruited to strengthen the commercial experience of the board. There was more concern to maintain a board whose make up balanced the interests of the managers (non-interference) with those of major shareholders increasingly bereft of business experience or interest.

The business was run by and for a charmed circle of partnership, management and ex-management families. Out of deference and uninventiveness the managers, who had long served under the dominant personality of Bunten, continued to run the business as he had left it, almost as a memorial to him. They were the factors of the Bunten estate and the owners, apart from occasional questioning, left operations to these faithful retainers. Davidson and Syme could be deployed as intermediaries to smooth over any difficulties. Difficulties were more likely to arise were the firm to indulge in further risky schemes such as making gas engines. Shareholders, of a rentier outlook, preferred certain if unspectacular dividends to the risk of none at all, becoming restive only when financial problems became overwhelmingly clear (1910-12), great schemes were afoot (1890

and 1912/13) to alter the character of the company, or managerial difficulties escaped into the public domain (1911/12).

Usually there would be no conflict: the company by its whole hearted adherence to anti-competitive trade practices was as much a profit satisfiser as were its shareholders. The balance of interests in the firm coalesced upon "safety first" which the managers brought up in the firm were well qualified to deliver. Most of the company's businesses were returning solid, if unspectacular, profits most of the time. If not they seemed capable of revival to that state. Otherwise losses were small enough to be carried on the back of the profitable departments.[166]

Had Bunten survived as long as his contemporary Arthur Keen (who was driving the Patent Nut and Bolt Company into the merger that produced Guest, Keen and Nettlefolds at the time of Bunten's death) and had he devoted more enegy to Anderston after 1890, his combined power, influence and experience could have given Anderston a direction and momentum which would have lasted well into this century. As the removal of Keen left G.K.N. headless, that of Bunten, whenever it might occur, left Anderston similarly bereft: none of his successors enjoyed his pre-eminent position, none was in a position to force the pace, and none seemed to want to do so.[167] One of the principal makers of railway track fitting was doomed to relative decline - G.K.N. forced itself forward at the expense of C.I.C.A. in the early 1900s - and, subsequently, to absolute decline. Anderston fell back upon its specialisms without using them, as it had in the past, as foundations for further conquests. The cosy embrace of collusion, which in the case of the chair cartel embalmed the relative position of its members as it had been in the early 1880s, when Anderston was at its most vital, offering orderly markets

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and a certainty of business which might be lost to more competitively minded collaborators (as in the 1920s) provided, as we shall see, a substitute for any general consideration of business strategy and a substitute for the defunct arrangement of orders by influence or corruption.

TABLE 3.3

LINES TO WHICH LIVESEY AND HENDERSON
ARE CONSULTING ENGINEERS, 1900

Algeceiras (Gibraltar)
Antofagasta (Chili) and Bolivia
Argentine North Eastern
Buenos Ayres and Rosario
Buenos Ayres and Valparasso Transandine/Argentine Transandine
Buenos Ayres Great Southern
Buenos Ayres Western
Central Uruguay of Monte Video and associates
Chubut Central (Argentina)
Costa Rica
Cordoba Central inc. North West Argentine and Central Northern
Cordoba and Rosario
Cuba Central
Entre Rios (Argentina)
Great Southern of Spain
Interoceanic (Mexico)
La Guaira and Caracas
Leopoldina (Brazil)
Midland Uruguay Railways and associates
Northern Uruguay Railways
Peruvian Corporation - (various lines)
Puerto Cabello and Valencia (Venezuela)
Salvador
Santa Fe & Cordova (Argentina)
Southern of Mexico
Santa Marta (Columbia)
South Western of Venezuela
Taltal (Chile)
United Railways of Havana
Western Railways of Havana

Shiré Highlands (Nyasaland) - the sole African line financed by the Hendersons

Source: Universal Directory of Railway Officials, 1900
Bradshaw's Railway Shareholders Manual and Guide, 1901
D. Wainwright, Henderson: A History of the life of Alexander Henderson First Lord Faringdon (1985)

TABLE 3.4

RAILWAY MILEAGE

	Great Britain		India		Argentina		S Africa	
	Total	new	Total	new	Total	new	Total	New
1841	1775		-	-	-	-	-	-
1842-1851	6665	4890	-	-	-	-	-	-
1851-1860/1	9442	2777	838	838	-	-	-	-
1860/1-1870/1	13388	3946	4771	3933	637	637	62	62
1870/1-1880/1	15734	2346	9166	4395	1563	926	1007	945
1880/1-1890/1	17328	1594	16407	7241	5861	4298	2237	1230
1890/1-1900/1	18852	1525	24760	8353	10292	4431	4047	1810
1900/1-1910/1	19998	1145	32099	7339	17384	7092	7089	3042
1910/1-1920/1	20299	301	36735	4636	n/a	n/a	9704	2615
1920/1-1930/1	20437	138	41734	4989	n/a	n/a	11754	2050
1935			42961		23704			

Source: Railway Year Books; Universal Directory of Railway Officials; C.M. Lewis Table 7 and 33; Jack Simmons The Railways of Britain (1986) p.225; Bradshaws

TABLE 3.5 KEY RAILWAYS

	Buenos Ayres Great Southern mileage	% Argentine Total	% Argentine Railways British-owned	Great Indian Peninsula mileage	% Indian Total
1868	71	11.1	n/a	869	18.2
1880	350	22.5	n/a		
1889/90	83 9	16.5	n/a	c.1500	9.1
1900	2188	21.3	78		
1910	2770	16.0	69		
1935	5088	21.4	71	3526	8.2

1935 G.I.P.R. includes Indian Midland

Source: as above

Footnotes: Chapter 3

1. Only 50 shares were in the hands of Middlesbrough folk, excluding the firm's employees, until 1912. D/AF 128-9. Copies of Annual Returns to Registrar of Companies.

2. See Appendix 2.

3. Lesley Richmond and Bridget Stockford Company Archives (1986), pp.ix-xi.

4. Peter L. Payne The Early Scottish Limited Companies, 1856-95 (1980), pp.15-19, 48-53 and note to p.17 by Sir Alec Cairncross.

5. Richmond and Stockford loc cit. Private companies were not officially recognised as a distinct category until 1907. Carvel pp.43-53.

6. This too was not unusual. Payne op cit. pp.56-60 and Table p.76. Anderston with a nominal capital of £300,000 was much larger than the typical company incorporated in Scotland at that time; so too was its paid up capital.

7. Scottish Record Office - SC 36/51/79, Lanark Sheriff Court records. Will and codicils of M.A. Muir, including partnership agreements of 11 and 14 January 1867 and 28 and 30 January 1875 recited.

8. "Such of my sons as may be desirous of following out the said business should be afforded an opportunity of doing so provided that in the estimation of my trustees they shall be duly qualified... my trustees shall be sole judges", Will. "... sons who may have shewn a desire by steady and perservering efforts to attain a competent knowledge... of following out the said business", Codicil SC 36/51/79.

9. J.G. Muir, the eldest son, had received his stake subject to his "conducting himself to my satisfaction". SC 36/51/79. Codicil.

10. Scottish Record Office, Davidson and Syme letter book, GD 282/3/60, 15 May 1884. Letter from John Blair to McGrigor in Glasgow.

11. Bunten may, of course, have been mindful of the possibilities of introducing useful outsiders to the company. GD 282/3/60-63. Letters from Blair to Bunten and to McGrigor and Spens, 8 April - 9 July 1884, especially 8 May 1884 to Bunten.

12. GD 282/3/61 Blair to Bunten "I made it as plain as words could... that we would not negotiate on the basis of one of the Muirs being on the board", 12 May 1884.

13. GD 282/3/61, Same to Same, 23 May 1884. M.A. Muir may have had doubts about his eldest son's character in view of the phrasing used to transfer capital to him.

14. GD 282/3/61, Blair to McGrigor and Spens, 23 May 1884.

15. Presumably an attempt to keep options open, GD 282/3/60-63 passim 30 May - 20 August 1884.

16. Arbitrator's decision reported 9 July 1884, GD 282/3/63.

17. Circular to customers 8 August 1884. Text given in Minute Book D/AF 6.

18. C.£179,000 in private ledger, D/AF 13.

19. Miscellaneous agreements 1884/5, D/AF 1.

20. D/AF 628

21. D/AF 6, Circular, 8 August 1884.

22. See Appendix 3.

23. See Appendix 2.

24. D/AF 628 and A.C. Blair Davidson and Syme and D/AF 384 Secretary's letter book: Letter, 26 March 1890.

25. D/AF 384, letters to Blair, 1890. D/AF 6 Minute book and GD 282/3/133-135 Blair's letters to Bunten, February - March 1890 passim.

26. GD 282/3/134 Blair to Bunten reporting on negotiations with Jamieson, 1 April 1890 et seq. A. Slaven and S.G. Checkland ed. Dictionary of Scottish Business Biography vol.2, pp.409-412 for Jamieson.

27. D/AF 6, 1890.

28. See below and Appendix 2. For Sir James King see A. Slaven (ed.) volume 1, pp.111-113; D/AF 384 Bunten to Blair, 28 March 1890; GD 282/3/133-135 26 March 1890 Blair to Bunten et seq.

29. GD 282/3/134-135, Blair to Bunten, 1 April 1890 and D/AF 384 25 March 1890, letter to Reverend W.T. Houldsworth.

30. A shareholder through the re-organisation of the Houldsworth interest recently completed (D/AF 127 Register of Shareholders). He was domiciled in Portland Place, London and was destined to be one of the few 'active' shareholders.

31. D/AF 6 Circular of 3 April 1890; GD 282/3/314-135 passim.

32. As in the case inter alia of Thomas Summerson & Sons, Darlington Railway Plant and Foundry Ltd. and the Railway and General Engineering Co. Ltd. amongst Anderston's rivals.

33. By 1893/4 the ordinary dividend would have been down to 1%.

34. A maximum of 5, a minimum of 3. D/AF 1 Articles of Association.

35. Calendars of Confirmations 1900-1901 for estate value. D/AF 136 Income tax returns. D/AF 329-336 wages books and D/AF 6 minutes passim.

36. D/AF 6, March 1895.

37. For example D/AF 384, 15 January 1901.

38. Glasgow Herald Obituary, 26 September 1899. D/AF 628. J.L. Carvel, The Coltness Iron Company, a study in private enterprise and H.H. Houldsworth and W.H. MacLeod The Beginnings of the Houldsworth's of Coltness. He was a director of the National Bank of Scotland and of the Scottish Widows Insurance Company. He was "shrewd, upright... [of] sound judgement" D/AF 628.

39. D/AF 6, 1901. D/AF 628.

40. D/AF 628. Calendars of confirmations for 1906 and 1927 shew estates of £16,000 and £29,000 for Drennan and Dawson respectively. A calculation of their Anderston shareholding produces figures of 83% and 74% repectively of personal estate.

41. D/AF 628. D/AF 6, 1901.

42. D/AF 628; D/AF 384 Letter to Houldsworth, 19 July 1901. There were "other particular reasons why we should welcome you". Bunten was scarcely buried. However, he had been failing for some months (D/AF 384, 27 April 1901); long enough for the scheme to approach Houldswroth to be hatched.

43. D/AF 6, 28 May 1902.

44. Burke's Landed Gentry 1925 and 1952 editions. Addresses for correspondence, D/AF 384-5 and in share registers D/AF 127. A Dictionary of Edwardian Biography, Leicestershire and Rutland (Edinburgh, 1985), p.103, alias Pike's New Century Series W. Scarff and W.T. Pike ed. (1902).

45. D/AF 628.

46. D/AF 384, 11 September 1901 to Blair, 30 September 1901 to Muir. Muir approved of Dawson's elevation and Houldsworth's appointment. He had been put up to it by his cousin Sir John Muir. He remained the second largest individual shareholder (14.4%).

47. D/AF 384, 29 December 1893.

48. See Appendix 2. Kenneth is Alexander Kenneth Lyon Harvey. Various details emerge from D/AF 628 and wages books, D/AF 329-336, 346.

49. D/AF 126. Income tax returns D/AF 158 Patent applications. Murray was co-patentee with Bunten of various designs, 1884-1886.

50. D/AF 384, 29 December 1893. Both were then invited to take shares: Murray the lesser amount. Their salaries kept pace (D/AF 126): £714 to Murray 1901/2 and £716 to Harvey.

51. See Appendix 1 : Murray, Workman & Co.

52. Eg. Bow in the 1920s and many post 1945, see below. Murray, had he stayed, could reasonably have expected to succeed Drennan as Glasgow director.

53. D/AF 628, assessment of Hardie. See also Appendix 2. Hardie was in his mid-30s on appointment. His estate was c.40% that of Drennan's as Drennan's of Robertson's.

54. See Appendix 2. D/AF 576 letter T.P. Cargill to G.D. Cunningham, 27 September 1951. D/AF 126 passim.

55. Their three holdings were now in the hands of:
(1) Trustees for the widow and children of M.A. Muir junior
(2) J.G. Muir, D.L., J.P. of Farmingwoods, Thrapston and Hillcrest, Market Harborough, both Northants. and Badenoch, Kinbrace, Sutherland, a sporting gentleman.
(3) R.B. Muir, a sporting reserve officer.
Kelly's Handbooks, 1899 and 1926 editions; Burke's Landed Gentry, 1925 and 1952 editions; A Dictionary of Edwardian Biography op cit. D/AF 127.
All the above were unsuitable, unavailable, inexperienced or unwanted.

56. D/AF 127 and Register of transfers of share D/AF 131; D/AF 128-129 Annual returns to Registrar. London, Canada, Ayrshire.

57. In his mid fifties - Glasgow census returns 1861. See Appendix 2.

58. D/AF 385, Secretary's letter book, Hardie to Dawson, 9 January 1909.

59. He inherited a business fortune and left one of comparable size (£1/3m) to the Houldsworths, but very heavily invested in risk free securities. No great new business connexion was to flow from him.

60. Moores Carson and Watson the auditors and Moore and Snodgrass the brokers had common antecendents. D/AF 405, 2 July 1920.

61. Harvey had served over 20 years under the Bunten regime and a further twenty under Dawson.

62. Those younger Houldsworths active at Coltness were not amongst the Houldsworth family shareholders in Anderston - a mixed bag of widows, clergy, and residents of pretty villas on the Gareloch. D/AF 127-129.

63. The three largest shareholders owned 54% of the capital in the later 1880s and 44% by 1903 (See Appendix3). D/AF 127-129.

64. See Appendix 1. Family firms are excluded. British Hydraulic Foundry, Railway and General Engineering Co. and the Darlington Railway Plant and Foundry are examples. In some of these, and in other cases, there was concentration of ownership of the voting shares and wider ownership of non-voting preference stocks.

65. The annual returns D/AF 128-129 and register of shareholders D/AF 127. Calendar of Confirmation and the letter books of the secretary D/AF 384-385 form the basis for much of what follows.

66. £38,404 and £68,782 respectively. Purchases of real estate may account for these figures being so much smaller than M.A. Muir's. The return on agricultural land would be small - see F.M.L. Thompson English Landed Society in the 19th Century (1963) - its possession a matter of status and prestige.

67. D/AF 385, 14 May 1908. The obvious explanation of his wanting the shares more widely marketable and able to command a better price does not suffice. There were no sales of shares by the Muirs until the 1920s.

68. D/AF 127; D/AF 385, Secretary's letters, 7 January - 11 March 1909: 367 to Bunten jr., 225 to Harvey, 150 to Tubby, 100 to the Dawson family, 100 to an employee, 100 to a Houldsworth employee/executor and 250 to Grierson,(manager of the Bank of Scotland at Anderston and Faill's son-in-law).

69. See note 39 above.

70. For many years the shares were registered in the name of the Bank's nominees D/AF 127. This would appear to be the most likely reason for it.

71. A partner could, as Bunten, increase his share of the profits if he had talent to contribute (See Chapter 2) and build up capital by limiting his drawings from the business.

72. D/AF 385 for 1906. D/AF 127: 300 to Drennan's successor Hardie, the rest to Harvey, Bunten jr., Dawson jr., and another employee.

73. An army officer and a medical man in New Zealand, later in Belfast. D/AF 127-129, 131.

74. Clearly Grierson was the most likely point of contact between Faill, Anderston and Murray. Both Faill and Grierson were fairly useful additions to the share register.

75. D/AF 385, 23 - 24 August 1907.

76. Who's Who, 1920.

77. D/AF 385, 11 March 1909, 13 December 1910 et seq.

78. D/AF 385, 11 March 1909. The directors could veto transfers.

79. Dr. Glen, William Morris, a foreman, later a director (see Appendix 2) and G. Eason, a cashier. They paid £7/10/- to £8/- per share, D/AF 385, 6 June 1910 and D/AF 430, out letter book, 31 May 1910. Glen was the first truly local Teesside shareholder.

80. c.850 shares passed to the Campbell family between 1913 and 1916. He was as much an expatriate Scot as the Anderston managers. On that account, and through his business he would have known or know of them, and they of him. D/AF 127; A. Slaven and S.G. Checkland, Dictionary of Scottish Business Biography (Aberdeen 1986) vol.1, pp.20-23; Stock Exchange Year Books.

81. A special journey to Glasgow, where few shareholders now lived, to attend a formal meeting of less than thirty minutes' duration was unappealing to most proprietors. D/AF 7, Minutes for attendances.

82. D/AF 7, Minutes of 1912 A.G.M.

83. D/AF 385, 22 May 1905. To J.B. Davison telling him that he could not complain at the level of dividends and therefore should not complain at all.

84. D/AF 384, 30 January 1901 et seq.

85. i.e. Sold for full value rather than transferred for a nominal consideration between living persons. The balancing act was of greater importance after 1907: as a "private" company Anderston was limited to 50 shareholders, but the taking of shares by Grierson rather than Faill was welcomed (D/AF 385, 11 March 1909), otherwise Faill's holding would have exceeded 500 shares and, as yet, no thought had been given to Faill's becoming a director.

86. D/AF 385, 28 December 1907 et seq., regarding Cowan's executors.

87. D/AF 384, 22 May 1899 and 23 January 1901.

88. D/AF 430, 5 January 1911 et seq. D/AF 386 Copy letters from Anderston, Glasgow to Anderston, Port Clarence, 1911. D/AF 7, minutes, 1911.

89. D/AF 386, 5 September 1911. None of the partnership families was now represented on the board; D/AF 430, 24 July 1911, Dawson visited Houldsworth in London at the latter's request.

90. D/AF 385, 7 June 1911. Another small Houldsworth stake was sold in March 1912 (D/AF 7).

91. Cargill had been appointed general manager, 24 April 1912. See D/AF 431, Out letters of Dawson, 31 May - 6 June 1912 and D/AF 388, Anderston, Glasgow to Anderston, Port Clarence letters, 1 June 1912 et seq.

92. D/AF 7, minutes of Annual General Meetings.

93. As 89

94. D/AF 390 Anderston, Glasgow to Anderston, Port Clarence letters, 30 April - 3 May 1913. The circumstances of 1927/8 are different.

95. D/AF 127-129, Burke's Landed Gentry op cit. Kelly's Handbook op cit.

96. See chapter 4.

97. A requirement of the Glasgow Stock Exchange (D/AF 390 passim).

98. D/AF 390, 26 April 1913. Dawson put the blame for J.B. Peat of Head Wrightson's expressing an interest in switch and crossing making upon the publication of accounts, D/AF 432, 27 July 1914.

99. Main line railways capitalised at tens of millions of pounds seldom required directors to hold more than £1,000 in stock - see Stock Exchange Year Books. The Anderston deliberations are recorded in the minutes D/AF 7 and in correspondence D/AF 390, 30 April - 7 May 1913 and D/AF 432, 25 April - 6 May 1913. High value shares were particularly common in Scottish companies. P.L. Payne (Edinburgh 1980) op cit., pp.50-51.

100. The Houldsworth holding was sub-divided in the late 1880s, D/AF 127; the Muir holding from the outset.

101. See statistical appendix for dividends paid by Anderston and Chapter 2 above; D/AF 384, 29 April 1886 in respect of Dawson.

102. J.R. Hume and M.S. Moss Workshop of the British Empire, p.90 and pp. 88-109 passim.

103. Durham County Record Office, Darlington D/DL 18. This was not uncommon - the Distillers Company Ltd. sought a similar tie up with suppliers. (Information, R.C. Michie).

104. See Appendix 1.

105. A Greenock merchant (b.1819, d.1895). He was subscriber to the Articles of Association in August 1884. See Appendix 2.

106. Scottish Record Office BR/CAL 4/5.

107. BR/CAL 1/26, 1881 (Bunten joined the board on May 10th) and BR/CAL 1/35, 1891, Minutes of the Caledonian Railway Co.

108. BR/CAL 1/29, 1884; BR/CAL 1/40, 1897.

109. See statistical appendix 3.

110. D/AF 127-134. Annual returns to Registrar, Registers of shareholders etc. The heirs lived in the south of England, the colonies and rural Scotland. They remained shareholders until 1962 (See Appendix 3). D/AF 385, 28 December 1907 et seq.

111. D/AF 14, Private Ledger. Bank of Scotland deposit receipts and Clydeside local authority loans were the other staples to 1914 (see statistical appendix). BR/CAL 1/29, 15 December 1884; BR/CAL 1/44, 2 July 1901.

112. The Houldsworths on the Caledonian and London, Midland and Scottish Railway boards had no financial links with Anderston. But informal links may have continued through Houldsworth cousins who were still Anderston shareholders (as was Mr. Duncan, the Coltness Iron Company's Secretary).

113. Continuity of directors and of officials who, in the railways as much as at Anderston, were recruited young and, except at the highest reaches, tended to remain within one company. Lorimer the Stores Superintendent under Bunten and Cowan was in office 1889-1905, Ferguson 1905-1911, Easton 1911-1923 - BR/CAL 4/5; also T.R. Gourvish British Railways 1948-1973 (Cambridge 1988); D.H. Aldcroft British Railways in Transition (1968), pp.24-25; M.R. Bonavia Railway Policy Between the Wars (Manchester 1981), chapter 2.

114. Dundas and Wilson, C.S. Edinburgh: will of J.C. Bunten. Bradshaw's Shareholders' Manual, Stock Exchange Year Book, Universal Directory of Railway Officials etc. various editions. A. Slaven and S.G. Checkland ed. (1986) vol.1, pp.55-57. The Neilsons were another of the west of Scotland's industrial dynasties whose activities straddled iron, coal, iron founding, engineering and locomotive building - (see John Thomas The Springburn Story (Dawlish, 1964), pp.84-88) Bunten was one of the largest outside shareholders in the family-dominated Summerlee & Mossend, (£6,000 in preference shares). The Caledonian's General Manager and three Caledonian directors held Summerlee shares at the outset (1896). Many of its shareholders were connected with the iron trade (Scottish Record Office: BT 2/3221/1, annual return of shareholders).

115. A. Slaven and S.G. Checkland, vol.1, pp.110-111 for Kennard, pp.111-113 for King. W.W. Tomlinson The North Eastern Railway; its rise and development (Newcastle 1915), pp.768-770 lists directors.

116. See APPENDIX 2 for Macnee. See APPENDIX 1 for Glasgow Railway & Engineering Co. Ltd.

117. Watt had applied for 1000 shares but Bunten had other uses for the balance, D/AF 6, 1885. The Great Indian Peninsula was one of the earliest and largest main lines in India opened from the 1850s. (The Indian Midland, incorporated in 1885, was merged with the G.I.P.R. in 1900). The G.I.P.R. bought extensively from Anderston until the 1920s (see Chapter 4). Its capital of £14.4m plus £4.2m loans in 1868 had increased to £20m and £5m respectively by 1887. Stock Exchange Year Books, Bradshaw's Railway Shareholders' Manual and Guide, 1869 et seq.

118. Barker, who had been secretary of the Buenos Ayres Great Southern for some 20 years, became its Managing Director in 1883. In 1890 he was one of the first board of directors of the Buenos Ayres Western which was being sold by the Argentine

government to a British-owned company, The Times, 29 May 1890. The Western's first board included three directors of the Great Southern, two of whom were also directors of the Rosario plus a further Rosario director who was a director of the Entre Rios. Another Western director was on the board of the Central Uruguay Railway and its associates, of which Barker was managing director, as was one of the abovementioned Great Southern directors. One Buenos Ayres Western director was on the board of the Central Argentine - the only line so far mentioned outwith the Livesey and Henderson orbit. Various of the directors of Livesey and Henderson lines in S. America were members of the boards of the Algeceiras, Great Southern of Spain etc. - obscure Livesey-engineered lines elsewhere. To a great extent these railways employed Deloittes as their auditors. Alexander and H.W. Henderson had trained as accountants with Deloittes. It becomes difficult to divide the rational workings of specialisation from those of influence. The B.A.G.S. was capitalised at £3/4m in 1863 and £7.2m by 1888. D/AF 384, 4 December 1885. Stock Exchange Year Books, Bradshaw's Railway Shareholders Manual and Guide; David J. Jeremy ed. Dictionary of Business Biography (1985) op cit, vol.3, pp.153-156; D. Wainwright Henderson: A History of the life of Alexander Henderson, First Lord Faringdon (1985) caps. 1-3.

119. D/AF 265 Foundry Order book.

120. David J. Jeremy ed. (1985), vol.3, pp.819-821. See also Chapter 2 above; D/AF 384, especially 20 January 1886, for the offer to Livesey.

121. E.g. D/AF 265, 16 September 1888. 18,000 tons of cast iron sleepers. Part of the order had been despatched before it had been booked. There was no balancing entry in the quotation book D/AF 244. See also D/AF 265, 21 January 1887; D/AF 243 Quotation book, 14 January 1887 concerning verbal quotation to Davison and table 3.1 and note 142. Letters to Barker start "My dear Barker" rather than Dear Sir from 4 December 1885 at least. Letter from Bunten to Barker: "I will be glad to hear that you are going to accept our provisional tender... even supposing you have not yet finally settled matters in Buenos Ayres, as we can always delay delivery..." D/AF 384, 28 December 1888.

122. D/AF 265, 28 December 1888.

123. For Macnee see Appendix 2 and Chapter 4 below. Macnee had various railway and financial linkages independent of Bunten - not just in connexion with Dugald Drummond. See GD 282/12/129, Macnee executorship papers; D/AF 384, 28 December 1888.

124. D/AF 384, 18 October 1888 and 15 December 1893. The Rosario was capitalised at £3m in 1887, the B.A.G.S. at £7.2m 1888. Stock Exchange Year Books. Livesey was the Rosario's consulting engineer. Orders of c.31250 tons had been placed with Anderston, December 1888 - January 1889, D/AF 265.

125. D/AF 384, 28 December 1888. The party "who had died" is unknown to me. He was neither Edward Corry, Anderston's long established London Agent nor Berkeley, the Civil Engineer of the Great India Peninsula Railway, the most obvious choices. Both were placing orders or seeking quotations into the 1890s D/AF 265 passim; D/AF 244-246.

126. D/AF 384, 24 December 1888, Letter to Barker; David J. Jeremy ed. (1985) vol.3., article on Alexander Henderson, 1st Lord Faringdon, pp.153-156 and Wainwright op cit.

127. H.W. Henderson joined Greenwoods in the early 1880s from Deliottes. Henderson's obituary (The Times, 18 March 1931) gives details of his career. Greenwoods was acting as broker for the Buenos Ayres Western (The Times, 29 May 1890) as it had long done for the Great Southern.

128. David J. Jeremy ed. (1985) volume 3, pp.151-153, pp.819-821.

129. D/AF 384, Letter Bunten to Barker, 28 December 1888.

130. D/AF 384, 9 December 1893.

131. D/AF 384, 15 - 21 November 1893 "I gave [Davison] credit for a man of more sense from his experience..." when reminding Davison that the board had first refusal on share transfers.

132. Until they repaid him they could not vote the shares which remained in the names of the nominees.

133. David J. Jeremy ed. (1985), vol.3, pp.819-821.

134. GD 282/12/129 and D/AF 384, 29 December 1893. He had been Macnee's clerk.

135. D/AF 384, 21 December 1893 - 4 January 1894.

136. D/AF 384, 30 November 1894.

137. Pauling - a sometime Rhodesian minister and associate of Cecil Rhodes built virtually all of the Rhodesia Railway system, Anthony H. Croxton Railways of Rhodesia (Newton Abbot, 1973) passim; David J. Jeremy ed. (1985), vol.2, pp.351 and 669; Alexander Henderson's one foray into Africa was the Shire Highlands Railway - one of the few private lines north of Rhodesia (consulting engineers, Livesey and Henderson, their sole African connexion)-in Nyasaland which was a territory from which Rhodes and his allies had been excluded. Wainwright Chapter 5.

138. Railway Year Book 1903. Hardwood sleepers had become standard for the Buenos Ayres Great Southern with 50% of its track miles thus laid. See also D/AF 248 for 1902 when quotations to the Buenos Ayres Western were lost to hardwood.

139. This may also be seen as the first of the transfers by informal agreement within the charmed circle of directors, higher managers, their families and associates which, for 60 years,

sought to absorb shares for sale by other members of the circle and to buy in such shares as might be placed on the market by outsiders. All previous share transfers had been under Bunten's direction.

140. D/AF 389, 23 June 1899 and 1900-1901 passim.

141. See TABLE 3.1. Other business from the Central Argentine went to Wilsons, Pease and Edingtons through the Chair Association with the requisite commissions paid.

142. See note 121 above. The form "My dear Barker" and "My dear Sir" for Davison contrasts with a more formal tone in letters to the Hendersons.
The table shows how orders sometimes to run over several years, were awarded. The Central Argentine is handled in a conventional way (see Chapter 4). For the others the orders are frequently large and unspecific. Bunten discussed business with Barker in what was otherwise formal financial correspondence (D/AF 384, 1885-90), i.e. away from the general in and out letters kept by Anderston and dealing with its ordinary business.

143. D/AF 6, Minutes of 31 May 1887 and 23 December 1890. Clarks contracted for companies inside and outside the Livesey orbit, see B. Fawcett Railways of the Andes (1963) for the Livesey/Henderson/Clerk co-operation on the Transandine Railways. The Livesey pattern iron sleeper was, during the 1880s, in almost universal use by South American railways.

144. See Chapter 2 above.

145. SC 36/59/79 Glasgow Sheriff Court)See also Chapter 2 above). Anderston Foundry, £40,000; home railway securities, £66,000; N. American railways, £31,000; mortgages and local authority loans, W. of Scotland, £84,000; shares in land and mortgage and investment companies operating in the U.S.A., Canada, Australasia, £132,500; James Finlays, the family trading firm, £16,200.

146. £10,180 in the B.A.G.S., £4,000 in the Central Uruguay, £8,640 nominal taken at one shilling in the pound in the Rosario's predecessor.

147. c.1% of James Livesey's personal estate of £302,211 (1925); under 1% of Sir Henry Livesey's £211,333 of 1933; insignificant portions of the Hendersons' wealth. H.W. Henderson left £679,000 gross (The Times, 13 April 1931) and Brodie Henderson £263,700 (The Times, 1 October 1936). If large portions of these fortunes continued to be held in S. American securities the effect of the interwar depression in causing a great depreciation in their prices would necessarily diminish the amount of these estates to offset, in part, the extra capital accumulated since the 1890s. Calendars of Confirmations; David J. Jeremy (1985), vol.3, loc cit.

148. Calendars of Confirmations, 1893-1895. Valuation of Anderston shares and/or price at which they were repurchased: D/AF 6; D/AF 131; D/AF 384, 1893-1895 passim.

149. Both figures assume that the parties lived on their salaries. The sum is computed from the value of Anderston shares, capital profits and dividends received. No attempt is made, in respect of the dividends, to calculate the income arising from their subsequent reinvestment in other securities and the capital appreciation which might have resulted.

150. Scottish Record Office, SC 6/44/62, Ayr Sheriff Court records. Coltness £74,450; Fine Cotton Spinners and Dublers, the successor to the Manchester textile business, £21,438; Anderston, £11,628; Dalmellington Iron Company £3,910 (nominally £35,190); J. Houldsworth and Company £3,490. National Bank of Scotland (director) £17,783; Scottish Widows' Fund (director) £10,199. £19,265 in United States railways. £2,440 in the Bengal Iron Comapny, £4,883 (£14,000 nominal) in the Great Central Railway (chairman, Alexander Henderson). The South American securities comprised: Buenos Ayres Western, £41,904; Buenos Ayres Great Southern £17,723; Rosario £7,410; Central Uruguay and associates £19,200; the non-Livesey Mexican Central (an American company) £11,166 and the Central Argentine £28,825.

151. SC 6/44/71, 1908. £214,000: 50% in the family's two iron comapnies; 4% in Anderston; 5% in Fine Cotton Spinners; £6,663 in the Caledonian Railway; £1,255 in the North British Locomotive Co.; £1,313 in the Bengal Iron Company; £15,400 in miscellaneous investment trusts; £2,756 in United States Railways; £11,807 in Latin American railways related to the Liveseys, including the Cordoba Central and also the Algeceiras (Spain); £3,282 in other Latin American railways.

152. SC 6/44/73, 1910 £327,500: Coltness and Dalmellington, 58.1%; Anderston 8.3%; Fine Cotton Spinners 5.3%; J. Houldsworth & Co. and other family businesses 2.3%. His foreign railway holdings comprised £11,600 in the Buenos Ayres Western, £8,310 in the Central Uruguay and £5,003 in the San Francisco Railway. The first two were his largest individual shareholdings in non-family enterprises. His only home railway stock (valued at £1,000) was that of the Great Central.

153. Irvine Stone, "British Long Term Investment in Latin America, 1865-1913" in Business History Review XLII, 1968, pp.311-340 - £24m in 1875; £200m in 1895; £405m in 1913 - n.d. His table 7.

154 Calendar of Confirmations; Dundas and Wilson for details of Bunten's estate

for the ensuing paragraph Bunten's investments were valued at £46,650 in the B.A.G.S., £22,500 in the Rosario £12,400 in the Buenos Ayres Western, £4,700 in the Central Uruguay and associates, £2,219 in the Leopoldina; £500 nominal but of no value in the Venezuela Central (built by Clarks); £81 (£7,500 nominal) in the Algeceiras (Spain); £3,611 in the Argentine Northern Central Extension, which seems likely to have been a Livesey line. His other railway foreign investments were £10,569 in the Grand Trunk (Canada), £2,402 in the New Brunswick - from neither of which orders could be expected - £5,350 in the Southern Punjab and £5,973 in the San Paulo (Brazil).

155. See note 118 for shared directorships.

156. J.C. Bolton, a merchant, was Bunten's predecessor as chairman of the Caledonian (1880-1897). His estate comprised £430,000 personal and £61,250 heritable (SC 67/30/124). £74,000 was held in the securities of the Caledonian Railway and its associates; the rest was widely dispersed: £67,000 in Scottish equities, £30,000 in English ones, £114,000 in North American Railways, £94,500 in foreign government loans (China, S. America, S. Africa, Europe). Only £18,000 was invested in five South American railways of which £15,000 was in four Livesey and
Henderson concerns. £5,000 was invested in the Alquife Mine, a Spanish ore company in which the Houldsworths were interested - a Houldsworth not associated with Anderson, was on the Caledonian board in the 1890s. (Bolton's grandson became a director of the Coltness Iron Company).
Bolton's investments may be seen as purely or primarily commercial with Bolton allowing his business contacts within and without the Caledonian to influence his investment decisions or using those contacts to assist him in formulating such decisions. The preponderence of Livesey and Henderson lines within his small South American railway portfolio more than reflects their prepondence as financiers of such lines. However, there is no evidence of Bunten's influencing Bolton - he might just have sought informal advice from Bunten.
The Caledonian shareholding apart, Bolton's holdings form a complete contrast to Bunten's in their lack of concentration upon particular companies, particular types of company or particular geographical areas. Bolton could be taken as the control model in which case Bunten's choice of railways in which to invest in South America becomes unremarkable without, however, explaining the concentration of funds in such lines.

157. Who's Who, 1930. Entry for Maj. General Sir William Liddell. Pedigree: see Appendix 2.

158. A government appointed director sat on the board of each Indian railway. For details of this and dividend guarantee see Bradshaw Railway Shareholders' Manual and Guide and Stock Exchange Year Books. Rendels, Palmer and Tritton was the principal firm of consulting engineers. Watt was a more substantial figure than Barker and held his Anderston shares in his own name. Bunten held no shares in the G.I.P.R. or its associates. Berkeley was based in London. Payments made to him may represent genuine commissions for work done in securing orders in the period predating the Chair Association. A combination of consultancy work and an agency is not impossible in the earlier period when the two roles had not been fully refined.

159. See Chapters 2 and 4. Private ledger, D/AF 12-13. Commission accounts, D/AF 16.

160. GD 282/12/129.

161. See above under analyses of personal estates and below under Appendix 2.

162. P.L. Payne (1980) op cit., pp.15-18.

163. J. Scott and M. Hughes The Anatomy of Scottish Capital (Edinburgh, 1980).

164. R.C. Michie The Scottish Stock Exchanges in the 19th Century, Ph.D., University of Aberdeen, 1979, p.409-410, p.473 "Most Scottish stock exchanges continued to retain... a long list of... companies whose shares were held locally... Concerns as diverse as the Glasgow and South Western Railway, the Scottish American Investment Company..."; David Macmillan Scotland and Australia, 1788-1830 (Oxford 1967) passim; P.L. Payne (1980), pp.49-53; R.C. Michie Money, Mania and Markets (Edinburgh, 1981), chapter 18.

165. E.G. James Campbell of Middlesbrough and London, iron merchant and financier; Messrs. Shaw of Middlesbrough, iron merchants and steel founders; J.B. Couper of Glasgow, shipowner; - Mr. Duncan, the long serving secretary of the Coltness Iron Comapny and its first non-Houldsworth chairman. All were shareholders in the 1910s. Only Campbell possessed the requisite directors' qualification.

166. See chapter 4.

167. For Keen see David J. Jeremy ed. (1985) vol.3, p.370ff. and H. Edgar Jones A History of G.K.N., vol.1, 1759-1918 (1987), vol.1, passim.

CHAPTER 4

Manufactures and Manufacturing

1880s - 1914

To balance the question of ownership and the financial linkages shewn in the previous chapter, this one will discuss the products, manufacturing practices, and business techniques of the company. Business through collusion was flourishing long before the demise of business through influence. Little can be said about the workforce, its behaviour and performance for want of evidence.

Chairs and iron sleepers had formed the foundation of the company's growth since the 1850s; its fortunes continued to depend on them. Echoeing the 1850s, the surge in business in the later 1880s was led by exports - a revival of Indian business with the incorporation of new companies such as the India Midland coincided with major developments in Argentina. Chair output was lower than usual, perhaps for want of any spare capacity to fulfil orders: the opportunities afforded by Latin America, in which all departments shared, were not to be passed up in view of the great efforts Bunten had made to win friends there. With the Baring crisis the opportunities passed away for ever. From 1890 until 1960 the company marked time.

During the 1880s Anderston diversified, not from necessity, but to take the opportunities presented to it. It manufactured further railway products, some newly developed, for familiar customers. Indeed its reduced output of chairs at the end of the 1880s might have resulted from an excess of demand for these new products over works' capacity. Anderston was looking to develop and broaden its

business from a solid base - demand for its existing railway products. It was not driven to do so from the weak position of a business whose staple product was redundant and whose prospects bleak. Businesses could be developed or, like Macnee's, bought in whole. High profits encouraged optimism. After 1890, and particularly from 1900, pessimism and decline seem endemic.

In the 1850s railways and all the activities connected with them were new. Over the succeeding generation the fluidity of earlier times congealed. Different parts of the globe experienced, at different times, phases of railway construction. The pre-eminence of British capital and political influence, and a strong grip on engineering and contracting, ensured that much of the business would come to Britain. By 1910 the position was changing; foreign and native competition was experienced in India and South America for which the new, barely developed, colonial markets of Africa were insufficient compensation. In retrospect there were clear pointers to the troubles Anderston came to experience in the 1920s.

The overwhelming characterstic of Anderston's business in this and later periods was collusion. This depended upon the business of supplying railways having settled into a pattern as much as had business through influence. All purpose ironfounding and engineering was giving way to specialisation be it in chairs or bath tubs - a boon for all of Anderston's businesses except its unspecialised machine shop. As the market segmented, specialist linkages developed between suppliers and customers and a limited number of agents, contractors, consulting engineers and so forth. Personal ties between entrepreneurial engineers and managers, through which matters had been arranged, had declined, but matching the small groups of purchasers seeking tenders in London was a small group of

manufacturers who rubbed up against one another. Their London agents would know each other; Anderston's managers would come to know those of their local rivals within the limited business society of Teesside. With business plentiful, it paid to make friends rather than competing for every order and thereby risking a fall in price levels. Depression could induce greater collusion to hold up prices and maintain excess capacity.

Collusion and influence could be complementary: pre-existing relationships based on influence could be recognised and institutionalised whilst with new customers not susceptible to influence, such as the Crown Agents for the Colonies blind allocation supplanted any need to attempt cultivation. Despite some evidence of co-operation with T. Eddington and Sons, another Glasgow ironfounder in the early 1860s to split contracts, organised collusion seems not to predate the 1880s[1]. By 1914 the amalgamation movement had produced several industrial giants such as Guest Keen and Nettlefolds[2] but, despite the potential, on the one hand, for economies of scale, or vertical integration which might by-pass the trade associations, on the other, and prospectively greater, defensive, collusive co-operation between small manufacturers, the relationship between the two phenomena (discussed below) is not clear cut.

Collusion may have encouraged laxity and blunted the competitive edge: like a drug the deadening effect of collusion required larger doses. Anderston facing, in 1912, coincidentally and simultaneously in its several businesses, foreign and domestic competition, a dearth of orders, low productivity, labour problems etc., sought more collusion not improved competitiveness. A recovery of orders was in prospect; there was no need to confront or acknowledge underlying difficulties. At Port Clarence, Anderston was

not in absolute decline. Its turnover, though not its profits in the last years before the First World War compared with that of the 1880s.

In 1884/5 the sales of the Port Clarence foundry were roughly double those of Glasgow (£317,000 to £165,000) and the overall sales of the Port Clarence works dwarfed the overall sales of Glasgow (£521,000 to £234,000).[3] Thirty years later Port Clarence completely overshadowed Glasgow,[4] due mainly to the latter's decline; it remained profitable throughout whilst Glasgow for a decade before the war was consistently unprofitable.

Fluctuations in sales and profits reflected the dependence of all branches of the business, with the partial exception of the Glasgow machine shop, upon railway orders, the bulk of them for export. Anderston was licensed to print money in the later 1880s with the rapid expansion in South America, in which it had a particular interest, coinciding with persistent high demand from India. 6200 miles were added to Argentine railways (1880-1890); 7250 to India ones (1880-1890). The Baring crisis brought these conditions to an end: the Indian system expanded by another 8350 miles during the 1890s, the appetite for stores of the guaranteed railways remained voracious whereas the Argentine system added only 2500 miles of new line (1891-1900).[5]

Prosperity returned to the latter market (7100 new mileage, 1900-1910) but not to Anderston. The opening up of the hinterland by the railway systems had given them access to native hardwood forests and to suitable, presumably cheaper, wooden sleepers at a time of financial retrenchment. New markets for Anderston arose in Rhodesia and the surrounding territories from the 1890s and in the colonial empire after 1900 but these were comparatively small beer, for

example, the total mileage of Rhodesia Railways and its associates, the largest such system, was only some 2650 miles by the middle 1930s[6], when all of British colonial Africa contained only 10000 miles of line. South Africa was to form the largest African market and had contributed to the boom in orders of the late 1880s. The Boer War and political disruption held back further developments until shortly before the First War.[7]

Developments in India, weakened Anderston's hold and foreshadowed trouble: the Bengal Iron Company had been founded. Tata's Iron and Steel Company was coming into production just before the War; foreign competition for the supply of steel products to India had increased;[8] steel sleepers were becoming more popular than iron ones (1912 and after). Sales for the sleeper shop had recovered from the crash of the early 1890s but profit margins had not: 14.8% (1886-1888); 12.0% (1896/7), 0.1% (1906-1907), 3.7% (1911/12) on similar tonnages.[9] Profit margins elsewhere in the business declined albeit less spectacularly; sales from Port Clarence in occasional years e.g. 1913/14 (£525,000) could match levels reached in the past but did not do so consistently: in 1911/12 only £281,000 of goods were sold and a business with the capacity to manufacturer 120,000 tons had produced only 50,000 tons.[10] Generally there was sufficient spare capacity in the business to cover most eventualities and a level of orders sufficient to avoid a desperate search for new products to fill the works - parts of which were too specialised easily to be adapted. Only the finishing of fishplates for local steel companies during the 1910s indicates difficulty in obtaining sufficient work for traditional products to keep the business going.[11]

Profits of £100,000 p.a. and dividends of 50% ceased after 1891: the return on capital employed sank from over 60% common in the years 1884/5 - 1890/1, to under 5% 1910-1912. Once the company had recovered from the shock of the early 1890s average profits of £30,000 - £40,000 p.a. had become typical.[12] The difficulties experienced after 1900 were not unique - many of its rivals were complaining at the depressed state of trade, their dividends and profits falling into a trough c.1910.[13] Only £27,000 was spent on new buildings and equipment at Glasgow over this thirty years,[14] 90% of it on plant and machinery; £65,500 was spent at Port Clarence, one third of it for new lands and buildings.[15] The new departments and products were added to Port Clarence - whereas the tie bar and sleeper plant in Glasgow was closed down[16] - where additional lands were acquired between 1884 and 1894 to give considerable scope for expansion. Little thought was given to the overall planning of the works where temporary buildings were thrown up ad hoc in response to demand and tended to become permanent. Buildings were extensive rather than substantial:[17] those for the foundry, smithy, wrought iron sleeper and tiebar shops and points and crossings departments at Port Clarence were valued at £9,230 (1884/5), compared with £13,400 for the machine shop, two foundries, smithy, grinding shops and tiebar yard in Glasgow.[18]

The limitations of the Port Clarence site (e.g. casting pits common for certain foundry processes, might flood), were irrelevant until the post-1918 search for new products, and outweighed by the advantages of good communications. Most of the works' output was shipped out from its private pier, extended in 1897, served by an internal railway system.[19]

Power for both works was originally provided by their own steam engines, transmitted through shafting and gearing to individual items of machinery. The north east was well served at an early date by various electricity undertakings with their own local grid.[20] From 1906/7 Port Clarence took its power from the Cleveland and Durham company.[21] In Anderston where the cost of steam power relative to the size of the works was high, an unfortunate experiment with one of the company's own-manufacture gas engines was made before making use of the readily available, but expensive, Glasgow Corporation power supply from 1911/12.[22]

Modernity was the exception. In Glasgow Cargill imputed the poor labour relations in part to the inattention of his predecessor. A poor working environment reflected insufficient investment but because the results of manufacturing in Glasgow were poor, new investment there was unattractive.[23] The removal of the top management to Middlesbrough reduced their direct interest in Glasgow - of the 1000 plus workforce of the early 20th century 70% were based on Teesside.[24] Ultimately, poor morale and productivity resulted: apprentices left rather than use 30 year old lathes taking two days to do work which modern equipment could perform in hours.[25] There was no shortage of alternative employment in the Clydeside engineering trades. The managers, brought up in the business, and usually staying with it for life, accepted what they found having no experience for comparison. Cargill, and those he brought into Glasgow after 1912, were exceptional in having joined the company in adult life.[26]

In London, Anderston, like most firms, had an agent but no permanent staff. It was not large enough to justify a London office; the organisation of its business with a small core of managers taking

all the decisions and a reliance on collusive arrangements with many other companies located in the provinces, did not require one. Decisions could be taken in the north east of England; meetings of any importance in London required the presence of Bunten or Dawson. Edward Corry, agent from the 1860s to the early 1890s was supplemented by Daniel Macnee after 1880 and ultimately supplanted by him. Macnee and Company continued to act for Anderston until the 1960s.[27] Their premises in Victoria Street, Westminster, were in the heart of the capital's engineering quarter where they rubbed shoulders with other agents and consulting engineers. It was Macnees, not Anderston, which advertised in railway gazetteers and year books.[28] When Anderston tried to make gas engines it sought a different agent, with, necessarily, a different set of specialist contacts, in a different section of the engineering trades.[29]

The survival of order and quotation books allows a detailed investigation of the business to be made, department by department (see Appendix 3 for statistics). Orders might be cancelled as in S. America in 1890/1, or might be for delivery over several years, as was the case with cast iron segments and large sleeper and chair orders. Some Glasgow work appears in the foundry order books kept at Port Clarence; and steel sleepers and their fittings are ordered through the foundry. Hence the connexion between orders and sales, for which few detailed records survive, is uncertain.[30].

The turnover of the Port Clarence Foundry in the late 1890s and early 1900s frequently exceeded that of the rest of the business at Port Clarence. Its sales in 1891/2 (£64,000) were but a quarter of those of the previous year: a more dramatic drop than that experienced in Port Clarence's other departments, all of which

suffered from the collapse of South American orders, but one which was followed by a more consistent recovery.[31]

FIGURE 4.1 Supply of Chairs
(to specimen home railway companies)

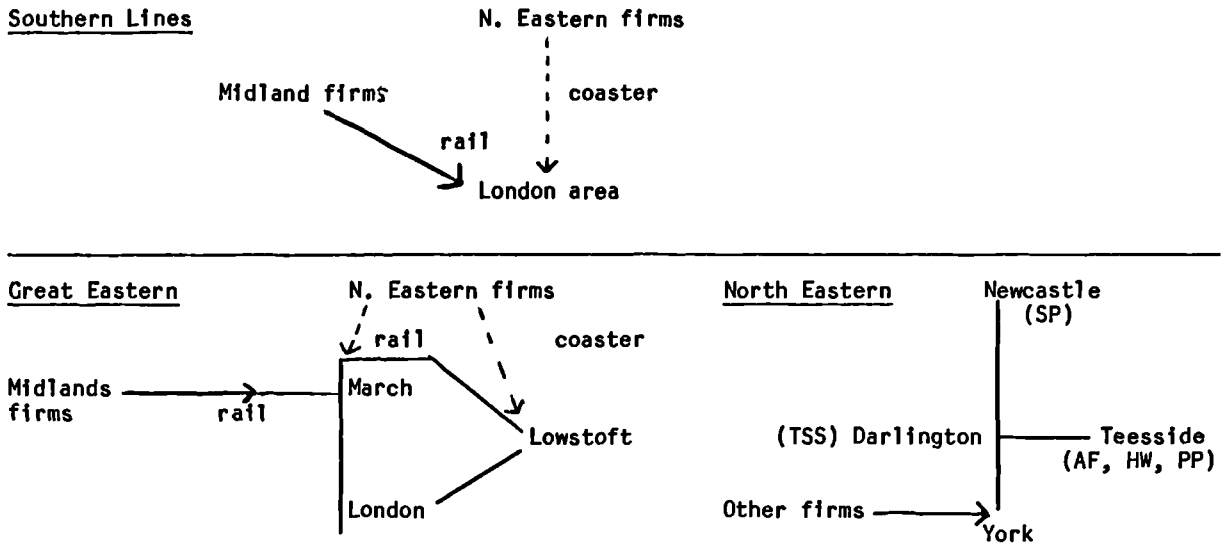


TABLE 4.1

CHAIR PRODUCTION

	Caledonian (tons p.a.)	% of all chair orders
1884-89	5725	54.7
1889-94	5020	68.9
1894-99	11732	63.5
1899-1904	5650	40.4
1904-09	6100	50.5

Source: Order book D/AF 265-268

TABLE 4.2

(Steel and Iron) SLEEPER PRODUCTION

	India %	India tons p.a.	S. America %	S America tons p.a.
1879-84	18.7	4923	62.6	16509
1884-89	48.4	46573	47.6	45407
1889-94	41.8	15943	27.4	10442
1894-99	82.2	32150	6.5	2520
1899-1904	58.3	10736	1.0	174
1904-09	57.6	18265	24.2	7686
1909-14	74.6	24359	1.9	619

N.B. 3 large South American orders of 1889-90 have no tonnages specified. The cancellation of South American orders during 1891 helps to offset these.

% is of Anderston's ascertainable orders for sleepers

Source: Order books, D/AF 265-268.

TABLE 4.3

ORDERS overall of FRIENDLY RAILWAYS

Great Indian Peninsula & Indian Midland 159000 tons 1886/7-1888/89

Buenos Ayres Gt Southern & B.A. Rosario 149000 tons 1887/8-1889/90

See table 3.2

Source: D/AF 265-267

The Port Clarence foundry retained its central role in the business throughout. Chairs and iron sleepers formed its principal output. Some 80% of chairs were made for domestic consumption, with India the most important export market. The early Indian main line railways were constructed solidly according to British practic using bull head rails.[32] Although a limited business was done in S. Africa, S. America and Egypt, the general use in the growing markets of African and the colonial empire of flat bottom rail, securable directly to the sleeper to give a lighter track formation more suited to the physical conditions and economic backwardness of the territories, inhibited orders.[33]

Cast iron bowl sleepers, which continued to be supplied to the Great India Peninsula Railway and certain other Indian lines until the 1920s, were superseded by other designs of cast iron, wrought iron and steel sleepers in other export markets from the later 1880s.[34] Chairs, and to a lesser extent, bowl sleepers were sold to mature customers and markets. Indian railway building continued on a considerable scale. At home replacement orders and those required for the increase in track mileage brought about by doubling existing lines or adding extra sidings, exceeded orders flowing from the construction of new route mileage. Orders fell from c.24,000 tons p.a. (1878/9 - 1883/4) to 13,000 tons p.a. (1898/9 - 1908/9).[35]

Anderston's principal chair customers were the Caledonian, other Scottish lines and the North Eastern Railway, all close to its plants, and south of England railways which, serving no industrial areas, lacked local suppliers. Many railways possessed their own chair foundries and would place only overspill orders with private makers:[36] Anderston had occasionally supplied the London and North Western but for considerable periods received no invitations to tender. Other influences shaped the market such as Anderston's special relationship with the Caledonian - the Railway and General company in Nottingham seems to have tried to establish similar ties with the lines in its area - whereas the North Eastern railway had four private makers on its system and made none of its own chairs.[37] Until 1921 each major company had its own design of chair of different weights, designed to hold different weights and sections of rail, secured to the sleepers by differing numbers of different types of screws though holes differently spaced.[38] Some specialisation by makers in respect of the special chairs required for use with the various angles, shapes and configurations of junctions on each railway system may have occurred.

In 1878/9 commission payments were being exchanged with Head Wrightson:[39] Anderston had been established on Teesside long enough to make its competition felt and it had started to receive chair orders from the North Eastern.[40] Collusive competition, so much a part of Anderston's business and ethos until the 1960s, dates, in an organised form, from January 1881 when arrangements dealing with chairs, cast iron sleepers and iron fencing were concluded.[41] Prices seem to have been reached by ad hoc consultation not by the setting-down of a fixed tariff: for every 14 units taken by Anderston, Head Wrightson was to take 10, Wilsons Pease 5 and Smith

Patterson, primarily sanitary engineers, an unspecified (lesser) quantity.[42] The aim of the ring was not necessarily to maximise prices but to maintain, restore or increase levels by limiting competition (and price cutting) and secondarily to institutionalise links between certain suppliers and certain customers. The payment of commissions by the successful tenderer to those who had protected his prices might induce certain firms not to compete seriously for certain tenders, i.e. not to expend money on all the patterns required for all business; they would still receive their overall share of work.

The four northern firms included 6d. per ton in every tender for each other member of the group who had, in a particular instance, been invited to tender. Smith Patterson, fated on several occasions to receive no such invitation, would in such instances, secure no commission.[43] During 1885/6 the Patent Nut and Bolt Company (PNB) with a chair foundry at Cwmbran, Monmouthshire, joined the agreement taking the same share of the expanded cake as Head Wrightson.[44] PNB withdrew in 1901/2, roughly at the time of its amalgamation into Guest Keen and Nettlefolds (GKN), to be re-admitted in 1903/4 when, having inflicted sufficient damage upon its former partners, they accepted its demand for parity with Anderston in the division of work.[45]

From the outset the Cast Iron Chair Association (CICA) shewed flexibility and adaptability: a few examples will illustrate the sophistication of its workings and the possibilities open to the many other "Associations" mentioned hereafter.[46] Anderston's role, as the largest maker, as the link between the north eastern firms and the Scottish ones, and as informal secretary and treasurer of the Association, was pivotal.[47]

Whereas Anderston had regularly supplied the Great Western Railway (GWR) with chairs for delivery to the northern parts of its system between 1878 and 1885, none was supplied thereafter.[48] GKN was later to regard the GWR as its private preserve. The coincidence of the change with PNB's joining the Association points to a deliberate self-denying ordinance. Likewise, PNB never tendered for business with the North Eastern or the Scottish lines which could be regarded as the home markets of other members.[49]

The North Eastern specified delivery at several points around its system for railway chairs. The possibility that it could play off one maker against another if they were unorganised and that they could turn the tables on the N.E.R. if they were organised might have encouraged the Association's foundation. At southern delivery points, e.g. York, competition was experienced from outsiders during the 1880s but ad hoc arrangements might be made with them.[50] Deliveries in the north east were kept within C.I.C.A.: the three principal local makers quoted a mixture of equal prices and prices with slight variations to secure the (unequal) division of individual orders between them. Smith Patterson, which quoted slightly higher received orders (but no commissions) on several occasions; it regularly quoted lowest for points and crossings chairs to be delivered to Gateshead. Wilsons Pease usually quoted lowest for points and crossing chairs for Darlington, with Anderston and Head Wrightson taking but occasional orders. When deliveries to York began to be sought Wilson Pease received the allotment, however, it suffered occasional disruption from outsiders.[51] The successful firms duly paid commissions to the two losers.

To the Great Eastern northern firms delivered by coaster to Lowestoft, taking, in the 1880s, entire orders turn and turn about.

After 1894 deliveries by rail to March were often lost, in the first instance by 2/2d. a ton to the South Yorkshire Iron Company of Leeds when the northern firms' Lowestoft price was 2/- a ton below their March prices and carried 2/- a ton in commissions. Quotations to March were cut, with commissions excluded and a 'make' price up to 1/1d. per ton below that for Lowestoft. Durings its break with C.I.C.A., P.N.B. took a number of these orders and thereafter competition was felt from Taylor Brothers of Sandiacre the Railway and General Engineering Company of Nottingham and Williamson's of Wellingborough. Northern firms continued to lose orders despite their commission-free quotations but, in one of several hopeful signs of the two years before the Great War, the Midland firms were integrated into the system with 6d. commissions all round and arranged prices causing orders to be divided.[52] Like Smith Patterson, such firms received no fixed allocation: to have attempted to do so might have led existing makers to press for a comprehensive renegotiation of terms.[53]

Neither tenders nor orders were received from the Glasgow and South Western Railway despite both Glasgow and northern makers being well placed to supply it. Howie of Kilwinning secured most of the business and the even smaller firm of Hunter's of Ayr, whose quotations or threatened competition were used by the G. & S.W.R. to keep Howie in line, the rest. The Association left Howie this business; he rarely ventured to quote for any other.[54] The Highland and Great North of Scotland systems possessed a local supplier in the Rose Street Foundry of Inverness. Glasgow firms could deliver by rail to Perth and Aberdeen, northern firms by coaster to Aberdeen or Inverness. Rose Street enjoyed an arrangement with Anderston as well as exchanging commissions with northern firms from time to time through the C.I.C.A. apparatus.[55]

Deliveries to the North British had settled into a pattern by the late 1880s of northern firms supplying it at Edinburgh (by coaster or rail), Carlisle and Riccarton Junction (on the Borders) whilst Glasgow firms made deliveries in Glasgow. Chairs supplied from England were subject to the usual commissions; those from Scotland to a self contained set of mutual payments between Anderston, Goodwins and Edingtons, with MacFarlane Strang and the British Hydraulic Foundry replacing the two latter from the early 1890s.[56] Firms delivering to the N.B.R. in Glasgow seldom tendered for deliveries elsewhere. Anderston conceded the other Glasgow firms a price advantage of 3d. - 6d. a ton; they then quoted equal prices, divided each order and paid Anderston 6d. a ton as the Scottish loser but nothing to the English ones. Anderston could conciliate rival Scottish makers by giving up its claim to N.B.R. work in Glasgow whilst taking a share in other deliveries to the N.B.R. as an English maker, receiving commissions, as appropriate in both guises.

Had Anderston adopted a less conciliatory approach and dropped its strong adherence to the cosy environment provided by the Associations it could have driven the Glasgow firms from the field. Obliged to use higher priced local iron or import Cleveland pig, their manufacturing costs were higher, e.g. British Hydraulic's price for ordinary chairs at works was £3/9/6d., Anderston's Port Clarence price was £3/1/3d. giving prices of £3/11/6d. and £3/12/- respectively delivered to Glasgow.[57] It needed little to cut the ground from under the Scots but such action might harm the general level of prices and sow dissent in C.I.C.A. After experiencing P.N.B.'s[58] competition Anderston feared that it had more to lose from disruption than from maintaining small net payments through C.I.C.A. to friendly rivals happy to collude. Price competition might get out

of hand, which was in no-one's interest least of all that of a flabby firm with its Caledonian prize to protect.

After 1906 Melvin's of Alloa, exclusive suppliers of points and crossings chairs to N.B.R., joined the general arrangement, receiving protection from all other makers upon ordinary chairs to be delivered at Ladykirk, Perthshire, but tendering for no others. Melvin's paid to Anderston and Head Wrightson, the interested English makers, 6d. per ton each upon its deliveries for their support. Latterly, Howie required intermittent bribes to stay out of N.B.R. business to which he was not "entitled".[59]

Whereas in 1884 the Glasgow foundry had in hand chairs and iron sleepers for various Scottish and Indian lines and for the Buenos Ayres Great Southern,[60] after 1890, when it ceased making sleepers,[61] its only consistent large railway customer was the Caledonian. Some contracts for Caledonian ordinary chairs were executed at Port Clarence; all points and crossings chairs for it were made ar Glasgow, where the patterns were kept, and the Glasgow works in expectation of large and continuing orders made Caledonian chairs for stock if short of work.[62] The Caledonian was Anderston's principal domestic customer: from 1884 to 1909 its orders averaged 5000-6000 tons p.a., i.e. from 30% to 70% of Anderston's chair output in any one year (see Table 4.1). The peak period (1894-99) coincided with Bunten's rise to power in the Caledonian.

On its Caledonian orders Anderston paid English firms no commissions. It achieved a monopoly in supplying the Caledonian with points and crossings chairs and a stronger position in respect of ordinary ones relative to Edington's and Goodwin's as the 1880s wore on.[63] By 1889 Anderston received 1/- a ton commission on Caledonian orders taken by the other firms but only paid it on its points and

crossings chair orders.[64] Within a few years of their respective entries into the chair business (1890 and 1894),[65] MacFarlane Strang and British Hydraulic were exchanging the usual 6d. a ton commissions with Anderston on the small quantities of Caledonian orders they received.[66] Anderston which acted as sole co-ordinator and intermediary between the firms and C.I.C.A. continued to take the major portion of the Caledonian's Glasgow order, all orders for delivery elsewhere (Aberdeen, Edinburgh, Carlisle etc.) and all points and crossings chairs.[67] When, in the only upset to this arrangement, Campbell and Jones of Larbert underquoted Anderston by up to 2/3d. a ton the Caledonian, on the strength of their special relationship, gave Anderston the opportunity to reduce its tender to match those of its competitor to secure the bulk of the order.[68]

In time the effectiveness of Anderston's personal links to the Caledonian boardroom was doomed to diminish: the later generations of managers of Anderston were not of the class from which railway directors were drawn. In both railway and foundry power passed increasingly to managers: the larger railways became more bureaucratic and less amenable to the personal influence of directors.[69] To replace the loss and waning influence of friends at court links between the two sets of managers could be institutionalised. The foundry's Glasgow managers maintained regular friendly contact with the Caledonian Stores Superintendent capitalising upon links forged by Houldsworth, Cowan and Bunten, seeking to continue them as ties of sentiment buttressed by the continuity of the Caledonian's personnel as much as Anderston's. Other English manufacturers, assured of their share of chair orders through C.I.C.A., had neither need nor incentive to become involved:[70] they might have their own special interests to protect,

they lacked the ear of the Caledonian (and probably the patterns for its chairs). Other Scottish makers possessed more extensive local contacts, however, Goodwins and Edingtons seem to have quit the business after 1890: the former was a bridge builder and structural steel firm, the latter a pipe maker which had previously given up locomotive building. Both had participated in the export market the collapse of which, in conjunction with Anderston's strengthened hold upon the Caledonian could have signalled to them the need to retreat. Anderston's larger lower cost capacity at Port Clarence could cast a shadow over Scottish rivals such as MacFarlane Strang (which diversified into chairs in 1890 as the boom bust) and the financially weak British Hydraulic. These two firms soon proved willing to co-operate and be conciliated with a small share of Caledonian business. Price cutting by such firms would be more a self inflicted wound than a means of damaging Anderston.[71]

Anderston's fondness for forming and maintaining agreements suggests that having established a leading position in the track fittings business, it wished to conserve it with the least possible effort. Collusion had complemented personal links in the 1880s; by the 1900s it had supplanted them at the core of Anderston's business strategy. Anderston was a satisfied power sliding into decay, seeking to maintain a system of alliances which would preserve a familiar world order (in reality receding) in which its power had been great. It had become a consumer of the security system it had created as it outgrew its previous aggressive expansionism. Appeasement of would be rivals, whose legitimate aspirations were treated sympathetically took the place of aggression which might place unbearable strain upon Anderston and its alliances. It outgrew competitiveness and hoped, by its moral example, to persuade others to

do likewise. Maintenance of the alliances (associations) became an end in itself as, in due course, Anderston's position was further eroded.

Anderston had long supplied C.I.C.A.'s principal Indian customers, the Great Indian Peninsula Railway with sleepers, chairs, fencing and miscellaneous items: 13500 t p.a., 1884-9; 7300 t. p.a., 1889-94; 13600 t. p.a., 1894-99, 2900 t. p.a., 1899-1904; 13600 t. p.a., 1904-1909.[72] Before the temporary competition from Patent Nut and Bolt (reflected in the figures for 1899-1904) orders from the G.I.P.R. (and its Indian Midland associates) had been disproportionately the preserve of Anderston. Many firms, including Goodwins and Edingtons tendered, Head Wrightson took occasional orders (1883 and 1889) but 7 of the 9 orders for fencing and 16 of the 19 for sleepers and chairs placed in the seven years to 1901 had been placed with Anderston which, in July 1899, was preferred to P.N.B. whose tender was slightly lower just as it had been given the opportunity to reduce its tender in October 1882 to secure an order.[73] However, during 1902 and 1903 when P.N.B./G.K.N. was outside the Chair Association, Anderston lost seven of eight orders for materials required by the G.I.P.R. to G.K.N.[74]

Certain patents for designs of sleeper fastenings held by Anderston since the middle 1880s expired between 1899 and 1901, thus, perhaps, providing Patent Nut and Bolt with an opportunity it was ready to sieze. These patents seem to have accounted for Anderston's complete dominance of Indian Midland business until that company was absorbed by the G.I.P.R. in 1900. In view, however, of close connexions with Watt and Berkeley it may[75] be conjectured that the patent designs were themselves a product of collusion.

During the 1880s Anderston paid the usual commissions to those losing out on G.I.P.R. orders plus 1/- a ton to Edingtons. By the later 1890s MacFarlane Strang and Smith Patterson were quoting for parts of the orders and receiving commissions on those items whilst Sir Theodore Fry and Co. of Darlington and P. and W. McLellan of Glasgow were quoting for the wrought iron items (tie bars, gibs) receiving commission on these. Anderston often arranged to buy in the tiebars from firms such as Frys.[76]

Anderston's dominance of G.I.P.R. orders diminished with the readmittance of P.N.B./G.K.N. to C.I.C.A. but it remained the largest supplier: 7 of 12 orders between 1904 and 1910 were placed with Anderston, the balance with G.K.N. Moreover the expanding chair makers of Nottingham and the Anglo-Scottish owned, London-based, Bengal Iron Company had to be accommodated. By 1912 the participants in commission arrangements for the G.I.P.R. comprised:[77]

(1) Chairs: Anderston, Head Wrightson, Wilsons Pease, Smith Patterson, G.K.N., Railway and General, Williamsons of Wellingborough and the Bengal Iron Company

(2) Iron Sleepers: the above plus, on certain occasions, British Hydraulic and MacFarlane Strang

(3) Fencing: Anderston, Head Wrightson, Wilsons Pease, G.K.N. and, from time to time, Frys of Darlington

(4) Tiebars: Anderston, Head Wrightson, G.K.N. and Frys.

Orders for tiebars and fencing might be lost to Bayliss, Jones and Bayliss, who were outside the arrangements, or to Bain of Coatbridge, who intermittently participated in the commissions - still 6d. per ton to losers - even when the sleepers themselves were secured. Loss of such orders became more frequent as prices fell upon the break-up of the Wrought Iron Association of Scotland under outside competition.[78]

TABLE 4.4

ANDERSTON AND PATENT NUT AND BOLT, 1896 (Calendar Year)

	Anderston (orders, tons)	Patent Nut & Bolt (sales, tons)
Cast Iron Sleepers	70089	23320
Cast Iron Chairs	11544	7614
Cast Iron clips and jaws	2051	1021
Wrought Iron keys	675	238
Wrought Iron tiebars etc.	12868	4084
Steel sleepers	9793	-
Cast iron segments	7000	-
Wrought iron posts and wedges	1784	-
Steel Sleeper keys	485	521
Fishplates and bearing plates	-	3159
Bolt Shop etc.	?	8251

Source: H. Edgar Jones A History of G.K.N., volume 1, p.176 and D/AF 266 Order Book

The ability of the Bengal company to compete was limited by its high raw material costs, heavy transport costs within India and problems of quality.[79] India remained the largest market for metal sleepers of all kinds. It too had boomed in the 1880s; but continued into a prosperous 1890s: from 1884-1889 India took 48% of Anderston's sleeper output, from 1894-99 it took 82%. Increasingly Indian railways were ordering steel sleepers in place of iron ones. Anderston had lost its pre-eminent place in C.I.C.A. through G.K.N.'s competition and suffered from reduced demand for chairs and iron sleepers in the early 1900s. Although it made steel sleepers it was the least important firm to do so; there was foreign competition and potential native competition in the supply of such goods to India.

The Indian market could no longer be apportioned without referring to the Indians. Tatas, a native concern, was expanding and the collapse in 1915 of its local agreement with the Bengal Iron Company to keep out of iron sleepers and chairs in return for a free hand in steel railway fittings cast a shadow over the future of business with India.[80]

The Chair Association of 1886 was still recognisable in that of 1914. Anderston declined in importance as a manufacturer, although it remained the largest chair maker in the north of England and regarded itself as the principal maker in Scotland. Its position within the Association remained disproportionately strong through its local influence in the two principal manufacturing areas, its role as intermediary between the two sets of firms and, through Glasgow, its link with Bengal. Payments from C.I.C.A. to firms as diverse at British Hydraulic, Darlington Rolling Mills (late Frys) and the Bengal Iron Company were routed through Anderston.[81] The Association was under internal and external pressure: in India it had become necessary to cut prices to cut out competition from steel, wood and native made sleepers and face a future of increased native competition;[82] at home G.K.N. which had successfully challenged the Association in the early 1900s, issued further threats in the slack period of 1910 the "disastrous consequences"[83] of which Anderston side tracked by (endemic) appeasement. Demands from Head Wrightson for an increased share of business to match its increased capacity forced Anderston to abandon its proposal to grant fixed allocations both to the midland firms and to Smith Patterson.[84] Attempts to reconstruct C.I.C.A. on a more rational basis to allow in firms who had worked with the Association but were not of it

endangered C.I.C.A.'s future by bringing forward the demands and disputes of current members.

Two new products were introduced into the foundry department: cast iron tunnel segments and tramway fittings. Each brought a limited diversification of the foundry's custom: tube railways and electric tramways whose demand in their initial burst of expansion around the turn of the century was independent of that from traditional railway customers.

Four cast iron curved segments, bolted together, formed a ring to line deep tunnels. From 1900 road tunnels and large scale municipal drainage and sewerage schemes, many of them in London, brought extra demand to supplement that of the tube railways. Nevertheless, the London underground system remained the single greatest customer for segments and the peaks and troughs of production from the 1890s to the 1950s match closely the progress of that system.[85]

The other northern chairmakers became segment makers as did British Hydraulic which supplied segments for the Glasgow subway railway.[86] Anderston was not a leading firm: it may have followed the pack. Its policy, using the friendships established with its competitors through C.I.C.A., was of "hanging on to Head Wrightson with both hands".[87] From its first order for the Waterloo and City railway (1894) to 1911 the bulk of orders was subcontracts from Head Wrightson or obtained in connexion with them.[88] Segment orders for major public works were infrequent but individually large.[89] Installing capacity for the occasional large order was uneconomic. Collusion favoured by the cast of mind prevailing in firms such as Anderston formed the natural solution to the problem. The erratic

incidence of orders did not favour the creation of a formal structure such as that of C.I.C.A. Individual enquiries were dealt with ad hoc to secure a division of work: for example, individual firms might agree to tender at roughly equal prices but each only for part of the business.[90]

In the east midlands large iron and coal combines with an established interest in producing iron pipes, (Stanton Ironworks, Staveley Iron and Coal Co., Sheepbridge Coal and Iron Co.) came to predominate. Informal arrangements were made between various groupings of makers in various locations and combinations to share out work. The 75000 tons required by the Central London Railway (1896) were to be divided nine ways and the 17000 tons required in the same year by the City and South London to be split between three other firms. Business could still be lost to outsiders.[91]

Segments were, unlike Anderston's other products, required exclusively for new works for which several contractors might tender. Thus, although the northern firms made arranged quotations for segments for the Rotherhithe Tunnel to Walter Scott, a Newcastle contractor, his failure to secure the work caused the segments to be placed with Staveley by his successful rival. Contractors were likely to have favourite suppliers and a firm such as Anderston, often hidden behind Head Wrightson, might be unknown to several contractors and fail to receive enquiries.[92]

Segments provided valuable counter-cyclical demand for chairmakers: the fortunes of tube railways remained distinct from those of main lines. The first tube had opened in 1890 leading, once its teething troubles had been overcome, to the promotion of a group of more ambitious schemes in the middle 1890s, all completed by the middle 1900s. These helped fill the gap caused by the cessation of

orders from South America during the 1890s. New conventional home railway building declined. One cause was the loss of suburban traffic to the underground railways of London and the tramways of the provinces whose construction brought Anderston orders to offset that decline. Poor returns on capital and financial difficulties brought a period of consolidation to the London Underground Group until the amalgamation of the tube companies and their acquisition of their tramway or bus competitors after 1910 pointed to a further expansion which the war was to interrupt.[93]

The Cast Iron Pipe Association had been established in 1908 in the anticipation of large orders; several of its leading members were secondarily segment makers.[94] With this model and the prospect of large segment orders, Staveley launched the Cast Iron Segment(s) Association (C.I.S.A.) "to improve prices... and to prevent... undue competition" at a meeting of makers (3 May 1910). The ten founders were joined by Thomas Butlins of Wellingborough from January 1912. Their practice was to enhance prices by 1/- a ton for each member (10/-) and pool the proceeds.[95]

In its first year C.I.S.A. handled 34250 tons of business and paid £15,225 in commissions: by the end of 1911 a further 12100 tons had been apportioned, at which point work for sewers was about equal to that for railway tunnels. To suit the circumstances no commission might be charged but where no outside competition was anticipated commissions were routinely increased to 13/9d. per ton by 1913. Potters of Govan had taken a contract for Manchester Corporation Waterworks on which Staveley had sought 20/- a ton commission; Robert MacLarens of Glasgow had to be bribed by 6d. a ton not to queer Stanton's pitch in negotiations for a 36000 t sewer contract for

Buenos Ayres (January 1912) whose price had been cut in the face of possible continental competition.[96]

Anderston was part of an inner ring with Smith Patterson and Head Wrightson; by standing aside from certain inquiries for an extra 1/- a ton in private commission from the other two, Anderston believed that it could get "the best of the bargain".[97] As a minor segment maker Anderston was as devoted to collusion as it was as a major chair maker. Staveley, which acted as C.I.S.A.'s secretary, boasted of its success in its main aim of securing more profitable prices.[98] Business was buoyant until 1916; outside competitors had been brought into membership of the Association or co-operation with it.[99] To September 1915 £42,350 had been paid in commissions which may be regarded as approximately the sum wrung from purchasers through the Association's activities; in 1914/15 as in 1913/14 the Association apportioned c. 44,500 tons of business.[100]

As with other arrangements the details of operation were modified from time to time to reconcile differences, e.g. commissions from 1913 became more closely related to output in response to the pressure of larger firms who jibbed at the subsidy they were providing to smaller ones through the previous equal distribution of pools.[101]

From 1904 to 1911, a period of little tube railway construction, Anderston had been without segment orders: it was now assured of a mixture of orders and compensation. The claim that collusion maintained profits despite overcapacity is an accurate expression of its workings in the segments industry.[102]

Tramway business flourished in the 1900s to complement the dearth of segments: cast iron insulation frames and covers, boxes, hydrants, yokes and manhole covers, were analogous to the lever

boxes, tank plates and track fittings already manufactured by Anderston. Only tramways using the conduit system of current collection (in which there were pick up and return rails buried under the road surface) required such objects. A few experimental lines apart, the London County Council's system was the only one so constructed and the L.C.C. and its contractors, the only regular purchasers. Elsewhere current was collected from 'unsightly' overhead wires: a system cheaper to construct and easier to maintain.[103]

By British standards the L.C.C.'s tramways were late to electrify. It was, nevertheless, the largest system in Britain (c.150 route miles)[104] and between 1901 and the outbreak of war absorbed some 52000 t of material from Anderston: requirements peaked at 11600 t 1905/6 and 9300 tons 1908/0 in the trough of segment orders and diminished from 1909 once the principal construction and rebuilding phase terminated.[105] British tramways overall were in terminal decline from the end of the Great War.[106] Although London's system survived to 1952 only renewal orders declining in size and frequency could be expected. Anderston's declining to participate in the Tramway Exhibition of 1911 shewed a realisation that it could expect little more work from conduit tramways.[107]

Head Wrightson and Wilsons Pease were Anderston's rival suppliers: as usual collusion flourished.[108] Within 6 months of the first orders commissions of 6d. per ton to losers were being paid. As with seg ments it is unclear how far Anderston diversified of its own accord and how far it followed neighbouring chairmakers into new business.

Occasionally other products such as sashweights and firebars were made. From 1910 some stoker links for the boiler makers Babcock and Wilcox, usually made in Glasgow, were produced at Port Clarence.[109] Fishplates were produced for Dorman Long, Cargo Fleet and other local steelmakers in the same depressed period, more as a make weight to maintain tonnage through the works whilst improving friendships with useful local suppliers, than as diversification.[110]

The points and crossings department for the manufacture of railway junction layouts and ancillary equipment was the first addition to Port Clarence. Anderston's foundry already made the complicated patterns of chairs required at junctions; lever boxes to house parts of the operating mechanisms of points could be cast in the foundry; steel rails to be planed into shape were available from many firms on Teesside and elsewhere. Although rails continued to be supplied to Anderston from firms such as Moss Bay (W. Cumberland) or Ebbw Vale (S. Wales) proximity to a rail roller would prove increasingly advantageous: points and corssings might form a subsidiary part of an enquiry for rails and sleepers.[111]

Untypically the points and crossings business was bought complete. Anderston acquired the Rotherham based firm of Daniel Macnee preferring to transfer the bulk of the plant and workforce to an undeveloped portion of the Port Clarence site than spread the management of the company thinly between three plants or keep on Macnee to run the business.[112] Anderston's operations on two sites echoed those of P.N.B.; its wholesale removal of a works foreshadowed Sharp, Stewarts, locomotive builders, shifting from Manchester to Glasgow in the mid-1880s and Charles Camell the railmakers from Dronfield, near Sheffield, to West Cumberland in 1883.[113]

Anderston's first known business contacts with Macnee (Autumn 1879) may have led to the sale of Macnee's business, or the prospective sale of the business may have brought about the contact. Developments coincided with Bunten assuming full charge of affairs. By spring 1881,[114] Macnee was in London using his contacts and goodwill to divert business to his erstwhile works now in operation at Port Clarence. When Edward Corry retired in the early 1890s,[115] Macnee succeeded him as Anderston's London agent.

Macnee held various patents at home and abroad: his design of lever boxes was used by the Caledonian Railway pre-1914. He retained his axle box patents and continued an agency business with a variety of axle makers and spring steel manufacturers based in Rotherham and Sheffield. He subsequently represented various Scottish firms supplying railway equipment to form a web of connexion complementary to that spun by Bunten.[116]

Few records survive for the points and crossings department, a reflexion in part of Macnee's rôle in conducting the business. It is impossible therefore to asses the scope of collusive competition and the particular significance of the works "arranged points and crossings" which appear in commission accounts.[117] Anderston's customers included the Great Eastern and North Eastern railways and several in the south of England; many main lines, in whole or in part, manufacturered points and crossings for themselves.[118] Export customers comprised the usual mixture: Indian government, private and native state line; South Africa; Egypt; the Crown Agents and the colonial empire. Orders from Livesey associated lines in South America were plentiful, those from the Buenos Ayres and Pacific and its associates were not.[119]

Sales and commission payments peaked in 1889/90, based, it may be assumed, on the same foundations of S. America and India which were bringing unmatched prosperity to the rest of the business. Sales recovered in the later 1890s and were typically £50,000 - £60,000, through to the war, dropping to £40,000 in 1910/11 - 1911/12; commissions had peaked again in 1901/2, and in 1914/15 as renewed prosperity and collusion marched together into the war.[120] The intervening difficulties in which the profit margins of the department declined steeply (c.17%-18% of sales in the three quinquennia 1884-99; 14.3% 1899-1904, 12.6% 1904-09, 7.1% 1909-14) arose largely from increased competition which the prosperity of the later 1890s had fostered. Rising wages (c.14%-15% of orders in the quinquenia 1884-1904, 18% thereafter), common throughout the business played a lesser part as did static fixed costs in the face of falling sales.[121]

The Darlington Railway Plant and Foundry Ltd., an entirely new manufacturer established in 1899, steadily increased its capital until 1911. To carve out a market share it cut prices aggressively to be matched by its long-established neighbours, Thomas Summerson and Sons Ltd. Summersons had, for family reasons, become a limited company in 1900; coincidentally over the following five years it expanded and modernised, financed by £25,000 of debentures. The Nottingham firm of John Taylor and Sons Ltd., which had expanded in the later 1890s, was reconstructed in 1900 as the Railway and General Engineering Co. Ltd. intending to spend half its capital of £80,000 upon a new works. By 1908 it had issued stocks and debentures totalling £127,000. Anderston was, therefore, faced locally and nationally with new or renascent competitors possessing modern plant,

eager to obtain orders to pay for their recent investments, whose competition was not confined to points and crossings (see above).[122]

Whether through overcapacity or an absence of arrangements, competition intensified and prices fell. To the more intensive price cutting of 1910-12, when work was short, Anderston's reponse foreshadowed the 1920s: business at such a price was not worth having.[123] The poor state of trade was used by Summersons in 1906 to excuse its results over the previous five years and by Railway and General from 1907 to explain falling profits and vanished dividends. Between 1908 and 1912 the profits of Darlington Railway plant were almost halved. In all firms profits revived strongly from 1912 onwards.[124]

Competition had cut profits; Anderston therefore adopted its usual expedient of seeking collusion to cut competition. After a faltering attempt in May 1909,[125] Anderston, Summersons and Darlington had, by 1911, confected a commission agreement covering supplies to the North Eastern Railway and other local consumers.[126] A more comprehensive syndicate of makers fell through because of Summersons' intention to fight Darlington by matching its low prices.[127] Anderston hoped that Darlington's low reputation amongst consulting engineers would allow respect able makers (itself, Isca, Patent Shaft, Summersons) to add c.15% to their quotations and split the proceeds.[128] Discussions continued from late 1910 to March 1911 as prices were cut down to costs and Summersons was obliged to admit that it was making no money from its aggressive tactics. By 1912 Anderston could console Macnees, whose commission income had suffered severely, that a large volume of business as in prospect albeit at a low price.[129]

In September 1913 the three northern firms included £1 per set for mutual commissions upon a tender to South Africa, ad hoc co-operation with other manufacturers and Anderston's proposal to divide certain orders 40% to itself, 35% to Summersons and 25% to Isca seemed to have borne fruit.[130] The war became a catalyst for further collusion but beforehand recovery was sufficiently widespread for J.B. Peat, a director of Head Wrightson, to consider entering the points and crossings business. Railway and General remained outside any arrangments and took orders, e.g. from the Great Indian Peninsula at "very low prices".[131]

Other departments were established to manufacture further types of track fittings. As steel was replacing iron in railway rails so from the 1880s to the 1920s steel sleepers gradually supplanted iron ones in countries whose climate and fauna would destroy wooden sleepers. (Steel sleepers were hydraulically pressed into shape then coated in tar or creosote to prevent rusting). The search for a lighter metal sleeper had led via the wrought iron bowl sleeper, made at Glasgow and, in its early years, at Port Clarence and the transverse wrought iron sleeper, first ordered for S. Africa, to steel. For the lighter track formations required in Africa steel was technically attractive; the lowering of steel prices relative to iron prices made it financially attractive.[132]

During 1884 and 1885 Anderston (Bunten and Murray) obtained four patents for improvements to the design and manufacture of metal sleepers. That of January 1885 provided for the formation of jaws on the sleeper surface to bite the rail which was secured by a tapered steel key driven into the jaw. This 'Rendel type' sleeper became the standard design made in Britain: Anderston shipped 5400 tons of them

during 1885.[133] The ubiquitous James Livesey patented a development of this sleeper design in 1887 with the jaws pressed from a separate plate rather than the whole being pressed as one.[134] In and around 1890 the market was still in flux: steel sleepers were shipped to S. America and India; wrought iron transverse sleepers to S. Africa and S. America; cast iron sleepers with steel jaws to certain S. American lines; and cast iron bowl sleepers to many Indian lines. Livesey sleepers of various designs were bought by S. American lines within and without his influence.

Steel sleepers were generally for use with the flat bottom rail commonly found abroad and, where narrow gauge, light weight, steeply graded formations could be justified but more ample ones could not, within the Empire. India took c.5000 tons p.a. of steel sleepers from Anderston 1889-94, c.32% of its sleeper purchases from the company, but very few thereafter until 31500 tons ordered between 1912 and 1914. Lines such as Rhodesia Railways used steel exclusively and the shift in balance in favour of steel sleeper orders coincides with the development of the colonial railway market.[135] Calculation by weight understates the quantity of the lighter steel sleepers.

TABLE 4.5 SLEEPERS

Anderston's Orders (weight)	1889-94	1894-99	1899-04	1904-09	1909-14	1919-24	1924-29
Steel %	15	13.1	43.9	41.2	42.5	56.5	92.0
All types iron %	85	86.9	56.1	58.8	57.5	43.5	8.0

Source: D/AF 265-268

In South America and in India there was a drift from iron to metal sleepers but no stampede. Different companies maintained different standards: iron[136] was finished outside India by 1900 but within India old habits prevailed. By 1930 Anderston had produced c.17m wrought iron and steel sleepers but, despite the extinction of the business, 23m cast iron ones.[137]

Various home main lines, led by the London and North Western Railway experimented with steel sleepers during the 1880s and 1890s: Anderston sold 140 tons to the Caledonian (1895). None was convinced, whereas a variety of designs was successfully used on the continent (with flat bottom rail) providing Anderston's foreign competitors with a reliable base of orders in their home markets from which to challenge Anderston in export markets.[138] Development of various designs of steel sleeper for bull head rail had no effect in shrinking the conservatism of British railway managers and engineers. Although metal sleepers lasted much longer than wooden ones, the latter's lower first cost (and the scrap value when removed) appealed to the fiscal prudence of the railway companies. Increased use of electric track circuiting as a signalling safety device would have required further expenditure to ensure the insulation of the circuits from the metal sleeper.[139]

The surge in the sales of the sleeper department from c.£140,000 p.a. 1884/5-1888/89 to £350,000 in the next two years (with profits of £50,000) was rooted in the S. American market, thus was not unconnected with Bunten's cultivation of contacts. Because iron sleepers booked at Port Clarence might be made in Glasgow and the "Foundry" order books list all metal sleepers ordered, it is impossible to relate such orders to the sales of the three departments. After 1891 business was depressed: S. American orders,

87000 tons in 1888/9, were under 1000 tons p.a. in the early 1890s ; profit margins fell from 15% of sales 1884/9 to 1½% to 3½% 1889-1914; profits were only £2,000 p.a. at the turn of the century. Wages followed the usual improved trend: 6.1% of sales in 1884/9 and 10.1% in 1909/14; 6.6% 1886/7, 8.3% 1906/7 and 9.8% 1911/12 which were years of similar levels of sales.[140]

The sleeper business shared in the revival of prosperity from 1912 to 1914; it also shared in collusive practices. Anderston's competitors were large steel companies, not the usual iron founders and engineering companies. The weight of foreign competition, reflecting the overall relative decline of the British steel industry, was more pronounced: the continentals were 17/- a ton cheaper in tendering to the Central Uruguay in 1908.[141]

The Steel Sleeper Association was organised within a very short time of sleeper production commencing in 1885.[142] The pioneers, Anderston, Bolckow Vaughan (Teesside) and the Dowlais Iron Works (S. Wales) were soon joined by the Tredegar Iron Company, the Darlington Steel and Iron Company and the Ebbw Vale Iron and Coal Company. The Moss Bay works in West Cumberland may have been inside the ring in the late 1880s but for much of the following decade was not. It was absorbed into the Workington Iron and Steel combine in 1909 and that a decade later into United Steel Companies. The Darlington Steel and Iron Company had closed down by 1900 and the Tredegar company seems to have quit the business before its reconstruction as Whiteheads, a rolling specialist, in 1906.[143]

Steel companies naturally possessed their own plant for rolling sleeper plates; Anderston did not. In due course it formed a partnership, vital for its future success as a sleeper maker, with the North Eastern Steel Company, a railmaker, [144] which received half

of the commissions paid to Anderston from the workings of the Association in return for supplying Anderston with plates. Anderston was fortunate to find a local railmaker content to supply it, and not to set up in competition. No other maker of cast iron sleepers followed Anderston's lead, perhaps conscious of this problem.

Each loser in the Association received 1/- a ton in commissions on orders placed with another member;[145] over time each member was to receive roughtly an equal share of work. As with other arrangements the smallprint charged from time to time. Anderston apart, the Association's members were all railmakers party, through the British Rail Makers' Association, to the International Rail Makers' Syndicate, established by Britain, Germany and Belgium in 1883. The considerable success of the Syndicate in increasing prices may have encouraged British firms to further collusion.[146]

The fate of steel sleeper makers is bound up with that of both rail rollers and the wider British steel industry. The number of rail makers halved between the mid 1880s and 1900s and British production of steel rails fell from 1.235m tons (1882) to 0.58m (1893) as the number of makers and their output declined.[147] At each reformation of the international railmakers' cartel after one of its periodic collapses, Britain's share declined; those of Belgium and Germany increased.[148] British rolling mills were technologically backward; its freight and shipping costs were high; it was increasingly a dumping ground for the steel products of others whose home markets were protected by tariffs,[149] whose steel industry was highly organised by a network of cartels, and who operated a policy of encouraging exports through the differential pricing which cartels and tariffs made possible. German success was ascribed to the large size of its firms as well as to these other practices. British

firms, with the failure of tariff reform, sought amalgamations and the formation of all manner of trade associations and employers federations as a palliative.[150]

The low profits of sleeper making, despite collusion, shew that the Association's effectiveness was limited, in the absence of an international agreement, to preventing domestic competition breaking out to push prices lower. Open markets from an early date fell prey to French and German competition, hence the revival of railway building in S. America produced no comensurate revival in steel sleeper orders for Britain: increased use of wood also played a part.[151] A continuing deterioration of Britain's competitive position emerges: customers such as the Crown Agents or Rhodesia Railways, generally loyal to British goods, were, by the 1910s, ordering sleepers from Belgium and Germany in what appeared to be an attempt to "beat down" British prices to the "much lower"[152] continental level. In 1914 the directors of the British-owned Hyderabad Railway would have ordered cheaper sleepers in Germany but for the intervention of their British consulting engineers, keen to protect their own interest, who sought to negotiate a reduced price from G.K.N. The stage was set for a troubled time inter-wars.[153]

The Rail Fittings Department alias the Bolt Shop was last and least of the new departments. It was founded (1886) as an adjunct to the points and crossings business where difficulties had been experienced with the unreliable supplies of the non-standard design of nuts, bolts and spikes required to assemble points and crossings layouts. Unprofitable self-sufficiency was preferred. It was not intended to compete with the large numbers of well-established Black

Country makers, despite a range of products which came to resemble that of Patent Nut and Bolt.[154]

The subjoined figures relate solely to work passing through the 'Bolts Order Books' with no attempt made to disentangle its contributions to the other departments (which include minor fittings for sleepers for both the foundry and steel sleeper shop). The shop's progress as a service department to other parts of the works must be born in mind when its trading results - initial losses, succeeded by an irregular sequence of small profits and small losses - are considered. To 1914 profits averaged £800 p.a. - a mere 4% of sales - on a business of typically less than 1000 tons p.a. Sales shewed the usual peak in 1889/90 (£30,000) before settling to £15-20,000 p.a. and rising from 1912 to the war.[155]

TABLE 4.6

Bolts Orders (weight)	Caledonian	India	S. America
1886-89	5.3%	49.8%	40.3%
1889-94	16.2%	27.3%	38.2%
1894-99	31.7%	9.3%	15.0%
1899-1904	31.4%	19.6%	0

Source: Order Book D/AF 304

Exports were of greater importance than domestic business. The former went to the usual array of markets; the latter was largely confined to the Caledonian, North Eastern and Great Eastern railways. Orders accurately reflected the state of the markets. South African business revived in the more settled period after the Boer War; South American orders strengthened with the revival of Argentine railway building after 1900.[156]

Keys and distance pieces for steel sleepers were made, exclusively for export. Many were subcontracted to Anderston by its neighbouring sleeper maker, Bolckow Vaughan. The Steel Sleeper

Association's operations influenced all such work without necessarily controlling it.[157] The balance of the output comprised iron and steel fishbolts, dogspikes, nuts and washers.

Mutual commissions on individual orders might be arranged with Patent Nut and Bolt and Bayliss, Jones and Bayliss, the leading firms. Commissions where paid were regularly 15/- - 30/- a ton (1912-14) compared with 3/- a ton on chairs; Macnees' commission of 1/- was double that of any other class of business handled by them. Both are testimony to the higher value of bolts compared with the rest of Anderston's output.[158]

Surviving quotation books point to the sporadic nature of collusion: there was no Association to give it structure. Between 1902 and 1914 the sums paid out as commissions were within the spread (1.7% - 2.1% of turnover) usual for other departments. Before 1890 no payments were made and between 1899 and 1902 whatever arrangements subsequently developed seem inoperative.[159] Home orders, where arranged, usually involved no commissions; many orders were lost to non-colluding firms; many were left unarranged. Discussions about the general level of price would be central to such contacts as there were, if only to set minimum prices and give firms a free hand to quote above them. In some instances orders might be deliberately left unarranged rather than unarranged by default. Inquiries involving a variety of types of bolt and spike might be arranged only in part.[160] The colluders' control of the market was far less complete than for chairs: there were great numbers of nut and bolt makers supplying a much more diverse market than Anderston experienced for its other products. Even for steel fishbolts, essentially a railway product, orders from the Great India Peninsula Railway were frequently lost to outsiders such as Coopers of

Sheffield.[161] Thorough-going cartel arrangements would have been difficult to initiate; in their absence there was no profit to be made on such business as could be "arranged".[162]

TABLE 4.7 GLASGOW MACHINE SHOP

	Average Sales £	Average Profits £	Wages as % sales £	Wages as % production costs
1884/5 - 8/9	33,500	8,700	22.8	29.9
1894/5 - 8/9	24,500	2,300	34.3	37.5
1899/00 - 03/4	28,200	850	38.6	39.2
1904/5 - 8/9	19,100	-1800	47.9	41.5
1909/10 - 13/14	22,000	-5400	39.5	32.0

Source: Private ledger D/AF 14

Arrangements were commonplace in respect of the Glasgow works. Coiled keys for India were made in the machine shop,[163] which, unexpectedly, derived c.40% of its turnover in the years 1912-14 from such business.[164] Previously arrangements with Patent Nut and Bolt and Bayliss, Jones and Bayliss had left the losers each receiving 15/- per thousand keys on business transacted within the ring, where each firm took orders by turn. Ibbotson Brothers, initially outside the agreement, took certain orders. By 1904 it had joined in.[165]

Angus Murray, Anderston's chief engineer in Glasgow, seeking better prospects, resigned in 1904. His own firm, later Murray, Workman and Co. Ltd., naturally capitalised upon his contacts and

inside knowledge.[166] In November 1904 he took an order for coiled keys at £11 6s. 8d. per thousand for which Anderston had tendered £13 7s. 6d. (including 3 x 15/- commissions). Attempts by the other makers to retain commissions at a reduced level (c.20/- per thousand) faltered after 1906 and Ibbotsons, in effect, withdrew from manufacturing.[167] Murray's other wares, such as air compressors and high speed steam engines, also competed with Anderston's machine shop.[168]

Murray had, by 1912, driven any profit from the coiled kay business for Anderston and, probably, for the other makers but, as with Darlington Railway Plant or Railway and General, he was happy to negotiate should the terms be attractive. Anderston enjoyed preferential terms from Whiteheads, supplier of the special steel required for the keys from South Wales. G.K.N. through vertical integration and amalgamation were their own suppliers. Neither they nor, despite Macnees' prompting, Dawson, would accept Murray's demand for an equal share of the work; he spurned their offer of 40% each to themselves and 20% to him.[169] To force the issue G.K.N. threatened to "make keys for the bare costs of the bars"[170] which they could afford to do. To Anderston these keys now returned their bare overheads.[171] Previously their profits had staunched the losses elsehwere in the machine shop. A further, distinct, contribution was thus made to the difficulties of 1912.

Except in providing and repairing machinery for Port Clarence and furnishing a core of trainee managers for the firm - the shop required more highly skilled workers than the rest of the company - the machine shop's engineering business was irrelevant to the company's main concerns. Tradition and conservatism ensured that the shop would survive. A misguided attempt to revive the firm's

fortunes as a machine maker, coinciding with its flagging fortunes as a railway supplier, provoked a crisis during 1911/12.[172] As control within the business passed to directors based in Middlesbrough, Glasgow suffered from unintended, but apparent, neglect, its poor results tolerated equably by those who had been trained there.

Machinery continued to be made for the Scottish textile industry, which continued its steady decline, exacerbated after 1900 by a shift in fashion from one of its staples: quality muslins.[173] Patents for improvements to the design of textile machinery were regularly taken out.[174] Looms remained the shop's largest single product in 1914 and orders from Ireland, Belgium, Germany and elsewhere notwithstanding, the local market was the main one.[175] Designs were kept up to date whilst other classes of business were expanded - particularly high speed engines for electric power generation.[176] At no time did the new supplant the old: the shop could not compete in newer businesses with newer specialist firms whose expertise it lacked; its expertise in textiles, anchored to the declining local industry, provided few openings whereas the large Lancashire makers of textile machinery enjoying a still buoyant local industry as a tied market, had scope for economies of scale.[177] In 1912-14 when Anderston's other businesses were reviving, that for textile machinery remained depressed and regular customers, such as Mortons of Darvel, were held back by uncertainties over American tariffs.[178]

Initially, diversification was successful. Cargill, recruited to strengthen the technical management in Glasgow, had experience in the wire industry and received commission payments for business he introduced to Anderston.[179] His arrival coincided with rapid expansion by Bruntons of Musselburgh to become, under the guidance of

J.D. Brunton, one of the wire industry's leading firms. Wire looms and other related machines were produced to Cargill's designs from the late 1900s to the late 1920s, principally for Bruntons' use.[180]

In 1909 Anderston bought patents for a rotary air compressor from which a successful[181] business in air pumps, vacuum pumps and varieties of compressor, developed. Many machines were supplied to the south of England and to contracting firms such as Siemens, some for use in Anderston's traditional export markets, some in connexion with railway projects; one of the largest customers was Blair, Campbell and McLean, a Govan firm supplying the sugar industry.[182]

In railway products and in much of this new machine building diversification flowed naturally: new demands followed on from existing specialisations. However, these successes were negated by Anderston's failures in manufacturing high speed vertical gas engines for the generation of electricity which, at least by Bunten junior, was seen as qualitatively different. In 1908 a gas engine patent and its patentee's services were acquired.[183] Hope that a "good and permanent" business would develop, expressed by Dawson indicates[184] either wishful thinking or the poor control exerted by him over Bunten junior and by the latter over the Glasgow works.[185] The machines persistently gave trouble. Lengthy technical correspondence between Glasgow and Port Clarence helped cure various mechanical ailments whilst exposing the insufficient understanding of the product by those who had recklessly embarked upon its manufacture.[186] An engine supplied to Imperial Tobacco required the prolonged attendance of a mechanic in France during 1911. Bunten, wriggling, was instructed to settle Imperial's claim for damages on the best terms possible[187]

"in view of the promises in your [sic] brochures, the damage done to [our] name if all the faults of the engines were exposed in court would be almost irreparable".[188]

An engine supplied to Bruntons was "a disastrous experiment for both of us"[189] and brought a claim for £889 compensation to add to £1,380 written of the 1911/12 accounts from similar problems.[190]

Bunten as the man most deeply involved with the gas engines, and responsible for the operations of Glasgow, having resisted Dawson's attempts to rein him back, was obliged to resign.[191] His attempt to use family influence upon the principal shareholders to secure his reinstatement failed (see Chapter 3), for it would have caused the loss of Cargill and others valued more highly than Bunten.[192] Although Bunten was right to seek a new direction for the Glasgow works his optimism overwhelmed his judgement; what he attempted to do was desirable but impracticable.[193] The scepticism with which his successor, the principal beneficiary of his departure, Cargill, viewed the various proposals to diversify the business in the 1920s and 1930s into manufacturing articles which required high grade workmanship involving, for Anderston, untried technology, may have been Bunten's legacy. There was clear evidence of the risk of taking risks.

Anderston persisted with gas engines briefly, appointing a separate London agent with contacts in the electric power and contracting worlds and shewing financial flexibility to get one of its engines installed and working in the south of England.[194] By spring 1914 it was decided to cut losses and withdraw from the business as gracefully as possible.[195] Orders were scarce, Anderston prices were too high to secure orders; but if orders were secured gas engines could not be made at a profit with the existing plant.

Expenditure of several thousand pounds on new plant would not produce sufficient orders at a price which would give a return on the investment. In addition to the monies already expended, further lavish expenditure on agencies, advertising and travellers, all alien to Anderston's culture and railway experience, would be necessary. Anderston was competing against extremely well equipped specialists such as Crossleys, with few prospects of success. It was as if Anderston was newly introducing the manufacture of textile machinery in a workshop used to producing other things years after Platts, Bulloughs and their like had consolidated their position. The move was as foolhardy as it was a contrast with Anderston's burgeoning conservatism. None of Anderston's gas engines (1912-14) had contributed to overheads; the business was not worth having.[196] The difficulties of the machine shop foreshadow those of the inter war years: old fashioned, unspecialised, small and with high costs. Speculative diversification on such insubstantial foundations was likely to be unsuccessful. As other firms found in the 1920s, diversification from weakness might cripple as easily as restore health. Driven to "do something" by necessity, that something was seldom well-considered.

The Glasgow foundry never recovered its prosperity after the general collapse of orders in the early 1890s. Sleeper manufacture ceased; sales fell from £160,000 to the range of £20,000 - £40,000 p.a.; trading profits, which elsewhere revived in the later 1890s, declined. Consistant losses were made after 1905. Labour costs increased from 12.4% of sales (1884-8/9) to 35.3% (1909-14) which is only partially explained by the declining level of business, the shift from 21% (1904-5) to 32% in the following busier year was most noticeable.[197]

Glasgow's railway output fell within C.I.C.A's operations. Its other business in jobbing work suffered from unrestricted competition; the castings it supplied to the machine shop were underpriced to enhance the competitiveness of the end product.[198] The machine shop should have been able to buy-in castings more cheaply to its own benefit: the foundry now lacked a raison de 'être, particularly as Caledonian chairs might be made on Teesside.

Stoker links were made for Babcock and Wilcox, the Clydeside boiler makers but when large orders were received as in April - July 1913 a lack of capacity caused part of the work to be executed at Port Clarence.[199] Jobbing work, principally engine castings for Barclay Curle, shipbuilders and marine engineers, sold typically (June 1912) at £2 6s. 3d. a ton less than it cost to produce.[200] Babcocks was building a large foundry of its own. Neither business was secure.[201]

The internal difficulties of Glasgow had been allowed to continue and worsen until the poor results at Port Clarence shook the management from its torpor. Cargill's appointment to manage Glasgow coincided with that plant's nadir of fortune. The success of his methods in Glasgow brought him increased recognition within the business and shews the approach he was to adopt to Port Clarence after 1928. He concentrated on basic improvements to the manufacturing of traditional products; he eschewed ambitious or expensive diversification and heavy capital expenditure on existing plant in favour of doing better the things that the company did. He relied on existing products and connexions and placed his faith in collusion. He sought to limit losses by limited action rather than eradicate them by boldness. He was the opposite of Bunten who had concentrated on over ambitious schemes for the future at the expense

of the day-to-day mundane problems of a works which was drifting into obsolescence.[202]

In the six months to March 1912 the foundry produced 484 t of jobbing castings, 1530t of Caledonian chairs and 95t of other chairs.[203] Caledonian orders were falling leaving the foundry, geared to regular delivery orders, carrying a stock of 730 tons.[204] Cargill stressed the need to recruit and retain good quality labour to increase output and productivity. Much lay outside his control: the underlying decline of Scottish ironfounding from the 1890s as cheap local pig iron was exhausted;[205] the lack of rail access to the works; rail, coal and carters' strikes during 1912/13; overheads inflated by ground rent payments of £600 p.a.[206] Power had been expensive for the size of the works before Anderston installed a gas engine of its own manufacture to cut costs (1910). This had, instead, increased them.[207] Industrial unrest amongst the chairmakers persisted from 1912 to 1914: a vicious circle of low quality labour, low productivity and (individually) low wages, a legacy of lax management over many years, proved difficult to break.[208] Fewer, better, higher paid workmen would be more satisfied, more productive and cheaper overall. To seek to enforce simple piece rates in place of a complicated system of bonus payments which had grown up, the chair making operation was temporarily closed down.[209]

Cargill recruited Robert Forsyth, a Kirkcaldy connexion of his with 24 years' experience, to manage the machine shop and strengthen the technical management. Like Cargill, he brought business with him, for which he received commission payments, in respect of the manufacture and repair of steam engines.[210]

Rising raw material and labour costs, increased competition and price cutting had caused the National Light Castings Association to be born in Glasgow in 1912.[211] From the same stable of Mann, Judd and Gordon, accountants, the Scottish Ironfounders' Association (S.I.A.) was foaled for the heavy section of the industry which was to effect an improvement for makers of jobbing castings.[212] Cargill and Dawson were less keen than usual upon this collusion because the base years for the allocation of tonnage between members, 1909-1912, were poor ones for Anderston.[213] After further negotiations had excluded: chairs, brake blocks, tunnel segments and castings made by firms for their own use from the ambit of the Association, Anderston and British Hydraulic agreed to join. By March 1913 80% of Scottish makers had done so.[214]

On the one hand Anderston's history in the period 1880 to 1914 can be seen as one of rising prosperity to 1890, rapid collapse, partial recovery and a gradual slide to the difficult years around 1912 (when a variety of problems in different departments coincided). The crisis was minor: better times were seen ahead. Bunten jr. was purged but otherwise things continued as before. In Glasgow all had been left alone by a distant, complacent and nostalgic management in Port Clarence until the failure of the bold but ill judged leap into new business to escape dependence on declining products. Considered schemes for the future of a small, non-specialist, ill equipped machine shop over-reliant on a declining local textile industry were never formulated. Cautious improvement and belated damage limitation by Cargill sufficed. Those in charge of Anderston, possessed of tunnel vision, lacked any strategy for the rest of the business except more of the same. They travelled hopefully along a well worn

path. The plant was far from fully occupied but the situation was not felt to warrant a change in direction. For a few years various difficulties had coincided, in which Anderston had been unlucky. Its overall position was not felt to be unsound.

By 1912, by different routes, all of the firm's business, except that in machinery, had come to rely upon collusion in place of competition. The detail and techniques of the arrangments and Associations varied as did the timing and circumstances of their inception; they were nonetheless, pervasive. No sooner had Anderston established some new product - steel sleepers in the 1880s, segements in the 1890s, or tramway materials in the 1900s - than collusion developed. It appears to have been endemic in the iron industry. For example, the Carron Company was involved in the Scottish Ironfounders' Association, the National Light Castings Association, a bathmakers' association, the Gas Goods Makers' Association, a Garden Roller Association and so forth.[215] Business was synonymous with organisation. In an unregulated market the manufacturers sought to manage it in their own interests. "Masters always everywhere are in a sort of tacit but constant and uniform combination".[216]

The S.I.A., copying the N.L.C.A., allotted fixed quotas to members, penalising those who overproduced to compensate those who underproduced.[217] It was more highly regulated than other arrangements to which Anderston was party - it had to deal with a far larger number of firms and jobbing castings were not a specialised product such as steel sleepers. More clearly than other types of association, the S.I.A. sought to freeze an industry in the shape it had reached at one point in its development: the Chair Association adjusted, however incompletely, to changing circumstances and the rival claims and interests of participants. Mutual commission

arrangements simply cut down competition and transferred resources from customers to suppliers. In the absence of a statutory basis to collusion, such as existed in Germany, the prevention of defections proved troublesome.[218] When orders were depressed rats might jump from sinking cartels but, in the mutual trust and team spirit on which the largely informal agreements relied for smooth operation, there was social conditioning against being a rat. A certain kind of trust had to exist between members in order to draw up the rules of their game and as an assurance that they would play with a straight bat. Being too keen was frowned upon.

Common to all arrangements was the enrichment of suppliers at their customers' expense, through increasing prices, or eliminating the competition which had driven down prices and margins thereby leading to their gradual improvement. Collusion might thwart the expansion of dynamic firms and help protect the decadent from extinction. However, within a group of established firms undertaking an established activity, there was no great dynamic pressure: Patent Nut and Bolt was an exception. An ideal arrangement ensured an equitable share of work for all at remunerative prices; sought to institutionalise existing influence - based relationships whilst allowing blind allocation to handle the rest. The insider's special relationships could be prolonged, preserved and deepened, through acts of mutual self-denial with 'rival' firms.

If arrangements were too successful in extracting monopoly profits from high prices, new capital might flow into the industry causing overcapacity and the collapse of prices and, possibly, arrangements.[219] In adversity associations might fail - thus residual internal tensions prevented them responding as a monopolist for they were antithetical to the achievement of rationalisation and

economies of scale. Alternatively, in difficulties the members might huddle together more closely to escape the icy blast of competition.

Contemporaries were willing to justify collusive practices in general terms but the particpants shunned public exposure which would shew that what was seen as a rising phenomenon of modern industry had long been endemic in iron and engineering and, as Levy and Rees shewed at the time, in many other industries.

> "If the manufacturer can arrange with all his competitors to decide beforehand which of them shall take the order, he can ensure a better price... higher than some would have been willing to accept...".[220]

The aim of collusion was to maintain the level of trade and keep prices steady to prevent "cut-throat" competition and the loss of capacity in a depression. Cartels claimed not to seek large profits or recklessly expand capacity and markets for fear of over-reaching themselves. How far our examples adhere to Hood's examplar is impossible to discover: the Segments Association boasted of its success in raising prices; the Sleeper Association was constrained by international competition. Chairmaking produced low profits despite the longevity of the Association: maximising tonnage to spread overheads lay at its root. The S.I.A. was a defensive attempt to minimise losses, formed at the same time as a Segments Association which justified itself by the continuing prospect of large orders.

In the decade before the First World War more collusive arrangements were established than theretofore but in many cases formal arrangements might simply replace the ad hoc collusion of the past.[221] For Anderston the most important and lasting agreements date from the 1880s. Underlying practices may have been publicised because the attention and interest of various contemporary writers, from Macrosty onwards, many of whom had particular political and economic viewpoints to purvey, were directed at the increased

concentration of industry.[222] Amalgamations and the creation of 'trusts' form the main theme of such work; trade associations, discovered almost by accident, a sub-plot.

Collusion formed a response to a market in which purchasers might seek to take unfair advantage of the incipient rivalry of their suppliers.[223] The position of each firm in an association depended upon some former period of competition and dynamism through which it had established its place in the industry. Firms which had grown with an industry might discover the benefits of collusion at a similar stage of their development. If the Association was not a profit maximising body neither were its constituents. New competitors, once they had carved their niche, usually wished to accept the warm embra ce of collusion - which they had previously rejected from transitory self interest not from a principled belief in competition.

Through collusion larger, established firms gained an orderly market, their leading position embalmed, by bribing smaller firms into acquiescence. Smaller firms, and, at a given period, newer arrivals, preferred the bribe and the guarantee of some business at remunerative prices to the risks of cutting prices to obtain a larger share of the work and thereby extinction through retaliatory price cutting by larger, potentially lower cost, and financially stronger rivals whose net outflow of commission payments was more than balanced by the inflow of funds from higher price levels. Lest, however, it be thought that collusion tended everywhere to flabbiness, the elimination of domestic rivalries and the bringing together of manufacturers allowed for a more consistent response to foreign competition in both steel sleepers and segments. Without tariffs, consistent differential pricing between markets was

impossible but Association provided a primitive means for cross subsidising orders by keeping up domestic prices.[224]

Customers could not have been unaware of arrangements as a fact of business life, although the associations kept a low profile and endeavoured to hide the details of their operation.[225] Everyone pretended. Businessmen knew how business worked. Except they maintained Chinese walls in their heads how could it be otherwise when industrialists, who were deeply involved in collusion within their own firms, were, such as Bunten at the Caledonian, Bain of Coatbridge at the Great North of Scotland, Kennard (a leading[226] figure in the Railmakers' Association) at the Great Eastern, and so forth, also the purchasers of their firms' manufactures.

From the 1880s the British steel industry had the example of the fast-developing German economy to consider, whose cartels and syndicates[227] were more widespread and more thoroughly organised than in Britain, and were synonymous with success. Successful rival economies contained larger firms, so that concentration in the British iron and steel industry through amalgamation leading to the achieving of economies of scale, beckoned. The relationship between combination and collusion is complex, that of complementary and competing solutions which marched together. Associations could prevent excess domestic competition but they might encourage rather than solve the problem of inefficiency and obsolescence of equipment in industry. Their inability to interfere in their members' internal affairs was seen by those members as a virtue. Loss of personal authority by entrenched managers or owner-managers which could accompany either the creation of full blown cartels or the formation of large industrial combines was avoided, whilst the benefits of improved prices were enjoyed. Small firms could continue to

predominate retarding: economies of scale; the recruitment of better educated, more technically proficient and adventurous management; and the development of more sophisticated management practices.[228]

Amalgamation might produce rationalisation and modernising investment. However, many early mergers left separate operating units, competing with one another, intact under existing managements and spawned large boards of directors dominated by family dynasts who could not bury their individual differences and proved incapable of effective leadership. The failure to integrate Dorman Long and Bell Brothers for a generation after their ostensible merger is a typical example on Anderston's doorstep.[229] However, amalgamations by reducing the numbers of firms (and plants) might ease the creation of a cartel. Six members of roughly similar size were more easily organised (e.g. the Switches and Crossings Syndicate) than a score of members with varying priorities and interests, vastly different in their scale of operations, e.g. the bolt business. Associations may have provided Anderston with an alternative to amalgamation; to more dynamic firms amalgamation was an alternative to the cartels, e.g. South Durham/Cargo Fleet's competition with the railmakers in the 1900s. Other firms amalgamated and remained loyal colluders, e.g. Workington Iron and Steel. An effective existing association might be more successful in reducing competition than a defective merger helping explain not why there were so many mergers in British industry pre-1914, but so few.[230]

From the viewpoint of those who believed in free markets and competition, in the instability and incompleteness of collusive practices lay their virtue. Vestigial bouts of competition could still occur which might not be the case in the more successful practices of Germany and the United States where monopoly and

oligopoly were institutionalised, respectively, because of and despite the legislative frameworks of those countries. Anderston's fondness for arrangements indicates a desire to conserve its leading position, acquired through competition, technical innovation and influence without competing or innovating. Established firms, set in their ways, were more interested in dividing the cake than in baking a new, larger, one. Anderston, in particular, worked to appease rather than confront potential foes - it had no stomach for fighting Darlington Railway Plant's low prices unlike the generally more aggressive Summersons'. It would not strike first, nor strike back to ensure its long-term health: it wanted to be left alone. It had outgrown juvenile, aggressive competition and expected others to do likewise. Maintenance of the Associations was becoming an end in itself as Anderston sought to disguise its decline through them. The "disastrous consequences" of a split with G.K.N. and the danger of a price war placing an intolerable strain upon its alliances, were clear to Anderston which was becoming the consumer of the security system it had produced as it outgrew its previous aggressive expansionism in order to postpone the evil day when it would have to admit its demotion to the second rank of firms.[231]

Once Anderston had separated from the Houldsworths it was unlikely to joint another industrial group. It had no wish to see its stock widely held nor use its status as a public company to seek the limelight. Whereas Bunten knew what he wanted and seized opportunities to develop the business his domination of his managers ensured that they could not escape his shadow. They stuck to his methods. After 1890, as Bunten's attentions were given increasingly to outside interests[232] and time and shifts of demand from South

American to African undermined his web of influence, Anderston's relative position declined. New firms were seeking a share of the chair business; steel sleepers, where it was just another maker, were displacing iron ones, where it held a leading position. Collusion brought, with little effort, a share of business in segments which, in a competitive market might have passed it by, and preserved a share of chair business unjustified by its subsequent performance.

Anderston survived without growing, amalgamating or rationalising and improving its methods to remain competitive. Behind the shadow of collusive competition, the trade associations were anaesthetising real competition. During the 1900s, mergers, foreshadowing those of 1918-20, created vertical groupings of iron, coal, steel and heavy engineering enterprises which proved less threatening than might be expected. Of these, the merger of Guests (steel sleepers) with Patent Nut and Bolt (iron sleepers and chairs) and the absorption of Patent Shaft and Axletree (a maker of points and crossings) into Dudley Dockers' Metropolitan Carriage and Wagon combine alone touched Anderston. Had these two groups consummated a proposed merger, Anderston would for the first time have had one rival dominating the supply of all railway equipment except rails and locomotives.[233]

By 1914, of Anderston's special relationships, that with the Caledonian alone survived. In former times contracts had to be sought and secured through individual contacts and the individual firm's reputation. Once a limited number of makers had specialised in track fittings, with little by way of patents or branded products to differentiate one from another, anonymous tendering and allocation flourished.

As long as the Buntens, Liveseys, Houldsworths and their like, who had achieved wealth and prominence in business and inhabited a similar milieu, controlled their various business, matters could be arranged between them on a personal basis. Their successors in the railways, iron foundries and, to a lesser extent, in engineering, were salaried servants such as stores superintendents, or government officials. Professional railway management restricted the directors to matters of policy in place of day to day oversight. The competitive man of business with sound interests for making money gave way to the official with a bureaucratic tint to his makeup. A sense of duty and an obligation to public service increased, reflecting a changing national ethos. Consulting engineers were proud, professional and independent rather than middle men. Management replaced entrepreneurship.

It would be unfair to criticise Anderston's management too harshly

> "In practice individual firms find themselves buffeted between the rival interests of family owners, management,... shareholders and banks... out to protect their respective stakes in the firm..."[234]

After Bunten a foundry run by business men became a business run by foundry men. Dominant figures seldom provide properly for their successors and frequently squeeze inventiveness and initiative from their assistants. The successors enjoyed considerable practical experience but lacked commercial experience outside ironfounding and, in many cases, outside the one firm. The retreat into narrow expertise was a natural corollary to the specialisation of firms, their small size and the segmentation of the market which accompanied specalisation. Specialisation laid the ground for collusion: subsequently, from the narrowed horizons of such managers, collusion appeared part of the natural order of things, as connexion had been

to their predecessors. Ways of doing business which had arisen, rationally, from the 1880s, took on independent life. More effort was devoted to maintaining the mechanics of collusion than to maintaining the business, although collusion was seen as one means of maintaining the business and limiting its decline. This worked until the 1920s, collusion flourished until the 1960s, seeping into all the firm's affairs. Anderston was hooked upon it requiring ever larger draughts.

Where effective ownership and control were combined in the hands of a small group, be it a partnership, Anderston under Bunten or the Tees Side Bridge and Engineering Works in the 1920s, a unity of purpose and a dynamic performance were practicable. Paradoxically adopting a modern structure (limited liability) might hinder the modernisation of a business. Managers could not look forward to the large rewards enjoyed by their predecessors who would accumulate capital in the business. The capital was still held by those 19th century business families who had accumulated it thus, but were business families no longer. Living up to the stereotype, they had retreated to the spa towns and hunting shires of the south. They sought safe returns rather than speculation: some were very heavily invested in Anderston. Old capitalists were replaced not by new ones but by rentiers. The inter-twining of personal links, financial involvement and orders amongst either the Glasgow élite, at mid-century, or Bunten's connexions more recently, had ceased.

A small number of large shareholders exerted influence - not all shareholders were treated equally - but they were incapable of running the business. They were known to the managers and vice versa. The managers could neither buy them out nor reduce them to the impotence of the anonymous shareholders of a large corporation.

Steady returns kept the shareholders happy and the management managing whilst the latter found a safe home for their savings as they pieced together shareholdings in Anderston, often with borrowed money. Trapped in a constricting embrace all interests demanded safety first. Collusion offered stability: it had rational appeal within the firm as well as in relation to other firms. Individually and corporately risk taking and profit maximisation were out of favour.

Whereas Bunten had succeeded spectacularly as an entrepreneur judged by the fortune he amassed and the profits Anderston made, it is a misunderstanding to describe his successors as entrepreneurs: they were administrators. Entrepreneurs were absent in the 20th century from Anderston's boardroom and from a prominent place on its share register. The period from 1880 to 1914 saw Anderston transformed not just in location, size and range of products, but from a business run to make money to one whose purpose, in the eyes of its managers and directors, was primarily to make track fittings; from a firm seizing opportunities to one which would not risk taking risks.

In considering the relative decline of the British economy in this period, greater consideration should be given to the pervasiveness of collusion and to the particular balance of interest within individual firms and not to "informal social control".[235] How many other firms, having reached a similar stage in the development of their business and its ownership, faced by similar problems of reconciling the interests of the firm and interests within the firm, found, in collusion, relief.

Chapter 4: Footnotes

1. D/AF 11 Private ledger records commission payments, 1861-1865.

2. H. Edgar Jones, A History of G.K.N. vol.1, chapter 11.

3. From D/AF 13-14, Private ledgers.

4. D/AF 14, Private ledger: £392,400 sales 1914/15 versus £50,250 for Glasgow.

5. C.M. Lewis British Railways in Argentina, 1857-1914, Tables 7 and 33. See TABLE 3.4 above.

6. Universal Directory, 1935/6 and A.H. Croxton Railways of Rhodesia passim.

7. See TABLE 3.4.

8. Ed. Kumar, Cambridge Economic History of India (Cambridge 1982-3), vol.2, pp.585-586; A.K. Bagchi Private Investment in India, 1900-39 (1972), p.291ff; R.J. Ray Industrialisation in India: Growth and Conflict in the Private Sector (Delhi, 1979), pp.25-35, 74-93; R.S. Rungta, The Rise of Business Corporations in India, 1851-1900 (Cambridge, 1970), pp.276-278; C.N. Vakil, The Growth of Trade and Industry in Modern India (Calcutta, 1931), pp.259-262, 270-294; D.R. Gadgil, The Industrial Evolution of India in Recent Times, 5th ed., (Bombay, 1971), pp.281-286; A.K. Banerji Aspects of Indo-British Economic Relations, 1856-1898 (Bombay, 1982)

9. Calculated from D/AF 14 Private ledgers

10. D/AF 432 Out-letter book, 29 November 1913 where output was given as c.50,000 t. (1911/12) and 75,000 t . (1912/13) and capacity, including Glasgow (?) at 120,000 t.

11. D/AF 268, Order Books.

12. D/AF 14, Private ledger.

13. Stock Exchange Year Books, various editions.

14. D/AF 4-5 Valuations of plant 1884/5.

15. Extracted from D/AF 14 Private ledger and D/AF 6-7 minutes. As mentioned in Chapters 1-2 there was nowhere to expand in Anderston. £12,000 was spent on new land and buildings at Port Clarence, 1884-87.

16. D/AF 6 Minutes (e.g. 25 August 1886), 1885-94 passim.

17. D/AF 553 Cargill to Cunningham, 9 October 1944. D/AF 636 Report by Norman Hanlon to the directors of Dorman Long and interview with Hanlon (1987).

18. D/AF 4-5 Valuation of plant etc.

19. D/AF 6 Minutes, 15 December 1897.
Ordnance Survey 2nd edition and 3rd edition, 25 ins. to 1 mile plans of the area shew layout, quay, and railways, 1896 and 1920. In 1885 (D/AF 4-5) there were three steam locomotives and four steam cranes (for discharging cargo?) at the Port Clarence works. D/AF 553 Cargill to Cunningham, 15 October 1943 on the problems of the site. D/AF 431 Out-letter books, 29 July 1913 gives 90% of the output of the works as being shipped but how this divides between direct shipment, coasting and lighterage, is uncertain. G.A. North indicates the tonnage of sleepers and other products being shipped out through the Tees in specimen years.

20. L.B. Hannah Electricity before Nationalisation (1979), pp.28-35.

21. D/AF 7 Minutes, 17 May 1906 - 25 January 1907.

22. D/AF 388 of 25 August 1912 and D/AF 393 of 17 June 1914, both Anderston, Glasgow to Anderston, Port Clarence. "Expensive" power had to be taken from Glasgow Corporation whilst preserving the erratic gas engine and maintaining the old steam engine as an auxiliary.

23. D/AF 387-393 internal letters/memoranda from Anderston, Glasgow to Anderston, Port Clarence contain monthly reports from Cargill to Dawson, 1912-16.

24. D/AF 430 out letter book, 22 December 1910 gives 700 employees, plus office staff, at Port Clarence with the expectation of an increase in numbers early in 1911. In late 1913 - spring 1914, the Glasgow machine shop employed 129 and the foundry 192: D/AF 392 Anderston, Glasgow to Anderston, Port Clarence, December 1913, D/AF 393 same to same, 21 May 1914 etc. and D/AF 524 Letter from Cargill, 3 May 1934.

25. D/AF 393 Cargill report to Dawson, 8 April 1914.

26. See above Chapter 3 and Appendix 2 below. Cargill's mentor from his apprentice days, Robert Forsyth, was brought in from Kirkcaldy to act as superintendent/under-manager of the machine shop, staying for c.20 years.

27. Edward Corry was agent from the 1850s until the early 1890s. He is last mentioned in D/AF 245 Quotations Book, 11 April 1892. For early evidence of him see D/AF 11 private ledger, 1854-. D/AF 447 Cargill to Cunningham, 20 June 1945.

28. The consulting engineers and the engineering institutions were established in Westminster, close to Parliament, where their members' services were frequently required, i.e. in the professional part of town rather than the commercial city. The London offices/agents of many of Anderston's rivals were thereabouts. See Railway Year Books, Universal Directory etc. of the 1900s. Macnees were at Victoria Street by the 1890s - see S.R.O. GD 282/12/129 etc.

29. To this end Anderston considered taking part payment in shares of the County of Dorset Supply Company. Williams, the new agent for gas engines, had formerly worked for Crompton & Co., who were currently Dorset's contractors and in the market for 10 engines. A further agent, an employee of a power supply company, was appointed for Ireland. (D/AF 389 Anderston, Glasgow to Anderston, Port Clarence, 27 November - 31 December 1912).

30. D/AF 265-268, Foundry order book and D/AF 242-251, Foundry quotation books.

31. See Appendix 3. Figures from D/AF 14, Private ledgers.

32. A considerable variety of design was used. The various railway year books and directories give certain details as of the several firms of consulting engineers employed. Different consultants might wish, for a variety of reasons (pace Livesey and Henderson) to standardise on a variety of different fittings.

33. See PLATES 1-2 for different types of rail section. Much of the railway system of sub Saharan Africa was of metre gauge, or similar, constructed with an eye to lightness and cheapness of engineering and track fixtures. Secondary lines in India were frequently metre gauge, and minor lines, narrow gauge, whereas the core main lines of the 1850s were, as with the later Argentine system, constructed to a broader gauge than was common in Europe.

34. D/AF 629-634, Essays on steel sleepers, metal sleepers and their development, with illustrations of particular designs; D/AF 242-251, Quotation books. In the late 19th and early 20th centuries, Indian railways used variously cast iron pot sleepers, cast iron plate sleepers and steel sleepers. South Africa progressed from wrought iron transverse sleepers (1880s to early 1890s) to steel sleepers thereafter. S. American railways, having moved from cast iron to steel sleepers, increasingly used native hardwoods. The basic iron sleeper, the bowl sleeper, comprised a pair of up-ended cast iron saucers, secured together by wrought iron tiebars. Various fastenings were used to secure the rail, including steel jaws cast onto the bowls. Thus one sleeper and fittings could take in wrought and cast iron and steel.

35. See TABLES 4.1 and 4.3 and Appendix 3. Calculated from D/AF 265-268, Order Books.

36. Not unlike the experience of private locomotive builders. See, for example, S.B. Saul "The Engineering Industry" in Aldcroft ed. The Development of British Industry and Foreign Competition (1968), pp.197-199 or M.W. Kirby "Product Proliferation in the British Locomotive Building Industry" in Business History, vol.30, no.3, July 1988. The London and South Western, London, Brighton and South Coast, South Eastern and Chatham and Great Eastern systems formed the southern customers. The Great Northern at Peterborough, the London and North Western at Crewe, the Midland at Derby, the Lancashire and Yorkshire at Horwich (Lancs.) and the Great Central at Gorton (Lancs.)

possessed chair foundries. See also G. Findlay, The Working and Management of an English Railway, chapter 4.

37. See Appendix 1 for historical notes on the Railway and General. The N.E.R. was served by Anderston, Head Wrightson and Gilkes Wilsons Pease, later Wilsons Pease, later Pease and Partners on Teesside, and Smith Patterson at Blaydon.

38. Minor lines did not insist upon separate designs. The Railway Year Book and the Universal Directory of Railway Officials, 1902-3 shew, for example, the then standards: N.E.R., 90lb rail, 40lb chair; L.N.W.R., 90lb rail, 45lb chair; G.N.R., 96lb rail, 50½lb chair; North British, 92lb rail, 45lb chair; Caledonian, 90lb rail, 46lb chair. The same weight does not imply the same design. Railmakers, facing similar problems, might keep in stock over 1000 tenplates of railway sections. See J.Y. Lancaster and D.R. Wattlesworth The Iron and Steel Industry of West Cumberland (Workington, British Steel Corp., 1977), p.108ff.

39. D/AF 16, Commission accounts; D/AF 242, Quotations Book, p.20, 46-47, 66, 69 et seq. The Quotation and Order Books are indexed. The argument which follows concerning collusion relies extensively upon the cumulative information in them covering some 35 years. To itemise the references in full would swamp these notes.

40. D/AF 265, Order Book covering 1877-80.

41 Iron fencing posts, poles and fixtures were made by Anderston for Australia in 1878/80. Thereafter regular orders were received from India (c.2000 tons p.a.) until the 1920s, largely from the G.I.P.R. - see Appendix 3. D/AF 265-269, Order Books. For the inception of C.I.C.A. see D/AF Commission Accounts covering 1880-81; D/AF 242, Quotations covering the same, and the succeeding volumes. D/AF 433 out-letter book, 30 May 1916 and D/AF 437 out-letter book (to Anderston, Glasgow) 14 - 29 March 1922.

42. D/AF 437, Out-letter book (to Anderston, Glasgow), 14 - 29 March 1922. D/AF 431 out-letter book (to Head Wrightson), 21 October 1912. Kelly's Directory of Durham and Northumberland, 1879,(and various following editions to the 1890s) carries advertisements from Smith Patterson in which sanitary engineering is uppermost. Business connexions linked Smiths to the gas and water companies of Tyneside through the Cowen family. Whether Scottish deliveries and Great Western orders were included fully, or even partly in the tonnage figures of C.I.C.A. may be doubted. D/AF 441, Out-letter book, 24 February 1925.

43. Smiths received 3d. per ton on sleeper orders if they were invited to tender, but seems not to have supplied any sleepers. D/AF 16-17, Commission accounts; D/AF 242-251, Quotations.

44. D/AF 243, Quotations, 1883-87. D/AF 569, Anderston/G.K.N. correspondence for 1950 passim. D/AF 438, Out-letter book, 22 January 1923; D/AF 441 ditto, 30 January 1925.

During 1885/6 an inner ring operated within C.I.C.A. as Anderston and Patent Nut and Bolt paid one another double commissions. It is uncertain whether other members knew of this. The result would have been a net payment from Anderston to Patent Nut and Bolt as, perhaps, a sweetener for joining.

45. D/AF 248, Quotations book covering 1900-1904. D/AF 441, Out-letter book, 30 January 1925. D/AF 430, out-letter book, 22 July 1910. The precise dates of P.N.B./G.K.N.'s defection are not known.

46. There is no evidence of a formal constitution for C.I.C.A. There were no outside officials. The shares were not rigidly adhered to - so that firms suffering from a particular shortage of work might obtain work to which they were not entitled, assuming that everything, over time, would even out. Anderston was the firm at the hub of C.I.C.A.

47. Head Wrighton, its most important local 'rival', seems to have taken over the administration of C.I.C.A. in the 1900s, but payments of commissions to British Hydraulic, and various of the peripheral members, continued to be arranged through Anderston. D/AF 17, Commission accounts, 1912-.

48. D/AF 242-243, Quotations books, 1877-87; D/AF 265, Order Book, 1875-89. Except for small deliveries to joint lines in which the Great Western was but part owner. Deliveries had been to points in Cheshire. P.N.B's plant at Cwmbran was in the heart of the G.W.R.'s territory. The Isca Foundry (see chapter 6) had a small trade in G.W.R. chairs but was never party to C.I.C.A. - insulated from it by P.N.B. as, for example, various Scottish makers were by Anderston.

49. D/AF 441, Out-letter book and D/AF 420, Anderston, Glasgow to Anderston, Middlesbrough, 23 - 24 February 1925.

50. D/AF 242-251, Quotation books. T. Richardson & Co. to Messrs. Close, the Yorkshire Engine[ering?] Co., and Walkers of Warrington were the principal outsiders. How many of these were makers and how regularly, how many were merchants, and what was the extent of their chair business, is unknown.

51. e.g. In 1897 (D/AF 246), Close took both ordinary and points and crossings chairs for delivery at York. After 1904 Thomas Summerson's seemed on the point of disrupting arrangmenets for points and crossing chairs for delivery at Darlington, where it had just extended its works (See Appendix 1 for historical notes on Summerson's). Darlington Railway Plant later joined in but both firms' prices were usually too high to be of any account. See D/AF 242-251, Quotation Books and D/AF 265-268, Order Books for all of the preceding.

52. D/AF 242-251, particularly: D/AF 246, 31 October 1904 for South Yorkshire; D/AF 248, 4 July 1901, lost to Patent Nut and Bolt (who had previously received 6d. a ton for losing prices); D/AF 250, 3 December 1907, 28 November 1908 and 1 October 1910 for losses to Nottingham; D/AF 251, 10 February 1912, where the northern firms secured the order and paid 6d. per ton

commission to Williamsons of Wellingborough; and ibid, 15 July 1912 when G.K.N. received 6d. per ton, Heads 2500 tons and Peases 1600 tons, both to Lowestoft, Taylors 1900 tons and Railway and General 1000 tons, both to March; D/AF 432, out-letter books (to Anderston, Glasgow), 14 July 1913. None of these Midlands firms should be regarded as a major producer. Complete orders (D/AF 248, 24 July 1901 and D/AF 251, 30 November 1912) continued to be lost to complete outsiders, such as Swains of Manchester, from time to time.

53. D/AF 431, Out-letter book (to Anderston, Glasgow), 21 October 1912.

54. The northern firms could deliver to Carlisle. After 1900 Howie proved troublesome on occasions in respect of North British orders, e.g. D/AF 393, Anderston, Glasgow to Anderston, Port Clarence, 1 June 1914 and D/AF 408, . ditto, concerning mutual stand off with Howie, 12 August 1921. D/AF 414 ditto, regarding Hunters of Ayr and that firm's contacts with the Glasgow and S.W. Railway, 8 - 13 June 1923.

55. D/AF 251. In the period 1912-14, 3 Highland Railway orders were arranged for Rose Street, subject to 1/- a ton to Anderston, Head Wrightson and Peases, and 6d. a ton to Smith Patterson, whilst one order was arranged for Anderston, which paid 1/- a ton to Rose Street and 6d. to Heads and Peases. D/AF 436, out-letter book, 10 February 1921 and D/AF 439, same, 26 April 1923, both to Anderston, Glasgow concerning arrangements with Rose Street. D/AF 416, Anderston, Glasgow to Anderston, Port Clarence, 28 December 1923; D/AF 415, ditto, 2 August 1923.

56. T. Edington & Sons, Phoenix Works, Garscube, Glasgow and James Goodwin, ironfounders, bridge builders etc. of Motherwell, Ardrossan etc. and Johnstone, also ironfounders, engineers, boiler makers, ingot moulders, contractors for railway plant etc. See J.R. Hume and M.S. Moss Workshop of the British Empire, pp.19, 43-44. Slater's Directory of Scotland, 1862 and 1886. E. Dawson had been "on principle against Scottish makers paying commissions to north eastern makers on Scottish orders". D/AF 404, Anderston, Glasgow to Anderston, Port Clarence, 10 June 1920.

57. D/AF 248, Quotations Book, 23 February 1904.

58. See above and D/AF 430, out-letter book (to Anderston, Glasgow), 27 July 1910.

59. D/AF 412, Anderston, Glasgow to Anderston, Port Clarence, 4 December 1922. By 1912 Melvins was paying 6d. per ton to Anderston and British Hydraulic on N.B.R. orders received, whilst Hydraulic paid 1/- a ton to both Howie and MacFarlane Strang on the orders it received. See Appendix 1 for short historical notes on all of the above companies. Howie had been receiving various commissions since 1906 (D/AF 249-251, Quotations Books, 19 July 1906 - December 1911). D/AF 386, Anderston, Glasgow to Anderston, Port Clarence, 30 December 1911 (quoted).

60. Work in hand, included in valuations D/AF 4-5 of 1884/5. In 1883/4 (D/AF 16, Commission Accounts and D/AF 23, Balance Sheets), Glasgow made, inter alia, 2565 t. of fencing for India, 10136 t. of chairs and sleepers for the same, 1000 t. of chairs for the L.N.W.R.

61. D/AF 14, Private ledger. Some chairs for S. America were made at Glasgow, 1896/7. D/AF 266, Order Book, p.253.

62. Not all Caledonian orders passing through the Foundry Order Book were executed at Port Clarence, whilst the absence of such orders in those books in the 1870s/80s does not indicate that there were no Caledonian orders, but that they were placed in Glasgow. Cargill's monthly reports, 1912-14 (in D/AF 387-393) detail the making of Caledonian chairs for stock, a long established practice which reflected the size and frequency of such orders.

63. No other northern firm quoted the Caledonian between 10 December 1881 and the end of the First World War (D/AF 242-252, Quotation Books) as far as can be ascertained. Goodwin's took an order for points and crossings chairs, 20 May 1881 (S.R.O. BR/CAL 1/26, Minutes of Caledonian Railway). After 20 November 1884 (D/AF 265, Order Book), Anderston took all such. D/AF 242-243, Quotations: Goodwin's took points and crossings and ordinary chairs, 20 May 1881; Anderston took 5000 tons to Goodwin's 1000 tons, 28 October 1881, on a rising curve to 20 August 1886 - when Anderston received 10-12000 tons of ordinaries (for delivery over several years), Edington's 2-3000 tons, Goodwin's, nil.

64. D/AF 244, Quotations, 26 August 1889. By 8 August 1890 (D/AF 245) Goodwins' price was 2/- per ton, and Edington s' 6/9d. per ton above Anderston's.

65. The first quotations from MacFarlane Strang (est. 1877) is 8 September 1890 (D/AF 245) and from British Hydraulic, newly established, 16 January 1894 (D/AF 245).

66. These new firms were net recipients of commissions. Their prices were, in effect, set by Anderston, with its direct line to the Caledonian, and were never less, and, frequently, slightly more than Anderston's price. Both firms when quoting for Indian business co-ordinated prices with C.I.C.A. and always took losing prices. They had become content with their allotted place.

67. A typical order (D/AF 267, 1 September 1906) was divided: 3000 tons of ordinary chairs plus all points and crossings ones, to Anderston; 500 tons of ordinaries to MacFarlane Strang; 1000 tons of ordinaries to British Hydraulic.

68. D/AF 250, Quotation and D/AF 262, Order, December 1908. Anderston received 6000 tons, Campbell 1000 tons.

69. This process was not completed until the railway grouping of 1923. See, for example, C.J. Allen The London and North Eastern Railway (1966), chapters 4-7; G. Findlay, chapter 2,

Sir John Elliot On and off the Rails (1982), chapters 3-5; M.R. Bonavia, Four Great Railways (1980), chapters 2-5; Bonavia, Railway Policy Between the Wars (Manchester 1981), chapter 1; Bonavia, History of the London and North Eastern Railway, vol.1 (1982), chapters 1-5.

70. The Stores Committee, once the influence of the Anderston interest had worn off during the 1900s, and in default of a further interest group, was likely to be guided by the Stores Superintendent: Lorimer, in office under Bunten, continued until 1907. (BR/CAL 4/5, List of directors and officials). Orders could be nursed for particular suppliers. Anderston used to enjoy long informal discussions in advance of tenders being invited and get more than it had tendered for (D/AF 424, out-letter book (to Anderston, Glasgow), 26 December 1925). Anderston usually received first refusal on chairs. Easton, in office from 1911 to c.1928 (BR/CAL 4/5), was a "particular friend" (D/AF 412, Anderston, Glasgow to Anderston, Middlesbrough, 7 November 1922). British Hydraulic's shareholder base (see Appendix 1) was broad enough to be able to exert some influence. Post 1918 British Hydraulic tried to woo business from the North British.

71. On quotations to Glasgow, Anderston's manufacturing costs were 5/- - 10/- a ton below those of the local firms (D/AF 249-250, 1906-1908). Edgington's last appeared in the quotations books in 1892 (D/AF 245).

72. Calculated from order books, D/AF 265-269. See also Appendix 3.

73. Calculated from order books, D/AF 265-267 and quotations, D/AF 242-250. See TABLE 3.2 for G.I.P.R./I.M.R. orders, 1880-1914.

74. D/AF 248, quotations, 12 March 1902 - 13 October 1903. G.K.N. was back in the commission arrangement by 17 February 1904 (D/AF 248). Both of the personal connexions, Watt and Berkeley, had died during the 1890s.

75. D/AF 246, Quotation Book, 19 September 1894 indicates that British Hydraulic's tender was seen off once this newcomer had been made aware of the patents. D/AF 158 records patents held and those taken out in 1886/7, and running to 1899/1901, relating to sleeper fastenings appear pertinent. It might be that the timing of P.N.B.'s break with C.I.C.A. was no coincidence but a shrewd move to take maximum advantage of the expiry of those patents. In the way that Liveseys designs followed Livesey and Henderson around it would be feasible for Anderston, G. Berkeley, consulting engineer to the I.M.R./G.I.P.R., Watt et al. to have co-operated to produce an individual design of sleepers and fittings. The patent was protection inter alia against other C.I.C.A. members and maintained Anderston's leading place in the Association. The I.M.R./G.I.P.R. would order by choice from Anderston; the future of the relationship was being institutionalised against the failure of personal linkages. Anderston was employed by the G.I.P.R. in the 1920s to design its new standard, steel sleepers. For discussion of the individualism of engineers and

of the market in railway products see M.W. Kirby "Product Proliferation..." in Business History, vol.30, no.3, July 1988.

76. It may have ceased to manufacture its own with the closure of the Glasgow tiebar and sleeper shop. Fry's became the Darlington Rolling Mills. See, for example, D/AF 430, out-letter book, 16 September 1910 and D/AF 432, same, 13 November 1913, respecting continued co-operation with Fry/D.R.M. MacLellan's was a firm of Glasgow ironfounders, structural steel and bolts manufacturers, and merchants and contractors with whom Anderston had done business since the 1850s. It was seldom seriously competitive in price. Sometimes it would obtain orders for railway equipment and subcontract part to Anderston.

77. D/AF 249-251, Quotations book. The Cambridge Economic History of India, vol.2, p.601. After 1910 B.I.C. was able to solve many of its technical problems by gaining access to better ore. See Appendix 1 for historical note.

78. Bain's, for example, received 1/3d. per ton commission, for covering Anderston's fencing quotation to the G.I.P.R. D/AF 433, out-letter book (to Anderston, Glasgow), 4 May 1915. The Wrought Iron Association had broken late in 1911, D/AF 386, Anderston, Glasgow to Anderston, Port Clarence, 20 November 1911. Bayliss took a tiebar order (D/AF 250, 3 August 1910).

79. The Bengal Iron Company was a London based company operating in Bengal from 1890. Its directors included the Managing Director of the Bengal Nagpur Railway, a partner in a contracting firm and a member of a Glasgow iron firm. The Cambridge Economic History of India, vol.2, pp.585-586, Rungta, pp.276-278. The Glasgow iron firm was none other than P&W. MacLellan. W.T. MacLellan, one of the sons of the founder (W. Maclellan)was chairman and managing director of Bengal Iron and Steel Co. and Bengal Iron Company from the 1910s to the 1930s. (Slaven ed. 1986), vol.1, pp.173-174; Who Was Who, 1941-50; Who's Who, 1931 (See D/AF 11-12, Private ledgers). The Houldsworths had a small investment in Bengal Iron Co. (See Chapter 3), perhaps on the strength of their Glasgow iron connexions, perhaps through the Anderston link. Bengal's being party to C.I.C.A. with commission payments to it (D/AF 16) routed via Anderston, should occasion no surprise. It could not rely on Anglo-Indian domestic custom. The G.I.P.R. would not reduce its quality tests to give Bengal a break (D/AF 431, out-letter book (to Anderston, Glasgow), 31 October 1912). The Indian government assisted the enterprise with orders. See also note 8 above and Gadgil, p.133.

80. The competition from Darlington Railway Plant and Foundry was felt in respect of switches and crossings for the G.I.P.R. etc. (D/AF 430, out-letter book (to Anderston, Glasgow), 14 May 1910 and D/AF 432, same, 21 April 1914). Before the rise of Tata (T.I.S.C.O.), Anderston faced the loss of cast iron sleeper business in India to native competition (D/AF 430, 24 October 1910). Only Anderston and G.K.N. supplied these to the G.I.P.R., although many other firms might occasionally supply chairs, tiebars etc., e.g. Williamsons (D/AF 431, 25 November

1911) or MacFarlane Strang (D/AF 433, 24 April 1915). It was necessary to pay firms to stand aside, e.g. D/AF 431, 26 February 1912 in respect of Railway and General. Tatas' agreement with the Bengal Iron Company collapsed when Tatas took an iron sleeper order for the Bombay, Baroda and Central India Railway (D/AF 433, out-letter book (to Anderston, Glasgow), 27 March 1915). For the rise of Tatas see sources cited at note (8).

81. E.G. D/AF 386, 28 September 1911, Anderston, Glasgow to Anderston, Port Clarence, cheque for commission for the Bengal Iron Company passed on via Anderston and Macnees.

82. Fortunately hard wood sleepers had not proved successful in India (D/AF 430, out-letter book, 10 June 1911). To avoid the potential loss of business to wood, native iron, or steel, the price of S. Punjab sleepers had to be cut (D/AF 430, 4 August 1911).

83. D/AF 430, out-letter book (to Anderston, Glasgow), 22 July 1910.

84. D/AF 430, out-letter book (to Anderston, Glasgow and Head Wrightson), 21 October 1912/3

85. At its most pronounced in the late 1930s. See Chapter 7 below.

86. British Association Handbook of the Industries of Glasgow and the West of Scotland (1901), p.27.

87. D/AF 553, 3 March 1942, Cargill to Cunningham.

88. D/AF 246-251, Quotation Book.

89. Segments had no replacement demand. They were ordered for large scale new schemes such as tunnels, sewers etc. The contracts were large, irregular in incidence and designed for delivery over several years. All segments orders prior to 1911 executed by Anderston were for the London tube system. Anderston obtained no fresh work, 1904-11. See Appendix 3 for details of orders.

90. That for the Waterloo and City (1894) was intended to be divided: 6000 tons each to Head Wrightson and Anderston, 2500 tons to Wilsons Pease, 4000 tons to Tees Side Bridge, a local bridge builder.

91. Head Wrightson, Smith Patterson, St anton Ironworks, Staveley Coal and Iron Co., British Hydraulic Foundry, Widnes Foundry, Phoenix of Derby, Laidlaws and J. & S. Roberts; and the City and South London between Wilsons Pease, the Sheepbridge Coal and Iron Co. and Anderston. Less ambitious arrangements between 1899 and 1904 involved Anderston, Head Wrightson and British Hydraulic. Makers and arrangements fluctuated. In November 1902 the Great Northern and City order was lost in part "The remainder going outside, probably to Whessoe". D/AF 248, Quotations Book.

92. D/AF 247-249, Quotations Book.

93. T.C. Barker and Michael Robbins, A History of London Transport, vol.2 (1974), particularly chapters 4 and 7 and also vol.1 (1963), pp.305-315.

94. S.D. Chapman, Stanton and Staveley, pp.117-119; J. Morgan Rees, Trusts in British Industry, (1922), pp.97-99. Stanton and Staveley of the larger makers; Sheepbridge, Widnes Foundry, the Butterley Company and Whessoe amongst the smaller. Other large firms in C.I.P.A. were Cochranes of Middlesbrough (see Chapter 5 and Appendix 1) and Maclarens of Glasgow who were (see Appendix 1) associated with the chair makers, MacFarlane Strang. Chapman was not accurate in respect of the membership of the Segments Association (C.I.S.A.).

95. D/AF 602, Minutes and correspondence of C.I.S.A., 1910-1915. The original members (ibid) were Sheepbridge, Stanton, Staveley, Whessoe, Widnes, British Hydraulic and the four northern chairmakers. None of these firms was primarily a segment maker unless it were British Hydraulic in its otherwise unsuccessful early years. The Derbyshire firms were iron and coal, quarrying and pipe making combines; the north-eastern firms were chairmakers. Solidarity from C.I.C.A. might ease co-operation between members of the latter group; the disputes of C.I.P.A. harm that of the former.

96. All D/AF 602. The contract for Buenos Ayres, the price of which had been cut by 5% a ton was negotiated by Stanton for subletting to other members. Anderston was quite happy not to participate in the Buenos Ayres contract but to receive extra commissions from an inner ring of northern makers to stand back, in view of the investment in new plant that would be required. D/AF 432, out-letter book (to Anderston, Glasgow), 23 October - 4 November 1913.

97. D/AF 431, out-letter book (to Anderston, Glasgow), 3 December 1912 and D/AF 432, ditto, 23 October 1913.

98. D/AF 602 and D/AF 433, out-letter book, 10 September 1915.

99. D/AF 17, Commission accouts and D/AF 602, passim. For example, the Butterley Company, which had been bribed with £1,000 not to tender for the G.P.O. tube railway tunnel segments in October 1914, agreed to join C.I.S.A. from January 1915. Anderston, through Edward Dawson, negotiated, on behalf of C.I.S.A. with its Glasgow neighbours, Potters of Govan (July - September 1914) leading to the latter's entering into a working agreement with C.I.S.A., reporting all enquiries to it and promising not to expand manufacturing plant (D/AF 602, 10 September 1914).

100. D/AF 602: 41670 tons allotted through C.I.S.A. in 1914 and £18,815 paid in commissions; D/AF 17, Commission accounts provides evidence of c.44000 tons of C.I.S.A. business, April 1913 - March 1914, and 45000 tons for the following twelve months.

101. D/AF 602. The details of the dispute are not made explicit. From 1913 commissions on all orders of less than 2000 tons were divided equally but on larger orders commissions were divided, in whole, or in part, pro rata to output. The former system of equal distribution of all C.I.S.A. commissions between members was unlike C.I.C.A.'s(direct payments by those taking an order to those who protected their prices) but in both cases, the larger firms made net payments to the smaller. Frictions within C.I.S.A. may have been the cause of Anderston's suggesting the employment of a firm such as Peat Marwick as "neutral" secretaries, D/AF 602, D/AF 431, out-letter book, 28 January 1913.

102. C. Hood, Iron and Steel, Their Production and Manufacture, (Pitman's Common Commodities of Commerce, c.1911), p.132 ff.

103. Barker and Robbins, vol.2, chapters 2 and 5, especially, pp.89-94. The Bournemouth tramways briefly used the conduit (Private information, editor Tramway Review). C.F. Klapper, The Golden Age of Tramways (1961) and innumerable books and articles on individual systems point to the general pattern on which (electric) tramway building boomed from 1897 to the early 1900s when its collapse brought the failure of various firms of tramcar builders such as G.F. Milnes. Experiments with other forms of surface current collection were uniformly unsuccessful.

104. Barker and Robbins, vol.2, pp.88-94, 233-234.

105. Calculated from D/AF 267-268, Order Books.

106. Barker and Robbins, vol.2, p.240 and findings of the Royal Commission on Transport (Cmd. 3751, 1931) cited there.

107. D/AF 430, Out-letter book, 24 August 1911.

108. D/AF 249-251, Quotations Books.

109. Sashweights were a staple of Head Wrightson (G.A. North, Teesside's Economic Heritage, pp.31-33). The head of Babcocks, Sir James Kemnal, had worked for Anderston in the early 1880s. (David J. Jeremy ed. Dictionary of Business Biography, vol.3, p.578). See Appendix 3 and D/AF 265-, Order Books.

110. Junction fish plates were one of the Points and Crossings department's lines. In the 1920s fish plates were a makeweight, done to please Dormans (see Chapter 5).

111. This was particularly the case interwars - see Chapters 5 and 6 below, with respect to subcontracts from Dorman's, the activities of the Crown Agents etc. D/AF 161-182, Furnishings books provide details of the suppliers of rails.

112. D/AF 557, Cargill to Cunningham, 20 June 1945; D/AF 489, Cunningham to A.K.L. Harvey, 20 August 1958 and other similar references from the 1930s.

113. H. Edgar Jones, vol.1, chapter 6 on the growth of Patent Nut and Bolt in the Black Country and its acquisition, and expansion of a works at Cwmbran, Monmouthshire, 1864 and after. S.B. Saul, "The Engineering Industry", in D.H. Aldcroft ed. (1968), pp.195-205 on inter alia, the removal of various locomotive building firms. Malcolm Ford Steel Town, Dronfield and Wilson Cammell, 1873-1883 (Sheffield, 1983).

114. See D/AF 242, Quotations Book; D/AF 265, Order Book; and D/AF 161-163, Furnishings Books for contacts with Macnee in 1879-1881.

115. Corry is mentioned from the 1850s, see above.

116. Scottish Record Office, GD 282/12/129 etc. for Daniel Macnee's executorship and accounts. See Appendix 2 for biographical notice. D/AF 380, Anderston, Glasgow to Anderston, Port Clarence, 29 February 1913, for the Caledonian's ceasing to use Macnee lever boxes. In Rotherham, Macnee was close to miscellaneous rail rollers and railway suppliers. His connexion to Anderston may have been through business, through Scottish links, through Davidson and Syme, or through James Livesey (who had acted for Owen's, a Rotherham maker of axles and spring steel, commodities in which Macnees were to deal in London): it is not clear. D/AF 540, Anderston/Macnee correspondence, 10 - 11 October 1938, indicating that Macnees had been in Victoria Street since the mid 1880s.

117. No records of Macnee and Co. survive according to Arthur Gracie, its last surviving partner (1985). Macnees had nothing to do with Anderston's chair and segments businesses but received commissions on those parts of iron and steel sleeper orders let separately or not arranged by the cartels. The difficulties Anderston experienced in its points and crossings business, the core of Macnee's commissions, left Macnee and Co. very badly off in 1912 and obliged Anderston to increase the commission it paid. D/AF 431, Out-letter book (to Anderston, Glasgow and Macnees), 16 February - 5 July 1912.

118. The North Eastern Railway at Gateshead, the Great Western at Swindon, the London and South Western at Eastleigh.

119. Unquantifiable references in D/AF 161 et seq., Furnishings Books and D/AF 430-432, correspondence. Some particular details in D/AF 16-17, Commission Accounts. Work in hand, 1884-5, recorded in D/AF 4-5, valuations.

120. D/AF 14, Private ledger for all details. The peak was £3,500.

121. Calculated from D/AF 14, private ledger.

122. See Appendix 1 for short histories of the various switches and crossings makers mentioned here. Darlington Railway Plant's issued share capital increased from c.£13,000 (1901) to £20,000 (1911). Durham Record Office, Darlington, D/DL 18 for Summersons. Sheffield Record Office, TW 219, 229-231, 238, 441-442 for Railway and General amd Darlington Railway Plant

minutes, annual reports and accounts. Stock Exchange Year Books, various editions, give some details.

123. D/AF 430, Out-letter book (to Anderston, Glasgow), 2 April and 3 October 1910 for Anderston's semi-detached attitude, foreshadowing the 1920s.

124. D/DL 18, Summerson's prospectus. Sheffield Record Office, annual reports and accounts of Railway and General and Darlington Railway Plant, TW 238, 441-442.

125. Private ledger of Darlington Railway Plant at Sheffield Record Office, TW 239. The detailed accounting records either do not survive or have not been deposited by Wards (alias R.T.Z) or by the various subsequent purchasers of Ward's railway business. Darlington was to receive one seventh of 5% of the sale price of an order. 5% was presumably, the add on for commissions. Anderston and Summersons were both interested in the order.

126. D/AF 17, Commission accounts; D/AF 430, Out-letter book (to Anderston, Glasgow), 11 July 1910.

127. D/AF 430, Out-letter book (to Anderston, Glasgow), 2 April, 7 April, 14 May and 3 October 1910. Anderston wondered when the two firms would "come to their senses", 2 April.

128. Rendels, Palmer and Tritton, consulting engineers, looked unfavourably upon Darlington ibid, 7 April 1910. 7½% was to be divided by the three losers and 7½% retained by the victor.

129. D/AF 431, Out-letter book (to Macnee and Co.), 19 June 1912 and see D/AF 430-432 generally.

130. D/AF 430, Out-letter book, 15 March 1911 and D/AF 432, Out-letter book, 5 September 1913; ibid 7 July 1913 to Patent Shaft and 16 February 1914 to Railway and General.

131. D/AF 432, Out-letter book (to Anderston, Glasgow), 21 April and 7 July 1914. Prior to the organisation of the Switches and Crossings Syndicate in 1923, but at dates unknown, the arrangement of the domestic market had taken place (D/AF 520, Anderston to Macnee, 1 June 1933 and Railway and General Minutes, 1944-1945 cited in Appendix 1), with northern firms taking the North Eastern Railway; Nottingham firms, the Great Eastern and the Midland; Whites, Isca, and Nottingham taking the few Great Western orders placed with outsiders; the latter two taking Southern Railway (predecessors) work; and Whites and the Nottingham firms, London and North Western orders. In the period 1911-1914 there was (at least) intermittent co-operation with Patent Shaft and Railway and General; and considerable co-operation with Summersons and Isca. Darlington Railway Plant's position was erratic - it hoped to benefit from the price enhancing aspects of collusion whilst steering clear of direct involvement, in order to take what it fancied.

132. D/AF 629-634, Lectures on the development of the steel sleeper by T.P. Cargill and accompanying illustrations. H. Edgar Jones, vol.1, p.294 and John A. Owen History of Dowlais Iron

Works (Risca, Monmouthshire, 1977), pp.83 and 159 both claim that Guests were first with steel sleepers, having got the idea from F.W. Webb of the London and North Western Railway. But (D/AF 629) Anderston and Bolckows were in the field in 1885, the years Guests began - Anderston tendered to the Indian State Railway (D/AF 243, Quotations, 21 December 1885). The cartel may have existed from the outset, perhaps first to deal with wrought iron sleepers (D/AF 7, minutes, 17 December 1920 places the origin then).
Transverse wrought iron sleepers had been made from 1882 (D/AF 265). The average cast iron sleepers and fittings weighed 94 lb. (D/AF 629), as much as a yard of main line track; wrought and steel sleepers only 67 lb.

133. Named after Rendel, the consulting engineers to the Indian State Railways, who were the first large purchasers. D/AF 629, D/AF 158, for patents and see above for individual purchasing and patents in respect of iron sleepers. D/AF 265-, Order Books, for sales.

134. D/AF 629.

135. D/AF 265 and Appendix 3. The predominance of iron amongst Anderston's sleeper output may reflect (1) that Indian sleeper business held up better than that of other markets (2) Anderston's lesser share of business within the Sleeper Association than within C.I.C.A. (3) The greater weight of the iron sleepers.

136. By 1903 the Leopoldina in Brazil was using hardwood and the Buenos Ayres had been standardising on it for some time (1300 of its 2550 trackmiles were so laid), both Railway Year Book, 1903. The Buenos Ayres and Rosario, which had ordered wrought iron tiebars in 1894 (D/AF 266) was seeking quotations for Rendel sleepers in 1899 (D/AF 247, 28 February). As in India, certain lines remained loyal to cast iron pots (e.g. Bahia Blanca and North Western, D/AF 266, 18 February 1897), whilst others were early converts to steel (Buenos Ayres and Pacific, D/AF 266, 22 April 1890). The Buenos Ayres Western, in the 1900s, sought tenders in steel and iron but ordered native hardwood (e.g. D/AF 248, 18 March 1902).
The Indian State and Hyderabad systems were early converts to steel (D/AF 243, 26 October 1886 for the latter); the Bengal Nagpur experimented (D/AF 265, 26 May 1887) before reverting to cast iron (D/AF 264, 24 June 1897); the East Indian sought cast iron plate sleepers (D/AF 254, 21 November 1911); the G.I.P.R., South Indian, and Bombay, Baroda and Central India all ordered cast iron pots consistently to 1914 (D/AF 246-254, Quotations, passim).

137. D/AF 629.

138. D/AF 629 and G. Findlay, p.93 for the London and North Western's experiment. F.W. Webb, their engineer, had, typically, produced his own design to be made at Crewe of which 100,000 were laid in the 1880s. The Midland and North Eastern Railway conducted more limited experiments. The Caledonian's

purchase of a small quantity from Anderston was no doubt inspired by Bunten.

139. D/AF 629. See Chapters 5 and 7 below for later, abortive attempts to sell steel sleepers to home railways. D/AF 432, out-letter book (to Anderston, Glasgow), October 1914, for a new sleeper design by A.T. Harvey suited to bullhead rail.

140. Calculated from D/AF 265-268, Order Books and Private ledger D/AF 14, viz 15% 4/1884 - 3/1889, 12.6% 1889-94; 8.9% 1894-99; 3.4% 1899-1904; 1.5% 1904-09, 3.3% 1909-14.

141. D/AF 250, Quotations, 23 May 1908, also D/AF 246, Quotations, 30 October 1894 - sleepers for the Cordoba and Rosario were lost abroad - as were orders for the Buenos Ayres Western, 19 July 1906 to Germany (D/AF 249, Quotations, 25 May 1905) for the Buenos Ayres and Rosario (ibid) and many others. How little Bunten's elaborate system of influence now counted is clear.

142. D/AF 7, Minutes, 17 December 1920.

143. The Darlington Company closed down during the 1890s (Kelly's Directory of Durham, various editions, and other similar works). The Tredegar Company had, by 1906, been taken over by Whitehead's (J.C. Carr and W. Taplin, History of the British Steel Industry, p.225) to be used as the site of the first semi-continuous rolling mill in Britain: Whitehead's was Anderston's supplier of spring steel for coiled keys. Ebbw Vale, Darlington, Tredegar and Moss Bay (W. Cumberland) were within the arrangement by 1891 (see D/AF 245, Quotations, e.g. 17 January, 21 December 1891) and all, except, perhaps, Ebbw Vale, were so at the time of the 25 February 1887 quotation, (D/AF 243) to the Indian State Railways. In the mid 1890s Moss Bay was outside the S.S.A. (D/AF 245-246, Quotations, 27 February 1893 - 5 June 1896) whose adoption of a system of allocating orders to districts rather than individual makers was tried at this time (as cause, consequences or reaction?) - see D/AF 512, Cargill/Cunningham correspondence, July 1931). Moss Bay had returned by 21 February 1898 (D/AF 247, quotations). By 1893 Anderston was co-operating with Bolckow Vaughan to supply the latter with steel sleeper fittings which they did not make but Anderston's bolt shop did (D/AF 245). British Steel continues (1989) to make steel sleepers at Workington.

144. Possibly as early as 13 July 1891, definitely by 1893. D/AF 24, Private Journal. The arrangment may have allowed Anderston to share the burden of losses and low prices as well as the commissions. The sleeper plates, really a semi-finished product, accounted for a high proportion of the production costs.

145. D/AF 17, Commission accounts.

146. Carr and Taplin, pp.167-168. The gain was c.13/- a ton; the loss on the syndicate's collapse (1886) 12/-. The connexion

between the S.S.A and the railmakers' associations, whose members dominated it, was extremely close, now and later.

147. H. Edgar Jones, vol.1, p.376.

148. Carr and Taplin, chapters 19 to 26 deal with the general position, pp.251-253 with the resumed British Railmakers' Association (1896) and the international one (1904), through which prices again rose substantially. See also H. Levy Monopolies, Cartels and Trusts in British Industry (English edition, 1927), pp.266-269. Carr and Taplin, pp.289-295 deals with the prospects, difficulties and attitudes of the steel industry.

149. Carr and Taplin, pp.198-202, 232-235, 294-295. The British Iron Trade Association reported on Belgium and Germany in 1895 (ibid pp.175-179) describing their advantages in terms similar to those of the 1920s/30s: in the former, low wages, low freight costs (via Antwerp) and the need to export to compensate for a small home market. Those who operated a system of differential pricing, to encourage exports as a matter of policy, gained thereby from high tonnages, the spreading and lowering of overheads, improved efficiency and an atmosphere of optimism conducive to expansion.

150. Carr and Taplin, chapters 25, 26 and 28. D.L. Burn Economic History of Steelmaking (Cambridge, 1940), pp.95-112 concerning price discrimination, and ibid chapter 11, especially pp.275-285 on cartels, associations and structural change.

151. See also note 141. Mexican sleepers were lost to Germany (D/AF 245, Quotations, 29 September 1891); those for Mozambique were lost (D/AF 245, 2 June 1893) at "a very low figure" to Germany. Continental competition was also felt in wrought iron (D/AF 245, 26 January 1892)with the loss to Belgium of tiebars for Egypt.

152. For example the Crown Agents bought German sleepers for Uganda (D/AF 430, out-letter book (to Anderston, Glasgow), 6 February 1911). Paulings, Rhodesia Railways' in-house contractor similarly (D/AF 431, out-letter book (to Anderston, Glasgow), 7 February 1912, Quotations from D/AF 392, Anderston, Glasgow to Anderston, Port Clarence, 6 and 23 January 1914 respectively).

153. D/AF 432, out-letter book (to Anderston, Glasgow), 20 March 1914.

154. D/AF 7, Minutes, 25 August 1886. Steel sleeper fittings regularly appear in "Foundry" order books.

155. D/AF 14, Private ledger and D/AF 304-305, Bolts Order Book: 1100 tons p.a., 1889-94, thereafter 600-950 tons p.a. in each quinquennium. See Appendix 3.

156. D/AF 304-305, Bolts Orders. The Caledonian featured prominently, inevitably.

157. See note 143 above.

158. D/AF 292-295, Bolts Quotation Books provide details, 1898-1914; none survives for the earlier period. Also D/AF 17, Commission accounts for 1912-14.

159. Calculated from D/AF 14, Private ledger.

160. E.g. D/AF 294, 2 November 1909. An order for the Crown Agents was arranged as to bolts but not as to spikes. G.K.N. and Anderston had some manner of agreement covering fish bolts and nuts (D/AF 430, out-letter book (to Anderston, Glasgow), 11 July 1910).

161. The greater the number of firms and the less specialised the product, the more difficult it was to arrange. Examples of orders lost to Coopers are at D/AF 293, 10 February 1904 and D/AF 294, 27 November 1907.

162. D/AF 431, out-letter book (to Macnees), 16 February 1912.

163. See Chapter 2. The quotations are, however, frequently found in the Foundry Order Books, kept at Port Clarence, after 1894 (D/AF 266-268) - another example of the difficulties in relating orders to particular plants and departments. The Great Indian Peninsula was principal customer.

164. Calculated from Cargill's monthly reports, 1912-14 in D/AF 387-393.

165. D/AF 246-252, Quotations, July 1894 and after, D/AF 248, 29 June 1904 refers to the "usual" 3 payments.

166. See Chapter 3 above for Murray and Appendices 1 and 2 for notes on him and his firm.

167. D/AF 249, Quotations. After 1906 Ibbotson Bros. consistently quoted very high prices, e.g. £15 in December 1906 compared with £10 10/- by Anderston. See also D/AF 407, Cargill/Anderston, Glasgow to Anderston, Port Clarence, 22 April 1921.

168. Glasgow Trade Directories, 1910-12.

169. On the negotiations see D/AF 431, Out-letter book (to Anderston, Glasgow), 28 November - 9 December 1912; D/AF 388-389, Anderston, Glasgow to Anderston, Port Clarence, 7 October - 4 December 1912, D/AF 402, Anderston, Glasgow to Anderston, Port Clarence, 8 September 1919 and D/AF 407 same to same, 22 April 1921.

170. D/AF 390, Anderston, Glasgow to Anderston, Port Clarence, 1 May 1913.

171. D/AF 389, Anderston, Glasgow to Anderston, Port Clarence, 21 November 1912 and D/AF 431, out-letter book (to Macnees), 16 February 1912.

172. The nadir of the machine shop was 1910/11 with sales down to £13,000. The training of apprentices continued into the late

1920s. Ian Mac intosh was the last to rise to higher office in the company.

173. A. Slaven and S.G. Checkland ed. Dictionary of Scottish Business Biography (1986), vol.1, p.297: employment in textiles in Strathclyde had dropped by 42%, 1861-1911. See also A.J. Robertson "The Decline of the Scottish Textile Industry" in Business History, 12, 1970.

174. D/AF 158 contains notes of patents of 1894, 1899, 1901 and 1911 relating to looms, shuttle boxes, picking mechanisms of looms etc.

175. See Appendix 3. D/AF 212, Specifications Book of Machine Shop, Cargill's monthly reports and the daily letters from Glasgow to Port Clarence, D/AF 386-393, 1912-1914.

176. British Association Handbook, (1901), p.77.

177. S.B. Saul "The Machine Tool Industry in Britain to 1914" in Business History, 1968 and "The Engineering Industry" in D.H. Aldcroft ed. (1968).

178. D/AF 393, Anderston, Glasgow to Anderston, Port Clarence, 8 April and 17 June 1914.

179. D/AF 17 and D/AF 136, Income Tax Book, for details fo commission. See also Chapter 3 and Appendix 2.

180. A. Slaven ed. (1986) vol.1, pp.93-95. Brunton had succeeded to his family business in 1900. His firm continued consulting Cargill to c.1938, long after Anderston had ceased machine making. (D/AF 630, photographs of machinery produced by Anderston, c.1910; D/AF 586, Cargill to Cunningham, 23 November 1956).

181. D/AF 7, Minutes, 16 September 1908.

182. Hume and Moss, Workshop, p.30 ff, and p.55 respecting Blairs. See also note 175 above.

183. D/AF 7, Minutes, 3 June 1908 - one Hatch. D/AF 562, Cargill to Cunningham, 2 April 1947.

184. D/AF 430, Out-letter book (to Anderston, Glasgow), 15 May 1910: "It seems you are at present in a most serious crisis in Glasgow for we cannot go on making losses... [There is] a prospect of good and permanent business in gas engines if properly handled".

185. E.G. Bunten had two wire belt machines made up to Cargill's designs for stock. These were sold only with the greatest difficulty and some delay. D/AF 557, Cargill/Cunningham correspondence, 9 - 10 August 1945.

186. D/AF 430-431, D/AF 386-387, Anderston, Glasgow/Anderston, Port Clarence correspondence, 1910 - 1912 passim.

187. D/AF 430, Out-letter book (to Anderston, Glasgow), 19 January - 13 April 1911 passim, for Hatch in France and the difficulties with Imperial Tobacco. Bunten continued to dig in his heels for several weeks more. He was keen (D/AF 387 to Anderston, Port Clarence, 18 March 1912) to take a loss on gas engines to get in with useful customers.

188. D/AF 430, Out-letter book (to Anderston, Glasgow), 13 April 1911.

189. D/AF 387-388, Anderston, Glasgow to Anderston, Port Clarence, 13 May - 2 June 1912.

190. D/AF 14, Private ledger. Bruntons' claim was settled for £500 (D/AF 388, Anderston, Glasgow to Anderston, Port Clarence, 11 July 1912).

191. D/AF 7, Minutes, April - June 1912. D/AF 387, Anderston, Glasgow to Anderston, Port Clarence and D/AF 431, replies in out-letter book, 20 - 28 April 1912.

192. D/AF 431, out-letter book (to Anderston, Glasgow), 31 May - 6 June 1912 and D/AF 388, reply, 1 June 1912. D/AF 7, Minutes of A.G.M., 30 May 1912.

193. See notes 184 and 185 above. Glasgow could not go on as it had done. Its ultimate fate (closure) was long delayed but not unexpected. The disagreement with Babcock and Wilcox, boiler makers, respecting stoker links (D/AF 386, October 1911) is symptomatic of the managerial problems which will be discussed below.

194. See note 29 above.

195. D/AF 393, Report by Cargill to Anderston, Port Clarence, 8 April 1914. The decision had already been made, despite the great effort of Anderston's machine shop staff. The engines (D/AF 392, Anderston, Glasgow to Anderston, Port Clarence, March 1914), were unsuitable for high speed operation from a town gas supply - thus, in practice, of little potential. Railway and General burnt its fingers on gas engines at the same time - despite more modern plant. Both were up against successful specialist firms such as Crossley's (turning out 100 gas engines a week) - see S.B. Saul "The Engineering Industry" in D.H. Aldcroft ed. (1968) on the trend to specialisation in engineering products and on the nature of the leading firms and the development of gas and oil engines, pp.216-222.

196. D/AF 393, Cargill's report, 8 April 1914; D/AF 432, out-letter book (Dawson, Port Clarence to Cargill, Glasgow), 11 April 1912.

197. From D/AF 14, Private ledger.

198. D/AF 389, Anderston, Glasgow to Anderston, Port Clarence, 28 October 1912. Dundee firms complained at the ridiculously low prices of textile machinery work done by Anderston who were well aware that such work did not pay. To add 1/- or 2/- per

cwt to machine costs would ruin the chances of orders for machinery with competition from Lancashire for looms, from Belfast for winding machines etc. For the same reason, Anderston kept down the price of replacement parts. The foundry's jobbing work was a loser, its castings for the machine shop ditto, its chairs could have been more cheaply made at Port Clarence. An unspecialised machine shop was a drag on it.

199. Large orders had to be executed at Port Clarence for want of capacity in Glasgow, April - July 1913. See D/AF 390-391, 431-432, correspondence between the two halves of the business passim and D/AF 268, Order Book.

200. D/AF 388, Cargill's report to Anderston, Port Clarence for June 1912; and D/AF 393, same for June 1914 and D/AF 395, Anderston, Glasgow to Anderston, Port Clarence passim for other instances of supplying Barclay Curle.

201. D/AF 432, Out-letter book (to Anderston, Glasgow), 13 November 1913.

202. Bunten may well have been correct in assuming that the machine shop should take a new direction. That it had no future as a general shop squeezed by specialist rivals (a theme recurring in the 1920s), placed the cart before the horse. The successful production of a new class of machine to new technical standards required careful planning and an attention to detail of which Bunten seemed incapable.

203. The other chairs were for the Clyde Navigation Trust. D/AF 387, Anderston, Glasgow to Anderston, Port Clarence, 20 April 1912.

204. Calculated from D/AF 387, 20 April 1912 and Cargill's monthly reports, 1912-1914 in D/AF 387-393. His September report gives details of chairs being carried as stock.

205. Hume and Moss, Workshop, pp.23-24.

206. D/AF 14, Private ledger for ground rents. D/AF 431, Out-letter book (to Glasgow), June - July 1912 for strikes; D/AF 389-390, Anderston, Glasgow to Anderston, Port Clarence, February 1913, report and correspondence concerning strikes in Glasgow.

207. D/AF 388 of 25 August 1912 and D/AF 393 of 17 June 1914, both Anderston, Glasgow to Anderston, Port Clarence. "Expensive" power had to be taken from Glasgow Corporation whilst preserving the erratic gas engine and maintaining the old steam engine as an auxiliary.

208. D/AF 387-393, Monthly reports and D/AF 393, Cargill to Anderston, Port Clarence, 8 April, 5 June and 17 June 1914.

209. D/AF 393, 5 June 1914.

210. D/AF 389, Cargill to Anderston, Port Clarence, 9 December 1912 respecting Forsyth and his connexion with the Cargills.

211. The Monopolies and Restrictive Practices Commission, Report on the Supply of Cast Iron Rainwater Goods, 1951, pp.19-20. See also Report on the Builders' Light Castings Industry, (Cmd 1200), 1921. Hume and Moss, Workshop, p.24. J.M. Rees, (1922), pp.86-96; Report on Trusts, Cmd 9236 of 1919 and the subsequent publications of the Sub-Committees appointed under the Standing Committee on Trusts.

212. D/AF 389, Anderston, Glasgow to Anderston, Port Clarence, 28 October - 23 November 1912 and replies in D/AF 431, particularly 20 November 1912.

213. D/AF 388, Anderston, Glasgow to Anderston, Port Clarence, 24 July 1912 and reply in D/AF 431, 25 July 1912.

214. D/AF 390, Anderston, Glasgow to Anderston, Port Clarence, 5 March 1913.

215. See generally P. Fitzgerald Industrial Combination in England (1927), especially chapter 4; and for a particular instance in another foundry R.H. Cambell, The Carron Company (1961), pp.312-316. Campbell thinks that the effectiveness of the N.L.C.A. was overestimated - Carron was up to its neck in collusion. It may be that the psychological effect of collusion was more important than the practical. Certainly there were limits to the effectiveness of collusion - see Chapters 5 and 6 below.

216. Cited by J. Rees, p.16.

217. Campbell Carron, pp.312-316; Rees, pp.86-95; Fitzgerald, chapter 4; Monopolies Commission Report, 1951, pp.19-20. D/AF 389, Anderston, Glasgow to Anderston, Middlesbrough, October - November 1912 and replies in D/AF 431, both passim.

218. Hood, p.132 ff.

219. Hood ibid.

220. Hood ibid; Rees, pp.97-99; S.D. Chapman, pp.117-119. The aim of C.I.P.A. was (1) to obtain "fair renumeration" for its members (2) consultation to get a fair share of exports (3) combined action to protect the home market and preserve jobs (Rees). C.I.P.A. met monthly to fix prices but it had no printed rules.

221. As with the Segments Association. Political and Economic Planning, Industrial Trade Associations (1957), p.5 dates some 50 Associations, chiefly in iron and steel, to the 20 years to 1906, in contrast with other writers.

222. D.H. Macgregor, Industrial Combination (1906); F.W. Hirst, Monopolies, Trusts and Kartells (1905); H.W. Macrosty, The Trust Movement in British Industry (1907); H.J. Levy; Rees; Fitzgerald; A.F. Lucas, Industrial Reconstruction and the Control of Competition (1937).

223. Had the northern chairmakers not colluded to divide North Eastern Railway orders that railway could have played them off against each other.

224. Associations allowed members to cut prices to meet circumstances, e.g. C.I.S.A. in Buenos Ayres or the Steel Sleeper Association with G.K.N. in Hyderabad (D/AF 432, out-letter book (to Anderston, Glasgow), 20 March 1914), without a stampede of recriminatory price cutting ensuing. Commission earned on safe orders might provide a fighting fund - see Chapters 5 and 6.

225. D/AF 430, Out-letter book (to Anderston, Glasgow), 27 July 1910. Anderston feared Rendels, the principal consulting engineers to the Indian railways would learn of the sleeper "ring" and the inclusion of G.K.N. and Bengal Iron. Members of Associations seem to have gone to much trouble, as time wore on, to make the various movements in prices, from one tender to the next, sufficiently plausible and unpredictable to hide their collusive inspiration.

226. A. Slaven ed. (1986), vol.1, p.110. Or, for example, the various Peases and Bells on the North Eastern Railway's board.

227. See D.L. Burn The Economic History of Steelmaking, (1940) and Carr and Taplin generally. Hood estimates 75 syndicates were established in the German coal, iron and steel trades from the late 1870s. Also H.J. Levy, Industrial Germany, a study of its monopoly organisations (Cambridge, 1935).

228. See Fitzgerald, Levy (1927) and particularly Lucas, chapter 9, for all of the above.

229. S. Tolliday, Business, Banking and Politics, pp.47-51. Fitzgerald, chapter 2, describes the mixed record of success and failure of the large scale turn of the century mergers in the textile trade. Opposed takeovers were unknown. Moss and Hume, Workshop, p.62 ff summarise the ill conceived and unintegrated expansion of William Beadmore's, an early example of financial linkages (share swaps with Vickers), producing no integration of the two business. Also L.B. Hannah, The Rise of the Corporate Economy (1976), chapter 2; D.H. Aldcroft ed. (1968) passim.

230. Iron and Coal Trades Review, 26 August 1910 cited by Hood. German steel firms had integrated backwards and forwards to avoid interference by cartels; Tolliday, p.49, regarding Cargo Fleet/South Durham.

231. See below, Chapter 5, for the experiences of the 1920s.

232. See above, Chapter 3, and below, Appendix 2.

233. H. Edgar Jones, vol.1. for the rise of G.K.N. and the diversity of its business.

234. B. Elbaum in B. Elbaum and W. Lazonick eds. The Decline of the British Economy, (Oxford, 1986), p.77.

235. J. Boswell "The Informal Social Control of Business in Britain", Business History Review, vol.57 (1983), pp.237-257.

PART 2

Interwars and Depression

The coherence of the inter-war period is provided by depression, domestic and worldwide, and the recovery from it. In such circumstances the Anderston Foundry did not thrive but neither did it collapse. It lost ground to an onslaught of domestic and foreign competition in the 1920s, but more nearly held its own in the 1930s. Various of the problems in the 1920s carried over into the following decade but Anderston had belatedly come to terms with these. It was better able to deal with the new problems of the 1930s as well as with more of the same.

Without the First World War, Anderston would have faced in a reduced form many of the same problems: the rise of native manufacturing, the loosening of imperial linkages, the rise of road transport, the use of new materials as well as the amalgamation of competitors. In outline such developments may be discerned pre-war. Nevertheless war acted as a catalyst and disrupted, to a degree not then comprehended by others far better informed than Anderston's management, the economies of individual nations as well as the trading patterns of the world economy.

The manufacturing aspects of the business are considered in two chapters divided at 1930; ownership and control is taken as one chapter. Themes dealt with under both headings continue from the pre-1914 chapters. Elements of decline before 1914 were less apparent at the time than when viewed with hindsight through the distorting mirror of the experience of the interwars. However, Anderston was clearly far less dynamic than it had been before the 1890s and its response to difficult circumstances (as much in the 1910s as in the 1920s) points to a lack of vitality for which the war cannot be blamed.

The dramatic changes of fortune experienced by much of staple industry conjoined with the common and severe misjudgement of future opportunities made by many leading industrialists and financiers in 1918 point to the problems Anderston faced and how others pursued policies more ill conceived than its own.

CHAPTER 5

Manufactures and Manufacturing

1914 - 1930

The 1920s, the black decade for steel, was black for the Anderston Foundry but less so for many of its collaborators. This chapter investigates the fate of the company's products and markets during the First World War and through to the onset of the world depression.

The Middlesbrough plant lost 130 men in the first month of the war; more drained away subsequently.[1] The patriotic joined the services, the mercenary were attracted to the higher wages of munitions work, causing the Glasgow works to introduce bonus payments to retain labour[2] (January 1915). During 1916 the recruitment of women, the dilution of labour and, in Glasgow, some form of government control, took place, despite Anderston's resistance.[3] Rising raw material prices and wages, a feature of wartime inflation, were passed on to customers, many less than pleased, who could not resist paying.[4] The company half-heartedly followed fashion in joining the F.B.I. and the Scottish Employers' Federation,[5] but took no active part in them.

War caused business to boom. Domestic railways sought to secure their supplies by placing larger orders than usual for delivery over several years. Traditional foreign customers placed their usual orders and, until the end of 1915, business as usual

persisted. Thereafter, as the government got to grips with the war, chairs for the main line railways were the sole peace time product to be manufacturered on a large scale.[6] The others were supplanted by large orders from the War Office and from the French Government for light-weight railway tracks and metal sleepers, often to be shipped in pre-fabricated sections, for the military railways of the Western Front.[7] Over 46,000 tons of such material were ordered during the first six months of the war, increasing thereafter, e.g. 24,000 tons placed in a single order in March 1917.[8]

Both foundries made large quantities of stick bombs, howitzers, cast iron practice shot, grenade casings and other work which had little post-war application.[9] Sales of bombs and shot amounted to £14,000 in the first half of 1916/17.[10] Stoker links for Babcocks, peaking at 4,000 tons in 1916/17,[11] had to be made at Middlesbrough: the Glasgow foundry, profitable once more, was too busy.[12] The machine shop received its usual orders for looms alongside government contracts for cordite-mixing machinery, of aircraft parts, equipping 25 sawmills for the Canadian military, and so forth.[13] Plentiful orders for vacuum pumps and air compressors required by explosives makers,[14] orders to supply the expanding chemical firm Brunner Mond ,[15] and to supply wire weaving looms for paper makers, a business usually monopolised by one Manchester firm,[16] raised prospects of post-war work and consolidated the company's reputation and contacts in various spheres. The manufacture of axles and hubs for lorries[17] (1916), a means of escape from the firm's overwhelming dependence upon railway work was, typically, not persisted with.

The war's sudden end and the immediate cessation of government orders caused temporary disruption but this was buried by the avalanche of orders from traditional customers for traditional wares

(e.g. 9,400 tons of sleepers for India ordered between November 1918 and March 1919)[18] which engendered a false notion that the war had changed little and that lasting prosperity had arrived. If little had been gained as to new customers and products, little had been lost. A return to 1914 seemed possible, and was desirable to a company which wished to continue with the business, markets, products and sales methods it knew, all of which had remained relatively constant. Among several indicators that the true position was otherwise, was the attempt by the Tatas Iron and Steel Company (TISCO) to buy a steel sleeper press.[19]

As Anderston's core businesses were doing well, the temptation to diversify which afflicted many businesses passed it by. A modest expansion to the sleeper plant and some new machinery for the Glasgow machine shop apart, there was no investment, in inflated money, in new plant. Existing plant had not been fully used pre-war. Without a need to expand or invest, Anderston did not do so. The managers, cautious as ever, had no interest in building industrial empires, nor had the shareholders. Incorporation in someone else's empire was considered only after the post-war boom had bust (see Chapter 7).

The pitfalls and the opportunities of the post-war years were avoided, more by default than intent, to ensure that an unchanged business was passed on from 1914 to 1930 and after. That a decisive change in the industrial and trading climate in which Anderston operated had come about became apparent to it in 1924 as the post-boom depression broke the cycle, deepening rather than diminishing, and demand and prices for Anderston's staple products, at home and abroad, declined ruinously. New directions were then considered, belatedly and half-heartedly.

Anderston was irreversibly linked to manufacturing for railway customers. War had proved a filip to the development of all types of road transport.[20] Little new railway building occurred in the developed world.[21] The possibility of switching to a new market as the peak of railway construction in an existing one was breasted, had ceased to exist. In the late 19th century Africa had formed a partial substitute for South America; now the maturing railway systems of developing economies such as India or South Africa were to be supported by domestic industries supplying equipment formerly imported from Britain. South Africa was rumoured to be developing the manufacture of switches and crossings immediately after the war - nothing happened for a decade, but it was a straw in the wind.[22] In India, TISCO expanding pre-war, was boosted during the war by strategic considerations of imperial defence. Post-war the Indianisation of the attitudes of the British administration in India, and the rise of Indian nationalism, promoted by the war, pushed TISCO forward. Anderston by supplying track fittings for Tata's works and coiled key machines to the G.I.P.R. was recognising that it had no long-term future in that market and might as well make what it could whilst it could.[23]

The financial consequences of war and peace disrupted international trade: currencies depreciated; new plant commissioned during the war needed to be filled; various countries were driven to export to obtain foreign currency to pay reparations and war debts. New domestic competitors arose for all of Anderston's principal products except points and crossings, either attracted by the optimistic prospects apparently on offer or driven by difficulties experienced in their own staple activities. In the post-war boom merger-mania broke out in a rush of rational, irrational and/or

financially unstable amalgamations, vertical, horizontal and mixed, which appeared, sooner or later, threatening to Anderston. Would-be suppliers might now also be competitors: competitors might be driven to desperate action by desperate finances. The ramifications of groups such as G.K.N., Dorman Long (after its absorption of Bolckows, Braithwaites and Tees Side Bridge) and United Steel genuinely worried it. Their rivalries elsewhere might threaten Anderston's Associations from inside and outside. Their increased strength coincided with the decreasing effectiveness of those Associations on which Anderston relied to counterbalance the growth of these combines. (Only in switches and crossings was no large group involved: there, Anderston led and collusion flourished). Vertical combinations, by deft internal accounting might cross subsidise their finishing trades by providing, for example, pig iron or sleeper plates, at prices unavailable to the genuine outside purchaser.[24]

Anderston was keen to maintain the level of chair prices but in all other spheres, during the post-war boom or later, it tried to moderate its colleagues fearing that domestic, foreign and native competition might be further encouraged: it was "terribly short sighted on England's part" as customers held up orders until prices fell.[25] Anderston lacked the fighting spirit whereas those firms eager to extract maximum prices were likely to be equally quick in cutting prices once price levels had collapsed. From India, S. America and South Africa, British makers were, to a great extent, driven by low price competition; where a British presence was retained it was seldom by Anderston which had retreated to safer colonial markets, which would, in turn, come under pressure.

Although some of this loss of export business was due to a nationalisation of attitudes, so that a British registered South American railway might come to regard itself, and be under some pressure to do so, as more Brazilian than British, and other to similar changes in the imperial family relationship, most work could have been retained by Britain had its prices been more competitive. High domestic prices, high wages and taxes and the high cost of raw materials were seen as the root of the problem: their cause, the war and the boost it had given to organised labour. Abroad, freight rates might be subsidised and high price domestic markets, safe behind tariff barriers and more comprehensively cartelised than anything seen in Britain, be used to subsidise the dumping of exports. Britain, in its desire to return to 1914, sought to return to the gold standard at the pre war parity. The deflation of the economy to achieve and maintain this from the middle 1920s encouraged 'cheap' imports from European countries which, from either choice or necessity, had depreciated their currencies considerably and thus obtained an instant price advantage when exporting to sterling-based countries.

From 1921/22, as the boom collapsed, to 1924/25, as Associations and markets did likewise, problems multiplied. The Port Clarence foundry remained at the head of the business and was now the head of its problems. Tonnage fell from 33,000 (1920/21) to 10,400 (1925/26); profits subsided from £34,000 p.a. (1918/19 - 1923/24) to losses of £5,500 p.a. (1924/25 - 1928/29).[26] The products on which Anderston's prosperity was based were now the cause of difficulties. Its formerly advantagous site had ceased to be such. Lighterage costs soared, and the iron ores and iron industry of the Midlands now

enjoyed the advantages of price and technology over Cleveland which that latter had enjoyed in the 1870s over Scotland.[27]

The war and ensuing boom eroded the compartmentalisation between chairmakers; management changes at British Hydraulic seemed likely to make it less co-operative; to bring work to its new chair foundry, Smith Patterson sought an increased allotment, and G.K.N. threatened to break with CICA if others resisted its taking all the business it could.[28] Changes in railway freight rates to Scotland, and the North British Railway's move to seeking quotations priced ex-works rather than as delivered to various points on its system, began the undermining of the elaborate system of differential pricing deployed by CICA to divide orders.[29] British Hydraulic, facing the higher costs common to Scottish firms, could not now compete with northern makers in supplying the North British, one of its regular customers, just as the cheapening of Midlands iron would erode the northern firm s' position as suppliers to various English lines.[30]

CICA's internal stresses were exacerbated by outside competition, the railway grouping (1923) and the adoption of British Standard pattern chairs. At the Tees Side Bridge and Engineering Works, J.B. Peat used his firm management and propriet onal control, plus wartime profits, to expand and diversify. Anderston's alarm at his building a chair foundry, turned to loathing as he recruited its foundry manager (November 1921) and other staff.[31] From his former employers, Head Wrightson, Peat poached F.S. Fletcher as general manager. The two principal northern members of CICA, Guy Wrightson and A.T. Harvey, took these defections personally. Their hubris prevented CICA's adopting the rational policy of offering Tees Side membership, to forestall a competitor who would be the more effective for its managers' inside knowledge.[32] Tees Side was followed by

Cochranes, a local pipe maker recently taken into the Cargo Fleet/South Durham group, under pressure to diversify due to Stanton Ironworks' technological and competitive advances in its core business. McQuistan, former managing director of MacFarlane Strang, was recruited to run Cochranes, bringing further inside knowledge and useful connexions in Scotland.[33]

Cochranes "cut to ribbons" chair prices.[34] Fear of its competition drove the weaker willed (or more dynamic) of the existing makers to take unnecessarily low prices, which communicated themselves to other makers and customers, bringing prices spiralling downward.[35] Anderston had sought to keep down the price of Caledonian ordinary chairs to discourage competition, whilst maintaining the price differential of the switch and crossing chairs which it alone supplied,[36] but Cochranes quotation for Caledonian ordinaries forced Anderston and its allies to modify their "ideas of prices considerably".[37] Easton, Caledonian Stores Superintendent, steered his committee to give the bulk of the order, at reduced prices, to the usual suppliers but he became increasingly suspicious that by his "nursing" orders for them in the past, they had "bled" him. During 1922 the Caledonian began to tender and order more widely.[38]

Members of the Association became disputatious. To forestall resignations and collapse commission payments were suspended (July 1922) and Head Wrightson's and Smith Patterson's repudiations of the 1886 apportionments accepted.[39] Pease and Partners refused to protect Scottish makers' prices unless those firms were seen to be making more effort to compete with Cochranes.[40] In consequence, North British orders became the plaything of price, influence and rivalry between Pease, Anderston, Cochranes and British Hydraulic to the

benefit of none but the customer as prices fell further. Unprotected by its former allies, and uncompetitive, British Hydraulic closed.[41] CICA in disarray could not prevent members, suffering from competition, seeking work where they could.

Anderston forecast correctly that the grouping would do it no good.[42] Its principal customers were absorbed by the London, Midland and Scottish and London and North Eastern railways, both of which inherited chair foundries from other constituents. Only the Southern, the smallest group, having neither foundries of its own, nor makers on its system, might be handled in the old style.[43] Elsewhere, quotations were, increasingly, sought ex-works, or as delivered to the nearest point on a particular system to the makers' foundries.[44] Most manufacturers now were sited on, or close to, both major systems, rendering differential pricing impossible or impossibly suspicous.[45] Independent Scottish railways, with their national loyalties, disappeared; tendering became centralised and the railways more aware of the revenue they derived from the carriage of completed chairs and from their suppliers' other traffics.[46]

Any alternative pattern of railway grouping would have been better for Anderston whose misfortune was the absorption of the Caledonian into the largest group where the practices of three other constituents (all inclined to manufacture in-house) held sway in conjunction with mounting, bureaucratic, centralised, control from Euston. Easton's becoming Stores Superintendent for the L.M.S. in Scotland (including the Highland and Glasgow and South Western lines) provided him with evidence of chair price differences. Howie's low prices for the Glasgow and South Western were no longer insulated. To quote prices for chairs for Inverness which would be compatible with those of the Rose Street Foundry risked lowering prices for

other Scottish destinations.[47] In early 1924 railway officials compared chair prices (with a basic price from their own foundries) to shew Caledonian chairs amongst the more expensive, and its switch and crossings chairs much higher than others.[48]

The long, informal, discussions which had prefaced tenders to the Caledonian, through which Anderston had often obtained more work than it sought, ceased. Easton remained "a good friend" until his retirement (1928) but his freedom of action diminished: he had clear evidence of what prices should be and his new masters wished to economise.[49] From 1924 Pease and Partners, Cochrane's and other northern firms, elbowed aside traditional suppliers. Anderston was forced to cut prices; from 1927 it was offered small surplus orders at the ruling price; by 1929 it was offered nothing.[50]

Whereas very few firms had possessed full sets of patterns for switch and crossings chairs, the adoption, in 1925, of the new British Standard switch and crossing chair by all main lines obliged all interested makers to obtain new patterns with which they could compete for all business. Another former method of segmenting the business broke down although only some firms equipped themselves thoroughly.[51]

Simultaneously, CICA collapsed in disarray. Wrightson, the current secretary lacked the commitment to it.[52] Various existing members were seeking revisions of their allocations; some wanted a change in its methods, e.g. the introduction of sealed bids to auction prospective businesses within the Association so that those prepared to take the risks would get the work (and the others might get the commissions).[53] G.K.N., which had broken with the arrangments in the past, demanded shares of Southern and L.M.S. orders, as well as total protection for Great Western orders, in

return for assisting northern firms to beat Tees Side.[54] Head Wrightson was ever more willing to take low price work whilst Pease and Partners and Smith Patterson warned they would quit if any attempt were made to stop them taking such business as they could (they were respectively 30% and 60% above their old quotas).[55] Business continued to be lost to the Association but when McQuistan, contacted by his former colleagues at MacFarlane Strang , professed himself willing to co-operate, Wrightson spurned the offer and Anderston, which had hoped that Cochranes would tire of taking losses and come to its senses, allowed its judgement to be swayed by him.[56]

Cargill, a realist, disliked Tees Side's methods but, as its competition could not be wished away, was keen that Fletcher's approach for an arrangement be pursued to prevent further falls in price.[57] His fear that Tees Side would demand too great a share was never to be tested; Wrightson rejected this approach as emphatically as McQuistan's, and Tees Side thrived as principal beneficiary of the Association's demise. Harvey, his judgement impaired by personal animus and the rapid changes of circumstance, relied too greatly on longstanding links with Head Wrightson, trailing after the latter, of whose conduct Cargill was suspicious.[58] Anderston contrasted its own naive loyalty to the Association, whose collapse would harm it, with that of others who would gain from change. G.K.N. despite its demands, had a large stake in the status quo and it was actively encouraging the survival of the Association in some form.[59]

As northern firms had criticised Scottish ones for not putting up greater resistance so Railway and General became critical of Anderston and various of its partners in the north for their seeming unwillingness to match Tees Side's prices after several years of

competition.[60] The latter appeared to make profits from orders taken at prices which its neighbours considered unrealistic. Head Wrightson, in contrast, increasingly threw money away to obtain orders in panic response to such competition but remained adamantly opposed to the Tees Side's admission to the Association.[61] Smith Patterson threatened to resign, in 1925, in opposition to Head s' refusal, and Pease and Partners, which shared this view, did so on November 3rd to bring the Association to an end. A burst of activity from Anderston (which made an admission of its past sins) and G.K.N., acting in collusion but ostensibly independently, failed to change Head Wrightson's stance.[62]

The collapse of the Association and the Caledonian connection shewed up Anderston's uncompetitiveness. Prices "would be cut out of all reason"[63] and, once cut, would be difficult to restore. Large reserves funded a detachment which many rivals could not afford and only in 1926, after years of worsening results, was attention given to the structure of costs in the business, their apportionment, and to cutting labour and overall costs.[64] Cosy adherence to price fixing had induced a concept of a proper price for chairs, based on what had customarily been received, which persisted in the minds of directors irrespective of market conditions. This fuelled Anderston's unwillingness to take low price work in chairs, segments or sleepers at the onset of depression, and its wishful thinking that those who did would be driven by their losses to repent and collude.[65] Risk avoidance was in the interest of the principal shareholders (see 7th chapter) and could be afforded. Reserves which would have financed severe price cutting provided a cushion to taking awkward decisions.

Anderston, having told Easton repeatedly of its losses declined to "beg..." for more switch and crossing chairs; others lacking such inhibitions touted for Caledonian and other business at low prices and obtained · · fair quantities of work.[66] Pease and Partners, whose resignation had been timed to give it a free hand in the imminent tenders for the 1926 main line chair contracts, made a profit on its foundry with what Anderston considered surprisingly low overheads. Anderston took little action to shift overheads to departments better able to carry them, would not actively cross subsidise between departments and would not take the initial losses necessary to attract the extra business which, by spreading overheads would have allowed it to quote thereafter lower prices at an apparent profit.[67]

Harvey's response to the cocktail of difficulties experienced throughout the business was to wring his hands; some throught was given to closure or to offering the foundry to the L.N.E.R., but neither was pursued.[68] The loss of the Caledonian switches and crossings chair contract proved cathartic. To "get back in to the running again" Anderston successfully tendered for a large (3900 t.) chair contract from the Southern Railway at the "ridiculous" price necessary with the intention of bringing its former partners to their senses.[69] Smith Patterson rapidly sought a meeting and within a few months Head Wrightson was prepared to let Tees Side join in the limited discussions of orders between established norther makers which had followed the Association's collapse.[70]

All makers including G.K.N. were keen to increase prices. The existing shadowy arrangements with which Cochrane's (whose significance as a competitor had diminished) and Melvin's fell in, dealt with orders individually: some by arranged prices, some with tender fees added to independent quotations, others left open.[71]

Head Wrightson had become the most troublesome firm, making and breaking and by "sheer foolishness" undermining the effectiveness of, these arrangements (1927), e.g. taking L.M.S. chairs at 8/6d. a ton below Tees Side's quotation and 9/6d. below Anderston's (for which the latter had sacrificed all overheads and some in direct wages).[72]

Under Cargill, Anderston was more tightly managed and it was he, with the consistent backing of Smith Patterson locally and G.K.N. nationally, who led negotiations to recreate the Chair Association.[73] In the Midlands Taylor Brothers sought to limit local rivalries and, through Anderston, was linked to the discussions and meetings of those firms interested in the bulk business in ordinary chairs to which the Midland firms, primarily interested in special chairs were not invited.[74] Heads had spurned a meeting of all makers as untimely and pointless but negotiations continued under the shadow of the rivalry of Heads with Pease and Partners and the arrival of the Stanton Ironworks as a new competitor in late 1927.[75] Stanton was approached and appeared willing to make arrangements but these took several years to develop. Although Stanton did not develop into the formidable competitor which its access to cheap ore and pig iron might have indicated, those northern makers minded to cut prices had a further excuse to do so.[76] Free tendering increased, threatening the premium prices received by Anderston and Smith Patterson for L.N.E.R. switch and crossings chairs, one of the early fruits of renewed collusion[77] - the other one was to confirm the total protection of G.K.N. in respect of Great Western enquiries, where Tees Side had once proved troublesome, to secure which G.K.N. had withdrawn from Southern Railway[78] work, but even this was threatened by the unpredictable behaviour of Pease and Partners and Head

Wrightson as their irreconcilability deepened. G.K.N. abided by the agreement; Pease could not be guaranteed to do so.[79]

Anderston, which had forgotten how to compete, had been stranded by the Association's demise: its attempts to restore collusion and thus to restore its position, continued despite the difficulties put in its way by former allies. By 1930 Pease and Partners favoured higher tender fees and commissions leading to a local agreement. Head Wrightson would not join any scheme involving both tender fees and Pease and Partners. (Their open expression of distrust caused Pease temporarily to break off negotiations). Others disliked tender fees but different arrangements posed greater problems - with so few customers the production of plausible arranged prices to divide individual orders or share out work over time would have been extremely difficult. Equal pricing would shew up the collusion to the railways who might expand their own production or seek outside firms keen for work: rivalries and poor trading prospects militated against solid adherence to an Association. An allocation system would produce price movements in tenders inexplicable on grounds of cost, which costs the railways would know from their own chair-making activities, with similar prospective results.[80]

The dislike of railway companies for Associations, probably deep seated, had become more apparent and had strongly influenced the actions of Pease and Partners.[81] The 1923 grouping's creation of four large regional monopolies moving towards greater standardisation, co-operation and consultation, all suffering from road competition and falling profits, shifted the balance of power from maker to customer: the oligopoly of the purchasers was stronger than that of the suppliers. Formerly many customers faced comparatively few makers; now a few customers, some with their own

plant, faced a greater number of makers who were simultaneously beset by internal rivalries and difficulties. Their vast purchasing power and falling profits made the railways keen bargain hunters and the Association was ground to pieces between internal and external pressure. Industrial depression which reduced railway business and profits, was concentrated in the staple industries, badly effecting firms such as Pease and Partners and undermining further their shaky resistance, individual and collective to pressure from customers to cut prices.

By the late 1920s, optimism that an Association would soon be restored, and from which benefits would, flow persisted at Anderston, which, under Cargill's management, was seeking to become more competitive, despite the difficulties encountered. However the poor prospects of the domestic economy, the purchasing practices of the railways, with Anderston tied to the least prosperous two[31] and excluded from the others, the arrival of further competition and the extinction of export work cast deep shadows over all.

TABLE 5.1 Output of Northern Chair Makers (tons)
[Figures relate to foundry products only]

Cochranes:	L.N.E.R. Chairs	L.N.E.R. other	Other Castings	Total	Pease and Partners:	L.N.E.R. Chairs	L.N.E.R. Brake Blocks	Other Castings	Total
1921	695	45	32137	32877		4240	1837	17460	23573
1922	2402	105	39720	42227		2975	1190	13487	17652
1923	2865	1281	36644	40790		5225	1980	16910	24115
1924	-	113	63733	63846		6966	2724	16508	26198
1925	-	96	73302	73398		2250	2444	19448	24142
1926	1000	315	53002	54317		3056	1493	16027	20576
1927	2000	565	61560	64125		6000	688	14493	21181
1928	-	331	42905	43236		6000	813	22178	28991
1929	-	430	38703	39132		3000	150	27990	21140
1930	-	252	56303	56556		2870	70	25203	28143
	8962	3533	498099	510504		42582	13424	189704	245711

Head Wrightson:	L.N.E.R. Chairs	L.N.E.R. Brake Blocks	Other	Total	Smith Patterson:	L.N.E.R. Chairs	L.E.R.R. Brake Blocks	Other Castings	Total
1921	1000	221	40973	42194		5500	885	10350	16735
1922	1750	82	28060	29892		2595	910	10687	14192
1923	6175	11	19035	25221		3661	930	12060	16651
1924	500	-	28293	28793		7320	1280	10965	19565
1925	3388	34	28622	32044		1760	960	12970	15960
1926	376	50	28243	28670		4290	1090	17600	22980
1927	81	-	27533	27614		3140	175	16813	20128
1928	5554	223	21175	26952		2350	-	16187	18537
1929	1007	-	24908	25915		3985	-	16530	20515
1930	-	-	28069	28069		4835	-	8470	13305
	19831	621	274911	295363		39441	6230	132632	178303

Tees Side:	L.N.E.R. Chairs	L.N.E.R. Brake Blocks	Other	Total	Anderston:	L.N.E.R. Chairs	L.N.E.R. Brake Blocks	Other	Total
1921	-	-	-	-		3250	-	19138	22388
1922	-	-	10871	10871		2227	-	14997	17224
1923	703	272	8480	9455		5925	-	7644	13569
1924	2267	304	4789	7360		1385	-	13171	14556
1925	13493	303	16041	29837		-	-	11426	11426
1926	4971	359	5968	11298		-	-	5360	5360
1927	333	397	16420	17150		300	-	9967	10267
1928	4948	527	13522	18997		1200	-	3466	4666
1929	2223	263	13821	16307		1675	-	4136	5811
1930	1882	336	10365	12583		-	-	8565	8565
	30820	2761	99777	133358		15962	0	98222	114184

All Firms

	L.N.E.R. Chairs	L.N.E.R. Brake Blocks	Other	Total
1921	14685	2979	120103	137767
1922	11949	2182	117927	132058
1923	24554	3950	101299	129803
1924	18438	4350	137530	160318
1925	20891	3740	161906	186537
1926	13693	3065	126443	143201
1927	11845	1304	147307	160465
1928	20052	1637	119690	141379
1929	11890	456	126474	138820
1930	9587	450	137184	147221
	157593	24167	1295863	1477623

Other: includes chairs for other railways, tunnel segments, pipes etc. Tees Side's bridge yard etc. is excluded. Anderston figures are derived from the total figures less other manufacturers' figures.

Source: D/AF 519-521, returns from the five named companies, 1933.

Whereas Cochranes' competition was primarily domestic, that of Tees Side, more persistent, afflicted the export market. Tees Side began cutting into iron sleepers and chair orders for India and received large and regular chair orders from South Africa which, in this instance, could buy cheapest and British in one.[83] Between 1924 and 1927 Anderston reduced its price for making such chairs from 45/6d. to 34/6d. a ton [84] (plus materials) without becoming competitive. As elsewhere, it decided that work at the ruling price was not worth having, whereas Head Wrighton from the mid 1920s outplayed Tees Side at its own game in seeking low price work.[85]

In 1913 India had been Britain's largest single export market; government stores, including those of state railways were, when bought outside India, reserved for British products. £271m of British capital was invested in Indian railways.[86] India's trade deficit with Britain pre-1914 was succeeded by a surplus in the 1930s: in 1914 96% of its iron and steel was imported (of which a declining 70% came from Britain); by 1936 it was 70% self-sufficient and only half of the balance was British made.[87] The changed policies of the Indian government had more effect than British competitiveness with foreign and native manufacturers in bringing this about.[88]

From 1921 (a time of economic crisis), and reinforced in 1924 when control of the policy shifted from the India Office to Delhi, British tenders ceased to be treated more favourably than continental ones - thus a contract for supplying locomotives was lost to the Germans by a margin of 20%.[89] Pursuit of increased self-sufficiency in railway stores led by the 1930s to import substitution, replacement of sterling tenders in London by rupee tenders in Delhi as the normal means of filling contracts, and instructions to

purchasing officers to buy Indian at prices up to 10% above those quoted by foreign suppliers. Britain's share of the import of railway plant fell from 94.6% (1923/24) to 66.8% (1926/27) to the principal benefit of Belgium. Simultaneously the overall level of such imports fell by 60% in value.[90]

The Indian government could control the purchases only of its state railways but a programme for nationalisation was in progress, completed in 1942, pursuant to the recommendations of the Acworth Committee (1921/22) which had inquired into the Indian transport system. One of the first victims (1925) was the Great Indian Peninsula Railway, long Anderston's principal Indian customer and latterly its sole customer for iron sleepers.[91] With nationalisation consulting engineers were changed[92] and trading links disrupted. Paradoxically the small railways of many Indian native states, reliant upon London consulting engineers or Anglo-Indian managing agencies for expertise and supplies, shewed greater loyalty to British products[93], whereas in British India, Bombay Corporation's boycott of British made goods, soon followed by others, pointed to the political upheavals that made the long term retention of most Indian business impossible. The question was when rather than if India would cease to buy iron and steel products from Britain.[94]

In 1923 the Great Indian Peninsula adopted steel sleepers and flat bottom rail as its new standard, depriving Anderston of a market for chairs as well as for iron sleepers - some other Indian lines continued with the old pattern for which there had long ceased to be a market outside India. Anderston would not be compensated by extra orders for steel sleepers where continental competition was severe and Tata's was expanding to be able to supply all requirements by the early 1930s. The Sleeper Association recognised no special

relationships and Anderston's allocation under it was much smaller than under the Chair Association.[95]

The cheapness of foreign iron and steel products was partly counteracted by Anderston importing iron and steel from the continent. From 1924 Anderston regularly quoted for Indian work using continental as well as British materials. Dearest quotations from the continent would heavily undercut it, e.g. c.£7 compared with £9/2/6d. for the Madras and Southern Mahratta in 1927. In late 1926 the price of French steel for tiebars as delivered to Middlesbrough was £2 per ton (21%) less than Dorman's price for tiebar steel made locally. This means of circumventing the consequences of the British government's economic policies was not possible with respect to steel sleepers.[96]

Before 1922 India imposed 2½% revenue duties on steel imports; after 1924 these stood at 33%. Wrought iron as a possible substitute for steel was similarly rated; cast iron incurred a 10% tariff. The survival of Tata's, the first and largest native iron and steel company whose expansion the government of India had sponsored during and after the war on strategic and economic grounds, was deemed of national importance. TISCO continued to expand its production of rails, sleepers, points and crossings whilst industrial and political interests coalesced to support the Tariff Board's recommendations of high duties. The Bengal Iron Company expanded its foundry.[97]

Anderston could deliver tiebars to India more cheaply than TISCO could make them: the tariff proved critical.[98] All firms operating in India were protected but only those registered in India, with a rupee capital, in effect T.I.S.C o., benefitted from various subsidies and bounties which formed part of the tariff package. The Bengal company, registered in Britain with a sterling capital,[99]

objected that taxes on its profits helped subsidise TISCO's expansion which, through increasing competition in the pig iron business, diminished those profits. Bengal lacked the official sponsorship enjoyed by TISCO An old collaborator with the Chair Association - it had connexions with the Scottish iron and engineering trades - it happily co-operated with Anderston, which provided it with a source of tiebars independent of TISCO, for its own cast iron sleepers. Rôles had reversed: Anderston was now a adjunct to Bengal which, for a fee, lobbied for Anderston to secure the balance of any sleeper order Bengal lacked the capacity to fulfil..[100]

The collapse of the Chair Association loosed severe competition from Head Wrightson and Tees Side who willingly quoted 'suicidal' prices to obtain some orders for iron sleepers and fittings.[101] Their success was limited: Indian firms were, by 1926, openly allowed the opportunity of re-tendering to match any lower price quotation received from Britain.[102] At a time of expansion for the Indian railways what had been Anderston's "chief market... is a dead letter to use".[103]

The share of state railway stores bought in India continued to increase (46%, 1938/39) as did the scale of TISCOs operations; the proportion of British goods amongst Indian imports of iron and steel and railway equipment to fall. Anderston was left to rely upon speciality products and smaller Anglophile customers for its residual business in India. Otherwise it found itself with a declining portion of the declining British share in a declining export market with, in cast iron sleepers, a declining product.[104] Had Anderston been able to quote more competitive prices the decline would have been slowed but not arrested. In the political circumstances TISCO's rise was unstopable. Indian national interests, political and

economic, demanded it and could no longer be subordinated to those of Britain.

TABLE 5.2 Indian Orders (Chairs, sleepers, fencing): From 1927/28 none is a direct order from an Indian railway company

	Number	tonnage
1/4/1919-20	9	19255
1/4/1920-21	5	4382
1/4/1921-22	22	31210
1/4/1922-23	12	11387
1/4/1923-24	9	16765 (includes finishing fish plates for Dorman Long)
1/4/1924-25	2	110
1/4/1925-26	6	4819 (includes finishing fish plates for Dorman Long)
1/4/1926-27	6	1238 (includes finishing fish plates for Dorman Long)
1/4/1927-28	1	27 (includes finishing fish plates for Dorman Long)
1/4/1928-29	2	2683
1/4/1929-30	2	1100
1/4/1930-31	0	0

Source: D/AF 269-270, Foundry Order Books

Demand for tunnel segments was only 2000 tons p.a. in the otherwise booming post-war years, compared with 40,000 tons p.a. (1913-16).[105] However, the Segments Association handled 15000 tons in the half year to March 1923.[106] Projects such as sewers and tube railways which required tunnel segments had a longer lead in time the Anderston's other business - segments were entirely for new projects, other items more often mere replacements - thus should have produced a beneficial, counter-cyclical demand.

The considerable expansion of London's tube railways during the 1920s,[107] much of it planned during the previous decade, caused Head Wrightson to suggest that Anderston, Smith Patterson and Pease and Partners join it in forming a grouping outside the Segments Association, but Anderston declined.[108] Stanton, the dominant maker, with an expanding pig iron production from cheaper Midland ores, was able to cut into any available business.[109] Anderston

preferred others to fill up with loss making work, hoping that something better would come along whilst passively received commission payments[110] When, in 1922, it alone of CISA members received no orders from the Underground Group, Anderston was prepared to cut prices through sacrificing overheads, but typically it would not match the prices of firms it judged[111] to be "giving castings away".

Cochranes' competition and the panic response to it, Stanton's demands for a greater share of the Assocation's business, and its erratic and needless price breaking, brought CISA to the same state of dereliction as the Chair Assocation.[112] Firms left, firms rejoined, others threatened to leave: revising the methods of operation and allocation was pursued to revive a decreasingly effective body and engineer Stanton's return. Once restored the Assocation might lead to "enhanced prices".[113] In 1923 a further large order (84000 t.) for the London underground, financed by the Trade Facilities Act (thus guaranteed to use British materials) rekindled the Assocation to effect an orderly division of the work. Anderston was to receive 9000 t. at £9/15/0(+) a ton.[114] Rumours of lower quotations were discarded as an attempt by the purchasers to break prices - which had exceeded the estimate by £150,000. Cochranes, reneging on previous agreements snatched 59000 tons at £9/3/6d. Stanton, which had undertaken the Association's negotiations, was spurned in its offer to take the entire contract at £9/5/- - £9/7/6d. with subletting powers.[115] Subsequent meetings between Stanton and Potters and the Underground Group and between Lords Gainford and Ashfield bore little fruit.[116]

The balance of the order was placed with Potters (6500 t. at £9/9/-). Stanton (12500 t.) and, after lobbying by United Steel Companies, Butlins (7000 t.). To maintain the Association these

firms were persuaded to sublet 9000 tons of work. Anderston obtained 2500 tons by threatening to resign.[117] With this incentive all CISA members solidly refused to help Cochranes and take subcontracts from it. The northern firms resented Cochranes' disruption of their chair business, other firms its attacks on the Cast Iron Pipe Association. Stanton was about to sue Cochranes for infringing its patents for spun pipe technology. Pressure on Cochranes' basic business may well have caused it to diversify into segments but its pipe making experience proved of little help.[118] Glee at reports of Cochranes' considerable manufacturing problems ceased once it had acquired machinery and patterns from the recently defunct British Hydraulic Foundry.[119]

CISA continued for another year as an agency for reporting enquiries, dealing with commissions and allocations (if any) on an ad hoc basis,[120] in the hope of preventing further price cuts. Cargill, sensibly favoured inviting Cochranes to join "Though we may despise them". The proposal was the catalyst to the breaking of the Assocation: Stanton and Staveley opposed the invitation; there was no agreement on a modus operandi for the Association as personal animosities grounded on disputes between Stanton and Staveley over pipe making brought further disharmony.[121]

Despite sacrificing overheads, Anderston received no orders for segments from 1924 until mid-1926; in a competitive market it was "quite out of it" as it was with chairs and sleepers.[122] Its past success in segments had been due largely to its participation in collusive arrangements or to the receipt of subcontracts from Head Wrightson and other larger firms. Several of its rivals were pig iron producers who enjoyed the same advantages of vertical integration as its rivals in the steel sleeper business.[123]

The need to divide the large and irregular orders typical of the segments business between the available productive capacity well suited the type of arrangements to which Anderston was naturally inclined. From February 1926,[124] with co-operation between Stanton, Head Wrightson and Anderston resumed, the path leading to the resurrection of CISA in 1933 was prepared. The three firms hoped to get in on the ground floor with the promoters of the London Goods Railway, a freight tube system which would provide five years of work. Enthusiasm waned once the promoters sought subscriptions from the firms as a quid pro quo.[125] The three collaborated with Pease and Partners to undercut Cochrane's and Potter's from the 135000 t. of segments required for the projected, but unrealised, Buenos Ayres Metro (1927). It was hoped thereby to encourage Cochranes to co-operate in the future - a policy similar to Anderston's[126] in respect of the chair business.

Other foundry staples provided little work: cheap foreign supplies and manufacturing in house caused Babcocks rapidly to reduce orders for stoker links,[127] iron fencing passed away with other Indian business; the London County Council's[128] optimistic schemes for tramway extensions (1919) went largely unrealised. Small replacement orders for tramway materials were received. Large contracts from Dorman Long to finish fishplates were taken, not as diversification but in desperation for work for the foundry,[129] which was operating at only 20% of capacity in the later 1920s.[130] There was little profit in such work but the maintenance of Dormans' goodwill had now become of vital concern (see below).[131] Other departments fared better despite the difficulties facing British exports.

The Steel Sleeper Association, whose principal object was "to secure the highest price possible whilst avoiding the risk of orders going abroad"[132] revised its methods during the 1920s to ensure that the object was realised. It had handled 35000 tons of business in 1920/21 rising to a peak of 72000 tons in 1923/24. For the remainder of the decade tonnage varied between 20000 and 60000 p.a. of which Anderston's share remained roughly constant.[133] Profits, seldom substantial pre-war all but disappeared as the Association sought to meet severe continental competition.

World demand for steel sleepers was buoyant: in India the Great Indian Peninsula system was changing from iron to steel sleepers, in S. America some lines in Argentina were substituting wooden sleepers for metal ones but the Antofagasta Railway in Chile was making the reverse substitution.[134] Where railways were expanding in India, South Africa and the empire, steel sleepers were required but British makers relied increasingly on safe and tied markets where they could get a reasonable price.[135] The expansion of Tata's in India, the decline of buy-British policies there and in South Africa, and the imposition of tariffs, all common to the firm's other export products harmed the sleeper business: of c.100,000 tons of steel sleepers ordered by India in 1926/27 most were placed in Germany.[136] In some measure this was repayment for the indifference of the railmakers (who dominated the Sleeper Association) to its business during the post-war boom when they were sure of rail orders. Anderston forecast that high prices "terribly short-sighted on England's part"[137] would encourage Tata's to lay down a steel sleeper plant.

Continuing from its position in 1914, the sleeper business reflected the overall performance of the steel industry, which had been bypassed by the post-war recovery enjoyed by the continentals

whose prices fell faster and remained lower than British ones. Territorial change destroyed many continental cartels to produce severe price cutting. High freight rates, coal prices, wages and domestic taxes contrasted with the low taxes, costs and state subsidised freight-rates of Belgium and the dramatic currency devaluations of France and Germany. British output fell as continental production advanced rapidly.[138] Imports of steel into Britain and competition in export markets surged forward. Many domestic steel makers had expanded during and immediately after the war at a heavy cost in high interest, borrowed, inflated money. Rationalisation, retrenchment, enforced mergers and reconstructed balance sheets dominated an industry trying to stave off bankruptcy, hindered by free trade, on the defensive in its home market. Whilst continental firms enjoyed full order books through which to spread overheads, reformed their cartels, expanded and traded with optimism, British works closed.

All sleeper makers except Anderston were iron and steel producers needing to maintain high tonnages through their furnaces and steel mills, unable to stand aside from low price orders. To reduce their sleeper prices by importing cheaper sleeper plates was self defeating, providing further encouragement to continental rivals. Anderston, as a finisher of steel sleepers could not exploit the position of independence it enjoyed in respect of tiebars: it had long been in partnership with the North Eastern Steel Company which Dorman Long had absorbed in 1919.[139] The concerns of large steel companies dominated the Association and increasingly Anderston required Dormans' backing to maintain its position there; nevertheless the preponderence of large rail makers, although they might relegate sleeper making to second place, provided the

Assocation with the strength to negotiate with its continental counterparts.[140]

Anderston could expect Dormans to be anxious for volume, thus willing to make great sacrifices to provide sleeper plates at "fighting prices".[141] Anderston would gain from reduced overheads as tonnage rose; most of the cost would be borne at the steel mill. Dormans' size and contacts allowed it to offer finance to railways such as the Benguella, short of funds, taking payment by installments, in part in stocks and bonds (akin to the practices of domestic contractors in the 1860s) and obtaining higher prices for the assistance rendered. Dormans would roll the rails and subcontract sleepers, points and crossings, fishplates and bolts to Anderston.[142]

Since 1919 Anderston had feared that it would be forced to chose between Dormans and the Assocation.[143] To renounce Dormans endangered more than its sleeper business, to accept Dormans' subcontracts outside the Association and at prices which undercut it, brought the risk of expulsion but Anderston, having expanded its manufacturing capacity to 1200 t. a week, was a not unwilling accomplice of Dormans with whom it shared the desire to bring down prices.[144] Anderston declined Dormans' friendly approach to take it over in 1921 with a counter proposal for a closer working relationship which would not involve Anderston's leaving the cartel.[145] Dormans' purchase in the summer of 1921 of Braithwaites, a Black Country bridge builder, lately diversified into making steel sleepers,[146] forced Anderston from the fence. It gave notice of resignation from the Assocation a week later. However, the Association used Anderston as intermediaries to bring Dormans, through Braithwaites, into membership. Braithwaites was tied to buying

sleeper plates from Dorman's, paying more than Anderston and allowing the latter to eat its cake and have it.[147]

Other competition loomed: Tees Side Bridge was persistently rumoured to be starting sleeper production - had it received a large order it would have done so. Cargo Fleet, whose invitation to co-operate Anderston had to decline, seemed a likely supplier of plates to Tees Side whilst Baldwin's, another rail maker and, like Cargo Fleet, short of work, considered sleeper manufacture.[148] Only Colville's, the Scottish rail maker, commenced sleeper making in 1923.[149] Thereafter it co-operated intermittently with the Association, whilst overhauling the output of most of the latter's members. By 1929 G.K.N. was negotiating to bring Colville's within the cartel but on terms insufficiently generous (an 8% allocation) to bring results - G.K.N. would have been the principal loser in the consequent re-allocation of business.[150]

Of existing members, Bolckow Vaughan was planning new sleeper furnaces. G.K.N. had its new plant in operation from early 1924; Ebbw Vale its from 1922.[151] The last named, pre-war a poor financial performer with an ill sited plant, had made a belated and extremely expensive post-war expansion. The millstone of resulting debt brought it to a financial crisis earlier than most of its competitors.[152] From 1923, seeking tonnage at any price to bring work to this plant, it undercut and queered the pitch for other members and, by frequent threats of resignation and demands for change, disrupted the Association's workings.[153]

The wisdom of Ebbw Vale's policy, which failed to prevent the firm's extinction, may be doubted. Whatever price it could reach (and it undercut Anderston by up to £1 per ton) the "staggering"[154] prices of the continentals who had resumed their "old system of

dumping"[155] would be lower, e.g. £7 per ton for Uruguay or £6/14/- a ton at Rotterdam when British makers were quoting £10 +/- 10%, or continental quotations of £6/17/6d. when Anderston had to pay £7/10/- for plates and could manage to quote £9/9/- only by sacrificing overheads, and Ebbw Vale quoted £7/15/-.[156] Normally loyal customers such as Rhodesia saved 30% by ordering in Germany leaving only the Crown Agent's business secure - at £13 to £14 a ton.[157] French and Belgian prices continued to be 30-40% below British ones for several years.

Under pressure from G.K.N., and in a way Anderston disliked, the Association restructured itself to survive and compete. Peat Marwick and Mitchell became neutral secretaries in December 1924.[158] In place of equal allocations each member was to submit a sealed bid for an enquiry in the hands of more than one firm; the allottee was the firm bidding highest (i.e. paying most into the pool) which, if successful in securing the order, paid its bid into a pool which was divided equally between members twice yearly. Covering prices and penalties for poaching completed arrangements which allowed the adventurous to seek work at any price and the unadventurous to earn more in commissions than the successful might earn in taking work.[159] Before Anderston could bid it had to know Dormans' price for sleeper plates thus prior discussion of each enquiry with Dormans was essential. Now Dormans took responsibility for two-thirds of the bid in return for two-thirds of the commissions, relegating Anderston to the junior role in their partnership.[160] When in 1929 Dormans absorbed Bolckow Vaughan, Anderston feared that it was expendable, with only personal friendship (with the ageing Sir Arthur Dorman) to underpin the partnership. The relationship had progressed from customer and supplier, through self-interested mutual dependence, to dependence of

Anderston upon Dormans from whose embrace Anderston would not escape.[161]

Refinement to the Assocation's practices ensued which left the bidding in place for work likely to be free from continental competition but substituted free tending and a nominal 1/- a ton payment into the pool where such competition[162] was likely. High prices for safe business helped inflate the pool to form an indirect subsidy for competitive work.[163] In the absence of protection, and the possibilities of export bounties and differential pricing it would open up, little more could be done. If Ebbw Vale continued to quote very low prices cuts might be forced on safe Crown Agents' work which would otherwise appearly flagrantly overpriced.[164]

In the first 18 months of these arrangements Ebbw Vale took 55000 tons, G.K.N. 41000 tons, United Steel 20000 tons, Anderston 19000 tons and Bolckows 12000 tons. Anderston was making no money on sleepers and 7000 tons of its 1925 deliveries had been a Benguella subcontract from Dormans.[165] (Braithwaites had ceased to compete but continued to share commissions).[166] In safe business Anderston was usually unwilling to bid high enough (into the pool) to secure work, shewing the same detachment and unresponsive timidity as in its other businesses.[167] When it made the effort and took an order the Crown Agents' inspector thought that "we had gone off the map for good".[168]

The northern firms combined to secure the partial restoration of a system of district allocations from late 1926 and obtain fairer shares (16% to United Steel, 32% to the North East and the balance to Wales and the Midlands) for business likely to be placed in Britain, with a uniform 10/- per ton pool for it and only 20% of that pool to be divided equally, the balance pro-rata to tonnage ranking for the pool.[169] Free tendering, nominal commissions and no debit to

allocations was made for competitive work. Other, intermediate, enquiries were auctioned by sealed bid as before. With the addition (1928) of a sliding scale for commissions paid into the pool and tonnages debited to it, which took orders for the Crown Agents as of full price and related all other work to this, and later fine tuning of the scale, the Association's method of business continued unaltered until the war. The allocation of business did change on occasion, e.g. 19% to United Steel, 36% to the North East and 45% to South Wales by 1929 after Braithwaites (neither manufacturing nor, now, receiving worthwhile commissions) withdrew.[170] Ebbw Vale had opposed these changes (it would lose the subsidy to its competitive business through the pool's re-organisation) whilst seeking to have its debt of £33,000 to the Association waved. An abatement of 25% secured its compliance.[171]

In 1926 the Association negotiated with Germany an agreement to co-ordinate tenders for India. The sharp increases required in German prices and the suspicious pattern of pricing required to divide the business, as in South Africa in similar circumstances a decade later, risked alerting the customer to the arrangement.[172] Britain obtained only 600 tons of its share of 13500 tons and Anderston none, whereas Germany received 100,000 tons of Indian orders during 1926-27.[173] An approach by Thyssen and Ougrée during 1927 led to the division of Indian orders from January 1929[174] in the proportion of 40 units to Britain, 30 each to Germany and Belgium. Despite the repeated failure to secure French participation and increased Belgian dissatisfaction at high British prices, the agreement survived until November 1931.[175] During its first ten months it handled 19,000 tons of business. Unfortunately, no means of extending its coverage to Egypt and South Africa, where the

continentals were taking business, could be found. It served, however, to block attempts by the Crown Agents to obtain low continental quotations.[176]

Between January 1927 and August 1929 Ebbw Vale obtained 42,5000 tons of sleeper orders - double the average of the other members of the Assocation - of which 86% was taken at below Crown Agents' prices.[177] No doubt such competitiveness helped the Assocation with its foreign negotiations but Ebbw Vale's closure in late 1929 in consequence of its financial problems denied it the benefit.[178] Although sleeper making took second place to rail making for many steel companies the existence of the International Rail Makers' Association, the sharing with it of Peats', the secretaries of its British division, and the negotiations at its meetings co-ordinated by G.K.N., allowed the tripartite sleeper agreement to mature. In every respect Anderston was dependent on the steel companies for its survival in this business.[179]

A natural adjunct to the agreement in respect of India was to reach an understanding with Tatas', who were unable to supply all of India's sleeper requirements but seemed likely to expand to do so and who could count upon the Indian government to grant further tariff protection if necessary. Neither an agreeent between the Association and TISCO at the expense of the continentals, nor an agrement including continental firms proved possible. TISCO's desired guaranteed tonnage; Britain desired stable prices; Britain and the continentals wanted to limit any increase in TISCO's production; the continentals wanted to lower prices in a way which might undermine India's domestic iron sleeper industry.[180]

TABLE 5.3A: Steel Sleeper Assocation (tonnage)

	1927			1928			1929 (9 months)			Totals			Grand Total
	A	B	C	A	B	C	A	B	C	A	B	C	-
Anderston	3830	-	9245	5764	-	-	5535	485	69	15129	485	9314	24928
Bolckow's	5531	-	-	5825	-	-	-	-	-	11356	-	-	11356
Ebbw Vale	-	5535	5718	5431	7644	12465	475	3881	1294	5906	17050	19477	42443
G.K.N.	11824	-	-	1727	5504	329	181	472	3125	13732	5976	3454	23162
United Steel	6985	-	-	5836	-	2312	818	-	4687	13639	-	4999	20638
Totals	28170	5535	14963	24583	13148	15106	7009	4838	9175	59762	23521	39244	122527

A = work at Crown Agents' prices and tonnage debited
B = work taken below such prices and tonnage debited
C = work taken below Crown Agents' prices, no tonnage debited

Source: D/AF 504, Peat Marwick file, 23 September 1929

TABLE 5.3B: Steel Sleeper Association (Production / orders, in tons)

	Oct. 21 Sept. 24	Oct. 22 Mar. 24	Jan. 25 June 26
Anderston	41581	36350	18937
Ebbw Vale	38422	32743	55105
G.K.N.	30880	30733	40731
United Steel	25007	23743	20180
Braithwaite's	24335	24330	-
+Bolckow's	17626	15905	12035

+ works closed in part of period

Sources: D/AF 441, 30 September 1924,
D/AF 495, 17 September 1926

TABLE 5.3C: Colvilles' Production (tons)

1927	1928	1929 (to August 31)
13697	16097	6608

Source: D/AF 504, 13 September 1929

During 1928/29, to counterbalance the loss of export business, a concerted attempt was made by a joint committee of the Sleeper Association and the National Federation of Iron and Steel Makers, predecessor of B.I.S.F., to rekindle the interest of home railways in steel sleepers. Initial cost was of paramount importance to the railways, irrespective of the longer life of metal or concrete sleepers. With the high price of iron and steel and the falling price of timber this obstacle could not be overcome. Cargill, as a member of the joint committee and of various working parties flowing from it, addressed a meeting of the principal railway civil engineers who had been driven, frequently against their will and good judgement to experiment with steel sleepers. But for pressure from Dorman, Anderston would have let the matter rest.[181]

An advertising campaign "British Steel replaces Foreign Timber" and discreet lobbying persuaded J.H. Thomas (an ex-railwayman), the minister with reponsibility for employment policies in the second Labour government, to induce domestic railways to buy further quantities of steel sleepers.[182] Technical committees and standardising committees developed apace (and continued meeting for many years) - orders did not. The conservatism and scepticism of the the would-be purchasers prevailed, so that the difficulties forecast by Cargill in organising a domestic sleeper cartel never arose. Various designs by various manufacturers were tried.[183] Anderston, despite its submission of a well received design to the L.N.E.R. in 1925, received no orders. That company with three chief civil engineers and its customary lack of funds proved the least willing to experiement - only the Great Western placed orders (42,000 tons) for sleepers in serious quantities.[184]

Despite problems the Sleeper Association provided a solid framework for the defence of British manufacturers and their interests. Whereas other Associations died during the 1920s it adapted in the crisis of 1924/25 and by doing so was able to negotiate with domestic and foreign rivals to ensure the survival of its members as major manufacturers of steel sleepers and to limit further foreign incursions. The closure of Ebbw Vale notwithstanding, the prospects for the sleeper industry seemed, in 1929, brighter than for some years. In 1914 Anderston could not have foreseen that it would become so dependent on Dorman Long, but in dependency was strength and protection as there was in adherence to the Association which was, unavoidably, dominated by steel companies quite unlike Anderston in this scale of operations. The structure of the Assocation and the dependency on Dormans contributed to Anderston's keeping in the running with steel sleepers: it had fewer opportunities to wring its hands in despair.

In contrast with other businesses, that in switches and crossings boomed and collusion increased. Wartime needs to divide large government contracts beyond the capacity of one firm to undertake had increased contacts between makers.[185] Agreements such as those between northern makers to arrange North Eastern Railway work and between Anderston, Summersons and Isca, predating the war, continued. By 1918/19 Taylor Brothers, Patent Shaft, Isca and the northern firms were paying mutual commissions of £1 per set[186] on many orders, with further arrangements in prospect.

The railway grouping of 1923 rendered obsolete many existing domestic arrangements which shared some of the sophistication of the Chair Association: Taylor Brothers took orders from the South Eastern

and Chatham and London and Brighton railways; Railway and General took the (few) outside orders from the Southern Railway's third constituent, the London and South Western.[187] Whereas grouping helped destroy the declining Chair Association it provided the spur to revise and renew collusion in the switches and crossings, business. The Switches and Crossings Association of December 1923 was pre-eminently a creature of Anderston's, whose London agents Macnee and Company acted as its not entirely neutral secretaries. Anderston prevailed over Summersons' desire for independent tendering with a pool of commission payments and concluded a "most favourable"[188] arrangement whereby business was allocated to members, which was to work "very well to our advantage".[189]

Anderston had the largest allocation and was one of the larger firms interested in the business; most collaborators were small, independent, concerns whose attitudes and interests diverged less than those of the members of some other cartels. Subordination to the priorities of large combines, as in the Sleeper Association, was not here evident, and with work plentiful its allocation was less of a source of dispute than with Associations pressed by foreign and domestic rivals.

Taylor Bros. and Railway and General confined themselves to supplying the home main line railways - principally the L.M.S. for the other three had, in varying degrees, inherited their own manufacturing capacity. Isca was allowed an interest in Great Western orders and a special position in respect of work for Southern Ireland.[190] All other exports and miscellaneous domestic work were divided: 30% to Anderston, 13% to Patent Shaft, 19% each to Isca, Summersons' and Darlington.[191] Export makers took work in an order determined by their absolute deficit to their allotment but special

connexions, circumstances and shortages of work were recognised to bring flexibility to the system.[192] Thus if the rails to be used were rolled in South Wales action would be taken to avoid a firm on Teesside engendering suspicion by tendering lowest. Rails ordered on the continent or made in India would not be sent to Britain to be finished.[193] The success of the business depended largely on the success of British steelmakers in obtaining orders for rails. In their desperation (and with help from intermittently extant international cartels such as the Rail Makers' Association) steel companies obtained track contracts from which their subcontractors making points and crossings or steel sleepers might profit but not they.[194] Dorman Long continued to be valuable as a collaborator.

In the early 1920s, enquiries were plentiful from tied colonial markets, South Africa and S. America. South Africa's move to manufacture its own points and crossings, rumoured in the 1920s, did not take place until the end of the decade.[195] Its immediate effect was much less damaging than either the development of native industries in India or the international competition for South African work. South Africa was flexing the muscles of independence by buying cheapest, not British. The first statistics for Anderston (1929/30) shew that South Africa and South America each took some 40% of this department's output: India only 3%.[196]

Initially Anderston had intended to include White's of Widnes in the Association, but preferred instead that White's co-operate, include commission fees on its tenders but receive no allocation.[197] White's unpredictability might keep down prices and discourage further developments of domestic production in India. Friction within the Association arose from Summersons' attempts to increase its share, and cut Anderston's to 25%. Anderston, by making a conciliatory

offer to cut its own share by a lesser amount dependent upon Isca and Darlington doing likewise,[198] forestalled Summerson's until 1928 when the shares became 26 to Anderston, 20 each to Darlington and Summerson's, 17 to Isca, 12 to Patent Shaft and 5 to White's (which had been admitted on 6%, taken roughly equally from other members, in 1926).[199]

TABLE 5.4: Switch and Crossings Production, S.A.X.A.

Calendar year	1924	1925	1926	1927	1928	1929	1930
Units (approx. 1 ton) to nearest 500	9000	13000	10500	17500	12000	13000	8000

Source: D/AF 611-620, 499, 504, 508, 515

Anderston enjoyed increased sales and profits and high and rising profit margins (8.9% p.a. 1917/16 - 1923/24, 22.2% 1924/25 - 1930/31)[200] from this business. The work handled by the Association's members rose from c.5000 sets p.a. 1920-23 to a peak of 17300 in 1927; it averaged nearly 12000 units p.a. 1924-30.[201] Anderston had much to lose as the principal beneficiary of the arrangement: learning from its experiences and mistakes elsewhere, it was conciliatory. Without the Association and its careful segregation of business the familiar mixture of competition and price cutting might erupt with Anderston likely to lose a disproportionate share of work through its unpreparedness to compete. If new competition had arisen, as in the 1900s or as contemporaneously in the chair business, the collusive arrangements could not have been perfected. Collusion might bring greater prosperity for as long as work was plentiful; it was incapable of securing prosperity in the

1930s when SAXA came under the kind of internal pressure which had afflicted other associations in the 1920s.

The bolt shop maintained a healthy business in traditional products sent to traditional markets, making consistent if unspectacular profits (5.45% of sales, 1919-24 and 4.58% 1924-29).[202] It benefitted as a service department to switches and crossings and steel sleepers, and from the high level of orders for those products. No indigenous Indian competition was evident and various collusive arrangements shewed resilience. The manufacture of rail anchors (see below) brought new markets to Anderston whilst helping its penetration of established ones.

Anderston's nuisance value to G.K.N.[203], the dominant firm in the nuts and bolts trade, caused the latter to be accommodating through not needlessly so. Anderston had the capacity to manufacture all the steel sleeper keys British makers might require; by threatening to act independently and underquoting G.K.N. in retaliation for the unsatisfactory workings of the existing agreement covering sleeper keys, Anderston rapidly secured a revision of terms.[204] Whereas Anderston might hold down prices for switches and crossings because of its relative importance as a manufacturer, it was unable to hold down G.K.N.'s prices[205] which caused Braithwaites to detect their collusion and may have encouraged the competition of Tees Side Bridge as also of Turton Platts and United Steel to "knock the bottom out of our little corner in distance pieces and keys".[206] Anderston wavered not in its arrangements with G.K.N. hoping that they each could regain business, and subsequently increase prices and re-introduce commissions, by sacrificing both prices and commissions now.[207] Despite G.K.N.'s opposition, Anderston, with Cargill in

charge, wished to bring Tees Side into collusion, as was happening with chairs; Tees Side having made its mark was in both cases willing to discuss this. As with other British firms, Tees Side was suffering from continental competition in, for example, the Indian market.[208]

Anderston received an eager response from G.K.N. to its suggested resumption of arrangements for dividing dogspike and fishbolt orders from South American railways connected with Livesey and Henderson.[209] This illustrates the lack of homogeneous bolts business: there had long been agreements between the two covering keys supplied to India and South Africa; other agreements had been revised or renewed; there was open competition between them in S. America. Satisfactory arrangements were concluded after Anderston proved its nuisance value by cutting out G.K.N. from an order from the Buenos Ayres Great Southern.[210] G.K.N. retained the whiphand, as with Stanton in segments: it could not be forced to act but self interest frequently made it willing to be placable.

The bolt shop benefitted from using continental materials to reduce prices but, as for tiebars, it could be undercut by direct continental quotations, e.g. spikes for Argentina taken at £15 a ton would have cost £18/5/- using British materials but could be placed on the continent at £10/4/-.[211] Nevertheless its prospects seemed bright (it was working night shifts when the foundry was aching for work)[212] and, taking advantage of the slackness in business in the Glasgow machine shop, extra bolt making machines were ordered.[213] The onset of the world depression and the imposition of tariffs on imported iron and steel by this country undermined the position of the bolt shop cutting orders and cheap supplies simultaneously. The greater price flexibility of this department may have been a reaction

to the damage caused by obduracy elsewhere. Because it was the least important department, with no great expectations for its performance, any losses would be commesurately small and affordable. As with points and crossings, the comparative success of collusive arrangments indicated, wrongly, a means of reviving the foundry's fortunes.

Attention turned to Glasgow once the decline in Middlesbrough's profits made its losses less easy to bear. Difficulties with supplies and high transport costs drove Anderston from the coiled key business in 1919-20.[214] The closure of Murray Workman's business in January 1921 encouraged Anderston to approach G.K.N. to resume arrangements but disagreement[215] with G.K.N.'s high prices caused difficulties (as in other bolt businesses) and, after a large order running through 1922 into early 1923, little further work was obtained.[216] This became another victim of changing conditions in India.

The Glasgow foundry's dependance on Caledonian orders and cast iron pots for Indian sleepers sealed its fate in the aftermath of the grouping. A dearth of orders caused Anderston to cease making Caledonian pattern chairs for stock and the new British Standard points and crossings chairs, when orders were secured, were made at Middlesbrough.[217] Had Anderston proved more able to secure chairs orders from the L.M.S. it would have made them in Middlesbrough to use the surplus capacity of the foundry there. The loss of independence by the Scottish railways, centralisation and standardisation, and the higher costs of all Scottish chair makers encouraged the closure of all three firms in Glasgow, once the

collapse of the Chair Association denied them protection from the competition of northern firms chasing business at any price.[218]

Pre war problems of labour, wages and productivity recurred as did pre war unprofitability.[219] Large orders for jobbing castings produced profits in 1919 to mask the unprofitable chair making (high raw material and freight costs ruined it).[220] Foundry extensions by Weirs, Harland and Wolff and Beardmores, in misplaced optimism at future prospects lost Anderston labour to the higher wages these firms paid.[221] Increased prosperity in light castings brought to workers there higher wages which seeped through to the depressed members of the Scottish Ironfounders' Association.[222] The former class of firms, able to spread overheads across profitable activities, began competing for heavy engineering work, undercutting the minimum prices of the S.I.A. and further depressing its members.[223] With general engineering work in a worse state than chairmaking, Anderston dismissed hands and moved to short time working.[224]

All Clydeside general engineering firms, to secure orders and stay in business, had to[225] sacrifice overheads and portions of indirect wages. The opening by Harland's of its Govan Foundry in 1924 withdrew its own and its associates' business from the market, drove former suppliers from their own specialist fields into competition for general foundry work and thereby disrupted the whole trade in the area. Cargill was obliged to be more aware than his colleagues in Middlesbrough of the need to take risks to obtain orders and to stay in touch with prevailing prices, hence his attitude to the firm's problems.[226]

With two foundries working at a fraction of capacity indefinite closure of the Glasgow one was considered in 1926. A trading loss of

c.25% of sales was recorded: despite cutting permanent staff to a minimum, wages and overheads loomed ever larger;[227] sales had fallen from £22,000 p.a. (1921/22 - 1924/25) to under £11,000 p.a. in the three years following.[228] Such work as there was came at appalling prices.[229] The decline in work for the machine shop was reflected in the diminished quantity of castings required from the foundry and the (inter-linked) high costs of foundry castings harmed the machine shop. The foundry had no future; its performance worsened.[230] Its belated, relatively painless, amputation was a fortuitous consequence of the unexpected changes in the company's management during 1927/28.[231]

Pre-war trading losses soon reappeared at the machine shop but nothing could be done to change the character of an establishment whose weaknesses Cargill had recognised.[232] Its decline was less abrupt than the foundry's but it too was dogged by high costs, which may have been general to the west of Scotland and contributory to the area's decline as an engineering centre.[233] Diversification into wet pumps, for which Blairs of Govan was the first customer,[234] followed the successful development of a business in dry vacuum pumps from 1914. An agent based in Manchester, where the chief competitors were based, obtained some orders but, as prices there averaged one third less than in Glasgow,[235] prospects were poor.

Signs of optimism - the expenditure of £2100 on new equipment,[236] the development of a new style of carpet loom in conjunction with a customer[237] - were misplaced. The textile trade in the west of Scotland remained depressed, so too was the Irish linen business[238] (by political uncertainty). Competition from Germany for export work was felt within months of the war's end to counterbalance a useful subcontract from Atherton Brothers, a leading

linen machinery maker in Lancashire,[239] which was rebuilding entire war-damaged factories in northern France and Belgium. During 1921 the boom collapsed. To secure orders prices had to be cut and, with more willingness than they shewed elsewhere, the Middlesbrough directors accepted the need to seek business which failed to cover overheads.[240]

By 1925 orders were taken yielding bare wages above which 60% was needed to cover indirect costs and 155% to cover all overheads.[241] Payment in 6 month or 12 month bills was accepted to secure work.[242] At Glasgow Cargill navigated through the storm with more certainty than his colleagues in Middlesbrough, veering close to taking work regardless of price in contrast to their aloof expectation that normality would return. In the circumstances of the time, he received insufficient business at insufficient prices.

Price cutting and foreign competition were common to nearly all of Anderston's businesses; the particular difficulty of a general engineering shop trying, but failing, to meet the competition of specialist makers of particular products, had been identified as insoluble pre-war.[243] Re-launching it with a speciality product was discussed but no such product with prospects of success had been, or was to be, found.[244] Closure of a peripheral activity in a peripheral location was available as a solution in Glasgow as it was not in Middlesbrough. Cross subsidising a plant in terminal decline and nostalgia for the origins of the business gave way, eventually, to commercial logic.

The machine shop's range of products and customers in 1930 was similar to 1914,[245] and Anderston no better able to break with fresh markets, many of them now depressed, in competition with large Lancashire textile machinery specialists, than pre-war. Textile

machinery was at the core of the machine shop's problems as chairs at the foundry: supplemented by, but incapable of being supplanted by, newer products. Orders in hand at the start of 1920 comprised looms 38.3%, wire weaving apparatus 5.2%, winding machinery 18.5%, compressors and pumps 18%, miscellaneous 20%.[246] Blairs of Govan and other local firms connected with the sugar trade were principal customers for vacuum pumps and air compressors; Bruntons for wire weaving and drawing machinery; Mortons and other firms in the Kilmarnock area the most consistent purchasers of textile machinery.[247]

Adventurism was eschewed after the failure of the firm's gas engines but Anderston was willing and technically competent to respond to definite enquiries and demand. Diversification was customer-led. Anderston retained its ability to design machinery; it could, as with pumps and compressors, build gradually upon the foundations of existing customers and products: it lacked ideas. The last new type of machine illustrates this. Melville, Dundas and Whitson, a large Glasgow contractors, sought a machine to spin concrete pipes using the Moir Buchanan patents. Melvilles and its associates bought a limited number (into whose design Cargill put much work) for contracts such as sewering parts of Edinburgh in concrete.[248] Due to the high costs of the moulds used in the process it was impossible to make machinery and fixtures at a price to compete with similar American apparatus. Business did not develop.[249]

Despite closure of the foundry allowing the machine shop to buy in castings more cheaply in the depressed market, the shop's sales fell and its losses mounted: the former from c.£20,000 p.a. (1922/23 - 1927/28) to £11,000 by 1929/30; the latter varying between £1,500 and £4,500 p.a. rose from c.10-20% of sales to over 40%.[250] The

pattern was similar to that of the foundry's decline, albeit a few years later, belonging to the British depression of the 1920s not the world depression of the 1930s.

Anderston's response to its difficulties were fourfold: tighter management; invigoration of collusion; thoughts of selling out; searching for new products.

As the various associations came under pressures from within and without, Anderston's noble posturings on the burning deck (claiming that it alone was playing by the rules) contrasted with the sauve qui peut of its rivals.[251] Anderston's conduct masked self-interest: it had most to lose. Its staunch adherence to collusion was both cause and effect of an unpreparedness, unwillingness and inability to match the aggressive price cutting of more dynamic rivals. Capable of bending the rules, when steeled to do so by Dormans in the early 1920s, Anderston preferred the policy of safety-first, typical in the public life of the times. Its financial position (see Chapter 7) spared it the need to be aggressive and discouraged risk-taking. Collusion continued in its most successful business. Contemporary trends were anti-competitive, favouring the organisation and rationalisation of industry. Trade associations were of limited effect when forced by foreign competition but provided the vehicle of unity and strength for negotiating with such competitors. Associations formed an elementary defence for the small firm against the amalgamations all around it - the other side of 'organisation'. Anderston's actions could be justified.[252]

Selling out was fitfully considered between 1921 and 1924 (see Chapter 7) but frustrated by the divergence of interest between

managers and shareholders and the lack of steady purpose to it. Cargill brought tighter but undynamic management, having absorbed lessons in the management of decline and losses from his Glasgow years. Harvey had admitted to shortcomings, e.g. poor internal accounting, rudimentary apportionment of overheads, excess wages and staff, but had done little. The amputation of Glasgow, whose survival was testimony to the dominance of Anderston by undynamic nostalgic emigré Scots, was best effected by Cargill who had emphasised its weakness before 1914. Its losses could no longer be carried; its foundry had ceased to be of use after the railway grouping. Only in turning off the supply of home trained, trusted former apprentices who might manage the business in the future was its demise to be regretted. For the same reason, looking at Anderston's excessive continuity, its closure had the potential to be a boon.

Anderston required new products to penetrate existing markets - there were no new markets left for existing products[253] - new products for new types of customer, or new means of securing the sale of existing products to existing markets. The rise of infant industries in India and South Africa indicated that the establishment of foreign subsidiaries, as Head Wrightson had done for some of its businesses, might answer the third problem. Nevertheless, new products would be required to fill its British plants.

Anderston bemoaned its inability to export due to high costs but was timourous of following Summersons' suggestion that they establish a jointly owned subsidiary to manufacture points and crossings in India to forestall the loss of business there. Anderston's instinctive risk avoidance proved sound: the difficult future relations with Summersons would have added to the inherent

problems of dual ownership and divided control.[254] Summerson's gave up the idea in 1923.[255] Tata's, whose expansion to meet most of India's railway requirements was damaging Anderston's other business, was building its own switch and crossings shop. Irrespective of the favouritism the Indian government shewed it, Tata's would have had the whip hand as sole supplier of locally produced rail (tariff free) to the proposed plant.[256]

Successful foreign subsidiaries might be established;[257] the contemporary example of the railway contractors and locomotive builders Kerr Stuart shews the problems of so doing. To circumvent the ending of preference for British manufactures in India, Kerr's subscribed 80% of the equity and lent £78,000 to the Peninsular Locomotive Co. Ltd., an unsuccessful venture rescued by its acquisition by the Indian Government - which later sold it to Tata's. Kerr Stuart's capital was locked up as, like many staple industries, it experienced declining liquidity with the onset of depression. Its Indian venture contributed largely to the group's collapse in 1930.[258]

Its iron sleeper busines having vanished, Anderston reconsidered opening a plant in India (1929) but the several years' wait until a return on the capital investment could be expected was intolerable. All of Anderston's reserves, which were now required to generate income to cushion the fall in profits and dividends so as to contain the restiveness of shareholders (see Chapter 7), would have been swallowed up. Anderston's ally was to be the Indian Iron Company, another Scottish firm, whose outlets for pig iron Tatas' advance had impaired. Anderston would secure a supplier independent of Tata's;the iron company would provide useful local contacts. The two, united from self interest, would give Tata's a run for its

money. Such a scheme, quite beyond Anderston's usual breadth of vision, was suggested to it by James Watt.[259] But until the panacea of "a repetitive product using semi-skilled labour" was found, the problem of severe overcapacity in the existing works remained.[260]

Local agents appointed to market Anderston's products in expanding areas in Africa were incompatible with adherence to the blind allocation of business by Associations.[261] The appointment of Dowson and Dobson of Johannesburg as agents for South Africa (June 1928), however helpful their contacts in a competitive market, was due entirely to the Union government's becoming more nationalistic in its tendering practices.[262] Manufacture of telegraph pole bases for the South African railway and postal authorities had already commenced.

Bases were similar to metal fencing posts, orders for which had followed other Indian business into oblivion. They required little innovation and could be sold to known customers by known means with little effort, an ideal product. The first tender was submitted in 1926; the first order (for 928 tons) was received in June 1927 from which a valuable business grew (2800 tons p.a. 1927/28 - 1928/29).[263]

Rail anchors brought business to the bolt shop. Anderston had co-operated with Yates, their begetter, to perfect the design, patented in January 1921, and undertake experimental manufacture, obtaining world manufacturing rights to it. In 1926 an improved one-piece anchor was devised by Adcock, Anderston's foundry manager, for use with a variety of rail sections and with steel sleepers. This proved much more successful and brought Anderston's products to new markets, e.g. Japan, and gave the firm its last substantial business with India.[264]

TABLE 5.5 ANCHORS SUPPLIED (to nearest 500)		Calendar Years	Anchors
East India Railway	661000		
North Western Railway (India)	903000	1921-25	36900
Other Indian	320000	1926-30	252500
Rhodesia and associates	961500	1931-35/6	1266000
South America	261500		
France, Belgium and colonies	493000		
Japan	84000		
London & North Eastern Railway	40500		
Total	3725000		4160000

Source: D/AF 305-306, Bolts Order Books

Anderston made less effort to find new products than to consider. ideas brought to it. Dorman Long passed on Stent, formerly a railway engineer in India, with his design for reinforced concrete pot sleepers secured by iron tiebars. The sleepers were in use successfully in India[265] but the Indian rights had been sold, denying Anderston a means of re-establishing itself there. Cargill pressed his colleagues further to investigate the design - close enough to the iron sleepers which had been so successful - despite an unenthusiastic report from Livesey and Henderson, for whom Anderston had made some concrete sleepers in the 1900s.[266]

From desultory negotiations, agreement was reached to pay Stent's office and publicity expenses, and a royalty on the sleepers, for a trial period of two years. Anderston was determined "not to get in too tight" with Stent[267] and their working relationship, from the first, failed to work. Each felt that the other should take more of the risk and put in more effort (and money). Without orders, acrimony increased.[268] Stent estimated the cost of each sleeper at 9/3d.; due largely to the high price of aggregate they cost Anderston 12/8d. to make and, after payment of Stent's royalty, sold for 14/4d. A concrete sleeper lasted 50 years, a wooden one 15, but cost only

8/6d. and retained a scrap value of 3/6d.[269] Concrete was cheaper overall but, like the steel sleeper, its high first cost and the conservatism of British railway engineers continued to thwart home sales. Difficulties in overcoming domestic railways' suspicion of the new had been foreseen.[270] Once the apparent interest of the L.N.E.R. had vanished and a price cut to 12/6d. had failed to stimulate interest, the decision was taken to drop Stent (July 1925) after little more than a year. Anderston felt that his concern for his royalties was at the expense of its profits and refused to reduce prices further. Harvey, sceptical throughout, doubted that any profit could be made due to the complexities of manufacture.[271] The sums expended formed the only legitimate charge on the "Development Fund" contained in the company's accounts.[272] Stent's new collaborators soon secured the first order which had eluded Anderston; his business continued, to exhibit at the Festival of Britain (1951).[273]

Had Anderston made a firmer commitment, gambling on the future by taking an initial loss, it would have been well placed to take advantage of the increased use of concrete by railways and others. Alas, throughout its business, it was unprepared to take large risks although, in theory, well able to afford them. In good times little thought was given to diversification; in bad ones, the prospect of jam tomorrow was secondary to conserving today's jam to see Anderston through the night. The opportunity to back a certainty never materialised. A better return or, at least, a guaranteed one, was available by leaving the reserves invested in securities, not in manufacturing plant. To invest extensively for the long term risked pressure, from certain shareholders, for liquidation in the short term (see Chapter 7). Peaceful co-existence of managers and

shareholders was bought at the price of long term stagnation. New ideas could not be backed; the reserves were already being 'used'.

It was impossible to raise new capital without offending those large shareholders who were seeking to reduce their over-commitment to Anderston. Thereby failed the proposal of Harvey's brother-in-law that Anderston manufacture the American patented 'Bates' metal poles for which a wide market existed.[274] Dorman's could supply the requisite steel girders but the cost of plant, outstripping both published and free inner reserves, proved prohibitive (£70,000 would be required, including £26,00 payable to the *American parent concern* for patents, good will and British and imperial manufacturing rights). The technical design and sales organisation required were outside Anderston's experience, where it was content now as later to leave them. Anderston sought a licence to manufacture; the Americans a partnership in which they would have the guiding hand, which seemed a threat to the firm's cosy ambience. Anderston withdrew.[275] Victaulic joints, a product flourishing like concrete sleepers nowadays, were cursorily investigated and discarded.[276]

By default, a product to be made in Anderston's existing plant, requiring little capital expenditure was seen as the most attractive option. Paradoxically, by moving into domestic light castings, whose prosperity was evident to Cargill in Scotland, Anderston allied itself with the industry's principal cartel-breaker, Percy Donald.[277] Entering a business where it was unknown, with customers of a type (e.g. builders' merchants) unknown to it, keen to avoid establishing a sales organisation, Anderston sought introductions to large wholesalers or merchants.[278] It is unlikely that the firm was consciously re-aligning itself towards the domestic market to balance its declining export position.

In 1925, with customary alacrity, Cargill's colleagues followed up his suggestion made the previous year.[279] Bisset, late foundry manager in Glasgow, provided Cargill with details of manufacturing techniques, rival firms and prices obtained, warning Anderston that Donald, whom he had introduced to them was keen "for the last ounce of flesh".[280]

When Donald visited Port Clarence (June 1925) to discuss terms, Anderston had specimen pipes, produced by methods of its own devising, to shew him.[281] The contract was to allow Donald to undercut the National Light Castings Association (which, he made clear, he intended smashing), take a 10% return, and give merchant firms buying from him profits similar to those they could obtain from the N.L.C.A. His firm, Rownson, Drew and Clydesdale would take Anderston's whole output at a price pegged to that of Cleveland No.3 pig iron, handling all sales. Anderston could increase profits by substituting cheaper iron.[282] Donald's keenness shewed: when negotiating prices for 1927 he sought £7/7/1d. a ton for a class of pipe previously costing £9/7/10d. Anderston compromised at £8/12/6d.[283]

> "No doubt Donald will eventually profit most but what other opening as good as this exists in foundry work and will give a reasonable [profit] margin ...".[284]

Light castings, like pole bases, could not replace traditional products but they provided regular work to an empty foundry with a margin of profit to cover overheads. Orders fell off in 1928 and 1929 but recovered when, in the latter year, Donald organised Associated Builders' Merchants (ABM), a common purchasing agency for a group of other merchants, which entered into contracts with Anderston on the same basis as Rownsons: regular orders, monthly

payments, prices related to that of pig iron. The initial contract was for manhole covers and frames: one for gratings followed from March 1930. Orders flooded into the foundry to buck the trend of falling demand for all other products, but a year's output was little more than a single large order for chairs.[285]

TABLE 5.6 OUTPUT OF PIPES AND GRATINGS

Calendar Year	1926	1927	1928	1929	1930	1931	1932
Tonnage	1933	2051	795	548	1230	2150	196 (2 mos.)

Source: D/AF 511, Associated Builders' Merchants file, 1932

Donald, using American precedents, developed large, long-term contracts for a limited range of products. Merchants meeting prior to the formation of ABM realised that 95% of demand for manhole covers could be satisfied by five patterns and sizes. Three sizes of pipe and one of gutters served most needs for house castings. Thus ABM could place large contracts with Anderston at below the overall market price for all types of gutter.[286] The limited range offered larger production runs, reduced manufacturing costs, required fewer patterns and, ideally, reduced stock. The interests of Donald and Anderston temporarily coincided: it had found a repetitive product, needed the work and had the capacity to execute large orders. Providentially demand was counter cyclical to its railway products. Donald handled all sales and marketing. Deliveries, by the truck or wagon load of a mixed bag of pipes and covers came, in practice, to cause erratic production runs and higher stock levels; a burden on Anderston not on Donald.[287]

Cargill, who served as chairman and president of the Scottish Ironfounders' Association in the later 1920s, faced an embarrassing position. His committee contained King, president of the N.L.C.A., with whom the S.I.A. shared secretaries: Mann, Judd and Gordon who were the agents of the N.L.C.A.'s complaints to Cargill at Anderston's conduct. Cargill casuistically claimed that what happened in Port Clarence was nothing to do with the two Associations and criticised N.L.C.A.'s lack of control of its members' activities outside the rainwater business. They were damaging the S.I.A.'s price maintenance agreement; Anderston's competition, through Donald, destroyed that of the N.L.C.A.[288]

Pipes, poles, anchors and manhole covers were but new versions of existing products or new products using existing plant and technology. Some sold in established markets by established means. None required much capital investment. They were intended to supplement, rather than supplant old products for, in the continued manufacture of railway castings, Anderston saw its raison d'être.[289] More effort was spent on the maintenance and revival of collusive practices than upon the search for new products. Many of these, and the schemes for heavy investment abroad, were proposals brought before Anderston, not ones it actively sought out.

In the 1920s as in the 1960s, diversification was not necessarily a solution. As Tolliday observes of the steel industry: "most of the diversifying links that were made actually accentuated existing problems".[290] Anderston might be seen to have been lucky to escape entanglement with combines. Where the diversification was outside heavy industry disaster was waiting: for Armstrong Whitworth in Newfoundland wood pulp; for Vickers and Beardmore's in automobiles;

for Kerr Stuart both in metal door frames and Indian subsidiaries. What did the North British Locomotive Company know of diesel hydraulic locomotives let alone dragline excavators or metal cutting machinery in the 1950s?[291] By avoiding the lure of ambitious schemes, Anderston avoided the risk of extinction but its timidity and lack of drive prevented its picking up promising new lines within its manufacturing and financial capacity. Where the successful compromise between caution and adventure may lie is of course easier to assess from hindsight. However, Anderston erred on the side of caution more from instinct and ethos than from calculation.

For the rest of its existence, Anderston lived with its failure in the 1920s to break free from its past. Its poor performance relative to many of its local collaborators (see Table 5.1) has to be set against the abysmal performance of many established firms in staple industries. The Indian market was never recovered.[292] This applied equally to a host of British steel companies and locomotive builders as well as to the Lancashire cotton manufacturers. Native manufacturers protected by tariffs and cheap foreign competition, had driven out British goods. In the late 1920s, the G.I.P.R., for example, bought all its rails and fishplates from Tata's, all its steel sleepers and fishbolts from Germany or Belgium. No sleeper maker was selling to Argentina where virtually all lines had standardised on native hardwoods.[293]

Anderston remained the leading member of the Chair Association but never regained the position as the north's leading chair-maker. It wanted to return to the more orderly world of 1914 by recreating the orderly, regulated market of that time. Subsequent events would dim its faith in Associations but never extinguish it. Few of its competitors adhered so stubbornly to the past. Although wedded to

manufacturing similar products they faced up to the realities of business conditions, some with enthusiasm. In the 1920s the success of the points and crossing business where, untypically, firm size remained small and arrangements were enhanced not abandoned, may have encouraged a false belief in a causal connexion between collusion and prosperity the reverse of the real one. Anderston was not alone in believing that a return to the golden age in which business and collusion flourished lay less in the availability of orders than in the availability of collusion.

The organisation of industry was fashionable. Anderston never faced the catharsis of re-organisation - thus it carried the attitudes and practices of the 1890s into the 1950s. The 1930s have been seen, by Hannah and others, as the high water mark of restrictive practices.[294] This view needs modifying in the light of evidence which shews how widespread collusion was pre-1914 and how much effort businesses made in the 1920s to maintain and recreate it. With few exceptions arrangements had involved modest numbers of modest firms and were of a particular, narrow, application (ingot moulds, segments etc.). The better-known 1930s' arrangements such as B.I.S.F. were more broadly based; many of the others were reconstructions of arrangements which had collapsed in the 1920s, some on a more formal footing, others less so. Trading difficulties might destroy or modify collusion, e.g. CICA or the S.S.A. in the 1920s. Severe trading difficulties encouraged a return to it as firms co-operated to survive. It formed a windbreak from the harsh trading climate for firms less decadent than Anderston.

Collusion was more stable when there was plentiful work to share than in a depression when the balance between team loyalty and self interest varied widely from firm to firm. In the 1930s

officially sponsored collusion was seen as a catalyst to industrial recovery: a provider of stability rather than a consumer. In 1919/21 a Select Committee had delved into what it mistakenly believed was the recent phenomenon of trusts. Ten years later public and private attitudes to competition, amalgamation, rationalisation and protection, to "safeguard" industry, had so changed that, in various combinations, governments, the Bank of England, the clearers and the industries themselves sponsored centralised selling agencies and quota schemes (coal), levies to scrap surplus capacity (shipbuilding), amalgamations to reduce capacity (Lancashire Cotton Corporation) and the various schemes of Brasserts and B.I.S.F. respecting the steel industry.[295] The fewer and larger the firms, the more obvious and wide ranging their agreements. By the late 1920s, the ground was prepared for the control and corporatism of the 1940s. The 'new' arrangements of the 1930s were not necessarily an indication of the modernisation of Britain's industrial structure. Old arrangmenets continued alongside them, with conservatism, particularism and narrow horizons contributing more to the former's survival than notions of rationalisation. With a slight of hand the one could be passed off as the other.

Anderston exemplifies the virtues and vices of the conservative, appeasing, climate of the times. Timidity and internal power relationships (see Chapter 7) kept it from imprudent over extension of its finances or involvement in amalgamations which, even where strategically sound, were often financially flawed. However it was the financially stretched combines and the newly expanded firms of the post war boom who set the tone within the Sleeper Association or in breaking the Chair Association. Anderston, decreasingly able to shape its environment, defensively and reactively placed its faith

not in competition but collusion. Old methods were not seen to have failed per se. Government policy to protect an overvalued pound had harmed Anderston's exports. The economic and political effects of the war had changed the Indian market in a way that could be reversed only by (impossible) political action. The grouping of home railways, largely a consequence of government action and intervention, had strengthened their position relative to their more numerous, small suppliers it had undermined CICA, irrespective of the outside competition it faced.

Anderston lacked both the freshness of mind of new competitors and the cathartic effect of imminent ruin which would have shaken it from its complacency. When Cargill, his instincts honed by 15 years of piloting the leaking ship in Glasgow, unexpectedly took charge, the drifting of the previous years ceased. He lacked the inspiration to return Anderston to its former leading position but he could hope, through orderly management, to arrest further decline. At the end of 1929, with negotiations for collusion amongst chairmakers proceeding, various international agreements for sleeper orders in place and healthy and expanding orders for anchors, pipes and poles, prospects must have appeared brighter than for many years. World depression undermined everything rendering impossible a proper judgement on the firm's capacity to recover.

Reserves accumulated in 1917-21, allowed Anderston to avoid self appraisal, to stand apart from the desperate scramble for orders irrespective of price which characterised some firms (e.g. Ebbw Vale) in severe difficulties and avoid the pressure of bankers intent on extinguishing independence (Bolckow Vaughan) or removing inadequate management (Dorman Long, Pease & Partners etc.). Only after its position was demonstrably hopeless was Glasgow closed. To close the

Port Clarence foundry whose activity, and difficulties were the heart of the business, would leave little that was worth carrying on independently. The overstated trading profits of other departments carried the foundry which carried a disproportionate and inaccurate burden of the overheads of the business. To closing the whole firm (as British Hydraulic), Harvey, wringing his hands at each reverse, gave some thought but such a counsel of despair held no appeal for his younger colleagues who could not be expected to put themselves on the street, (Harvey was a man of means).[296]

Underlying Anderston's relative performance was the decline of much of Britain's staple industries, narrowly specialising in the wrong products at the wrong price to the wrong markets. Road was everywhere dimming the prospects of rail. The firm had risen with the railway industry, its prosperity based on chairs, India and Glasgow; these were now its three principal sources of trouble.

Chapter 5: Footnotes

1. D/AF 432, Anderston, Middlesbrough to Anderston, Glasgow, September 1914. D/AF 433, same to same, 21 - 25 February 1916.

2. D/AF 433, Anderston, Middlesbrough to Anderston, Glasgow, 26 November 1915 and D/AF 394, Anderston, Glasgow to Anderston, Middlesbrough, 11 January 1915.

3. D/AF 395, Anderston, Glasgow to Anderston, Middlesbrough, 12 January - 24 February 1916.

4. E.g. D/AF 394, Anderston, Glasgow to Anderston, Middlesbrough, reporting the Caledonian Railway's response in May 1915.

5. "not to be left out", D/AF 434, Anderston, Middlesbrough to Anderston, Glasgow, 31 August 1917, and subsequently to October 1917.

6. See generally D/AF 268-269, Order books; D/AF 398, Anderston, Glasgow to Anderston, Middlesbrough, 4 October 1917.

7. E.g. D/AF 434, Anderston, Middlesbrough to Anderston, Glasgow, 30 March 1917, 24000 tons alias 3 months' work and D/AF 268-269, passim. Orders were placed both directly and in the form of subcontracts. The tonnage of many is unascertainable, i.e. they were for so many miles of track, or were running contracts.

8. D/AF 268 and note 7.

9. E.g. D/AF 395, Anderston, Glasgow to Anderston, Middlesbrough, 1 February 1916.

10. D/AF 434, Anderston, Middlesbrough to Anderston, Glasgow, 7 November 1916.

11. Calculated from D/AF 268-269.

12. D/AF 395, Anderston, Glasgow to Anderston, Middlesbrough, 18 November 1915 etc.

13. D/AF 395, same to same, 17 January 1916 and D/AF 394-400, same to same, generally 1915-18.

14. D/AF 398, same to same, July - October 1917.

15. D/AF 397, same to same, 24 January 1917.

16. D/AF 396, same to same, 3 October 1916.

17. D/AF 396, same to same, 31 October 1916.

18. D/AF 269.

19. D/AF 435, Anderston, Middlesbrough to Anderston, Glasgow, 13 October 1919 and D/AF 435 et seq., generally. Was Anderston to sell machinery or, for example, points and crossings to TISCO for its new plant, and get some business - although helping TISCO was making a rod for Anderston's own back.

20. Both in improvements to the vehicles and in teaching vast numbers to drive and maintain them. A contemporary archetype is of the returned soldier investing his gratuity in a lorry or omnibus.

21. E.g. 20202 route miles in G.B. 1920, 20372 in 1935. Universal Directory of Railway Officials (1935).

22. See below Chapters 6 and 7 for the development of "ISCOR" and of South African attitudes. The earlier rumour (D/AF 406, Anderston, Glasgow to Anderston, Middlesbrough, 31 December 1920) was discounted due to the lack of a steel industry - an omission corrected in the late 1920s.

23. E.g. D/AF 435, Anderston, Middlesbrough to Anderston, Glasgow, 22 - 28 July 1919 and after, or D/AF 406, Anderston, Glasgow to Anderston, Middlesbrough, 11 - 21 February 1921. For TISCO see: R.K. Ray, Industrialization in India (Delhi, 1979); C. Markovits, Indian Business and Nationlist Politics (Cambridge, 1985); A.K. Bagchi, Private Investment in India (Cambridge, 1972); D.R. Gadgil, The Industrial Evolution of India in Recent Times 5th edition (Bombay, 1971); C.N. Vakil, The Growth of Trade and Industry in Modern India (Calcutta, 1931); B.R. Tomlinson The Political Economy of the Raj (1979) provides an overview, economic, financial and political of the disentanglement of Britain and India, the replacement of a British trade surplus with India by an Indian one, of large Indian debts to Britain by large sterling balances in consequence of the Second World War etc.

24. e.g. D/AF 494, Cargill to Harvey, 27 March 1924 and 31 October 1924; D/AF 494, Harvey to E. Dawson, 7 November 1924; D/AF 440, Anderston, Middlesbrough to Anderston, Glasgow, 4 February 1924; D/AF 443, same to same, 27 November 1926; D/AF 418, Anderston, Glasgow to Anderston, Middlesbrough, 9 July 1924; D/AF 424, same to same, 8 December 1925; D/AF 519, Anderston to Dowson and Dobson, Johannesburg, 19 April 1933; D/AF 531, Anderston to Railway and General Engineering Company, 18 May 1936.

25. D/AF 435-436, Anderston, Middlesbrough to Anderston, Glasgow, 18 December 1919, 20 November 1920; D/AF 407, Anderston, Glasgow to Anderston, Middlesbrough, 19 May 1921.

26. Calculated from D/AF 259-270, Order books; D/AF 15, Private ledger.

27. S. Tolliday Business Banking and Politics Table 6 on the manufacturing costs of pig iron in various locations and general histories of the steel industry, e.g. J. Vaizey, The History of British Steel (1974), D.L. Burn The Economic History of Steelmaking (1940), Carr and Taplin, History of the British

Steel Industry (1962) D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 30 September 1924; D/AF 411, Anderston, Glasgow to Anderston, Middlesbrough, 19 June 1922; D/AF 417, same to same, 7 - 10 March 1924; D/AF 424, same to same, 16 January 1926 etc.

28. The Great Eastern imported chairs from Belgium in response to the high domestic prices, enjoying easy access to the low countries from Harwich etc. (D/AF 437, Anderston, Middlesbrough to Anderston, Glasgow, 25 August 1921). D/AF 405-411, 423, Anderston, Glasgow to Anderston, Middlesbrough, 18 October 1920, 17 January 1921, 17 March and 17 July 1922, 18 October and 8 November 1925; D/AF 436-438, Anderston, Middlesbrough to Anderston, Glasgow, 10 - 15 February 1921, 13 December 1922.

29. D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 9 February 1925. D/AF 252-254, Quotations Books; D/AF 405-412, 436-438, Anderston, Middlesbrough/Glasgow correspondence, 1920-22.

30. For price of ore see note 27; D/AF 403-412, Anderston, Glasgow to Anderston, Middlesbrough, 8 - 17 September and 4 October 1920, 13 July, 27 September and 3 - 7 November 1921, 22 February, 1 March and 7 November 1922; D/AF 436-438, Anderston, Middlesbrough to Anderston, Glasgow, 28 September 1921, 6 March, 6 April, 15 September and 2 December 1922.

31. See Appendix 1 for historical notes on Tees Side Bridge, and T.R. Tighe, Tees Side Bridge, the Rise, Fortunes and Dissolution of a Private Company (British Steel Corporation, Teesside, 1980), for a general history. D/AF 408, Anderston, Glasgow to Anderston, Middlesbrough, 29 August 1921; D/AF 437, Anderston, Middlesbrough to Anderston, Glasgow, 25 - 28 August and 21 October 1921. D/AF 409, Anderston, Glasgow to Anderston, Middlesbrough, 2 November 1921; D/AF 420, same to same, 21 - 28 January 1925; D/AF 437, 439, 441, Anderston, Middlesbrough to Anderston, Glasgow, 1 - 4 November 1921, 3 and 26 January 1922, 8 March 1922, 5 December 1923, 20 January 1925. Fletcher of Tees Side claimed (D/AF 441, 20 January 1925) that Bow had been going to leave Anderston to work for Tata's. See also Tighe passim.

32. D/AF 420 as in note 31. D/AF 415, Anderston, Glasgow to Anderston, Middlesbrough, 29 October 1923. Cargill initially hoped that Tees Side and Cochranes would tire of making losses on chairs and come to see sense (D/AF 415, 1 August 1923; D/AF 439, Anderston, Middlesbrough to Anderston, Glasgow, 31 July 1923; D/AF 441, same to same, 23 - 26 January 1925; D/AF 495, Cargill/Harvey correspondence, 3 - 14 November 1925.

33. D/AF 408-410, Anderston, Glasgow to Anderston, Middlesbrough, 24 October - 1 November 1921, 22 February - 1 March 1922; D/AF 437-438, Anderston, Middlesbrough to Anderston, Glasgow, 24 October 1921, 8 March and 21 September 1922. See S.D. Chapman, Stanton and Staveley (Cambridge, 1981) for details of the pipe industry and Appendix 1 (below) for notes on Cochranes.

34. D/AF 437, Anderston, Middlesbrough to Anderston, Glasgow, 11 March 1922.

35. E.g. Howie taking a low price order for the Glasgow and South Western which other Scottish makers felt would threaten prices for supplies to other Scottish railways, allowing lower-cost English makers to make further inroads into the Scottish market. Howie, whom the G.S.W.R. shrewdly played off against Hunters of Ayr, felt the need to secure chair orders (now and hereafter) at any price. His jumpy state did not conduce to the making of arrangements. D/AF 409-410, 414, Anderston, Glasgow to Anderston, Middlesbrough, 7 November 1921, 3 May 1922, 8 - 13 June 1923; D/AF 438, Anderston, Middlesbrough to Anderston, Glasgow, 9 June 1922 for further expressions of fear over price level.

36. D/AF 435, Anderston, Middlesbrough to Anderston, Glasgow, 19 June 1919.

37. D/AF 437, Anderston, Middlesbrough to Anderston, Glasgow, 31 January 1922 (quoted); D/AF 409, Anderston, Glasgow to Anderston, Middlesbrough, 25 - 27 January 1922; D/AF 253, Quotations book.

38. D/AF 411, Anderston, Glasgow to Anderston, Middlesbrough, 22 June 1922 and D/AF 409, same to same, 1 November 1921 (quoted); D/AF 412, same to same, 7 November 1922; D/AF 409, same to same, 25 - 26 January 1922. D/AF 253, Quotations, June 1922 and after. The usual suppliers had to cut 5/- a ton from their tenders. Easton was standing by them and up to his directors but, ever since 1918 (D/AF 434, Anderston, Middlesbrough to Anderston, Glasgow, 22 October 1918), when Anderston had quoted lower to the part-Caledonian owned Portpatrick Railway than to the Caledonian, plus later problems of sending the wrong invoices (Glasgow and South Western ones) to the Caledonian, there had been prospect of difficulties in their special relationship. D/AF 412, Anderston, Glasgow to Anderston, Middlesbrough, 25 October 1922 on the expansion of the Caledonian's list of tenderers.

39. D/AF 437-438, Anderston, Middlesbrough to Anderston, Glasgow, 14 - 21 March 1922, 24 July 1922.

40. D/AF 438, Anderston, Middlesbrough to Anderston, Glasgow, 2 December 1922 and see note 41.

41. D/AF 438, Anderston, Middlesbrough to Anderston, Glasgow, 15 - 21 September and 2 December 1922. Anderston and Pease both quoted below cost to punish British Hydraulic for its previous attempts to make up for its price disadvantage by influencing the North British directors and officials to give it work. They were themselves cut out by Cochranes (£6/9/9d. a ton delivered, Glasgow versus £7 a ton quoted by makers in Glasgow). Of the next order (arranged for Melvins, British Hydraulic and Anderston in Middlesbrough), Cochranes got 2050 tons to their 1250. McQuistan was believed to have a contact inside the N.B.R. Stores Department. (D/AF 253, Quotations; D/AF 269, Orders, 16 January 1923; D/AF 413, Anderston, Glasgow

to Anderston, Middlesbrough, 23 January 1923 etc.). British Hydraulic had been told (D/AF 437, Anderston, Middlesbrough to Anderston, Glasgow, 28 September 1921) that it would be undercut by the north eastern firms unless its prices were brought into line. British Hydraulic was suffering similar pressure on prices in its seg ments business. See Appendix 1 for further details of British Hydraulic and D/AF 417, Anderston, Glasgow to Anderston, Middlesbrough, 10 October 1923 - 21 February 1924, for the firm's closure. British Hydraulic could quit because there was to hand Barclay Curle, owners of the adjoining shipyard who were willing to purchase the plant for £30,000.

42. D/AF 438, Anderston, Middlesbrough to Anderston, Glasgow, 28 November 1922. In the lead up to the grouping the North British Railway had, for example, ceased ordering new locomotives (Cecil J. Allen, The London and North Eastern Railway (1966) chapters 2 and 15) whilst the North Eastern's failure to place its regular half-yearly chair contract in July 1922 led, it appears, to the pressure from Pease and Partners which caused CICA temporarily to suspend commission payments (D/AF 438, Anderston, Middlesbrough to Anderston, Glasgow, 8 - 24 July 1922). Any large scale railway amalgamation would disrupt the finely-tuned arrangements of CICA

43. i.e. rail deliveries from the Midlands and delivery by coaster from the North East. Unfortunately, a new special relationship was established between Francis, the Stores Superintendent of the Southern Railway (1920s-1940s) and certain suppliers, particularly with Cowen of Smith Patterson , which excluded Anderston from the share of the business it had once enjoyed. See below Chapter 6 and D/AF 549, Cunningham/Cargill correspondence, 1942.

44. e.g. from the north east delivery was sought by the L.M.S. at Tebay. The North British had already begun to seek orders priced F.O.T. Works - contributing to the eclipse of the British Hydraulic. The effects of the latter's inability to compete on price with the northern firms had been held in check by the structure of CICA and the high freight charges from the north to various delivery points in Scotland. D/AF 435, Anderston, Middlesbrough to Anderston, Glasgow, 25 May 1919; D/AF 437, same to same, 6 March 1922 et seq. See generally correspondence between Glasgow and Middlesbrough, Order Books and Quotation Books : and note 46.

45. See, for example, M.R. Bonavia, The Four Great Railways, (Newton Abbot, 1980) chapter 1 on the background to the grouping. The L.M.S. included the London and North Western, Midland and Lancashire and Yorkshire systems. Alike in possessing chair foundries in their works at Crewe, Derby and Horwich, these lines provided 70% of the mileage, 70% of the board and the heads of all principal departments. The Caledonian's position was, perhaps, weakened by its haggling over the merger terms long after the other lines had settled. The L.N.E.R. included the Great Northern and Great Central (both chairmakers) as well as the Great Eastern, North Eastern,

North British and Great North of Scotland (all chair customers).
Longitudinal merger would, at least, have kept the Glasgow and South Western (and Howie's cheap prices) away from the Caledonian. The first grouping scheme would have merged all Scottish companies, allowing Scottish makers to play the national card, and left the N.E.R. separate from its northern and southern neighbours, ensuring the continued advantage of its traditional suppliers (plus their new local rivals). Midlands firms, with cheap local ores, would have enjoyed direct access only to the London North Western/Midland and Great Northern, Central and Eastern groups, both largely self sufficient.

46. The Association could not prevent English makers, suffering from Cochranes' competition, seeking work where they would if their Scottish (erstwhile collaborators) would not and could not quote prices which would maintain pressure on Cochranes. Subsequently Railway and General of Nottingham was to be critical of Anderston for the latter's inability to quote competitive prices (see below, this chapter).
In December 1923 the L.N.E.R. required that all tenders for chairs of whatever pattern, for whatever district, be submitted to the same set of London-based officials on the same date (D/AF 254, Quotations Book, December 1923 and D/AF 439, Anderston, Middlesbrough to Anderston, Glasgow, 3 December 1923 and D/AF 441, same to same, 9 February 1925, regarding the L.N.E.R. seeking quotations at works). On the revenue from haulage aspect see D/AF 415-416, Anderston, Glasgow to Anderston, Middlesbrough, 2 August and 28 November 1923 and 13 December 1924. On the supposed influence of Pease and Partners with the L.N.E.R. see, for example, D/AF 419-420, same to same, 12 - 19 November 1924. On the influence of overall traffic from suppliers influencing the placing of orders, see Chapter 7 below and D/AF 439 and 441, Anderston, Middlesbrough to Anderston, Glasgow, 16 April 1923 and 31 October 1924.

47. The purchaser, from other tenders, would know the level of makers' ex-works prices and prices quoted for delivery at, for example, Tebay and Glasgow as well as to Inverness. Some flexibility on price could be introduced by delivering by sea, (e.g. 11/- a ton was saved on an order for the Great North of Scotland) D/AF 438, Anderston, Middlesbrough to Anderston, Glasgow, 16 August 1922, but this ran counter to the calculations of the railway companies explained in note 46. On the difficulties of quoting consistent and realistic prices for delivery to, for example, Inverness, see D/AF 439, same to same, 26 April 1923, 29 June 1923, 11 July 1923; D/AF 441, same to same, 5 December 1924, and D/AF 414-416, Anderston, Glasgow to Anderston, Middlesbrough, 29 June - 2 July 1923, 2 August 1923 and 28 December 1923.

48. D/AF 417, Anderston, Glasgow to Anderston, Middlesbrough, 7 - 10 March 1924. In 1925 the differential for Caledonian switch and crossings chairs was 22/6d. per ton, elsewhere on the L.M.S. as little as 7/6d:- D/AF 424, same to same, 10 December 1925. Easton later admitted a certain scepticism as to the base prices quoted from the railways' own foundries.

49. Scottish Record Office, BR/CAL 4/5 for Easton's retirement. The extension of the Caledonian's tendering lists and the placing of small orders with non-usual suppliers - Melvin's, Pease and Partners and Smith Patterson - in late 1922 (D/AF 412, Anderston, Glasgow to Anderston, Middlesbrough, 25 October - 7 November 1922) points to a weakening of the special relationship before the grouping. Later Anderston cut its own throat (D/AF 426, Anderston, Glasgow to Anderston, Middlesbrough, 12 July 1926) when, having run out of excuses and opportunities to cut prices in line with competitors, Anderston decided it was "not going begging" to Easton because more switch and crossing chairs at current prices "would be ruinous".
D/AF 414, Anderston, Glasgow to Anderston, Middlesbrough, 16 May 1923, quoted in text; D/AF 412-414, 417, 419, 423-424, same to same, 7 November 1922, 15 February 1923, 12 March 1923, 8, 13 and 29 June 1923, 7 - 10 March 1924, 12 November 1924, 15 October, 8 and 26 December 1925, 5 March 1926. Also D/AF 438-442, Anderston, Middlesbrough to Anderston, Glasgow, 1922-25 replies to the preceding and D/AF 494-495, Cargill/Harvey correspondence, 1924-27, especially December 1926.
To drag together the unwieldy conglomerate that was the L.M.S. standardisation was imposed by an outsider to the railway business - Stamp, ex. I.C.I. and the civil service. With a capital of £400m the L.M.S. was the largest private transport concern in the world. The Caledonian provided but 3 of its 26 original directors and few chief officers. The two principal constituents, L.N.W.R. and Midland, in matters of policy, practice, structure and ethos were entirely antithetical, with a rivalry of 70 years' standing. Bureaucratic centralis m was imposed in contrast to the L.N.E.R. where four medium sized companies balanced the largest constituent and a loose confederation was achieved.
See Bonavia The Four Great Railways, Bonavia, Railway Policy Between the Wars (Manchester, 1981) and various books on the L.M.S. aimed at the enthusiast such as: C. Hamilton Ellis, London, Midland and Scottish, a railway in retrospect (1970).

50. For 1923 the bulk of the Caledonian contract had been placed as usual; in 1924 Pease took 1600 tons, Cochrane's 1000 tons, MacFarlane Strang 1200 tons and Anderston 2000 tons. By 1926, for L.M.S. Scotland, Pease took 5000 tons, other northern firms 2750 tons, Anderston, Howie and MacFarlane's 2000 tons. Formerly Anderston had enjoyed informal discussions with the Caledonian, as a result of which it frequently obtained more work than it sought; to the end of the Caledonian's existence it had first refusal of work at lower prices (see Chapter 4 above). In December 1925, for 1926, Anderston had been obliged to tender £4/19/- a ton in line with neighbouring firms in place of its considered price of £5/10/-. From 1927 the bulk of the order was placed with northern firms at lower prices (e.g. Anderston cost at works £5/19/7d., Anderston quotes £5/17/-, order placed at £5/9/-) with Anderston occasionally offered any surplus at the ruling price. By 1929 (post-Easton) the L.M.S. would not even make Anderston an offer. D/AF 254-256, Quotations, 1923-30; D/AF 269-270, Foundry orders, 1923-30 and as note 49.

51. D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 20 June, 22 July 1925. See below and Chapter 6 for investment of particular manufacturers in more or less full sets of patterns. D/AF 422, Anderston, Glasgow to Anderston, Middlesbrough, 23 July 1925 finally ends the fiction of Caledonian chairs being made in Glasgow.

52. E.g. D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 23 January 1925. Head Wrightson wanted CICA to end.

53. The Steel Sleeper Association, see below, had introduced a system of sealed bids supervised by neutral secretaries - losers might gain more in commission payments than the successful firms in profits. Surprisingly, Anderston opposed this although it was happy to stand back and receive commissions on its segments and sleeper business. The adventurous might have gained by their subsequent ability to spread overheads across increased output. Attempts to revise allocations were complicated by the various demands of G.K.N., Pease and Smith Patterson (see below) but one such proposed: Anderston and G.K.N. 25%, Head Wrightson, 20%, Pease and Smith Patterson, 12½% and Taylors and Railway and General 2½%. The theoretical division of work formerly was Anderston and G.K.N. 29.4%, Heads 21%, Pease and Smith Patterson 10.25%. In the period 1919-24 Anderston had undershot its delivery quota by c.9500 tons. For all the above see D/AF 420 and 441, Anderston, Middlesbrough/Anderston, Glasgow correspondence, 24 November 1924 - 24 February 1925 and D/AF 494, Harvey to Cargill, 16 - 20 January 1925.

54. See Chapter 4 for G.K.N.'s previous break with CICA It had stayed out of Scotland and the North East in return for protection for its G.W.R. work. D/AF 494, Harvey to Cargill, 16 January 1925; D/AF 420 and 441, as above, 9 December 1924 - 12 January 1925.

55. D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 23 January 1925, concerning South African order, and see generally the order and quotation books and correspondence for 1926-31, e.g. D/AF 443, Anderston, Middlesbrough to Anderston, Glasgow, 25 August and 30 October 1926. D/AF 440 and 420, Anderston, Middlesbrough to Anderston, Glasgow and reply, 23 - 24 February 1925 with figures of orders taken and allocations exceeded.

56. D/AF 415, Anderston, Glasgow to Anderston, Middlesbrough, 29 October 1923.

57. D/AF 420, 422, Anderston, Glasgow to Anderston, Middlesbrough, 21 January - 6 February, 12 June 1925; D/AF 441 and 494, Anderston, Middlesbrough to Anderston, Glasgow, 20 - 29 January 1925; D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 10 June and 10 November 1925.

58. Cargill wanted Harvey to act more from self interest and hang on less to the personal friendship of Wrightson who was prepared to pursue his firm's interest as it suited him. D/AF 420, 440, 494, Anderston, Middlesbrough (Harvey)/Anderston,

Glasgow (Cargill) correspondence, 24 December 1924, 20 - 24 January 1925, 6 February 1925.

59. D/AF 440, Anderston, Middlesbrough to Anderston, Glasgow, respecting G.K.N.'s letter to Head Wrightson, 2 March 1925.

60. D/AF 420, Anderston, Glasgow to Anderston, Middlesbrough, 24 December 1924 and D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 12 January 1925.

61. See notes 55 and 57 above.

62. D/AF 422, Anderston, Glasgow to Anderston, Middlesbrough, 2 June 1925. D/AF 495, Harvey to Cargill, 3 November 1925. D/AF 423-424, 442 and 495, Anderston, Middlesbrough (Harvey)/Anderston, Glasgow (Cargill) correspondence, 3 - 16 November 1925.
Anderston admitted to G.K.N. that it had earlier opposed Tees Side's admission, but now it had seen the light, admitted its share of responsibility for the impasse and sought the help of G.K.N. to induce a less obdurate attitude at Head Wrightson . "I [Harvey] as well as Sir Guy [Wrightson] have been a stumbling block to including Tees Side Bridge", D/AF 442, 10 November 1925.

63. D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 15 November 1925.

64. See Chapter7 for discussion of the reserves. Cargill was more flexible than Harvey in taking work which covered its direct costs but both were averse to slashing prices in the manner of more desperate rivals.
D/AF 494-495, Harvey/Cargill correspondence, especially 23 April 1924, 23 April 1925, 1 - 2 March 1926 and 9 May 1927 (when the other departments were estimated to owe the foundry £2000 in respect of 1926/27). It seems that overheads in 1909 and later, and, no doubt, before, had been guessed at. Latterly they had been apportioned pro-rata to tonnage but 1 ton of bolts required much greater expenditure (small orders, high value produce) than 1 ton of sleepers (large orders, low increase in value). Harvey, late in his career and lacking the experience of Glasgow, where Cargill had been obliged to seek work more actively and take risks with his costs, was floundering in the various storms.

65. E.g. D/AF 415, Anderston, Glasgow to Anderston, Middlesbrough, 29 October 1923 and D/AF 495, Harvey to Cargill, 1 March 1926. For attitudes on price see 1923-27 correspondence generally. D/AF 443-444, Anderston, Middlesbrough to Anderston, Glasgow, 20 January and 3 December 1927 as particular examples.

66. D/AF 424, Anderston, Glasgow to Anderston, Middlesbrough, 12 February 1926. In December 1925, for the first time, Head Wrightson sought a Caledonian order. D/AF 255, Quotations, D/AF 270, Orders, D/AF 462, Anderston, Middlesbrough to Anderston, Glasgow, 8 December 1925, D/AF 424, Anderston, Glasgow to Anderston, Middlesbrough, 1 - 26 December 1925. D/AF 424, same to same, 25 January 1926 concerning Smith Patterson's

"low down and mean" unwillingness to protect Melvins for L.N.E.R. Scotland switch and crossings chairs. D/AF 443, Anderston, Middlesbrough to Anderston, Glasgow, 25 August and 30 October 1926 respecting Head Wrightson's filling up with low price work.

67. And secured its position with its customers to benefit from the return to more settled conditions in the 1930s. (See Chapter 6). D/AF 443, Anderston, Middlesbrough to Anderston, Glasgow, 27 November 1926. How far Anderston, with wages tied to those obtaining in the iron and steel industry (as had long been the case), was faced with an uncompetitive wage-cost profile is unclear. Some, if not all, of its rivals were more desperate and successful in cutting wages, others may have been paying different rates. In pre-war Glasgow, the wage structure had become fossilised and burdensome (see Chapter 4), whilst that at Middlesbrough in turn may have shewn similar failings (see Chapter 7). When Anderston realised that it must cut prices to have a realistic chance of an order (e.g. D/AF 419, Anderston, Glasgow to Anderston, Middlesbrough, 7 - 12 November 1924 for South Africa) others cut to prices Anderston felt unable to consider.

68. D/AF 494, Cargill/Harvey correspondence, 27 March - 1 April 1924, 19 October 1925 etc. British Hydraulic, which had liquidated before its reserves disappeared, had a purchaser for its site, and for some of its plant, in waiting. Its principal shareholder willed such an end. At Anderston it would have represented an admission of managerial defeat. The L.N.E.R. was reviewing its foundry arrangements.

69. D/AF 495, Harvey to Cargill, 23 December 1926 (quoted) and D/AF 443, Anderston, Middlesbrough to Anderston, Glasgow, 20 January 1927 and D/AF 255, Quotations. A nasty jolt for Smith Patterson (who had just got the Caledonian switch and crossings chair contract), whose cultivation of the Southern had been mentioned (e.g. D/AF 551, Cunningham to Harvey, 1 January 1942). Anderston used regularly to obtain orders from the Southern's constituents. G.K.N. and Smiths received the bulk, 1923-25 when G.K.N. withdrew in return for guarantees from the members of the moribund CICA not to take G.W.R. orders. D/AF 444, Anderston, Middlesbrough to Anderston, Glasgow, 12 - 19 September 1927, 28 November - 5 December 1927. D/AF 427, Anderston, Glasgow to Anderston, Middlesbrough, 2 February 1927, 28 March 1927, 26 April 1927. On ad hoc co-operation see D/AF 443, Anderston, Middlesbrough to Anderston, Glasgow, 25 October 1926 (G.K.N./Heads/Anderston for iron sleepers).

71. Cochranes seems not to have turned up to meetings. See TABLE 5.1 for its diminished output for the L.N.E.R. and below Appendix 1 and Chapter 6 . Melvins knew that Middlesbrough firms could easily cut it out of work and was willing to hang on to arrangements made there: D/AF 428, Anderston, Glasgow to Anderston, Middlesbrough, 3 May 1927. Howie remained erratic in behaviour (see above, and Chapter 6 below). By late 1928, these two small firms were the only Scottish chairmakers left in business, surviving in their niche markets

for North British and Glasgow and South Western pattern chairs and deliveries on their doorstep.
On improving prices see D/AF 444, Anderston, Middlesbrough to Anderston, Glasgow, 29 November 1927 and 5 December 1927.

72. D/AF 444, Anderston, Middlesbrough to Anderston, Glasgow, 1 - 5 December 1927 quoted. D/AF 255, Quotations. Distrust of Cochranes was evident on the part of Smith Patterson and others. For Head Wrighton's continued awkwardness see D/AF 496, Anderston, Middlesbrough to Anderston, Glasgow, 12 March 1928. By December 1927 (D/AF 496) arrangements for the current L.N.E.R. inquiry included all 6 northern and 3 Scottish firms.

73. Cargill, now in charge at Anderston, was proving willing to quote lower prices (D/AF 496, 2 May 1928) to shew that Anderston was still "in the running". A stick and carrot approach to reviving collusion. See generally Anderston/G.K.N. Anderston/Smith Patterson correspondence and Anderston's correspondence with other chairmakers, D/AF 497-514, 1927-31, e.g. D/AF 503, Anderston to G.K.N., 31 December 1929 and D/AF 505, Anderston to Smith Patterson, 4 December 1929. Various meetings to include Scottish makers, G.K.N. and Midlands firms were arranged. G.K.N. was used to approach Stanton; Melvins to approach Howie. D/AF 509, Head Wrightson's memorandum on the chairmakers' London meeting of 4 January 1930.

74. E.g. Williamsons was content with 1500-2000 tons of ordinary chairs plus various special pattern chairs for the London railways and the Southern. D/AF 509, Anderston/Taylor Brothers correspondence, 10 - 15 May 1930; D/AF 507, Anderston to Head Wrightson, 3 January 1930 and 10 - 27 May 1930.

75. D/AF 498, Anderston/G.K.N., Anderston/Head Wrightson correspondence, October 1928 and D/AF 500, Anderston/Pease and Partners, Anderston/Smith Patterson, Anderston/Tees Side Bridge correspondence, October 1928. See also note 79. Stanton, like Pease and Partners, might have viewed its foundry as a means of consuming, at any price, its surplus pig iron. Unfortunately, it broke into the chair business (D/AF 496, December 1927) just as that seemed to be calming down.

76. See above note 27, respecting pig iron prices. D/AF 498, Anderston/Head Wrightson correspondence and D/AF 500, Anderston/Smith Patterson correspondence, carry reports of meetings of Cowen of Smith Patterson with Fox of Stanton and meetings of chairmakers, 28 February 1928 and after.

77. D/AF 505, Anderston/Smith Patterson correspondence, 1929, especially 13 June 1929 and 9 November 1929.

78. D/AF 503, Anderston/G.K.N. correspondence, 31 October 1929. D/AF 509, Anderston to Smith Patterson, 27 October 1930.

79. D/AF 509, Anderston to Taylors, 1 October 1930 describing Pease and Partners as the major problem in the north east. D/AF 509, Anderston to Smith Patterson, 1 - 10 October 1930 with replies. Pease, in considerable financial difficulties, had adopted a policy of grabbing tonnage at any price (like Ebbw Vale).

80. Learning of Heads' attitude to them, Pease and Partners decided that the re-establishment of CICA was "not opportune". Heads shewd the same tactlessness and hubris in respect of Peases as formerly with Cochranes and Tees Side. D/AF 507, Pease and Partners to Anderston, 24 October 1930 and Anderston/Head Wrightson correspondence, 1930 (the Pease letter was forwarded). D/AF 509 Anderston/Smith Patterson correspondence as note 79.

81. See note 46 for the supposed influence of Pease and Partners through Sir Arthur Pease (d.1927), a director of the L.N.E.R. and member of its purchasing committee. This is mentioned frequently, 1923-25, for example D/AF 423, Anderston, Glasgow to Anderston, Middlesbrough, 4 November 1925, D/AF 495, Cargill/Harvey correspondence, 3 - 14 November 1925.

82. See Chapter 6 for figures on the comparative prosperity of the home railways.

83. Whilst Tees Side interested itself in home orders - Peat claimed that he had made 45000 tons of chairs in the two years following CICA's demise (D/AF 549, Cargill to Cunningham, 13 March 1942) - there is no evidence of quotations from Cochranes for exports. Cochranes never attempted to make iron sleepers. T.R. Tighe, chapter 3, gives various (incomplete) figures for foundry/chair orders/output at Tees Side - e.g. 6840t, July 1924; 9400t, September 1924; 8600t, June 1925 (all for South Africa). Tees Side did not make tiebars thus the arrangements between Anderston, G.K.N., Bains of Coatbridge and Bayliss, Jones and Bayliss could continue, ineffectual though they came to be against continental and native competition (D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 17 September 1925). Tees Side, initially, shunned by consulting engineers, took its first order for iron sleepers from the East Indian Railway (D/AF 437, Anderston, Middlesbrough to Anderston, Glasgow, 27 - 29 October 1921). Thereafter, it secured others by margins of c.10/- a ton at prices which Anderston had no wish to touch. See D/AF 253-255, Quotation books, 1921-28 passim, particularly September 1922, 23 February 1923, 21 May 1924, and D/AF 438, Anderston, Middlesbrough to Anderston, Glasgow, 25 September 1922.

84. D/AF 254-255, Quotations: 14 February 1924, 21 September 1927, 20 June 1925. Anderston quoted £5/14/4½d. a ton by sacrificing half its overheads then cut further to £5/12/-. The order was placed at £5/-/- (D/AF 422 and 441, Anderston, Middlesbrough/Glasgow correspondence, 20 June 1925). Head Wrightson and Pease were below Anderston's quotation but above Tees Side's. On 20 September 1924 a cut of 2/6d. a ton by CICA from an already low price was insufficient to prevent business going to Tees Side.

85. D/AF 439, Anderston, Middlesbrough to Anderston, Glasgow, "Ridiculously low" prices of Cochranes for chairs and "absurd" price of Tees Side for sleepers (D/AF 411-412, Anderston, Glasgow to Anderston, Middlesbrough, 26 September and 5 October 1922). D/AF 443, Anderston, Middlesbrough to Anderston,

Glasgow, 8 - 25 August 1926 on low prices quoted by Heads and Tees Side for sleepers.

86. Vakil, pp.259-262, Gadgil, pp.282-284, Bagchi, pp.299-300.

87. B.R. Tomlinson, The Political Economy of the Raj, pp.1-3, 46-48; C. Markovits, pp.57-59; V. Astey, The Economic Development of India (1952), p.519 - Indian iron and steel output was 33% higher in 1937 than 1925, having increased considerably in the early 1920s.

88. Government of India, India in 1929-30, p.195 on the important changes in tendering practices from 1930.

89. Tomlinson, pp.62-63, p.124 and chapter 4 generally; Bagchi, p.40; The Times, 2 October 1921, 11 - 15 February 1924, 5 November 1930; D/AF 437, Anderston, Glasgow to Anderston, Middlesbrough, 2 November 1921.

90. B.R. Tomlinson, pp.46-48, pp.62-63, TABLE 2.7. Cheaper though inferior goods were preferred. In comparing goods of equal prices Indian manufacturers from Indian materials were to be preferred to Indian products made from imported materials; to goods held in stock in India by branches of foreign companies; to straight imports. See also Government of India, India in 1930-31 and subsequent annual volumes and C.N. Vakil. Whilst the position was not formalised until 1930/31 the trend was evident from 1921. The overall political, economic and financial (rupee-sterling parity, balance of payments etc.) context cannot be overemphasised.

91. Universal Directory..., 1936, Gadgil, pp.342-343, A.K. Bagchi, p.303ff., Railway Gazette, Indian Number 1923. The East Indian was the other.

92. Rendels, the usual engineers for the Indian State railways, replaced Whites. D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 24 April 1925.

93. On the basis of quotations sought and orders placed with Anderston, D/AF 255-257, 270. See note 104.

94. D/AF 418, Anderston, Glasgow to Anderston, Middlesbrough, 31 May 1924.

95. Many Indian lines had shifted to steel sleepers since the 1890s (see Chapter 4). Steel sleepers had since the 1900s been subject to greater continental competition whereas only Anderston, G.K.N., to a lesser extent Head Wrightson, and (now) Tees Side, were interested in making iron ones.
D/AF 439, Anderston, Middlesbrough to Anderston, Glasgow, 22 March, 1 April and 21 June 1923. Anderston designed the G.I.P.R.'s new steel sleeper but, after the first order, lost out to continental suppliers. See D/AF 255-257, 270, Quotations and Orders and the contrast in tone and information between the "Indian Number" of 1923 and that of 1929 in the Railway Gazette.

The new G.I.P.R. standard replaced 100lb bull head rails by 90lb flat bottom ones. All rails and fish plates were, by 1929, made by Tata's. All sleepers in the years to 1929 had come from Germany and Belgium (on price over Britain).

96. Of course it could not buy cheaper continental steel sleeper plates because of the relationship with Dorman Long. A typical quotation for tiebars was of £12/12/6d. per ton with British iron; £9/2/6d. with continental iron or continental steel and £10/5/- with British steel (D/AF 254, Quotation, 20 June 1925). Between 1925 and 1927 a price advantage of 30/- a ton in favour of continental materials was usual. D/AF 255, 14 March 1927 for quotation to Madras and S. Mahratta. When prices were extremely close no residual loyalty to Britain remained - a contract for £10,000 tiebars for the Madras line was lost to continentals by £63. (D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 31 March 1925). D/AF 443, same to same, 12 November 1926 gives tiebar prices.

97. The Times, 1 October 1921, 15 February 1924; The Economist, 12 April and 17 May 1924. See above this chapter and Chapter 4 for Tata's and A.K. Bagchi, pp.291ff. R.K. Ray, pp.74-93. C. Markovits, pp.10-12, 57-59. Gadgil, p.284ff.

98. E.g. £9/17/6d. a ton delivered (Tata's £11/5/-) plus duty at 33% on Anderston's produce, 18 October 1926, when Anderston lost an order to the Bengal Company, or 6 October 1925 when it lost an order for the Indian State Railways. D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 17 September and 6 October 1925 and D/AF 443, same to same, 18 October 1926. See also quotations.

99. See Appendix 1. The Bengal company was reconstructed in 1937 with an Indian domicile and rupee capital. D/AF 423, Anderston, Glasgow to Anderston, Middlesbrough, 4 September 1925 and see generally annual reports and proceedings at annual general meetings of the Bengal Iron Co., 1924-36.

100. One benefit for Anderston of being empty of orders. But for the tariff Anderston believed that it could supply Bengal with cheaper as well as better tiebars. Anderston stood some chance in direct sales to Indian railways far distant from the Bengal and Tata works in view of high internal transport costs versus low shipping costs - see Gadgil , p.133 for example; D/AF 423, Anderston, Glasgow to Anderston, Middlesbrough, 8 - 9 October 1925; D/AF 440-443, Anderston, Middlesbrough to Anderston, Glasgow, 2 February 1924, 6 October 1925, 5 November 1926 and see quotation books.

101. The suicidal price of Head Wrightson's "willing to throw money away" was £5/14/6d. per ton plus 16/- a ton shipping to Bombay - £6/10/6d. The tarriff on cast iron pots was much below that on tiebars. Bengal faced 30/- a ton transport costs to Bombay. Whilst Anderston priced sleepers at £7 a ton, Tees Side was offering them at £6 - a typical sign of Anderston's uncompetitiveness. D/AF 443, Anderston, Middlesbrough to Anderston, Glasgow, 6 August and 18 October 1926; D/AF 424-425,

Anderston, Glasgow to Anderston, Middlesbrough, 18 February and 20 March 1926.

102. Bengal Iron expected this to happen. D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 17 September 1925. By 27 November 1926 (D/AF 443, same to same) the India Office was extending the tendering periods for those firms based in India.

103. D/AF 494, Harvey to Cargill, 23 June 1924; D/AF 443, Anderston to James Watt, 21 December 1926.

104. The demand for cast iron sleepers, although diminishing, continued, but Indian makers could supply the requirement - the Bengal Iron Co. expanded its foundry. Gadgil, p.344 - 5360 miles of line were added to the Indian railway system, 1924-32 but neither Anderston nor Britain was, as we have seen, well placed to benefit. The share of Indian (state) Railway Stores bought in India (12½% 1931/32) rose continuously to 46% in 1938/39 in respect of the state system; for railway stores overall the figures are 8% and 28%. Tomlinson Table 2.7 and p.63.

105. Calculated from D/AF 17-19, Commission accounts. Public works requiring tunnel segments were of a type which required a long lead-in-time.

106. D/AF 438-439, Anderston, Middlesbrough to Anderston, Glasgow, 31 May 1922, 14 June 1922, 11 January and 6 June 1923.

107. Expansion and extension. See Barker and Robbins, A History of London Transport, volume 2, chapter 13.

108. c.13000 tons were required. The result could have been to recreate the local ring which had existed in the 1890s/1900s. D/AF 439, Anderston, Middlesbrough to Anderston, Glasgow, 24 May 1923. Naturally Anderston held on to nurse.

109. Stanton had bought out various other iron firms in the aftermath of the war - see S.D. Chapman, chapter 5 and see note 27 above, respecting pig iron/iron ore prices. D/AF 438, Anderston, Middlesbrough to Anderston, Glasgow, 17 June 1922.

110. E.g. D/AF 438, Anderston, Middlesbrough to Anderston, Glasgow, 31 May - 17 June 1922, and reply D/AF 411, 19 June 1922. If others were full with loss making work they could not intrude on Anderston's taking better-priced work if it turned up.

111. D/AF 438, 17 June, 29 August, 21 October (quoted) and 13 December 1922.

112. D/AF 438, 17 June - 4 July 1922 as Stanton shot itself in the foot, and D/AF 411, Anderston, Glasgow to Anderston, Middlesbrough, 18 July - 28 August 1922. Rivals seemed to be sacrificing large portions of indirect wages, not just overheads, to make low tenders, i.e. going beyond the point which Anderston would countenance.

113. D/AF 439, Anderston, Middlesbrough to Anderston, Glasgow, 24 May 1923 (quoted); D/AF 437-439, same to same, 28 February, 31 May, 17 June, 13 December 1922; 11 January, 24 May, 9 June 1923 etc. and D/AF 603 CISA file (incomplete), 1921-24.

114. D/AF 603, 22 November 1923.

115. D/AF 603, Minutes, 11 December 1923. D/AF 603; D/AF 416, 439, Anderston Middlesbrough/Glasgow correspondence, 16 November 1923 - 11 December 1923.
At the end of 1923 the members of CISA were:
Anderston, Sheepbridge, Smith Patterson, Stanton, Staveley, Whessoe, Widnes Foundry and Newton Chambers, with Potter's co-operating for the while. D/AF 603, 19 November 1923 - 6 March 1924 contains the details of the tender and its refusal. Staveley was approached by Cochrane's as soon as as the latter had booked the order (11 December 1923) to see whether it would accept a sub-contract, offering to barter castings for pipes. Under some moral pressure from the rest of CISA, and with a promise of a sub-contract of further work, Staveley agreed not to treat. The sub-contracting of the remaining 26000 tons and the arrangmeent of other orders (7000t London and Manchester sewers) before CISA ceased to function as an allocating body gave: Anderston 2000t; Butlins 5500t; Heads 3228t; Pease 5000t; Sheepbridge 1250t; Smith Patterson 2384t; Stanton 7460t; Staveley 2500t; Widnes 2500t; Newton Chambers 1250t; Potter's 4500t; British Hydraulic and Whessoe: 3d. per ton each in commissions.

116. D/AF 603, 11 - 21 December 1923. D/AF 440, Anderston, Middlesbrough to Anderston, Glasgow, 11 January - 24 February, 7 - 15 April and 10 May 1924. D/AF 416-417, Anderston, Glasgow to Anderston, Middlesbrough, 21 January - 25 February, 14 April 1924. D/AF 494, Harvey/Cargill correspondence, 6 November - 18 December 1923.

117. As 116. Anderston felt that by some shift or other it had been cut out of all other recent business, now it stuck out for an order (D/AF 440, Anderston, Middlesbrough to Anderston, Glasgow, 11 January 1924).

118. Chapman, chapter 5, for an account of the pipe business and Stanton's capture of new technology. Appendix 1 below for notes on Cochrane's. Above, this chapter for the chair association. D/AF 440, Anderston, Middlesbrough to Anderston, Glasgow, 15 April 1924.

119. D/AF 417, Anderston, Glasgow to Anderston, Middlesbrough, 14 April 1924 concerning closure and sale of British Hydraulic which from its poor site could not face competition on its chair business and had been in difficulties with segments and with the Ingot Mould Association. D/AF 440, Anderston, Middlesbrough to Anderston, Glasgow, 30 January 1924 etc. for bad news of Cochrane's.

120. D/AF 603, March 1924. D/AF 19, Commission accounts. Anderston correspondence, March 1924 - March 1925 passim.

121. D/AF 440-441, Anderston, Middlesbrough to Anderston, Glasgow, 4 February and 1 November 1924 and D/AF 443, same to same, 2 July 1926 for references to personal animosities between Midlands pipe makers spilling over into CISA and the segments business. D/AF 441, same to same, 14 February 1925, 2 - 6 March 1925 and D/AF 419-421, Anderston, Glasgow to Anderston, Middlesbrough, 3 - 22 November 1924, 11 February 1925 and 3 March 1925 (quoted) on final demise of CISA

122. D/AF 254-255, Quotations: 12 November 1924: Anderston quoted Dormans £9 per ton, Smith Patterson took the order at £8/6/6d., and 25 November 1925 where Anderston's full price for the Mersey Tunnel was £7/5/8d. per ton, it quoted £6/19/6d. and Cochranes took the order at £6/15/-.

123. See Chapter 4 above and Chapters 7 and 8 below, respecting the preponderance of sub-contracts and A.K.L. Harvey's attempts to publicise Anderston. A sign of the times was the liquidation of the Widnes Foundry (D/AF 494, Harvey/Cargill correspondence, 25 July 1924 and D/AF 420, Anderston, Glasgow to Anderston, Middlesbrough, 28 - 30 January 1925). See Appendix 3 for Anderston's output of segments.

124. D/AF 425, Anderston, Glasgow to Anderston, Middlesbrough, 23 February 1926.

125. D/AF 443, Anderston, Middlesbrough to Anderston, Glasgow, 26 July 1926 for first contacts and ibid, D/AF 426 and D/AF 495 for subsequent developments to 17 December 1926.

126. D/AF 427, Anderston, Glasgow to Anderston, Middlesbrough, 8 March 1927.

127. D/AF 407 and 410, Anderston, Glasgow to Anderston, Middlesbrough, 28 June 1921 and 14 March 1922.

128. Barker and Robbins volume 2, chapter 12. D/AF 435, Anderston, Middlesbrough to Anderston, Glasgow, 1 November 1919.

129. D/AF 494, Harvey/Cargill correspondence, 28 April 1924. D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 11 February 1925.

130. D/AF 503, Cargill to Faill, 19 July 1929.

131. As 129.

132. D/AF 441, Anderston, Middlesbrough to Bolckow Vaughan, 12 November 1924. And for 30 years it had succeeded.

133. Calculated from D/AF 19, Commission Accounts.

134. Railway Gazette: Indian Number 1923; South American Number, 1926; Indian Number 1929. The Antofagasta Railway in Chile was replacing wooden sleepers with steel ones, whilst Argentine lines, at their government's behest, were using native hardwood to replace steel. Lines such as the Entre Rios and the

Argentine North Eastern were 80% sleepered in wood. The Buenos Ayres Great Southern was 62%.

135. E.g. D/AF 424, Anderston, Glasgow to Anderston, Middlesbrough, 6 January 1926. D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 21 November 1924 and 14 March 1925.

136. D/AF 443, Anderston, Middlesbrough to Anderston, Glasgow, 7 September 1926.

137. D/AF 435, Anderston, Middlesbrough to Anderston, Glasgow, 18 December 1919 and see D/AF 435-436, generally and above, this chapter, for similar expressions.

138. See generally Burn (1940), Vaizey, Tolliday, Carr and Taplin etc.

139. D/AF 494, Cargill/Harvey correspondence, 8 November 1924, for example, on the fear of steel companies juggling costs and the revised rules of the S.S.A. being devised by steelmakers with the interests of their steel mills dominant. D/AF 435, Anderston, Middlesbrough to Anderston, Glasgow, 10 September 1919 on Dormans' acquisition.

140. E.g. through the International Rail Makers' Association. See Carr and Taplin and Burn (1940).

141. D/AF 407, Anderston, Glasgow to Anderston, Middlesbrough, 26 - 28 June 1921.

142. The sub-contracts of points and crossings became more apparent in the 1930s. E.g. D/AF 409, Anderston, Glasgow to Anderston, Middlesbrough, 13 January 1922; D/AF 437-438, Anderston, Middlesbrough to Anderston, Glasgow, 12 - 18 July 1922 and 1 June 1922 and 2 October 1922; or D/AF 421, Anderston, Glasgow to Anderston, Middlesbrough, 14 May 1925.

143. D/AF 435 as note 139; D/AF 436-437, same to same, 20 - 22 November 1920, 2 May 1921, 20 June 1921; D/AF 406, Anderston, Glasgow to Anderston, Middlesbrough, 27 January 1921.

144. D/AF 435-437, Anderston, Middlesbrough to Anderston, Glasgow, 19 December 1919, 8 and 15 January 1920, 29 October and 15 - 22 November 1920, 31 December 1920, 2 May and 20 June 1921 etc., and replies. Anderston's taking sleeper orders in co-operation with Dormans caused friction with Bolckows. Dormans agreed to carry the can and Bolckows was compensated. Anderston argued, with a grain of truth, that it was doing the Sleeper Association a good turn by taking Dormans' work lest the latter build its own sleeper plant.

145. D/AF 436, Anderston, Middlesbrough to Anderston, Glasgow, 14 and 30 December 1920, 12 January 1921; D/AF 406, Anderston, Glasgow to Anderston, Middlesbrough, 27 January 1921. D/AF 7, Minutes, 17 December 1920. Minutes of Dorman Long, 11 January - 8 February 1921 (BSC(UK)/Sec/3 series at British Steel Northern Regional Records Centre, Middlesbrough).

146. D/AF 436-437, Anderston, Middlesbrough to Anderston, Glasgow, 5 November 1920, 17 - 30 June 1921. The purchase was consistent with Dormans' expansion of its structured steel business (Vaizey, passim), as was its later purchase of Tees Side Bridge, and should not be seen as primarily an aggressive/coercive move into the sleeper business, although that must have been an incentive. By 1923 (D/AF 439, 3 August 1923), after prices had broken, Braithwaites was unable to make a profit on sleepers despite help from Dormans.

147. D/AF 437, Anderston, Middlesbrough to Anderston, Glasgow, 6 and 20 July, 25 July - 24 September and 8 October 1921, with replies, D/AF 407-408.

148. For Tees Side see Tighe and Minutes of the firm for the 1920s (BSC 22/44/2/6 at British Steel Northern Regional Records Centre). Anderston also feared Beardmores, diversifying madly away from armaments (D/AF 403, Anderston, Glasgow to Anderston, Middlesbrough, 4 December 1919). Cargo Fleet sought to buy sleeper making machinery from Anderston once the latter had declined to co-operate in manufacture. Anderston had tried to keep its options open until the Braithwaites purchase cut the ground from under it. Dormans' embrace was both comforting and constraining. D/AF 406-408, Anderston, Glasgow to Anderston, Middlesbrough, 27 January and 12 October 1921; D/AF 437-438, Anderston, Middlesbrough to Anderston, Glasgow, 6 and 13 October 1921, 3 January and 15 February 1922. D/AF 409, Anderston, Glasgow to Anderston, Middlesbrough, 4 January 1922 re Baldwins. Anderston had fallen for a conspiracy theory and believed that some link existed between Cochranes/Cargo Fleet and Tees Side. The latter, it feared, would move into segments. Rumours of Tees Side's sleeper making rumbled on (e.g. D/AF 441, 4 November 1924).

149. D/AF 438, Anderston, Middlesbrough to Anderston, Glasgow, 11 January 1923.

150. D/AF 512, Cargill/Cunningham correspondence, 3 - 4 July 1931; D/AF 503, Anderston/G.K.N. correspondence, 1929, especially 16 September 1929 and D/AF 504 Anderston/Peat Marwick correspondence, 23 September - 4 October 1929. See TABLE 5.3 for details of sleeper output. Much of Colvilles' output (c.23% of British steel sleeper production) was obtained by private arrangement. D/AF 440, 442, Anderston, Middlesbrough to Anderston, Glasgow, 22 January 1924, 13 May - 10 June 1925, and replies, for example of co-operation and attempts to arrange matters.

151. D/AF 417, Anderston, Glasgow to Anderston, Middlesbrough, 28 February 1924. D/AF 440, Anderston, Middlesbrough to Anderston, Glasgow, 27 February 1924. D/AF 424, Anderston, Glasgow to Anderston, Middlesbrough, 9 January 1926. D/AF 421, Anderston, Glasgow to Anderston, Middlesbrough, 28 March 1925. D/AF 436, Anderston, Middlesbrough to Anderston, Glasgow, 11 January 1922. D/AF 411, Anderston, Glasgow to Anderston, Middlesbrough, 1 July 1922. Anderston had renewed and expanded its capacity, e.g. D/AF 408, Anderston, Glasgow to Anderston,

Middlesbrough, 21 September 1921; D/AF 436, Anderston, Middlesbrough to Anderston, Glasgow, 22 November 1920.

152. Anderston had first thought that Ebbw Vale was able to quote such low prices becuase of the efficiency of its new plant; later it became clear that desperation to fill that plant to spread overheads and capital charges was the spur. See Stock Exchange Year Books for the 1920s and Vaizey passim. D/AF 426 and 429, Anderston, Glasgow to Anderston, Middlesbrough, 14 October 1926, 3 November 1927.

153. D/AF 424, Anderston, Glasgow to Anderston, Middlesbrough, 9 January 1926. A more efficient plant but one whose fixed costs were 3-4 times those of Anderston. For Ebbw Vale: D/AF 415, 419, 426, Anderston, Glasgow to Anderston, Middlesbrough, 17 August 1923, 25 September, 13 October and 1 November 1924, 23 July, 18 August, 14-29 October 1926; D/AF 439-441, 443-444, Anderston, Middlesbrough to Anderston, Glasgow, 11 - 23 August 1923, 24 - 29 October 1924, 31 October 1924, 11 August, 12 October, 20 November and 17 December 1926, 26 September 1927; D/AF 494-495, Cargill/Harvey correspondence passim, particularly 22 November 1926. Ebbw Vale poached orders from other members by breaking price levels or pulling strings to be asked to tender, e.g. D/AF 439, Anderston, Middlesbrough to Anderston, Glasgow, 11 - 23 August 1923.

154. D/AF 417, 419, Anderston, Glasgow to Anderston, Middlesbrough, 26 April (quoted), 25 September and 13 October 1924.

155. D/AF 425, Anderston, Glasgow to Anderston, Middlesbrough, 22 May 1926.

156. D/AF 253-256, Foundry Quotations passim, 1921-30. D/AF 444, Anderston, Middlesbrough to Anderston, Glasgow, 15 November 1927 - Anderston was to quote £8/2/6d. a ton for South African steel sleepers but the last order had gone to Belgium at c.£5/6/6d. D/AF 419, Anderston, Glasgow to Anderston, Middlesbrough, 25 September - 1 November 1924; D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 24 - 26 September 1924, 2 and 27 March 1925.

157. The S.S.A. price in 1920 had been £30 a ton minimum (D/AF 436, 20 November 1920). D/AF 253-256, Foundry Quotations; D/AF 436 and 441, Anderston, Middlesbrough to Anderston, Glasgow, 15 November 1920 and 14 March 1925.

158. D/AF 494, Cargill/Harvey correspondence, 8 - 25 November 1924; D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 9 October - 30 December 1924; D/AF 419, Anderston, Glasgow to Anderston, Middlesbrough, 12 November 1924. Until the mid 1920s the Sleeper Association sought to give roughly equal shares to all members.

159. As 158; D/AF 19, Commission Accounts; D/AF 478, Anderston/Peat Marwick , London (Steel Sleeper Association) correspondence file, 1951, in which an outline history of the Sleeper Association under Peats' management is given. D/AF 425, Anderston, Glasgow to Anderston, Middlesbrough, 15 April 1926

and D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 2 September 1925 for commissions over orders.

160. D/AF 494, Cargill/Harvey correspondence, 24 November 1924. In practice, Anderston had been tied to Dormans since 1921 (see above). D/AF 438, Anderston, Middlesbrough to Anderston, Glasgow, 29 March and 4 December 1922.

161. D/AF 509, Cargill to Watt, 20 January 1930; D/AF 508, 515, Anderston to Macnees, 11 March 1930, 1 October 1931 etc. Reliance upon personal contacts with Dormans, not institutional ones had worried Anderston through the 1920s, e.g. D/AF 494, Cargill to Harvey, 4 October 1924.

162. D/AF 578, as note 159. D/AF 512, Cargill/Cunningham correspondence, 3 July 1931 et seq.

163. D/AF 578. D/AF 495, Cargill/Harvey correspondence, 26 July 1926; D/AF 425, Anderston, Glasgow to Anderston, Middlesbrough, 6 January 1926.

164. Like the contagious fall in chair prices. D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 14 March 1925.

165. See TABLE 5.3; D/AF 270, Foundry Orders; D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 10 - 12 June 1925.

166. Braithwaites' uncompetitiveness led them to sub-contract to Anderston on occasions. From the end of 1924 Braithwaites slipped out of active participation. See TABLE 5.3B. D/AF 439, Anderston, Middlesbrough to Anderston, Glasgow, 3 August and 12 October 1923.

167. D/AF 254-256, Quotations passim. D/AF 441-443, Anderston, Middlesbrough to Anderston, Glasgow, e.g. 27 March, 8 April, 21 October and 17 - 18 November 1925 and 11 August 1926 as examples.

168. D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 21 October 1925.

169. D/AF 578 as note 159. D/AF 426, Anderston, Glasgow to Anderston, Middlesbrough, 12 - 23 July 1926, 18 August 1926, 14 and 29 October 1926; D/AF 495, Cargill/Harvey correspondence, 26 July - 21 November 1926; D/AF 443, Anderston, Middlesbrough to Anderston, Glasgow, 13 July - 17 December 1926. District allocations had been tried in the 1890s (see Chapter 4). Braithwaites was now cut out of the commissions. The new arrangements were an endeavour to rein back Ebbw Vale. Various members had been less than happy with the 1924/25 arrangement.

170. D/AF 578, as note 159; D/AF 503, Anderston/G.K.N. correspondence, 16 September 1929 et seq. for Braithwaites' departure.

171. D/AF 495, Cargill/Harvey correspondence, 22 November 1926. Ebbw Vale jibbed further at the 1928 revision (D/AF 444,

Anderston, Middlesbrough to Anderston, Glasgow, 29 November 1927).

172. D/AF 255, Foundry Quotations; D/AF 425 and 427, Anderston, Glasgow to Anderston, Middlesbrough, 7 June 1926, 25 February 1927. D/AF 443, Anderston, Middlesbrough to Anderston, Glasgow, 26 - 28 July 1926 and 7 September 1926.

173. D/AF 443, Anderston to Macnees, 17 December 1926. D/AF 255, Foundry Quotations; D/AF 270, Foundry Orders. D/AF 443, 7 September 1926.

174. Earlier some ad hoc apportionments had been made. D/AF 429, Anderston, Glasgow to Anderston, Middlesbrough, 4 August 1927.

175. D/AF 503, 507, 512, Anderston/G.K.N. correspondence, 1929-31, especially 6 May - 16 July 1930; D/AF 504, 508, 515, Anderston/Peat Marwick correspondence, 1929-31, e.g. 26 June 1931 arranging with Belgian and German firms a Bengal Nagpur order. D/AF 504, 508, 515, Anderston/Macnees correspondence on steel sleeper matters, 1929-31. D/AF 578, as note 159.

176. D/AF 507, Anderston/G.K.N. correspondence, 6 May - 16 July 1930; D/AF 504, Anderston/Peat Marwick correspondence, 31 October 1929; D/AF 504, Anderston/Macnees correspondence, 6 December 1929 et seq.; D/AF 503, Anderston/G.K.N. correspondence, 9 December 1929 et seq.; D/AF 578, as above. See D/AF 515, Anderston/Macnees correspondence, 10 March, 29 September 1931 etc. for recrudescene of this.

177. See TABLE 5.3 and D/AF 507 as above.

178. Ebbw Vale continued to receive commissions (D/AF 19, Commission accounts). See Vaizey and other general histories for Ebbw Vale's problems, closure and fate. Stock Exchange Year Books and contemporary newspaper reports describe its hopeless insolvency. D/AF 512, Anderston/G.K.N. correspondence, 1931, especially 3 October regarding Ebbw Vale, Braithwaite's etc.

179. D/AF 507, Anderston/G.K.N. correspondence, 1930, especially 23 June 1930. D/AF 515, Anderston/Macnees correspondence, 29 September - 2 October 1931. Its dependence both on sub-contracts and supplies of sleeper plates; its dependence on Dormans' muscle in the sleeper association whose 1924/25 revisions were felt to be impositions of steel companies, anxious for tonnage through their mills.

180. D/AF 507, Anderston/G.K.N. correspondence, 6 May 1930 etc. See above, section dealing with iron sleepers for the expansion of TISCO and sources such as R.K. Ray, pp.74-93.

181. See generally D/AF 499, 504, Anderston/Peat Marwick (Steel Sleeper Association) and Anderston/Macnees (Steel Sleepers) files, 1928-29 plus D/AF 500, 505 and 507, Anderston/National Federation of Iron and Steel Makers correspondence, with minutes of the latter's steel sleepers committee, 1928-31. D/AF629, Cargill's lecture on steel sleepers provides general background. D/AF 507, 5 November 1930 on the fall in timber

prices; D/AF 497, Cargill to Sowerby, 6 June 1928 on importance of first costs (see also D/AF 503, Anderston/G.K.N. correspondence, 1929 passim). Conservatism amongst railway engineers and first cost were to be factors in the failure of Anderston's concrete sleepers (see below, this chapter).

182. D/AF 505, Anderston/N.F.I.S.M. file, 9 July 1929; D/AF 504, Anderston to Macnees, 6 December 1929 et seq. D/AF 507, Anderston/N.F.I.S.M. file, 30 January, 11 February 1930 et seq.

183. Cargill imagined that the railways would plump for one design, thus complicating with patents and royalties the workings of an association. Instead, various designs, several of which had already proved unsuccessful in India were tried. D/AF 500, Cargill to Watt, 13 December 1928; D/AF 497, Cargill to Cunningham, 18 July 1928.

184. D/AF 629; D/AF 494, Cargill/Harvey correspondence, 22 January 1925; D/AF 423, Anderston, Glasgow to Anderston, Middlesbrough, 1 October 1925; D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 11 February and 2 September 1925.

185. E.g. an attempt to divide five ways an order for the Ministry of Munitions. D/AF 434, Anderston, Middlesbrough to Anderston, Glasgow, 8 May 1918.

186. D/AF 435, same to same, 24 February 1919. D/AF 436, same to same, 4 September 1920 with Anderston, Darlington, Isca, Summersons and Taylor Bros. colluding.

187. D/AF 515, 517, 520, Anderston/Macnee correspondence, 1931-33 passim discussing Summersons' demands, especially 1 June 1933. Minutes of Switches and Crossings Association, 12 October 1944 - 7 May 1945 in Railway and General Engineering Company's minutes, Sheffield Record Office, TW 445. Railway and General had inherited a special relationship with the Midland Railway, whose orders were placed in Nottingham. The North Eastern ordered locally, the Great Eastern from Nottingham, the Southern's constituents from Nottingham and Isca. The London and North Western from Nottingham and Whites. The Great Western made most of its own and ordered the balance from Whites and Darlington. Revenue from carriage of both the rails and the finished product might apply as with the chair business.

188. D/AF 439, Anderston, Middlesbrough to Anderston, Glasgow, 1 December 1923 and D/AF 439 and D/AF 415-416, Anderston, Middlesbrough/Anderston, Glasgow correspondence, October - November 1923 for negotiations.

189. D/AF 424, Anderston, Glasgow to Anderston, Middlesbrough, 21 December 1925.

190. As note 187.

191. During the 4 years before the Association was established, Anderston made 6443 units (33.6%); Summersons, 3850 (20.1%); Darlington Railway Plant, 3327 (17.4%); Isca, 3504 (18.3%);

Patent Shaft, 2043 (10.7%). D/AF 439 and 415-416, Anderston, Middlesbrough/Anderston, Glasgow correspondence, October - December 1923. D/AF 611-620 provides statistics and details of the early operation of the Cartel.

192. E.g. D/AF 440, Anderston, Middlesbrough to Anderston, Glasgow, 25 April 1924.

193. A further unwelcome side effect of Tatas' expansion. The question of whether to arrange for the lowest tender to come from the area where rails were rolled had a long pedigree, e.g. D/AF 436, Anderston, Middlesbrough to Anderston, Glasgow, 4 September 1920 and D/AF 440, same to same, 23 June 1924, and see Chapter 7 below.

194. D/AF 417, Anderston, Glasgow to Anderston, Middlesbrough, 7 March 1924 on sub-contracts; the usual histories (Burn, Carr and Taplin) on the position of the steel industry. D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 12 June 1925 for Dormans' subsidising switches and crossings and losing money on rails.

195. D/AF 406, Anderston, Glasgow to Anderston, Middlesbrough, 31 December 1920.

196. D/AF 221-222, Sales Day Books. There are no statistics shewing the geographical distribution of the Association's sales.

197. D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 23 November 1925.

198. D/AF 441-442, Anderston, Middlesbrough to Anderston, Glasgow, 5 December 1924, 19 December 1925.

199. Existing members shed 1 - 1¼% each. Whites' had received 4.1% of the business, December 1923 - November 1926. An offer of 5% was originally contemplated (D/AF 443, Anderston, Middlesbrough to Anderston, Glasgow, 7 November - 24 December 1926).

200. Calculated from D/AF 15, Private ledger: 1922/23 1.27%; 1923/24 7.57%; 1924/25 11.83%; 1925/26 16.61%; 1926/27 - 1929/30 25% +/- 2½% each year.

201. D/AF 611-620, "Switch and Crossing Syndicate Correspondence", 1924-27; D/AF 499, 504, 508, 515, Anderston/Macnees correspondence, 1927-31.

202. Calculated from D/AF 15, Private ledger.

203. The Successor to Patent Nut and Bolt, G.K.N., had recently acquired Bayliss, Jones and Bayliss which it ran as a separate business and wished to bring into various agreements as though it were completely separate, e.g. for tiebars D/AF 436, Anderston, Middlesbrough to Anderston, Glasgow, 9 April 1921.

204. G.K.N. benefitted from the earlier sleeper business which Ebbw Vale secured through aggressive price cutting. Sleeper keys ordered by firms outside S.S.A. were to be divided equally by

Anderston and G.K.N. with covering prices and mutual commissions of 10/- a ton. Ebbw Vale had been assigned to G.K.N.; Bolckows to Anderston. D/AF 438, Anderston, Middlesbrough to G.K.N. and Anderston, Glasgow, 3, 11, 22 and 31 August 1922. The agreement between January 1921 and July 1922 had given only 130t of business to Anderston, compared with 1088t to G.K.N. United Steel made its own keys. Braithwaites was now assigned to G.K.N. giving the latter 50% of the overall business.

205. E.g. G.K.N. thought £34 a ton suitable for an Indian quotation; Anderston thought £24. Anderston was throughout its business neither a price maximiser nor a leading price cutter - just flabby. D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 8 April 1925 (example).

206. D/AF 439-441, same to same, 23 November 1923, 14 January 1924, 25 July 1924, 24 February 1925. Orders for South African keys were lost to United Steel and Tees Side (D/AF 442, same to same, 22 August 1925), to Turton Platts and to Tees Side (D/AF 443, same to same, 2 - 8 September 1926) at prices of c.£23 a ton compared with £25/10/- from Anderston and G.K.N. D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 24 April 1925 quoted.

207. D/AF 443, same to same, 12 October and 12 November 1926.

208. D/AF 444, Anderston, Middlesbrough to Anderston, Glasgow, 21 September and 17 October 1927. As with respect to chairs, Cargill lacked Harvey's personal animosity to Peat.

209. D/AF 498, Anderston/G.K.N. correspondence, 6 January 1928 etc.

210. D/AF 498, Anderston/G.K.N. correspondence, 10 March and 7 November 1928. D/AF 500, Anderston to James Watt, 10 March 1928. Thereafter work was to be divided 1 to Anderston to 4½ to G.K.N., with a maximum annual tonnage of 1000 for Anderston and payment to it of 2/6d. per ton by G.K.N. for any orders in excess of 4250 tons p.a. taken by G.K.N.

211. D/AF 440, Anderston, Middlesbrough to Anderston, Glasgow, 14 July 1924, when the Central Argentine order was secured but the Buenos Ayres Western was lost. See D/AF 296-298, Bolt quotations and D/AF 205, Rail Fittings estimate book; D/AF 309-310, Bolt shop cost statements; D/AF 187-193, Materials cost account books.

212. D/AF 500, Anderston to Watt, 5 March 1928. In a higher value product higher British prices mattered less. See Chapter 7 for effects of B.I.S.F. and tariffs.

213. D/AF 496, Anderston, Middlesbrough/Anderston, Glasgow files, 5 and 24 May and 23 July 1928.

214. Anderston relied upon Whiteheads of Tredegar, S. Wales for spring steel which no Scottish company would or could supply. Only 3/6d. per 1000 keys had been made pre-war towards overheads. Now the business was deemed, like many others, not

worth having, and G.K.N., which rolled its own steel, was left to take all the orders. D/AF 402, Anderston, Glasgow to Anderston, Middlesbrough, 8 September and 23 October 1919.

215. D/AF 406, Anderston, Glasgow to Anderston, Middlesbrough, 20 January 1921. An arrangement for mutual commissions of 10/- a ton was agreed to (D/AF 407, same to same, 22 April - 19 May 1921).

216. D/AF 412, same to same, 12 December 1922. Between November 1921 and December 1922, Anderston had obtained orders for 182500 keys and G.K.N. 377500. See D/AF 253-256, Quotation Books and D/AF 269-270, Order Books generally. D/AF 422 and 428, Anderston, Glasgow to Anderston, Middlesbrough, 1 July 1925 and 14 May 1927. The last order was for 102000 keys from the South Indian Railway in May 1927 (D/AF 496, Anderston, Glasgow to Anderston, Middlesbrough, 8 February 1928). In 1921 a coiled key machine was supplied by Anderston to the G.I.P.R. to oblige them and their consulting engineers - just as points and crossings were being sold to TISCO (D/AF 406, same to same, 11 - 21 February 1921).

217. D/AF 422 and 424, Anderston, Glasgow to Anderston, Middlesbrough, 23 July 1925 and 5 March 1926. 700 tons had been in stock on March 1924. When order picked up the L.M.S. complained at the long delivery times - which were due to the lack of stock.

218. Between 1923 and 1928 the three principal Scottish makers, all Glasgow-based, ceased. See above respecting their inability to compete purely on price terms.

219. E.g. D/AF 404, Anderston, Glasgow to Anderston, Middlesbrough, 13 May 1920. And see Chapter 4 above.

220. D/AF 402, 404, same to same, 15 September 1919, 11 March and 7 June 1920.

221. D/AF 494, Harvey to E. Dawson, 7 November 1924. D/AF 404-405, Anderston, Glasgow to Anderston, Middlesbrough, 21 May and 6 September 1920.

222. D/AF 421 and 422, Anderston, Glasgow to Anderston, Middlesbrough, 14 February and 15 July 1925.

223. E.g. D/AF 415, same to same, 28 September 1923.

224. 43 from the foundry and 66 from the machine shop were dismissed in 1921. Short time working spread from the shop floor to the technical staff in 1923. D/AF 407, Anderston, Glasgow to Anderston, Middlesbrough, 23 June 1921 et seq. See also D/AF 347-348, Staff wages (Glasgow).

225. D/AF 411, Anderston, Glasgow to Anderston, Middlesbrough, 18 July 1922.

226. The Govan Foundry, a white elephant, cost £2.2m. D/AF 494, Harvey to E. Dawson, 7 November 1924. D/AF 418, Anderston, Glasgow to Anderston, Middlesbrough, 9 July 1924.

227. 1918/19 - 1924/25, c.35% of turnover 1925/26, 48%, 1927/28, 63.5%. Calculated from D/AF 15, Private ledger. See Appendix 3 for further details.

228. D/AF 15, Private ledger.

229. D/AF 495, Cargill/Harvey correspondence, 3 May 1926 et seq.

230. To a loss equivalent of 29% + of sales.

231. See chapter 7. D/AF 429, Anderston, Glasgow to Anderston, Middlesbrough, 3 October 1927 with arrangmenets for the preparation of a half-yearly balance, indicates that once Cargill had headed south, even before succeeding Harvey, Glasgow's days were numbered.

232. See above Chapter 4, e.g. D/AF 393, Report by Cargill to Anderston, Middlesbrough, 8 April 1914 et seq. D/AF 417, Anderston, Glasgow to Anderston, Middlesbrough, 29 February 1924. The Railway and General Engineering Co. was later to experience similar difficulties and made a similar assessment of its own general business. (See Appendix 1).

233. T.C. Smout, A Century of the Scottish People, 1830-1950 (1986), pp.112-113.

234. D/AF 403, Anderston, Glasgow to Anderston, Middlesbrough, 10 December 1919 and 5 March 1920.

235. D/AF 401, same to same, 6 March 1919. 18/8d. - 24/6d. per ton in Manchester; 30/- - 35/- in Glasgow.

236. D/AF 400, Anderston, Glasgow to Anderston, Middlesbrough, 11 December 1918.

237. D/AF 401, Anderston, Glasgow to Anderston, Middlesbrough, 2 July 1919.

238. D/AF 402, Anderston, Glasgow to Anderston, Middlesbrough, 2 August 1919. An order for 6 looms for Italy was lost on price and delivery.

239. D/AF 400, Anderston, Glasgow to Anderston, Middlesbrough, 14 January 1919. A two year agreement.

240. D/AF 408, 414, Anderston, Glasgow to Anderston, Middlesbrough, 17 August 1921 and 16 April 1925. D/AF 438, Anderston, Middlesbrough to Anderston, Glasgow, 14 October 1922.

241. D/AF 423, Anderston, Glasgow to Anderston, Middlesbrough, 24 October 1925.

242. D/AF 412, Anderston, Glasgow to Anderston, Middlesbrough, 29 February 1924.

243. See Chapter 4 and note 232.

244. See Chapters 6 and 7. Cargill pointed out the limitations to Watt before deciding that there was no alternative to closure.

245. See D/AF 212, Specifications Book and D/AF 529, Letter from T.P. Cargill to student at Nevilles Cross College, 13 May 1936.

246. Calculated from D/AF 212, and D/AF 403, Anderston, Glasgow to Anderston, Middlesbrough, particularly 6 January 1920. Changing fashions had contributed to the decline of the Scottish textile industry. Because of the competition of the large Lancashire textile machiney specialists, Anderston's output of textile machinery had primarily a local market.

247. E.g. D/AF 496, Anderston, Glasgow to Anderston, Middlesbrough, 21 April, 15 May and 21 May 1928 for Blairs; 10 November 1928 for drop valve steam engines (usually obtained through the local contacts of Cargill and Forsyth in the Kirkcaldy area); D/AF 496 and 212, Mortons ordered loom parts, 17 September 1928 - they had ordered 52 looms in 1919-20, 12 in 1922, 12 in 1927 etc.

248. D/AF 418, Anderston, Glasgow to Anderston, Middlesbrough, 2 May 1924; D/AF 429, same to same, 19 November 1927; D/AF 496, same to same, 28 February and 24 May 1928 etc.; Anderston/Melville Dundas and Whitson and Anderston/Moir Buchanan correspondence, 1928-31 in D/AF 498 etc.

249. D/AF 496, Anderston, Middlesbrough to Anderston, Glasgow, 15 October 1928.

250. D/AF 15, Private ledger and calculations therefrom. Orders for the machine shop average 119 p.a., 1 April 1909 - 31 March 1916; 83 p.a., 1 April 1916 to 31 March 1923; 64 p.a., 1 April 1923 - 30 March 1930. D/AF 212 and D/AF 510, Anderston, Glasgow to Anderston, Middlesbrough, 4 April 1930.

251. The new regime of 1928 was just as keen as the old on collusion "it is only the existence of price fixing arrangements that enables an ordinary commercial profit... so many firms take contracts just to spread overheads". D/AF 500, Watt to Cargill, 30 April 1928.

252. The nature of collusion is discussed, at length, elsewhere in this thesis. See works such as L.F. Urwick, The Meaning of Rationalisation, L.E. Hannah, The Rise of the Corporate Economy, S. Tolliday, Business, Banking and Politics, M. Wiener, English Culture and the Decline of the Industrial Spirit and A.F. Lucas, Industrial Reconstruction and the Control of Competition (1937).

253. In the past it had been able to shift emphasis as business in one market temporarily declined or to find new, virgin markets whose railway system was but recently established, to balance established, mature markets.

254. See Chapter 6 for difficulties with Summerson's and SAXA. D/AF 435, Anderston, Middlesbrough to Anderston, Glasgow, 22 July 1919.

255. D/AF 439-440, same to same, 6 June 1923 and 23 June 1924.

256. Sole supplier until the late 1930s and the merger/re-organisation of the Bengal Iron Company. Of course the existence of the Summerson's plant might have encouraged the construction of various other steel works considered by British-backed companies trading in India at that time, e.g. the Indian Iron and Steel Company (1919). See Bagchi, pp.291-381, Ray, pp.74-93 etc.

257. E.g. Head Wrightson in South Africa. See Appendix 1 and John W. Wardell's typescript history of Head Wrightson deposited in Cleveland Record Office, Middlesbrough.

258. Vakil, p.287, Ray loc cit., Bagchi, p.339ff., The Times, 1 October 1921, 4 October 1922, 13 October 1923, 9 December 1924, 15 November 1930 and reports of annual meetings of Kerr Stuart : from optimism (1923) to pessimism, (late 1924) to receivership (May 1930). The flavour of Kerr Stuart's public pronouncements mirror Anderston's private ones. Respecting locomotives "impossible to secure any considerable orders at remunerative prices" (The Times, 29 January 1929). The belief in salvation lying "in developing as many new specialised lines as possible" (ibid) which included diesel locomotives, diesel lorries, low temperature carbonisation plants (Coalite) and Evos sliding doors foreshadowed the failure of other locomotive builders 30 years later: Steam locomotive builders at sea with diesels; desperate measures and what would have been successful long-term speculations jockeying side by side, all of them a drain on capital, squeezing the liquidity of the company which backed them and hastening its demise. The North British Locomotive Co. and Thomas Summerson's passed that way in the 1960s . Kerr Stuart ., a regular customer of Anderston, had migrated from Glasgow to London and integrated backwards from contracting to locomotive building, acquiring one of its own sub-contractors at Stoke on Trent. (L.T.C. Rolt, Landscape With Machines (1971), chapter 6.)

259. D/AF 494, Cargill to Harvey, 27 March 1924 and Harvey/Cargill correspondence, 5 - 24 June 1924. Anderston would swap an Indian problem for a Port Clarence problem. See Appendix 2 for Watt and Chapters 6 and 7 below.

260. D/AF 495, Cargill to Harvey, 3 May 1926.

261. D/AF 494, Cargill to Harvey, 24 June 1924.

262. D/AF 8, Minutes, 3 July 1928 and D/AF 497, Anderston/Dowson and Dobson correspondence, 1927-28. The first contacts were by A.T. Harvey (September 1927). Dowson's advised on framing tenders and on the local business/economic outlook - their local contacts were extensive. Much of the business they handled, e.g. in respect of switches and crossings, was

arranged by the domestic cartels, leaving Dowsons to handle the paper work in South Africa for nominal fees.

263. Calculated from order books, D/AF 255, 270. There was, of course, a price fixing ring of sorts in operation, involving various firms in the Falkirk area (see D/AF 506, Anderston/Carron Company correspondence, 1930 and same, Cargill to Cunningham, 14 July 1930). N. Hanlon (Interview 1987) asserted that this ring had been revived post-1945.

264. D/AF 498, Improved Anchor Company file, 1928, which contains earlier patent specifications etc. The patent on Anderston's anchor was assigned to the Improved Anchor Company (Yates' successors) who, in return for promoting the anchor, granted Anderston sole British and Imperial manufacturing rights plus ½d. per anchor royalty on any made by foreign licensees. D/AF 426, Anderston, Glasgow to Anderston, Middlesbrough, 24 September 1926; D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 28 July 1925; D/AF 443, Anderston, Middlesbrough to Anderston, Glasgow, 1 - 12 October, 9 November 1926 - 8 January 1927.

265. Railway Gazette, Indian Number, November 1923. The North Western Railway - a large customer for anchors, had laid 100 miles of track with them in 1922/23.

266. D/AF 417, Anderston, Glasgow to Anderston, Middlesbrough, 28 February - 27 March 1924. D/AF 440, Anderston, Middlesbrough to Anderston, Glasgow, 26 February 1924 et seq. "In the course of time the use of concrete sleepers will come to the front", Cargill, 27 March 1924.

267. D/AF 494, Harvey/Cargill correspondence, 2 July 1924. D/AF 418, Cargill to Harvey, 2 July 1924.

268. E.g. D/AF 419-420, Anderston, Glasgow to Anderston, Middlesbrough, 6 September 1924 and 2 February 1925. Cargill's enthusiasm waned more for Stent than for the product.

269. D/AF 417, Anderston, Glasgow to Anderston, Middlesbrough, 9 April 1924.

270. As with steel sleepers (see above). D/AF 422, Anderston, Glasgow to Anderston, Middlesbrough, 16 - 25 June 1925.

271. D/AF 419-422, Anderston, Glasgow to Anderston, Middlesbrough, 24 October 1924, 7 January, 2 February, 7 April and 29 July 1925. D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 14 January 1925.

272. D/AF 15, Private ledger.

273. D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 14 December 1925. D/AF 578, list of exhibitors included in Peat Marwick Mitchell/Anderston correspondence file, 1951.

274. D/AF 440, Anderston, Middlesbrough to Anderston, Glasgow, 11 July 1924 and D/AF 413, reply, 15 July 1924.

275. This was one of the few occasions when Cunningham's professional skills were called into play - for costing the scheme. The competition faced by the poles was from wood, concrete and Mannesman steel. D/AF 440-441 and D/AF 419-421, Anderston, Middlesbrough/Anderston, Glasgow correspondence, July 1924 - May 1925, especially D/AF 440-441, 5 August and 20 September 1924; D/AF 421-422, 26 May and 16 June 1925. D/AF 494, Cargill/Harvey correspondence, 11 July, 25 July, 2 - 4 October, 2 - 6 December 1924.

276. D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 18 July 1925. D/AF 422, Anderston, Glasgow to Anderston, Middlesbrough, 21 July 1925. The offer of 4½ years' work left Anderston far from optimistic. Some few orders were executed (D/AF 270, Order Book).

277. For the light castings industry in general and the activities of Donald, in particular see The Monopolies and Restrictive Practices Commission, Report on the supply of cast iron rainwater goods, HC136, (1951) wherein Anderston is the un-named northern foundry. Cargill in Glasgow was well acquainted with the light castings industry whose hub was Falkirk, apart from the effects of the light castings competition with the S.I.A.

278. D/AF 419-421, Anderston, Glasgow to Anderston, Middlesbrough, 30 October 1924, 17 February and 10 March 1925. D/AF 411, Anderston, Middlesbrough to Anderston, Glasgow, 18 February and 14 March 1925.

279. D/AF 494, Cargill to Harvey, 24 June 1924 and D/AF 441, 18 February 1925.

280. D/AF 421, Anderston, Glasgow to Anderston, Middlesbrough, 2 April 1925.

281. D/AF 421-422, same to same, 7 April 1925, 19 June 1925. D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 18 June and 18 July 1925.

282. D/AF 422, Anderston, Glasgow to Anderston, Middlesbrough, 4 July 1925. D/AF 494-495, Cargill/Harvey correspondence, 4 September 1925, 2 December 1926.

283. D/AF 495, Cargill/Harvey correspondence, 2 - 17 December 1926 including long memorandum by Cargill.

284. D/AF 422, Anderston, Glasgow to Anderston, Middlesbrough, 15 July 1925.

285. E.g. D/AF 509, Cargill to Watt, 20 January 1930 on the state of orders. D/AF 505, Cargill to Watt, 29 July 1929 and generally on manholes contract. D/AF 502, 506, 511, 516, Anderston/ABM files, 1929-32. The promise of larger output to meet ABM's demand induced Anderston to reduce prices by £1/7/3d. a ton (D/AF 514, Cargill to Watt, 18 June 1931).

286. Monopolies Commission Report, 1951.

287. See D/AF 221-224, Sales Day Books. D/AF 506, 511, 516, Anderston/ABM files responding to complaints about long delivery times. D/AF 514 and 518, Anderston/Watt correspondence, 30 September 1931, 6 April 1932 etc. See also Chapter 6 .

288. Anderston remained a member of the S.I.A. until the closure of its Glasgow foundry, although privately Cargill professed himself willing to give up office in the S.I.A. The principal objector was Baillie King, the N.L.C.A. President who was on the S.I.A. committee, placing Cargill in an awkward spot. Monopolies Commission Report (1951) and: D/AF 495, Cargill to Harvey, 27 April 1926, 12 November 1926; D/AF 422 and D/AF 428, Anderston, Glasgow to Anderston, Middlesbrough, 15 July 1925, 4 May and 5 July 927; D/AF 496, Anderston, Middlesbrough to Anderston, Glasgow, 26 May 1928.

289. D/AF 514, Cargill to Watt, 18 May 1931. D/AF 523, Cargill to R.B. Muir, 7 January 1934.

290. Tolliday, p.36.

291. Tolliday, p.50; A History of the North British Locomotive Company Ltd. (Glasgow, the Company, 1953). J.R. Hume and M.S. Moss, Workshop of the British Empire, p.50. For Kerr Stuart see above note 258.

292. Various Indian railways continued to buy cast iron sleepers in bulk - the East Indian Railway did not abandon them as the G.I.P.R. had. D/AF 425, Anderston, Glasgow to Anderston, Middlesbrough, 20 March 1926.

293. B.R. Tomlinson, and Railway Gazette, Indian Number, 1923 and 1929; South American number, 1926.

294 L.E. Hannah, The Rise of the Corporate Economy, pp.155-158. See note 252.

295. See generally Tolliday, Carr and Taplin, Burn (1940) for the steel industry.

296. D/AF 494-495, Cargill/Harvey correspondence, 27 March 1924, 28 April 1924, 23 April 1925, 23 December 1926. D/AF 442, Anderston, Middlesbrough to Anderston, Glasgow, 15 May 1925.

CHAPTER 6

Manufactures and Manufacturing, the 1930s

In 1933 all departments were working, at least, a three day week; by 1934/5 the foundry department had made its first trading profit in a decade. From the beginning of 1936 overall business was reviving firmly; by the late 1930s the foundry department's profits reached levels not seen for twenty years. At first sight Anderston seemed to have survived the depression in good order. The foundry had ceased to be the major problem, replaced by sleepers and, latterly, bolts, but its revival was based largely on orders for tunnel segments from London Transport, upon which no reliance could be placed in the long term.

Orders for segments, required by projects of modernisation of the infrastructure, could expect to benefit from the developing domestic economy of the 1930s. Similarly expectations of the light castings business were unrealised. Continuity of products, methods and markets, predominated. Anderston remained an exporter of railway materials afflicted by low price continental competition and the rise of native industries. The Crown Agents and Rhodesia, who would buy British come what may, were the only safe markets: all others would buy cheapest.[1]

Poor prospects discouraged new domestic competition in the early 1930s; supply difficulties would have done so later in the decade. The latter hampered Anderston's ability to compete for work in the reviving world market: the domestic iron and steel industry's success in obtaining protection curbed the import of raw materials.

Re-rollers and finishers felt, like Anderston, that the B.I.S.F.'s schemes threatened their future existence.[2]

World depression hit all of Anderston's export business; the domestic market, depressed in the 1920s, had less far to fall. Revival helped but little. Road competition in all forms continued to increase. The northern main line railways, upon whom Anderston depended for chair orders, recovered but partially, being heavily dependent on the traffics of the coal and other staple industries. They possessed their own manufacturing capacity of which they made maximum use.[3] Those who supplied the Southern and Great Western railways could expect to improve their position relative to the other firms.

Throughout the economy the safeguarding of industry through tariffs, re-organisations sponsored by banks and government, officially sanctioned and inspired pooling schemes, and so forth, set the tone. As far as possible industrial self-government was preferred to direct government intervention. "A bewildering array of associations, price agreements, quota arrangements... and the like" existed in the engineering trades, and some fifty in iron and steel.[4] The "tendency for separate productive undertakings to associate themselves with other similar enterprises with a view to regulating output, prices, marketing and other matters"[5] had been noted by the Balfour Committee (1929).

Contemporaries viewed such events as originating more recently than was the case.[6] Collusion had become officially respectable; the facade of pretence could now be dropped. "Old animosities constantly polluted the atmosphere of discussions"[7] and, with the interplay of power relationships within and between firms, influenced the shape of the resulting arrangements more than did ideal and abstract

principles. One man's tool for re-organisation was another's for preserving inefficiencies and his own company, under the guise of safeguarding the industry as a whole.

Anderston's plant remained severely underemployed: four to five hundred worked there compared with seven hundred in the not particularly prosperous years before 1914; there had been no compensating investment in labour saving devices. The bolt shop worked frequently at 30% of its capacity, the sleeper shop (capacity 25,000 tons p.a.) was usually empty, its sales insignificant. Detailed differences existed between the departments. Foundry sales fell from £50,000 (1931/2) to £12,000 (1932/3) but reached £145,000 p.a. in the pre-war years, surpassing levels common in the 1920s, whereas the sales of switches and crossings (£60,000 p.a. in the late 1930s) had recovered from the nadir of £4,700 (1933/4) but lagged well behind their peak of the late 1920s (£110,000 in 1928/9). The bolt shop held onto business in the early 1930s, underwritten by rail anchor sales; when tariffs and the B.I.S.F. cut the supply of nutbars from abroad it "played havoc with the work we hoped to get".[9] The cushion of profit disappeared - Port Clarence overall made a trading profit of £13,000 (1929/30), and losses of £8,000 - £10,500 (1931/2 - 1933/4). So great was the reduction in the foundry's business that its absolute losses of £3,500 p.a. in that period were similar to its best results in the later 1920s.[10] Cargill's belief in the prevailing conditions that "filling up" the works with orders, if it could be done, would increase losses, has some justification.[11]

Anderston's managers, we have seen, were constrained in the risks they took and the investments they made, by the balance of interests in the firm which encouraged caution: they had no intention of suffering "the disgrace of misinvestment".[12] Cargill, aware that

Anderston must keep in the running, was more willing than his predecessors to sacrifice overheads to obtain work,[13] a consequence of his long struggles at Glasgow - provided that labour and material costs were met. He would not take work at any price.

Everywhere, large combines, be they steel companies or railways, diminished Anderston's freedom of action.

> "The strange thing is that... the large amalgamated firms who are on the verge of ruin, who are indebted to the banks for several millions... seem to go out of their way to take work at any price... quite impossible... to meet such unhealthy competition which, if it continues... [will close]... down numerous smaller and independent firms who must stand on their own feet".[14]

Increasingly, the power of collusive associations to help Anderston stand on its own feet was compromised by vertical groupings such as Thomas W. Ward's which might put pressure upon, or bypass the associations. Such groups had the strength to get their own way or go their own way. They saw the associations as intermittently useful to them whereas Anderston saw the re-establishment of collusion as an end in itself, so used, was it, to collusive practices and so dependent upon them.[15]

Defence and re-armament brought orders at home (industrial sidings for shadow factories) and abroad (the Singapore naval base) to revive the economy at the expense of rising costs, increased wages (16% April 1936 to April 1938) and supply difficulties. Had its continental competitors not shared this experience, Anderston's export business would have been severely hit. Now, and for twenty years, the customer must wait and pay the manufacturer's price.[16] From 1936 attempts to improve margins took third place to passing increased costs on to the customer, or to absorbing some portion of them to maintain goodwill.[17] Until the former became acceptable, Anderston was caught between export prices it could not sufficiently

increase, wage costs over which it had little control - they being tied to those of the iron and steel industry, now restored to prosperity - and increased material costs which were one of the means of that industry's revival.

Once the re-organised steel industry, safe behind tariff barriers, revived, there was excess demand for pig iron. Capacity to manufacture it had been rationalised during the depression. With little slack to be taken up, every kind of production was pressed into service: no new capacity was created. Further amalgamations had integrated most pig iron makers with the steel companies who, now needing extra pig for their own semi-finished products, had first call upon it.[18] Outside users struggled to obtain supplies: a 33% tariff and arrangments between B.I.S.F. and the continental cartel precluded the ready importation of iron which had been a feature of the 1920s. In desparation, Anderston asked Macnees to investigage purchasing Indian iron.[19]

Competitors such as Cochranes, Stanton, Pease and Partners, or Teesside were pig iron makers or subsidiaries of makers, whereas Anderston and Taylor Brothers had to decline quoting for work in South Africa (spring 1937) for want of materials.[20] Delivery times lengthened: quotations became subject to rise and fall clauses. From late 1936 to September 1937 the agreed price of C.I.C.A. for supplying chairs to the L.N.E.R. increased from £6 to £8/10/- a ton, not from the avarice of chairmakers.[21]

Prolonged discussions between the various associations and B.I.S.F. from 1936 to 1939,[22] sought to secure assured supplies of pig iron at predictable prices for the foundries. There was little enthusiasm amongst chairmakers for B.I.S.F.'s proposals for loyalty rebates in the purchase of pig iron (to keep prices down) or for the

control of cast iron scrap (increasingly scarce and expensive).[23] Although a scheme was operating to control steel scrap no such scheme could be devised for cast iron where organisations such as the North East Coast Association of Iron and Metal Merchants rejected controls completely.[24] Cargill became C.I.C.A.'s nominee on a working party comprising other half sceptical representatives of divers associations with diverging interests. All chairmakers with access to pig iron were opposed to the control of scrap, not all of those without it were in favour.[25] Meanwhile the organisers of the B.I.A. investigated whether ironfounders could affiliate to B.I.S.F. to have some influence upon it. The road to a national ironfounders' federation was being travelled.[26]

Anderston joined the pig iron rebate scheme (November 1937) which alone of the various proposals came to life. Sensing no hypocrisy, Anderston complained that the controls on pig, steel and rail prices were "a deliberate attempt to narrow the scope" for independent firms.[27] As the state sponsored railway amalgamations had caused power to shift from C.I.C.A. to its principal customers, the officially sanctioned collusion of B.I.S.F. proved more effective than the private arrangements to which Anderston was party. Anderston was a victim of the dramatic recovery in the fortunes of steel companies which various of its uninformed shareholders expected it to echo. Iron and steel makers profited at the expense of finishers; the protected domestic market at the expense of exports. By April 1937 Anderston was owed 4750 tons of pig on existing contracts and had to decline work and lay off workmen.[28]

Other underlying trends were unfavourable. The Indian government had revised its tendering rules 1930/31 further to encourage indigenous industry. Duties on points and crossings stood

at 21¼% or on steel sleepers at 12½% in 1933.[29] The political and economic considerations which had led to their being levied withstood the Imperial Preference trade agreements concluded at Ottawa in 1932. All types of railway equipment from wagons and locomotives to rails had become the objects of state sponsored domestic manufacture since the 1920s.[30] Consulting engineers such as Rendels, Palmer and Tritton, who specialised in Indian business, were as anxious as British manufacturers at these developments. As tenders denominated in rupees were sought from domestic makers through domestic channels in place of sterling tenders in London, Rendels' raison d'être shrivelled.[31] Their suggestion that switch and crossing makers collectively lobby Parliament for a reduction in Indian duties was politically impossible. Anglo-Indian negotiations regarding steel shipments - more valuable - were in progress; the Indian legislature had given the Ottawa proposals to halve duties over a decade a rough ride. The F.B.I. recommended letting sleeping dogs lie rather than risk embroilment in sensitive and contentious matters.[32] Thus was the loss of business of up to 40,000 tons p.a. accepted.[33] Where Indian enquiries were received by S.A.X.A. free tendering with no commission payments was allowed on the correct assumption that business would be lost. With TISCO's entrenched position it was inconceivable that most rails for India would be rolled anywhere else; therefore, even if import duties diminished, there was little chance that British points and crossings makers would participate in planing such rails. Anderston had, during the 1930s, become resigned to the loss of its principal market on which the foundry, and to a lesser extent the sleeper and crossings shops had relied.[34]

The agrarian economies of South America were in severe difficulties. Local currencies collapsed, relative to gold and

sterling, as did government finances and many governments. Between June 1930 and June 1931 the Argentine Peso lost 22% of its value pushing up the price of imported fuel and equipment required by local railways by that amount. Fuel was necessary, new equipment was not. Labour legislation and increased road competition bit into the profit margins and traffics of Argentine railways who were allowed to make few increases in their charges.[35] Convertability of local soft currencies was restricted, leaving railways, the majority of whose capital and obligations was in sterling, in even greater financial difficulties[36] than economic ones. Buying locally took precedence of buying the cheapest foreign supplies - which were unlikely to be British - which depended on unfreezing funds and might favour barter arrangements and suppliers with equally weak currencies.[37]

South Africa remained a highly competitive market with tariffs, currency fluctuations and cuts in capital spending and maintenance as railway traffics fell, causing further difficulties. "Politics must enter very largely into matters".[38] The railways moved towards self-sufficiency with the completion of the Bloemfontein switch and crossings shops - (able to supply all the reduced demand of the early 1930s). Costs of production were secondary to finding work for all the permanent employees. The Union government's sponsorship of ISCOR and domestic industry, its disloyal habit of buying the cheapest of imports backed up by penalty clauses, its extending the lists of tenders, despite the entreaties of South Africa House, to all comers from continental Europe undermined the benefits to Anderston of well connected local agents. Anderston had to cut its prices to the bone and hope that the short delivery times, which weekly sailings from Middlesbrough and an underworked plant provided, would secure contracts.[39]

The establishment of ISCOR as a national steel corporation of mixed state and private ownership, its plant in Pretoria due to open in 1934/5 for the manufacture of (inter alia) rails, posed a threat akin to that of TISCO, To assist it, duties were imposed which side-stepped the Ottawa agreements. Framed to prevent the dumping of steel products in South Africa, their principal bene ficiary was Belgium with its low home prices. Like TISCO, I.S.C.O.R. was a chosen instrument of a government, whose political independence of Britain had been boosted by one world war and would be boosted by the next one. South African orders were to collapse over Anderston's whole-produced range in the early 1950s, as Indian ones had in the early 1920s.[40]

Various Chinese contracts apart, British trade credits produced few enquiries of possible benefit to Anderston. That from Roumania (Summer 1939), part of a belated effort to counter German economic influence in the Balkans, was spectacularly illtimed. Moreover, Anderston had little interest in it and would have been unable to obtain the requisite raw materials.[41]

In the 1930s Anderston stopped its position from sliding further but it did not recover ground. The overall reduction of business in its wares was more serious than competition: a reversal of the 1920s.

In the foundry, Indian and export business for sleepers and chairs had vanished. Chair output, having slipped from 4500-6500 tons p.a. in the mid 1920s to 1000 tons in 1928/9 remained low, making a partial recovery to 3000-4000 tons p.a. from the mid-1930s. In 1937/8 alone were orders healthy: 7000 tons.[42] The depression hit badly all of Anderston's principal chair customers: the L.N.E.R., the

L.M.S. and the Irish main lines, who sought economy throughout their operations, maximising the use of their own plant, reducing maintenance and paying the lowest prices.

INDEX

TABLE 6.1	Net Revenue				Maintenance of Ways and Works		
	LNE	LMS	SR	All	LNE	LMS	SR
1925	?	?	?	100	100	100	100
1929	100	100	100	99	92	91	104
1932	55	58	75	58	71	77	89
1937	77	84	100	?	82	89	98 (1936)

Calculated from Annual Reports and Accounts of the Railway Companies and from C.I. Savage, Economic History of Transport, (1959).

The northern companies, the least prosperous in the 1920s, were worst hit by the depression of the 1930s. Whereas Anderston's special relationships with railway customers had been destroyed by the grouping, those of G.K.N. with the Great Western and of Smith Patterson with the prosperous Southern flourished.[43] In 1934 the L.N.E.R. invited tenders for little more than 2000 tons of chairs compared with c.10,000 tons p.a. common in the recent past.[44]

Much effort was diverted to the recreation of C.I.C.A.; except in causing prices to improve, its operations did not bring to Anderston the expected benefits. Cargill and Cowen (chairman of Smith Patterson) were the mainstays of the desultory negotiations which bore fruit at the end of 1931.[45] They represented the two established northern firms who had not followed Head Wrightson and Pease and Partners in chosing tonnage at any price.[46] Preferring a small share of vaguely remunerative business to open competition (where Anderston's record of success was poor) Cargill tolerated the continued erratic behaviour of Head Wrightson and Pease and Partners

to prevent further, threatened price cutting. From enlightened self-interest Anderston and Smith Patterson desired a scheme which would divide work more equally, each member, for example, receiving a basic annual allocation of 3000 tons, with greater freedom above that.[47] Tees Side favoured allocation and opposed tendering at arranged prices. Head Wrightson regarded all schemes of allocations as "unacceptable or unworkable".[48] Pease and Partners had no fixed viewpoint. Chairs had been taken by Anderston, as by other manufacturers, as a make weight to spread overheads across tonnage.[49] Restoration of orders to the business was sufficiently important to all makers for Head Wrightson's proposals to be accepted, with varying enthusiasm, as a first step.

A tender fee of 3/- per ton was included in orders to be divided amongst the losers: when future circumstances permitted, it was to be increased.[50] The "foolish price cutting" through which Head Wrightson had "wilfully"[51] thrown away the efforts of the immediate past to coax up L.M.S. and L.N.E.R. chair prices concentrated some minds on the desirability of an arrangement: the threat of Tees Side and Cochrane's to withdraw from negotiations, in retaliation, concentrated Head Wrightson's. Pease and Partners, on the verge of bankruptcy and re-organisation was more accommodating than previously.[52] The price obtained (late 1931) for L.N.E.R. chairs with an ad hoc arrangement in force was £4/4/- a ton (F.O.T. works); for the L.M.S., without arrangement, £3/18/9d. As the new agreement took effect the price to the L.N.E.R. increased by c.2/6d. a ton.[53]

In the highly competitive South African market, where Anderston had had no success, free tenders produced a quotation from Pease at £3/12/- a ton which implied, to Anderston, a figure of only 9/6d. per

ton for making the chairs compared with 21/- - 25/- usual pre-war – sustainable only by a company which was cross subsidising its foundry in order to consume the pig iron it was producing.[54] By 1937 tender fees of 31/6d. were obtained for South African contracts before rising costs and continental competition forced them down again.[55]

Cargill prophesied that once trade improved the full re-establishment of the old cartel would be possible.[56] Although existing arrangements continued, and Anderston was restored to the hub of them as administrators, such an improvement did not occur. The self-centred behaviour of Head Wrightson and Pease and Partners, especially between 1934 and 1936, caused persistent annoyance but did not threaten the existence of the association: nor did it conduce to a formal arrangement of agreed prices and allocations, administered by neutral secretaries, as Cargill wished.[57] The Cargill-Cowen friendship of the 1930s, which supplanted that of Harvey and Wrightson, led to Smiths lending Anderston many extra patterns it might require to manufacture special chairs for the Great Northern Railway (Ireland) in return for the "usual private commission".[58] Local arrangements in the north east allowed the two firms to divide L.N.E.R. orders for switch and crossings chairs, whilst the other local firms quoted even prices to divide orders from the L.N.E.R. for ordinary chairs. Persistent attempts to improve the price and price differential of special chairs (6/- a ton better 1931-34) were hampered by the erratic conduct of Taylor Brothers.[59] Cochranes had largely ceased to manufacture in the early 1930s; arrangements for mutual protection between the north east and G.K.N. held from the 1920s.[60]

A system for allocating the bulk of home orders proved impossible[61] to arrange but there had been "a good measure of success

to regulate matters... [to obtain] a fair share of contracts at a reasonably remunerative price".[62] Two former outsiders were party to arrangements, whilst the small Williamson's of Wellingborough, who had brought prices to ruinous levels, was suceptible to some steadying influence from Nottingham.[63] As the 1930s wore on, Stanton become more friendly to arrangements.[64] Only Robert Howie, one of the two small surviving Scottish makers remained awkwardly unpredictable. A "dour old man" of eighty, he continued the erratic pricing which, for a generation, had, to the annoyance of other Scottish makers and despite their entreaties, led him to quote prices lower than those required to secure him the business.[65] Melvins of Alloa, co-ordinated its business closely with the northern firms[66] whose assistance it obtained to reason with Howie whose scope, with the breakdown of the old compartmentalism of suppliers and customers, for inflicting damage had spread to the L.N.E.R.

All Ireland was included in the domestic market. For Anderston, whose prices northern and Midlands firms regularly protected, it filled some of the gap left at the railway grouping. A temporary invasion by the Isca Foundry (1939) was soon rebuffed. By September 1939 Anderston was receiving commission-free protection from Isca, as from other makers.[67] Less successful was Anderston's attempt to air its dissatisfaction with its share of L.N.E.R. work through Col. Sowerby (See Chapter 7). Anderston, Smith Patterson, Taylor Brothers and Railway and General alone possessed full sets of patterns for British Standard points and crossing chairs.[68] Smiths gained through its proximity to the L.N.E.R. points and crossings works at Gateshead. The L.N.E.R. replied that all chairs were aggregated and orders placed in relation to the traffic suppliers gave the railways ceteris paribus. Anderston's share of points and

crossings chairs could improve only at the expense of its other L.N.E.R. business. Firms such as Pease and Partners and, later, Stanton (whose interest in L.N.E.R. contracts worried northern makers in the late 1930s) benefitted from their large coal and iron traffic.[69] Anderston was paying the price for its failure in the 1920s to maximise output and take cut price work to keep up with its competitors.

The L.M.S., which calculated profits on carriage when deciding where to place orders,[70] maximised the output of its own foundries (which it intended to expand),[71] and ordered points and crossings chairs largely from makers on its own system. In 1933 the L.M.S. in Scotland received all of its ordinary chairs from Horwich; those special chairs the L.M.S. could manufacture it did, leaving private makers, as with points and crossings, to pick up awkward crumbs.[72] Rumoured expansion of the L.N.E.R.'s Peterborough chair foundry provoked co-ordinated opposition from its outside suppliers, despite fears that the railway would unearth their collusive practices.[73] They had suffered enough from the fall in orders which hit them disproportionately as the railway kept its own works busy. Anderston doubted the accuracy of the manufacturing costs of the railways' own foundries feeling that, as in South Africa, hands were kept busy in priority to cost efficiency. Anderston had experienced various attempts by railways to bluff suppliers and play them off against each other in order to reduce prices further.[74] C.I.C.A. renascent was as much a defence of the manufacturers against this as an attack on the purchasers of chairs.

After 1927 Anderston, which had regularly supplied chairs to the constituents of the Southern Railway, received no orders and few inquiries from it.[75] Work hinged largely on the "entertainment

offered".[76] Contacts with Cowen, whose friendship with the Southern's Stores Superintendent helped explain his firm's overhauling Anderston as a chairmaker, were not harmed.[77] Typically the Southern ordered from Smith Patterson and Pease and Partners; Head Wrightson and Tees Side receiving lesser quantities - in 1936 c.60% of Smith's chair output was for this one customer.[78]

The agreement (1935) of northern makers to report, via Anderston, all enquiries for small quantities of chairs and to include a 5/- a ton tender fee marked further progress on the re-establishment of friendly rivalry.[79] However, the recreation of a collusive framework solved few of Anderston's problems, rather it benefitted firms such as Pease and Partners and Tees Side, whose past aggression had caused the old Association to collapse from which they were the principal beneficiaries. Their stance persisted - they were gradually to overhaul Smith Patterson as suppliers to the Southern. They used the Association insofar as it suited them and relied on the timid demur of others to keep it in being, leaving them able to wring concessions from it. The revival of C.I.C.A. had been intended to put an end to the experiences of the later 1920s with a few of the firms getting the bulk of the work: it did not.[80]

In the best years of the later 1930s, chair orders still lagged far behind capacity. Anderston with c.11% of the business was now the least of the northern makers - Cochranes had quit the business - and shared with Head Wrightson, the most unused capacity. Its average output 1932-41 was barely 20% of that 1910-22; Pease and Partners, was 158%.[81]

Anderston's refusal to cut prices to obtain unprofitable work, understandable when viewed from within the business, had lost it good will and orders in the longer term. Others had more dexterously

managed their special relationships as Anderston faltered, stepping into its place as opportunities arose. Under the new collusion all northern firms came, by negotiation, to quote even prices, robbing Anderston of the prospect of re-purchasing favour by deploying the flexibility on prices it had begun to show elsewhere.

TABLE 6.2 Chair Business (tons)

	Capacity	Orders 1936	1937	1938	1939	1940	Average Orders	As % of chair business of firms (1) - (5)	As % Capac
(1) Anderston	24000	4240	3260	2275	5393	1962	3426	11	14
(2) Head Wrightson	28000	6650	2125	2200	6965	1200	3828	12	14
(3) Pease & Partners	32000	14400	6500	8700	16040	5760	10280	33	32
(4) Smith Patterson	26000	9870	6350	4200	7688	2665	6155	20	24
(5) Tees Side	48000	12150	4900	6025	11235	4200	7702	25	16
Cochrane's	8000	0	0	0	n/a	616	n/a	-	-
Total	166000	47310	23135	23400	47321	15787	31391	100	

			Anderston	Head	Pease	Smith	Tees Side
Output (tons pa)	A. 1910/11-1922	12 years	15677	11417	7792	[c6900]	0
	B. 1932/3-41	9 years	3127	4066	12281	7144	7801
	% B. of A.		20	36	158	104	n/a

Capacity: G.K.N. 22,000 tons; Stanton, 16,000 tons; Taylors, 12,000 tons; Railway and General, 5,000 tons; Howie, 2,500 tons; Melvins, 2,500 tons.

Note: Capacity is likely to be foundry capacity not just chair capacity. See Chapter 8 for later figures.

Sources: D/AF 551, Head Wrightson to Anderston, February - March 1942;
D/AF 545, "Chairmakers" file, 1940/41;
D/AF 605, Iron founders' National Committee file, 1940/41.
TABLE A1.1 below
and various returns to Anderston by individual chairmakers
D/AF passim, 1936-42

Orders for tunnel segments revived strongly to levels last seen in the 1910s. From 1936 to 1941, 25,000 tons were made, overshadowing the foundry's other activities.[82] Formation of the London Passenger Transport Board (July 1933) brought into being statutory arrangements for pooling revenue and co-ordinating activities with the main line railways within the Board's area. Opposition to further suburban expansion of the tube system vanished whilst changing attitudes in government towards investment in public works led shortly to the creation of the London Electric Railway Finance Corporation to provide cheap, government backed loans, for improvements to London's railways.[83]

With the blessing of Stanton Ironworks, the Cast Iron Segments Association underwent another timely revival (November 1933),[84] with a formal constitution and independent secretaries "to secure fair prices, obviate undue competition and discuss matters of general interest". All enquiries were to be reported and prices agreed between the members wherever possible. Business was to be allocated: 25% to Stanton, 20% to Head Wrightson, 17% to Smith Patterson, 15% to Cochranes, 14% to Butlins and 9% to Anderston. No surplus or deficit could be carried over from one annual account to another. Those exceeding their share paid 2/6d. per ton into a pool to be divided between members in deficit pro rata.[85] Anderston's small share was its penalty for not maintaining competitive prices to secure greater tonnage in the 1920s; its membership an indication that its potential nuisance value rendered its adherence worthwhile.[86]

Pease and Partners declined to join C.I.S.A. in 1935 but maintained friendly contacts through Head Wrightson. Potters of Govan resumed its informal relationship with C.I.S.A. in October 1938 with Anderston, enjoying personal links, as intermediaries.[87] Once

it had absorbed Cochrane's (1934), Stanton's domination of the Association was complete. Cochrane's ceased manufacturing segments and its allocation was transferred to Stanton.[88]

Stanton resumed its traditional role as negotiator and co-ordinator on behalf of the C.I.S.A. to secure the c.170,000 tons required for London Transport's new works programme and divide the contract tonnage amongst members. Anderston was not entirely happy at the price obtained, particularly once the shortage of pig iron began to effect its ability to deliver, and pleased not to have a greater share of the work.[89] As both pig iron and subcontract came from Stanton, Anderston was able to exert some pressure to secure further supplies.[90] The satisfactory resolution of a dispute with London Transport to pass on the increased costs of pig iron to the Board, was marred by the decision to experiment with re-inforced concrete segments on the Leytonstone-Newbury Park line at an estimated saving of 25% on initial cost.[91]

Tunnel segments were the most successful of Anderston's products in combining railway custom with a link to the expanding areas of the domestic economy. Anderston had received no orders for them in 1934 and 1935,[92] although it received commission payments. Thereafter, it was consistently in surplus (300-700 tons) to its allotment. Orders and enquiries for 1938/9 indicate a rising demand for segments outside Anderston's traditional railway business: Royal Ordnance factories, deep air raid shelters for Middlesbrough Corporation; the Colne Valley sewerage scheme; the Dartford-Purfleet road tunnel (30,000 tons) and so forth.[93]

Because most of its segments business had been sublet to it, Anderston had been little known to many of the contractors who had occasion to seek tenders.[94] If it received no enquiry it missed its

turn in the allocation of orders by C.I.S.A. Some contractors may have dropped Anderston from their lists for uncompetitiveness in the 1920s. However, A.K.L. Harvey succeeded in opening doors, as he had hoped, through which contracts in connexion with hydro electric schemes in the Highlands flowed.[95]

The expected business in air raid shelters failed to develop to the extent anticipated because of the weight of materials involved. London Transport contracts were suspended for the duration in 1940. The London underground's pre-eminence as a purchaser of segments between 1890 and 1950 is clear but of all Anderston's products segments offered now, and in the future, one of the best prospects of business in the domestic market. Suburbia needed sewers and tube railways as much as manholes and gutterings.

TABLE 6.3 SEGMENTS BUSINESS OF CISA (Tons)

Calendar Year	All Deliveries	Deliveries to London	%	Deliveries To Others	%
1934	14386	0	0	14386	100
1935	5553	0	0	5553	100
1936	15555	9855	63	5700	37
1937	60952	55952	92	5000	8
1938	74621	72455	97	2166	3
1939	50606	25806	51	24800	49
1940	21587	3887	18	17700	82
1941	24218	n/a	?	c.24000	c.99
1942	3944	0	0	3944	100
1942-1946	835	0	0	835	100

Source: Calculated from D/AF 604, statistical returns and graph.

Expansion of the London tube railways coincided with abandonment of much of the London tramway system. Orders for tramway ironwork all but ceased.[96] The finishing of fishplates as a make weight was now impossible: the sale of fishplate bars to firms such as Anderston was prohibited by the Railmakers' Association with B.I.S.F.'s concurrence.[97]

Orders for pole bases averaged 1400 tons p.a. 1927/8 - 1931/2 and, after a severe fall, resumed former levels from 1934/5.[98] As with all material for South Africa, tight prices, stringent delivery conditions and foreign and domestic competition had to be faced. Freedom of action was further circumscribed once Siemens Brothers (1934) and Bullers (1935), neither of whom manufactured pole bases,[99] began submitting combined quotations for poles and bases at prices which cut out the individual makers of the two items. Anderston was unsuccessful in finding a maker of poles with whom to co-operate in retaliatory action. It proved impossible in these circumstances to make lasting arrangements with other makers of bases to increase prices - without enthusiasm Anderston joined a pool in December 1930 but this seems soon to have collapsed.[100] Anderston had, therefore, to accept the bluff and blandishments of Siemens to secure a share of the work as their sub-contractors at prices 2½%-10% below those low prices it had quoted directly.[101] Pole bases for South African railways, rather than its posts and telegraphs administration, could be lost to the railways' own foundries. When the shortage of pig iron was felt, Anderston withdrew various tenders from this barely profitable and inconvenient business to use its iron better.[102]

Anderston benefitted less from the domestic housing boom in the 1930s[103] than it could have hoped to. In 1927 it produced 2050 tons of pipes, in the ensuing two years 800 tons and 500 tons respectively. Contract prices had been settled with Associated Builders' Merchants in anticipation of a considerable increase in orders.[104] Anderston could not "make ends meet". Its reduction in price of £1/7/3d. a ton had been made with orders of 5000 tons p.a. in view.[105] Business peaked at 2150 tons in 1931, the success in

pursuading A.B.M. to increase orders outweighed by its notice to terminate the contract from the year's end.[106] Percy Donald, having no loyalty but to the cheapest price, could readily find another supplier during the depression.[107] Davidson and Syme was instructed to formulate a claim against A.B.M. to cover all the actual and contingent losses. Anderston had suffered but, after much effort, thoughts of litigation had to be abandoned. A.B.M. was a straw company, testimony to Donald's acuity.[108]

TABLE 6.4 Anderston's output of pipes and gratings

Calendar Year	1926	1927	1928	1929	1930	1931	1932 (2mos)
tons	1933	2051	795	548	1220	2150	196

Source: D/AF 511, Associated Builders' Merchants file

Prospects were poor: the British Ironfounders' Association had been formed during 1931 as successor to the defunct National Light Castings Association. The competition of Anderston and A.B.M. which had helped destroy the N.L.C.A., combined with the effects of depression, concentrated minds in the castings industry. Within a year, 74 out of a possible 114 firms had joined the B.I.A. which, learning from its predecessor's mistakes, strongly enforced its resale price maintenance agreement: decent margins and loyalty rebates on the one hand, heavy penalties for exceeding production quotas and generous compensation for underproduction, on the other. Amalgamations in the industry such as Allied Ironfounders (1929) reacted to falling profits by mechanising, to increase output per man hour, cut costs and allow the substitution of unskilled labour. To the long runs of standard products sought by A.B.M. such moves were ideally suited.[109]

Retail business was outside Anderston's experience; it remained so by choice as the proposal to put a salesman on the road was rejected.[110] Anderston again placed itself in David Bisset's hands in search of new custom.[111] Independently, Anderston secured annual contracts with Moat's, a large Newcastle builders, (July 1933)[112] to form the basis of the revival of its light castings trade. For three years it sought to make the best of this whilst deflecting persistent pressure to tie itself exclusively to Moat's, e.g. it took, at a loss, a contract to make cisterns to avoid loss of the rest of the work. Anderston feared that Moat's would behave like A.B.M. and drop the company for a cheaper supplier could one be found. Moat's took 1024 tons from Anderston, July 1934-35 and 1300 tons the next year at prices which left "very little margin indeed... to cover the increased costs of pig, scrap and wages".[113] A small group of local merchants whom Anderston supplied at a price higher than Moat's formed an insufficient foundation for the redirection of Anderston's light castings business. Anderston determined to find an alternative.[114]

Reluctant to move into sales and distribution or to supply small orders to small customers,[115] Anderston found security in the arms of the B.I.A., which had come to an agreement with Percy Donald in May 1933[116] and, once Anderston had resumed large scale competition, turned its attentions to smothering it, and Moat's, through a series of offers and approaches.[117] The first was rejected: it required Anderston to establish a sales organisation and the gains from higher prices were thought likely to be offset by Anderston's being unknown to most would-be purchasers.[118] The next offer was considered in detail, the third (May 1936), a contract from c.1600 tons p.a. for the duration of the B.I.A.'s price maintenance agreement, was accepted.[119] House Castings Ltd., a merchant subsidiary of B.I.A.,

would take most of Anderston's output leaving up to 150 tons p.a. to be sold elsewhere.[120] The B.I.A.'s deposit of £5,000 as security for the contract's performance satisfied Anderston's longings to be free from unnecessary risk. "An important North of England Foundry... whose competition was proving embarassing" was squared.[121] By coincidence the arrangement was settled just before another bout of shareholder restiveness.

Unwilling to go out and sell its products or itself, passive in respect of A.B.M. and indecisive in respect of Moat's and the B.I.A., Anderston missed the bus for house castings. The B.I.A.'s sales advanced from £1.87m in 1930 to £2,69m in 1937, then dropped to £2.2m by 1939.[122] Anderston's guaranteed tonnage was related to the B.I.A.'s overall business, thus it fell but Anderston gained more from the certainty of some business at reasonable prices than from uncertain larger tonnages at very low prices, obtained, after difficult annual negotiations, with fickle purchasers such as Moat's.[123]

Despite delivery orders lagging behind its declining allocation, Anderston shewed no desire to break with the B.I.A. Under pressure from Anderston, the B.I.A. endeavoured to keep up the level of orders despite the difficulties it was experiencing with its own operations. By spring 1939, Anderston, which had run down stocks, faced difficulties meeting the revived demand.[124] From January 1939 House Castings Ltd. had become a mere agency for disposing of Anderston's manufacturers. It had accentuated the conditions it had been designed to meet; its price competition with suppliers and to merchants outside the B.I.A., had brought an overall lowering of prices. The B.I.A. was loth to put more business through House Castings, whose principal supplier was Anderston for fear of

adding to losses: House Castings lost £46,000 on sales of £405,000 (1936-39), yet it had its contract with Anderston to maintain. The war formed a blessed release.[125]

TABLE 6.5 ORDERS FOR ANDERSTON'S LIGHT CASTINGS

(tons)	1936 (6 mos.)	1937	1938	1939
(1) Allocation	800	1600	1436	1173
(2) Delivery	284	1434	772	n/a
% (2) of (1)	35.5%	89.5%	54%	n/a
% (2) of 1936 allocation	35.5%	89.5%	48%	n/a

Source: calculated from B.I.A. correspondence and returns. D/AF 529, 533, 538, 541

As in the case of segments, rising prices encouraged customers to seek substitute materials: in this case asbestos cement.[126] B.I.A. prices rose by 36.6% from 1933 to 1937, fuelled by wage rises and a 60% increase in pig iron prices, to be forced down by 17½% in 1939 through the competition of outsiders, House Castings and asbestos.[127] Anderston devoted some 76 men and 10% of its overall capacity to light castings which,[128] however useful in providing extra demand and customers in a new, domestic, counter cyclical market, could not replace the loss of so much tonnage in staple products.[129] Anderston's management remained wedded to manufacturing railway products: light castings were more a stop gap than a path to further diversification.

A.B.M. had caused Anderston to manufacture manhole covers which it continued to do throughout the 1930s, latterly in collusion with Smith Patterson and the National Federation of Builders' Merchants which received the bulk of the 100-250 ton annual output at preferential rates.[130] At the end of the decade, the place of collapsing house building orders was filled by a contract for £43,000 cast iron trench gratings for use at aerodromes, secured from the

Dover Engineering Works whom Summerson's, in one of several examples of cross fertilisation between colluders, had introduced to Anderston.[131]

The limits to the effectiveness of such a well organised group as the B.I.A. and the experiences of the workings of the revived C.I.C.A. should have dented Anderston's faith in collusion as the road to prosperity. In the export trades further indications of the benefits from, and limits to, collusion arose. Anderston was willingly carried forward by the wave of corporatism, government intervention and control sweeping through the 1940s to be beached by a swift ebb tide in the 1950s.

TABLE 6.6 ANDERSTON'S STEEL SLEEPER OUTPUT (tons p.a.)

	Total	Crown Agents	India	Rhodesia/ C. Africa	Other	Of which, sub-contracts for Dormans
April 1929 - March 1934	3268	22.2%	6.4%	55.3%	16.2%	9.6%
April 1934 - March 1939	1820	51.0%	2.8%	10.4%	35.8%	33.9%

Source: D/AF 270-273, Order Books; D/AF 221-229, Sales Day Books

The business of the Steel Sleeper Association plunged from 45,000 tons p.a. in the late 1920s to c.3,000 tons in 1933/4; it revived little before the war. Safe and loyal markets predominated - a foretaste of post-war developments throughout Anderston's business - for the Chinese and Sierra Leone Development Company orders which comprise most of the "other" orders above, were underwritten by the British government and tied to the use of British materials. South Africa continued to order from Belgium and Germany, e.g. 20,000 tons in 1933. Indian orders continued their absolu te and relative decline.[132]

Many years saw Anderston without orders; in its best years (1935/6) only 4262 tons were produced, 60% of which was a sub-contract from Dorman Long.[133] The last order for tiebars for iron sleepers (c.1000 tons) had been placed in 1929/30. Whereas India had absorbed c.80% of Anderston's metal sleeper output, only the 20% made for other colonial markets, remained. Anderston's attempts to obtain domestic orders proved entirely unsuccessful: other manufacturers of other designs of steel sleeper received orders from the Southern and Great Western railway systems.[134] Various committees of sleeper makers and representatives of the iron and steel industries continued to meet and in 1936 B.I.S.F. contemplated a further campaign amongst home railways. Anderston was even less enthusiastic than in 1929/30, since when the price advantage of wooden sleepers had increased relative to steel ones.[135]

The sleeper business continued to reflect the international position of the British steel industry. During 1930 cut throat competition for exports followed the collapse of the international steel cartel. By the year's end, only 30% of Britain's steel capacity was working and the international understandings involving the Sleeper Association had collapsed. Closure of the valuable British market to outsiders when tariffs were introduced (1932) brought increasingly desperate competition for orders in third countries, threatening products such as sleepers which lacked a home market. Devaluation (1931) cheapened British exports but whereas continental makers had gained from similar action in the 1920s, the collapse in world trade and the financial difficulties of would-be purchasers denied us the prospect of extra work. Subsequent competitive devaluations by competitors, eroded our temporary advantage. By 1937 British steel exports were but 60% of their 1929

level comparied with 86% in Belgium and 66% in Germany. Railway products were one of the most depressed sectors - our exports of rail sleepers and fishplates fell from 400-500,000 tons in the late 1920s, to 73,000 tons in 1933, seldom to exceed 125,000 tons thereafter.[136]

Ebbw Vale's closure (September 1929) removed one domestic irritant;[137] G.K.N.'s claim to take the entire 45% allotment reserved for South Wales under the Sleeper Association replaced it. G.K.N. could better pick and choose its work to the detriment of others; as the principal prospective loser, its negotiations to bring Colvilles, now a troublesome competitor, into the Association seemed to other members, less than whole hearted. Dormans supported Anderston's proposal to re-allocate work within the Association, otherwise their relationship was strained.[138]

Various sleeper finishing contracts which would formerly have been sub-let to Anderston, were directed to the Bolckow Vaughan sleeper plant which Dormans had absorbed. The former North Eastern Steel works which had supplied Anderston was closed. Sir Arthur Dorman's death and his succession by a new non-family management had broken the links of personal friendship.[139] Anderston felt Dormans "heel on our neck"[140] in respect of sleeper prices, and in 1931 considered approaching the Cargo Fleet/South Durham group, whose advances it had spurned in 1921, for a new partnership. Anderston pined for its former alliance with a railmaker who lacked a sleeper plant to provide it with a stream of sub-contracts once the depression lifted. It had become a dependency of Dormans in practice without an independent voice in the Association, but it preferred the familiar, though constricting, embrace of Dormans to the risks of cutting loose. In 1934 it rebuffed Cargo Fleet's advances once more.[141]

Colvilles was admitted to the Association (August 1934) only after United Steel threatened to resign if it were not.[142] These two each received 20% of orders; Guest, Keen and Baldwins and the Anderston/Dorman Long group 30% each. Commission payments to Ebbw Vale finally ceased. The continuation of the sliding scales which geared pool and commission levels to Crown Agents (full) prices, underlined the makers' realisation of their own uncompetitiveness and the need to subsidise exports.[143] A national cartel in an international business was of limited effect. Work for the Crown Agents at £8/7/6d. a ton continued to subsidise the more adventurous makers to quote £6 a ton for various Indian enquiries.[144] With most of the business it handled, the Association gave members a free hand; mostly they were unsuccessful. TISCO took the bulk of Indian work; South Africa ordered on the continent where, like the 1920s, finished prices were 15-25% below those at which the British firms could obtain sleeper plates.[145] Protection for the home market, (which market for sleepers, did not exist) caused domestic prices to rise to hamper exports. In the absence of export bounties or of some form of organised dumping abroad, business would remain lost to continentals "who gave away" sleepers.[146] Meanwhile, Germany granted financial assistance to steel exports and Belgium improved its competitiveness by a belated, devaluing departure from gold.[147]

Depression had produced a contageous slide in prices, United Steel succeeding Ebbw Vale as loss leader.[148] Anderston's realisation that it must follow the drift in prices to have any prospect of business was hampered by a lack of enthusiasm, redolent of the 1920s. Its dependence on Dormans limited its scope for cutting costs to those for manufacturing the sleepers. A.T. Harvey had regarded 35/- a ton as low for such work, 22/6d. was now typical.[149]

The knock-on from low continental prices was forcing down British prices. Low prices for one customer could infect another causing the charge to full-price customers such as Rhodesia or the Crown Agents, the benchmark of the entire system, to be forced down.[150]

G.K.B., on behalf of the Assocation, secured occasional arrangements with foreign makers in respect of individual orders.[151] Attempts, from early 1933, to re-negotiate a comprehensive agreement to replace the defunct one of the 1920s, were slow to fructify.[152] The re-formed international steel cartel (1933) reached agreement with Britain in 1935, pre-figuring the revival of the International Rail Makers' Association (1936), whose London operations Peat Marwick (secretaries to the Sleeper Association) administered.[153] From July 1936 combined action by the Assocation and its German counterpart increased prices to South Africa from £5/5/0 - £5/16/- a ton (March 1936) to £6/12/6d. - £6/17/6d. a ton (March 1937) and £8 (November 1937). Irrespective of increased costs, scope existed to improve prices to £8/12/6d., equivalent in cost, maintenance and depreciation to wooden sleepers.[154] All sleeper prices were rising: the absolute reduction in the discount of competitive prices for South Africa to those charged the Crown Agents of £1 per ton, whilst both sets of prices were rising, indicates that increased material and manufacturing costs were not the sole explanations - margins were being clawed back.[155] Social legislation, shorter working hours and paid holidays in France and Belgium forced their prices up, helped offset increased costs in Britain and give all an interest in increasing the selling price.[156]

Anderston was reconciled to its diminished role in the Sleeper Association where it would not lightly abandon the constricting certainty of its relationship with Dorman's. Sleeper plates accounted

for 75-85% of the costs of production leaving Anderston little more than a sub-contractor, even where it, notionally, was taking the order, not finishing it for Dorman's.[157] Dorman's could deny Anderston work by quoting unrealistic prices for plates; they could almost force it to take work by quoting exceptionally low prices as, perhaps, part of a more vital rail orders.[158] Anderston, not being a large iron and steel company, had always been odd member out of the S.S.A. Its slide into the second rank was more excusable in an industry where the dominant voice was that of large firms whose sleeper business was a mere adjunct to railmaking, than in chairmaking. Over caution permeated all aspects of the firm. Where there was continuity Anderston retained its position; it would seldom rise to a challenge. It had, however, overcome its aimlessness of the 1920s and, whilst rarely daring, tried to keep in touch with developments. Nevertheless, it remained reactive to developments - it had not formulated a long-term strategy for making the most of its position, expertise and resources.

It remained the principal exporter of switches and crossings, a business which declined as rapidly as that for steel sleepers but recovered more fully in the later 1930s. South America and South Africa, markets which had ceased to count for its other products, had been the principal customers of the late 1920s, underwriting this department's success in that decade. In the depression both collapsed, as indicated above, to leave the remaining safe markets, which could not recompense Anderston for the loss, absolutely as well as proportionately more important; development of the colonial infrastructure continued.[159]

To meet foreign competition, S.A.X.A. adopted an ad hoc version of the Sleeper Association's rules: tender fees and the proportion of tonnage counted against allotments were varied to suit circumstances. When the British-owned Peruvian Corporation sought points and crossings and junction fish plates, the former, anticipating continential competition, were left to independent quotation with nominal fees, the latter, where competition was unlikely, had full tender fees included.[160] Despite the variations in outlook and pricing policies of makers causing petty frictions, the Association held.

The onset of competition from Edgar Allen, which diversified into railway work to compensate for the steep decline in its specialist (domestic) tramway business,[161] threatened to spoil indefinitely prices for the Crown Agents whose business (as postwar and as with sleepers) was the milch cow for S.A.X.A. from which to cross subsidise competitive tenders. Learning from the 1920s, Anderston favoured Allen's being brought into the cartel before it could take further business, damage prices and demand a large allocation. Simultaneously, the Association might, to the same end, increase competition with Allens' undercutting it to test for prices below which it would refuse to take business or forcing it to retaliate, take work at a loss and undermine its finances. The carrot and the stick brought Edgar Allen into S.A.X.A. (1936) with a 5% allotment; a "material increase" in prices was expected to follow.[162]

Summerson's, restive in the 1920s, was the rogue of the 1930s, quitting S.A.X.A. between 1932 and 1934 and weakening prices - damage which took longer to repair.[163] Summerson's, over quota as the export market collapsed, could expect no further allocations for some time. From September 1931 it agitated for a revision of the 1923

agreement to allow export makers access to the home market.[164] Although that market would suffer from cut backs by home railways who, as with chairs, possessed their own manufacturing plant, its prospects were less gloomy than for exports. In the year to June 1931 the two home firms took 6390 units of work, the export firms 5044.[165] The L.N.E.R.'s contract for 1932/3 was an irresistable temptation to Summersons: other members would not break faith with the Nottingham firms.[166]

To compete with Summersons, who slashed prices to grab the available work, Anderston considered introducing the sealed bid system, used by the Sleeper Association in the mid 1920s, to S.A.X.A.[167] The allottee under existing rules would be obliged to take work at the lowest price bid by any of the members, with penalties for refusal. Instead Cargill capitalized upon his friendship with Smith Patterson, sole suppliers outside S.A.X.A. of the special chairs Summersons would require in execution of L.N.E.R. contracts, whom he persuaded to add 15/- a ton to their quotations to Summersons.[168] Summersons would be priced out of the work unless it took large losses: it was unlikely to spend £4,000 to acquire the patterns to make the chairs itself. Such ruthlessness was quite out of character. "We have certainly done our best... to make it difficult... and are prepared to make it more difficult still even though prices are now down to... practically bare wages and materials".[169]

With an "unexampled scarcity"[170] of orders rapprochment leading to higher prices was in the common interest. Negotiations with Summersons continued through 1933 with the Association's members resisting Summersons' pressure for a share of home railway work in the north east and deeming as impracticable Summersons' proposals for

independent quotations with tender fees (as in 1923), within a quota system, buttressed by penalties for overproduction.[171] One large order could, with the dearth of business, place a firm over quota. From experience elsewhere, it seemed undesirable in leaving the passive recipient of commissions better off than the active seeker after work.[172]

Further negotiations, co-ordinated through Whites of Widnes, which shared Summersons' interest in platelaying work, brought the return of the prodigal on the Assocation's terms. To conciliate Summersons, the bringing within the Association of private industrial work was investigated but considered impracticable by all other members - the customers were too diverse and diffuse.[173]

Business for domestic railway docks was to be allotted to home members and all classes of export work for port installations (excluding that for the War Office and Admiralty) to export makers,[174] thereby tidying up areas of further potential conflict.

Honour was satisfied: unlike the chairmakers, neither personal animosities nor recrimination were allowed to poison the air;[175] no party felt sufficiently aggrieved to upset the arrangements hereafter; Darlington Railway Plant, financially troubled, stood aside (in exchange for various sub-contracts and commissions) to allow Summersons to take a Singapore dockyard contract (where Summersons had done previous work).[176] Anderston, Summersons and Whites, leading on from their negotiations in 1933/4 brought to life the Junction Fish Plate Association with Macnees as Secretary and an allocation (43 to Anderston, 24 to Summersons, 14 to Whites, 19 to Isca) based on the past five years' business.[177]

Anderston and Summersons arranged to apportion work from Robert Hudsons of Gildersome, a manufacturing and contracting firm which

specialised in light railways. Hudson's, they believed, had played off the one against the other, stirring in an occasional inquiry to Isca or White's to reduce prices to levels that Anderston, typically, felt itself now "better off without". Anderston offered Summerson's a 60:40 division of the work but accepted the latter's counter offer of equal shares to close an agreement.[178] Both had to shew great care in nursing up prices without driving Hudsons' business away or making their collusion transparent.[179] Macnees approached Isca and White's for their acquiescence.

Prices were too low for makers to earn decent profits; too high for them to beat continental competition, whose success in markets such as Mozambique was anticipated. Anderston was now critical of those who did not cut prices in an attempt to match the continentals. In 1935 it resumed consideration of sealed bids whilst Summerson's and Darlington were anxious[180] that prices rose. Anderston continued to benefit from sub-contracts privately arranged with Dorman's.[181]

Ward's' acquisition of Darlington Railway Plant in 1937 allowed a measure of vertical integration between the former's platelaying and contracting business and the latter's manufacture of track fittings. The potential to bypass the Association was a foretaste of the 1950s and an example of what Anderston feared would happen from the 1920s. Darlington refused, for example, to protect Isca for work at an aerodrome close to the latter's works because of Ward's'[182] interest in the platelaying contract. Simultaneously, Cohen's, a rival group to Ward's of a similar type, acquired rail planing machinery and moved into platelaying.[183]

The Crown Agents, who supplied rails free to points and crossings makers, revived pressure upon the maker best situated relative to the rail roller and the port of shipment to take orders

at the price of the lowest tender received.[184] White's, the principal beneficiary feared the loss of all Agents' business if it did not co-operate. It had shewn itself weak in taking Crown Agents' work at Edgar Allen's prices in the mid 1930s,[185] whereas Anderston counseled resistance fearing, initially, a break in prices and ultimately the nullifying of the Association's effectiveness just as that of the Chair Association had been undermined by the erosion of differential pricing. The usual problem of rising prices and shortage of supply in the reviving economy afflicted points and crossings. Moreover, Summersons'- work for the Admiralty at . Singapore[186] produced an imbalance of business within the Association now that there was sufficient business to allocate.

The strong revival of business with S. Africa, despite industrial developments there, was outside Anderston's expectations. The usually well informed Dowson and Dobson had considered future prospects poor,[187] with political considerations ascendant over economic ones, a "pro-German tendency"[188] in various influential persons, and surplus capacity in the railway shops. Paradoxically the short delivery times which made Anderston's tenders attractive were the boon from the shortage of other work. Anderston and Patent Shaft were willing to accept low prices whilst others sought price rises and wished to avoid filling their works with low price business to the potential exclusion of something better[189] - such as Admiralty orders on which full tender fees of 25/- a set could be charged.[190] Anderston had reversed its position from that of the 1920s.

The fierce Anglo-German competition for this work had reduced the German Cartel to free tendering. In spring 1937 one of its members took an order at an alarmingly low price, causing Dr. Schully of Bochum (acting for Krupps, Dortmund, Orenstein & Koppel and his

own firm) to open negotiations with Cargill, on behalf of the Association. An arrangement to divide South African work between the two countries was made. Whereas British firms had sought damage limit ing international agreements in the sleeper business, this approach to Britain points to the residual strength of its crossings industry whose chief exporter Anderston remained. The approach was timely: British firms were aware of their rising costs and uncertain supplies and delivery times. The Germans, as with sleepers for India in the 1920s, were left to explain to their customer the rapid increase in their prices necessary to bring them into line with British ones.[191] Too great an increase might prompt further extensions to Bloemfontein and to South Africa's list of tenderers (which had spread to Canada and Poland) and cause the return of Belgian competition (long absent).[192] It proved impossible in the face of German opposition "to raise prices as much as we would like"[193] to cover further increases in British costs, despite which the agreement functioned until the war.

Business here had recovered more fully than in the other export led departments but at the expense of a heavy dependency on South Africa (55% of sales 1936-9). War relieved Anderston of its problems: the government had indicated that it would be purchasing 800 turnouts a year, the threat of cost investigations by the Ministry of Supply, the only cloud.[194] In the long term, the future was less bright. Points and crossings were completely a railway product and largely an export one. The tide was running against both.

The Bolt Shop depended for 85% of its direct business on exports and as a service department to the rest of the Anderston

business it shared its vulnerability.[195] G.K.N. remained dominant and kept up the various agreements covering particular types of fastenings or particular markets insofar as they avoided unnecessary competition.[196] However, without dismantling the framework of collusion, agreements might be suspended for a particular order, either by arrangement or by G.K.N.'s unilateral action when, as in South America and South Africa, severe continental competition was anticipated.[197]

G.K.N. might disagree with its collaborators over particular arrangements or the possibility and desirability of some attempts to raise prices, but as with Stanton in the segments business, it predominated rather than dictated. It could veto the proposals of individual collaborators but they, if united as a group, could deflect and modify its proposals.[198] Neither side forced the issue: the underlying framework was sufficiently secure for G.K.N. (exhibiting, like Smith Patterson, honour amongst colluders), at Anderston's behest, to improve high prices on the keys it supplied to Edgar Allen to hamper that firm's ability to compete with S.A.X.A.[199]

Anderston had never been equipped to compete in the general nut and bolt business, which might have kept the shop busy and which Midlands firms (such as G.K.N.), and organisations such as the Black Bolt and Nut Association, dominated.[200] Shortage of work in the Bolt Shop was worse later in the 1930s than before as B.I.S.F. enforced minimum prices for bolt and nut bars, and Anderston feared the elimination of firms such as itself, geared to exports, from this business.[201] Perhaps as reinsurance it joined the Black Bolt and Nut Association to protect its home railway business.[202]

South American and South African business collapsed in the early 1930s; the latter revived, at low prices (as for points and

crossings), the former did not.[203] Despite the inflexibility of raw material prices, Anderston proved more willing to quote competitive prices in the 1930s than in the 1920s. Agreements with G.K.N., Tees Side and Richards Brothers for the equal division of sleeper keys, and subsequently, other classes of business for South Africa were called out of abeyance (of 4600 tons secured by the group between February 1936 and February 1938, Anderston took 1168 tons).[204] Now Anderston was critical of partners such as Richards who claimed to be unable to quote competitive prices and had adopted Anderston's former fatalism in claiming German prices were so much lower that to attempt to match them was futile.[205] From 1934/5 to 1938/9 57.3% by weight of Bolt Shop production was sold to South Africa at prices that were cut fine. Heartened by success elsewhere, Anderston wished to approach its German competitors for an understanding to increase South African prices but G.K.N. would have none of it.[206] As usual, colonial and tied markets formed the only safe export destinations.

At home, railway companies could play makers off against one another as several non-specialist firms in the Black Country were capable of supplying the straight forward spikes required by the railways. The balance of advantage the railway companies enjoyed allowed them to set the price at which work was to be offered. Anderston was prepared to accept such contracts which, in the 1920s, it would have spurned.[207] G.K.N. could always cut in to take the lion's share of the work in order to keep its own plants employed (reaping further economies of scale): it over rode attempts by Anderston and Summersons to raise price levels.

Penetration of the French, Belgian and Japanese markets, and maintenance of a good business with Indian, unique to the Bolt Shop, were due to the success of the Improved Rail Anchor. Ordinary

business had dropped away for the usual reaons. Anchors formed 40% of Bolt Shop's sales (1929-30), but over 70% of its business with India where over 70% of the anchors produced in those years were sold. Once the anchor's patent expired and competing designs appeared, these markets collapsed. The last order for anchors was in September 1936. India , which had taken 33% of the Bolt Shop's output (1929-34) took only 5% in the next five years.[208]

The Bolt Shop, having worked to capacity during 1930 and 1931, was latterly a growing problem. Anderston was but a minor producer of most of those classes of fastening it manufactured. Only its value as a service department for the points and crossings and steel sleepers business justified the Bolt Shop's creation and its retention. Like the points and crossings department, it was unhealthily over-dependent on the fickle South African market.

TABLE 6.7 EXPORTS (tons) BOLTS. etc.

	Fish bolts	Dog-spikes	Screw Spikes	Clips	Keys	Gibs/ Cotters	Anchors	Anderston Total	National Total
1937	137½	8	½	427½	1	-	-	575	11450
1938	45	25	75	490	28	7	-	670	11398
1939 (to 31 Aug)	5	24	1	-	-	58	-	88	3792
(1) Anderston Total	187	57	77	918	29	65	-	1333	—
(2) Overall Total	6714	5067	3194	4785	3306	260	3314	—	26640
% (1) of (2)	2.8%	1.1%	2.5%	19%	0.9%	2.5%	0%		5.0%

Source: D/AF 546, Rail and Telegraph Accessories Export Group Statistics (sub Heathcote & Coleman), 28 April 1940

Anderston's policy for the 1930s was one of collective security - in pursuing which, it had considerable success - in the recreation of C.I.C.A., in securing acceptable terms from the B.I.A., in

reaching international agreement to help lift the price of switches and crossings. The limitations of such security were shewn by Anderston's failure to re-establish itself as a leading chair maker to match its leading position in C.I.C.A., its failure to benefit from the building boom of the 1930s, the circumscribing of national agreements by international competition, and the weakness of Anderston's alliances in the face of those of the major iron and steel companies.

This policy was both a reaction to the setback of the 1920s, when collusion had, in many cases collapsed;it fitted the anti-competitive drift of the times, and with long term developments - which had seen collusion in switches and crossings perfected in the 1920s, on the foundations of less complete agreements made in the 1910s. Although the Second World War did not bring the riches, nor initially the boom in business, of the First War, it provided Anderston with the security it craved. The uncertainties that the power of B.I.S.F. and the revived demand for iron and steel in the later 1930s had created, were diminishing during the 1940s. In shortage, the producer rather than the consumer was king. Anderston had been temporarily trapped in between; now it could pass on rising costs and supply difficulties in increased prices and delivery times: rivals, domestic and foreign, were sharing its experience. It could do little about it: with war it could happily do nothing about it. Shortages, backlogs and prices might increase but they, with its labour rates, selling prices and the destination of its products, would be controlled from outside. Over a decade of control ensured that Anderston would have greater difficulties adjusting to the revival of competition in the 1950s: it would never have embraced competition for an instant.

"As a result of Mr. Cargill's efforts over the last 10 years or so, chairmakers are getting a better price... than they did...".[209] The foundry had been very busy throughout 1939 with chairs, pipes, segments and ballast blocks for local shipbuilders - whose business had also revived in anticipation of war. The 2250 tons of gratings for aerodromes - higher precision and higher profit than usual - would counterbalance any collapse in domestic light castings demand. With orders for contractors and the government, the points and crossings shop was busy. Bolts remained depressed and sleepers dead, but hanging on through a decade of misery seemed to have been justified.[210]

New products were rejected on financial and technical grounds. There was, however, no will to expand the company's technical competence - it preferred to live within its limitations - nor to mobilise resources which were deployed subsidising the existing business and its shareholders. Watt and Cunningham knew more of money than manufacturing. Where new lines had been adopted - pole bases - they differed little in their manufacture or custom from existing ones. Light castings - the principal innovation - were never seen as more than a means of helping fill up the foundry, whose proper business was to make railway chairs.[211] Clearly the will to redirect the business or to divert much effort to succeeding with new things was lacking. Energy was expended to prop up the old. Nothing the business might do would make up for the loss of its Caledonian chair business and the 40,000 tons p.a. which, at best, the various commodities supplied to India had totalled.[212] In all its export trades, Anderston, like other similar firms, was trapped between the uneconomic prices of continental competitors, whose governments provided subsidies and encouragements to exports, and the high prices

it had to pay for raw materials through the home government's domestic assistance to the iron and steel industry.[213] The steel industry's voice was louder than that of groups of ironfounders and finishers. Government assistance for exports was unlikely on political grounds and to succeed in recapturing Indian (and S. African) work required any financial intervention to be undertaken by a political decision. To offset the narrowing field of operations at home and abroad, whose inevitably was not questioned,[214] co-operation which had proved so "uniformly beneficial"[215] was required.

Continuity of products and attitudes remained at the core of Anderston's activities. It was less passive in its search for work and more willing to cut costs in order to secure it, but it would not take work at any price just to fill up its plant. Risk was eschewed from inclination, conviction and the perception that it would unbalance the divers competing interests within the company. Considering the difficulties of decision making for the long term, particularly in the confused conditions of the 1930s, and notwithstanding those internal constraints, it is unsurprising that Anderston failed to develop a strategy beyond haning on and surviving.

In most business Anderston had willingly been reduced to a recipient of orders not a seeker after them: in new business such as light castings it had little desire to be anything else. It was but a short step to taking things as it found them in place of seeking to influence the shape of its trading environment. Anderston hovered on the edge. When it tried to use influence, that influence was always in order to encourage or enhance collusion. As competitors, domestic and foreign, grew larger, its scope for independent action and influence diminished. It could only hope to exert influence in

combination with others - the Associations were its lifeboat - but in some, particularly steel sleepers, it carried little weight. Its failure to grow, or to amalgamate, returns us to questions of ownership and control.

In common with other branches of industry, the relatively small scale of individual productive units formed a serious obstacle to the formation of rigid organisations. To some extent, smallness was why firms needed organisations. Associations appealed to them as allowing the maintenance of personal authority, which combines and full cartels would not. Competition would be suppressed and prices improved but neither surplus capacity nor high cost producers would be cut out.[216] Organisation and rationalisation were in vogue; the one could be grasped without the other. Most firms in a given sector of industry were "friendly rivals" to whom rowing together in adversity was more natural than throwing overboard the least efficient, whose survival collusion could not guarantee but whose prospects it improved. However, making arrangments which would be acceptable to the less efficient might depress the whole industry - much depends on price elasticity of demand. It could, however, leave the efficient with high profits from high prices comparable with the lower profits from a greater tonnage which they would have obtained under competitive circumstances, without any of the potential disruption of the latter. The inefficient could still receive more from commissions than from manufacturing. In the 1920s, but particularly after 1930, Associations became increasingly sophisticated in their modus operandi to limit doles to the inefficient whilst maximising prices in those markets which would bear it and, directly, by cross subsidising, or indirectly, by

encouragement, getting makers to quote fighting prices in competitive markets.

Rationalisation, amalgamation and centralisation, in various guises, were the new industrial panaceas. Collusion was becoming respectable under the guise of industrial organisation, though price fixing was less so. The 1930s saw no great incease in the numbers of Associations, merely the more open re-establishment of many that had existed previously but which had fallen apart in the 1920s. Generally the outside firms of the 1920s were now inside, be it Cochranes in C.I.C.A., or Anderston in the B.I.A., following the well established line that firms did not compete from a belief in competition as a superior form of industrial activity.

Domestic associations could in the 1930s, as in the 1920s - the Sleeper Association with its close relationship with the railmakers cartel may have do so before 1914 - negotiate arrangements with the continental cartels. In certain industries this was from a position of strength provided by tariff protection. For firms such as Anderston, geared to exporting, limited to cross subsidising tenders within the Assocations, and in their ability to dump goods abroad by the absence of export bounties, the tariff was double-edged. B.I.S.F.'s success in reducing capacity and increasing prices in the iron and steel industry, the fruits of its cartel powers, was inimical to the recovery of firms such as Anderston, but those same successes produced contracts and negotiations with international cartels to the ultimate benefit of, for example, the Sleeper Assocation.

Others might by-pass the Associations on which Anderston relied. The Darlington Railway Plant would co-operate with its parent, and customer, Thomas W. Wards, as well as with 'rival' points and crossings makers. Anderston had to secure iron from firms who

were rivals as manufacturers, e.g. Stanton, or whose subsidiaries (with a first claim on their parents' iron) 'competed' with Anderston. Home railways were increasingly self-sufficient and, pressed by declining and stagnating business and profit margins, more willing to flex the muscle their post-1923 position as oligopoly purchasers had provided.

The re-organisation of industry of which the recrudescence of Trade Associations was part had mixed effects: new constraints could easily outweigh new strengths; Anderston's internal circumstances acted against diversification. Adherence to Associations obliged it to eschew marketing. There were no new markets for its traditional products; many existing ones were in irreversible decline. Supplementary to structural constraints to its performance was ill luck. Its special relationships, partly through changing practices, partly through its own delinquencies, evaporated. Its best domestic customers were absorbed into the least prosperous railway groups, both of which possessed their own manufacturing plant. With the decline of the local economy and the rise of the Midlands ore fields, its location turned from asset to liability.

Recovery in the late 1930s was uneven and insecure: segments for London Transport, switches and crossings for South Africa. Light castings, geared more directly than segments, to the expansion of suburbia present a picture of opportunity lost through unwillingness to contemplate a retail trade, the search for certainty and easy options, and naivety when dealing with men such as Percy Donald.

At the end of the 1930s, the firm recognised certain of its difficulties but war deferred further consideration of breaking with the past. How far Anderston could influence its own destiny, or had the will to try to do so, may be doubted. Existing products and

methods had not failed utterly so as to encourage restructuring. It could be seen that Associations were not the key to reviving prosperity but a useful tool which could limit the destructive qualities of price competition which Anderston could not meet. Anderston was squeezed between the high prices imposed on it by B.I.S.F., the more efficient and competitive stance of many of its rivals and the low prices at which, due to foreign competition, it could sell in world markets.

Output was predominantly for railways and exports. In many developed countries the eclipse of the railway as the principal form of inland transport had, almost imperceptibly, begun. War and its aftermath postponed this phenomenon and made its resolution more difficult. In many developing counties, the establishment of home industries became a talisman of progress: where India and South Africa led, others post war, would follow. Monopolies, monopsonies, oligopolies and cartels provide the flavour of the times and of the immediate future. The re-established associations produced a species of bilateral oligopoly in chairs and segments.

Footnotes: Chapter 6

1. D/AF 545, Cunningham to Cargill, 5 June 1940.

2. The Economist, 1 April 1932, pp.678-679. The Times, 8 February and 21 February 1934.

3. For example Sheffield Record Office, TW 444, Minutes of Railway and General Engineering Co. Ltd., 25 March - 30 June 1936, and 29 December 1937 on the L.M.S.'s making as many of its points and crossings as possible, leaving outside suppliers the left overs of the most difficult items and beating down prices.

4. A.F. Lucas, Industrial Reconstruction and the Control of Competition, pp.62-63, p.201ff. The regional sales apparatus of the coal industry, the B.I.S.F., National Shipbuilders Securities are various examples of re-organisation.

5. Quoted by A.F. Lucas, p.18.

6. Lucas generally.

7. S. Tolliday, Business Banking and Politics, p.86. The animosities of the chair makers, particularly of Wrightson and Harvey to Peat during the 1920s are discussed in Chapter 5.

8. Relating output from Sales Day Books (D/AF 227-228) to figures for capacity quoted to the Admiralty D/AF 541, 1939. In the earlier decade one year's worth of sleepers was ordered.

9. D/AF 549, Cargill to Cunningham, 4 April 1941.

10. D/AF 15, Private ledger. The margin was, of course, worse.

11. D/AF 523, Cargill to R.B. Muir, 7 January 1934.

12. Alex Rubner, The Ensnared Shareholder, p.66. And see Chapter 7 below.

13. D/AF 519, to Dowson and Dobson, 19 April 1933 and D/AF 524, Cargill to Sowerby, 12 January 1934.

14. D/AF 519, as above.

15. C. Hood, Iron and Steel, Their Production and Manufacture (1911), p.133 citing the Iron and Coal Trades Review, 26 August 1910 on vertical amalgamation in German Industry to bypass a rigid cartel-sructure. Anderston was alone in the sleeper association in not being an integrated steel company. Stanton Ironworks or Pease and Partners both produced coal, owned iron ore, and used the resulting 'pig' in their foundries.

16. D/AF 534 to Dorman Long, 10 November 1937. Anderston estimated that 18% was the rise in its wage costs, allowing for the introduction of paid holidays and adjustmen ts in the hours worked. The tying of wages for skilled workers to the sliding scales paid in the steel industry (see D.L. Burn, The Economic

History of Steelmaking (1940) table 43 and Chapter 7) ensured that these wages rose with the price of iron.

17. The increased cost of 52/- per set of points and crossings for Rhodesia was passed on as to 25/- and absorbed by Anderston as to 27/-. (D/AF 535 to Macnees, 24 April 1937).
Railway and General faced cuts of 7-10% upon the (increased) prices it put forward to the L.M.S. for the annual points and crossings contract. Railway and General minutes, 29 December 1937.
Previously the attempt had been to raise tender fees on chairs, for example, to claw back prices from very low levels. D/AF 531, to Stanton Ironworks, 11 March 1936.
See Burn (1940) Table 43 for prices.

18. D/AF 534, to Head Wrightson, 31 May 1937. Cargill believed that Dormans, by closing down Bell Bros. and not replacing its capacity, had done much to engineer an artificial shortage. See J. Vaizey, The History of British Steel, chapter 4; Burn (1940) chapter 16; and S. Tolliday, "Steel and Rationalisation Policies, 1918-50", p.88ff. in B. Elbaum and W. Lazonick, The Decline of the British Economy. D/AF 535 to Macnees, 9 February 1937.

19. Indian iron presumably enjoyed Ottawa preference when imported into Britain.

20. D/AF 534, to Head Wrightson, 31 May 1937. D/AF 537, to Taylor Brothers, 25 March 1937. Isca and Whites both declined tendering for switches and crossings for this reason (D/AF 535, correspondence with Isca, February - March 1937 and D/AF 537, correspondence with Whites, 23 - 29 June 1937). South African work, being tightly priced and subject to stringent delivery conditions and penalties, was an obvious candidate to be given up until, by late 1937, it too became subject to an accepted rise and fall provision in the contract, with penalties deleted. Pole bases suffered - see below.

21. D/AF 533, Chairmakers' file, 27 September 1937.

22. D/AF 529, Chairmakers' file, 18 January 1936 is the first indication. See generally Vaizey, chapter 4, Burn (1940), chapter 16, J.C.Carr and W. Taplin, History of the British Steel Industry, chapter 47.

23. D/AF 533, Chairmakers file, 2 - 20 April 1937.
With loyalty rebates the higher the tonnage purchased the lower the net price on a sliding scale. The supplier to whom the customer was to be loyal was probably an agency created by B.I.S.F.

24. D/AF 535, Correspondence with the North East Coast Association, 10 - 18 June 1937 and generally D/AF 533, Cargill/Cunningham correspondence, June - July 1937.

25. D/AF 535 to Mann, Judd and Gordon, C.A., Glasgow, 28 April 1937. The north eastern chairmakers soon pulled out of all negotiations about scrap (D/AF 535, 21 June 1937 to Manns).

26. See Chapter 8 for the national federations and super-associations of the 1940s. D/AF 535, Mann, Judd and Gordon file and D/AF 533, B.I.A. file, both 1937.

27. D/AF 528 to Edward Sistersons, a Newcastle steel merchant and associate of Darlington Railway Plant, 4 May 1935.

28. D/AF 536 to Stanton Ironworks, 2 April 1937. D/AF 534, to A.K.L. Harvey, 8 April 1937. There was c.1370 tons due from Stanton, on whom Anderston put pressure, claiming that the iron was needed for the segments sub-contracts it had taken from Stanton, and 3400 tons from Dorman Long. See Chapter 7 in respect of restive shareholders and notes (16), (18) and (19) above generally. D/AF 531 to Railway and General, 18 May 1936 regarding the "unmerciful" rise in steel prices.

29. Indian tariff levels as in 1933. Copy of tariff schedule and regulations in D/AF 519 but also India in 1929-30 (Government of India, Calcutta, 1931) p.195 and same for 1930-31, pp.256-7, 345-6 and for 1931-32 p.121 regarding (a) expansion of the lists of railway supplies that had to be bought through the Indian Stores Department (b) the rigid economies being made in railway expenditure during the early 1930s (c) the new tendering rules enforced, from 1930, by the Government of India for delivery in India, payment in rupees etc. and the direct encouragement of native industry. 'Indian made from Indian materials' had priority over Indian made from imported materials, both over the rest.

30. B.R. Tomlinson, The Political Economy of the Raj, 1914-47 (1978), pp.62-63, 124 and chapters 2 and 4 generally; Markovits, pp.57-59, A.K. Bagchi, Private Investment in India, 1900-1939 pp.291-381, A.J. Ray, Industrialisation in India, (1979) pp.74-93, pp.241-243, C.N. Vakil The Growth of Trade and Industry in Modern India, pp.271-287. Bounty payments to wagon builders, guarantees by the Government of India to purchase a quantity of rails from TISCO at a fixed price; state ownership of the Peninsular Locomotive Company (after the failure of Kerr Stuart) - the paradox of a British Indian administration going native whilst native state administrations continued to rely on British consulting engineers and managing agencies for their supplies.

31. D/AF 535 to Macnees, 12 June 1937. Many orders were never known about in London. Or see report of the A.G.M. of Guest Keen at Nettlefolds, Daily Telegraph, 28 June 1934.

32. D/AF 527, 578, Correspondence with Rendels, with Thomas Summersons (a member of the F.B.I.) and Macnees, 28 February - 7 March 1935.

33. D/AF 527 to Rendels, 7 March 1935.

34. D/AF 536 and 540, Macnees (Switches and Crossings) files, 1937-38. Tatas had expanded to take in all manner of railway equipment (see note 30). Likewise for steel sleepers when Anderston left to the other members of the Assocation, who were steel railmakers, the decision as to whether to contact TISCO

over arranging orders. Where TISCO wanted the order there was no arrangement made, the British firms tendered independently and lost, e.g. D/AF 540, Peat Marwick file, 29 January - 10 February 1938. D/AF 514 and 513, Cargill to Sowerby, 24 November 1931 and to R.B. Muir, 21 December 1931.

35. D.S. Purdom, Steam on the Pampas (1977), especially pp.112-113. For example the Buenos Ayres Great Southern, having received 270 new locomotives between 1923 and 1931, bought none till 1938/39, a batch of 45, and none thereafter until 1948.

36. Excess supply caused commodity prices to fall - the terms of trade moved against primary producers in the 1920s - which could have enhanced the export tonnage of the Argentine railways. The industrial depression in the developed economies then produced exaggerated falls in tonnage. Poor results in native currencies translated into disastrous ones in sterling, even after Britain left the gold standard. Dividends disappeared; moratoria upon debts flourished. Currency problems, road competition, labour charges and the resolution of difficulties through a state transport policy with nationalisation (starting with the Cordoba Central in 1936) as its goal were discussed at the annual general meetings of the various railways. Those of the Central Argentine (late Buenos Ayres and Rosario) are the most detailed. Daily Telegraph, 7 - 8 and 15 - 16 November 1934; 18, 30 and 31 October and 7 November 1935; 29 - 30 October and 5 and 13 November 1936; 27 - 28 October and 2 - 3 November 1938 etc.

37. D/AF 523, Cargill to R.B. Muir, 7 January 1934; D/AF 521, Cargill to Watt, 25 March 1933. The Argentine Government had previously encouraged the substitution of native hardwood for metal sleepers: Railway Gazette South American Number, November 1926.

38. D/AF 519, Dowson and Dobson to Anderston, 5 June 1933. Temporary tariffs and the movement of the £S.A. relative to sterling had complicated the picture in the early 1930s.

39. D/AF 519, ibid; D/AF 516, Dowson and Dobson/Anderston correspondence, 7 March - 28 April 1932. D/AF 538, Anderston to Dowson and Dobson, 20 May 1938. Unfortunately, very low freight rates to S. Africa from many continental ports ensured intense competition. See generally correspondence with Dowsons, 1930-39. D/AF 506 and following.

40. As (39). See Chapter 8 and Appendix 3 for the subsequent collapse of S. African orders. I.S.C.O.R. had been established under an Act of Parliament (S.A.) of 1928. From 1936, under an agreement involving B.I.S.F. and the International Steel Cartel. I.S.C.O.R. was granted 350,000 tons of domestic business: Carr and Taplin, pp.524-525.

41. The Chinese orders represented a mixture of tied work financed by British credits etc., and open orders. This hamstrung attempts to extract high prices, e.g. D/AF 535 to Macnees, 13 January 1937. For Roumania see D/AF 543 from Macnees, 21

August 1939 in which it was assumed that Anderston would not be interested in view of difficulties in getting rail.

42. D/AF 223-229, Sales day books.

43. The profits of the Southern were buoyant in the 1920s. Its traffics depended more on passengers (an increasing, electrified, commuter network) than freight (of which coal was the largest single commodity for all lines). See generally the annual reports and accounts, with their detailed tabulations, for each company. Chapter 7 for observations on the Southern.

44. D/AF 524, Cargill to Sowerby, 12 January 1934.

45. Cargill received an honorarium for his efforts, March 1932. All northern firms, G.K.N. and the two Nottingham firms, subscribed. See "Chairmakers'" files; D/AF 512 (1931) and D/AF ; 516 (1932) and correspondence with individual firms principally Head Wrightson, Pease and Partners, Railway and General, Smith Patterson, Tees Side Bridge and G.K.N., 1930-31 in D/AF 507-514.

46. D/AF 514, Cargill to Cowen (Smith Patterson file), 16 November 1931. With their link to the Southern involving personal friendship and the possession of their own vessel to coaster deliveries to the Southern's Angerstein Wharf, on the Thames, Smith Patterson could afford to be more detached.

47. D/AF 514, Cargill to Tees Side, 30 July 1931.

48. D/AF 513, Head Wrightson to Anderston, 29 July 1931.

49. D/AF 524, Cargill to E.C. Sowerby, 12 January 1934.

50. As (47) and (48). 6d. each to the five losers in the North East, 6d. to be divided between the Nottingham firms, who had, like Cochranes, taken little part in the discussions.

51. D/AF 514, Cargill to Smith Patterson, 29 May 1931.

52. D/AF 514, Cargill to Smith Patterson, 16 November 1931.

53. D/AF 515, to Macnees, 11 September - 19 October 1931.

54. D/AF 514, Cargill to Smith Patterson, 29 May 1931, D/AF 515 to Macnees, 11 September 1931; D/AF 514, to Watt, 4 September 1931.

55. The tender fees had climbed with reasonable consistency during the 1930s, dropped to c.5/- a ton in 1938. Stanton Ironworks was (by the mid-1930s) one of the usual recipients of their commission plus the northern makers and G.K.N. See D/AF 539, Cargill to G.K.N., 12 April 1938 but generally correspondence with G.K.N. (and other chairmakers) through the 1930s. D/AF 507 and following. See (64) below.

56. D/AF 517 and 518, 16 March 1932 to Heads and Smith Patterson respectively.

57. D/AF 524, Cargill to Railway and General, 17 September 1934.

58. D/AF 536, Cargill to Smith Patterson, 8 November 1937.

59. D/AF 524, Cargill to Taylor Bros (Sandiacre), 20 April and 29 November 1934 etc. Switch and crossing chairs were 6/- up on 1931 and at a 24/6d. differential per ton when, in 1934, Taylor's quoted an "ordinary" price for them.

60. See Cochranes' production figures at Appendix 1 and table 6.2 above. The mutual stand-off between G.K.N. and the north east had existed since the 1880s and been re-affirmed in the 1920s, by the dying C.I.C.A. See D/AF 537 to Taylor Bros., 23 January 1937.

61. D/AF 461, Cargill to Taylor Bros., 13 October 1938.

62. D/AF 542, Cargill to Howie, Kilwinning, 4 January 939.

63. D/AF 528, Cargill to Smith Patterson, 7 January 1935. D/AF 513, Cargill to Head Wrightson, 31 July 1931. D/AF 534, Chairmakers' file, 27 September 1937.

64. After its absorption of Cochranes in 1934, Stanton was inevitably drawn further into the operations of C.I.C.A. Whereas there had been considerable unease at the proposed doubling of the tender fee on S. African chairs to 10/- a ton in fear of Stanton (D/AF 522 to G.K.N., 6 March 1934) by 1937. Stanton was one of the 7 losers between whom the 31/6d. fee was divided. See D/AF 526, Anderston to G.K.N., 13 August 1935; D/AF 534, same to same, 7 June 1937; D/AF 536, to Smith Patterson, 23 October 1937, for the progress of S. African business and the organisation of C.I.C.A.

65. D/AF 527, Anderston/Melvins correspondence, 9 November - 3 December 1935. D/AF 535, Melvins to Anderston, 1 November 1937 quoted.

66. D/AF 536, Anderston to Pease and Partners, 9 December 1937; D/AF 536 to Smith Patterson, 23 October 1937; D/AF 542 to Howie, 19 January 1931.

67. Isca was not a member of C.I.C.A. Usually it picked up the crumbs of Great Western Railway business left by G.K.N. The G.W.R. had payed its lowest dividend of the century in 1938. Lacking orders from that source Isca had poached an order for the Great Northern Railway (Ireland) at £1 a ton below Anderston (Isca held a privileged position as supplier of points and crossings to the various Irish lines: Railway and General Minutes, 1944-45 and see Appendix 1). Mutual protestations of wronged innocence ensued. Anderston ceded its interest in track work for a government factory at Caerwent to Isca in return for commission payments and for future consultations on future Irish chair contracts. D/AF 542, Anderston/Isca correspondence, 28 February - 6 March 1939, May 1939, September 1939.

68. D/AF 514, Cargill to Sowerby, 18 August 1931. Some £4,000 would need to be spent by any other firm to equip itself with the patterns in order to compete.

69. D/AF 514, Cargill to Sowerby, 18 August 1931, and reply; D/AF 521, same to same, 13 December 1933. In fact (D/AF 513 to Head Wrightson, 7 and 9 February 1931) Anderston had received 2500 tons from the L.N.E.R., when both classes of chair were combined, compared with 1000 for Smith Patterson and Cochranes, 2500 from Tees Side and 2800 from Pease and Partners. See also D/AF 544, Anderston to Stanton, 23 January 1939.

70. D/AF 532, Anderston to Taylor Brothers, 18 December 1936.

71. See Chapter 8. The 1931 expansion scheme for Horwich was abandoned due to the onset of depression.

72. D/AF 518, Cargill to Sowerby, 13 December 1937; D/AF 531, Cargill to Smith Patterson, 25 August 1936; Railway and General minutes, 1936 and after. See Appendix 1 and the historical notes there concerning Railway and General.

73. D/AF 519, Anderston to Head Wrightson, 24 July 1933. D/AF 519, Anderston to Dorman Long, 26 May 1933. D/AF 519, correspondence with Isca, 1933. The L.N.E.R. had cut back its orders in the 1920s producing a disproportionately large loss of business for its outside suppliers form whom it had been obtaining low priced supplies. In the past Anderston had been cut off the London Underground Group's list of suppliers for its obdurate adherence to collusion (D/AF 513 to Head Wrightson, 31 July 1931). Later (see Chapter 8) it felt its chair business might be suffering on account of its known leadership of C.I.C.A. Attempts to influence the L.N.E.R. by other means were not successful. Macnees believed L.N.E.R. officials were being too well looked after by other contractors (D/AF 543, Macnees to Anderston, 20 July 1939).

74. See Chapter 8 for the matter of costs. D/AF 519, correspondence with Isca, 15 - 19 December 1933, who got £1 per ton more for Great Western chairs than northern firms had got for similar chairs for other customers, or D/AF 523, Anderston to Melvins, 10 August 1934, concerning the L.N.E.R.'s false claims that Nottingham had underquoted Anderston and Smith Patterson for points and crossings chairs.

75. See Chapter 5 for the 1927 order. The London and South Western; London, Brighton and South Coast; and South Eastern were the constituents.

76. D/AF 526, Cargill to A.K.L. Harvey, 2 March 1935 and D/AF 526, Cargill/Harvey correspondence, 2 March - 2 April 1935; D/AF 549, Cargill/Cunningham correspondence, 29 December 1941 - 13 January 1942.

77. Witness their close co-operation in dishing Summersons and in the manhole cover business etc. etc.

78. See Table 6.2. D/AF 529, Chairmakers' file, 1936: Pease 7000 tons: Smiths 6000 tons; Tees Side 3500 tons; Heads 2600 tons. D/AF 533, Chairmakers' file, 9 December 1937. Pease, Smiths and Tees Side are the suppliers. D/AF 538, Chairmakers' file, 1938, 21 December 1938 (after Cowen's death, Pease and Partners 5800 tons; Tees Side 4000 tons; Smith Patterson 1800 tons; Head Wrightson 1000 tons).

79. D/AF 525, Chairmakers' file, record of meeting, 13 August 1935. From 21 August 1936 (D/AF 529, Chairmakers' file) this was revised to 5/- a ton on orders of less than 100 tons and 3/- a ton on orders of 101-200 tons.

80. See (78) and Table 6.2. D/AF 514, correspondence with Tees Side Bridge, May - July 1931. The very casual arrangements between northern makers from the late 1920s to 1931 had produced similar results. See D/AF 514, memorandum from Tees Side Bridge & Engineering Co., 30 May 1931. See D/AF 545 and 549, Chairmakers' files 1940-41 generally; D/AF 551, Head Wrightson to Anderston, 13 March 1942.

81. See Table 6.2 and Appendix 3. The decline of Anderston's position may be seen from the inquiries and orders it received. In 1931 (D/AF 513-514, correspondence with Head Wrightson, 7 - 9 February 1931, letter to Smith Patterson, 29 May 1931 respectively) the L.M.S. took 5000 tons from Pease, 2000 tons of ordinaries from Smith Patterson, 1000 tons each from Head Wrightson and Tees Side, 500 tons of switch and crossing chairs from Anderston and 520 tons of them from Smiths. In 1936 (D/AF 529, Chairmakers' file, November 1936) the L.M.S. inquired for 25000 tons from Pease, 1200 tons from Head Wrightson, 1000 tons from Howie, 750 tons from Anderston and the L.N.E.R. ordered 5900 tons from Pease, 3650 tons from Tees Side, 3000 tons from Heads, 2100 tons from Smiths, 1400 tons from Cochranes and Stanton combined (all would be made by Stanton) and 920 tons from Anderston, plus 1450 tons from Melvins.

82. D/AF 227-230, Sales day books.

83. T.C. Barker and M. Robbins, A History of London Transport, volume 2, chapter 16; Cecil J. Allen, the London and North Eastern Railway, pp.175-176.

84. C.I.S.A. always revived when large orders were in prospect, and D/AF 520, Anderston to Macnees, 1 November 1933. Correspondence concerning segment orders will be found under T.R. Sutherland (1933-36) and H.D. Acland (1937 onward) in Anderston's general correspondence D/AF 521, 524, 528, 531, 533, 538, 541, 545 etc.

85. D/AF 602, C.I.S.A. file: Draft constitutions and minutes of proceedings, statistics etc.

86. D/AF 523, Cargill to Harvey, 18 September 1934. Anderston had (see Chapter 5) explicitly preferred receiving commission payments to receiving orders.

87. Various contracts pending in Glasgow provided the opportunity for consultation, after which it was agreed that contracts would be discussed on an individual basis. Cochrane's received what it wanted: a small share of segments business in England. By 1938 (D/AF 604, passim) Pease were co-operating. D/AF 540, correspondence with Potters, October 1938; D/AF 461, Anderston to Potter, 28 October 1938; D/AF 604, Anderston to Secretary, C.I.S.A., 11 October 1938 and subsequent correspondence and memoranda to 10 March 1939. D/AF 523, Cargill to Harvey, 18 September 1934. Neither Pease nor Staveley had been asked to join.

88. D/AF 604, statistics. See appendix 1 for details of Cochrane and its output, 1934-40. The C.I.S.A. was chaired by Cowen, further evidence of Smith Patterson's collusive outlook.

89. D/AF 521, Cargill to Harvey, 14 January 1936; D/AF 534, same to same, 2 February 1937: "lamentably low" prices.

90. D/AF 536, Cargill to Stanton, 2 April 1937, 13 May 1937 etc.

91. D/AF 604 with cutting from Evening News, 30 March 1938. D/AF 539, correspondence with Head Wrightson, 29 March 1938 and after. Concrete was cheaper initially but had higher maintenance costs. D/AF 536, Anderston to Smith Patterson, 2 February 1937 and subsequent letters; D/AF 536, Anderston/Stanton correspondence, 1937, especially 5 - 8 March and 8 November; D/AF 604, passim.

92. £62/10/- in respect of a notional 500 ton deficit in 1935. D/AF 604, delivery statistics; D/AF 526, Cargill to Harvey, 20 July 1935.

93. D/AF 604, 1 September 1938, Dartford tunnel enquiry; same 16 March 1939, Colne Valley enquiry; same 16 February 1939 for Royal Ordnance; same 29 September 1939 for 2000 tons (£21,000) of air raid shelters. Unfortunately the shelter business did not develop (D/AF 604, 18 January 1940, report of meetings with the various service ministries and government departments) - the iron was required for more urgent uses.

94. D/AF 526, Cargill to Harvey, 15 March 1935: no inquiry = no tender possible = no allocation possible. D/AF 549, Cargill to Cunningham, 3 March 1942, on the subcontract nature of Anderston's segment business from the 1890s onward.

95. See Chapter 7. D/AF 523, Cargill to Harvey, 18 September 1934; D/AF 523, Anderston/Macnee's correspondence, 1934, especially 26 May, 17 July and 17 August; D/AF 526, Cargill/Harvey correspondence, 1935, espcially 15 March, 2 April and 17 June.

96. Barker and Robbins Volume 2, chapter 16. D/AF 271-273, Foundry Orders.

97. D/AF 526, Cargill to Harvey, 2 March 1935. B.I.S.F. transcended the friendly relationships with Dorman's et al.

98. D/AF 271-273, Foundry Orders.

99. D/AF 224-226, Sales day books. See, for example, correspondence with Dowson and Dobson, March 1935 in D/AF 525.

100. D/AF 506, correspondence with the Carron Company, July and 29 November - December 1930, with Cochrane and Company, December 1930; D/AF 507, correspondence with Falkirk Iron Company, December 1930 and with Head Wrightson, July and December 1930, especially 18 December 1930 from Falkirk. The arrangement seems to have been confined to S. Africa and lapsed, perhaps for want of orders, in 1932. Head Wrightson was interested in farmers' poles and, with Cochranes, in telegraph pole bases. See also D/AF 506, Cargill to Cunningham, 16 July 1930. D/AF 505/509, correspondence with Spencers Ltd., Wednesbury, 19 December 1929 and following. Anderston wished to establish that the agreement with the Falkirk firms had nothing to do with the National Light Castings Association, of which those firms were members.

101. Prices were already tight before the intrusion of Siemens (D/AF 516, Dowson and Dobson to Anderston, 7 March 1932). The separatism and boorishness of the Boerish authorities, whom Dowson and Dobson despised, were increasingly apparent. D/AF 522, Anderston/Dowson and Dobson correspondence, 3 October - 21 November 1934; D/AF 525, same, September 1935; D/AF 530, Anderston to Dowson and Dobson, 29 December 1936; D/AF 538, same to same, 20 May 1938.

102. D/AF 534, Anderston to Dowson and Dobson, 14 April and 20 August 1937; D/AF 519, Anderston/Dowson and Dobson correspondence, 4 May - 8 August 1933; D/AF 516, Anderston/Dowson and Dobson correspondence, March - April 1932.

103. Houses built increased from c.200,000 pre-1931 to 370,000 in 1937. Cheap money, increased real wages, slum clearance and changing patterns of social and family life fuelled it. Monopolies and Restrictive Practices Commission, Report on the supply of cast iron rainwater goods, 1951, p.23.

104. Light castings output is for calendar years. Contained in D/AF 514, memorandum by Cargill to Watt, 18 June 1931 regarding history of relations with Rownson Drew and Clydesdale and Associated Builders' Merchants, with copy letter from Cargill to A.B.M.

105. As 104.

106. D/AF 514, Cargill to Watt, 4 and 30 September 1931.

107. He used a Midlands subsidiary of the recently created Allied Ironfounders. Monopolies and Restrictive Practices Commission, p.33.

108. D/AF 514, 516 and 518, correspondence between Watt and Cargill and between Davidson and Syme and Cargill, especially Cargill to Watt, 18 June and 11 December 1931. By 2 May 1932, the claim was for £7,500. A.B.M. counter claimed at the end of 1932, claiming that Anderston had been unable to supply it, having long delivery dates and insufficient stocks etc. See

D/AF 519, Cargill to Davidson and Syme, 19 December 1932 and 20 February 1933 and copy letter from A.B.M. to Davidson and Syme, 15 February 1933. Much of the original correspondence between Anderston and A.B.M. was sent to Davidson and Syme and does not survive.

109. The collapse in prices after the demise of the National Light Castings Association and the shortage of orders left Anderston with little enthusiasm for pressing on with light castings. D/AF 516, Cargill to Bisset, 6 April 1932. The foregoing paragraph draws heavily upon the Monopolies and Restrictive Practices Commission Report, Chapters 6, 8 and 13 and Appendix 19. The B.I.A.'s trader discounts, cash discounts, tonnage allowances and graduated rebates to merchants meant that if the public paid 100, builders and plumbers would pay 67½ - 87½, class B merchants 62½ - 72½, class A merchants 53½ - 71 (ibid chapter 10).

110. An offer from the Midlands was rejected. D/AF 527, Cargill to a Mr. Maltby, Blythe Bridge, Staffs., 18 October 1935. And see (111).

111. Bisset had worked for Anderston in Glasgow as Foundry Manager, 1923-24 (D/AF 347, Staff wages book). He had been consulted 1924/25 about the move into light castings and introduced Anderston to Percy Donald. During the 1930s he bought some light castings from Anderston for his own business. See correspondence filed variously under Bisset and Enfield Foundry, 1932-36, D/AF 516, 519, 522, 525, 529, 530, especially 19 November 1931, 6 April 1932, 3 June 1933, 4 June 1936 to Bisset and 11 December 1931 and 6 January 1932 from him.

112. D/AF 519 to Bisset, 14 July 1933. Anderston investigated the propspects of the S. African market with Dowson and Dobson (D/AF 419, 28 June 1933) now that the Union had dropped tariffs and gone off gold, but local competition and the entrenched position of the Carron Company killed the idea.

113. D/AF 520, Moat's to Anderston, 29 November 1933 and reply. Moat's caused Anderston to manufacture gutterings for the first time, and (D/AF 520, 523, 527 passim) were always pressing Anderston to supply none but themselves in return for their becoming Anderston's sole agent in the north east. D/AF 525, Cunningham to Cargill, 10 July 1935; D/AF 527, Anderston/Moat's correspondence, 22 February - 14 March and 11 June - 18 July 1935 and Quotation from D/AF 529, Cargill to B.I.A., 11 March 1936.

114. D/AF 530, Cargill to Harvey, 3 March 1936.

115. D/AF 526, Cargill to Harvey, 7 December 1935; D/AF 522, Cargill to B.I.A., 15 April 1934.

116. A.B.M. was taking 8½% of the B.I.A.'s output in 1938. Anderston had been rendered more reluctant to join the B.I.A. (D/AF 519, 3 June 1933 to Bisset), because of Donald's involvement. The "exclusive dealing" conditions imposed by the B.I.A. on its members denied Donald his supply of non-standard

items to compliment the cheap bulk work he placed outside the B.I.A. A deal was struck.

117. The B.I.A. had been in intermittent touch since 1932 (D/AF 516). The serious and persistent approaches began on 17 January 1934 (D/AF 522, B.I.A. to Anderston). It seems that the B.I.A. wished to get Moat's to join it as well, e.g. D/AF 529, B.I.A./Anderston correspondence, July 1936.

118. D/AF 8, Minutes, 8 November 1934. Cargill was authorised to continue negotiations or not as he thought best. D/AF 522, Anderston/B.I.A. correspondence and reports of meetings, 17 January - 16 October 1934.

119. D/AF 9, Minutes, 29 May 1936 accepting B.I.A.'s offer. D/AF 8, Minutes, 8 May 1935 contains details of the previous offer - 1300 tons p.a. for 3 years - itself an improvement on terms earlier rejected (D/AF 525, Anderston to B.I.A., 18 February 1935). See generally D/AF 522-532, correspondence with B.I.A., Bisset, Harvey and Watt, 1934-1936.

120. In 1935-36 Anderston supplied 1300 tons to Moat's, 441 tons to other merchants and 88 tons to various smaller local builders (and Bisset?). The alternative offered up to 1750 tons and greater security. The absence of security for the performance of the agreement had been a major reason for turning down the 1935 offer. D/AF 529, Anderston/B.I.A. correspondence, February - June 1936, especially Anderston to B.I.A., 10 January 1936; D/AF 532, Cargill/Watt correspondence, especially, 29 April 1936 after meeting with the B.I.A. All was in place when Moats' contract expired in June.

121. Monopolies and Restrictive Practices Commission, p.23.

122. Monopolies and Restrictive Practices Commission, pp.23-28.

123. Anderston realised that Moat's would drop it, just as A.B.M. had, in the right circumstances. See Table 6.5 for tonnage, and correspondence with the B.I.A. regarding deliveries, orders, explanations for shortfalls etc. from December 1936 onward in D/AF 529, 533, 538 and 541.

124. D/AF 538 and 541, especially Cargill to B.I.A., 27 September 1938 and following to March 1939.

125. Monopolies and Restrictive Practices Commission Report, pp.23-28. House Castings Ltd. had been formed in 1935 to undercut selectively the competition from firms outside the B.I.A. Its losses were to be divided amongst B.I.A. members through a levy on sales. It would quote low prices to customers lost to outsiders to reduce the quantity of work, price and profits obtainable by outsiders who, weakened, would be willing to join the B.I.A. It fouled the B.I.A.'s own nest, exacerbating the fall in prices, 1937-39.

126. Monopolies and Restrictive Practices Commission Report, pp.28-29. In 1936-37 the B.I.A. tried to come to terms with the makers of asbestos cement gutters.

127. ibid, pp.28-29.

128. D/AF 541, Anderston to Air Ministry, 11 August 1939.

129. D/AF 523, Cargill to R.B. Muir, 7 January 1934.

130. Smiths manufactured manholes and sashweights under an annual contract with the Northumberland and Durham section of the N.F.B.M. to whose Teesside section it introduced Anderston 1936. The two co-ordinated prices and price rises. In November 1936 the price preference given to N.F.B.M. members was 10%. Thomas Allan of Thornaby, part of Federated Foundries was seen as the most likely competition but in 1938/39 a Midlands firm supplying local merchants caused most damage. See generally correspondence with N.F.B.M., 1937-39 (D/AF 535, 540, 543) and with Smith Patterson , 1936-37, 1939 (D/AF 531, 536, 544) especially D/AF 540 to N.F.B.M., 20 June 1938; D/AF 531, Anderston to Smith Patterson, 10 November 1936; D/AF 536, Anderston/Smith Patterson correspondence, 8 - 10 March 1937; D/AF 544, Smith Patterson to Anderston, 14 April 1939.

131. For the half year to March 1940 only 118 tons of domestic castings were made (D/AF 632, Foundry output summaries). Other business continued as before or revived. D/AF 543, Anderston/Macnee correspondence, 6 July - 28 August 1939; D/AF 541, Cunningham to Cargill, 18 October regarding Dover.

132. 95% was supplied to loyalist or tied customers. D/AF 521, Cargill to Watt, 25 March 1933, remarks upon S. African orders. In 1936 Indian sleepers were being supplied at £6/17/6d. per ton, £1 less than to the Crown Agents. In 1931 (D/AF 513, Cargill to R.B. Muir, 21 December) S. Africa had ordered 25000 tons of steel sleeper on the continent at c.£5/7/6d. whilst the British price of £7/5/- to the Crown Agents was hopelessly uneconomic. Most Indian sleepers came from Germany and Belgium with prices such as £4/15/- a ton F.O.T. Antwerp when Anderston had to pay £6 for sleeper plates. See also D/AF 565, Peat Marwick , London, Steel Sleeper Association file, 15 March 1947.

133. D/AF 226, Sales day book.

134. See Chapter 5 and D/AF 630, T.P. Cargill's lecture on the development of the steel sleeper.

135. D/AF 529, Cargill to B.I.S.F. Steel Sleeper Committee, 29 April 1936. The prices for steel sleepers suggested in 1929/30 had been too low for Anderston's tastes.

136. The above paragraph draws on Burn (1940) chapters 15 and 16 and Carr and Taplin, chapters 37-38, 41-44. Railway materials became subject to a 20% tariff, pig iron to 33%. D/AF 515, correspondence with both Macnees and Peat Marwick , 1931, covers international relations.

137. Ebbw Vale's collieries kept going and the firm itself was liquidated in 1935 following the sale of the steel works to

Richard Thomas for rebuilding. The firm had been in deep financial waters since 1926. Carr and Taplin, pp.371-372, 450, 545-548. Ebbw Vale continued to receive commissions from the S.S.A.

138. G.K.N. merged its sleeper business and heavy steel operations with Baldwin's to form Guest Keen & Baldwin's (G.K.B). Vaizey, p.61. D/AF 512, Cargill/Cunningham correspondence, 3 July and following; D/AF 515, Anderston/Peat Marwick correspondence, 27 June - 4 July 1931 and 6 October 1931; D/AF 512, Anderston/Dorman's correspondence, 30 October 1931 and following.

139. E.g. D/AF 515, Anderston/Macnee correspondence, 29 September - 2 October 1931.

140. D/AF 515, Cargill to Macnee , 1 October 1931.

141. D/AF 512, Cargill to Cunningham, 4 July 1931. D/AF 522, Cunningham to Cargill, 30 July 1934 and as note 139. A railmaker would secure and negotiate large contracts, and subcontract various items elsewhere. Anderston was well aware of the work, other than sleepers, which it picked up from Dorman's (e.g. point work on a train ferry at Nanking and a bridge in Londonderry, D/AF 518, Cargill to Sowerby, 13 December 1932) and the value of Dorman's as a voice with the railmakers. (D/AF 512, Anderston/Dorman's correspondence, 3 - 4 August 1931. Table 6.6 above).

142. From 8 April 1932 the S.S.A. had revised its operations (D/AF 518, Peat Marwick file) so that work at Crown Agents' prices was debited at 100% against allotment tonnage and subject to 6/0 per ton compensation with a sliding scale to no debit or commissions at £1 per ton below such prices: D/AF 578, Peat Marwick, London, Steel Sleeper Association file, 1951, contains a typescript history of the S.S.A. outlining developments during the 1930s in respect of sliding scales and allocations. D/AF 520, Anderston to Macnees, 17 November 1933 for United Steel's intention to quit S.S.A. D/AF 522, copy letter from Dorman's to United Steel forwarded to Anderston on need for Colvilles to be brought in and suggesting terms, 31 July 1934; D/AF 523, Anderston/Macnees correspondence, 27 June - 3 August 1934 etc.

143. D/AF 512, Anderston/Dorman Long, 27 June 1931.

144. D/AF 515, Anderston/Peat Marwick , London (Steel Sleeper file), 6 January, 2 March and 26 June 1931.

145. For Tata's see D/AF 540, Anderston/Peat Marwick correspondence, 29 January, 10 February 1938 etc. For S. Africa see: D/AF 523, Cargill to Harvey, 13 September 1934 - plates cost Anderston £6 when continentals were quoting prices for the completed sleeper of £4/9/6 - £5/1/9d.; D/AF 534, Anderston/Dorman Long, 2 October 1937 when S. Africa was seeking 1 million sleepers, none of them ordered in Britain; and D/AF 526, Cargill to Harvey, 11 April 1935.

146. D/AF 525, Anderston to Bain & Co., Coatbridge, 7 May 1935 (quoted) and D/AF 530, Anderston to Dowson and Dobson, 13 March 1936.

147. D/AF 525, Anderston to Bain & Co., Coatbridge, 2 April 1935; D/AF 530, Anderston to Dowson and Dobson, 24 March 1936 and see Burn (1940).

148. E.g. United quoted £5/10/- to S. Africa or £6 to Hyderabad. D/AF 515, Anderston/Macnees (Steel Sleeper file) and Anderston/Peat Marwick. (Steel Sleeper) correspondence, 1931, especially 26 June - 13 August 1931. Such prices might still not be sufficient.

149. D/AF 515, Anderston to Macnees, 29 September 1931 and D/AF 517 same to same, 30 January 1933.

150. D/AF 515, Anderston/Macnees correspondence, 13 - 24 January 1931, 29 September 1931. D/AF 520, Anderston/Macnees correspondence, 30 January 1933 and 17 November 1933. The negotiator for Sierra Leone Development Co. was James Campbell, Anderston's troublesome shareholder, as principal of Northern Mercantile and Investment Co., which was associated with William Bairds, the Scottish iron group, in the scheme. Sleepers risked following the downward spiral which had characterised chair prices when the grouping had blown the cover on differential pricing. A low price to the Benguela Railway, which shared consulting engineers with the loyalist Rhodesia Railways group, might harm the prices realisable from the latter. £7/5/- a ton to the Sierra Leone Development Co., limited to buying British materials and trading in a colony, might easily come to the notice of the Crown Agents, or so it was feared. The Sierra Leone company with its iron connexions, was bound to be familiar with the Associations and knew of the S.S.A. (D/AF 515 above).

151. E.g. in September 1935 for the Egyptian State Railways. D/AF 526-527, Anderston correspondence with Guest Keen, Macnees and Peat Marwick .

152. G.K.B. acted for the S.S.A. The continentals erroneously feared that even with a price arrangement, S. Africa and India would prefer to buy British. D/AF 520, Peat Marwick's circular to S.S.A. members, 21 March 1933 and D/AF 520, generally.

153. Carr and Taplin, pp.518-524.

154. D/AF 533, Anderston/Dormans correspondence, 2 October - 10 November 1937 outlining developments. See also D/AF 536, Peat Marwick (Steel Sleeper) file, 1937.

155. Raw material price rises placed the healthier margins under pressure. International collusion maintained or restored margins in what had been highly competitive markets. S. African prices rose by £1/15/0 during 1937, Crown Agents by 15/-, narrowing the discount from £3/17/6d to £2/17/6d. See D/AF 536, Peat Marwick (Steel Sleeper) file, 1937 and D/AF 259, Quotation Book.

156. D/AF 533, as at 154 above; Carr and Taplin, pp.493-494, pp.511-517.

157. Calculated from private ledger, D/AF 15.

158. D/AF 515, Anderston/Macnees correspondence, 13 - 24 January 1931. Dormans and similar firms might take a contract for railway track and sublet sleeper, fittings etc. - Anderston tied to them for supplies was obliged to do their bidding. For Dormans, securing the major tonnage of the rail order was the primary concern.

159. See Appendix 3 for statistics. Well over 90% of Anderston's switches and crossings were for export since it was exluded from the home main line railway marked by the S.A.X.A. agreement of 1923.

160. There does not seem to have been a definite scheme as in the S.S.A. but a treatment of individual cases on their merits. S. African work was debited at 20% against allocations of tonnage and charged at a similar percentage of the usual fees. For much business tender fees were halved. See generally Anderston/Macnee correspondence during the 1930s, D/AF 515 et seq. See D/AF 540, Anderston/Macnees correspondence, 21 April 1936 - 22 June 1938 regarding Peru and the reasons for so behaving and D/AF 527, same, 15 - 20 February 1935 concerning tender fees etc. for S. Africa.

161. D/AF 513, Anderston to Macnees, 9 September 1931.

162. D/AF 526, Isca/Anderston correspondence, 9 November - 16 December 1935. D/AF 528, White's (Widnes)/Anderston, November 1935; D/AF 530, Anderston to Isca, 21 February 1936, quoted. See correspondence with other manufacturers, 1935-36; D/AF 527, Anderston/Macnees correspondence, 4 October - 11 November 1935.

163. D/AF 523, Cargill to Harvey, 13 September 1934, on the difficulties of making significant one-step price increases.

164. D/AF 515, Anderston/Macnees correspondence, 1931, especially 9 September and 21 November 1931 and correspondence with other switch and crossing makers, 1931. Summersons had taken c.32% of export work, 1 July 1930 - 30 June 1931 and (see Chapter 5) had long been pressing for a higher allotment.

165. See TW 444, Railway and General minutes, 1936, on the problem of supplying home railways as cited at Appendix 1 below. D/AF 515, Anderston/Macnees correspondence as above and 10 March 1931; D/AF 521, Anderston to White's, 20 November 1933. The calculations are based on units rather than weight although there might be a rough tonnage equivalent (D/AF 494, passim when discussing pre-1914 output and the current apportionment of overheads). Summersons' proposal of 29 March 1933 (D/AF 521) calculated a diamond crossing at 8 and a pair of simple points as 1 unit.

166. Until 1924 the northern firms had arranged N.E.R. contracts and had respected one another's particular local interests with

local industrial customers. The L.N.E.R. made part of its own requirements at Gateshead. Of the 6390 units: 5000 were for the L.M.S., which Taylor Bros. divided with Railway and General, c.3:1; 900 to the L.N.E.R.; 333 to the Southern; and 157 to the Metropolitan. See Chapter 8 below and Appendix 1 Sub Railway and General for the friction between home makers. The G.W.R. made most of its own pointwork, as did the Southern.

167. D/AF 517, Anderston to Macnees, 4 May and 8 July 1932 and D/AF 518, Anderston to Railway and General, 7 July 1932.

168. The surcharge was maintained by Smiths until Summersons rejoined S.A.X.A. Anderston, Taylor and Railway and General had full sets of patterns but they would not sell to Summersons. The differential was set so that Summersons would not be tempted to invest in the patterns itself. D/AF 518, Anderston to Smith Patterson, 19 June 1932 and subsequently and correspondence with other points and crossings manufacturers and Macnees, 1932-34.

169. D/AF 520, Cargill to Macnees, 7 March 1933.

170. D/AF 519, Anderston to Darlington Railway Plant, 5 May 1933.

171. A version of the B.I.A. scheme but with greater price flexibility. See D/AF 520, Anderston/Macnees correspondence from 7 March to 29 May 1933; D/AF 521, Anderston/Summersons correspondence, 29 March - 24 May 1933; D/AF 521, Anderston/Whites correspondence, 20 November - 11 December 1933.

172. As notes 169 and 170. However, Cargill was keen that Macnees should not cold shoulder Summersons, "any reasonable scheme leading to an increase in prices" was better than cut throat competition.

173. Anderston had consistently maintained tha the diverse, sporadic nature of the work ruled out its regulation, e.g. D/AF 521, 524, Anderston to Whites, 11 December 1933, 4 and 10 April 1934. All S.A.X.A. members, meeting in August 1934 (see D/AF 523, Anderston/Macnees, 30 August 1934) agreed, by which time Summersons was back in the Association on the same terms as those on which it had left. D/AF 523, Anderston/Macnees correspondence, 26 - 28 February, 10 - 26 April 1934.

174. D/AF 522, Anderston to Darlington Railway Plant, 13 August 1934. Anderston was happy to give serious consideration to arranging docks/harbours business and (D/AF 523, Anderston/Macnees correspondence, September 1934) this came to pass.

175. D/AF 521, Anderston to Whites, 20 November 1935; D/AF 523, Isca to Anderston, 6 March 1934.

176. D/AF 523, Anderston/Macnees correspondence, September 1934.

177. Special fish plates to connect rails of different sections which - unlike ordinary fishplates - were not within B.I.S.F.'s ban. D/AF 523, Anderston/Macnees correspondence, May/June 1934,

especially 30 June 1934. See also correspondence with Isca/Summerson/White's in this period.

178. Based on orders taken since 1930, Anderston should have been allotted 58.75% to Summersons' 41.25%. D/AF 523, Anderston/Macnees correspondence, 17 October - 12 November 1934; D/AF 524, Anderston/Summersons correspondence, 15 - 30 November 1934.

179. As 178. To add the full tender fees applicable under the 1923 agreement would have been too much of a jolt. At a time of static wage and iron prices, the two firms had to compare their figures closely so that no sudden or inexplicable fluctuations in price occurred, whilst sharing the business out without resorting to the strict rotation of orders which would give the game away. This was a typical example of the problem of price fixing where only one customer existed.

180. D/AF 528, Anderston to Summersons 15 August 1935; D/AF 526, Anderston to Isca, 29 May and 16 December 1935 and D/AF 539, same to same, 4 April 1938. For Mozambique see D/AF 525, Anderston to Dorman Long, 19 March 1935. Work for Latvia was lost to the Germans repaying their debts in kind; D/AF 527, Anderston/Macnees correspondence, 15 February and 9 December 1935. Inevitably different firms had different perceptions, but this seems to indicate an end to the drift shewn in the 1920s, as was Anderston's success of pricing itself into S. African business in this and other departments. It blamed financial difficulties for Darlington and Summersons' keenness to raise prices.

181. See above, e.g. D/AF 518, Cargill to Sowerby, 13 December 1932.

182. See Appendix 1 for historical sketch of the Darlington Railway Plant; D/AF 539, Anderston to Isca, 25 April 1938 and D/AF 541, Cunningham to Cargill, 30 May 1939.

183. D/AF 540, Anderston to Macnees, 9 March 1938.

184. D/AF 532, Anderston/Whites correspondence, November 1936; D/AF 535, Anderston to Macnees, 24 June 1937. The Agents invariably exported from Liverpool which favoured Whites of Widnes. Rails could be rolled in Cumberland (also favourable to Whites), S. Wales or N. East. The Agents displayed great skill in calculating the lowest price ex-works by deducting the various freight costs to the port of shipment which were included in quoted prices but not explicitly stated.

185. D/AF 527, Anderston to Macnees, 4 October 1935.

186. A long standing relationship, D/AF 536, Summersons/Anderston correspondence, 8 - 29 January 1937. Or see D/AF 535, Anderston to Isca, 9 August 1937 respecting another special relationship.

187. I.S.C.O.R. and the extension to the South African Railways and Harbours' own Bloemfontein shops had both opened in the early

1930s but revived demand outstripped the capacity of both. Anderston was aware that sooner or later both would be expanded and orders from Europe would decline, e.g. D/AF 535, Anderston/Isca correspondence, 6 May 1937 and following. D/AF 516, Dowson's to Anderston, 7 March and 26 April 1932 etc. for previous predictions.

188. D/AF 525, Dowsons to Anderston, 27 August 1935 quoted.

189. See note 180 and D/AF 527, Anderston/Macnees correspondence, 11 January - 15 February 1935; D/AF 527, Anderston/Patent Shaft correspondence, 1935, especially August. Patent Shaft wanted lower prices as the only guarantee of business from markets such as S. Africa when other firms were wanting higher ones. As raw material prices rose, many firms declined to tender for S. African work, e.g. D/AF 537, Anderston/White's correspondence, 23 - 29 June 1937; D/AF 535, Isca to Anderston, 23 February 1937.

190. S. African orders were typically at 20% fees and 20% debits. Admiralty work was full price - part of a natural policy of making tied customers pay to subsidise low price competitive tendering elsewhere. D/AF 527, Anderston/Macnees correspondence, 15 - 20 February 1935.

191. D/AF 535, Anderston/Macnees correspondence, 5 March - 6 April 1937. D/AF 535-536, Anderston correspondence with Isca, Patent Shaft and Summerson's, 9 - 11 March 1937; D/AF 534, Memorandum of Meeting of Anderston, Isca and Summersons with Dr. Schully, 21 March 1937 in "Cargill" file. The 3 orders on the market were to be divided to give £15,700 work to Germany and £15,900 to G.B. The last S. African order had been taken by the Germans at £28,600 (13.6% below the lowest British tender), as (D/AF 534, 19 April 1937) Anderston explained to Dowson and Dobson. This price had been uneconomic, even for the Germans (D/AF 535 to Macnees, 5 March 1937) who were faced with making difficult explanations for the sudden rise in their prices.

192. D/AF 535, Anderston/Isca correspondence, 6 May 1937 and following and see D/AF 538, Anderston to Dowson and Dobson, 5 April - 4 May 1938.

193. In 1938 more German firms were interested, despite which Anderston's share of the work was due to be £20,600. D/AF 5329, Anderston to Isca, 24 March 1938; D/AF 538, Anderston to Edgar Allen., 24 March 1938 (quoted); D/AF 540, Anderston to Patent Shaft, 5 March 1938; D/AF 541, Cunningham to Cargill, 6 June 1939, when the Germans had protected British prices; for the next order, had war not intervened, Britain would have reciprocated. Dowsons was not told of the arrangement until 5 April 1938, D/AF 538.

194. D/AF 544, Ministry of Supply/War Office circular, 28 Februry 1939. D/AF 544 and 548, correspondence with Taylor Bros (Sandiacre), 1939-40; D/AF 543, Summersons to Anderston, 27 November 1939.

195. See Appendix 3 for statistics of Bolt Shop output.

196. D/AF 519, 522, Anderston/G.K.N. correspondence, 19 October 1933 - 17 January 1934 respecting S. African bolts agreement and S. American dogspike agreement.

197. E.g. Uruguayan dogspikes - D/AF 526, Anderston/G.K.N. correspondence, 27 June 1934; or clips for the Central Argentine - D/AF 534, Anderston to G.K.N., 22 June 1937. The core correspondence relating to Bolts is that with G.K.N. during the 1930s - D/AF 507, 512, 517, 519, 522, 526, 530, 534, 539, 542.

198. For example, D/AF 522, Anderston/G.K.N. correspondence, 25 - 29 August 1934. The latter wanted minimum prices for S. African clips but accepted the 20/- a ton tender fee on free quotations preferred by Anderston, Richards and Tees Side - the other parties to the agreement. Or D/AF 542, Anderston to G.K.N., 24 January 1939. Anderston hoped to increase prices but was happy to leave the bulk of business with G.K.N. and its associates. G.K.N. declined.

199. D/AF 521, G.K.N. to Anderston, 24 May 1935.

200. D/AF 541, Cargill to Cunningham, 23 September 1939.

201. D/AF 544, Cunningham to Watt, 15 September 1939; D/AF 525, Cunningham to Cargill, 7 July 1935; D/AF 539, Anderston to G.K.N., 12 April 1938. Access to cheap imported nut bars had been blocked by B.I.S.F. and the tariff.

202. D/AF 536, Anderston to Richards, 1 May 1937.

203. Anderston received its largest single order for sleeper keys to date (695tons) from S. Africa, in 1935, giving 15 weeks work including night shifts. D/AF 526, Anderston to G.K.N., 11 April 1935.

204. Clips, taper keys etc., D/AF 539, Anderston to G.K.N., 4 March 1938 etc. Anderston was unwilling to allow Bayliss, Jones & Bayliss, another G.K.N. associate, to participate, and D/AF 526, Anderston/G.K.N. correspondence, August - November 1935, especially 12 - 20 August.

205. D/AF 534, Anderston/G.K.N. correspondence, 1937, generally, especially 10 November and 2 December 1937; D/AF 536, Tees Side Bridge/Anderston correspondence, 1937, especially 25 October.

206. D/AF 539, Anderston/G.K.N. correspondence, 4 March - 12 April 1938. D/AF 534, Anderston/G.K.N. correspondence, October - November 1937. The last order for clips had gone to Germany at 9/9d. each when the lowest British tender was 11/8d.

207. See Chapter 5 regarding Anderston's previous attitudes to chair orders. Anderston often felt that the prices the railways claimed to have received were fictitious. E.g. D/AF 540, Anderston to Richards, 18 January 1938 and D/AF 536, same to same, 1 May 1937. D/AF 536, Anderston/Summerson's correspondence, 25 January - 11 February 1937 regarding constraints on raising L.N.E.R. prices.

D/AF 531, Summerson's to Anderston, 5 November 1936 on G.K.N.'s refusal to play in fixing prices for L.N.E.R. fastenings. G.K.N. had a lot of expensive plant lying idle and would cut prices to ribbons to get the lion's share, if this was in its own interest.

208. See Appendix 3. Calculated from D/AF 222-229, Sales Day Books.

209. D/AF 543, Anderston to Smith Patterson, 10 January 1939.

210. D/AF 544, Cunningham to Watt, 15 September 1939.

211. D/AF 523, Cargill to R.B. Muir, 7 January 1934.

212. D/AF 527, Anderston to Rendel, Palmer & Tritton, 7 March 1935.

213. D/AF 532, Anderston/Tees Side Bridge correspondence, November 1936.

214. D/AF 531, Anderston to Railway and General, 18 May 1936.

215. D/AF 536, Anderston to Summerson's, 25 January 1937.

216. Lucas, pp.62-63, p.201ff.

CHAPTER 7

Ownership and Control, 1918-1940

Continuity of methods and practices was complemented by continuity of management. The financial strength of the company insulated it from pressures experienced by many of its contemporaries to re-organise their activities and change their leading personnel, thereby encouraging its natural conservatism which had prevented its wasting money in the post-war boom. Anderston failed to raise extra capital to acquire other businesses or to be acquired by them.

Sales and profits had, in common with those of competitors, recovered from the black period of 1910-12 before receiving a boost from the war.[1] Departmental profits stood at £40-50000 p.a. in 1913/14 to 1915/16 and peaked at £125,000 in 1917/18 and £100,000 in 1921/22. Sales had peaked at £1,230,000 in 1920/21 before settling to £300,000 - £450,000 p.a. for the rest of the decade when profits varied between £6,000 and £21,000 p.a. (The changing value of the pound first through inflation, then through deflation, exaggerates the swings in these figures). With the onset of world depression sales fell to £173,000 (1930/31) and £36,000 (1932/33). Only in 1937/38 had they recovered to £200,000 and not until the middle of the Second World War over £300,000.[2]

Production in the foundry, where capacity exceeded 50000 tons p.a. had declined steadily during the 1920s: 25500 tons p.a. (1920-22); 13500 tons p.a. (1923-25); under 7000 tons p.a. (1926-29). The comparative prosperity of other departments had counterbalanced this. As the whole business subsided into losses (£8,000 - £10,500 p.a. 1930/31 - 1933/34), the importance of the company's reserves and

the annual income of £5,000 - £7,000 p.a. they generated was magnified as was the attention paid to their management. Not until 1937/38 was a trading profit again made, and this little exceeded investment income.[3] The company was becoming more an investment trust than a manufacturing concern.

The 1920s

In 1919 war had seemed but a temporary interruption which left no new customers, products or ideas behind it. Five years later the legacy of excess capacity, a dearth of orders and the decline of traditional export markets was apparent: new products and markets were required. Anderston's existing businesses were doing well enough in the early 1920s for there to be no need to diversify. Inanition rather than prudence preserved Anderston from expensive errors: it had no desire to expend on change; existing capacity could handle all orders; the misplaced zeal of the gas engine experiment was fresh in the mind to counsel against a leap in the dark.

During the latter stages of the war, Anderston's reserves had built up, despite high taxation. They were, in part, liquidated and a £50,000 overdraft arranged,[4] to finance the over trading, akin to the South American boom of 1889/90, which followed the war. As conditions settled the overdraft was repaid and the (now) surplus working capital re-invested. In 1923 the general reserve fund was £70,000, a typical figure for the 15 years following, compared with £15,000 in 1910. The inner reserves (c.£30,000) were hidden in the published accounts amongst "sundry creditors and credit balances" and the Workmen's Compensation Fund maintained at a high level. Deflation harmed trade but enhanced the purchasing power of the reserves.

Interest and dividends on investments, under £1,000 p.a. pre-1914, regularly exceeded £5,000.[5]

TABLE 7.1 1927/28 Accounts

Published:

Capital	180000	(B) Value of ground, plant and tools	60984
Reserve	70000	(C) Stock	60971
Profit and Loss	11621	(D) Sundry debtors	35018
Workmen's Compensation	16900	(E) Cash in hand and at bankers and investments	175770
(A) Sundry creditors and credit balances	54222		
	332743		332743

Private:

(A) Broken down between: sundry creditors, Investment Realisation Reserve; unpaid wages; Imperial Taxes suspense account; Employees' Benefit Fund; Development Fund.

(B) & (C) Broken down between Glasgow and Port Clarence.

(D) Broken down between debtors, interest and commissions.

(E) Broken down between cash and bank accounts (itemised), £8,200; deposit receipts, £36,000; investments (itemised), £131,571.

At 31 March 1928 liquid assets exceeded the firm's capital (£180,000) by £5,000. At 31 March 1929 liquid assets exceeded the firm's capital by £12,000.

Source: D/AF 15 and D/AF 126

Anderston stood apart bemoaning the loss of "an ordinary commercial profit",[6] hoping that the restoration of collusive arrangements would, in time, help restore profit margins. Its need meanwhile was for new products, temporary or permanent "to occupy our cash"[7] which had been salted away by a "breeding of reserve funds".[8] Others might have financial problems, actual or threatened; Anderston had business problems. The trading profits of others might be vitiated by heavy interest charges. Anderston owed nothing and might

benefit from high interest rates.

Many firms which had expanded or amalgamated during the post-war boom were in difficulties. Deflation and the prolonged recession magnified the heavy burden of high interest debt in inflated money which they had taken on just as the combination of deflation, high interest rates and low profits discouraged investment generally. Such firms, having little more to lose, might be amongst those most eager to take business at heavily discounted prices in order to spread overheads.[9] The British Hydraulic Foundry and the Darlington Railway Plant were amongst those of Anderston's competitors to write up their capital at the end of the war: a common practice. Darlington brought the water of goodwill into its balance sheet and, after paying high dividends in the 1920s, came close to drowning from it by the early 1930s. It clung onto the lifeboat of collusive arrangements in contrast with its pre-war aggression. Summerson's and Taylor Brothers had large debenture debts outstanding - possibly the only way open to them to obtain capital and maintain family control. Ebbw Vale, and to a large extent, other steel companies, compounded war-time expansion with post-war renewal.[10]

Merger mania at the end of the war produced an array of vertical combinations (to secure transiently scarce supplies and tie in useful customers) and horizontal mergers in the iron and steel, engineering and shipbuilding trades, e.g. United Steel Companies, the Sperling combine, the Royal Mail-Harland and Wolff-Colville group. Many of these mergers were sound in theory and could have survived in more prosperous times but when, as was frequently the case, they were financed by high borrowings and cross-shareholdings, they were undermanaged and unwieldy, leaving economies of scale or tight central management unrealised; instability and, often, collapse

ensued.[11]

As many firms in staple industries lurched towards insolvency, Anderston sat tight. It had the means to expand and diversify but, by the time the need was recognised, the perils were clear. Poor prospects discouraged anything more than a small investment in new plant and products during the mid-1920s. Risk avoidance seemed to serve it well: it could afford to view the aggression of despair evident in Ebbw Vale's competition with superior detachment. By 1922 the majority of Anderston's assets were formed by investments (£119,000 in deposit receipts and government stocks).[12] In an era of limited financial disclosure to shareholders, when asset stripping and contested takeovers were unknown, a firm rich in assets but poor in performance was immune.[13] Uncritical shareholders, for such most were, would be glad to receive regular dividends (15% average, 1913/14; 5.75%, 1923/24 - 1933/34) as their other investments collapsed;[14] the company was not forced to examine its business and prospects in the light of impending doom.

It was content that it could do nothing about the general problems facing British exporters; it was opposed to change because change in others was harmful to it; it was disinclined to change with circumstances. The challenge posed by amalgamations and diversifications, which brought suppliers and competitors into unified ownership, e.g. Stanton or Pease and Partners (owning Skinningrove) and threatened to bypass or undermine the trade associations, (e.g. cross subsidising between departments to enhance the competitive position of such combines' finishing trades), was seen as unfair but accepted as such and not something to be taken up. Anderston was much concerned with its own relationship with Dorman Long (1920/21), realised its dependence upon them but sustained, for 40

years, close co-operation as a substitute for absorption.[15]

An approach by Cochrane's and its associates in the Cargo Fleet group (March 1922), one of the groups whose competition was causing the prospects for business to dim, was better received but the terms found no favour with either Watt or Mrs. La Terriere — who lacked the management's knowledge of the declining prospects. The Muirs, the other principal shareholders, stood out for £12 per share (compared with a market price of £8½) and the negotiations lapsed. Anderston's willingness to consider the offer undermines, somewhat, its pose of playing with a straight bat and its criticisms of many long-term collaborators, for bending the rules.[16]

No change in outlook or ethos could be expected from the changes in personnel, G.W. Dawson, Edward's son, became a director in June 1918 prior to succeeding Harvey as general manager at Port Clarence when the latter, in June 1919, succeeded Edward Dawson as chairman and managing director.[17] Harvey, aged 60, had been Dawson's principal assistant for a generation, having spent nearly all his working life with Anderston. Harvey's son, had he not resigned on health grounds (1919)[18] would have been G.W. Dawson's natural successor, thus continuing the managerial grip of the two families until c.1960. Cargill, more experienced than G.W. Dawson, but lacking family connexions, had to accept that whilst "we highly appreciate your services and are thankful for what you have done"[19] he would remain the junior in salary, status and prospects, despite his election to the board in January 1920.[20] Hardie continued to be passed over - a reflexion of his competent but unspectacular secretaryship.

Long service and internal promotion pervaded the departmental

management. Morris at points and crossings had joined the firm in 1891; J. Findlay, his assistant had been apprenticed in the Glasgow works, where his father had been employed since 1895. Findlay came south in 1927 and retired in 1960.[21] Adcock the foundry manager, had a similarly structured career.[22] Competent executives were produced, only exceptionally would someone be able to transcend the narrowing horizons of the technically competent but under educated amateur common to British industrial management. Inbreeding produced a resistance to change and innovation coupled to the veneration of the company's traditions. Loyalty might be a weakness.

In 1920 Harvey had, with difficulty, been persuaded to appoint, as a personal assistant, a graduate or trained accountant.[23] The appointee, Cunningham, was, typically, a Scot: a thirty year old Edinburgh accountant with no previous business experience. Little use was made of his professional expertise until 1928[24] by which time he had, without understanding the technicalities of iron foundry, been moulded into Anderston's ways of doing business.[25] What might have seemed an adventurous appointment failed to find an adventurous individual to make the company more dynamic. Cunningham, in common with his colleagues, lacked breadth of vision.[26]

Long service and family connexion as the route to success discouraged the ambitious. In November 1921 William Bow, the Port Clarence family manager, left for a similar position with the Tees Side Bridge and Engineering Company, taking several employees with him.[27] His new employers paid him more and awarded him a five year contract with a bonus related to turnover. Bow had previously considered joining Tata's (TISCO) in India. Presently Anderston's analyst would join Tees Side and, as a short-sighted economy measure, not be replaced.[28] The events had been foreshadowed by Murray's

leaving in the 1900s and prefigured the firm's inability to recruit and retain new blood post-1945. Its plant, management and methods were to seem increasingly moribund.

The unchangeable nature of manufacturing costs and practices and lax internal accounting were accepted[29] with the same fatalism as high exchange rates, tariff barriers, increased freight charges and a host of other problems, international, national and local, which harmed the business. Labour costs might be curtailed but Anderston's response was as sluggish as it had been in increasing wages to retain labour during the First World War.[30] The Glasgow works had, with encouragement from Middlesbrough, joined an employers' association; to meet the large scale amalgamation of foundry unions the employers' organisation had merged to create the North Western Engineering Employers' Association (1921) with whose help Glasgow clawed back more of the wartime increases than Port Clarence[31] despite its exposure to the "tyranny of labour"[32] between January and March 1919, when massed picketing and an engineering strike closed the works. Port Clarence wage rates had, for the past 30 years, been governed by those prevailing in the local iron industry.[33] Faced with difficulties in the early 1920s,[34] the works there formally joined the agreement between the Iron and Steel Employers' Association and the North East Coast Iron and Steel Trade s Allied Craftsmen's Committee. The adjustment of wages to the iron and steel trade rather than the engineering one was seen to be a mistake[35] which no-one was prepared to face the difficulties of undoing. How far this undermined further Anderston's ability to compete is unclear. Vaizey considers that wages in steel remained high despite the cuts imposed by the sliding scale mechanism in the early 1920s;[36] the high price of domestic ore ensured it, most noticeably in the 1930s, with protectionism.

Wages became a problem with the fall in output after 1923:[37] they rose from 19/6d. per ton of output in 1922/23 to 22/6d. in 1923/24; sundry wages in the steel sleeper shop were 1/1½d. per ton in 1914 and 4/9d. per ton in both 1919 and 1924.[38] Salaries at Port Clarence, far higher than those in Glasgow, were cut on three occasions; otherwise the response was half-hearted. Pensioning off old hands and some of the "dead wood" in the Glasgow offices was considered, together with a reduction in directors' fees.[39] Action was limited to a gradual reduction in staff as circumstances permitted. The wholesale sackings, suspensions and across the board pay cuts (10-25%) taking place at Cargo Fleet, Dorman's and Head Wrightson were discussed but not emulated:[40] strong leadership was lacking. Bonuses, varying but loosely with profits and now traditional, continued to be paid to the principal managers as they had been in 1910-12.[41] The payments did not relate in any clear way to an individual's contribution: there was no obvious incentive aspect to them.

Cargill was paid £1,000 plus directors fees (£263); G.W. Dawson his equivalent at Port Clarence had, through family influence, seen his salary increase from £1,000 in 1919 to £1,750 (plus fees) in 1923 to be placed in an "exceptionally good"[42] position in case the firm were taken over. Harvey was unable to set the house in order amongst his close colleagues precluding a consistent approach by the board to all questions of salaries and wages. Cargill advocated selective cuts not least because he objected to taking the same percentage cut as Dawson.[43] Hardie would sooner cut his own salary than that of his clerks, who were not overpaid by Glasgow standards. Harvey would have cut his own salary by £500-£1,000 had his colleagues not disuaded him.[44] Latterly he was inhibited by G.W. Dawson who would

not make a similar sacrifice, concerned as he was for his own position with Harvey's retirement in view and aware of his family commitments[45] (see below).

These difficulties underscore the lack of direction characteristic of the 1920s. Anderston did not adequately reward effort and merit, hence the loss of Bow; it did not seek to recruit talent; it was inefficient in cutting wages and salaries. Bonuses related to profit and turnover could be deployed where ownership and control were united (Tees Side); high salaries were acceptable where the owning family provided the management and could choose to be rewarded in dividends or salaries (Summerson's). Anderston's incomplete separation of ownership and control brought conflict: family connexions might ensure generous rewards for some at the expense of the most deserving; the interests of the major shareholders precluded the principal managers receiving large success-related bonuses of the kind Bunten had enjoyed when ownership and management were more nearly one. Anderston was both insufficiently generous and insufficiently economical to maximise the efficient use of its workforce.

TABLE 7.2

Average salaries (£ per week)
Excludes: Morris, Cunningham, Hardie, Forsyth and directors

	Middlesbrough	Glasgow (Total)	Glasgow Administration	Gl Machine Shop	Gl Foundry
1910	2/16/7	n/a	n/a	n/a	n/a
1915	3/1/0	1/17/9	1/5/1	2/2/3	3/6/8
1920	5/2/5	3/14/11	2/16/6	4/7/4	5/5/-
1925	5/17/9	3/13/5	3/0/4	4/9/-	3/19/11
1928	5/12/-	3/18/5	3/5/10	4/12/10	3/18/6
1930	5/15/8	n/a	n/a	n/a	n/a

Total Salaries (£ per week)

1910	n/a	n/a
1915	67/18/6	41/10/6
1920	112/11/-	112/6/8
1925	111/17/6	91/15/9
1928	95/4/-	66/13/9
1930	121/10/-	n/a

Total number of Staff

	Middlesbrough	Glasgow (Total)	Glasgow Administration	Gl Machine Shop	Gl Foundry
1910	c.20	n/a	n/a	n/a	n/a
1915	22	22	10	9	3
1920	22	30	15	10	9
1925	19	25	12	8	5
1928	17	17	8	7	2
1930	21	n/a	n/a	n/a	n/a

Source: D/AF 335-341, 345-348

TABLE 7.3 Salaries (excludes directors' fees)

	Managing Director	General Manager (G)	Secretary	General Manager Middlesbrough
1901	1500	610	700	800
1907	2000	445	455	1000
1913	2000	538	460	1200
1918	2000	540	n/a	1500

	Harvey	Cargill	Hardie	Cunningham	G. Dawson	Morris
1920	2000	1000	650A	-	1000	n/a
1921	3000	1000	650A	650	1300	n/a
1922	3000	1000	650A	650	1300	n/a
1923	3000	1000	650A	700	1750	n/a
1924	3000	1000	650A	700	1750	720
1925	3000	1000	650A	700	1750	720
1926	3000	1000	650A	700	1750	720
1927	3000	1000	650A	750	1750	720
1928	2450	<---	800	960	1140B	960
1929	2250	-	1050	<---	1140B	1050
1930	2250	-	1200		1200 <---	-
1931	2250	-	1200	-	1200	-
1932-6	2100	-	1120		1120	-
1937	2200	-	1200		1200	-
1938	2200	-	1200		1200	-
1939	1500	-	<---		1200	-
1940	1750	-	480		1300	

Source: D/AF 6, 136, 347-348

Salaries for General Managers (Glasgow) and Secretary include bonuses where appropriate to 1918. No directors received bonuses. Until 1927/8 they split fees equally: latterly each director received 250 gns.

A = plus bonus of c.£150 p.a.
B = A.K.L. Harvey

The interests of shareholders and directors did not necessarily coincide, but an (unstable) equilibrium was maintained through the good offices and influence of James Watt, in his dual rôle as legal and financial adviser to the company and to the La Terrieres, and of A.T. Harvey who was first cousin to the Muirs and La Terrieres as well as chairman and managing director.[46] The shareholders continued to rely upon the managers but the managers had to be mindful of the interests of a small group of large shareholders. Conservative business and financial policies suited both groups. Risk risked upsetting the coalition of interests.

The stock market price of the company's shares fell from over £8 in the early 1920s to close to par (£6) in the latter part of the decade before joining in the general fall of the early 1930s.[47] Unreconciled to its public status and with a thin market in its shares and a small number of large shareholders, the company arranged most deals between parties known to it and to one another. Moore and Snodgrass watched for any shares coming onto the market that those too might be absorbed within the charmed circle, however most disposals were likely to be known to the company in advance. Sale of much of the Houldsworth investment during the 1910s may have brought some temporary freedom to the market in Anderston's shares yet few of the new holders should be considered outsiders.[48] The policy of minimum disclosure in its published accounts continued until the enforced changes brought by the 1948 Companies' Act. The AGMs remained uninformative because those few shareholders who attended, in 1931 one, already knew privately what was going on.[49]

Dividends in the 1920s were pruned where provident but maintained at a level, never lower than 6¼%,[50] which was higher than in the troubled years pre-1914, through subventions from the reserve

funds. To the somnolent majority of the shareholders there was little to indicate difficulties in the firm's affairs which might call its management into question. One such as James Campbell[51] could see below the surface to become an increasing nuisance in his quest for information but, with his lack of family connexions, he could be ignored. When in 1923-24, in response to falling profits, the Houldsworths, Muirs and La Terrieres sloughed off their usual apathy to protect their investments, their uninformed intrusiveness resembled that of 1911/12. They had nothing, in commercial terms, to offer the company. Managers boasting of careful stewardship become ever more redolent of a land agent seeking to preserve an ancestral estate for, and despite the actions or interests of, its owners.

Between 1918 and 1939 the pattern of share ownship was reasonably consistent (See Appendix 3): some apparent changes masked basic continuity. The combined holdings of the directors, staff, former directors and partners and their families was c.90% in 1914, c.85% throughout this period and still over 80% in the late 1950s. The decline from 60% (1914) to 47% (1938) of shares owned by the partnership families was largely accounted for by the deaths and sales in the Houldsworth family.[52] The Muir holding was reduced in similar circumstances in the early 1920s and late 1930s.[53] A major reason for the increased numbers of shareholders and the decrease in size of individual holdings was the partition of the various Muir and Dawson trust holdings between the beneficiaries, some of whom used the opportunity to realise parts of their investment. These individuals were at an ever greater remove from active involvement with the foundry.

Sales by partnership families were arranged largely with and through Anderston to the current directors and employees; those by

former employees almost exclusively so. Faill's shares, sold after his death, passed entirely to insiders.[54] Rising figures such as Cargill and Cunningham pieced together holdings in a manner reminiscent of their immediate predecessors but on a more modest scale, beginning in the 1920s; the next generation of managers such as Adcock and Finlay travelled the same road after 1930.[55] Such gradual accumulation, often in anticipation of a seat on the board, exemplifies the continuity of personnel and the, largely, orderly succession to high office in the company. As the qualification for directors remained 500 shares, it was frequently necessary for existing directors to lend shares to qualify newcomers.[56]

The purchase of shares by informed insiders represented an extremely shrewd investment. With little activity in the shares throughout the period conditions were ideal. From the early 1920s the share price stood at a discount to net asset value; by the 1930s shares were trading below par, a considerable discount to the value of the assets backing them.[57] They formed a safe investment with a regular dividend and a high yield, attractive in their own right in a time of cheap money and poor investment opportunities. The regular dividend was in the interests of all shareholders in maintaining their confidence and income. In the event of liquidation a healthy, tax free, capital profit would arise. Regular repayments of capital liberated money from the business for the passive shareholders - and liberated it for re-investment in the purchase of further small parcels of the company's shares by the managers (who had little spare capital) to increase their hold on the business. The active management of the company's investments after 1927 provided the board with free financial advice from which their own investments and speculations could benefit. Watt seems to have introduced some of

his clients to the benefits of owning Anderston's shares, adding incidentally to the quantity of shares in safe hands willing to be influenced correctly.[58] Watt's family holding, pieced together like many others, was largely hidden from view within The Albyn Trust Ltd. and The Charlotte Trust Ltd., two tax-avoidance vehicles.[59]

Despite the acquisitions of those active in the business, more shares than ever were in dead hands which acted as a drag on development. After the La Terrieres and Muirs, the Dawsons held the largest block.[60] From 1919, and especially after 1927 when no member of the family was employed in the business, this took on the characteristics of the older family holdings, remaining for many years in the hands of trustees and executors before division amongst the cestui que trust, a collection of genteel spinsters, professional men and rentiers, domiciled in southern England, none well qualified for a non-executive directorship.[61]

Examination of the estates left by those with broad business interests and a relatively close involvement with Anderston (Livesey, Henderson, Watt and Faill) shews that Anderston shares formed typically less than 1% of the value of personalty. Those whose principal business occupation had been with Anderston shew vastly greater relative (and often absolute) investment. In all cases the fortunes of the latter group were more modest than those of the former and than those of their predecessors in the business, a trend evident before 1914. A.T. Harvey, cousin to the Muirs and Buntens, was the last manager of substantial means: £59,000 personal estate (1927) of which only 13% was invested in Anderston.[62] Otherwise, wherever Anderston shares represented a considerable portion of the personal wealth (and income) of an individual shareholder, that shareholder was an inactive rentier, unwilling, from the dead weight

of inheritance, to move money around to achieve either a spread of investments or a riskier, higher return.[63] Thus many large holdings in Anderston had, through the passing of the generations, come to rest in the hands of people interested primarily in steady, predictable incomes.

The field for recruiting non-executive directors had improved during the 1910s, as Houldsworth shares passed into new hands, e.g. Thomas Henderson, a prominent Glasgow East India merchant, became a holder in 1916.[64] None but Campbell held sufficient share but this could have been rectified, or the qualification reduced, had the existing directors exhibited any desire to broaden the board.[65] These potentially useful recruits who were strangers would have to be sold to the entrenched larger shareholders when the latters' attempt to introduce one of their own not conspicuously useful nominees (Sowerby) onto the board, was being resisted.

Anderston was neither a family firm nor an impersonal joint stock enterprise in which ownership was fragmented and completely divorced from managerial control: it was an uneasy and unwieldy hybrid. The managers might wish to retain reserves intact, having no clear use for them except to subsidise the continued operations of the firm (of which they were undoubtedly proud) and incidentally maintaining themselves in jobs. Shareholders, had they known the details of the firm's finances, might have wished to take capital out of it in order to conduct their own investment decisions (rather than participate in a company half iron foundry, half investment trust), or to have liquidated the concern whose break up value exceeded its share price. G.W. Dawson fell between two stools: anxious to maintain the business he was due to inherit but also to keep up its dividends, if necessary by raiding the reserves, because of the

"tight circumstances"[66] of his father and family. When an approach was made to take over the business, none of the minor and outside shareholders was consulted. Later Campbell, who owned 3% of the company, heard of it. Despite his criticisms of Anderston's meagre disclosure of its financial affairs, he accepted that as the large family shareholders had not wished to sell, the board had been right to say nothing to the rest.[67]

Falling profits and dividends in conjunction with the various offers to buy the business led the major shareholders to become more aware of its value. The Muirs launched one of their sporodic attempts to secure a place on the board. J.G. Muir's trustees were not seeking to help the business, merely to have a spy in the boardroom, through whom to obtain private information on dividends and future prospects ahead of the other shareholders. The trust's principal asset[68] was shares in Anderston, hence their concern; the nominee, Col. Edward Chaytor Sowerby, a Shropshire land agent,[69] was, at best, going to be another figurehead "such as Faill of whom one is enough"[70] and of no value, and at worst "A man poking into things...[who] must take his share of the responsibilities..." The potential of employment in the company as a form of out-relief for the family of major shareholders was a recurring problem.[71]

From the outset, Cargill assumed, correctly, that Harvey would be able to mobilise his personal prestige as chairman and his family influence to squash the proposal. What had been represented as a concerted move by the Muirs and La Terrieres (42½% of the shares) was a surprise to both Mrs. La Terriere and the other Muirs. J.G. Muir's trustees, representing 14½% of the shares, could be over-ruled much as J.G. Muir had been once a round of meetings between Harvey and

Watt, Watt and Mrs. La Terriere, Harvey and Mrs. La Terriere, various of them and various Muirs, had clarified the position. Mrs. La Terriere, no doubt at Watt's prompting, expressed her confidence in the board and the business. However, "the rise of Labour" and the political and economic climate made her assert that "all desire to realise".[72] Thus, by 1924, the La Terrieres, J.G. Muir, M.A. Muir and Houldsworth interests were all[73] more or less likely to be sold, in whole or in part, casting uncertainty over the company and limiting its scope for future developments at precisely the time that the chair and segments associations were collapsing, the sleeper association was in difficulties and the Indian market was drying up.

A liquidation of the business was likely to pay over £7 per £6 share;[74] it would also "put one or two useful people on the street". Harvey vaguely considered it as an option[75] to be laid before the shareholders. It was tantamount to an admission of failure by him and his colleagues and likely to lead to the appointment of either a shareholders' committee or a new board or both;[76] it was unwelcome to Cargill (and Dawson) who lacked Harvey's private resources and had many years service to give. The British Hydraulic Foundry[77] provided a recent precedent, undertaking a successful voluntary liquidation in late 1923 when its chair and segment business collapsed. That company had an assured purchaser for its plant, an adjacent shipyard which was represented on British Hydraulic's board; the outcome was sought by the chairman and managing director of British Hydraulic, whose family were the principal shareholders. Anderston's action would have been through loss of nerve with little prospect of selling the business at a good price. The company was, despite difficulties, making trading profits and continued to do so. Anderston rallied support from the shareholders by making a plausible, if not entirely

honest, statement concerning the restrictions upon trade and the unfair practices of recently established combines seeking to crush the independent firm.[78]

Liquidation would be more attractive to the shareholders than to the managers; diversification might be the converse. Most suggestions resulted from approaches to Anderston, not by it and caution was triumphant over enthusiasm. To manufacture Bates' poles or to establish a branch plant in India, whatever the ultimate success of the venture, would require a large investment on which no return could be expected for several years. Reserves on which the company relied to generate large portion of its dividend, would be dissipated. As the dividend declined, the restiveness of the shareholders would increase, the future of the business would be placed in doubt with the risk outright failure and liquidation at the behest of the major shareholders. It would be difficult to raise new capital without harming relations with the principal shareholders who, as they attempted to realise their holdings, could find the market flooded with new shares.[79]

The company could afford to avoid risk, it might not be able to afford to take it, in the short term.[80] When, in 1924/25, it became clear to the directors that the business was experiencing more than a cyclical slump - worse times there had been but never had prospects been so bad for so long - its reserves were already committed to counterbalancing declining trading profits.[81] In the post war boom, there had been no obvious need to diversify although the finance for it was available.

Harvey was disconcerted by developments, Cargill was more practical: Anderston should be interested in any new products and use any new materials impinging upon its existing product range.[82] A low

risk product with a guaranteed return, however modest, would suit Anderston well but speculative developments, such as gas engines, would not. If there were no new markets for traditional products and foreign and native competition was restricting existing markets, if little could be done about exchange rates, tariffs and high British production costs (shorter working hours; high taxes, fuel costs and freight rates), and if heavy expenditure was to be avoided, a new foundry product was required. From experience in Scotland it was clear that profits were to be had in domestic light castings, which proved to be the case.[83]

It was better to sit on reserves than to risk "frittering" them away[84] hence the firm should secure the hatches and hope to ride out the storm. Competitors who took cut price orders to spread overheads should not be emulated; their resulting large losses and financial difficulties were viewed with detached superiority.[85] The Development Fund, less £1,200 for the Stent experiments, was maintained as an inner reserve, not for development. A temporary overdraft[86] was preferred to selling government stock. Age and experience counted against Harvey's responding adequately to the challenge: he was infused with a fatalistic pessimism, so he would buy no more shares in Anderston but invested in gilts. Cargill, more experienced in managing adversity, was left to encourage his colleagues to take work for Port Clarence, if material and labour costs were covered, just to keep in the running.[87]

Late in 1926, Anderston, bereft of the protection provided by the defunct Associations, and subject to increased competition, alone in a disturbing world, sought to turn to advantage its enforced and increased closeness with Dorman's. If Dorman's would absorb the shares which seemed about to be offered for sale, Anderston would

assure itself of raw materials and subcontracts on favourable terms. It would have freed itself of unreliable, rentier shareholders whilst retaining its own management and some measure of independence. It could call upon Dormans' large reserves of business experience and institutionalise the personal friendship with Sir Arthur Dorman. Unfortunately, Dorman's had no interest in anything less than complete ownership.[88] Discussions ceased. Five years later J.B. Peat, with a greater singless of purpose, sold Tees Side Bridge to Dorman's whilst retaining effective control, with the existing management, of a now wholly owned subsidiary. Had Anderston persisted with negotiations it might have been able to reach such a result.[89]

The managers had left diversification until the funds were tied up; the shareholders had left it too late to escape with profit. Shareholders who came in at a high price were likely to prove troublesome when, as seemed certain, dividends fell. Anderston preferred the devil it knew: shareholders who had shewn that they had no great desire to hold its share but who had been successfully placated in the past and had continued to own them. The Muirs, who had held out for £12 a share in 1922, could realise an average of but £6/10/- when selling 958 shares in late 1924. Several Glasgow people were rumoured to be interested in buying small parcels for c.£8 but a large sale would flood the market. The Failles, Griersons and their contacts arranged to take most of the shares; James Watt, the company's legal adviser for 20 years, who was being drawn further into its affairs during the 1920s, took the rest.[90] He was being placed in a position where he was well known to the managers and the major shareholders[91] and could emerge centre stage from the crisis of 1927.

The sudden death of G.W. Dawson (22 August 1927) and the unexpected death of A.T. Harvey (20 October 1927) undid the good work of 1923/24 of calming the shareholders.[92] The large organisation benefits from a structured management, extensive enough to continue despite disruption and no worrying, close-at-hand, shareholders. For small companies, as for partnerships, individuals were important and their sudden departure could have great consequences. In the resulting shake-up decisions which had been postponed were made and T.P. Cargill came to unexpected prominence. The possible re-invigoration of the business by him was, however, soon to be submerged in the world depression.

Harvey (aged 70) was on the point of retiring in favour of G.W. Dawson, twenty five years younger. Morris, the manager of the Points and Crossings Department, had been approached during the summer to become a director, with the formal offer made in September, after he had completed the purchase of the qualifying shares from Edward Dawson and after both Dawsons had died.[93] Morris was the senior departmental manager and his department was, at the time, the principal maker of the company's profits. He was not, however, destined for higher things. Cargill, who had occasionally commanded Port Clarence in Harvey's absence, was perhaps intended to be Dawson's successor as works manager there when Dawson had succeeded Harvey.[94] With the mounting losses and uncertain future of Glasgow, it was in the interests of all that Cargill came south. His abilities in making the best of a bad job in Glasgow from 1912 had been recognised; Harvey had consulted him fully in all developments of the business; it was he who had introduced the company to the

rainwater and light-castings business, one of its few successful diversifications. Cargill arrived in Middlesbrough to replace Dawson, almost immediately took over the running of the business in Harvey's absence and was catapulted into the office of de facto managing director on Harvey's death.

Here he was faced by anxious enquiries from the Muirs, Dawsons and La Terrieres, all with a large capital exposure.[95] Part of the difficulty had been foreseen before Harvey's removal. His son, Kenneth, (A.K.L. Harvey) temporarily in England, had been approached with his father's approval to rejoin the company and re-establish himself in the line of succession.[96] Over the next few weeks, Cargill held interviews with Watt and both of them with Mrs. La Terriere from which a scheme for reconstructing the board, reasonably satisfactory to all parties, emerged "to end the present agitation".[97] As a result, the suggestion by the Dawson's executors that the Peat accountancy firm, with its experience of Teesside industry, be approached to investigate the state of the business and, more tentatively, that Shaw, the steelfounder, join the board, could be ignored.[98] Under the scheme the permitted number of directors was increased from five to seven and the qualification halved to £1,500.[99] Faill, in his seventies and never very active in the business, declined the chair[100] at an early stage, which allowed Watt to become chairman. He was placed to maintain the type of influence that Harvey might exercise over the principal shareholders and the Muirs and La Terrieres approved the appointment.[101] Twenty years' experience of the firm and other commercial directorships made Watt useful in his own right, whilst presenting an attractive image to the outside shareholders. In part he was a representative of the La Terrieres but never their delegate; he was his own man, and a proved

and mutually trusted link between the managers and Dunalastair. A.K.L. Harvey, whom Cargill intended to equip to take over in due course as managing director, represented the family's involvement in the daily management. Cargill would then retire from his regency when the lost heir came of age.[102] Col. Sowerby could not, in the circumstances, be kept out: to the generality of the shareholders, he was presented as having considerable business experience, like Faill in 1912, but his shareholding was lent to him by the Muirs whose creature he was seen to be.[103]

On 21 January 1928 Watt took the chair; the other new directors joined the board in February with Harvey as general works manager responsible for production and manufacturing activities in all departments save switches and crossings where Morris was in full charge. Cunningham became "Accountant" supervising all clerical and office activities and assisting in tenders.[104] The division of directors' fees was revised, to give the chairman a double share and the executives nothing. Whilst certain salaries were increased, the overall burden of salaries to full time directors fell from £7,220 p.a. to £5,310.[105] Deliberately, no one was appointed to succeed Cargill in Glasgow, and in the absence of higher technical management there, Hardie was given instructions on the reporting of orders and the minimum costings at which orders were to be taken.[106]

There was ample evidence of a new regime: board meetings were held more regularly, minutes written up more fully, various office and, later, banking and accounting practices were overhauled. With a larger board including outside directors, the old informality and the concentration of powers within and outwith the business in the person of a joint chairman and managing director, had gone. In the previous decade the only significant expenditure on buildings had followed a

fire in part of the Port Clarence works in 1923. Previously the directors had happily continued with things as they were - in contrast to the new foundry laid down by Tees Side Bridge. The obsolescence of various of the machinery in Glasgow had been evident pre-war; during the 1920s the Factory Inspectorate[107] came to complain of the standard of buildings there. In busy and profitable periods there was little need for expenditure to improve the works and no long term thought given to it; in depressed ones there was time to think, and a need to cut costs, but either little money available or an unwillingness to take the risk and make it available.

Cargill, who previously had favoured expenditure on the Bolt Shop[108] was now able to use £1,400 to install a travelling crane and provide cover for various areas formerly out of doors.[109] The construction of some new bolt forging machines[110] provided work for the Glasgow machine shop. Consideration was given to extensions and improvements to the Points and Crossings Department. £3,500 was spent replacing some old cupolas by two modern ones[111] to help improve the company's competitive position in its pipes and manholes business. The wringing of hands by Harvey had made way for firmer management in the partnership between Watt and Cargill which aimed at keeping the business ticking over until better times returned.

Not replacing Cargill in Glasgow led to rumour of closure of the foundry there.[112] Although the losses of the Glasgow foundry mounted, its strategic usefulness in relation to the Caledonian railway had ceased and the business as a whole was not generating the levels of overall profit required to carry it without inconvenience, closure was a deliberate choice, not an overpowering necessity. Immediately after the May annual general meeting, at which nothing was mentioned, the board decided to close it from June 27th 1928.[113]

The fate of the foundry's buildings and site had, however, been under discussion since late March.[114] Perpetual ground rents of c.£1,000 p.a. were charged on the site, whose quick disposal was thus particularly desirable. With the depressed state of the local economy, there were few interested purchasers: the prices of all industrial sites in the city had fallen considerably. The foundry buildings which were of little value were demolished once it was clear that they[115] could not be sold; part of the equipment was transferred to Port Clarence but much of it (e.g. the chair-making apparatus) was scrapped to deny it to would-be competitors.[116]

The burden of implementation fell upon Hardie whose protective attitude to his own staff has been indicated. By their own lights the directors behaved well to their employees: the foundry manager was given three months' salary (£87 10/-) as compensation and kept on into August supervising the disposal of equipment etc.; workmen with more than 10 years service received a fortnight's pay for every five years worked. Although the board was capable of acts of generosity, it turned down all special claims for workmen in the Glasgow foundry for ex gratia payments beyond the strict limits set down.[117]

Hardie had been warned immediately after Harvey's death that changes in the business were inevitable and great changes probable.[118] Despite re-assurances from Cargill that there was, for the present, no intention of closing the machine shop, that Hardie would not be superseded nor his work changed, that the company was generous[119] to its loyal servants, the uncertain future of the company in Glasgow, the promotion to the board of Cunningham, a trained accountant, whilst he was passed by again, and personal distress at the foundry's closure, drove Hardie to nervous collapse and death.[120] A welcome opportunity for further rationalisation was

created allowing arrangments "which perhaps"[121] would not have been considered in Hardie's lifetime to be introduced. Cunningham became secretary with J.W. Finlay, coming south as his assistant.[122] A chief clerk and three assistants formed the residual staff in the Glasgow office to handle the clerical and financial affairs of the machine shop. In belated recognition of reality, the principal financial transactions and records were removed to Middlesbrough. Cunningham then overhauled the accounting practices of the business and created, inter alia, a series of sales day books which overcame various of those problems of loose internal accounting which A.T. Harvey had ignored. As with so many other aspects of the business, the previous pattern of passing Port Clarence accounts to Glasgow for authorisation and transmitting them back to Port Clarence for payment, rational when Bunten and other top management were based in Glasgow, had been allowed to continue unquestioned as to relevance or suitability.[123] The presence of a token administrative staff in Glasgow shewed an unwillingness on the part of the company, in the wake of recent disturbances, to be seen to be abandoning what was left of the business in Scotland.

As business declined, the need was felt to dispose of workmen, many long-serving and some decreasingly efficient through increased age, from Port Clarence. It was important to treat old workmen well to keep the good will of those continuing with the company. There was not the means of providing a proper pension scheme but the inner reserve of the Employees Benefit Fund was available for making occasional grants, with the model of the Glasgow redundancy scheme to hand.[124] During 1929, attention turned towards compulsory retirement and ex-gratia weekly allowances.

Renewed ill-health provoked A.K.L. Harvey to seek to resign in

June 1929; despite Cargill's best endeavours, he was allowed to do so in October.[125] He was not replaced: some of his duties passed to Morris whom Cargill was anxious not to enhance in status lest further rivalries with Cunningham be sparked off.[126] The departmental managers now appointed were directly responsible to Cargill. This structure lasted throughout the ensuing decade and achieved a further reduction in management salaries.

The closure of the Glasgow foundry required a little extra depreciation but did nothing to undermine the balance sheet. Modern reaction to the amputation of an unrecoverable, loss making activity would be to enhance confidence in the health of the amputee. To sugar the pill for the different ambience of the 1920s, Anderston anounced the repayment of £30,000 capital to its shareholders in the same annual accounts which expressed regret at the closure.[127] The company's private accounts shew £192,000 (net) free to repay £180,000 capital from liquid assets, irrespective of the value of the plant.[128] Further repayments would follow. Meanwhile the shareholders' minds had been set to rest and no murmur of dissent interrupted the other developments of 1929-30.

After 1928 the business of the machine shop declined further and its losses increased. With the growing financial weakness of Port Clarence the company's hand was forced. Probable closure was announced at the annual meeting (May 1930)[129] with Cargill left to supervise the details. The several gratuities to the redundant were made, absorbing c.£1,000; the works was closed at the end of 1930.[130] M.L. Cargill and J. Callum were kept on to arrange the obsequies before being transferred to Middlesbrough;[131] others were kept on as required until late April.[132] An auction of plant and machinery, with the proceeds of private orders to intended individuals yielded

£3,367.[133] Technicians were lent out to help purchasers familiarize themselves with their new acquisitions.[134]

No alternative to closure was considered. The machine shop's limitations had long been known to Cargill who was the director best qualified to judge them. Orders had so far diminished that "staff almost outnumber... productive workers".[135] The prolonged severe depression of the local textile and engineering industries indicated even worse prospects. So unlike were the two halves of the business that no artisans could be transferred to Port Clarence, especially after the proposal to spend a few thousand pounds on a building to house machine tools there, that the plant be self-sufficient in repair work, had been abandoned.[136] Watt's later suggestions for speciality items quite beyond Port Clarence's manufacturing ability could have borne fruit in Glasgow, however Cargill could "see no future for Glasgow even though we attempted to re-organise it and re-equip it in order to manufacture... some speciality".[137]

The former offices, 100 Cheapside Street, were sold to British Oil and Cake Mills for £25,000, more than their book value; other portions of the property were sold piecemeal, demolished, or surrendered to the feudal superior,[138] a process not completed until January 1935. Like the foundry, the machine shop had been thoroughly depreciated: the extra sum required to write off plant and tools (£1,247) was easily found from inner reserves.[139]

The 1930s

The new regime of 1927/28 administered the existing business more efficiently but by training and inclination was wedded to continuity. The change in personnel, involved no rift with what had gone before: proprietors, managers, products and methods in 1939 would have been recognisable to those concerned with the business before 1914. During the 1930s, all other departments of the business experienced a severe decline in orders and traded at a loss: the foundry had less far to fall and ceased to overshadow the other departments as the root of all difficulties. Using investments and their income to make good losses and provide dividends became more explicit during the 1930s with the active management of investments a prominent aspect of boardroom discussions, but this too may be seen as a more efficient approach to what was being done from the middle 1920s. Likewise the relationship between managers and owners evolved along well charted courses.

Despite closing its works, Anderston could not contemplate cutting its links with the city which had given it birth and where most of its managers had trained. The registered office remained there, with a local accountant employed as registrar; the annual general meetings took place there; the firm's auditors, stock brokers, patent agents, stock market quotation and heart belonged to Glasgow.[140]

Unlike many of its competitors, Anderston continued paying regular dividends and avoided interference from either creditors or bankers. Dividends, which had increased slightly in the late 1920s fell to 4% (1930/1 - 1936/7) but began to recover before the outbreak of war. Investments, which had shewn a capital appreciation of £2,500 in

the decade to 1931, shewed one of £39,000 in the ensuing five years to permit the payment of 11.67% in supplementary tax free dividends during 1935-37. The general reserve was maintained (at c.£70,000), the inner reserves and the Workmen's Compensation Fund were drawn upon to make good net losses and to pay dividends to be replenished as need be, from successful speculations.[141]

Anderston's stated policy of keeping intact its investments in order to obviate borrowing working capital from its bankers[142] once prosperity returned was reversed. As prospects and trading diminished further the company was left with an enbarassment of cash. To calm the shareholders further repayments of capital could easily be made: £30,000 in June 1932, a further such sum two years later.[143]

More intensive management of investments also dated, by coincidence, from summer 1927 when £10,000 London, Midland and Scottish Railway 4% debentures and £7,000 New South Wales government stock were purchased with the proceeds of matured gilts. Bank deposit receipts (c.£20,000) gave way to 3 to 5 year loans to the Leith Docks, Scottish Wagon Company and Mersey Docks and Harbours. The first two suggest the influence of both Cunningham and Watt with their various financial contacts in Edinburgh. Watt's financial experience brought him increased prominence in the counsels of a company which, despite capital repayments, was worth more to its shareholders dead than alive.[144]

An unsought benefit from the cut in interest rates and the related War Loan conversion undertaken by the National Government during its first year brought Anderston's first large capital gain (£7,500 on its holdings of gilts). Investment, thereafter, was made more with a view to capital appreciation than to a high yield.[145] The advice of Moore and Snodgrass, the company's Glasgow brokers, was

regularly sought from 1931[146] leading to the purchase of Dominion government securities, Canadian railway debentures and industrial debentures, e.g. British American Tobacco. Tilneys, a Liverpool broking firm specialising in insurance shares, was approached in 1932 becoming one of Anderston's principal advisers as its holdings of insurance shares mushroomed.[147] On other occasions Anderston sought advice from the Bank of Scotland[148] and acted upon tips given by James Watt to invest in the equities of Brown Brothers, an Edinburgh engineers and the Lucas electrical company (1936).[149] In investment as in business, Anderston sought financial benefits free from great risk. Short term investments were rotated between bank and building society deposits, treasury bills, Leith Docks loans and so forth.[150] With the sale of home railway debentures, (c.£48,000, in mid-1932) because they were proving of no value in securing Anderston business, the separation of investment policy from trading policy was completed.[151]

In 1935, with capital reduced by repayments to £90,000, assets included £102,670 in permanent investments, £15,000 in temporary ones, £10,400 in deposit receipts and c.£20,000 in cash, bank accounts and other realisable forms.[152] As business picked up during 1935-36 Anderston preferred borrowing on overdraft (tax efficient) to selling any substantial part of its investments, contrary to its averral of 1930.[153] The effort devoted by Anderston to the management of its investments may well have been unusual; its financial position was not. Railway and General Engineering was to repay half its preference capital in the late 1930s. Ibbotson Brothers, the bolt makers, published accounts in which £115,000 stood as "sundry creditors" - Watt believed that the bulk of this was an inner reserve sufficient to repay the entire capital of a company

whose shares traded at a discount like Anderston's.[154]

Anderston proved more successful in the 1930s than in the 1920s in cutting labour costs. From 1931 all workers with 30 years' service or who had reached 70 years of age could retire on an allowance of 10/- a week with compulsory retirement at 71 on the same terms.[155] As conditions worsened pressure was increased to retire at 70 rather than 71 and various discretionary payments of 5/- a week were made to long serving employees not yet 70.[156] Allowances were cut by 10% in March 1932, following cuts of 5-10% in salaries throughtout the business in the previous October.[157] These latter were worked by Cargill and his colleagues in May 1931;[158] further ones in October 1933[159] were imposed by Watt, disappointed with recent financial results, to forestall any criticism from the shareholders. Misery was to be shared: between 1930 and 1933 the directors' fees were cut from 1000 to 525 guineas, achieved in part through Faill's resignation.[160] Salaries were restored to their 1930 levels between July 1935 and July 1936 for the staff, and in April 1937 for the directors. Fees did not reach their former level until after 1945.[161]

Although the number of weekly salaried staff at Middlesbrough remained at 17-20 from the late 1920s to 1939 there was a reduction in the level of salaries and the absorption of some individuals from Glasgow.[162] There was greater flexibility for hiring, firing and suspending the productive labour force, a variable and floating commodity, which fell from 550 in 1930 to c.200 in 1933 returning to 450-500[163] in the late 1930s. However, Cargill "never had the courage"[164] to undertake a change in wage policy which might have produced further economies by cutting Anderston free from the steel industry. In August 1937 under pressure from the General and

Municipal Workers' Union and lagging behind Head Wrightson, Pease and Partners and Tees Side Bridge, Anderston granted a general 3/- per week wage rise which marked the beginning of a quarter century of wage inflation.[165] Steel industry wages had maintained their monetary value and purchasing power during the 1920s. They surged forward with the price of materials from the mid 1930s (an increase in real and money terms) but, as we have seen, tariffs protected prices. Anderston failed to share the revived (domestic) prosperity of the steel companies: it was a victim of their increased prices and the increased labour costs which they could afford and pass on but which it, in both cases, could not.

TABLE 7.4 Steel Industry Costs

	1929	1933	1936	1938
Labour	100	99	102	122
Ore (home)	100	88	96	114
Ore (imported)	100	75	76	127
Scrap (home)	100	58	81	103
Scrap (imported)	100	67	88	151

Source: Burn (1940) table XLIII

Cargill's retirement in October 1938 aged 66, brought the orderly succession of Cunningham, there being no family candidates, who was nearly 20 years younger. Morris staked his claim as the more senior director and the one who possessed the usual technical background. His age and recurring ill-health ruled him out, as perhaps did his character.[166] He remained something of an outsider. Morris was recognised de jure as general works manager and later compensated with a salary increase (£1,300) and assured of the high

value placed upon his work. Cunningham, victor in a rivalry which had seen them vying for salary and status for a decade, received £1,500 p.a. - half the salary A.T. Harvey had enjoyed.[167]

Cunningham revived the idea of appointing an assistant for Morris, first considered in late 1937. Cargill convinced Harvey that Adcock, the foundry manager, had now developed sufficient strength of personality to complement his undoubted technical ability. There was no shortage of suitably qualified younger engineers, as Cunningham admitted, but after much dilatory deliberation,[168] the safer and older pair of hands was preferred. An outsider would "need time to assimilate our methods".[169] Recruiting such an individual was left until 1946 when the supply of suitable Anderston-trained apprentices, which had ceased with the running down and closure of the machine shop, dried up.[170] (The last of these was little younger than Cunningham). The decisions made and avoided in 1938/39 led directly to the successive crises of the 1950s.

Adcock was inducted in February 1940 in time for the final breakdown in Morris's health. Under pressure, Morris agreed in May to retire from September 1940. To his chagrin he, unlike Cargill (the exception) was to be made to give up his seat on the board. His death in July resolved the issue.[171]

Sowerby had settled into his rôle of family representative without becoming a mere mouthpiece of the Muirs' private interests. He was amenable to Cargill's guidance in what he reported to them.[172] His approaches to Murrough Wilson and E.B. Fielden kept Anderston's name and products before the eyes of the L.N.E. and L.M.S. railways even if he could not exert direct influence on the manner of former times.[173] Neither his sudden loss in March 1934, nor that of the elderly Faill, who resigned in May 1931 as the company's last links

with Glasgow were severed, was a great one.[174]

Cargill had become sufficiently known from his work in 1927-28 to call directly upon R.B. Muir and, with Watt's concurrence, suggest A.K.L. Harvey as best qualified to become family director. Muir accepted this proposal, which forestalled any outside nomination by the various Muir trustees and advisers, and helped secure Mrs. La Terriere's approval. She, allegedly, favoured either her cousin, General Sir William Liddell, late of the Royal Engineers and with Indian contacts, in the belief that he would have influence in obtaining War Office contacts, or his brother Guy. R.B. Muir realised that orders secured through influence were largely a thing of the past.[175]

The board was strengthened by a family representative who, as a sometime insider, could be expected to put his duty to Anderston before that to his cousins. In the face of further family pressure, the board would present an united front. Moreover, Harvey enjoyed useful knowledge and contacts. The coincidental repayment of a further £30,000 of capital may have been timed to maintain confidence amongst the shareholders.

Through Sowerby, the Muirs were told that the difficulties experienced by the business were largely the fault of others such as the Indian government to whose politically motivated policies no commercial response was possible[176] - an incomplete picture. To fill the plant with work at any prices as Head Wrightson and others had done, would cause the reserves to be frittered away.[177] In the absence of export rebates,[178] the re-organisation of the steel industry behind tariff barriers could only harm domestic purchasers, and finishers geared to exporting. The informed would understand Anderston's failure to achieve better results in 1935/6 when the

steel industry's recovery was apparent; J.G. Muir's trustees seemed uninformed.[179] Watt's explanations of the slow recovery of Anderston's home and foreign railway customers and the uncertain prospects for the business[180] did not enlighten them. Instead, they canvassed Mrs. La Terriere with a view to winding up the company. She favoured an outside review of Anderston but Watt, using his dual position, firmly on behalf of the company, brought her round. She was easily swayed.

The current position was explained in a letter written for Mrs. La Terriere to see but, ostensibly a private one from Cargill to Watt:[181] whereas numerous established steel and engineering companies had failed or had to endure financial reconstruction, wiping out most of their capital, Anderston had been congratulated by an informed local shareholder (Shaw, the steel founder) for coming through the depression in such good shape. All departments bar steel sleepers were busier than for eight years past. The 1931 wage cuts could be restored.[182] Little could be done to reverse the railway companies' trend to self-sufficiency in permanent way supplies and the development of new products was hamstrung by the deficiences of Anderston's plant and site, not by a want of keen management. Success in light castings could not be repeated by diversification into the cast iron pipe trade due to the dominance of it by Stanton and Staveley (see Appendix 1).[183] Large segment orders for London Transport were imminent. "There have been times... when I could have filled the foundry up to capacity, but at such unremunerative prices that our losses would have been rather disastrous...". Cargill might take more risks than Harvey but both had consciously balanced the preservation of the shareholders' assets against the securing of business.[184]

Much of the above was true but the quality of the management was overstated. A keener crew would surely have made a greater attempt to remedy the deficiencies of the plant or extrapolated earlier trends towards self-sufficiency by many of their railway customers. Much blame was imputed to former (laxer) managements, more closely associated with the large shareholders. The debilitating effect of a body of fickle shareholders seeking to use the company's boardroom as outrelief for stray kinsmen and to secure privileged information was, naturally, understated. Mrs. La Terriere, who felt some sentimental attachment to the business, not shared by the Muirs' London solicitors, was brought to agree that she would not force a liquidation provided that she received regular dividends.[185] An early benefit was that no further pressure from shareholders followed from R.B. Muir's death (March 1937).[186] The position that had obtained since 1924 was made explicit curbing, more effectively than Mrs. La Terriere realised, the future development of the business.

The better than anticipated results of 1936/37,[187] could confirm to the managers that their policy of hanging on had been justified with the revival of traditional business, and to the shareholders that liquidation was undesirable as profits and dividends rose:[188] Watt, briefed by Cargill that Guy Liddell whom Cargill was set against,[189] could be of no conceivable use as a director, had, during his negotiations at Dunalastair, brushed aside Liddell's attempts, with uncertain backing from the La Terrieres and Muirs, to insert himself. James Campbell, likewise quiescent during the depression, could not be so easily contained. He resumed his campaign for greater disclosure in the company's accounts, which proposition the 1935 annual meeting, attended by the usual few

insiders, rejected. Old attitudes persisted: to disclose information might encourage would-be competitors.[190]

Despite his protests coinciding with difficulties with the family shareholders, his lack of links to them diminished Campbell's power to threaten and he could be brushed aside. In 1937 and 1938 he alleged, accurately, that the failure to reveal investment income "deliberately obscured" trading losses, that only a minority of net assets was employed in the business and that by retaining investments the board paid itself salaries, fees and dividends yet could not produce reasonable trading results. Campbell was not prepared to attend the annual meetings; he was, as he had been a decade earlier, given some confidential information on the company in the hopes of silencing him.[191]

Campbell's statement that shareholders should press for a liquidation or reconstruction of the firm coincided with Cunningham's appointment as managing director. The consequences of two centres of disenchantment were made clear - a breathing space had been secured but:

> "It is obvious that unless the commercial profits are substantially increased, the great body of shareholders may press for realisation. In any event, Mr. Watt and Mr. Harvey wish to make it clear to Mr. Cunningham and Mr. Morris that they may decide to recommend that no less than £1 per share and possibly as much as £2 per share should be repaid within the next year so as to give... a large proportion of the present market value of the shares..."

to the holders, giving due consideration to the financial requirements of the business and its possible expansion.[192] Trading conditions in 1939 and the reduction in the value of the company's investments as the markets reacted to impending war forestalled any such action.[193]

Campbell in his last assault, complained to Anderston's

auditors who "to a certain extent" shared his views.[194] Cunningham accepted that certain changes in the published accounts were desirable but little was done until the 1948 Companies' Act compelled it. Anderston's auditors assured it that the accounts obeyed the letter of the law: it felt no need to join the trend to greater disclosure.[195] It was as yet uncertain how much the proprietors were entitled to know of a company's detailed results.

Despite their occasional intrusiveness, shareholders made little effort to be informed of the development of the company. In a typical year, the A.G.M. elicited only 11,400 proxie votes of a possible total of 30,000: 5,000 from the La Terrieres, 2,650 from the directors, 1,200 from the Muirs and 1,900 from varous erstwhile insiders.[196] Such shareholders neither deserved nor obtained dynamic management. By delivering steady dividends, through the not unwilling pursuit of unadventurous policies, the managers could hope to keep most of the shareholders quiescent most of the time.[197] Events between 1924 and 1938 which disturbed the peace left behind a strong dislike of the Muirs and Campbell, particularly on Cargill's part. War, and post war prosperity, were to allow the management to liberate itself from thraldom to shareholders who, having nothing to contribute, should, it felt, not be allowed to do so.

The first half of the 1930s was a period of retrenchment in the face of a severe fall in demand: after 1935, with a return to limited prosperity, consideration was given to new products and to spending money on ways of improving efficiency and reducing costs. Cargill was aware, for example, that the preparation and conveyance of sand for use in moulds could be much improved but he felt that the small savings would not justify the large expenditure, so that nothing was

done until the 1940s.[198]

Responding both to the upturn in business and a need to shew the shareholders that the management was as attentive to new possibilities as it claimed to be, Watt made numerous suggestions for new products vitiated by his lack of practical or technical knowledge. He sought ideas from Cunningham and Morris for a new product which would yield a high return, increase profits, thus increase the value of the shares so that the company would be worth more intact than partitioned and the threat of liquidation would be lifted.[199] Cunningham, with his accountant's eye,[200] felt that considerable scope for cutting manufacturing costs existed which should first be pursued. He arranged visits to various foundries and, in February 1937, presented a report[201] to the board, based on what he had seen, on the introduction of labour saving methods throughout the works. Four months later, Cargill was set to formulating a scheme for a travelling crane with an electro magnet for handling pig iron and scrap and two new cupolas with electric self-charging apparatus. A return of 2½% - 7% was anticipated on expenditure of c.£5,000,[202] which excluded the cupolas. Harvey, aware of the company's low profile and reliance on arranged orders for products manufactured to the designs of others, felt the re-organisation of the works should go hand in hand with re-organisation of its sales methods.[203] Conversely, Cargill felt that the re-organisation and mechanisation of Anderston's foundry was not desirable in view of the low grade of business done and its nature.[204] A re-organised foundry would allow sales methods and products to be re-organised; without a change in products and sales methods, a re-organisation of the foundry could not be justified. Watt, whilst wishing to cut costs, wished to avoid cutting the

numbers employed.

Eventually (May 1939) a limited programme of spending on automatic charging apparatus was ordered to proceed, despite Watt's repeated qualms at the loss of jobs, connected with the estimated £313 annual savings in wages from the scheme.[205] Apart from the employment of a consultant to achieve savings in the company's use of electricity, no further development took place before the outbreak of war.[206]

Watt was keen to promote co-operation with Bruce Peebles, the Edinburgh electrical contractors of which he was chairman, and had mooted it first in 1931.[207] In early 1936 he proposed that the two firms move into the rapidly expanding market for aircraft fixtures in co-operation with Brown Brothers, hydraulic engineers based in Edinburgh.[208] Anderston had the money, Bruce Peebles the expertise and Browns, presumably, the contacts and contracts. Anderston might have done such work in its machine shop: at Port Clarence it lacked the requisite quality of labour and special equipment; many firms in the Midlands had experience of the work.[209] But instead of investing directly in new activities linked to rival modes of communication (road and air) and new technologies, Anderston invested a portion of its reserves in the shares of Browns and the Lucas company.[210]

Less adventurous diversification into more familiar areas held greater appeal. D.G. Bisset,[211] as intermediary, brought Tyer and Company, a well known maker of railway signalling apparatus into contact with Anderston. Tyers, having closed its Darlaston works in 1934, sought a sub-contractor to manufacture for it, the possibilities of which Cargill fully investigated between June and September 1936. His hope that Anderston's existing plant could handle the bulk of the work was false; a considerable (unspecified)

outlay was required whilst Anderston's calculations of the costs of manufacture greatly exceeded Tyers' estimates. The uncertain return and the lack of security and continuity, which Anderston's experiences in the rain pipe business had underlined, caused the offer to be declined and passed on to Head Wrightson.[212]

Watt's next proposal, the manufacture of domestic refrigerators, impressed neither Cargill nor Harvey,[213] the directors with practical experience of Anderston's productive potential. Cargill dutifully investigated the possibilities with the company's patent agents who opined that there were too many protecting patents and too few profits: the manufacture of large units for commercial customers was the remunerative section of the business. Anderston would have to import technical expertise and a sales organisation whilst devoting a large percentage of the selling price to marketing, distribution, advertising and servicing in an unfamiliar market in competition with large and established manufacturers: a position, not unlike that of gas engines, with small prospects of success.[214] The company had resisted the move into the retail trade with light castings, a product of familiar technology and was equally unenthusiastic with an unfamiliar product.[215] Watt's lack of technical expertise blunted the effectiveness of his manifold ideas for developments, whilst those with technical knowledge were only happy to consider diversifications which did not involve great changes in the technology or basic pattern of the business. Their approach to the possibilities available was blinkered: in familiar areas they wished to back certainties; in unfamiliar ones, such as fridges, the very fine engineering required would confirm their view that Anderston could not make the product. In considering all suggestions it seems that Cargill, with his experience of the gas

engine fiasco wondered how many failures there might be to yield a single success.

A proposal that Anderston take a stake in Allan Kennedy & Co. of Middlesbrough, makers of a patent steel flooring was[216] seriously pursued before being declined. A.K.L. Harvey had undertaken protracted negotiations with Major Hill of Cast Iron Pavings, a firm interested in the use of iron for road surfaces.[217] After several months the paving concern sold out to another ironfounder. Cargill was doubtful that the business would secure many orders from highway authorities but the product was one that Cargill and his colleagues understood and would have "suited us well". Even in such circumstances, they would not take a risk.[218]

> "It must however be borne in mind that the works at Port Clarence were established for the manufacture of railway materials. That sets a limit to the kind of business we can undertake. For example, we could not convert or adapt our plant for the manufacture of Electric motors, rolling stock, machine tools..."[219]

The need to consider subsidising Macnees' office accommodation caused Harvey to cast a critical eye over their operations where continuity and conservation akin to Anderston's prevailed.[220] Anderston had enjoyed cheap representation: "a 100% increase in Macnees' Commission will be no more than they're worth and somewhat less than many firms would pay for their services" Cargill had observed.[221]

The Tubbys could not build up sufficient capital from Macnees to be able to retire and the firm could not afford to recruit fresh talent. Cowens Sheldon, railway crane makers, their last outside agency, had established its own London offices in the 1920s.[222] Whereas enterprising firms might do that, Anderston, the passive recipient of orders through established channels, continued to use

Macnees. Neither looked seriously at alternatives as loyalty triumphed. Macnees made little effort to obtain the new agencies necessary for the recruitment of younger, more adventurous partners which would generate the income to support them because Macnees were neither young nor adventurous: a vicous circle. In the early 1920s, Anderston's improved terms allowed Charles Wallace, who held a separate agency for the Gourock Rope Works to join Macnees to supplement and supplant an ailing Tubby - but Wallace was little younger than the surviving Tubby.[223]

By the late 1930s, they both admitted the need for younger men in the business, able to deal more easily with the younger men employed by Anderston's customers who felt uneasy dealing with the elderly pair - however Tubby could not afford to retire and Wallace had no wish to. Thus Anderston proposed further measures to improve Macnees' income in order to support a third partner and secure the future. In monetary terms, Macnees still represented a bargain compared with the costs of a London office but greater expenditure on the latter might have paid for itself in higher quality and more active representation.[224] A new partner, Turvey, an office boy with Macnees before 1914, was recruited: he had the prospects of other agencies based on his experience of the steel sheet, nuts and bolts business gained with United Steel Companies, from whose service he had just retired.[225]

Macnees survived, like Anderston, until 1962. When difficulties arose something was patched up, an old man replaced by a slightly younger one, to keep the show on the road, without settling Macnees' long term future or that of how Anderston was to be represented.

In the mid 19th century Anderston had been known for its

particular patent and speciality products. Now it was virtually unknown outside railway companies and their consulting engineers.[226] Cargill had favoured some elementary advertising but any attempt to establish a public identity or to spend money on agents to proselytize in developing parts of the empire was largely incompatible with dependence upon the impersonal system of allocations central to the workings of the collusive arrangements Anderston was so keen to foster.[227] In its drainpipe business, Anderston eschewed the retail trade and spurned the approaches of those who would have gone on the road for it, selling on commission. Kenneth Harvey's offer to maintain his connexion with the firm as a roving public relations and sales man (1929) was taken up only when he rejoined the board (1934).[228]

With his backing and the worst of the depression over, attention was paid to increasing the company's profile. Advertisements regularly appeared in the Overseas Number of the Railway Gazette and an interview and advertisement in the North East Coast number of the Trade and Industry supplement to The Times. An annual advertising budget of £100-£140, established in 1936, might seem little enough but represented a considerable advance upon hiding behind Macnees. But for the depression, an earlier move under Cargill's direction would have been likely.[229]

Harvey, living in Sussex, with a general acquaintance in social and commercial circles in that county and easy access to London, enjoyed some success in opening doors which had remained closed to Macnees. As a director he could expect to deal with others at a high level in their businesses. He made the contractors Balfour Beatty aware of Anderston for the first time, which brought in various orders for iron segments in the late 1930s.[230] Through his contacts

he confirmed that Anderston need expect little chair business from the Southern Railway whose Stores Superintendent was "expensive in lunches"[231] and unapproachable, part of a company that was "one bunch of graft".[232] Anderston's special relationship had vanished: others such as Smith Patterson had found ways of maintaining theirs.

Conclusion

The options open to the company in the 1920s - orderly liquidation, heavy expenditure or diversification, agreeing to be taken over, and fighting cut throat competition in kind - were all considered, some were pursued, all were ultimately rejected. Thirty years later the firm was faced with making similar decisions because no decisive course of action had been pursued on the former occasion. It proved no more capable of the requisite action and found unhealthy precedents from this period to justify its inaction. The company had, after all, survived.

The difficulties Anderston faced in the mid 1920s were more serious and prolonged than theretofore but the position did not seem desperate. Laborious reconstruction of collusive associations, the natural precursors of an orderly market, was attempted, in part, because cause and effect were confused, in part through a poverty of imagination. Collusion was more likely to work amicably when plentiful business could bury internal conflicts. In the desperate position of the 1930s, firms might feel an urge to come together. The rapid ebbing of business in the 1920s produced, all but inevitably, competition and collapse. Associations might flourish in prosperity, they could not, of themselves, rekindle it.

Anderston's traditional rivals shewed little diversification.

They and Anderston suffered more from diversification by outsiders (Tees Side, Cochrane's, Stanton) into their business. Smith Patterson and Railway and General shared certain characteristics with Anderston[233] in combining the form of public company with the existence of dynastic interests (the Cowens and Hills). Smith Patterson was keen to recreate collusion; Railway and General, having escaped earlier financial difficulties, used its reserves to repay debt and capital and, for want of a better opportunity, to maintain dividends. Many other firms may have reached a stage in their development in which the nature and interests of their managers and proprietors coalesced to let caution flourish. Safety first was not simply a political slogan.

Wild, over-ambitious diversification could kill (Armstrong, Whitworth or Kerr Stuart)[234] as easily as it could cure. It was best attempted from the firm foundations of a thriving business, i.e. where there was least need of it. Aggressive diversification[235] by Tees Side Bridge rested on a strong constructional steel business and was managed with a singleness of purpose by J.B. Peat in whose hands power and ownership resided. Stanton could expand from its strength as an iron producer in an expanding orefield and as a large technologically advanced pipe maker.[236] Cochrane's enjoyed the financial backing of the Furness group, despite which its diversifications did not succeed: its core business, pipe making, was under pressure from Stanton and it withdrew from chair making during the 1930s. Segments provided it with some prosperity in the 1920s. Upon absorption of the company by Stanton, production was rationalised and Cochrane's reverted to making pipes with renewed plant. Anderston's core business was that in greatest distress: its diversification was defensive, attacking no firm target - as half

hearted as its belated attempts at price competition or its search for a suitor in 1924. When Anderston acted decisively (to snatch bolts orders from G.K.N., to take chairs for the Southern Railway, to put pressure on Summersons') its aim was to secure future collusion. Past evidence indicated that, sooner or later, most firms would happily collude rather than continue competing.[237]

Anderston's managers and owners were uneasy bedfellows - neither married as in a family firm nor divorced as in a large joint stock enterprise, trapped in a mutual dependence, which was modified in 1927/8 but not destroyed. Cargill spoke as though he were a guardian keeping the seat warm for A.K.L. Harvey, the young heir to the Bunten estate.[238] Long service and internal promotion emphasised continuity and tradition. Maintaining Anderston in the mould cast by Bunten had, through poverty of imagination, become more important than the recreation of the dynamism and adaptability which Anderston had shewn under Bunten and which had caused the business to grow and prosper.

The breakdown of the old order was recognised with nostalgic regret. "The time is past, I fear, when personal influence could be used to secure contracts"[239] but the breakdown in the system of mutual allocation was felt to be reversible: Humpty Dumpty was uneasily and transiently put together again. The anti-competitive ethos flourished within Anderston as in the past. Of E. Dawson and A.T. Harvey, Cargill wrote admiringly[240] "both gentlemen had played a straight game"; with more dislike than admiration A.T. Harvey remarked upon Potter's being "very keen" and Percy Donald's being "as keen a man as I have met".[241] Keenness was disdained as sharp practice - Cochranes' methods of securing orders were despised. Teesside's personnel distrusted. One could play the game, as

Cunningham the cricketer continued to do, but lose regularly to those who did not (as was said of Austen Chamberlain).

In 1938 as in 1927/8, a newer broom swept a little cleaner but the attitudes and practices of the firm, sanctified by the passage of time, remained. Reasons for doing nothing were stronger than the pressures to do something. Large reserves insulated the firm from the need to make difficult decisions. Such decisions were not be made until the reserves had vanished. In the 1920s everyone had been out of step, except Anderston. In the 1930s those who had previously cast aside collusion returned to the fold. Attitudes changed: restrictive practices were able to come out of the closet and bask in the glow of official approval. Anderston could be seen to have been right. The fundamental question of what the business was there to do was never posed. It simply was, and would be.

But for the outbreak of war, Cunningham, with the assistance of Adcock and Harvey, might have moved further to improve efficiency and raise the company's public profile. However, his breadth and flexibility of mind and willingness to innovate may have been little greater than in later years, when he clung desperately to the declining cartels. He was hard working and competent but incapable of breaking with the past. Without war, pressure from certain shareholders might have provided the incentive to improve the company's performance by every available means that did not involve great risk, but the repayment of capital to those shareholders and the possible revival of demands for the business to be liquidated would have exerted a countervaling force. Stasis seems all but inevitable. After 1939 the opportunity to break the mould was lost for over a decade: Anderston would not change until time had run out upon it.

A show of considering new products had been made but only those things which the managers understood, e.g. railway signals, really appealed to them. The directors needed to be seen to be doing something to inject life into the business; they did enough so to be seen but without strong conviction. As much effort was expended on explaining why various proposals were impracticable as on investigating them, just as more effort was devoted to the cartels than to obtaining orders.

A threat of liquidation produced defensive activity and self justification. Fortunately, the most threatening of shareholders (the Muirs) were, in commercial terms, the least informed. There would have been every justification for the voluntary liquidation of the firm in the early 1930s, less so when it came to be raised. A continuing and repeated threat such as that made to the Darlington Railway Plant by its bankers might have achieved a similar purge of personnel at Anderston, however, through its own inspired inacitivy, Anderston was immune from such external pressures.

By caution, chance and inadvertance, Anderston survived in better health than it deserved. As armaments makers turned wood pulp processors headed for bankruptcy, long established and reputable firms in the staple industries faced closure and railway dividends collapsed, Anderston's (unwilling) shareholders received their regular dividends. Some change had occurred, but insufficient to be visible to the casual observer. Anderston seemed to have succeeded despite itself. Stately as a galleon, though moth eaten at the edges, Anderston sailed on, recognisably the ship that Bunten had built and pilot ed, despite the changing current. The pull of the past and the thread of continuity exerted a strong influence against change. As in 1914, equilibrium between the instincts of the management and the

tastes of the shareholders was maintainable only through eschewing drastic action. Anderston's solution to its difficulties, which was no solution, its reluctance to examine itself, its Micawberism in hoping that something would turn up,(but making little effort to find that something)may be altogether more typical of British industry than we might wish were the case.

Harvey's warning "If we are to continue as a firm we can't do so by reorganising our foundry without reorganising our selling methods" was, by circumstances, pushed into the background to re-emerge twenty years later.[241]

Footnotes: Chapter 7

1. Stock Exchange Year Books; Sheffield Record Office - Annual accounts of Railway and General and Darlington Railway Plant, TW 238, TW 440-452.

2. All figures extracted from private ledgers, D/AF 14-15.

3. The trading profit was of some £8,000. Figures from D/AF 15 and D/AF 509 - Cargill's correspondence with the National Union of General and Municipal Workers, May 1930 "Trade Unions" file.

4. D/AF 7, Minutes, 3 March 1920. Work in hand and stocks were valued at £215,000. Industrial disruption, difficulties in securing supplies etc. at a time when the entire economy was overheated caused cash flow problems.

5. D/AF 14-15. Cargill admitted to hiding the money, e.g. D/AF 494 to Harvey, 4 October 1924, D/AF 421, Anderston, Glasgow to Port Clarence, 16 April 1925 etc. From the trading profit for 1921/22, £15,000 was placed to the Development Fund and £10,000 to the Employees Benefit Fund (D/AF 15).

6. D/AF 500, Watt to Cargill, 30 April 1928 "it is only the existence of price fixing arrangments that enable an ordinary commercial profit".

7. D/AF 500, Watt to Cargill, 9 October 1928.

8. D/AF 496, Moores, Carson and Watson (Anderston's auditors), reported in letter from Anderston, Glasgow to Anderston, Middlesbrough, 16 May 1928. They clearly disapproved.

9. D/AF 500, 30 April 1928. With excess capacity in industry, many firms took contracts just to spread overheads. The most aggressive firms included Ebbw Vale and Pease and Partners, both in financial difficulties.

10. For Darlington see TW 238, Sheffield Record Office; for British Hydraulic and Summerson's see Stock Exchange Year Books. The details of Taylors' debenture debt are discussed at Appendix 1 below. Scottish Record Office BT 2/2145 for British Hydraulic, Companies' House, Cardiff files 65969 for Summersons and 145083 for Taylor Brothers etc.
In 1932 Ebbw Vale's debts had reached £8.25m: £4m in debentures and loans - the bulk of it the 7 year notes issued after the down turn had begun; £1.4m arrears of interest; £0.65m in taxes; £2.2m to banks. Business History, July 1987, p.297.

11. Stock Exchange Year Books indicate the borrowings piled up. Generally see Vaizey, The History of British Steel, chapters 1-3, M.S. Moss and E. Green, A Business of National Importance, on the Royal Mail Group, J.R. Hume and M. Moss, Workshop of the British Empire, discusses Beardmores, J.C. Carr and W. Taplin, History of the British Steel Industry and D.L. Burn, The Economic History of Steelmaking, touch the problem.

12. D/AF 15, Private ledger.

13. See L.B. Hannah, The Rise of the Corporate Economy, pp.76-78, 149-150, 170, 171 and Moss and Green upon the reserve fund accounting practices commonly deployed and the position of the Royal Mail Group collapse and subsequent litigation in forcing the pace towards greater disclosure.

14. Steel firms such as Dorman Long suspended ordinary dividends in the mid 1920s, paid preference dividends etc. at the expense of proper depreciation; suspended preference dividends at the end of the 1920s, and had to declare a moratorium on interest payments in the early 1930s. Inevitably such a firm, once its balance sheet had been reconstructed, seemed, in the later 1930s, to shew a dramatic recovery.

15. Stock Exchange Year Books and Vaizey on the various mergers. Dormans had been the effective owners of North Eastern Steel since 1903. The details are discussed in Chapter 5 above. Dorman's approach and the seriousness of their threat to break the Sleeper Association produced one of the rare instances before 1927 in which basic business matters were formally discussed by Anderston's board (D/AF 7, 17 December 1920). BSC (UK)/Sec/3, Dorman Long board minutes, 11 January and 8 February 1921 etc., British Steel Records Centre, Middlesbrough.

16. D/AF 494, Harvey to Cargill, 2 October 1924 and 25 November 1924; D/AF 410, Anderston, Glasgow to Anderston, Middlesbrough, 14 March 1922. The Muirs who should have been glad to escape from a position in which a large portion of their capital was tied up in one firm were too greedy, wanting £12, D/AF 440, Anderston, Middlesbrough to Anderston, Glasgow, 14 February 1924. No details of the meetings with Cochranes survive in their records (BSC) or in D/AF. "Mrs. La Terriere would now be getting 10% from gilt edged securities" (D/AF 494, 2 October 1924).

17. D/AF 7, Minutes, 4 June 1918 and 27 May 1919.

18. Information K.N.L. Harvey: A.K.L. Harvey went to British Columbia to farm fruit. See Appendix 2.

19. D/AF 434, E. Dawson to Cargill, 15 July 1918.

20. D/AF 7, Minutes, 2 March 1920.

21. Letter, J. Findlay to Durham County Record Office, 10 January 1968; D/AF 339 and 348, Salaries and wages books; Dundas and Wilson: Anderston File.

22. See Appendix 2. D/AF 337-338 and 347, Salaries and wages books. D/AF 437, letters from Anderston, Middlesbrough to Anderston, Glasgow, 1 November 1921 et seq.

23. On a salary of £650, equal to Hardie's. D/AF 338, D/AF 500, Report by Cargill to Watt on salaries, staffing etc., 9 January 1928.

24. D/AF 494-495, Correspondence between Harvey and Cargill, 1924-1927, e.g. 23 - 28 April 1924, 23 April 1925 and 2 March 1926. As Harvey pondered poor internal accounting and unpredictable results it was Cargill who was urging the use of Cunningham.

25. Interview: Hanlon. D/AF 438, Cunningham's private file, letter from Sir T.B. Whitson, President of the Society of Accountants, 8 November 1938.

26. See Appendix 2. Hardie continued to preside over the counting house in Glasgow. Hannah believes that for a medium sized company in this period to take on an accountant was unusual, but that Scottish business circles more readily accepted accountants and graduates - a reflexion of the Scottish education system and the independence of Edinburgh as a financial, commercial and legal centre. Anderston should never be considered as English.
During the 1930s, accountants became more common, particularly in large companies, e.g. Dormans, Pease and Partners, which had been re-organised by its bankers and institutional creditors to secure (better) financial control. (J. Vaizey, The History of British Steel caps 3-4)

27. Bow's father had been a foreman at Port Clarence in the 1880s-1890. (D/AF 332-334, Clerical, management and foremen's wages). The foundry foreman was retained by conceding him a small rise. Tees Side Bridge was poaching useful staff from Anderston and Head Wrightson - see Appendix 1 and T.R. Tighe's history there cited. Bow had been receiving £500 p.a. at Anderston, after a £50 rise in January 1921, which placed him behind only Morris and Close, the chief cashier, amongst the weekly salaried staff. Adcock, his successor, was paid £400 p.a. - as was the foundry manager in Glasgow. Bow's rewards at Tees Side Bridge were much greater (see T.R. Tighe, Tees Side Bridge, The Rise, Fortunes and Dissolution of a private company). D/AF 337-338, 347-348, Salaries and wages books; D/AF 409 and 437, Correspondence between Anderston, Port Clarence and Anderston, Glasgow, 1 - 11 November 1921. D/AF 438, 13 June 1922. D/AF 439, 5 December 1923. Men were still being lost to Teesside Bridge. D/AF 441, 20 January 1925, Report of conversation between Dawson and Fletcher of Tees Side.

28. D/AF 441, Harvey to Cargill, 20 January 1925; D/AF 557, Cargill to Cunningham, 7 - 10 August 1945.

29. E.g. D/AF 495, Harvey to Cargill, 23 December 1926 and D/AF 494-495, 1924-27, generally - See Note 24. For example lighterage charges on the Tees had increased four fold (D/AF 441, Anderston, Middlesbrough to Anderston, Glasgow, 30 September 1924).

30. See Chapter 5 above. Anderston had increased wages only to stem the loss of labour to other plants, belatedly and reluctantly.

31. D/AF 398 and 407, Anderston, Glasgow to Anderston, Middlesbrough, 6 October 1917 and 6 April 1921. D/AF 494, Cargill to Harvey, 23 April 1924.

32. D/AF 401, Anderston, Middlesbrough to Anderston, Glasgow, 24 March 1919.

33. D/AF 408, Anderston, Middlesbrough to Anderston, Glasgow, 16 August 1921.

34. D/AF 549, Cargill to Cunningham, 11 December 1942.

35. D/AF 553, Cargill to Cunningham, 23 April 1944. Cargill, after his experiences of labour troubles in Glasgow, jibbed at doing anything.

36. Vaizey, pp.26-29. Burn (1940) tables 35, 37 and 43. Real wages in the steel industry in Britain: 1913=100, 1920=98, 1924=92, 1929=95, 1933=94, 1936=97. British wages 1925-30, were some 75% higher than those in France and Belgium.

37. A large element of casual general labour was in use but a sizeable, irreducible core of skilled and semi-skilled workers was required for each manufacturing activity.

38. D/AF 494, Cargill and Harvey correspondence, 23 - 28 April 1924.

39. D/AF 494-495, 3 November 1924, 2 - 5 May 1926. Cuts in July 1922, May 1924 and December 1925 (D/AF 338 and 347-348, Salaries and wages books).

40. D/AF 495, Harvey to Cargill, 25 May 1926 and 9 August 1926.

41. D/AF 494, Harvey to Cargill, 4 May 1925. Cunningham had discovered the existence of the bonuses so was given one despite the deterioration in the company's financial position. The remaining bonuses were consolidated with salaries in 1927/28 as part of the general spring cleaning. Many had lapsed through promotion and death - they were not paid to directors. D/AF 500, Cargill to Watt, 8 - 9 January 1928 etc.; D/AF 136.

42. D/AF 500, Cargill to Watt and Sowerby and Watt to Faill, 8 - 9 January 1928 and following. Edward Dawson's retiral allowance, £500 p.a., was higher than most of Anderston's salaries.

43. D/AF 500, as above. G.W. Dawson received 75% more than Cargill and 55% more than was to be paid to his own successor.

44. Both D/AF 494, Cargill to Harvey, 10 August 1926.

45. D/AF 500, as above. Faill had backed G.W. Dawson in resisting Harvey.

46. See pedigree at Appendix 2 under the biographical notice for J.C. Bunten. Harvey could, if need arose, use his family

connexion to call directly on Mrs. La Terriere in a way that Cargill could not.

47. Calculated from transfers passed in minute books, D/AF 7-9. See Appendix 3 for table of prices.

48. For example of the 2500+ shares sold by the Houldsworths between 1915 and 1917, the directors and staff of Anderston, plus the Tubby family took over a quarter; employees of Coltness, Houldsworth executors, existing shareholders, and business contacts of Tubby, Faill and the Griersons absorbed most of the rest. The volume of shares involved made this the least closed set of transfers to date. D/AF 396-397, Anderston, Glasgow to Anderston, Middlesbrough, 27 September - 10 October 1916, 23 February 1917.

49. See Chapter 3 above. The attendances are recorded in the minutes, D/AF 7-9. D/AF 494, Harvey to Cargill, 4 February 1924 - the Muir trustees were again seeking more details.

50. See Appendix 3. They averaged 16.125% (1914-19); 14% (1919-24); 6.75% (1924-29).

51. Formerly a Middlesbrough iron merchant, associated with: Spanish ore mines, the Baird iron group, the Northern Mercantile Investment Corporation etc.

52. See Appendix 3. Figures calculated from annual returns to the Registrar and shareholders' registers, D/AF 127-135. The Houldsworths retained an 8.6% holding in the late 1930s.

53. Not least by the deaths of two beneficiaries of M.A. Muir jr. in 1923/ 4 and the financial downfall into bankruptcy of Capt. Muir Stewart, one of the subsequent heirs.

54. All of Hardie's shares passed to insiders during 1929. D/AF 135, Annual returns. The Dawsons sold 500 shares to Morris in 1927. D/AF 132; D/AF 8, Minutes, 18 October 1937 for the disposal of Faill's shares and D/AF 519-521, 1933, correspondence with A.K.L. Harvey, Watt, Sowerby et al. regarding them.

55. Annual returns to Registrar etc. D/AF 134-135 etc.

56. D/AF 132, D/AF 135. Harvey lent shares to Cargill (1920), Faill to Watt (1927/8) etc. See Appendix 3.

57. See Appendix 3 for details of share prices and shareholders.

58. From the increase in Edinburgh based shareholders, D/AF 135. But specifically D/AF 532, Watt to Cargill, 30 November 1936.

59. D/AF 524, Watt to Cargill, 8 October 1934. D/AF 9, Minutes, 1946 - 1950 for the division of various of these holdings. Scottish Record Office BT2/10303 for the Charlotte Trust Ltd., incorporated in 1919 with £100 capital. By 1931 97 shares were held by James Watt, one each by three of his children.

Thereafter 20 shares each by 5 children. Upon liquidation (1947) £585 was 'repaid' per £1 share.

60. In 1924: 5792; 7750; 4390 seriatim. In 1934: 5792; 6607; 3890. In 1939: 5100, 5398; 3890.

61. The Dawsons were spread (D/AF 135) between Bournemouth, Bristol and Exmouth. Latterly one was in Kenya. Small sales were made as the shares passed from generation to generation.

62. Calculations using values of estates given in Calendars of Confirmations. Very few of the shareholders were domiciled in Scotland thus detailed inventories of their holdings are not available.
Anderston shares formed as a percentage of personal estate: 26.4 (1928), Hardie; 33.1 (1940), Morris; 74 (1927), E. Dawson, including shares in the process of sale to Morris; 46.7 (1927) G.W. Dawson.
Hardie left personal estate of £6,000 compared with: £18,000 (1906) Drennan; and £40,000 (1900) Robertson. E. Dawson left £29,000; Morris £13,000; G.W. Dawson £9,000.

63. E.g. 8.1% of the personal estate of R.B. Muir (1937) thus, potentially, 16% of his estate of 1927/8 before the repayment of capital commenced; 11.7% of the personal estate of Miss Esther Houldsworth (1927) and 14.7% of that of her sister Florence (1924).

64. Henderson and J.B. Couper, a Glasgow shipowner, would have formed suitable non-executive directors to succeed Faill as the Glasgow representative. Couper built up a holding of 374 (£6) shares (D/AF 135). D/AF 396, Anderston, Glasgow to Anderston, Middlesbrough, concerning Henderson, 27 September - 10 October 1916. Henderson acquired 150 shares; he had the means of acquiring more. Couper, and possibly Henderson, were business connexions of Grierson, Faill's son-in-law.

65. The directors wished to have no interference; the major shareholders wished to interfere but lacked expertise and a nominee who would be of practical use; those who might be of use lacked shares, backing and connexions.

66. D/AF 495, Harvey to Cargill, 9 May 1927.

67. D/AF 443, Anderston, Middlesbrough to Anderston, Glasgow, 17 November 1926. He also believed that the said shareholders' decision not to sell had been wrong.

68. D/AF 494, Cargill to Harvey, 4 February 1924 et seq. They held 4333 shares, virtually their only asset - which indicates financial imprudence of some sort.

69. See pedigree at Appendix 2 under biographical notice of J.C. Bunten.

70. D/AF 494, Cargill and Harvey correspondence, 5 November 1923 - 5 February 1924. Quotations about Faill: Cargill, 5 November 1923; about Sowerby: Harvey, 6 November 1923.

71. Mrs. La Terriere had wanted "some general" to do our London business - probably Liddell (see pedigree at Appendix 2 under biographical notice of J.C. Bunten) who was one of James Livesey's executors. D/AF 494, Cargill to Harvey, 5 November 1923.

72. D/AF 494, La Terriere to Harvey, 2 January 1924 and Harvey to Cargill, 6 January 1924. Presumably the rise of the power of organised labour as much as the rise of its political party.

73. D/AF 494, Watt to Harvey, 1 October 1924. Another Houldsworth spinster had died raising the possibilities of further sales by her executors or beneficiaries.

74. D/AF 494, Watt to Harvey, 5 February 1925.

75. Harvey considered this option. He was ageing, coming up to retirement - over worked - G.W. Dawson was ill - and disoriented by recent developments. See D/AF 494-495 generally, e.g. 6 January 1925, Harvey to Cargill.

76. D/AF 494, Cargill to Harvey, 27 March 1924.

77. See Appendix 1. British Hydraulic's site was, in part, sought by the adjoining shipyard, two of whose directors sat on the Hydraulic board. There was thus a ready purchaser for the site and, in Cochrane's, for various fixtures. The commercial prospects of the Scottish chair makers were worse than for the English ones.

78. D/AF 494, Cargill to Harvey, 27 March 1924 and 31 October 1924, and Harvey to Cargill, 8 November 1924. Merger of Bolckow Vaughan with G.K.N. or Cargo Fleet seemed likely. Anderston had experienced the effects of Dorman's mergers in respect of steel sleepers where an impending re-organisation of the cartel in the interests of the steel companies threatened to make Anderston more dependent upon Dorman's. Large companies could and would, it was feared, juggle accounts to subsidise their finishing operations at the expense of their iron and steel production. Anderston's portrayal of itself as an independent was pure hypocrisy.

79. See Chapter 5. D/AF 494, Cargill to Harvey, 24 June 1924 on financial considerations and shareholder relations.

80. E.g. the difficulties of Kerr Stuart, locomotive builders were magnified by a heavy, unproductive investment in the Peninsular Locomotive Co. Ltd. in India. With Anderston the fall in dividends caused by the use of reserves for new products and plant might cause the whole business to fail - either through shareholders pressing for liquidation before the investment brought returns, or through the investment being mis-directed and adding to the losses of the concern.

81. D/AF 494, Harvey to Cargill, 23 June and 2 October 1924.

82. D/AF 417, Cargill to Harvey, 24 June 1924. For Harvey's tone D/AF 494-495, generally, e.g. 6 October 1924.

83. D/AF 494, Cargill to Harvey, 24 June 1924 and see Chapter 5. No existing or new market for traditional products could counterbalance the loss of India. D/AF 418, same to same, 14 May 1924.

84. D/AF 494, Harvey to Cargill, 11 February 1925.

85. D/AF 495, Harvey to Cargill, 1 March 1926; D/AF 495, same to same, 25 October 1926 re loss of £178,000 by Bolckow Vaughan; D/AF 422, Cargill to Harvey, 1 July 1925 on Head Wrightson's raiding £23,000 from its reserves.

86. For £12,000 Cargill's preference D/AF 494, Cargill to Harvey, 27 March 1924. Net cost only 1.75%.

87. D/AF 420, Cargill to Harvey, 6 January 1925 etc.

88. D/AF 494, Harvey to Cargill, 8 November 1924 and D/AF 494, Harvey/Cargill/Watt correspondence, 1 October 1924 - 24 November 1924. Anderston feared that the sale of one holding would break the dyke on the other sales. Mrs. La Terriere was considering selling some shares and the question was how to absorb these without damaging the price. Cargill could not, and Harvey would not, buy more. Anderston shares were an obvious source of funds for the La Terrieres. Their industrial and S. American and home railway stocks were likely to have depreciated more than Anderston's shares. The sale of the Dunalastair estate could not be contemplated.

89. See Appendix 1 for notes on Tees Side Bridge and T.R. Tighe's history of it cited there.

90. D/AF 494, Harvey to Cargill, 5 February 1924. D/AF 8, Minutes recording share transfers. D/AF 132, share transfers.

91. Cargill sometimes felt that Watt, with his many other concerns, gave Anderston a low priority. There was ample room for conflicts of interest to arise.

92. D/AF 628; D/AF 494, Anderston, Middlesbrough to Anderston, Glasgow, 12 October - 20 October 1927 and D/AF 429, Anderston, Glasgow to Anderston, Middlesbrough; D/AF 500, Cargill to Watt, 25 October 1927.

93. D/AF 132, share transfers. D/AF 8, Minutes, 17 September 1927. D/AF 500, Cargill and Watt correspondence, 25 October 1927 - 9 January 1928. D/AF 429, Hardie, Glasgow to Cargill, 6 December 1927.

94. During 1922, when Harvey was [? in Canada visiting his son], Cargill was for a time in charge at Port Clarence with Cunnigham's assistance.

95. See above notes 62, 63 and 68.

96. D/AF 497, Cargill to Campbell, 27 January 1928. D/AF 500, Cargill to Watt, 25 October 1927; D/AF 628.

97. D/AF 429, Cargill, Glasgow to Anderston, Middlesbrough, 26 October 1927.

98. D/AF 500, Cargill to Watt, 25 October 1927. The Dawsons were rendered simultaneously voiceless in the management and direction of the company and headless in the management of their own affairs.

99. Watt favoured splitting the stock into £1 units. D/AF 500, Watt to Cargill, 31 December 1927, another of the proposals put forward in 1912. D/AF 1, Articles of Association. The Extraordinary General Meetings to effect the reduction to £1,500 took place on 2 and 17 February 1928.

100. D/AF 497, Cargill to Campbell, 27 January 1928.

101. D/AF 500, Watt to Faill, 8 January 1928.

102. D/AF 500, Cargill to Watt, 25 October 1927.

103. D/AF 8, Minutes of share transfers 1928; D/AF 429, Anderston, Glasgow (Hardie) to Anderston, Middlesbrough (Cargill), 24 October 1927.

104. D/AF 500, Cargill to Watt, 9 January 1928; D/AF 505, Watt to Cargill, 27 April 1929; D/AF 8, Circular to shareholders, 25 January 1928 in minute book.

105. D/AF 500, Watt to Sowerby, 13 February 1928. Cargill received £2250 compared with £3,000 + £263 fees for A.T. Harvey. Harvey had sought to cut his own salary by £500 as an economy measure.

106. D/AF 496, Cargill, Middlesbrough to Hardie, Glasgow, 19 March 1928; D/AF 497, Cunningham to Cargill, 18 October 1928; D/AF 500, Watt to Sowerby, 8 February 1928.

107. D/AF 417, Anderston, Glasgow to Anderston, Middlesbrough, 8 February 1924.

108. D/AF 424, Cargill to Harvey, 11 January 1926.

109. D/AF 8, Minutes, 17 February 1928. On occasion rain had stopped play resulting in the imposition of penalties for late delivery; D/AF 496, Anderston, Middlesbrough to Anderston, Glasgow, 8 February - 7 March 1928.

110. D/AF 496, Anderston, Middlesbrough to Anderston, Glasgow, 5 - 7 March 1928.

111. D/AF 8, Minutes, 8 May 1929. Iron was remelted in cupolas for use in the foundry. New cupolas had been considered previously by E.W. Dawson and A.T. Harvey, but they did not feel that the poor prospects justified the cost.

112. D/AF 429, Hardie to Cargill, 6 December 1927 after an approach by E. Dawson's brother-in-law.

113. D/AF 8, Minutes, 25 May 1928.

114. D/AF 496, Correspondence between Anderston, Middlesbrough and Anderston, Glasgow, 28 March - 3 April, 12 April and 24 May 1928.

115. D/AF 500, Correspondence between Cargill and Watt, 28 March 1928 et seq. especially 12 November 1928. D/AF 8, Minutes, 13 September 1928 inviting offers for demolition. D/AF 496, 12 November 1928 and as note 114. No commercial offer was received and Glasgow Corporation could not be persuaded to buy the site for clearance or housing purposes.

116. D/AF 496, 24 May 1928. Mindful of the fate of British Hydraulic's segment plant in helping Cochrane.

117. D/AF 8, 25 May 1928 and 13 September 1928. Generosity included £100 granted to an old foundry foreman (D/AF 8, 18 May 1927) or the grant of £500 to the widow of the chief clerk in Glasgow - who had 29 years service, 6 children and left only £158 (D/AF 8, 3 May 1929 and D/AF 500, Watt/Cargill correspondence, May 1929 et seq.). One of the sons was to be employed as office boy in Glasgow. D/AF 497, 9 - 12 June 1928 arranging details of gratuities with Hardie.

118. D/AF 444, Cargill to Hardie, 20 October 1927.

119. D/AF 429, Cargill to Hardie, 27 July 1928. Loose letter on file.

120. D/AF 496, Anderston, Glasgow to Anderston, Middlesbrough, 11 July 1928 - 4 September 1928. Hardie, unwell in mid July, returned briefly to work, retired to a nursing home and died of pneumonia on September 4th. £500 was granted to his widow towards his daughter's education.

121. D/AF 496, Cargill to J.W. Finlay, 8 September 1928.

122. D/AF 8, Minutes, 13 September 1928.

123. D. Allison ran the residual office in Glasgow from late 1928 until his death in May 1929. D/AF 497, Cunningham, Glasgow to Cargill, 6 August 1928 and 18 October 1928, concerning background and future of office/financial arrangements. On a monthly basis workmen's time and materials were recharged between departments in place of loading the burden disproportionately onto the Port Clarence Foundry. D/AF 495, Harvey to Cargill, 9 May 1927 shewed that the vagueness over the accounts which had been discussed for several years had not been tackled. Harvey thought that the sleeper and bolts departments each owed the foundry c.£1,000 for materials over the last year (D/AF 441-443, 494-495, 417-429).

124. See 117 above and D/AF 505, Watt/Cargill correspondence, 18 - 20 April 1929 when a foundry foreman was given £200 to retire: he had a mere 17 years service. Previously the question of making one of the two foundry foremen redundant had been shelved.

125. D/AF 503, Harvey/Cargill correspondence, 7 June 1929 - 15 August 1929; D/AF 505, Cargill to Sowerby, 20 August 1929.

126. D/AF 505, Cargill to Watt, 26 October 1929; D/AF 505, Cargill to Sowerby, 17 October 1929; D/AF 8, Minutes, 24 October 1929. D/AF 505, Watt to Cargill, 27 April 1929. Morris (a "bumptious" character - Hanlon) and Cunningham received pay increases of £290 each: D/AF 8, 20 February 1930. Much of Harvey's £1,140 salary was saved as had been the case with Hardie's.

127. D/AF 8, Minutes, 3 May 1929.

128. D/AF 15, Private ledger. In May 1929, Watt, troubled by further approaches from James Campbell, indicated that £208,500 was realisable at short notice, i.e. £192,000 plus unpaid wages and trade creditors.

129. D/AF 8, Minutes, 23 May 1930.

130. D/AF 8, Minutes, 3 October 1930. 2 weeks' pay per 5 years service for all those with a minimum of 10 years service.

131. D/AF 8, Minutes, 3 October 1930.

132. D/AF 511, Anderston, Middlesbrough to Anderston, Glasgow, 18 April 1931.

133. Melville, Dundas and Whitson were annoyed that Anderston had abandoned them and that they had to pay £200 for drawings of the Moir Buchanan machinery. D/AF 507 and 513, Correspondence 1930 and 1931. The patterns for vacuum pumps and air compressors passed to Blair's of Govan, the principal customer. Atherton Brothers, Preston, an old collaborator, bought the patterns for pirn winding machinery. Some textile machinery was sold elsewhere in Lanchashire. Robert Hall and Sons of Bury, textile machinery makers, bought the wire weaving patterns. Both they and Bruntons, the chief customer, continued to consult Anderston for some time (at least until 1938 - D/AF 438): D/AF 510-511, Correspondence between Anderston, Middlesbrough and Anderston, Glasgow, 1930-31, especially 11 - 13 November 1930. D/AF 517, correspondence with Halls, 1932. D/AF 8, minutes, 29 April 1931.

134. Help was given to A.F. Craig & Co., Paisley, who took over the spun concrete business. D/AF 511, correspondence between Anderston, Middlesbrough and Anderston, Glasgow, January - June 1931. M.L. Cargill was seconded to Blairs: D/AF 510, Anderston, Middlesbrough to Anderston, Glasgow, 10 November 1930.

135. D/AF 509, Cargill to Watt, 18 September 1930 and following. In mid-1930, there were 7 office staff, 4 drawing office staff, 4 works staff, 24 labourers and craftsmen (6 of whom were temporarily suspended) and Forsyth, the machine shop manager. For an earlier assessment of Glasgow's problems, see D/AF 393, Cargill to Dawson, 8 April 1914 and Chapter 4 above.

136. D/AF 509, Cargill to Watt, 13 November 1930 and see note 170 below.

137. D/AF 509, Cargill to Watt, 13 November 1930 and see note 130 above.

138. D/AF 8, Minutes, 26 May 1932, 18 May 1934. Correspondence with Barrs, estate agents, Glasgow, 1931-34, D/AF 511, 516, 519, 522, especially 522, 13 September 1934. Correspondence with various would-be purchasers and between Cargill and Watt. Anderston could afford to bide its time in what should have formed a useful precedent for the period 1959-62 but did not. Few were the prospective industrial purchasers in a depressed part of a depressed area in the early 1930s.

139. D/AF 15, Private ledger.

140. D/AF 8-9, Minutes passim.

141. D/AF 15, Private ledger; D/AF 126, annual reports and accounts; D/AF 125, Financial statements for board meetings. With fewer workers, it was regarded as legitimate to run down the fund, e.g. D/AF 8, minutes, 27 April 1931. The payment of tax free bonus dividends was first discussed in 1933 (D/AF 521, Watt to Cargill, 1 May 1933), Watt exploring the mechanics of it.

142. D/AF 8, Minutes of annual general meeting, 23 May 1930.

143. D/AF 8, Minutes of extraordinary general meetings, 7 June 1932, 18 May 1934. D/AF 518 and 524, Watt/Cargill correspondence, 1932 and 1934.

144. The purchase of debentures in the Caledonian's successor was an unsuccessful attempt to wield a little informal influence by reverting to the methods of the 1880s. It was thought that appearance on a share register would keep Anderston's name in the mind of the L.M.S. when it came to placing orders. When this did not work, the debentures were sold. D/AF 8, Minutes, 22 June 1927 and D/AF 518, Cargill to Watt, 31 December 1932. After 1928 investment decisions were made by Watt and Cargill, with assistance from Cunningham (D/AF 8, 28 November 1928).

145. D/AF 529, letter to Bank of Scotland, 18 January 1936 and D/AF 529, letter to Tilneys, stockbrokers, Liverpool, 4 March 1935.

146. E.g. D/AF 17, Correspondence with Moore and Snodgrass, especially 8 April and 21 October 1932.

147. D/AF 8, Minutes, 29 April 1932. D/AF 518, of 10 August 1932 is the first letter to Tilneys. The minute books, D/AF 8-9, record the increasingly frequent purchase and sales of securities. See also D/AF 125, Financial Statements for the board, 1928-35.

148. D/AF 529, 18 January 1936 as note 145 above.

149. D/AF 532, Watt/Cargill correspondence, 25 February - 2 March 1936. Watt may have had inside knowledge of Brown Brothers

through his local business contacts. A.K.L. Harvey was going to buy Browns shares for himself (D/AF 530, Harvey to Cargill, 3 March 1936) and Watt held Browns shares - probably acquired at this time - at his death (SC 70/1/1140 Inventory).

150. Cunningham as a recognised accountant, received a commission on the sums invested in Leith Docks: D/AF 530, Harvey/Cunningham correspondence, October 1936. In 1933 Anderston declined the advice of Moore and Snodgrass to invest in the high yielding debentures of the Buenos Ayres Great Southern Railway - one of Bunten's connexions. It wanted something safer. By the time of its nationalisation (1948), and probably for several years before, the B.A.G.S. invest ment would have shewn the capital appreciation which Anderston craved: D/AF 520, Anderston/Moore and Snodgrass file.

151. D/AF 516, Cargill to Cunningham, 10 August 1932. D/AF 518, Cargill to Watt, 31 December 1932. Falling interest rates allowed railway prior securities to hold their value despite falling profits.

152. D/AF 125, Statement for 30 September 1935.

153. D/AF 9, Minutes, 29 May 1936 - 16 February 1937. D/AF 529, Bank of Scotland correspondence, 1936. D/AF 532, Watt/Cargill correspondence, 1936. £27,000 of Irish Land Stock was charged in the Bank's favour to secure an overdraft which built up to £35,000 during the spring of 1936. When some Daily Mirror debentures were sold in November 1936, a part of the proceeds was, exceptionally, retained for trading.

154. D/AF 518, Watt to Cargill, 19 April 1932. See Appendix 1 for short history of Railway and General. In most companies, as with Anderston, the published accounts revealed far less than the private ones and it is frequently not possible to produce evidence in detail.

155. D/AF 8, Minutes, 20 February 1930 - 8 employees were over 70 (eldest 76), 15 more over 65.

156. D/AF 8, Minutes, 19 March 1932. Staff were, as before, treated more generously. 2 clerks with 50 years of service received 40/- - 50/- a week.

157. D/AF 8, Minutes 20 October 1931 and 19 March 1932.

158. Saving c.£1,000 p.a. D/AF 8, 28 May 1931.

159. D/AF 8, Minutes, 31 October 1933.

160. Even the audit fee was cut from 100 gns. to its previous 60 gns., D/AF 8, 3 May 1932. Faill resigned in 1931 (D/AF 8, 29 April 1931) unwilling to attend board meetings at Middlesbrough - a few board meetings had continued to be held in Glasgow as alternate A.G.M.s were to be - in view of his age and feeling that, with the closure of the Glasgow operation, he was no longer needed.

161. D/AF 8-9, Minutes, 8 May 1935, 25 June 1936, 6 May and 30 June 1937, regarding salaries. D/AF 348, for fees, allowances and senior management salaries, 1928-55.

162. The weekly salaries bill of £5/15/8d. at Middlesbrough (1930), was £4/9/- by 1935 and £4/19/4d. by 1940. (D/AF 339-341, Salaries and wages books). Cargill's brother and the chief clerk moved to Port Clarence upon the closure of the Anderston works.

163. D/AF 518, Cargill to Watt, 6 January and 22 April 1932 on the difficulties of shedding further standing labour, although the bulk of the workforce was casual/floating. D/AF 506, 511, 516, 522, 525, 529, 533, 538, 541, Annual returns to Billingham U.D.C., 1930-39. The workforce remained at the 500 level thereafter, viz 460 plus foremen and managers in return to The Admiralty, 16 April 1940 (D/AF 545), and see Chapter 8 below.

164. D/AF 533, Cargill to Cunningham, 23 April 1944. All of Anderston's fitters, turners and machinists, skilled - Cargill was contemptuous of the level of skill of many of them - or unskilled, were paid on a sliding scale related to the price of iron.

165. D/AF 537, "Trade Unions" correspondence with the General and Municipal Workers' Union, 24 August 1937. This was concerned with general labourers.

166. Cargill's retirement had been mooted in May. D/AF 9, Minutes, 6 September 1938 for Cunningham's appointment. D/AF 539, Cargill/A.K.L. Harvey correspondence, 17 June - 17 July 1938 for Morris's increasing ill health. Morris had joined Anderston in 1891, he was not trained by it. Thus he would have been in his middle 60s by 1938. He was little involved in the non-technical side of the business and the terms of the offer of a seat on the board in 1927 had made it clear that such would be the case.

167. D/AF 9, 6 September 1938 and 16 November 1939. Cargill had received £2,250 and Cunningham was disappointed. See D/AF 500, Cargill to Watt, 9 January 1928. D/AF 461, out-letter to Watt, 21 September 1938. J.W. Finlay, the new secretary, received £420 p.a. roughly half the amount paid to Hardie who might be regarded as his most comparable predecessor: D/AF 348, Senior Management Salaries.

168. See Appendix 2 for note on F.H. Adcock. D/AF 539, Harvey to Cunningham, 2 November 1938 and subsequent correspondence to 8 December. D/AF 542, correspondence between A.K.L. Harvey and Cunningham, 1939, especially 6 June from Harvey. Morris had suffered several bouts of illness, particularly in the Summer of 1938 and Cunningham felt that "no time should be lost", 30 November 1938 (D/AF 539), but 15 months was. D/AF 9, Minutes, 16 November 1937 - 31 May 1940.

169. D/AF 539, A.K.L. Harvey to Cunningham, 2 November 1938.

170. The group included J. Findlay who was Assistant to Morris in Points and Crossings and his successor there and Mac.Intosh, who had left Anderston's service in Glasgow 1923, but been recruited in 1929 to manage the Port Clarence Bolt Shop and briefly succeeded Findlay at points and crossings, 1960-62. With Adcock and Cunningham, all would retire, c.1955-65. J.W. Finlay, who had joined the Glasgow office in the late 1890s was one of its last surviving products in the company. Apprentices continued to be trained at Glasgow during the 1920s but, as business fell off, fewer were kept on and none had risen to a management rôle which would have fitted him for transfer to Port Clarence.

171. D/AF 9, 31 May - 17 August 1940 and see Chapter 8 below. D/AF 548, Watt/Cunningham correspondence, respecting Morris, February - June 1940. Morris may have had little to contribute and not been particularly popular but he did own 4.8% of the shares.

172. D/AF 514, Cargill to Sowerby, 7 March 1931. Sowerby, with extreme prudence, had wanted to pass the dividend - which was in the interests neither of the Muirs nor his colleagues on the board. He had no shares of his own.

173. E.g. D/AF 521 and 524, Cargill to Sowerby, 13 December 1933 and subsequent correspondence to 12 January 1934.

174. D/AF 524, Cargill and Watt correspondence, 15 - 21 March 1934 talks of a "sad incident" and depression. D/AF 523, Cargill/R.B. Muir correspondence, 14 March 1934 and following. Faill was 75 in 1931. For his resignation see his letter of 27 April 1931 (D/AF 512).

175. D/AF 524, Cargill to Watt, 15 March and 12 April 1934, the latter reporting a visit to, and conversation with, R.B. Muir. D/AF 523, correspondence with A.K.L. Harvey, 1934. D/AF 523, correspondence with Muir, 14 March - 18 April 1934. See Appendix 2 for Guy Liddell and above and below, this chapter.

176. D/AF 514, Cargill to Sowerby, 24 November 1931 stressed the past dependence of all departments, but particularly the foundry, upon Indian work. Native prejudice against British products and the political impossibility of influencing the (British) Indian government to be pro-British is discussed in Chaters 5 and 6.

177. D/AF 523, Cargill to R.B. Muir, 7 January 1934.

178. D/AF 518, Cargill to Watt, 6 January 1932.

179. D/AF 532, James Watt file, J.G. Muir's trustees to Anderston, 29 May 1936.

180. D/AF 532, Watt to Cargill with copy of Watt's letter to Muir's trustees, 2 June 1936.

181. D/AF 532, Cargill to Watt, 27 June 1936 and related papers, including letter from Mrs. La Terriere to Watt, 25 June with

copy correspondence between her and Young, Jones & Co., (Muir trustees). Mrs. La Terriere seems to have been swayed in one direction by the Muirs and back again by Watt. Her profound ignorance of business in general, and of Anderston since her father's time, could not help her form an objective and realistic opinion. Her former attempt to involve General Liddell was similarly anachronistic. Whatever the deficiencies of Anderston's management it deserved better than the repeated need to explain problems in very simple terms to such people.

182. D/AF 532 ibid.

183. See Appendix 1 for the similar experience of Railway and General. The need to spend £20,000 on new plant before being able to manufacture the required segments was cited. The answer in respect of pipes was to a specific point raised by Mrs. La Terriere. Stanton Ironworks held the patents for the newer and more efficient spun-pipe technology causing it to enjoy a dominant place in the industry. Anderston's riverside site precluded the use of the deep casting pits required in conventional pipe making.

184. D/AF 532 ibid.

185. D/AF 532, Watt to Cargill, 1 December 1936.

186. D/AF 537, Cargill to Watt, and D/AF 534, same to Harvey, both 8 March 1937.

187. D/AF 534, Cunningham to Prof. A.M. Drennan, 8 June 1937.

188. The ordinary dividend was increased from 4% 1936/7 to 6% 1937/8 to 10% 1938/9 (its best since 1923/4). Bonus dividends were paid in 1935, 1936 and 1937.

189. Liddell (see Appendix 2) had sought to involve himself in Anderston's affairs in 1927/8: D/AF 500, Watt to Cargill, 6 February 1928, with copy of Liddell's letter and D/AF 532, Cargill/Watt correspondence, June - December 1936 especially 17 - 18 September.

190. D/AF 8, Minutes of A.G.M., 31 May 1935 at which a letter from Campbell was read. D/AF 528, Cargill to Watt, 4 June 1935. The meeting was attended by two directors, Watt's son as legal adviser, an accountant (Anderston's registrar) and three 'insider' shareholders.

191. D/AF 533 and 538, Letters from James Campbell, 2 June 1937 (quoted), 31 May 1938 and 23 September 1938. Cargill's correspondence with Davidson and Syme, June 1937 (D/AF 538) embodying their letters and replies thereto. D/AF 537, Cargill/Watt correspondence, June 1937; D/AF 461, Cargill to Watt, 24 September 1938.

192. D/AF 9, Minutes, 6 September 1938.

193. D/AF 9, Minutes, 12 May 1939. The directors were unanimously against further repayments in the current climate.

194. D/AF 540, Letters from Moores, Carson and Watson, Glasgow, accountants, 2 - 24 June 1938.

195. J.R. Edwards, Company Legislation and Changing Patterns of Disclosure in British Company Accounts (1981).

196. D/AF 9, Minutes of A.G.M., 3 June 1938.

197. D/AF 523, Watt to Cargill, with Mrs. La Terriere's statement, 1 December 1938.

198. D/AF 526, Cargill to A.K.L. Harvey, 7 December 1935.

199. D/AF 532, Watt to Cunningham, 20 November 1938.

200. D/AF 532, Cunningham to Cargill, 23 November 1936.

201. D/AF 9, Minutes, 16 February 1937 and 6 May 1937.

202. D/AF 9, Minutes, 30 June and 16 November 1937. Things were not being rushed.

203. D/AF 539, A.K.L. Harvey to Cargill, 28 February 1938. Harvey had been impressed by the mechanised foundry of International Combustion which he and Cargill had visited.

204. D/AF 539, Cargill to A.K.L. Harvey, 15 March 1938.

205. D/AF 9, Minutes, 12 May 1939. Cunningham was now managing director. D/AF 544, Watt to Cunningham, 11 May 1939.

206. The consultant was to receive half the estimated savings achieved by his actions in the year from September 1937 as payment for his services.

207. Through Morris, Bruce Peebles secured contracts from Redcar Corporation. D/AF 532, Watt to Anderston, 25 February 1936 and reply, 27 February. D/AF 529, Correspondence with Bruce Peebles, who hoped to get introductions to other local steel firms with Anderston's assistance, 1936. Anderston bought is electrical equipment, wherever possible, from Bruce Peebles.

208. D/AF 532, 25 February 1936, Watt, Anderston and Harvey were all Brown Brothers shareholders.

209. D/AF 532, Cargill to Watt, 2 March 1936.

210. D/AF 8-9, Minutes, 1936, recording purchases of stock.

211. Bisset had worked for Anderston in the 1920s. He was a member of the Council of Ironfoundry Associations in the 1940s and meanwhile acted as an agent as well as managing/owning various ironfoundry businesses. He had been prominent in introducing Anderston to Percy Donald and light castings and in seeking new customers for light castings in the 1930s.

212. D/AF 532, Correspondence with Tyer & Co., 30 June 1936 and 30 September 1936; D/AF 532, Correspondence with Watt, September

1936. D/AF 530, Anderston to Head Wrightson, 30 September 1936. Cargill decided that "the risks are too onerous" (D/AF 532).

213. D/AF 534, A.K.L. Harvey to Cargill, 13 July 1937.

214. D/AF 534, A.K.L. Harvey to Cargill, 13 July 1937; D/AF 537, Cargill to Watt, 22 September 1937; D/AF 534, Cargill to Cunnigham, 8 - 14 July 1937; D/AF 534, Cruickshank and Fairweather, patent agents, Glasgow to Cargill, 14 August and 8 September 1937 etc.

215. See Chapter 6.

216. D/AF 9, Minutes, 1 October 1938. D/AF 461, out-letters passim. D/AF 539, correspondence with Kennedys.

217. D/AF 526, 530, A.K.L. Harvey to Cargill, 3 September 1935 and subsequent correspondence to 14 March 1936.

218. D/AF 530, Cargill to A.K.L. Harvey, 16 March 1936.

219. D/AF 532, Cargill to Watt, 7 June 1936.

220. Macnees' lease was due for renewal.

221. D/AF 404, Cargill to A.T. Harvey, 13 May 1920.

222. D/AF 461, Cunningham to Watt, 19 November 1938.

223. D/AF 409, Anderston, Glasgow to Anderston, Middlesbrough, 23 December 1921 and D/AF 540, correspondence with Macnee , October - November 1938; D/AF 539, Cunningham to A.K.L. Harvey, 30 November 1938 and following. Wallace had business connexions with Argentina.

224. D/AF 539 ibid. D/AF 542, Cunningham to A.K.L. Harvey, 3 February 1939 and the latter's reply, 10 February 1939.

225. D/AF 542 ibid., and private information.

226. D/AF 530, Anderston to Dowson and Dobson, 15 January 1936.

227. In former times, Macnees had taken advertisements in various railway directories and year books. Anderston was an unknown firm to many contractors, housebuilders and builders' merchants - hence its reluctance to deal in light castings except as the supplier of fixed, large contracts, with a small number of purchasers. Most of its segments business had been as sub-contractor to Head Wrightson and Stanton (see Chapter 4). D/AF 419, Cargill to A.T. Harvey, 30 October 1924; D/AF 494, Cargill to A.T. Harvey, 24 June 1924.

228. D/AF 503, A.K.L. Harvey to Cargill, June - August 1929.

229. D/AF 9, Minutes, 29 May 1936; e.g. D/AF 524, 527, 531, 536, 540, 543 for correspondence with Railway Gazette, 1934-39.

230. D/AF 526, A.K.L. Harvey to Cargill, 2 April and 17 June 1935.

231. D/AF 525, A.K.L. Harvey to Cargill, 2 April 1935.

232. D/AF 526, A.K.L. Harvey to Cargill, 15 July 1935.

233. See Appendix 1.

234. Kerr, Stuart invested unwisely in locomotive building in India and manufacturing metal framed door for the domestic market. It might have survived had it stuck to domestic locomotive building, making losses on a less than terminal scale. Armstrong Whitworth suffered more from its failures in Newfoundland than from the decline in shipbuilding, steel and armaments. See Chapter 5.

235. See Appendix 1.

236. S.D. Chapman, Stanton and Staveley. Chairs were just another product from its extensive foundries and a further means of absorbing its pig iron production which increased as it absorbed other Midlands firms in the years after the First World War.

237. E.g. Murray, Workman or Darlington Railway Plant. See Chapter 4 and Appendix 1.

238. D/AF 497, Cargill to Campbell, 27 January 1928 etc.

239. ibid. Invalidating the appointment of someone such as Sowerby except as a family nominee.

240. D/AF 498, Cargill to Guest Keen and Nettlefolds, acknowledging their condolences, 22 October 1927.

241. For example, D/AF 437, A.T. Harvey to Cargill, 27 October 1921 and D/AF 442, same to same, 18 July 1925 respectively. See also D/AF 514, Cargill to Watt, 17 December 1931.
The cultural ambience of Newboult is pervasive. These remarks add credence to the lines of argument pursued by Martin J. Wiener in English Culture and the Decline of the Industrial Spirit (Cambridge 1981). To stretch the point, one can seen parallels between Anderston's external relations and those of this country when facing a new world order in which the other players had different standards and could not, practicably, be appeased.

242. D/AF 539, A.K.L. Harvey to Cargill, 28 February 1938.

PART 3

War and post-war

CHAPTER 8

Revival and Decline, 1940-1963

The Second World War, even more than the First, brought a concentration on home and government contracts and the manufacture of new products which had little post-war potential. The export or die campaigns of the Attlee government brought Anderston business in markets such as India or S. America which had been lost to it pre-war. Such a position was likely to be temporary - the war had destroyed rival industries and many countries had built up large sterling balances during the war which could be un-blocked by spending them on British goods. A revival of competition from ex-enemy countries was as certain in the 1950s as the 1920s.

Trade had followed the flag: the flag was being lowered and with the exception of Pakistan, which was unhappy to buy from India, independence was unlikely to bring extra business. Nationalisation of home railways in 1948 paralleled the 1923 grouping in further centralising purchasing: railways had been in decline since the 1920s; in the 1950s that rate of decline increased.

Wartime control of industry and raw materials refined the various collusive trade associations into vital intermediaries between manufacturing firms and government departments. With the 1930s example of the B.I.S.F. to hand, from which organisation many of those prominent in the iron and steel control were recruited, trade associations could perform valuable work in calculating the requirements of their members and distributing the available raw materials between them.[1]

In part, because of this new rôle, in part from the extra effort put in by the professional organising secretaries,[2] usually

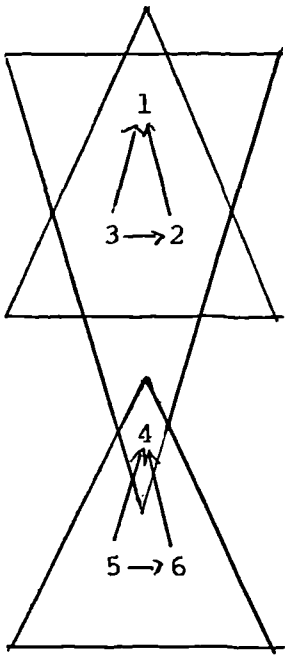
accountants, these new groupings were more conscious of the benefits of detailed statistics. The enhanced rôle of the Associations continued post-war when co-operation and economic planning exercised through such agencies as the Central Economic Planning Staff (1947) represented, much more than socialism, the outlook of the Attlee government. Sir Andrew Duncan during the war, Sir Edwin Plowden after it, were amongst the most prominent industrialists working in Whitehall. There were many others helping organise state regulation, e.g. Fitzherbert Wright,[3] chairman of a foundry, railway director, sometime Director of Iron Castings under the control machanism and head of the Council of Ironfoundry Associations (C.F.A.), the industry's new umbrella which co-ordinated the activities of many of the small Associations mentioned above and lobbied on their behalf.

The pervasiveness of the Associations in official circles as lobbyists and intermediaries was seen temporarily to coincide with the national interests of winning the war and surviving as a trading nation. With many prices controlled, price fixing and the payment of mutual commissions was displaced at the core of the Association's activities by negotiated price levels (with Association-minded controllers) and allocation of orders. The methods and practices suited to the 1930s where supplies and suppliers were plentiful and work was short were inappropriate when materials were rationed and the quantity of orders overwhelming (1940s) or plentiful (1950s). (See below Appendix 3, tables 67-68). In the C.F.A., the Ironfounders' National Council, the British Cast Iron Research Association and other such bodies the concept of an iron founding industry came to have substance which it could not whilst there were separate associations for the makers of baths, sinks and cisterns, for gutters as for gutter brackets.[4]

Within the company, various of its businesses had risen and fallen over time. This continued. Steel sleepers recovered from low orders and exiguous profits in the 1930s to large tonnages and consistently higher profit margins than at any time since the 1890s. The sales of the bolt shop had boomed in the 1920s; switches and crossings boomed in the 1950s without a comparable effect on the bolt shop.

Paradoxically, as many of Anderston's suppliers and customers were being consolidated through merger and/or nationalisation, the government which was creating state monopolies began, with the 1948 Monopolies Act, to attack private ones, fearful that they would hinder economic recovery just as later critics believe that state monopolies have. Restrictive practices, given the seal of respectability in the 1930s, were persecuted from the middle 1950s - when Anderston was coming to depend more upon them to secure orders which it might otherwise lose to rivals benefitting from large scale production, diversification, integration and more modern plant. Only 1% of agreements registered under the 1956 Restrictive Trade Practices Act were deemed to be in the public interest. Over ten years some 2100 agreements were abandoned amidst fears of adverse publicity - a return to earlier times.[5] Whereas a large steel company might possess full-time local representatives abroad, Anderston could not afford them. It was increasingly a subcontractor relying upon old friendships. If the pressure on cartels continued firms such as G.K.N. might feel it in their best interest to break away. Able to diversify they would survive as the unchanging, unaggressive Anderston did not - its business rusted away.

Figure 8.1 Anderston in the 1950s



(1) = Cunningham (2) = Harvey and Cargill (3) = Secretary (4) = Adcock

(5) = Departmental managers (6) = Assistant General Manager

Despite shortages, controls upon materials, costs and prices, high taxation and physical difficulties, the firm was busier than it had been for a decade and optimism infected the directors. The Second World War, unlike the First, was for three years prior to its conclusion, leading gradually to victory. The political climate after the war (in line with developments during the 1930s and the apparent success of the wartime directed economy, irrespective of the party of government) was likely to be more highly regulated and the state more intrusive, validating the continued need for industrial organisations and associations to speak with one voice for their members.[6]

Watt and Harvey were keen upon development, Cunningham and Cargill willing to see it. Adcock, the firm's principal technical mind, despite his long service, proved more innovative than Morris. During the war limited improvements were made: a new rail sawing machine was ordered at the end of 1941 (c.£1,000) for the points and crossings department; another one, with a pair of weighbridges and some welding equipment in 1943/44.[7] The first machine paid for itself within 2 years in improved efficiency: Morris had declined the offer of one.[8] The investment may seem small: after the dearth of capital spending in the 1930s, it was not.

Watt maintained his agitation for detailed development plans from 1942 until 1944 when, at a series of meetings involving all the other directors (i.e. those with responsibilities and/or technical competence), details of a far reaching renewal of the plant were settled.[9] Formal approval was not given until March 1945 for Anderston hurried slowly. Cunningham had come to agree with Cargill that Anderston was constrained severely in what new business it could take on. The firm was not be be transformed: it had, however, to be modernised to meet the expected high volume of demand. Cunningham blamed his predecessors for their undue conservatism: pessimism had prevailed during slack periods, followed by recoveries of sufficient strength to cause regret at opportunities lost through lack of investment in plant.[10] If the firm was to hold on to its traditional business it had to get the best plant, which was left to Adcock and Cargill to evaluate, which it could now afford to do.

Initially £25,700 was to be spent: an extension to the Bolt Shop (£2,587); a second steel sleeper plant (£9,675); a revised layout in the points and crossings department (£7,233); new electric rail-planers (£2,500); a works diesel locomotive (£1,400); bolt shop

machinery (£1,420); and sundries.[11] Post-war shortages and high demand for capital goods brought long delivery times and increased prices; later developments caused certain proposals to be modified. Between 1945 and 1950 the Port Clarence works received its most extensive rebuilding and re-equipment since its opening. During 1945 and 1946 over £21,000 of extra equipment was added[12] a travelling crane, rivetting equipment, a new furnace, mechanical handling and tar dipping plant and related building works, virtually all for the sleeper plant. Thereafter, the pace slackened but over four years another £21,000 was spent.[13] Layouts were re-organised. Improved conditions for the workers in the spirit of the times, included some dust extraction plant.[14]

Some of the modernisation was forced upon the company by dissatisfied inspecting engineers and the factory inspectorate concerned at its antique plant and methods.[15] The foundry, with its apparently safe base of chair orders and a largely domestic clientage, when exports were all important, received the least attention. Deficiencies remained elsewhere: the points and crossings' planing machinery would have been more adaptable if larger; lack of Cranes led to hand stacking of sleepers: the sleeper conveyors were cramped, as was the bolt shop - some of whose plant was aged. The foundry was unmechanised: the chair making machinery of an old design reliant upon the strength and endurance of its operators to maintain output. The segments' plant required a large labour force, its handling and ramming practices were primitive. The pipe plant required hand-ramming of sand for the moulds; sand mixing everywhere in the works was primitive and labour intensive.[16]

Piecemeal modernisation had continued through the 1950s at a reduced pace. By 1956 new planing machine (£6,000) and other

apparatus for the switches and crossings shop, a hot forging machine for the bolt shop (£5,000) and, upon the advice of the British Cast Iron Research Association, a sand preparation plant, had been installed. Further recommendations, e.g. the installing of a moving crane, were shelved. Despite experiences of labour shortage constraining production, greater mechanisation was not investigated; improvement was accepted but not embraced. Sand preparation remained primitive but matters had improved since the 1930s.[17]

Wherever new plant was installed, it justified itself. The new sleeper plant increased production by 20-25% from 1948, cut costs, used fewer workers and those more efficiently and improved the accuracy of the sleepers pressed.[18] Rail cutting machines saved c.£1 a ton on output.[19] The unforeseen decline of the chair business might provide a post facto justification for the lack of investment in the foundry but had Anderston installed a mechanised chair foundry such as that which G.K.N.[20] constructed, it would have been better able to secure continuing large chair orders (having cut its costs and cured its inability to manufacture its full quota of chairs in the post-war boom). All chairmakers bar G.K.N. become vulnerable to the competition from the new mechanical foundry at Horwich, Lancashire, which had been planned by the L.M.S. in the 1930s, but not proceeded with until after nationalisation.[21] Had the railways been given the option of several efficient, low-cost, external suppliers, Horwich might have been stillborn.

Watt, reversing his pre-war stance, preferred to spend £20,000 - £30,000 on development rather than repay further capital. "It is possible that we may try something which may not succeed, but I would rather lose £10,000 trying... than be reproached for not having tried anything".[22] Harvey pressed new orders and useful contacts on his

colleagues and, from 1942, wished to build bridges to the construction industry in anticipation of a post-war boom.[23] However, with Watt's demise (1945) Anderston lacked a friendly but dispassionate critic of its performance: the insiders were less innovative. As in 1918 few wartime products had clear peacetime uses: if demand continued Anderston hoped to continue its welding department for bridge components, otherwise nothing was to change.[24] The B.I.A.'s suggestion that Anderston establish a sales organisation, from which it might have benefitted during the housing boom of the 1950s, was rejected.[25] Cunningham felt that with the firm busy doing what it had always done there was little need to diversify: some changes were needed but not a thoroughgoing re-appraisal.[26] In the short term he was correct. From his technical ignorance and Adcock's lack of business experience it was easy for them to share Cargill's pre-war conclusions.[27] During the war Cargill, using confidential information from his position in the Iron and Steel Control, had suggested Anderston investigate the manufacture of asbestos-cement gutters and tank track links (the latter required up to £100,000 of new plant)[28], but he was no strong advocate.

New products might need a separate factory, up to date machinery, imported skilled labour (due to the limitations of the current workforce who were suited to, and limited by, the current plant and methods), a sales organisation and advertising, which would revolutionise the firm's nature - for example, aluminium spraying work from I.C.I. was rejected on grounds of complexity and the uncertainty of future orders.[29]

The layout and site of the works restricted what could be done there: many were the temporary buildings which, through indifference,

had become permanent.[30] Little except the partial rebuilding of the bolt shop had been done for a generation: machinery dating from the 1880s was still in use.[31] Much needed to be done to hold on to existing customers: South Africa's £30m post-war railway expansion scheme was announced but the government had instructed that increased preference be given to domestic manufacturers.[32] Adcock and Cargill were co-operating to design a lighter, cheaper tunnel segment, the better to compete with concrete, which had been boosted by the war. At a time of shortages expenditure on uncertain new ventures, in preference to staple products, would have been difficult to justify. The return on one uncertain; on the other rapid. Generous depreciation allowances contained in the 1945 and subsequent budgets, refunds of E.P.T. specifically to be spent on new plant and machinery, and the urge to dividend restraint may have encouraged greater spending on renewals, but even without them Anderston would have overhauled its plant.[33]

Control of iron, steel and scrap prices by the government and B.I.S.F. continued until the early 1950s. From c.1937 Anderston's contracts with its customers contained rise and fall clauses which allowed it to pass on the increased costs of raw materials. Shortages, controls, inflation and national wage settlements (a cause and effect of inflation) persisted. As long as order books remained full there was no incentive to absorb price increases in lowered margins, (a contrast with the 1930s) and little to promote the more economic use of labour and materials through mechanisation and internal controls: Anderston had closed its metallurgical laboratory in the 1920s. Its domestic rivals behaved similarly throughout the period.[34]

During the 1940s the trade associations as much as the trades unions were established in Whitehall. The Iron and Steel Control was filled with people from B.I.S.F. and others such as T.H. Summerson, who were familiar with the workings of collusive competition.[35] Cartels formed the ready-made intermediaries between manufacturers and the Control for apportioning scarce materials as they apportioned orders. The Ironfounders' National Confederation, established in 1940[36] as a pressure group for the substitution of steel by cast iron, to which C.I.C.A. (represented by Cunningham), C.I.S.A., B.I.A., Scottish Ironfounders' Association, the Cast Iron Axlebox Association and others affiliated, soon sought to become the voice of the cast iron industry, establishing, for instance, a technical committee. Once the Council of Ironfoundry Associations (C.F.A.) was formed in 1942 as a super-association for the industry, the I.N.C. concentrated up on its original purpose.[37] The I.N.C. had allowed individual firms to be members; the C.F.A. allowed only other associations to join it. Apart from the British Steel Producers' Conference and the British Cast Iron Research Association, Anderston belonged to at least eight export groups and trade associations during the 1940s.[38] The C.F.A. list of members makes clear the dominance of such Associations.

For the first time an industry-wide perspective was obtained with the I.N.C. and C.F.A. seeking statistical data on production, employment, capacity, future intentions, hopes and fears from members. Both the umbrella organisations and the individual associations were organised more formally at the war's end, with the expectation of the continuation of the corporatist and collusive culture which had allowed them to flourish. Formal constitutions were adopted, neutral secretaries with specialist knowledge, such as

Peats the accountants, were appointed. Allocation and negotiation of prices largely superseded the looser arrangements of the past where mutual commissions had featured strongly.[39] Anderston, although no longer the largest producer, remained the leading force in C.I.C.A. and was offered the chairmanship of C.I.S.A. Evidence, if any were needed, of its individual commitment to such practices. However the tide swiftly turned from this high water-mark of officially approved industrial organisation with the passing, in 1948, of the first anti-monopoly legislation, by a government which was busily creating state monopolies to free the commanding heights of the economy from the thrall of competition and profit in order to secure the benefits of rational, planned, non-commercial administration to all. During the early 1950s the light castings industry was one of the first to be investigated and the past and present activities of the B.I.A. made public.[39] After 1956 further legislation in the position of Associations become more difficult - restrictive practices were their business. Anderston found it particularly hard to modify its attitudes having for long been so deeply committed to non-competitive arrangements. Insofar as the steel industry, on the margins of the state sector, continued to be closely controlled by B.I.S.F.[40] and the government, and Anderston was faced by a monolithic state owned supplier of coal, a monolithic state railway as customer for its castings, and wage rates set nationally, it can be excused a slowness, which many of its rivals shared, to adjust to changed circumstances. The C.F.A. had negotiated successfully for the government to abandon (1943) a scheme for concentrating foundry production and closing down works. It was deeply involved in planning for post-war reconstruction and re-organisation. A Joint Council of pig iron producers and users had been formed (1945) to

avoid the recurrence of pre-war friction.[41] Now the long-established trade associations on which this superstructure had been recently erected were to be curbed. Each of Anderston's products experienced changes, the details of which differ.

II

Foundry output fell from 15500 t. (1939/40) to 6800 t. (1940/41), recovering somewhat in the later stages of the war, but never reaching its normal capacity of 20000 tons, let alone its peak capacity of 30000 tons.[42] As domestic construction ceased so did orders for drain pipes and tunnel segments. Railway chair output increased proportionately and absolutely. The price of chairs was intermittently controlled; the distribution pattern for the 1940s was set when, in 1940, the Director of Iron Castings gave C.I.C.A. the option of making its own allocation of orders.[43] Howie had, with difficulty, been gathered into the fold,[44] with G.K.N.'s inclusion in 1943, all 12 principal members had joined the Chair Association, presided over by Cunningham, whose proceedings become more formalised as its membership became more comprehensive.[45]

Pre-war practices continued alongside new arrangements. L.N.E.R. chairs might be arranged for the six northern makers plus Melvins; L.M.S. ones for the three Midland makers plus Howie; the G.W.R. was left to G.K.N.; the Southern invited tenders from its usual suppliers .[46] Northern firms wished to match orders more closely to capacity and hoped to sublet freely to achieve it.[47] The low ebb of chair orders in mid-1940 encouraged a review of how well or otherwise C.I.C.A. had worked

during the 1930s when Peases and Teesside had been principal beneficiaries and Head Wrightson and Anderston the losers.

The railways, already aware of the Association's existence, could not reasonably object. As C.I.C.A., personified by Cunningham, came out of the closet as sole supplier of railway chairs it faced, in practice, a sole purchaser: the Railway Executive.[48] As Anderston's share of the rising quantity of chairs ordered took its output past that of Head Wrightson and Smith Patterson and close to Pease and Tees Side its gloom at "becoming the Cinderella of the Association" lifted.[49]

Anderston believed that it had suffered adverse publicity as secretary to the "ring"[50] whereby it had not been invited to tender for various orders. Increased contacts between Cunningham and the Executive in the latter part of the war offered the prospect of a cosy relationship between suppliers and customers.[51] The L.N.E.R. was set to close its Peterborough chair foundry and the Executive agreed to purchase C.I.C.A.'s entire output from 1946 to 1948 placing orders as to makers and quantities at C.I.C.A.'s direction to give a steady work load and a better distribution of labour and employment.[52] Over-capacity was replaced by under-production due to raw material and labour shortages, absenteeism, high turnover, the shorter working week and poorer quality materials: for example Pease and Partners and Anderston were respectively 600 t. and 1200 t. below target production for the last quarter of 1946.[53] Deliveries from C.I.C.A. increased: 91363 t. in 1946, 95888 t. in 1947, 108400 t. in 1948, compared with a maximum of 104000 tons (c.1937/38) in the 1930s. All were falling short of their targets (1947),[54] despite lobbying to increase the quantity of scrap chairs supplied to them by the railways.[55] Stanton had temporarily abandoned chairmaking due to

the heavy demand for pipes, part of Railway and General's works remained requisitioned.[56] Once the difficulties had been overcome and G.K.N.'s new chair foundry at Cwmbran opened (1947) producted was estimated to rise to 141500 tons in 1949 and 182000 tons in 1951.[57] The Railway Executive's requirements, stated in 1946, were for c. 140000 tons p.a. in the late 1940s to meet which makers were encouraged to expand: instead allocation fell from a peak of 148000 tons in 1949 to 82000 tons the following year.[58]

The need to maximise output from all producers returned Anderston to greater prominence as a chairmaker. Taylor Brothers, Tees Side, Head Wrightson and Anderston each produced c. 10% of the chairs made by private supplier; Pease and Smith Patterson 15% a piece; G.K.N., with its new works, 18-19%; other firms were insignificant.[59] The grouping had harmed Anderston's position as a chairmaker, nationalisation ruined it. The ill conceived functional management structure of the nationalised railways centralised all mechanical matters and railway workshops under Riddles,[60] an L.M.S. man who surrounded himself with more of the same and re-activated the scheme for a mechanised foundry at Horwich, Lancashire, which the L.M.S. had shelved during the depression.[61] The L.M.S. had claimed considerable savings on chairs it had made for its own use. Rumours reached the chairmakers in early 1947;[62] the foundry was authorised in the Summer. Its effect:

TABLE 8.1 ANDERSTON

		Number employed in foundry	Number Making Chairs	Output of chairs for B.R.
Calendar Year	1951	100	100	100
	1952	109	83	79
	1953	95	55½	48
	1954	87	44½	37½
	1955	68	44½	21
	1956	72	44½	36½
	1957	72	55½	47
	1958	49	44½	29
	1959	54	28	14

Source: D/AF 490, 27 January 1960, Letter to Peat Marwick, Middlesbrough

TABLE 8.2 OVERALL B.R. ORDERS

	Base Plates	Chairs
1948	20.3%	79.7%
1949	27	73.0
1950	37.5	62.5
1951	42.5	57.5%

Source: D/AF 601, 16 September 1932

Further damage arose from British Railways' standardising upon flat bottom rail from 1948. Base plates (36lb) were required in place of chairs (46lb).[64] To renew the same mileage of track required, 21.7% less cast iron. The large decline in track and route mileage from the late 1950s was not yet perceived by railway managers, nor were other developments in permanent way construction. However, the poor future for private chair makers required little insight to forecast.

The Chair Association had acquired, during 1947, Peat Marwick and Mitchell as secretaries to take over an increasing burden from Cunningham, who became chairman of the Association and, ipso facto, chairman of its management committee (until 1957) under the new, written constitution which he had been prominent in formulating.[65]

Thus he remained closely involved in the formulation of policy and negotiations respecting Horwich whose construction had been authorised by the Ministry of Transport without reference to the Iron and Steel Board with whose planning activities the chairmakers were concerned. Private firms suspecting that nationalised industries charted an easier course through the sea of planning regulations and permits than they, felt Horwich a "grave threat" to the 1500 people employed in their chair foundries.[66] Horwich was due to open in 1951 with a capacity rising to c.500000 tons p.a. In 1955 it produced c.99000 tons of castings.[67]

Chairs

TABLE 8.3 All makers

	Allocation (tons)	Delivery (tons) (to British Railways etc.)	Capacity (tons)
1948	110875	108420	n/a
1949	148150	142664	151440
1950	82064	97480	165400
1951	131045	125909	182300
1952 (6 mos.)	60740	62655	63850
1952 (12 mos.)	91275	n/a	n/a
IV 1949	32405	n/a	41330
I 1950	20000	n/a	43000

Source: D/AF 570 and 601 (as notes 58 and 68)

TABLE 8.4 All makers

Chair Deliveries (tons)

	British Railways etc.	Other	Total
1946	91363	-	91363
1947	95888	-	95888
1948	108420	13226	121646
1949	142666	11503	154169
1950	97456	12525	109981
1951 (8 mos.)	86901	5791	92692

Source: D/AF 570 and 601

Allocations, deliveries and manufacturing capacity of chairs remained in step to 1949: in the first quarter of 1950 orders at a

rate of 80000 tons p.a. faced capacity of 172000 tons. Anderston's chair output peaked at 12000 - 13000 tons p.a. (1947-52), its foundry output at 15000 - 18000 tons. British Railways was not the sole customer for chairs but it regularly took 90% of those made.[68] The makers, presented with a fait accompli, began (1949) to lobby, through C.I.C.A., Regional Boards for Industry, the C.F.A. and M.P.s: British Railways should concentrate on running trains rather than ruining suppliers who had increased their capacity at the express request of the Iron and Steel Board. During the War the government could not persuade other firms to make chairs because prices were too low.[69] Horwich might be but the first stage to making British Railways self-sufficient in chairs, a misallocation of resources leaving private makers the almost impossible task of finding mass produced castings to replace their chair business and contributing to unemployment.[70] Despite some over-egging of the cake the proposition that the foundries would not be able to find a substitute for chairs was borne out by events: in Anderston's case there is little evidence that it tried to find substitutes. Profits from the business were not re-invested in modernising the foundry to broaden its potential and latterly were used, as in the late 1920s, to subsidise its losses.

Pressure from the Association of British Chambers of Commerce brought ministers and civil servants from the Board of Trade, to a meeting with representatives of British Railways, C.I.C.A. and other interested groups at which assurances were made that Howich would supply only 33% of the wants of the London Midland system.[71] Settlement was shortlived for in May 1950 the railways abandoned the allocation of chair business through C.I.C.A., and resumed ordering from individual works with reference to delivery points, the traffic

given by such firms to the railways, and the capacity of works.[72] Prices continued to be fixed by negotiation between C.I.C.A. and the Railway Executive making due allowance for iron and wage costs.[73]

The apportionment of standing orders by C.I.C.A. had proved particularly difficult: G.K.N. with increased capacity refused to accept an allocation based on post delivery levels; the other makers would not accept its claim for 25% of British Railways' requirements, later revised to a demand for 25000 tons p.a.[74] From 1950 - 1952 G.K.N. maintained pressure on the Association by threatening to resign whilst continuing to co-operate when it suited them.[75] G.K.N.'s output per employee was significantly higher than all but Head Wrightson and Smith Patterson and double Anderston's, which lagged far behind all medium and large-scale suppliers.[76] British Railways had previously broken the Wagon Builders' Association and the prices of the Steel Founders' Association.[77] The Chair Association, in G.K.N., faced a large, efficient, well-equipped, financially strong rival, not as heavily dependent on chairs as many members. G.K.N. could not be coerced as Summersons' had been in the 1930s[78]: it was G.K.N. rather than the Association which set the pace by demanding the right to underquote other makers by 5/- a ton and C.I.C.A. which, under pressure, sought compromises. "I thought Hitler was dead".[79]

C.I.C.A. exhibited the failures of a committee; G.K.N. could act decidedly. For the Association, Peats' devised a rebate scheme (lower prices for larger orders) which embodied: a minimum tonnage, rise and fall classes to cover labour and raw material costs; a three to four year contract period; and fixed allocations, to re-establish certainty, tempt British Railways into agreement and pacify G.K.N.[80] Unfortunately, agreement on details was difficult to

obtain and re-drafting by C.I.C.A.'s Rebate Sub-Committee consumed energy, better expended in winning orders.[81] Any rebate scheme might be negated by Horwich's ability to supply all the London Midland Region's requirements.[82] The minimum level at which private makers could maintain economic production, c.75,500 tons p.a. required, with the capacity of the railway-owned works accounted for overall orders of 140-150,000 tons p.a. The rebate scheme had settled upon 100,000 tons p.a. as the standard tonnage, which bore little relation to future prospects. Private capacity had peaked at 182,000 tons in 1951; demand in the following year was but half of this.[83]

TABLE 8.5 CHAIRMAKERS

	Employed in making chairs			Output Tons			
	1937	1945	Full	1938	1939	1945	Full
Anderston	95	84	n/a	(5825)	(4270)	(9500)	n/a
Cochrane	+	27	59	+	+	4100	7400
G.K.N.	129	85	132	19572	8948	8088	20000
Head Wrightson	55	24	89	14400	11670	3020	20000
Howie	22	19	29	1948	1607	1636	3500
Melvin's	10	9	12	2198	2093	1779	n/a
Pease & Partners	203	145	219	17000	19700	16264	26500
Railway & General	44	18	*	6792	4842	1420	*
Smith Patterson	113	82	130	13000	7400	8400	22500
Stanton	+	91	110	324	2131	13912	20000
Taylor Bros.	111	106	115	12254	12367	9090	12500
Tees Side Bridge	164	110	164	10626	9597	12016	23500
	946	803	1243	103937	84623	89221	186000

Note: Output figures relate to each company's last full year before 30 September of the given calendar year.

+ = Not chairmaking * = No return, plant requisitioned and to be rebuilt

Source: D/AF 557, Chairmakers File, November - December 1945

TABLE 8.6

Deliveries and Proposed Allocation of Chair Orders

	Deliveries, 1947-50		Deliveries, 1950		Allocation 29.12.49
Anderston	43339t	9.75%	9155t	9.39%	8.66
Cochrane's	18425	4.15	3071	3.15	4.46
G.K.N.	84698	19.06	17521	17.97	21.00
Head Wrightson	45037	10.13	8787	9.01	9.84
Howie	4763	1.07	1648	1.69	1.58
Melvin's	6183	1.39	1488	1.53	1.84
Pease's	69844	15.72	13821	14.18	16.53
+Railway & General	4753	1.07	1991	2.04	2.10
Smith Patterson	74262	16.71	15597	17.13	19.95
Stanton	16239	3.65	3632	3.73	3.94
Taylor's	31736	7.14	10524	10.80	excluded
TeesSide	45137	10.16	9145	9.38	10.10

+ Restricted by requisitioning of works to late 1947

Source: D/AF 601, 29 December 1949 - 1 February 1952

With such overcapacity British Railways would act as it chose, despite hollow assurances that it realised the value of keeping suppliers in business, exerting strong influence on chair prices as

the largest customer and, on costs, insofar as 60% of the tonnage it consumed was matched by the scrap chairs it supplied for remelting.[84] From its own manufacturing it knew likely costs of production. To shew that excess profits were not being made C.I.C.A. agreed from 1952/3 to allow British Railways to investigate the costs of production of its members.[85] Sandwiched between a monopsonist and the threat of G.K.N. reaching some separate arrangement with the railways, C.I.C.A. members had to accept their loss of freedom or quit the business.

In 1953 G.K.N. withdrew having been a source of constant unrest for some 4 years. It would not rejoin C.I.C.A. but it would co-operate in attempting to limit the challenge from Horwich when, for example, an extension to and increase in output from the railway-owned foundries was threatened (1954/5).[86] Ellis Hunter, head of Dorman Long , was brought in as adviser, negotiatior and link man to add weight to C.I.C.A.'s attempt during 1954/5 to persuade British Railways to close Horwich.[87] C.I.C.A. claimed that the maintenance of two shift working at Horwich was leading directly to the closure of private suppliers:[88] by ordering entirely from private firms c.£120,000 would be saved, to be offset against the cost of developing Horwich which, at £650,000, was felt to be much understated.[89] This offer was, after much delay, declined.[90] The railways were interested in keeping Horwich in production whilst obtaining the advantages of the volume rebates C.I.C.A. had offered as an incentive to get Horwich closed or to avoid its further development. G.K.N. as the largest, most modern maker, through its other business a significant customer of railway services, was better able to offer substantial price concessions in return for a long contract than was C.I.C.A. with its more disparate forces. To

reconcile these separate interests to avoid the railways plumping for C.I.C.A. or G.K.N. was impossible.[91]

Most makers were losing money on chairs but to increase prices substantially was to risk further reduction of orders and the harming of the negotiations respecting the future of Horwich, on the false assumption that these negotiations could have a satisfactory conclusion.[92] Although C.I.C.A. with increasing difficulty, passed on increased costs to its customers, and maintained a notional average profit margin of c. 7½% on chairs, the increased overheads of c.25/- a ton resulting from low orders devoured most of this profit.[93] The business was not worth the effort made to retain it but for the absence of something to take its place. Promises in 1955 to restore orders to a viable level of 70000t proved hollow: an improvement from 18000 tons p.a. to 28000 tons p.a.[94] was suddenly cut short in the final quarter of the year. Makers, to avoid losing their workforce, manufactured for stock.[95]

The futility of further negotiation should have been apparent but Cunningham, as long as he chaired C.I.C.A. (to Summer 1957), kept faith.[96] His tunnel vision, and hard work stood revealed as clearly in the conducting of the Chair Association as in the management of Anderston: he did not know when to give up. Whereas the Association and its methods had been "not only desirable but necessary" in the 1940s[97] it had been reduced by the later 1950s through changes in circumstance and the law to a mutual agreement for the exchange of information on orders[98] and quotations. The F.B.I. swimming against the tide, commissioned professional economists to write in defence of Trade Associations just as the railways' stores departments sought to cut all links with an organisation tainted by restrictive practices.[99]

The "particularly desperate position"[100] of firms heavily dependent on chair orders caused an exodus from the industry led by Pease and Partners (Summer 1957). Anderston's foundry was reduced to a four day week and even Cunningham had come to recognise that no good would come from further talks.[101] Customers outside British Railways were in decline: the Irish railways from financial exhaustion and closure; contracting firms such as Grant Lyon through vertical integration had less need of outside suppliers.[102] Within C.I.C.A. Anderston was one of the least efficient producers; its manufacture of chairs continuing because of habit despite high costs, low margins, falling orders and high, but not necessarily competitive prices. Northern makers as pre-war had to pay more than Midland makers for iron (6/- - 7/- a ton).[103] Price rises by C.I.C.A. and G.K.N. were not co-ordinated but tended to move in step. However, G.K.N. having insisted in the early 1950s upon a price advantage in its negotiations with C.I.C.A. had, in independence and through its own greater efficiency maintained it, e.g. £21/3/9d G.K.N., £21/11/- C.I.C.A. in late 1955.[104]

Over developments in the chair business Anderston and C.I.C.A. had little control. Anderston was unlikely, on past form, to have modernised without obvious need or to have cut from a cartel of which it was the founding and leading light. Had it done the one without the other its position would have been little improved. Once Horwich was in production chairs had, despite intermittent assurances, no future. Anderston's failing was in not cutting its losses. It would have stood a better chance of finding alternative products and funding the necessary re-equipment and diversification had it done so rather than waiting until 1960 when the rest of its business was in

crisis. Such observations benefit from hindsight: Anderston lacked foresight.

In contrast the future for tunnel segments was bright: threatened competition from concrete did not prove serious;[105] the business was not dependent on main line railways at home or abroad, C.I.S.A. functioned successfully. Suspension of London Transport's extension programme brought a complete cessation of orders by mid-1941 but C.I.S.A. remained as being.[106] Despite heavy lobbying the hoped for market in cast iron deep air raid shelters did not materialise. Stanton declined to join the campaign having prior claims upon its pig iron and, as was usual in C.I.S.A., without Stanton's lead nothing happened.[107]

Work on part of London Transport's extension resumed in the 1940s, however,[108] its dominance as a customer diminished. Road tunnels (Tyne, Dartford, Blackwall, Clyde etc.), many proposed during or before the war, and export work, e.g. the Toronto underground supplemented large sewerage and drainage schemes from the 1950s as the focus for new business. Butlin's, upon its sale by United Steel to Morris Motors ceased making segments at the end of 1947. Pease and Partners who had formerly co-operated, now joined (in 1949).[109]

Anderston's inefficiency was not limited to chairs: whereas Stanton could produce segments at £21/5/6d. and Pease, Head Wrightson and Smith Patterson could do so between £21/7/- and £21/16/-, Anderston required £22/18/-.[110] The Association existed through Stanton's goodwill upon which the others, particularly Anderston, depended. Segment production peaked, postwar at 3000 tons p.a. in 1952-54 and with the cost disadvantage, helps explain Anderston's decision of 1952 to construct a segment milling machine to Adcock's design. Teething troubles with the machine after its completion in

1955 were never overcome as Adcock's retirement removed the one first class technician from the business.[111]

When the segment market turned sharply upward in 1959-60, Anderston was unable to benefit from the counter cyclical demand which should have proved so valuable: its machinery was of dubious design, unable to machine large segments to the demanded tolerances; it thus failed to meet the increased standards demanded and the delivery targets it had agreed with Stanton. But for technically weak management and a lack of investment, Anderston's theoretical capacity of 5000 tons of segments a year could have provided the basic turnover of the foundry whilst it re-organised itself away from dependence on chairs:[112] public works would have kept up demand for segments. Until that demand revealed Anderston's shortcomings, there was the customary disinclination to act.

Telegraph pole bases were little sought during the war but demand returned to the best pre-war levels of 2-3000 tons p.a., declining to c.500 tons p.a. as the 1950s progressed. Orders came as before, largely for export to the Far East, the colonial empire and S. Africa.[113] Other foundry exports - A.B.C. rail anchors (chiefly for the East African Railways) and bearing plates - were insignificant; a mere 230 tons (£13,750) in the decade to March 1960.[114] At home increased competition and decreased profit caused Anderston to cease making manhole covers and gratings, c.200-300 tons of annual business, in 1949.[115]

During the war Anderston's agreement with the B.I.A. was suspended: iron was reserved for more important uses than pipes and gutters for which asbestos-cement found favour.[116] The B.I.A. terminated the agreement in 1947 - House Castings Ltd. was then liquidated - just as Anderston was increasing its output as quickly

as its labour shortage permitted.[117] In consequence, and with few reservations, Anderston negotiated full membership of the B.I.A.[118] Through the post-war building boom sales rose to a peak of 1377 tons (1955/6), comparable to the later 1930s, declining to c.300 tons by 1958/9.[119] Despite a lack of mechanisation the foundry was capable of a competitive output and, despite the changing environment, the old ways of doing business were too deeply embedded in Anderston (and many others) to be sloughed off willingly, quickly or easily.[120] Opportunities to supply local builders and the housing market generally were not grasped. Anderston remained unwilling to get involved in selling.[121]

As the chair business failed, Anderston's thoughts on what could be done were limited by poverty of imagination to the resumption of manhole production,[122] the sale of more pipes, bases and lever boxes, and the manufacture of segments for Dartford Tunnel.[123] Labour shortage was seen as inhibiting development rather than spurring the firm to use labour more efficiently by further mechanisation, which it could well afford. None of these proposals would be of much help to a foundry which was working, at 7000 tons p.a., at less than a third of its capacity.[124]

Anderston's capacity for steel sleepers was 25000 tons p.a. in normal circumstances, its peak production 50000 tons p.a., that for the other export departments was 2000-3000 tons for bolts and double that for points and crossings.[125] Sleeper pressing had been and would again be, the principal export business of Port Clarence. Pre-war it had suffered particularly from the depression: the total amount handled by the Sleeper Association was less than Anderston's own capacity, a position which the war did not change,[126] so that

Dormans had to be re-assured (1936) that Anderston was not going to demolish its, then, idle plant and quit.[127]

From 1945 to 1960 sleeper business (c.16500 tons p.a.) seemed to boom, constrained in the late 1940s by the general shortage of manpower and materials but free from ex-enemy competition. The Association returned to action in September 1944,[128] sufficiently confident of the end of the war to accept a 37856 ton order from South Africa, heretofore not a loyal customer.[129] Anderston encouraged by large orders from traditional customers, tax incentives and healthy reserves had embarked upon re-building its works.[130] The need to keep abreast of competitors with newer plant - Guest Keen and Baldwins, soon to be re-organised into the Steel Company of Wales,[131] (S.C.O.W.) and Colvilles - was limited, in the short term, by the distribution of orders through the Association and the excess of demand over supply. However, an engineer of the South African Railways on a tour of inspection of suppliers' works made it clear that no future S. African orders could be expected until Anderston's utterly outdated methods were changed. The risk of losing other sleeper business (Rhodesian), brought action with Adcock's home-spun automated production line. "The less said about our present methods the better", Cargill admitted without ever having felt the need to revise them.[132]

Co-operation with Dormans was re-affirmed with Dormans' suggestion that Anderston install a second plant to meet the expected rush.[133] Their alliance cemented, the two firms withstood pressure (from G.K.B. and Colvilles) to revise the Sleeper Association's policy of one member one vote and to alter allocations when Anderston was rebuilding, Dorman's was mothballed and the "North East Coast" could not deliver its full allotment.[134] External pressures

displaced internal rivalries. Dormans' fear of renewed Belgian competition (1946) was justified: by 1949 S.C.O.W. had to cut its prices from £26 to £23/15/- a ton in an attempt to retain business from Switzerland and a few months later a large order from Pakistan was placed in France with a short delivery time.[135] Assured work irrespective of price or mounting delivery times was, throughout the export trade, diminishing: over the next few years bolts and switches and crossings were to experience a loss of major customers.[136] Further attempts to push the use of metal sleepers by domestic railways failed, as before. S.C.O.W., having established its own priorities, closed its rail and sleeper plant during 1952.[137] The S.S.A. allocation then became Colvilles' and United Steel 32% each, northern makers 36%.

Until the early 1950s, the war time regulatory framework survived. Thus the Sleeper Association and the Rail Makers' Association (both administered by Peat Marwick in London) negotiated with the Board of Trade and the Ministry of Supply via the British Steel Producers' Conference, the supply of raw materials. The government would authorize the quarterly tonnage (divided 37½% to the Sleeper Association and 62½% to the Rail Makers) which the associations would then allocate between their members pro-rata to those members' entitlement under the Associations.[138] Peats' explained the process to B.I.S.F. and the Conference as a means of "securing a proportionate and efficient distribution of contracts"[140] in much the same way as C.I.C.A. sought to justify its arrangements to British Railways. Corporatism and collusion were out of the closet. The corollary of these arrangements was to divide large orders between several manufacturers, rationed for supplie s, in place of apportioning a particular order to a particular firm, turn

and turn about, as in the past. Temporarily abandoned in 1950, steel control resumed with the Korean War. Steel shortages and irregular deliveries of plates from Dormans persisted into the middle 1950s, handicapping Anderston's new sleeper plant opened in 1948.[140]

The Board of Trade decided what tonnage of sleepers could be exported and where. To maintain its export business the Association had to lobby constantly through the Conference to maintain supplies.[141] Whereas Egypt and Mozambique seemed the most substantial new markets to the manufacturers, there was great difficulty obtaining export business to non-sterling and non-Commonwealth countries.[142] Constraints on supply and the targetting of exports to certain export markets by the government, from a mixture of political and economic considerations, flourished at the expense of purely commercial actions throughout the period. United Steel had negotiated large contracts for rail sleepers and fittings with the Seven Year Plan Organisation in Persia at the end of 1950 which the British Government ordered suspended as inter government disputes respecting the Anglo-Iranian Oil Company developed.[143] The bright prospects of Egypt (1951) had dimmed by 1954; the difficulties with the railway authorities possibly having a political basis.[144] Conversely, the government's domestic activities - e.g. the nationalisation of steel - had none of its feared effect.[145]

Despite a flourishing order book, Anderston's underlying position was weakening. For sleepers, as for other products, South African orders fell away from the early 1950s due to foreign competition and domestic political and economic developments.[146] Orders were increasingly tied to infrastructural developments in an empire[147] more rapidly approaching dissolution than was realised: the

Crown Agents and Rhodesia took 43% of sleepers (1945-50) and 61% (1955-60). Although independent Ceylon and Iraq (until the coup of 1958) bought through the Crown Agents, other new states might shew economic independence: they were free to be influenced by rival packages of aid and soft loans.[148]

TABLE 8.7 STEEL SLEEPER ASSOCIATION (%)

	S. Africa	Crown Agents	Rhodesia/ C. Africa	India/ Pakistan	Near East	Other	Total p.a.
A Oct.1944-Sep.1950	38.45	22.73	19.71	16.30	1.49	1.34	56618 t (76900 t delivered, 1949/50)
B Oct.1954-Sep.1955	21.04	25.40	28.52	19.93	5.13	0	70630 t
B Oct.1959-Sep.1960	0	46.2	0	0	53.8	0	29645 t

A = Orders B = deliveries Source: SSA (Peat Marwick , London file D/AF 578; D/AF 585; D/AF 592)

The destruction of Anderston's records renders impossible the calculation of full figures for the S.S.A. after September 1952
Near East comprises Iran/Sudan (1945-50); Egypt (1954/55); Turkey and Iran (1959-60)

TABLE 8.8 ANDERSTON'S STEEL SLEEPER SALES (weight) (%)

	S. Africa	Crown Agents	Rhodesia/ C. Africa	Total
Apr.1945 - Mar.1950	46.5	19.6	23.8	89.9
Apr.1950 - Mar.1955	12.3	36.3	23.6	72.2
Apr.1955 - Mar.1960	13.8	43.7	13.3	70.8

Source: Sales Day Books, D/AF 233-241

Dependence on colonial markets was not due simply to manufacturers retreating from markets where they faced competition. When government controlled exports the corollary of the colonies

buying British was that Britain must supply them. Their requirements could be represented as essential by one government department to another and given priority.[149] Secure orders in the short term were won at the expense of those markets, in which French, Belgian and German competition was felt, which might offer better prospects in the future. An imperial government would see little point to colonies buying abroad and using scarce sterling to do so simply to allow sleeper makers to sell abroad to bring scarce foreign currency into the sterling area: the two transactions would counterbalance one another and autarchy, grounded on the sentiment of imperial preference sounded in the background. Trade within and without the empire had strategic and political overtones. Nevertheless, British exports of railway materials rose as a proportion of world production whilst overall British steel exports fell as a proportion of the same.[150]

Although the remaining British-owned Indian railways had been nationalised during the Second World War, the large sterling balances accumulated by[151] the government of India in the course of the war produced a rush of post-war orders for railway materials and other commodities to turn blocked funds into useful commodities. Political acrimony after 1947 discouraged Pakistan, which continued to use Rendels, Palmer and Tritton as its consulting engineers, from buying from "Hindustan", to the benefit of British firms.[152]

As United Steel had negotiated in Persia, and the resident agent of S.C.O.W. in Egypt, United Steel's Pakistan subsidiary was responsible for arranging the bulk of the orders secured from that country in the 1950s. These orders were then sub-contracted through the trade Associations or with their tacit approval.[153] Large steel companies could negotiate to equip entire railways. Through

subsidiaries and agents they could afford high quality international representation beyond the reach of such as Anderston. The changing patterns of contracts negotiated directly with foreign governments and agencies by large companies (or consortia dominated by them) was inimical to Anderston, attuned to passive receipt of orders tendered for in London. It had neither the means nor inclination to negotiate abroad for itself; its relationships with large rivals through the Associations allowed it to participate in consortia. Without its links to Dormans and the Assocation it had no future in the sleeper business. With the pressure of restrictive practices legislation upon the Assocations those who could negotiate such contracts might cut their losses, cut their links with the Associations (as G.K.N. with C.I.C.A.) and beach Anderston. Steel re-nationalisation in 1967 would have disrupted Anderston's relationship with Dormans had the firm survived until then.

Anderston's other export departments were subject to the same kinds of government control and direction as steel sleepers, to similar changes in the way business was conducted and to similar loss of markets. Wartime sales of switches and crossings, c.£100,000 p.a. were double those of the best years of the 1930s and a small but steady business with the Crown Agents and Rhodesia persisted throughout.[154] From 1938 to 1944 the Switches and Crossings Association hibernated in favour of the Switches and Crossings Export Group, chaired by Cunningham, run by Macnees and containing all the Association's export makers plus Robert Hudsons. From the outbreak of war the Board of Trade, allocator of raw materials to export industries, sought to grant official recognition to such groups to simplify its task.[155] The export drive of 1939/40, to help pay for the war, ceased with the events of summer 1940: orders in hand were

suspended, never to be revived as national survival took precedence of financial rectitude.[156]

Adcock, freed from Morris's rigidity was improving methods[157] and, in collaboration with L.O. Tubby, new blood at Macnees in April 1940, patented miscellaneous designs for use with concrete sleepers.[158] The connexion with Priest Furnaces to whom Anderston supplied tracks for mechanically charged furnaces was maintained to be of great value post-war (c.£3,163 p.a. 1950-60)[159] but, directly or indirectly, the government, cost conscious, was pre-eminent as a customer.[160] During 1940 Anderston and Taylor Brothers co-operated unsuccessfully to resist the Ministry of Supply which cut the price of turnouts supplied to it from £478 to £387 using a model which allowed assets at 75% of direct wages, compared with Anderston's figure of 114%.[161]

The Switches and Crossings Association resumed in October 1944 with firms jockeying for position. Summersons returned to the offensive, claiming that Anderston and Darlington Railway Plant had obtained undue advantage when SAXA was established: it sought a 25% allocation with Anderston reduced to 20% and Darlington to 17%. All makers opposed this.[162] Edgar Allen aimed to obtain a greater share if allocations were revised and Anderston, which had, since 1923, made the largest sacrifice of its allocation, could count on support against Summersons which had sacrificed least.[163] Export makers risked embroilment in a festering dispute between Taylor Brothers and Railway and General regarding the allocation of home business.[164] "A big element of competitive rivalry" persisted with sharp practitioners such as Summersons[165] but S.A.X.A. held, its difficulties solved by booming orders (c.500 units of work were allocated by it in 1943; 14,000 in 1945). From 1945 to 1950 an

average of 9000 units p.a. were placed with the association despite delivery dates lengthened by raw material shortages to 1-2 years.[166]

TABLE 8.9 ORDERS OF THE EXPORT MEMBERS OF THE SWITCHES AND CROSSINGS ASSOCIATION

(in units)

1943	506	1946	10097	1949	7110
1944 (13 mos)	939	1947	2790	1950	9963
1945 (11 mos)	13668	1948	8983		

Source: D/AF 555, 559, 564, 569, 573, 577, Macnees' files

In 1950 S.A.X.A., like C.I.C.A., adopted a formal constitution, under which it functioned until its collapse, with Anderston and Macnees, in 1962.[167] Patent Shaft withdrew in December 1950 to focus its business elsewhere.[168] The Railway Executive, consistent with its cartel busting elsewhere, tried to interest export makers in quoting for home work without success.[169] However, Railway and General under new leadership strove to increase its business by cutting margins and invading the export market thereby provoking very keen and retaliatory competition from S.A.X.A. members to cut Railway and General from the lucrative Crown Agents' business.[170] The Agents' late buyer became sales manager for Railway and General which sought to advance on the home market by taking control of a platelaying firm.[171] Anderston felt superior to such behaviour and resumed its policy of the early 1930s. The rebel maker found it difficult to get supplies.

> "I am of the opinion, without having any definite proof, that behind this difficulty was the hand of Mr. Cunningham, the Chairman of this Export Group, who was possibly implementing the threats personally made to Mr. Argyle some time ago to

> deprive this company of active participation in the export field unless it agreed to join... the Group on terms to be decided by the existing makers".[172]

The subsequent threat by Anderston and Summerson's to enter the home business provoked Taylor Brothers to threaten to take export orders. British Railways planned a new switch and crossings shop; its behaviour similar to that in respect of chairs. Maximum use was made of inherited manufacturing plants, and Taylors' relegated to supplying the left overs and less conveniently manufactured, non-standard parts, although it remained the chief supplier to the home market.[173] (Both the policy of the Railways and Taylors' preeminence may have influenced developments at Railway and General). Anderston was ill equipped to compete for home main line business[174] whilst the trend against restrictive practices in general and developments in this particular industry made a comprehensive re-negotiation of the cartel agreements unlikely. Paradoxically, as the effects of British Railways' monopsony in the domestic market for railway equipment became evident, small manufacturers who needed to ally in their own defence were barred from deploying various of the means previously available to them for shifting the balance of power from consumer to producer.

Patterns of home demand had changed. Despite large contracts through Priest Furnaces for the Orgreave Cokeworks (1955-56)[175] business with industrial customers was lost to competitors who could lay out the equipment they had supplied. Contracts for I.C.I. on Anderston's doorstep, were lost though its manufacturing plant and methods were not at fault: private words between Kenneth Harvey and a a Director of I.C.I. with whom he was acquainted were no longer enough.[176] Summerson's and White's had long possessed platelaying and contracting business: Summerson's consciously expanded its post-war.[177]

Darlington Railway Plant, through its association with Wards was able to offer such a service to the disruption of S.A.X.A. in the late 1930s;[178] Railway and General was seeking similar integration before its absorption by Wards in 1957. Contracting firms such as Tarmac and Boots possessed switch and crossings departments but others, e.g. McAlpines, did not. Anderston shunned any sort of sales department which could sell the firm's existence as well as its products and failed to cultivate contacts with contractors which might have fructified into beneficial partnership.[179]

Anderston did little to enhance its prospects of survival: platelaying was a business it could understand with an immediate future brighter than that for many of its businesses and an encouraging current performance. The Scunthorpe firms of Grant Lyon and Eagre Construction were both plate laying contractors from whom Anderston received orders (£11,600 in 1958/9).[180] Eagre acquired the Isca Foundry during 1958[181] just as Anderston, the passive recipient of an approach by a firm of business brokers, failed to buy Grant Lyon,[182] which had developed in only 7 years to produce average profits of £65,000 p.a. The price, £230,000, subject to negotiation, was within Anderston's reach but, oblivious to the impending collapse of its traditional business, Anderston negotiated without urgency on commitment and Grant Lyon passed to more enthusiastic purchasers.[183] A source of valuable orders for chairs and baseplates from the foundry as well as for points and crossings and bolts might have been secured with more effort: the contrast with the purchase of Macnees in 1880 by a, then, dynamic Anderston illustrates the cause and nature of the firm's decline.

Over certain of its difficulties, Anderston had no control. Orders from South Africa, its largest customer for switches and

crossings in both the late 1930s and 1940s, ceased entirely after 1952, in consequence of the National Party's drive towards industrial development and self sufficiency for political ends. Orders would be largely confined to South Africa by financial stringency and import restrictions. Preference on railway tiebars from domestic makers had lately been increased from 5% or 10% to 20% of prices. As with India in the 1920s, the more enterprising Summersons considered opening a branch plant but was dissuaded by the existing government regulations.[184] During the war Rhodesia Railways had bought from South Africa. The disappearance of such a loyalist customer from the middle 1950s may have resulted from the availability of S. African produce close to hand as from other foreign and British competition.[185]

Orders from S. America revived somewhat post-war. Argentine custom disappeared soon after the nationalisation of railways there in 1948 whereas concerns such as the Peruvian Corporation and the Antofagasta, British-owned, continued to buy from Britain.[186] As with steel sleepers more orders came from Pakistan than from India with Anderston relying increasingly upon the United Steel Companies to represent it on the sub continent.[187] The large Persian contract, which brought high levels of work and profit to the switches and crossings department, was secured by Anderston only through participation in the consortium led by United Steel Companies to furnish all the track and fittings for a new line, underwritten by extended credit from the British Government.[188] Anderston could not afford to be independent nor could it rely on Associations in an age of conglomerates, direct negotiations and official dislike for restrictive practices in private enterprise. Within the safe imperial market, unsafe Iraq was one of the principal customers (e.g.

£46,000 orders in July 1957).[189] Elsewhere Japanese and continental competition was increasing[190] as foreign suppliers recovered from the wartime destruction of industry, thus driving Anderston to increased dependence on Crown Agents' business, despite the competition from Railway and General which had reduced the traditional high profits of such work. By 1958 prospects were poor.

The Bolt Shop boomed during the second half of the war; to 1941 business as usual had persisted whenever possible with substantial exports to the empire and S. Africa under the aegis of the Rail and Telegraph Accessories Export Group[191] (R.T.A.E.G.) to which Anderston's usual partners also belonged.[192] Various classes of bolt had a higher value, relative to their (scarce) metal content than had other track fittings, making them desirable exports to bring badly needed foreign exchange to the country. (The Ministry of Supply made a levy of £3 a ton on all bolts for export).[193] Lower value items such as dogspikes, even when to a favoured market such as Argentine, where business had frequently been lost to the continentals, were not favoured with export licences.[194]

With costs 'very much above market rates'[195] the Shop continued primarily as a service department. Post-war improvements did not change its rôle.[196] Diversification of production during 1942-44 led to nothing. Spikes and fishbolts for the Ministry of Supply became secondary to posts, tie rods and sway boxes for Bailey Bridges, floating bridges and the Mulberry Harbour,[197] as sales exceeded those of the prosperous late 1920s. Post war renewal was less than thorough and much old machinery remained.[198]

Continuing adherence to R.T.A.E.G. underpinned post-war prosperity.[199] Anderston was kept up to date with prices and obtained work in South Africa and S. America for which it would have

had to cut prices pre-war. Taking advantage of Britain's temporary strength and the absence of German competition the Group had reached agreement with its Belgian equivalent in April 1946 to carve up the world market.[200] Average British exports had been 5919 tons (32.5%) in 1935-37 to 12303 tons from Belgium. In accepting an agreement the Belgians made a considerable sacrifice; even when re-negotiated in April - June 1949,[201] the British share remained at 37.5%. At the request of the Belgians the agreement terminated in 1950,[202] outside competition and the increased uncertainties of the exchange rates had undermined it.

The agreement had confirmed, for better or worse, the traditional direction of Britain's export trade: the Benelux countries, France and the Belgian colonies were reserved for Belgium; the United Kingdom, the British Empire, Palestine and Ceylon for Great Britain. The rest of the world viz Europe, Irish Free State, Turkey, Egypt and Sudan, India and Pakistan, South Africa and Mozambique was to be shared, through the usual operations of collusive pricing as were orders from South American Railways buying through London (subject to certain special conditions).[203]

South African business disappeared in 1949.[204] As with switches and crossings there was a brief burst of South American orders, making use of blocked sterling deposits. Export business otherwise was exclusively for the Crown Agents, Rhodesia and Australia. During the mid 1950s, the large crossings contracts for Persia, Iraq and the Crown Agents brought £4,000 p.a. of work to the Shop, more than all its home business at the time. Home Railway orders had all but ceased in 1942, and the War Office (early 1950) and, subsequently, I.C.I. provided the principal home demand.[205] Subcontracts, and participation in consortia with G.K.N. and Richards, replicating the

patterns of the other export departments, marked the later 1950s.[206] However, throughout the decade the Shop was unprofitable, carried on the backs of the other departments as Glasgow had been in the 1920s. The financial deterioration of the company after 1959 would have forced a close examination of the Shop and its activities (the willingness to face up to problems at an early stage was conspiciously absent as it had been 30 years before) had not the decision been taken out of Anderston's hands by Dormans' decision to cease rolling bars. Nevertheless, closure (1960) was presented as part of a clear policy to staunch losses.[207]

With the active help of Dormans, who might then have had an incentive to continue rolling bars - some attempt to compete in less specialised lines with G.K.N., the industry's predominant force, might have proved possible. Such action would have endangered the increasingly important subcontracts and would have required a sales drive to make Anderston known to new classes of customer . However, complacency, a long tradition of risk avoidance, a misreading of the parallels between the problems faced by the company in the 1950s and 1920s, and a reverence for traditional ways and means ensured that nothing was done.[208]

In all branches of export business markets had been lost where they were not tied to waning British political control and influence and much of the business obtained was secured only through participation in consortia, not through Associations which both at home and abroad were under pressure from changing attitudes, the defection of more adventurous members and monolithic customers. However, the Sleeper Association was continuing to work well for Anderston despite the domination of it by large steel companies. Indeed past co-operation through the Association was the route to

present co-operation with those other members not simply in sleepers but in other export trades. At home, C.I.S.A. always revived when business was in prospect. Thus sufficient comfort could be taken from traditional practices to confirm the impaired prejudice to adhere to them. Anderston's position did not appear hopeless, although its room for independent action had diminished (a disincentive to an attempt to break out of the mould).

The return of the problems of the 1920s in an intensified form, found Anderston unable to cope. The number of markets on which it could rely had diminished. All change was likely to damage it; all developments pointed towards:the establishment of more native industries, the decline of such residual links of loyalty from customers as remained, the decline of tenders through London(as ex-enemy competition revived, and sterling balances diminished). A firm such as Anderston had no real place in the consortium negotiations, financial packages, and inter-governmental arrangements by which business would be arranged. Its cartels would become as redundant as the railway chair. It was tied to the railway industry and, at home, railways were in rapid decline. Its trading practices were outmoded. Without the war the timing and detail of developments would have been different. Home railways might have declined earlier, but for the restriction on other forms of transport during the 1940s and early 1950s but, through earlier modernisation and adaptation, might have been better able to meet road competition. Developments towards a 'square deal' in the late 1930s indicate a more dynamic response than the bureaucratic albatross that was the Railway Executive/ British Transport Commission would manage. Argentine railways might have been nationalised earlier, or not at all. Indian independence would probably have been delayed and come

in a different form. What would have been the complexion of South African politics in 1948?

It is a commonplace that war speeds change in attitudes and developments, but it brings temporary dislocation. Without it there would have been no post war boom in traditional products to replenish run down stock thus, possibly, no great investment by firms such as Anderston in renewing plant. Would they have been forced out of business earlier or might they have used existing funds to invest in more modern products rather than new plant for old products? Would the longer continuance of British power and influence have brought more business than that which flowed temporarily and abundantly from the physical destruction of so much foreign competition? Could imperial preference from strength secure more orders than the sterling balances of weakness?

It may be doubted whether Anderston, with its rigid adherence to tried and tested ways, would have noticed subtle shifts in circumstance when it was unprepared for dramatic ones. Certain amidst this inconclusive speculation is that Anderston had to face change, sooner or later.

III

There was little enthusiasm for major changes in methods on practices in a company of increasingly elderly men whose long service and dedication was to be more conspicuous than their ability. The supply of the Glasgow trained had dried up obliging Anderston to recruit outsiders whose attitudes might conflict with the conservatism and traditionalism which weighed upon their predecessors. Their willingness to change jobs in order to come to

Anderston indicates an ambition and a restlessness which contrasts with the immobilism which prevailed the company.

Watt, despite panic at the early course of the War, recovered his mental vigour and retained it until a few months before his death in December 1945. Meetings came to be held increasingly in Charlotte Square, Edinburgh for his convenience. Regular contacts with Davidson and Syme . persisted but no one inherited Watt's position of influence, built upon his wide business and legal experience and contacts. Anderston turned in upon itself. Cargill, aged 73, took the chair until 1954 and, although his technical expertise was called upon to plan post war developments (making up for Cunningham's shortcomings)[209], his rôle diminished. Cunningham, sticking to well charted paths, was running the board and the business. His combining the chairmanship with the managing directorship gave him a position of power not enjoyed by his predecessors for a generation.[210]

Morris had been barred from keeping a seat on the board upon his retirement:[211] the exception made for Cargill pointed to the board's weakness in practical manufacturing matters. Adcock was not appointed to succeed Morris as Works Manager until April 1941; he joined the board in late 1943.[212] He was to prove a first rate engineer, designing machinery and re-organising the plant, but he knew his place. He left departmental managers to run things from day to day and was little seen about the works. Those managers had no separate access to the board where he had no involvement in the financial affairs of the business.[213]

Harvey, Cunningham's contemporary, was his most active collaborator,[214] his rôle as nominee of the outside shareholders eclipsed by the war and the period of regulation following it(which merged into a decade of high profitability). The rentier shareholders

need no longer be considered. In the former period they would have been unable to influence the operations of the company, in the latter they had no interest in doing so. The managers could largely run the business in their own interest as seems common in modern corporations:[215] the director's fees and salaries increased markedly and regularly in a rare touch of modernism; not with the generosity shewn by Summersons, but nevertheless, in contrast with the dour rectitude in such matters practiced under Watt.[216] Cunningham felt no urgency in finding a replacement for Watt: there was no action to find a well qualified outside director and no enthusiasm for following Cargill's suggestion to increase the family representation.[217] The application of Guy Liddell, a La Terriere cousin, to fill the seat of "old Dr. Watt [who] rather outstayed his welcome" could be turned down,[218] as before.

In 1953 the La Terriere executors' suggestion that the new head of the family, who spoke for a 17% shareholding should be given a seat was turned down less brusquely, but no less firmly, after due consultations with, and through, Davidson and Syme.[219]

Re-organisation after Morris's departure brought Findlay to the management of the Switches and Crossings Department:[220] McIntosh, manager of the Bolt Shop from the 1930s to 1960 and one of the last of the Glasgow trained engineers, was considered by Cargill as a manager for the foundry as well.[221] In planning post-war reconstruction thought was given to finding an assistant for Adcock - per force an (compatible) outsider.[222] The offer of the services of the former Managing Director of Thomas Summersons was turned down without a second thought - one of such experience could be both useful and disruptive.[223] One of Harvey's sons was shewn over the works with a view to his joining.[224] The first candidate for the new

post of Assistant Secretary was the Secretary of Shaw's of Glasgow, where Cargill had been a director during the war.[225] A new head foundry foreman was sought in a former employee of Bruce Peebles.[226] Advertisements, when placed, appeared in Scottish papers as well as local ones.[227] Old habits died hard.

Such a policy met with variable success: Mason, who succeeded Finlay as Secretary at the end of 1947, stayed seven years; his successor, Needham, nearly nine. Each was appointed in his early 30s and performed well.[228] Needham, became a director in 1958, and played a prominent role in the negotiations to reconstruct the business in the late 1950s. The assistant works managers who doubled as foundry managers were less settled and the problem more acute.

A successor to Cunningham would have to be found; one for Adcock would be required earlier. Neither Findlay nor McIntosh was regarded as suitable in age or ability.[229] Purdie, the first assistant manager lasted three years until he resigned in May 1949. An offer further to increase his recently raised salary (£675) failed to keep him.[230] A candidate recommended to Cunningham by Fitzherbert Wright spurned the offer. Norman Hanlon, who came from Dorman Long, returned after eighteen months and went on to higher things.[231] J.D. Reid appointed in August 1951 (£800 p.a.) remained with the firm for a decade: initially he was felt by Cunningham to be better than his predecessors.[232] Whatever his technical abilities as a foundry manager, he was not placed in succession to Adcock nor did he become general manager in 1960/61 at the next changeover. That he stayed much longer than his predecessors may indicate that his appeal to Cunningham was his lack of the restlessness and ambitious drive of the others. He could accommodate Anderston's ways and Anderston accommodated him.

Had a complete stranger been recruited, as in 1960/61, to be works manager, Anderston might have enjoyed better prospects. Instead F.K. Tubby was asked to join as Technical Director from June 1952 (at £2,000 p.a.) as ultimate heir to Adcock and Cunningham. Tubby's 25 years' experience of civil engineering on Indian railways would, in the past, have brought with it valuable contacts. Tubby had been apprenticed to Cowens Sheldon, the railway crane-makers in Carlisle (1924-26) but thereafter he had no experience of production - engineering and industrial and manufacturing activities. At 49 he would have to learn afresh and, initially, could only learn Anderston's methods as they were, with their manifold failings.[233] Tubby succeeded Adcock in September 1955. Like others, Adcock shewed an uncommon dedication to Anderston, despite recurrent illness (1951-54) and only pressure from his doctor (and behind him the company) dissuaded him from soldiering on.[234] He had "done a damned good job for A.F. Co. and has earned every consideration...".[235] "...He was a clever engineer and you will find some difficulty in getting someone... to take his place".[236] Tubby and Cunningham were, with Reid's assistance, incapable of replacing Adcock's expertise jointly and severally. Five years passed before specialist recruiters were employed to find someone who could.

Numbers employed remained consistent with former times - c.500 - the bulk of whom remained semi-skilled.[237] The abilities of the labour force remained a constraint upon schemes for diversification. Labour shortages, shorter working hours, absenteeism and casual attitudes to work, possible where full employment existed, marked the post war decade.[238] From 1937/8 a variety of controls upon the costs, prices, and sales (on political and economic grounds) had flourished allowing the manufacturers to retreat from competition and

marketing. The imposition of national wage rises and the direct transfer of such extra costs to the customers were accepted by the manufacturers[239] as an inescapable feature of the landscape and by the customer with resignation - the customer had little choice.

Cargill had noted the increased age of the firm's staff in 1944: indicating a creeping managerial sclerosis.[240] Cunningham was being congratulated for his skil ful and careful management as the source of the great prosperity being enjoyed.[241] The company's success in establishing loyalty amongst its clerks and foremen as well as its managers was a cause of its ultimate failure as a business. No force for change existed.

All ironfounders had experienced difficulties in recruiting into a trade whose image was poor. The increase in mechanisation, with the resultant supplanting of craftsmen by the semi-skilled came at the expense of failing to secure both first class practical men (the future Adcocks) and more broadly educated technicians and managers from outside.[242] To cultivate higher grade foundry work where demand might remain high, Anderston needed workers of a higher calibre than those in its employ: it had de-skilled since the 1920s.[243] Attempts in the 1950s to change techniques to make more economic use of materials foundered on the conservatism of workers wont to making railway chairs and doing so in a particular fashion.[244]

Macnees' renascence in the 1940s with L.O. Tubby increasingly taking charge,[245] lulled Anderston's fears.

Tubby's death in December 1950 produced a crisis at Macnees solved by his brother Frank's returning from the Bengal Nagpur Railway to take over.[246] When F.K. Tubby moved to Port Clarence he recruited Arthur Gracie, another India hand to help at Macnees.[247] Anderston was satisfied with arrangements which left Anderston's London representation in the hands of the elder Tubby, (c.80 years of age), who had been regarded as due for retirement in the late 1930s, Turvey, who had been in the firm pre-1914 and had retired back to it from United Steel Companies, and the inexperienced Gracie.[248] Although business at Anderston was at high levels, dependence on a limited range of markets, on subcontracts from friendly rivals and on the continuance of cartels indicates a structural weakness in the business in the long term. As at Macnees, Anderston lifted not a finger to help itself adjust to changing times. Until difficulties arose, Anderston happily continued as though none would.

Anderston did not not buy the loyalty of staff through its generosity as an employer - A staff pension scheme was rejected in 1948, to be introduced a decade later.[249] After Purdie's resignation the salaries of Adcock and Mason were increased to bring them into line with equivalent posts in similar companies.[250] Cargill was scandalised that Summerson's paid £550 each to its three directors and £25,750 in salaries to them.[251]

From 1943 bonuses were resumed, broadening so that by 1952 all employees with over five years' service came to benefit from the £5,500 - £6,500 paid out annually.[252] Directors' fees, which Watt had cut to £500 p.a. to impress shareholders that economy began at home, leapt upward between 1946 and 1956 to £550 a head.[253] This form of self congratulation raised no response from shareholders, the same faithful few of whom, usually former employees or their

descendants, formed the audience for the annual general meetings. Holders of about half the share capital could not even be bothered to send proxies.[254]

The number of shareholders had increased, principally through the subdivision of large holdings formerly held in trust, to 108 by 1953, yet three continued to own one quarter of the capital and ten almost one half of it.[255] Insofar as the shares gained a following this was in Middlesbrough and Edinburgh. The former group included, for the first time, considerable numbers not directly associated with the business, although many were likely to be personal or business acquaintances of Cunningham and his colleagues; the latter, no doubt, included clients of Davidson and Syme.[256]

In 1954 one third of the La Terriere holding was sold. This was arranged in the usual manner: c.70% of the shares passed to the directors and their families, c.20% to Turvey and Gracie of Macnees. When the Morris holding was realised in 1955 36% of the shares passed to directors and employees, 26% to outsiders, chiefly residents of Middlesbrough and 35% to Pease and Partners, two thirds of which was passed on to Anderston "insiders" in 1957. Tubby, Harvey and Cunningham each increased their family holdings by 1.6% - 1.8% of the issued capital during the 1950s as further testimony of their confidence in the firm. The directors' qualification had fallen, meanwhile, from 1.67% of issued capital up to the 1920s, to 1% by the 1930s to 0.4% by 1958 - in money terms from £3,000 to £900 before settling at £1,000 from 1951 to 1960. Despite this and the broadening base of shareholders, no thought was given to recruiting new part-time directors.[257]

Also unchanged was the company's enthusiasm for playing the stock market. The stock market's response to war-time reverses, which cut £19,000 from the value of Anderston's investments between March and June 1940 (they fell overall by £33,000), alarmed Watt. After the fall of France, Cargill and Cunningham agreed to a limited realisation of insurance shares to appease him despite their belief that such shares would recover unless Britain was invaded - in which case no investments would be of the slightest use.[258] Tilney's, Anderston's adviser on insurance shares, expected that those companies with a widespread business in the Empire and in the U.S.A. would do well in a recovery. Between March and June 1941 the value of the firm's investments recovered by £11,500 and continued to rise, exceeding book value by June 1944, and doing so to the extent of £29,000 by late 1946.[259]

To help finance post war reconstruction of the works, various shares were sold (spring 1946)[260] without shifting permanently the balance between them and the capital invested in the manufacturing activities. Post-war board meetings considered the spread and composition of the investments as regularly as in the 1930s. There was little interest in exchanging speculative returns from the stock market for speculative returns from manufacturing.[261] The realisation of profits on the sale of investments permitted the resumption of tax free bonus dividends from 1949.[262] Extra working capital was funded by overdrafts, as before, leaving investments untouched.[263] Interest on the overdraft would reduce the company's tax bill and, it was hoped, would be balanced by the income from and tax-free appreciation of investments.[264] Liquid reserves continued to exceed issued capital.[265] On the advice of Moore and Snodgrass, Tilney's and, occasionally, other experts, monies were

shunted around the shares of insurance companies, into and out of gilts, building society accounts, Leith Harbour loans and so forth, with a consistent view to tax-efficient capital appreciation.[266]

During the war these financial policies were an embarrassment. The least damaging basis which the company could obtain for the calculation of Excess Profits Tax was that which allowed a 6% return on issued capital. The usual standard of averaging the trading profits of the late 1930s was regularly unhelpful to firms in Anderston's position.[267] Much effort was expended by Davidson and Syme and Anderston's auditors in pursuing E.P.T. and Income Tax matters without great success.[268] A trading profit of £75,500 in 1943/44 was reduced to £10,500 after taxes.

Shareholders continued, despite the auditor's promptings, to receive uninformative annual accounts.[269] Watt admitted "We have in the past years made some drastic depreciation allowances... The published accounts will be of little or no guide to this...".[270] Watt persisted in his belief that the dividend distributed should be less than the working profit and that new plant should be depreciated to last year's figures whereas Harvey, with enlightened self interest as the shareholders' representative, believed in paying reasonable dividends if only to ensure that his constituents remained quiet and unintrusive.[271] Cunningham pursued, typically, a middle course which combined the practical increase of the published reserves to £70,000 and the step by step increase of dividends.

From 1944 the company's use of its reserves returned to centre stage. J.B. Couper attended that year's A.G.M. to question whether Anderston was becoming an investment company instead of a trading company.[272] Campbell resumed his pressure, complaining initially through his lawyers and then to the Board of Trade at the dearth of

information contained in Anderston's accounts. The directors, having received their auditor's assurance that the published accounts, although falling "considerably short of modern practice in the details given"[273] complied with the letter of the law, were immovably opposed to giving Campbell detailed or special information lest he pass it on through his wide business connexion to potential rivals. Campbell was viewed as an old curmudgeon, with a grudge against the directors, not as a man interested in the better performance of the company.[274] The directors continued to believe that the shareholders had no business in knowing more detail than the directors thought was good for them.

Campbell and his accountant,[275] attended the annual meetings from 1945 to 1948 to question and harry, writing regularly to Anderston in a similar vein. Cunningham was treated to a 4 hour visit and harangue from the elderly Campbell whose proposals were not without merit. His threatening manner with a group of long serving directors used to little interest from any shareholder engendered further distrust, reducing the likelihood that any of his schemes would be acted upon.[276] His repeated criticism of borrowing money rather than selling investments to provide working capital missed the point of the exercise.[277] His suggestion that the directors were acting ultra vires by running the company as a half way house to an investment trust seems vexatious pique as his other proposal were ever more brusquely rejected by the directors the longer he pressed them. Nevertheless, almost alone of shareholders, he understood the way in which the company had evolved its dual personality. His suggestion that Cargill (77) retire and that younger men join the board might have had more force if expressed by some other shareholders - he was 83.[278] Division of £3 shares into smaller

amounts, at first £1, and in later suggestions 10/- or 5/-, was in keeping with general trends - but the consequence might be to encourage more frequent sales of small parcels bringing an unwelcome increase in the number of (outside) holders.[279] In 1946 the directors were glad that an indecisive vote from an incomplete turnout of shareholders allowed them to avoid action.[280]

Campbell agitated for the partial distribution of the company's investments to the shareholders. When this was done in 1947 through a 50% bonus dividend (tax free to standard rate Income Tax payers), he rounded on the board for not having first consulted the shareholders.[281] Davidson and Syme had been equally surprised by a move which was harmful to the super tax paying La Terrieres and about which they had not been consulted.[282]

By establishing a new company to take over the fixed assets of Anderston, Campbell calculated that shareholders could be repaid their entire capital whilst leaving £41,750 as working capital for the new concern after payment of all expenses. In the late 1950s, Anderston's own throughts were to turn to similar ways of passing on the real value of the business to the shareholders. Campbell claimed that he desired influence but not a seat on the board, his motivation a concern for the firm, its products and personnel. He was prepared, within days of Watt's death, to buy all of the latter's shares were they to be sold. He wanted no more strangers (such as Watt) brought into the company - with this at least the board might agree - whilst his advice and consent should be weighed as that of the Muirs and Buntens had been pre-war.[283]

Unless Campbell fulfilled his threat to circularise other shareholders with a critique of Anderston's past and future performance and policy, he was an isolated nuisance whose suggestions

received shorter shrift than they merited. His motives were seen as selfish, his concern with the shares simply to maximise his own investment and, perhaps, dispose of it at an improved price. Later, in an open market, Anderston's insiders would come to share some of these aims. He was believed to be behind an offer to shareholders by Henry Adler and Sons of 95/- a share, raised to 120/- over succeeding months, having blamed the firm's secretiveness for its low share price and estimated 146/3d. per share as the break up value (compared with a valuation of 110/- + by a Glasgow broker). If split up and properly managed, Campbell estimated the shares might be worth £9.[284]

Anderston had never sought to publicise its financial affairs; it was instinctively against creating a free market in its shares lest people like Campbell peddled them in small lots to increase the price, thus lessening the insiders' control of transfers. The directors with unconscious irony, claimed to be more concerned with successful management and "maintaining the firm's high reputation" than with stock exchange values. Anderston preferred its Glasgow quotation upon which its own brokers could maintain a watchful eye to being touted before a London audience.[285] Stock market speculation was for Anderston to undertake not something of which it wished to be a recipient. The "traditional Scottish flavour" was not to be lost to a "financial group in London of Foreign extraction".[286]

The requirements of the 1948 Companies' Act brought the published accounts into line with the private ones. In consequence the prospects of contested takeovers greatly improved and, after a further lapse of time, companies whose share price stood at a heavy discount to underlying assets were to receive the attentions of specialist asset strippers.[287] Although insiders continued to buy Anderston's shares they lost the advantage of former times whereby

only they knew what a good buy these were. Their interest in buying at the cheapest price had to be weighed against the advantage of increasing the market value of the shares to deter predators and to give themselves and other shareholders tax free capital gains: all established directors were approaching death or retirement by the mid 1950s. The current remedy of buying in shares on the company's behalf using its reserves to do so, thereby helping the insiders further to tighten their grip, was not available to Anderston(which would, it may be conjectured, have made use of it).[288] After 1951 the (dis)advantages of £1 shares were tolerated.[289]

Until the late 1950s Anderston expressed its disapproval of the window dressing of accounts.[290] After consultation with Davidson and Syme, it was prepared to capitalise reserves in order to increase its nominal capital (from £90,000 to £135,000 in 1951, to £180,000 in 1953 and £250,000 in 1957/58) and bring it more closely into line with the capital actually employed in the business.[291] Even so, the former lagged behind the latter: Anderston had capital to spare whereas Railway and General required an infusion of extra capital to finance its expansion (or overtrading). During the late 1940s firms such as Summerson's, Head Wrightson and Smith Patterson had capitalised reserves and were to continue to do so during the 1950s on a scale which surpassed Anderston.[292]

Anderston had followed the general trend. Successful though it appeared in the 1950s its performance was less impressive than that of many of its long-standing collaborators who continued to overhaul it in terms of nominal and issued capital, gross and net assets and turnover.[293]

TABLE 8.10 (£) ISSUED SHARE CAPITAL

	Anderston	Darlington R.P.	Head Wrightson	Railway & General	Smith Patterson	Summersons
1914	18000(100)	20000(100)	379000(100)	72000(100)	60000(100)	52000(100)
1939	90000(50)	55000(275)	485000(128)	62500(87)	100000(167)	59000(114)
1959	250000(139)	181000(935)	3500000(924)	100000(139)	565500(942)	32900(633)

FIXED ASSETS

	Anderston	Darlington	Railway & General
1914	87500(100)	26700(100)	10700(100)
1939	37000(42)	58000(217)	48000(45)
1959	86750(99)	153500(575)	252500(236)

NET ASSETS

1914	212000(100)	22250(100)	65000(100)
1939	181750(86)	60500(269)	90500(139)
1959	476500(225)	381500(1717)	239500(368)

SALES

1914	461500(100)	55500(100)	n/a
1939	229500	n/a	n/a
1959	1312000(278)	555000(1000) (1961/62)	696000

NET PROFIT

1914	20380	2626	-5280
1939	11836	4844	5160
1959	19836	33000	29500

Notes: (a) The fixed assets and net assets of Smith Patterson were, in its last year of independence, double those of Anderston.

(b) The years are for company financial years ending variously March, April and June

(c) Different accounting standards make direct comparisons impossible

(d) The accounts of private companies and partnerships are not available; those of large concerns cannot be disaggregated

(e) Head Wrightson issued extra capital for cash as, to a lesser degree, did Summersons and Railway and General

Source: Stock Exchange Year Book. Private ledgers and published accounts of Anderston, Darlington R.P. and Railway and General

A firm with a capital of £90,000, orders in hand of c.£2m and sales of £1m p.a. (Anderston's position in 1951)[294] might have appeared anomalous. Anderston, and many other firms had a reason for seeking to increase their market value less from fear of shareholders, assets strippers and predatory takeovers than from that of nationalisation - not something they would admit in public.

The election of a Labour Government, whose ethos was so different, on the surface, from the free enterprise culture in which Anderston's directors were steeped, placed steel nationalisation on the political agenda. Many ironfounders, especially those, such as Anderston, with close links to the steel companies and the railways, feared that they too would be nationalised, later if not sooner.[295] The use of stock market prices as the basis for compensation to railway and utility shareholders seriously alarmed Cunningham.[296] If Anderston were nationalised, its investments would pass to the government and its "absurdly low" share price would provide poor compensation for its shareholders.[297] The unusual rapidity of the decision to make the 50% bonus dividend in Spring 1947 and the mechanism deployed to do so is thus explained. Various Scottish ironfounders aware of Anderston's reasons, applauded them whereas Davidson and Syme and various larger shareholders took umbrage at the deliberate lack of consultations, unaware of the reasons.[298] There was, however, no loss of confidence by the body of shareholders who maintained their docility, but to whom no attempt could be made to explain that in the developments of 1951 "one of our principal reasons... [was] ... the ultimate fear of nationalisation"[299] rather than a more fundamental change of outlook. Between 1947 and 1951, whilst obeying government requests for (ordinary) dividend restraint, which would keep down the share price, Anderston resumed tax free

distributions from profits made upon the realisation of investments to counterbalance this in a spirit of "to hell with Sir Stafford". Harvey was persistently critical of the effects of high taxes and the increased cost of living upon small rentiers such as himself and he feared a future left-wing Labour government. High dividends and directors' fees were directly of interest to him.[300]

Nationalisation had stripped Pease and Partners of its iron, coal and steel assets leaving its foundry, a paint works at Thorne and large sums in compensation. Fearful of the future nationalisation of the rest of the iron and engineering industry and worried by the near monopsony of the British Transport Commission as purchaser of the foundry's output, Peases sought a partial merger with Anderston, the more diversified concern, through an exchange of directors and the creation of a new holding company to amalgamate the two foundry businesses.[301] In 1945/46 Peases had proposed a closer relationship but had not pursued the matter. Now negotiations proceeded: Cunningham would join the board of Pease and Partners Tees Foundries Ltd., Pennington that of Anderston. In the face of the opposition of Harvey and Cargill to a loss of independence, with which he largely concurred, Cunningham withdrew from negotiations. Anderston lacked Peases' appreciation of the future difficulties of chair production; the possible benefits from rationalising it and reducing capacity to create a stronger base for diversification were not considered. Merger could have helped solve Anderston's shortcomings in technical management and the difficulty in finding a successor for Adcock and Cunningham, but Anderston preferred to be left alone.[302]

Anderston had been aware that Mrs. La Terriere's death would bring the sale of part, at least, of her shareholding to pay

taxes. The La Terrieres would not sell the Dunalastair estate and after the payment of death duties their holding in Anderston would represent a large slice of their liquid assets. Her untimely demise in the summer of 1952, brought a rapid approach by Pease and Partners' representatives to her executors which alarmed Anderston considerably.[303]

Anderston not for the first time, felt that Davidson and Syme might subordinate its interests to those of their client La Terriere leaving Anderston to face a takeover rather than a merger. Blair, in Watt's shoes, explained the state of affairs to the folk at Dunalastair and kept both parties happy whilst Cunningham sought advice as to any legal spanner the 1948 Companies Act might allow him to throw into the works.[304] Anderston expected that a sale of the La Terriere shares (17%) would open the gates to sales by other holders. Despite the rebuff of the suggestion that La Terriere join the board, the following years saw the sale of £10,000 (nominal) of his shares largely to insiders, arranged by Blair and Cunningham and at a lower price. Pease and Partners came away empty handed. Anderston's shareholders were the ultimate losers. When in 1955 Pease's acquired £3,000 in shares from the Morris executors there was little alarm: the holding was insignificant, there was no wave of selling, no attempt to launch a takeover. Later the shares were sold amicably to insiders.[305]

Despite certain changes forced on it by statute, and certain changes adopted out of self interest, such as share-splitting or recruiting outsiders, and the greater contacts with its 'rivals' through industry-wide organisations, Anderston remained to its core, as inward looking as ever. The times were out of joint with the company, rather than vice versa. A group of ageing and elderly men

congratulated one another on the raised profits rewarding them for their "careful management".[306] Careful was but a synonym for unadventurous: it would have been more remarkable if the business had not boomed in the post-war decade. Anderston's management had preserved their business as they had inherited it without preparing it to do business in the modern world. Anderston sailed on, creaking and slightly moth eaten unaware of the rocks ahead. Its ready subscription to the world's first railway preservation society[307] is a small but telling illustration of an enthusiasm for the past it could understand, populated by steam engines, old machinery, anachronistic practices and skilled artisans. Anderston was to go the way of the steam locomotive.

The indirect consequences of the Second World War as of the first had been hidden for several years. When orders and traditional markets fell away with a rapidity similar to that of 1924 Anderston was as unprepared as it had been then. It had forgotten nothing so assumed that history was repeating itself; it had learnt nothing. From its past experience and buoyed up by what had seemed to be great success during the 1950s it is easy to see how an elderly management could not see that this occasion was different. The whole environment in which Anderston operated at home and abroad had changed whereas Anderston had not. The outside observer, possessed of hindsight, sees a firm which had been in relative decline for over half a century. In what seemed to be an era of great prosperity, the 1950s, Anderston would have found it difficult not to do well. Nevertheless, more dynamic competitors did better. Those working within the firm, even had they enjoyed a broader outlook than was the case, could not have been expected to see how precarious was this prosperity.

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A now small firm without great ambitions in an unattractive industry, at a time of full employment would find the recruitment and retention of high calibre management difficult. Seeking a steady course, it had no desire to seek out talent which might disrupt its ways. It was too puritanical or old fashioned to offer incentives and fringe benefits. When, by good fortune, talented people were recruited, they found the atmosphere stultifying. Whether different management could have saved Anderston is unlikely - a complete change of culture and a clean sweep in the board room would have been necessary - until 1961 it was not given a chance and by then it was too late.

As asset stripper would have found pickings, an entrepreneur useful resources but the web of, often personal, connexions linking the incumbent managers and directors to the families of their predecessors to form a phalanx of inactive but loyalist shareholders, rendered Anderston largely immune to predators. The shareholders were being well rewarded. As in former times, few, it may be supposed, were interested in maximising their returns or in actively managing their investments. Had an approach been made, the legal and financial skills of Davidson and Syme and their Edinburgh connexions would have provided a formidable defence.

IV

The company's rapid collapse between 1958 and 1962 surprised those in charge of it: from the signs of managerial sclerosis, technical backwardness and unaggressive behaviour, evident from the 1920s, the firm's survival thus far might seem more remarkable.

As after the First World War, the decade following the Second saw traditional business with traditional customers boom. The

incentive to introspection provided by the 1920s and 1930s disappeared. Apparent success left managers basking in admiration and self admiration. In the 1940s and early 1950s all of Anderston's competitors were doing well. Anderston rested on its laurels whilst they broadened, modernised and expanded their businesses, e.g. Summersons'. new works at Spennymoor, G.K.N.'s Cwmbran foundry.[308] Anderston did not seek new opportunities or seize those presented to it until its decline had become terminal and such actions pointless. Long serving managers lacked the flexibility to respond to changing circumstances: in so far as Anderston's leaders possessed a long term aim it was to continue making what the firm had always made. Their more ambitious recruits fled.

Cargill looked back nostalgically to the artisans and craftsmen once employed at Glasgow rather than forward to new machinery and technical experts (both disruptive of old attitudes and practices). After Watt's death the board room again lacked an outsider to ginger up the management from a broader business perspective. None of the technical men could get past Adcock who lacked business and financial experience whilst Cunningham lacked technical ability. The line of succession in the business was insecure and Adcock's replacement by Tubby further weakened the technical management. The 'success' of the business muted any criticism from shareholders leaving personnel unchanged and practices unchallenged which time had rendered redundant.

In many markets the writing was on the wall. Hope and past experience triumphed over reality. Markets had been lost before (India, S. Africa) but seldom permanently or completely. Such blows had not proved fatal: persistence in adversity had seen Anderston through. Native and foreign competition could be expected to

supplant British goods elsewhere: the end of empire might bring assertions of economic independence from African countries as it had from India; soon British owned railways elsewhere might be nationalised as in Argentina and nationalistic and political considerations loom large in their purchasing policies.

In the 1950s, as in the 1920s, Anderston made little attempt to tackle losses as long as profits outweighed them. It wanted to keep to well tried methods which had seemed so successful: this was unrealistic. In the late 1940s many customers had bought British because rival industries had been destroyed by the war: when rebuilt and modernised their competition would prove more troublesome. The development of the colonial infrastructure during the last decades of empire was not guaranteed to continue nor was it certain that such business would be placed in Britain. Native industries encouraged for reasons of prestige, soft loans, direct inter-governmental negotiations and the politicising of business, point to future patterns of trade in which Anderston could only participate through the cartels or the long-established friendships with major companies.

Segments, where Anderston was a lesser, high cost maker happy to continue as little more than Stanton's sub-contractor, alone of major products enjoyed buoyant demand from non-rail customers.[309] Anderston's managers were at home in the small world of trade associations, at sea in the world of business as it was developing when larger diversified or integrated firms gained the upper hand. The disdain felt for the sharp operators who would not play the old game was as deep seated in the 1950s as in the 1920s.[310]

Typically, the closure of Anderston was not the conscious decision of its management who, although admitting many staple businesses were lost, would not face the consequence. Loth to be

adventurous they would not risk closure yet they hobbled the prospects of survival by removing the capital from the business which could have paid either for the modernisation of the plant or for the acquisition of new products to fill it. Reforming the company as an investment trust, a rational culmination to developments in the firm over the past 30 years was not pursued despite Cunningham's talents lying more in the stock market than the iron one. The manufacturing business could have been offered for sale at the first signs of difficulty, autumn 1958; it could have been closed early in 1960 when the irredeemability of the situation should have been apparent. Half-measures, half heartedly and belatedly applied, characteristic of the past half-century, persisted.

To 1958 directors, managers, their families and friends added consistently to their shareholdings. In that year record profits were made due, largely, to the Persian points and crossings contract.[311] Since the late 1940s, the Bolt Shop had traded at a loss, lower in 1957/58 than for some years past. Foundry losses increased as the chair business declined but profits elsewhere could, as in the 1920s, carry such losses: Cunningham remained optimistic. Closure of Pease and Partners' foundry in 1957 was cause for congratulations that Anderston had rebuffed the merger proposals (1952) rather than for introspection. Pease's had realised that there was no future: by mid-1959 three further firms had quit chairmaking. Anderston continued in its fools' paradise.[312]

In February 1958 Anderston wrote up its share capital by c.40% to £250,000 despite which the shares continued to trade at a substantial discount to their net asset value of c.37/- (£460,000).[313] The dividend was increased and a pension scheme introduced: both evidence of the belief that the firm had a bright

future.[314] The dead weight of tradition, of which the aging departmental managers were part, frustrated the more dynamic newcomers. Cunningham, despite working hard, failed to understand the technical aspects of the business.[315] His cricketer's loyalty to the Chair Association and all it stood for and his persistence in negotiating with British Railways point to a narrowness of vision. Ruthlessness was deployed only to maintain cosy arrangements. Summersons had been the target in the 1930s, Railway and General in the 1950s.[316] Despite the comparatively heavy post-war investment the plant remained over-manned and under mechanised with no-one competent to change things.[317] When money had been available to mechanise chair production the apparent success of old methods of business in tying up contracts with the Railway Executive provided no incentive, despite labour shortage. Chairs had their value in providing tonnage through the works; the improved margins from mechanisation might not have been worthwhile.

There was no obvious replacement for chair making - as in the 1920s - and other suppliers shared Anderston's difficulties in finding one. Thus Anderston irresolutely continued, squeezed between production costs over which it had little control and a selling price largely distorted by a monopsonist.[318] Had orders been secure the firm might have been happy to be freed by these external controls from an unpredictable market.

Cunningham continued to play the stock market with Anderston's reserves as heretofore.[319] In prosperous times money seemed better invested outside the business. The pre-war need to supplement dividends from investments was lacking: investment bonuses circumvented dividend restraint and differential profit taxes to

bring money to the shareholders' pockets. The downturn in business brought little investment to improve efficiency and competitiveness.

In the past the diverse talents of Cargill, Cunningham, Watt et al had, however, uneasily, coalesced. To a lack of business expertise in the boardroom was now added a fatal lack of engineering expertise. The practical talents of departmental managers could not make up for Tubby's lack of experience of production engineering and Cunningham's ignorance. Cunningham and Tubby were better educated than their predecessors but neither possessed the shrewd practical intelligence necessary for the company to adapt and survive. Macnees mirrored the problem.

In the nineteenth century Anderston seized opportunities: the acquisition of Grant Lyon[320] was passed up more from indecisiveness in negotiation than from deliberate decision. Purchase might merely have postponed Anderston'e demise - Summerson's was not saved from bankruptcy by its contracting business - but, by bringing its founding entrepreneurs into Anderston, Grant Lyon might have brought a change in attitude and culture which, buttressed by its profits, would have seen Anderston into the 1960s sufficiently remodelled to survive. Other acquisitions were considered.[321]

Anderston expected to ride out its difficulties as in the past. With each half year's accounts, those difficulties multiplied. The company was overwhelmed by the rapidity and completeness of its collapse.

TABLE 8.11

Departmental Profits (£)

	Foundry	Sleepers	Switches	Bolts
1957/8	-35874	65430	140541	-6074
1958/9	-45832	62925	34788	-13255
1959/60	-67612	7664	-10833	-9064
1960/1	-53299	19246	-7661	-
1961/2	-83588	4160	-11984	-

Source: Private Ledger with Evans of Leeds

The problem of making the share price reflect the asset value of the business turned, during 1959/60, into one of survival: falling orders, rising costs, short time working, squeezed margins and burdensome overheads. The return to pre-eminence of financial matters brought Davidson and Syme back to prominence in Anderston's councils. Once the 1958/9 results were known, Cunningham favoured reducing the dividend which Blair thought should be maintained from reserves, unless there was no hope for the business-which Cunningham would not admit. Lower dividends would increase the discount of share price to asset value to the benefit of predator whose attentions the firm would soon come to welcome.[322]

Because Cunningham believed until 1960 or later that this, much the worst depression in his time with Anderston, was not qualitatively different from its predecessors and that the tide could be turned,[323] time was wasted. Needham's proposals to divide the business into a manufacturing company and, either an investment trust (which would carry away the reserve fund), or a property company(which would lease the existing plant to the operating company), both

assuming a future for the firm, were discussed at length in summer 1959. Formerly, reserves had been hidden; now undervalued assets were to be drawn out from the manufacturing business. The managers, as shareholders, would gain financially and the company be better protected from takeover but the shareholders, directors and interests of the new companies would eventually drift apart to bring friction. To revalue the plant and create a capital reserve would warn the shareholders against selling too cheaply. When prosperity returned bonus shares would be issued to the value of the reserve - the kind of accounting Anderston had criticised in others and completely at variance with the over-depreciation of assets in the Watt era. Anderston's new tricks were belated and irrelevant. Davidson and Syme, with a wide experience of the investment trusts and the money management of their neighbours and clients in Charlotte Square, looked askance at the amateurs of Anderston seeking to make explicit their investment business. If neither investments nor reserves were likely to be employed in the business - working capital was returning in cash with the run down of orders as in the late 1920s - then they should be used to repay capital.[324]

Close parallels with the 1920s justified Cunningham's wishful thinking. Railway nationalisation had disrupted the chair business and C.I.C.A. as had the grouping in 1923. Politics was interferring with trade: India had been lost in the 1920s and South Africa more recently to state sponsored indigenous industries. Railways were in decline in the face of road, and now air, competition abroad as well as at home. Chair makers were closing, some making timely and profitable exits as in the 1920s. G.K.N. was disrupting C.I.C.A.: it had done so before. Anderston did not discern the structural shift in the industry and markets which should have been apparent and made

the comparison meaningless. "Pandrol" clips (replacing chairs and bolts) were the sort of new product Anderston should, and in the nineteenth century, would have developed.[325] Now it was the victim of developments.

The shareholders remained passive to the end; the bulk of shares held by loyal families for whom to sell out would be "like selling our birthright",[326] Current and past managerial families were the firm's staunchest supporters, identifying with it completely. One of the Dawsons was still prepared to buy shares in July 1960.[327] Working capital which had flooded back to the company, flooded out, largely on Tilneys' recommendations, into stocks and shares;[328] £265,733 was held in investments and deposits by November 1959.[329] A net loss of £34,500 in the six months to September 1959 promoted a bout of purposeless activity.

Anderston might: diversify, establishing new products or buying an existing business with potential for expansion; spend heavily on modernising its plant to improve efficiency whilst withdrawing from any business without a future; sell out to a collaborator or competitor, as with Isca; close down, selling the firm's goodwill to a competitor and making a leisurely, orderly disposal of assets. Simultaneous prosecution of more than one option was possible: Anderston tried all but closure between 1959 and 1961, but pursued none with sufficient vigour. The first two required money. The decision of November 1959[330] to repay three quarters of the firm's capital (£187,500) severely restricted the prospects of successful survival. The company retained sufficient funds and trading assets to provide security for the overdrafts it would require for working capital once prosperity revived.[331] The brave assumption that the existing business could be revived masked inner doubts.

Repayment might be seen as preserving the fortunes of the loyal shareholders against the worst outcome: total loss. Such clarity of purpose is unlikely: Cunningham was stumbling as the world familiar to him for forty years collapsed (as A.T. Harvey had done during the 1920s with no Cargill or Watt to turn to). The directors, their predecessors, families and friends remained a relatively small group. Despite the increased number of (outside) shareholders which the subdivision of holdings and the greater marketability of shares had brought, this group recreated a family firm and a family spirit in which the management families had largely displaced the partnership families. A high proportion of the personal assets of someone such as Cargill was invested in Anderston.[332] The ageing Cunningham and Harvey might now wish to maintain the value of their holdings in preference to the semi-closed market in undervalued shares which had previously helped them accumulate such holdings: the 1920s provided a precedent. To bolster shareholder confidence and give the proprietors more of the value of their shares, capital should be repaid.

Dorman Long was approached to see if it would take over the business. With Anderston in obvious decline this offer was declined in the light of a detailed report by Hanlon which stressed Anderston's achievements and difficulties, the backwardness of its plant and methods and the need for large scale investment.[333] An approach at the first sign of difficulties (mid-1958) might have brought success. Subsequently G.K.N., Vickers, United Steel Companies and Tillings were amongst the[334] firms approached, with growing desparation to rescue the business by taking it over. Whereas the opportunity to acquire Grant Lyon had been botched, Anderston now eagerly hoped that its suggestion for closer

co-operation with Henry Boot's in permanent way contracting would bear fruit.[335]

Cunningham, aged 70, retired in December 1960 to be succeeded by Tubby who seems to have pushed for modernisation.[336] Money was spent, and, in view of the outcome, wasted, on new plant and machinery to curb the constantly increasing manufacturing costs, much on items whose absence gave such a primitive impression of the works in Hanlon's report.[337] Had these been installed when business was plentiful and profitable, the company might have fa .red better and become more attractive to a potential purchaser. A purposive appearance was given and reassuring circulars sent to the shareholders who were mollified by the payment of a 5% dividend (1959/60 - 1960/61) on the reduced capital from the continuing success of the company's investments.[338] As late as August 1960 the company was acting as a sub-underwriter [339] for its stockbrokers.

In the summer of 1959 Anderston decided to recruit an expert[340] to develop and supervise its proposed diversification into plastics, before plant was installed. This represented a considerable change in the firm's attitude. Advertisements were placed [341] a few weeks before the repayment of capital was announced, but no appointment was made. Further consideration of plastics was tied to the fate of the bolt shop whose site could house the new department. Closure of the bolt shop was subsequently announced to shareholders[342] as part of the scheme for cutting waste and loss from the business, giving an erroreous impression of purposefulness. This was plausible misrepresentation: Dorman's was unable to take further orders for bolt and nut bars and Anderston could find no alternative supplier.[343] Losses per se were secondary.

Eventually an experienced foundry man (Hopper) was found by professional recruitment as general works manager to make up for the deficiencies of Tubby, his assistants and the departmental managers.[344] In the same month, February 1961, the retirement age was reduced from 70 to 65 to wed a workforce which remained at c.400. One pound a week retirement allowance was paid to all those with 25 years' service. Cunningham had cut his own salary by £500 p.a. during 1960 and took a smaller retiral allowance than that latterly received by Cargill.[345]

British Railways was, after 1958, making all its own main line chairs and had decreasing need for points and crossings chairs.[346] Railway mileage was falling: soon it would undergo drastic cuts. The Railways' foundries could supply a greater share of the reduced requirement. By 1961, for private makers, "chairs are not only on the way out but are almost completely out".[347] In that year the still profitable sleeper plant was worked intermittently for periods of two or three weeks at a time. That Railway and General might join the Switches and Crossings Export Association was looked upon as a hopeful development underscoring the unchanging nature of Anderston's attitude to business methods.[348]

Plentiful orders could have been obtained through the Segments Association but Anderston had been forced to default on its delivery commitments to Stanton due both to faults in its castings and continuing manufacturing difficulties through 1960 and 1961.[349]

The company's liquidity continued to decline: by March 1961 £100,000 was due to suppliers and £58,000 to the bank matched against £131,400 due to Anderston and £48,300 in investments. The rate of decline increased as the loss of £54,265 for the year 1960/61 was succeeded by one of £59,371 for the six months to September 1961.[350]

Dividends now ceased. Representatives of Davidson and Syme were in attendance at every board meeting. In recognition of the firm's long connexion with it, the Bank of Scotland continued to offer moderate terms for the growing overdraft, nevertheless by June 1961 the Bank sought a floating charge over all of Anderston's premises and executed it in December.[351]

Trading losses and repayment of capital drained the company of money hamstringing its ability to acquire new machinery and new businesses. The former, acquired on hire purchase or through further advances from the Bank had little opportunity[352] to shew that the foundry business could be revived and restored to profit with the more efficient production of non-railway materials (and could not have justified the expenditure upon it in such a short time). The machinery when sold, would be much depreciated in value, having added to the company's internal burden meanwhile through the use of borrowed money to purchase it. Mechanisation of foundry processes had been proceeding for 30 years[353] and it seems unlikely that Anderston, even with more time, could have become an effective competitor and adapted itself to seeking domestic, wholesale and merchant custom when it had resisted fiercely any change in its ethos. The acquisition of new businesses or the move into new products to be sold to old customers could prove unsuccessful. Beyer Peacock and the North British Locomotive Company, two of the principal makers of railway locomotives, both with an extensive export business, despite or because of their shift to producing diesel locomotives, closed down in 1962 and 1966 respectively. In the latter case, unfamiliar technology had been its undoing. Both firms diversified into non-railway products for the domestic market;

neither with success - it may simply have increased the firms' difficulties.

Other locomotive builders closed down at this time: the survivors, often in a changed or much reduced form, lost their independence.[354] Similarly, independent makers of track fittings closed between the late 1950s and late 1960s whereas the various associates of the Wards group and G.K.N. survived longer - Cwmbran closed in 1971.[355] Anderston was but one of the casualties of the final decline of the coal, iron and heavy engineering core of Britain's old industrial economy.

It is doubtful whether the Anderston's second attempt to diversify in plastics, abortive due to a lack of reserves, could have saved it. Nevertheless the purchase of the Apex Inflator Company of Birmingham, advertised for sale, was pursued from March to July 1961 with a view to removing its plant to the derelict former bolt shop at Port Clarence. Apex's products - metal and plastic towel rails, garden sprayers, cycle accessories - were far removed from Anderston's traditional activities (which was now seen as an advantage). The need to change the nature and methods of Anderston's business had been admitted, but, like the recruitment of Hopper, too late to be effective.[356]

The Industrial and Commercial Finance Corporation was approached for a long-term loan of £100,000 in one of a number of schemes to form a joint company in which Apex interests held a minority stake - an incentive for them to stay and prosper with the business - and Anderston a controlling one. Apex was in receipt of other, more definite, offers; negotiations with Anderston faltered and the Apex businesses were sold piecemeal to others.[357] Anderston formerly eschewed decisive behaviour: its financial position now

precluded what the retention of more of its reserves in 1959 would have allowed.

Having lost the last possibility of independent survival Anderston returned to seeking a purchaser ahead of bankruptcy. At Davidson and Syme's recommendation, Whitton, an Edinburgh accountant, was commissioned to report on the business in December 1961. He considered that only another ironfounder, particularly a segment maker, would be interested in purchasing it: his consequent approach to Sir John Wrightson and Anderston's to the Stanton Ironworks were unsuccessful.[358]

Whitton stressed that the business could not long continue in its existing form: it carried liabilities of £1,000 p.a. for its pension scheme; £4,000 p.a. for retiral allowances to former employees; tax losses of £175,000 (of value to a purchaser in the same line of business); a wage bill of £3,500 per week; an overdraft of £90,000; and £16,000 net further current liabilities. Needham departed (December 1961).[359] Tubby made contact with the Wards' group whose interest in the company owed less to its manufacturing activities, (although its goodwill might prove useful in respect of the switches and crossings business and the removal of its competition welcome) than to its possession of a 22 acre freehold site in a sound industrial area, with some good buildings. Wards' shipbreaking subsidiary might have found it useful.[360]

Once the extent of the loss for 1961/2 was known (£91,414 trading, £113,541 overall), an arranged bid was received from Wards' of 1/- per 5/- share plus the limited continuation of pensions.[361] The foundry was closed down in May and contracts surrendered. The volume of business was too small to provide anything towards overheads and there was no likelihood of its re-opening. A few months work was

left on switches and crossings and on sleepers.[362] As contracts ran out, employees were given notice, leaving a skeleton staff to maintain things for the potential purchaser. Latterly only 100 workers had remained.[363]

Cunningham recommended Wards' bid to the shareholders as the only alternative to liquidation and the loss of all capital.[364] His judgement proved faulty. F.R. Evans (Leeds) Ltd., a firm interested in industrial property, bid 1/9d. per share on terms otherwise the same as Wards'. Ward's, with 33% of acceptances, unwilling to increase its offer, withdrew on July 5th 1962.[365] Evans with 94% acceptances, took control on August 14th when Cunningham wishing them "every success in revitalising the fortunes of the company" withdrew. Anderston, which had resisted more profitable approaches in the past, fell to a hostile rescue bid.[366]

How little Cunningham understood what had happened is unclear. Evans had no interest in revitalising the business. Manufacturing ceased within weeks and Hopper and Tubby were abruptly dismissed at the end of August, in a manner which led them to pursue legal actions against the new owners, who threatened counterclaims alleging dishonesty. Tubby, who lost his entire livelihood with no prospects of replacing it - he was in his late fifties - was the principal casualty.[367] Macnee and Company retreated to Turvey's private address soon to be dissolved for want of a raison d'etre.[368]

The fixtures of Port Clarence were sold. In the 1970s the value of the site increased rapidly. It was first leased, then sold, to a firm involved in the offshore oil business. Thus surprisingly, prosperity returned to the Anderston Foundry Co. Ltd. which, rechristened Marchington Properties Ltd. during the 1980s, remains a subsidiary of Evans of Leeds PLC.[369]

> The more I saw of Davies the less I liked him but... he and his methods are successful whilst I and mine are not, so I could not afford to be choosey. Hopper was very nice about it and told me... he could see it coming to us both if not on that pretext then on some other..."[370]

The above quotation serves as an epitaph to Tubby and to the Anderston Foundry in the twentieth century. Evans and its employees were interested in making money; Anderston in making railway chairs. The times were out of joint with Anderston, not Anderston with the times. Tubby was not the man to break the mould into which Anderston had long set, least of all with Harvey, Cunningham and Cargill in positions of influence. In the changing circumstances in which cartels were regarded with increasing disfavour, the railways were declining at an increasing pace, foreign competition was harming an export business whose nature and mechanism were changing, British wares were, through high costs, wages and currency parities, becoming generally uncompetitive and Britain's captive markets were cutting free, Anderston needed someone prepared to take a decision to close down or sell out, not one who was wedded to the firm's image of itself and its past and wanted to do the usual things, only better. Anderston's strength in securing the loyalty and long service of managers was its weakness: inward looking, tunnel vision, the cumulative weight of inherited tradition which was so difficult to break. For Anderston there was no time like the past.

Had Anderston's leaders been capable of identifying the interests of the company, its shareholders and most of its staff, they would have closed it earlier. Even in the spring of 1961 they could have done so from a balance sheet which would have allowed them to undertake an orderly liquidation free from pressure, repay their share capital and compensate staff, pensioners and directors. At worst a takeover bid from a firm such as Evans might have been

received albeit at a better price than in 1962; at best Anderston could have bcome a successful investment and property company itself.

Many rational options were considered. Anderston's fault was to leave things to slide, to act only when a crisis whose nature it mis-diagnosed, came upon it. The prosperity of the late 1940s and 1950s was not evidence of the golden age but exceptional in breaking into half a century of decline. It was an Indian summer (or, perhaps, a Pakistani one). Anderston's competitive interests were not blunted by it for they had long shrivelled. The warmth of collusion innoculated the firm against catching the cold of risk-taking.

Anderston's difficulties hit it at a time of greater managerial weakness than usual - many key figures were of an age to retire but disinclined to go; no proper arrangements for their succession had been made. These were not the people to provide the competence, clarity and commitment to effect a successful diversification. The obsolescence in the plant, a feature of Glasgow before 1914 and the rest by the 1920s, had been but partially rectified after 1945. Had the firm behaved as aggresssively as G.K.N., cut away from cartels, invested in mechanised plant, sold its products more actively, integrated with platelaying and retail businesses it might have survived or its death might simply have been postponed. It was trapped supplying an industry in severe difficulties. The bulk of its rivals closed down, voluntarily or under duress, during the 1960s, others survived only through the financial strength of the large groups of which they were part. Unless Anderston could succeed in plastics or have found a new niche in ironfounding, having invested heavily in new plant, its demise was more likely than its survival. Heavy investment in new products might speed the collapse

as with Kerr Stuart in the 1920s, North British Locomotive Company in the 1960s.[371]

Anderston's prosperity from the 1850s was based on manufacturing chairs and iron sleepers to the latest designs with the latest methods. With the collapse of the business in iron sleepers in the 1920s, the firm was in evident decline. Chairs formed "the foundation"[372] of other work. Once the chair business collapsed so did the foundry department and, ultimately, the company. Its other businesses declined less far but their viability and turnover were insufficient to carry the company.

Anderston and other firms like it, had narrowed their range of options by specialising in the 19th century. They had prospered with the demand from their particular specialisms. Firms were led by those who knew more and more about less and less, experienced in manufacturing a product not in selling it, nor in business as a whole. Long service and a pride in the company's history and achievements provided the managers with a tenacity to keep the business going but only to manufacture what it had always made. The vision to change with the times in order to survive, to make money not just to make chairs, was absent.

Appendix to Chapter 8

Summary of Report by A. Whitton, C.A., 1 December 1961

A victim of circumstances largely outside its control

(1) Dying markets, individual development of Commonwealth countries, industrial nationalism.

(2) British Railways making own requirements and using new materials such as concrete sleepers.

(3) the breaking of price rings "most noticeable in foundry products".

(4) Overcapacity - many smaller foundries have closed.

(5) Very large expenditure in modern, mechanised plant required to meet competition. Anderston cannot afford this and its existing buildings are unsuited to conversion.

(6) Absence of skilled, modern technical management. No qualified ironfounder or metallurgist. No sales organisation - unnecessary and uneconomic previously.

(7) Sleepers on care and maintenance basis (1961); switches and crossings orders dwindling.

(8) Serious production difficulties with segments.

(9) Overdraft rising steadily. Liquidation would lose all capital through forced sale of assets.

(10) Assets
- (a) 22 acre freehold. A good industrial site with some good buildings
- (b) Substantial segment contracts can be exepcted through C.I.S.A. but modern machinery required
- (c) Efficient maker of light castings. Threat from artificial materials
- (d) Sleeper Association membership of value if market recovers
- (e) Tax losses of £175,000 of great value to a purchaser in the same line of business
- (f) Adequate labour force
- (g) Thomas W. Wards are interested

(11) Liability of £5,000 p.a. for pensions and for pensions schemes.

(12) Only another ironfounder would give a decent price - particularly segment maker. Whitton authorised to approach Sir J. Wrightson.

Source: Dundas and Wilson, C.S., Edinburgh

Footnotes: Chapter 8

After 1952 the body of archive material is greatly diminished. Unwisely those who secured the company records for Durham County Record Office sampled material without understanding it. Thus two sets of some correspondence were preserved, in part - maximum bulk for minimum usefulness.

1. D. Burn, The Steel Industry, 1939-59, (Cambridge, 1961), pp.4-13 and J. Vaizey, The History of British Steel, chapter 5.

2. Peat Marwick acted for 60 trade associations through six of their offices; Heathcote and Coleman and Thompson McClintock for several. Political and Economic Planning Industrial Trade Associations, pp.191-192.

3. Wright's family were the owners of the Butterley Company. For Wright see: Kelly's Handbook of the Titled Landed and Official Classes, various editions; Who's Who etc., various editions; annual reports of the L.N.E.R.; D/AF 606, Constitution of the Council of Ironfoundry Associations (C.F.A.), 13 June 1945; Edwin Plowden, An Industrialist at the Treasury, (1988) and Alec Cairncross, Years of Recovery, British Economic Policy, 1945-51 (1985) provide a general background. Sir Andrew Duncan, the leading light of B.I.S.F., moved temporarily into the civil service, before becoming President of the Board of Trade and Minister of Supply. S.R. Beale, the Export Council official supervising the Rail and Telegraph Accessories Export Group was a director of G.K.N. and of the L.M.S. Who's Who, various editions, A. Slaven and S.G. Checkland, Dictionary of Scottish Business Biography, vol.1, pp.156-158 for S.R. Beale. David Jeremy ed. Dictionary of Business Biography, vol.2, pp.196-199 for Sir Andrew Duncan.

4. Political and Economic Planning, pp.261-312. Lists of associations - which still manages to miss the S.S.A., S.A.X.A. and the Junction Fish Plates Association of those in which Anderston was concerned.

5. L.E. Hannah, The Rise of the Corporate Economy, p.169. Political and Economic Planning identify c.480 Associations in metal manufacture and engineering (industrial classes 40-99).

6. For example the discussions of the Ironfounders National Confederation. D/AF 605, I.N.C. file, 22 February 1941.

7. D/AF 9, Minutes, 4 December 1941 and 23 November 1943.

8. D/AF 549, Cargill to Cunningham, 28 October 1942.

9. D/AF 9, Minutes, October 1944 - March 1945; D/AF 554, Harvey/Cunningham correspondence, 19 July - 24 August 1944; D/AF 552 and 556, Watt/Cunningham correspondence, 1942-1944 especially 25 August 1942.

10. D/AF 554, Harvey/Cunningham correspondence, 1944.

11. D/AF 9, Minutes, 2 March 1945.

12. D/AF 9, Minutes, 12 July and 6 December 1945 and 6 March and 27 June 1946. Appropriately the furnace came from Priests, a long-standing customer of Anderston's.

13. D/AF 9, Minutes, 18 December 1946, 5 March 1947, 12 March 1948, 24 November 1948, 16 March 1949, 23 November 1949, 6 July 1950 and 6 December 1950. At this time capital investment was encouraged by generous depreciation allowances and companies were exhorted to restrain dividends and retain profit.

14. D/AF 9, Minutes, 17 December 1942, 2 March 1945, 16 March 1949, 19 May 1949 and 6 July 1950. Some of it was forced on Anderston by the Factory Inspectorate.

15. See below.

16. D/AF 636, Report of N. Hanlon to the directors of Dorman Long, 7 December 1959.

17. D/AF 10, Minutes, 28 November 1951, 19 April 1952, 6 May 1953, 25 November 1953, 2 March 1955, 17 November 1955. See D/AF 636 regarding sand preparation; D/AF 486, Cunningham to Cargill, 24 June 1956 as an example of labour shortages.

18. D/AF 9, Minutes, 17 March 1948, 24 November 1948, 16 March 1949. There were some teething troubles during 1948.

19. D/AF 553, Cargill to Cunningham, 15 October 1943.

20. See below.

21. E.J. & J.G. Larkin, The Railway Workshops of Britain, 1823-1986, (1988), pp.168-170. It is not clear that the railways under the various military - bureaucratic regimes of 1948-62 and despite great efforts at statistical investigation, had any stronger conception of or control of their costs of production than of their operating costs. T.R. Gourvish, British Railways, 1948-73, a Business History, (Cambridge, 1986) and M.R. Bonavia, British Rail, the First 25 Years, (Newton Abbot, 1981), both passim.

22. Watt quoted in D/AF 553, Cargill to Cunningham, 23 August 1944 and see same to same, 9 October 1944. The directors were now largely freed from the need to look over their shoulders at the shareholders.

23. D/AF 551, Harvey to Cunningham, 25 August 1942 and D/AF 558, same to same, 9 June 1946.

24. D/AF 556, Cunningham to Watt, 24 February 1944 and D/AF 554, Cunningham to Dowson and Dobson, 4 October 1944.

25. D/AF 9, Minutes, 13 May 1948 - 17 March 1948; D/AF 562, Cargill/Cunningham correspondence, 20 October 1947 - 1 April 1948; D/AF 562, Anderston/B.I.A. correspondence, 1947-1948.

26. D/AF 557, Cunningham to Cargill, 8 September 1945.

27. D/AF 556, Cunningham to Watt, report, 29 September 1944.

28. D/AF 545, Cargill to Cunningham, 15 September and 11 October 1940 and D/AF 549, same to same, 14 January and 23 October 1941. Cargill also acted for the Custodian of Alien Property as a director of the Kilmarnock Manufacturing and Exporting Company and Shaw (Glasgow) Ltd., spun pipe manufacturers. The Davidson and Syme connexion had been responsible for these appointments.

29. D/AF 557 and 558, Cunningham/Cargill and Cunningham/Harvey correspondence, October - November 1946.

30. D/AF 553, Cargill to Cunningham, 9 October 1944; D/AF 636, Hanlon report describes the foundry as a light, wrought iron, 19th century building etc.

31. D/AF 562, Cargill to Cunningham, 21 January 1948.

32. D/AF 554, Dowson and Dobson, Johannesburg, to Anderston, 31 July 1944 and D/AF 558, same to same, 9 June 1945.

33. For example see D/AF 558, Cunningham's memorandum to Cargill etc., 5 February 1946: 20% depreciation allowed on machinery, 10% on buildings.

34. D/AF 226-240, Sales Day Books passim and Sheffield Record Office, TW 447, Minutes of the Railway and General Engineering Co. Ltd., 2 January 1942 as an example from a rival. For the demise of the metallurgist see D/AF 557, Cargill to Cunningham, 10 August 1945. Events caught up with the company later. There was difficulty in securing the more economical mixing of scrap and iron due to the ingrained habits of the workforce. Such experiments met with erratic results hindering the segments business, see below (Interview, C.E. Needham, 1985).

35. Burn (1961), pp.4-13. Summerson was to be chairman and/or joint managing director of his family firm from 1945 to c.1965. D/AF 547, Anderston to Stanton, 2 May 1940 "It is desirable that all Associations in any one branch of industry... should combine together... to be of assistance to the government in carrying on the trade of the country...".

36. The first meeting was 9 May 1940. See D/AF 605, I.N.C. file, 1940-1942, and D/AF 547 and 552, Anderston/Stanton correspondence, 1940-1942.

37. See D/AF 605; D/AF 606-608, C.F.A. files, 1947-51. the history and constitution of the C.F.A. (D/AF 606, 13 June 1945) is particularly helpful in summarising the aims and achievements of the organisation. Subscriptions were related to output, the value of output and wage bills. The I.N.C.'s representative on the C.F.A. was D.G. Bisset (see Chapters 5-7 above). The I.N.C.'s membership list provides details of many of the chair and segment makers who had disappeared from the various trade associations or had never belonged to them, e.g. Williamson's of Wellingborough, the Darlington Railway Plant and Foundry, Matthew Swain of Newton Heath, Lancs., for chairs or: Whessoe,

Butterley, Melvins and Potters for segments. Many of these firms may have been manufacturers on but a small scale or more theoretical than actual, whose competition, if any, failed to impinge on the associations. The C.F.A.'s members, apart from the Associations involving Anderston and various employers' and staff federations point to the dominance of collusion: National Association of Malleable Ironfounders; British Bath Manufacturers' Association; British Malleable Tube Fittings Association; Cast Iron Axle Box Association; Cast Iron Heating Boiler and Radiator Manufacturers' Association; National Ingot Mould Association etc., D/AF 605, 7 September 1940. D/AF 606, 13 June 1945.

38. Chairs, segments, steel sleepers, switches and crossings and junction fishplates: the British Ironfounders' Association; the Rail and Telegraph Accessories Export Group; an export group for switches and crossings; the I.N.C.; the C.F.A. etc., and organisations such as the British Cast Iron Research Association.

39. See The Monopolies and Restrictive Practices Commission, Report on the supply of cast iron rainwater goods, NC 136, (1951).

40. Burn (1961) generally and Vaizey, especially caps. 6-7.

41. D/AF 550, 553, Cunningham/Cargill correspondence, 1942-43; D/AF 463-465, out letters to Cargill, the C.F.A., the I.N.C. etc., 1942-43. See also D/AF 605-606, C.F.A. files.

42. Output calculated from D/AF 230-233, Sales Day Books. Capacity given in D/AF 545, Anderston to the Admiralty, 16 April 1940.

43. Railway chairs, which had been c.30% of foundry output, 1939/40 were 77% by 1942/43; D/AF 557, return made by C.I.C.A. to the C.F.A., 24 December 1945; D/AF 545, 549, 553, 557, "Chairmakers" files, 1940-45, particularly D/AF 545, 19 June 1940 where the Director of Iron Castings gave C.I.C.A. the option of dividing 5500 t. of chairs unequally between its eleven members.

44. D/AF 547, Melvins, Allen to Anderston, 15 February 1940.

45. Inevitable with the wider geographical spread of members, wartime difficulties in arranging casual meetings etc.

46. D/AF 549, "Chairmakers" files, 18 March 1941 and 26 September 1942 as examples. Col. Francis of the Southern Railway would have retired but for the war. Tubby was busily cultivating Southern Railway officials and Harvey was asked to cultivate any Southern directors he might know. In November 1941, Francis claimed that orders had already been placed - before the lodgement date for tenders. D/AF 549, Cunningham to Cargill, 13 November 1941; D/AF 551, Cunningham/Harvey correspondence, December 1941 - January 1942.

47. D/AF 549, Cargill/Cunningham correspondence, 24 - 29 December 1941.

48. The Railway Executive acted as the government's agent for running the railways from 1 September 1939 until nationalisation. From 1944 Anderston, on behalf of the chairmakers, was in regular contact with the Executive arranging postwar work. D/AF 555, 560, 566, Anderston/Railway Executive correspondence files, 1944-47, contain various of the details of output, estimates of capacity and allocation of orders subsequently found in the C.I.C.A. files.

49. D/AF 549, Cargill to Cunningham, 29 December 1941 and Cunningham to Cargill, 13 March 1942. D/AF 553, Cunningham to Cargill, 23 August 1943. In 1940 Anderston received its first L.M.S. order for three years, with Tubby's assistance and that of Cargill (who revived the old practice of personal contacts at St. Rollox now that he was again living in Glasgow). The L.M.S. had been ordering only from makers with works on its system - see D/AF 553, Cargill/Cunningham correspondence, 5 - 21 January 1943; D/AF 545 and 547, Cunningham/Cargill and Cunningham/Macnee correspondence, October 1940. See also Table 8.5.

50. D/AF 549, ibid.

51. D/AF 557, Return by C.I.C.A. to C.F.A. for the Joint Iron Council's 5 Year Plan. Chairmakers' file, 24 December 1945.

52. D/AF 557, Cunningham to Cargill, 4 January 1945 and 19 March 1946; D/AF 570, Cunningham to Peat Marwick , Middlesbrough, Secretaries of C.I.C.A., 24 January 1949.

53. D/AF 560 and 566, Anderston to Railway Executive Stores Committee, 13 December 1946, 6 November 1947 etc.

54. Figures calculated from C.I.C.A. statistics returned to Peat Marwick , Middlesbrough which shew capacity and actual and forecast output.

55. D/AF 362, Cunningham to Cargill, 27 August 1948; D/AF 607, report by C.I.C.A. to C.F.A., 1949, D/AF 607; D/AF 562, Report by Cunningham to Cargill, 20 October 1947.

56. D/AF 566, Anderston/Railway Executive and Anderston/Railway and General correspondence, 1947; D/AF 561, Stanton to Anderston, 9 August 1946 and D/AF 565-566, Anderston/Peat Marwick correspondence, 1947-48.

57. D/AF 570, Peat Marwick , Middlesbrough correspondence file with Anderston, 11 January 1949. Hereafter Peat Marwick , Middlesbrough/C.I.C.A. file. It is unclear which of their correspondence was with Anderston as a member of C.I.C.A. and which with Cunningham as C.I.C.A.'s chairman. Much is circular or statistical, D/AF 601, duplicates, in part, the Peat Marwick , Middlesbrough/C.I.C.A. file.

58. D/AF 490, Out letter to Peat Marwick , Middlesbrough, 2 December 1949. For allocation see Tables 8.3 and Peat Marwick , Middlesbrough/C.I.C.A. files. D/AF 565-566, 570, 574, 578, 582, 1947-1952.

Makers had increased their capacity from 97500 tons p.a. (period IV 1946) to 157000 tons p.a. (period IV, 1947) etc. D/AF 490 ibid and Table 8.3 and 8.5 Deliveries made in 1946 (periods I to III) indicate the continuance of traditional patterns of business: the G.W.R. received 7270 tons from G.K.N. and 120 t. from elsehwere: the Southern 15330 t. from Pease, Tees Side and Smith Patterson; London Transport, 1870 t. from Smith Patterson and the two Nottingham firms; the L.M.S. 19160 t. from all makers bar G.K.N. and Melvins; the L.N.E.R. 22420 tons from all makers bar G.K.N., Howie and Railway and General.

59. The capacity of makers (IV 1946 to II 1949) lay within the following ranges (tons p.a.) see also Table 8.5. Source: D/AF 565-566, 574, 578 and 582 as in note 58. N.B. from 1948 the G.K.N. capcity, with new plant increases to 34000 tons p.a.

North East: Anderston 12800-19200; Cochranes 5200-5600; Head Wrightson 10000-20000; Pease and Partners 21000-23810; Smith Patterson 16800-23600; Tees Side 5260-19760

Wales/Scotland: Howie 1200-1300; Melvins 1600-2000; G.K.N. 12000-15600

Midlands: Taylors 7600-14000; Stanton 7200-11200; Railway and General, 500-2400.

60. M.R. Bonavia The Birth of British Rail (1979) passim; T.R. Gourvish (1986) cap.1.

61. D/AF 585, Peat Marwick , Middlesbrough/C.I.C.A. file, with offprint from Railway Gazette, 7 October 1955.

62. Prompting D/AF 566, Cunningham to Riddles, Railway Executive, 17 February 1947 on behalf of C.I.C.A. See also D/AF 562, Chairmakers' files, 1947 and correspondence with individual firms and D/AF 570, Peat Marwick , Middlesbrough/C.I.C.A. file, 11 - 27 January 1949.

63. The other makers were hit, it would seem, in comparable fashion.

64. D/AF 585, ibid; D/AF 562, Cunningham to Cargill, 22 October 1948; D/AF 601, C.I.C.A. file statistics, 16 September 1952.

65. The Management Committee comprised representatives of each of the six northern makers and of G.K.N. The Association was to run from 1 January 1948 to 31 December 1949 whereafter members could resign with 6 months notice. Annual elections for the chairman and management committee were held - votes being for individuals not firms. Members bound themselves to adhere to price levels.
"The objects of the Association shall be to maintain an organisation adequately representative of the cast iron chair manufacturers of the U.K. and to safeguard the general well being of the trade, having full regard to the national and common good, the well being of the work people and the interests of the consumers...".

The constitution (quoted) is very much a document of its time, dressing up the main purpose in fancy phrases, in contrast with the bald statements of the C.I.S.A. constitutions of c.1911 and 1934 - see above. D/AF 562 and 565, Chairmakers' file, Peat Marwick , Middlesbrough/C.I.C.A. file, both 1947-48.

66. D/AF 570, Peat Marwick , Middlesbrough/C.I.C.A. file, 3 - 9 March 1949. The division was North East 63%; Midlands 13%; G.K.N. 20%; Scotland 3%. See also Table 8.5.
Anderston 209; Cochrane's 67; Head Wrightson 75; Pease 297; Smith Patterson 127; Tees Side 160.
Midlands 200; G.K.N. 300; Scotland c.50.
In C.I.C.A.'s return to the C.F.A. (D/AF 557, Chairmakers' file, 24 December 1945) only 620 men had been employed in the chair business in 1937. The Iron and Steel Board was part of the planning framework erected by Oliver Franks et al. for the still privately owned post-war steel industry (see Burn (1961) and Vaizey, passim). For another example of nationalised railways getting something which private ones could not see Bonavia (1981), p.18.

67. As 66 and 61; E.J. & J. Larkin, p.169.

68. D/AF 601, C.I.C.A. files, especially 20 March and 24 July 1951, 18 March and 16 September 1952; D/AF 570, Peat Marwick , Middlesbrough/C.I.C.A. file, 11 January and 15 March 1949.

69. D/AF 670, Peat Marwick , Middlesbrough/C.I.C.A. file, 3 March, 14 March, 12 April and 13 May 1949 - all of it correspondence to/from Cunningham as chairman of C.I.C.A. Typically the management structure of the nationalised Railway Executive was centralised but at the centre there was no co-ordination of the various functional empires. See Gourvish (1986) and Bonavia (1979) and (1981).

70. D/AF 574, Peat Marwick , Middlesbrough/C.I.C.A. file. Letters from Melvin's, Alloa to Peat Marwick , Middlesbrough, 16 June 1950 "Our whole foundry economy is based on chair making... [which] gives us the necessary weight and turnover to reduce overheads to a minimum... it enables us to compete successfully in other lines". Chair profits were negligible.

71. D/AF 570, Peat Marwick , Middlesbrough/C.I.C.A. file, 13 May 1949.

72. A reversion to pre-war practice: D/AF 601, C.I.C.A. file, 24 May 1950. Report of meeting with the Railway Executive. Existing arrangements which should have continued to the end of 1950 were reneged upon by the Railway Executive almost immediately. See D/AF 574 and 601, Peat Marwick , Middlesbrough/C.I.C.A. file and C.I.C.A. file, 1950 respectively and D/AF 573, Anderston to G.K.N., 21 July 1950 and after.

73. D/AF 601 passim.

74. D/AF 570 and 573, Peat Marwick , Middlesbrough, C.I.C.A. files, 1949-1950, especially minutes of Extraordinary General Meeting, 29 December 1949; D/AF 601, C.I.C.A. file, 31 August 1950.

75. D/AF 572-573, Cunningham/Cargill and Cunningham/Harvey correspondence, June - August 1950; D/AF 601, C.I.C.A. file, July - August 1950; D/AF 573, Cunningham/G.K.N. correspondence, 21 - 26 July 1950.

76. Calculated from D/AF 570, Peat Marwick , Middlesbrough, C.I.C.A. file (see note 66) returns of employees etc. Output in tons per employee for period II 1949, calculated from D/AF 570: Anderston, 13.5; Cochrane's, 20.9; Head Wrightson, 43.3; Pease, 20.1; Smith Patterson, 37.0; Tees Side 23.75; Midlands 29.0; Scotland 14.4; G.K.N., 28.3. G.K.N. was free from the constraints of labour shortage through the use of Polish migrants (D/AF 601, C.I.C.A. file, 14 August 1950).

77. D/AF 572, Cunningham to Cargill, 20 June 1950.

78. D/AF 572, Cargill to Cunningham, 24 June 1950.

79. D/AF 573, Harvey to Cunningham, 10 August 1950 and D/AF 572, Cunningham to Cargill, 6 August 1950. Both concern G.K.N.'s terms expressed in D/AF 573, G.K.N. to Cunningham, 26 July 1950.

80. E.g. D/AF 601, C.I.C.A. file, 31 October 1950 and D/AF 574, Peat Marwick , Middlesbrough, C.I.C.A. file, October 1950. At 80000 tons p.a. nil rebate; thereafter 2/6d. per ton rebate on all tonnage if the orders exceeded 80000 tons p.a. but were less than 85000, rising by increments to 10/- per ton rebate above 110000 tons. This was later redrafted to: 100000 tons p.a. nil rebate (this to be standard tonnage); 11d. per ton rebate on entire tonnage at 110000 tons p.a.; rising incrementally to 9/4½d. per ton at 180000 tons p.a. - from D/AF 601, C.I.C.A. file, Memorandum of 1 February 1952; same, 2 April 1952.

81. D/AF 601, C.I.C.A. file, minutes of C.I.C.A., 1 February 1952; ibid 10 July 1951, letter from Smith Patterson to Peat Marwick ; ibid, summary of reply of members to C.I.C.A. questionnaire, 2 - 9 April 1952; ibid third draft of C.I.C.A.'s Rebate Sub-Committee (Anderston, G.K.N., Pease and Partners, Smith Patterson), submitted, 18 November 1952.

82. D/AF 601, C.I.C.A. file, 27 May 1952.

83. The scheduled capacity of Horwich was 51000 tons, that of the three other remaining railway foundries, [Gorton, Swindon, Peterborough), 16000 tons p.a. The other London Midland Region chair foundries had closed at Horwich's opening. D/AF 582, Peat Marwick , Middlesbrough, C.I.C.A. file, especially 28 November 1952; D/AF 601, C.I.C.A. file, 10 December 1952 for economic tonnage of private makers; D/AF 601 and above, and Table 8.5 for capacity; D/AF 578 and 582, Peat Marwick , Middlesbrough, C.I.C.A. files, 26 October 1951 - 4 July 1952. Orders in 1952 were c.90000 tons p.a.

84. D/AF 578 and D/AF 585, Peat Marwick , Middlesbrough, C.I.C.A. files, 28 November 1951 and 7 December 1955. In 1955 British Railways was still purchasing c.85% of chair output - D/AF 585 ibid and passim.

85. D/AF 582, Peat Marwick , Middlesbrough, C.I.C.A. file, 16 July 1952; D/AF 485, Cunningham to Cargill, 25 May 1955.

86. D/AF 10, Minutes, 7 July 1954; Larkin and Larkin, pp.168-170.

87. D/AF 10, Minutes, 9 December 1955; D/AF 584 and 585, Peat Marwick , Middlesbrough, C.I.C.A. files especially 20 October 1954, 4 and 30 March 1955.

88. D/AF 585, Peat Marwick , Middlesbrough, C.I.C.A. file; 10 June and 24 May 1955: respectively a copy letter from Smith Patterson to Peats and letter from Peat's (on behalf of C.I.C.A.) to the British Transport Commission (British Railways).

89. D/AF 585, Peat Marwick , Middlesbrough, C.I.C.A. file (22 March 1955). Costs of Horwich taken from Railway Gazette offprint (D/AF 585, 7 October 1955). Cunningham expressed his scepticism of the figures given therein, inter alia, D/AF 486, Anderston to Tees Side Bridge, 11 October 1955.

90. Some points raised in October 1954 were awaiting a proper reply 14 months later. The offer was declined after meetings in May/June 1955. (D/AF 585, Peat Marwick , Middlesbrough, C.I.C.A. file, 1955 passim).

91. D/AF 584-585, as notes 87-90 above.

92. D/AF 585, Peat Marwick , Middlesbrough, C.I.C.A. file, 24 May 1955: letter Anderston to Peats.

93. D/AF 585 and 587, Peat Marwick , Middlesbrough, C.I.C.A. files, 24 June 1955 and 14 March 1957. In 1955 chairs were selling at c.£21 per ton.

94. British Railways claimed that it had, in the past, regularly over-ordered to keep the private makers afloat - D/AF 585, Peat Marwick , Middlesbrough, C.I.C.A. file, 21 July 1955. Horwich continued on double shift working - D/AF 486, Cunningham to Cargill, 24 January 1956.

95. DAF 585, Peat Marwick , Middlesbrough, C.I.C.A. file, 15 - 26 October 1955.

96. D/AF 486, Cunningham to Dodds of Vigilant Investments, i.e. Smith Patterson now restructured as a holding company, 25 November 1955: "Dum spiro spero".

97. D/AF 587, Peat Marwick , Middlesbrough, C.I.C.A. file, 14 March 1957; D/AF 574, Peat Marwick , Middlesbrough, C.I.C.A. file, 25 April 1950 and after; D/AF 601, C.I.C.A. file, 24 May 1950 - minutes of meeting with railway representatives.

98. D/AF 490, Cunningham to Smith Patterson, 16 October 1959; D/AF 587, Peat Marwick , Middlesbrough, C.I.C.A. file, 1957 passim; D/AF 10, Minutes, 1955.

99. D/AF 587, Peat Marwick , Middlesbrough, C.I.C.A. file, 14 March 1957.

100. D/AF 10, Minutes, 9 December 1955.

101. Pease's had been reduced by successive waves of nationalisation to little more than its foundry; D/AF 489, Cunningham to Harvey, 13 November 1958 points to the resigned loss of hope (see note 96); D/AF 480, to Peat Marwick , Middlesbrough, 19 November 1959.

102. See below for Grant Lyon .

103. E.g. D/AF 601, C.I.C.A. file, 18 May 1950. See also S. Tolliday, Business Banking and Politics, table 6.

104. D/AF 585, Peat Marwick , Middlesbrough, C.I.C.A. file, 7 December 1955 and generally D/AF 584-585 and 587, Peat Marwick , Middlesbrough, C.I.C.A. files, 1954-57 and D/AF 601, C.I.C.A. file, 1950-1952.

105. D/AF 553, Cunningham to Cargill, 14 April 1944. Concrete segments (see above Chapter 6) cost two thirds of iron ones but their maintenance costs were greater. Cunningham, fearing the expansion of London Transport's pre-war experiments sought Cargill's technical assistance to simplify and lighten the design - D/AF 553, 15 January 1944 and following.

106. D/AF 604, C.I.S.A. file: graph c.1947/8.

107. D/AF 545, Cunningham to Cargill, 26 September 1940; D/AF 604, C.I.S.A. file, October 1940; D/AF 548, Anderston/Stanton correspondence, 1940 passim.

108. T.C. Barker and Robbins, History of London Transport, vol.2, pp.304-311, D/AF 568, Cunningham to Cargill, 4 October 1949 with the prospect of c.4300 tons to be ordered soon.

109. D/AF 604, C.I.S.A. file, 10 December 1947 and following; D/AF 562 and 568, correspondence with Aclands, Victoria Street, Westminster, engineering agents - the Secretaries of C.I.S.A., 1947-49 passim, particularly August 1947. In 1947/8 C.I.S.A. divided work with Butlins' exit: 42½% to Stanton and Cochranes; 24% to Head Wrightson; 19½% to Smith Patterson; 14% to Anderston.

110. D/AF 604, C.I.S.A. file, 19 July 1949 - cost comparisons. No doubt Stanton benefitted from being its own supplier of cheaper, Midland ores as well as from economies of scale.

111. D/AF 10, Minutes, 26 November 1952, 5 May 1954 and 2 March 1955. Interview with C.E. Needham (1985); D/AF 636, report by Hanlon, 1959; report of A. Whitton, C.A., 1 December 1961 in

the possession of Dundas and Wilson, C.S., Edinburgh, resumé of which is appended to this chapter.

112. Anderston's forecast capacity was 5000 tons of segments p.a. This was never achieved. See D/AF 636, Hanlon report, 1959; D/AF 489-493, out letters to Stanton Ironworks, 1958-62 (incomplete), especially 4 June 1958; D/AF 489-493, out letters to Aclands, Secretaries of C.I.S.A.; D/AF 588-589, correspondence with Aclands and Stanton, 1959 and 1958 respectively. Stanton, as usual, was co-ordinating the business and arranging the subletting of contracts.

113. The destinations may be conjectured from information given in Order Books, Quotation Books and Sales Day Books (D/AF 233-241, 262-264, 276-277).

114. The anchors seem to have been invented by an engineer of the East African Railways. Anderston had no particular design role - unlike the 1920s anchors. Figures from Sales Day Books (D/AF 233-234).

115. D/AF 568, Cunningham to Cargill, 4 October 1949.

116. Smoke pipes for the War Office had been the only product of this sort which Anderston had continued to manufacture. For the collapse of light castings' demand during the war see D/AF 541, 545, 549 and 553, Anderston/B.I.A. correspondence, 1939-44 passim and the Report of the Monopolies and Restrictive Practices Commission, 1951. An increasing quantity of rainwater goods was made from asbestos cement and other new materials, encouraged by wartime shortages. In 1949 22% of rainwater goods were of asbestos cement and 20% of steel or aluminium (see Monopolies Commission (1951)). D/AF 556, Cunningham report to Watt, 24 February 1944 for position and prospects.

117. D/AF 9, Minutes, 13 May 1947. Monopolies Commission (1951)).

118. D/AF 562, Cargill/Cunningham correspondence, 20 October 1947 - 1 April 1948. D/AF 9, Minutes, 17 March 1948. Anderston had the option of giving 6 months notice and going it alone should it find such action opportune - which it did not. The B.I.A. comprised 51 of the 74 manufacturers of rainwater goods - many of the outsiders were very small. Its makers produced 88500 t. of the 98250 t. of cast iron rainwater goods manufactured in Britain in 1949. Members employed 4900 in the rainwater business (1939) and 3100 (1945). A shortage of skilled workmen encouraged mechanisation in their foundries - as it should have done with the chairmakers. (Monopolies Commission, 1951).

119. D/AF 234-241, Sales Day Books.

120. D/AF 636, Hanlon report, 1959 and Monopolies Commission (1951).

121. D/AF 636, Hanlon report; interview with C.E. Needham (1985).

122. D/AF 485, Cunningham to Cargill, 25 May 1955.

123. D/AF 486, Cunningham to Harvey, 27 November 1955.

124. D/AF 486, Cunningham to Cargill, 24 January 1956.

125. D/AF 545, return to the Admiralty, 16 April 1940.

126. The Association's total production had been (calendar years): 1935, 20300 t.; 1936, 16500 t.; 1937, 20500 t.; 1938, 13300 t. D/AF 565, Peat Marwick , London, Steel Sleeper Association file, 1947-48. Calculated from returns and statistics in Anderston/Peat correspondence files, 1935-39 (D/AF 527, 531, 536, 540, 543) and D/AF 19, Commission Accounts, 1919-1941. During the war Robert Hudson's of Gildersome, as sub-contractor for the government, was sole customer - taking light weight sleepers. Production averaged 1260 tons p.a. 1/4/39 - 31/3/45 compared with 1600 tons p.a. in the eight preceeding years.

127. D/AF 553, Cargill to Cunningham, 25 August 1944.

128. D/AF 555, Peat Marwick , London, Steel Sleeper Association file, 14 September 1944 and following. The potential afforded by Anderston's new sleeper plant, which had come into operation at the end of 1948, was persistently hampered by both irregular deliveries from Dorman's, and the general shortage of steel throughout Britain. See Burn (1961) and Vaizey generally and D/AF 568, Cunningham to Cargill, 4 October 1949. D/AF 486, Cunningham to Cargill, 14 November 1955 and 24 January 1956.

129. S. Africa had long maintained strong quality and delivery checks - see D/AF 556 and following, correspondence of Anderston with its agents, Dowson and Dobson of Johannesburg, 1930s.

130. See above. The budget allowed 20% depreciation on new machinery and provided a 20% refund of Excess Profits Tax which had to be used on new plant and machinery. From 1947 a Differential Profits Tax was instituted to discourage dividend distribution - Alex Rubner, The Ensnared Shareholder, pp.64-66. D/AF 557, Cunningham to Cargill report, 5 February 1946.

131. Vaizey, chapter 8.

132. D/AF 557, Cargill to Cunningham, 7 February 1946. See note 130.

133. D/AF 557, Cunningham to Cargill, report, 5 February 1946.

134. D/AF 557, Cargill/Cunningham correspondence, 7 February, 19 - 27 March 1946. Dorman's had decided to resume production but needed time to do so. The meetings of the S.S.A. followed those of the Rail Makers' Association, at which Anderston was the only sleeper maker not present. Rivalries could spill over from one Association to another.

135. D/AF 557, Cunningham to Cargill, 4 June 1946. D/AF 570-574, Peat Marwick , London, Steel Sleeper Association files, September 1949 - January 1950.

136. D/AF 557, Cargill/Cunningham correspondence, 8 - 22 July 1946 concerning G.K.N.'s proposal to co-operate in making iron sleepers for domestic use - rejected by Anderston for fear of upsetting Dorman's. The Iron and Steel Control had raised the question of steel sleepers with the home railways in 1944, without success. Stanton's patenting a design for concrete sleepers in 1940 (D/AF 547, Stanton file, 17 May 1940) pointed to the way ahead.

137. D/AF 580, Cunningham to Cargill, 29 February 1952.

138. D/AF 566, 570, 574, Peat Marwick , London, Steel Sleeper Association files, 1946-1950 passim - particularly Peats' reports of 4 - 6 August 1948. The 5:3 division of raw materials between the Railmakers' Association and the Steel Sleeper Association was established in 1951. D/AF 578, Peat Marwick , London, Steel Sleeper Association file, 1951 passim. The Steel Sleeper Association's 1955 constitution spells out the arrangements for dealing with export licences etc., through the Association. D/AF 585, Peat Marwick , London, Steel Sleeper Association file, 1955.

139. And see D/AF 557, C.I.C.A.'s return to C.F.A., 24 December 1945. Steel Sleeper Association's reply to the B.I.S.F.'s inquiry is quoted in a circular from Peats to S.S.A. members. D/AF 566, Peat Marwick , London, Steel Sleeper Association file, 4 August 1948.

140. See notes 124 and 128 above. In January 1956 Anderston was down to one shift working. Conversely (D/AF 489, Cunningham to Harvey, 13 November 1959), Dorman's, when short of business, were very eager to roll plates.

141. The British Steel Producers' Conference (see D/AF 599-600) was a collective body for the various relevant trade associations, not unlike the C.F.A. The S.S.A.'s 1955 constitution (D/AF 585, Peat Marwick , London, Steel Sleeper Association file, 1955) mentions the S.S.A.'s nominating to the Conference.

142. D/AF 578, Peat Marwick , London, Steel Sleeper Association file, 2 July 1951. Report by Lyttelton of G.K.N./G.K.B. to the S.S.A.; and D/AF 582, Peat Marwick , London, Steel Sleeper Association file, February - March 1952 passim.

143. D/AF 576, Cunningham to Cargill, 29 September 1951. Anderston had spent £12,000 on the contract already. See also D/AF 578, Peat Marwick , London, Steel Sleeper Association file, 11 January 1951 and after.

144. D/AF 10, Minutes, 7 July 1954, 17 November 1954 in contrast with D/AF 578, Peat Marwick , London, Steel Sleeper Association file, 1951, reports by Lyttelton and others.

145. D/AF 557, Cunningham to Cargill, 4 June 1946, fearful of disrupting the link with Dorman's.

146. Dorman's and Anderston had forecast that this market would be lost - as for much of the inter-war period (D/AF 557 ibid).

The construction of a sleeper plant in S. Africa was rumoured (D/AF 582, Peat Marwick , London, Steel Sleeper Association file, 21 January 1952) and was consistent with the political/economic ethos of the National Party governments.

147. D/AF 578, Peat Marwick , London, Steel Sleeper Association file, Lyttelton's report, 2 July 1951. In Africa timber was expensive and hardwoods, such as Yarra, largely unavailable.

148. Personal observations of a salesman of railway equiment in the Far East on the rise of bribery. Soft loans to India (Tomlinson see note 151) helped revive business there temporarily. Ceylon, granted dominion status, behaved for long as a loyal colony.

149. E.g. D/AF 574, Peat Marwick , London, Steel Sleeper Association file, 23 January 1950 and Peat Marwick , London, Steel Sleeper Association files generally. The proposed distribution of the 67000 t. of steel allocated for 1952 was: Crown Agents, 40.9%; Rhodesia and C. Africa, 13.0%; S. Africa, 3.7%; Egypt, 8.3%; Australia, 25.8%, Mozambique, 7.6%; Other, 0.7%
Source: D/AF 578, Peat Marwick , London, Steel Sleeper Association file, 1951.
At 31 December 1952 orders in hand for the Steel Sleeper Association totalled 162200 tons: Crown Agents, 9.5%; Rhodesia and C. Africa, 47.4%; S. Africa, 8.1%; Egypt, 5.9%; Australia, 16.5%; Persia, 5.8%; Greece, 6.8%.
Source: D/AF 582, Peat Marwick , London, Steel Sleeper Association file, 1952.

150. 21.2% 1937 to 24.8% 1953 and 15.9% 1937 to 12.5% 1953 respectively. B.I.S.F. statistics circulated by Peats to S.S.A. members, D/AF 585, Peat Marwick , London, Steel Sleeper Association file, 27 April 1955.

151. The sterling balances of other countries may have influenced their purchasing policies in the late 1940s. Better to have goods than an inconvertible soft currency. A superficial continuity was presented. See B.R. Tomlinson, The Political Economy of the Raj, 1914-47, (1979) pp.157-167 and same "Indo-British Relations in the post-colonial era. "The Sterling Balances Negotiations, 1947-49" in The Journal of Imperial and Commonwealth History, vol.13 no.3 (May 1985).

152. Pakistan and India indulged in wars and trade wars. From 1949 trade between them virtually ceased. Pakistan did not devalue its rupee in line with the Indian rupee and sterling in 1949 thus cheapening imports from Britain paid in part from blocked sterling balances. See, for example, J.R. Andrus and A.F. Mohammed, Trade, Finance and Development in Pakistan (Stanford, 1966) or S.R. Lewis, Economic Policy and Industrial Growth in Pakistan (1969). The revival of Indian trade in the late 1950s was due, in part, to tied aid from Britain in 1958 within the general context of Anglo-Indian trade and the sterling area - Tomlinson (1979), pp.166-167. Pakistan's business could be lost, however, e.g. D/AF 574, Peat Marwick , London, Steel Sleeper Association file, 23 January 1950, but

the allocation of orders for Pakistan and negotiations with it run constantly through the S.S.A. files of the 1950s.

153. Trade missions, information on export opportunities and priorities and so forth were relayed by B.I.S.F. to Peats for the use of the S.S.A. (and the Railmakers' Association). E.g. dsee D/AF 574, 578, 582 - for the quantity and destination of Anderston output see D/AF 233-241, Sales Day Books. D/AF 262-264, Quotation Books, D/AF 276-277, Order Books for the period. The weight of sleepers subcontracted to Anderston, generally by other makers of S.S.A., rose from 5.6% (1944/5 - 1949/50) to 15% in the next five years to 28.1% (1954/5 - 1959/60).

154. D/AF 229-233, Sales Day Books.

155. Cargill remained chairman of the Switches and Crossings Association until 1944 - it had not met since 1938/9. The Export Group was formed (13 May 1940), following Cunningham's enthusiastic endorsement of Macnees' suggestion (24 April 1940), he having talked with Dorman's about the Railmakers' Export Group. As the examples of the I.N.C. and C.F.A. shew, industry required little encouragement to organise itself further. D/AF 547, Anderston/Macnees correspondence, 1940, especially 24 April - 13 May 1940.

156. The export drive of 1939/40 included, for example, a delegation led by Lord Willingdon, a former viceroy, to Latin America. In an early application to the Board of Trade, the Group could secure only 1000 tons of rail against the 2800 tons it required. From June to September, the export licences for an order for S. Africa were held up - this was typical not just of the period in which invasion was feared. In 1945 orders were still outstanding from 1940/41. D/AF 547, Anderston/Macnees correspondence, June - September 1940 and D/AF 545, Cunningham/Cargill correspondence, 24 August - 26 September 1945.

157. D/AF 549 and 553, Cunningham to Cargill, 21 August and 28 October 1942 and 23 September 1943.

158. D/AF 553, Cunningham/Cargill correspondence, March 1943.

159. D/AF 221, et seq., Sales Day Books, passim.

160. D/AF 553, Cunningham to Cargill, 23 September 1943. 95% of switches and crossings were purchased by, or for, the government.

161. D/AF 547, Anderston/Macnees correspondence and D/AF 548, Anderston/Taylor Brothers (Sandiacre) correspondence, both 1940, especially 2 July 1940 to Taylor's. D/AF 555, Anderston/Macnees correspondence, March 1943 for further court investigations. S.A.X.A. members compared notes: Lewis Brothers, a non-member, was left to fend for itself. The firms were not, necessarily, profiteering. Cost structures were geared to the relatively low levels of business in the 1930s and thus may well have required revision.

162. D/AF 559, Anderston/Macnees correspondence, 25 April, 7 July and 7 October 1945. A few conciliatory gestures were made to Summersons.

163. c.18% compared with 1.3% by Summersons - both % of their % share, not absolute.

164. D/AF 554, Cunningham to Harvey, 12 October 1944. See Appendix 1 for the Railway and General Engineering Co. Ltd., generally and Sheffield Record Office, TW 445, Minutes of Railway and General, citing minutes of meetings with S.A.X.A., 12 October 1944 - 7 May 1945.

165. D/AF 568, Cunningham to Cargill, 26 January 1949.

166. D/AF 562, Cunningham report to Cargill, 20 October 1947. D/AF 573, Cunningham to Harvey, 20 February 1950.

167. D/AF 569 and 573, Anderston/Macnees correspondence files, containing minutes of S.A.X.A. meeting 10 November 1949, and draft constitution, March 1950.

168. In 1945 (D/AF 559, Anderston/Macnees correspondence, 1945) Patent Shaft offered to sell to Summersons its share of S.A.X.A. business for one year. Patent Shaft's other businesses were squeezing out switches and crossings and in April 1947 (D/AF 564, Anderston/Macnees file) it was so far in deficit to its allocation of S.A.X.A. business that, by agreement, it was debited with an extra 1000 sets/units to bring it back into line. The revised allocation of S.A.X.A. from 1951 (D/AF 577, Anderston/Macnee correspondence, passim) was: Anderston 27%; Darlington Railway Plant 20.75%; Summersons 20.75%; Isca 13.5%; Whites 6.5%; Edgar Allen 6.5%.

169. Railway and General Minutes, TW 447, 11 January 1950. The export makers claimed, legitimately to be "too busy".

170. Railway and General Minutes, TW 447, 27 July 1955 and 29 February 1956; D/AF 10, Minutes, 17 November 1954; D/AF 584 and 587, Cunningham to Macnees, 23 December 1954 and 7 January 1957 commenting on the small reserves, rapid increase in turnover, low margins and overdrafts of Railway and General, its window dressing of accounts and use of consultants to report on production methods. Anderston was not inclined to be taught new tricks - Railway and General survived into the 1970s.

171. Railway and General Minutes, TW 447, 25 May 1955; 29 February, 30 May and 29 November 1956.

172. Railway and General Minutes, TW 447, 5 October 1955.

173. For all of the prec eding see D/AF 487, Anderston to Taylor Bros., 28 June 1956 and D/AF 588, Anderston/Taylors correspondence, 14 - 18 November 1958. Summersons was repeating its covetousness of the 1930s. In a free market it would have been reasonable to assume that rails rolled in the north east and ultimately to be laid there would be planed there and not in Nottingham into switches and crossings.

174. D/AF 636, Hanlon report. Anderston would need to renew and enlarge its planing machinery.

175. D/AF 239-240, Sales Day Books.

176. D/AF 562, Cunningham to Cargill, 22 October 1948 "overall our... methods are equal to anything [at Taylor Bros.]..." D/AF 569, Cunningham to Harvey, 23 January 1949 and same, Harvey to Cunningham, 2 May 1949 and following. D/AF 573, Cunningham/Harvey correspondence, 1950 passim.

177. Interview (1984) with Mr. Hunter, late of T. Summerson and Sons. See Appendix 1 for notes on Summerson's.

178. See above Chapter 6.

179. D/AF 636, Report by Hanlon. Boot's ultimately acquired Ward's railway activities in the 1980s before selling them, after a run of losses, to Balfour Beatty in December 1988.

180. D/AF 241, Sales Day Books.

181. D/AF 489, Anderston to Macnees, 20 August 1958.

182. D/AF 489, Cunningham to Harvey, 29 July - 20 August 1958. Grant and Lyon offered to continue managing their business and Anderston would have let them retain a shareholding as an incentive.

183. D/AF 592, Cunningham to Harvey, 13 January 1959. Although Summeron closed in 1966/67 and White in the 1970s, Grant Lyon Eagre remains in the platelaying and switches and crossings business, as does Taylor Brothers (into which the various other Ward's subsidiaries were merged). Grant Lyon Eagre, after passing through various ownerships, has come to rest (April 1989) as a subsidiary of British Steel. Platelaying was a business Anderston could understand and, despite the contraction of railway freight business, one with a future. From the late 1960s government grants have been available for the installation of industrial sidings.

184. D/AF 572, Anderston/Dowson and Dobson, Johannesburg, correspondence, 13 March - 9 May 1950.

185. D/AF 559, Macnees to Anderston, 13 November 1945. Freeman, Fox the consulting engineers for Rhodesia Railways, had warned that they would stop buying British unless there was a price advantage to doing so.

186. Livesey and Henderson continued as their consulting engineers as they had, for some time, for the state owned Argentine lines. Sterling balances may have played a rôle in some orders as with Indian business - see B.R. Tomlinson as note 151. The personnel of the Argentine railways was nationalised a few years after the companies had been - D.S. Purdom, British Steam on the Pampas, pp.22-24.

187. D/AF 636, Hanlon report.

188. D/AF 10, Minutes, 17 November 1954. Order estimated at £625,000 for delivery between early 1955 and early 1957 to be paid for with 6% interest, by February 1959. Interview (1985) C.E. Needham.

189. D/AF 587, Anderston/Macnees correspondence, 1957.

190. D/AF 489, Anderston to Taylor Brothers, 14 November 1958.

191. Similar to, but formed earlier than, the switches and crossings group.

192. Tees Side Bridge, G.K.N., Bayliss, Jones & Bayliss, Richards, Ibbotsons etc.

193. D/AF 546, Anderston/Heathcote and Coleman, Birmingham, accountants (Secretaries of the R.T.A.E.G. and the Black Bolt and Nut Association), 5 - 12 June 1940.

194. D/AF 546, Anderston to G.K.N., 19 January 1940 and Anderston/Heathcote and Coleman correspondence, 4 - 12 October 1940; D/AF 545, Cunningham to Cargill, 26 August 1940.

195. D/AF 553, Cunningham to Cargill, 28 April 1943. On this account Cunningham declined to join the Black Bolt and Nut Association.

196. D/AF 553, Cargill to Cunningham, 24 June 1943.

197. D/AF 553, Cunningham report to Cargill, 28 April 1943; D/AF 307, Order Book and D/AF 231-233, Sales Day Books, passim. The work for Bailey Bridges was sub-contracted by Head Wrightson and some of that for other new products by Dorman Long. .

198. D/AF 636, Hanlon report. If there's nothing wrong, don't fix it.

199. D/AF 562, Cunningham to Cargill, report, 20 October 1947.

200. D/AF 610, R.T.A.E.G. files, 1947-49 passim.

201. D/AF 610, R.T.A.E.G. files, 12 April 1949 and following, where are statistics of G.B. Exports to destinations in Europe viz: 8284 t., 1935; 5130 t., 1936; 4342 t., 1937.

202. D/AF 610, R.T.A.E.G. file, 26 September 1949, when the Belgians gave 12 months notice. To 31 December 1948 6580 t. of business had been arranged through R.T.A.E.G. British prices remained largely stable; Belgian ones fluctuated to produce the covering, or covered, prices.

203. D/AF 610, R.T.A.E.G. file, passim.

204. Whether through outside competition or import substitution is uncertain.

205. All from D/AF 236-241, Sales Day Books.

206. D/AF 220-241, Sales Day Books; D/AF 308, Bolts Order Book.

207. See below and, for example, D/AF 490, Cunningham to Isabel Cargill, 1 December 1959.

208. D/AF 636, Hanlon report - but, for example, the trade in taper keys had been lost during the 1950s to G.K.N.

209. D/AF 551, Cunningham to Harvey, 27 November 1941. Also see above and see Cunningham's correspondence with Cargill, 1942 - 1947.

210. Interview, C.E. Needham (1985). There were usually only 2 or 3 boards a year. Cunningham reported to the board what he was doing rather than they providing direction. He and they were "well dug in" (Needham).

211. Interview. N. Hanlon (1987) - Morris, by repute, was "bumptious" and his rivalry with Cunningham during the 1920s and 1930s (see above chapter 7) had not endeared him to his colleagues.

212. D/AF 9, Minutes, 31 May and 28 June for Morris, 16 May 1941 for Adcock. See also D/AF 545-546, 548-552, Cunningham/Cargill, Cunningham/Harvey and Cunningham/Watt correspondence, 1940-41. Adcock had come on well but Cunningham did not wish him yet to succeed to Morris's throne (D/AF 552, to Watt, 28 February 1941).

213. N. Hanlon, interview.

214. As Cargill aged Cunningham consulted Harvey increasingly. During 1949/50 he passed to Harvey (and none other) share tips based, for example, on inside information about Smith Patterson, and hoped to use Harvey's I.C.I. acquaintance (see above). D/AF 569, Cunningham to Harvey, 24 July 1949 and D/AF 573, same to same, 8 October 1950.

215. Rubner, pp.64-66.

216. D/AF 348, Salaries and fees book. Watt had pared down the fees. The full time directors and Cargill - part of those retiral allowance had been in lieu of fees - now received their full share, as before 1928. Harvey, reliant upon fees and investment income, had a clear interest in ensuring that fees kept up with the effects of inflation upon the rest of his income.

217. D/AF 557, Cargill/Cunningham correspondence, 5 - 20 November 1945.

218. D/AF 9, Minutes, 6 March 1946. Letter from Liddell to Harvey quoted in D/AF 558, Harvey to Cunningham, 13 December 1946. D/AF 548, Liddell to Harvey, 27 March 1954 and forwarded to Cunningham. Liddell had worked on railways in India and Cuba.

219. D/AF 10, Minutes, 23 November 1953 and 5 May 1954; D/AF 584, Harvey/Cunningham correspondence, 31 December 1953 and

following. Burns, an accountant dealing with the La Terriere family affairs had complained to Harvey of Cunningham's abrupt dismissal of James La Terriere. Harvey replied that he was the family nominated director.

220. D/AF 545, Cunningham to Cargill, 26 September 1940.

221. D/AF 540, Cargill to Cunningham, 4 April 1941. McIntosh, who had briefly left Anderston's service in Glasgow (1923-28) would retire - aged 65? in 1962 having been Bolt Shop manager, 1929-60 and Points and Crossings manager, 1960-62.

222. D/AF 553, Cargill to Cunningham, 15 October 1943.

223. D/AF 9, Minutes, 20 January 1947. As had an offer from a manager of the Darlington Railway Plant in the 1930s.

224. K.N.L. Harvey, D/AF 558, Cunningham/A.K.L. Harvey correspondence, 1 October - 18 November 1945.

225. D/AF 557, Cargill to Cunningham, 13 March 1946 and following. Cargill had become a director on behalf of the Custodian of Alien Property through the good offices of Davidson and Syme.

226. D/AF 557, Cargill to Cunningham, 8 September 1945 and following.

227. Primarily the Glasgow Herald.

228. See D/AF 126, for published accounts, 1946/7 and after. D/AF 9, Minutes, 22 May 1946 for Mason's appointment as Assistant Secretary. D/AF 557-560, 1946, for letters of application, insertions of advertisements etc. for this and the assistant foundry/works managers' posts. D/AF 580-584, for same, 1952. Interview (1985), C.E. Needham.

229. Either would have had but a short reign.

230. D/AF 9, Minutes, 22 May 1946 and 19 May 1949. D/AF 569, Harvey to Cunningham, 25 May 1949.

231. D/AF 569, Cunningham to Harvey, 26 October 1949; D/AF 571, Cunningham/Fitzherbert Wright correspondence, June - October 1949. There seems to have been a clear preference for recruiting by contact rather than openly or through professional agencies. Hanlon's departure (back to Dorman's) was a disappointment to his colleagues who seem to have recognised his abilities. He, like Needham, went on to higher things. Hanlon interview (1987); D/AF 576-577, Cunningham/Cargill and Cunningham/Harvey correspondence, 7 - 13 June 1951.

232. D/AF 10, Minutes, 28 November 1951. D/AF 576 and 580, Cunningham/Cargill correspondence, June - November 1951 and November 1952.

233. Just as Reid was a Scottish foundry man (20 years experience in light castings in Falkirk), a background Anderston could

appreciate, Tubby was the nearest appointment possible to an insider or founder's kin. D/AF 10, Minutes, 1952. Interview (1985) Needham. Interview (1984) Mrs. Gavin Cole (McIntosh's daughter). D/AF 581, Cunningham/Harvey correspondence, April 1952 and same Cunningham/Macnees correspondence. D/AF 583, Cunningham/Tubby correspondence, with latter's curriculum vitae, 18 - 22 April 1952. Tubby had visited Anderston on various occasions during the previous 15 months. His salary was pitched so that net of tax it would be comparable with his Indian, tax-free, remuneration on which his income from Macnees had been based.

234. Adcock had suffered at least one stroke. He was working only three days a week when he returned in late 1954. His retiral allowance of £1,000 p.a. and a pension for his widow testify to the high regard felt for him. He died 15 November 1956. D/AF 577, Cunningham to Harvey, 12 December 1951; D/AF 584, Harvey to Cunningham, 9 September 1954; D/AF 485, Cunningham to Cargill, 25 May 1955; D/AF 10, Minutes, November 1955 - November 1956.

235. D/AF 586, Cargill to Cunningham, 18 November 1956.

236. E.g. D/AF 586, Anderston to Cargill, 3 January 1956; Interview, Needham (1985).

237. D/AF 555, Return to the Ministry of Supply, 21 July 1943 (374 employees). D/AF 586, Cunningham to Cargill, 18 November 1956; D/AF 549, same to same, 21 August 1942; D/AF 605, Return to the I.N.C. (263 workers in the foundry department), 28 May 1940; D/AF 545, Return to the Admiralty of 460 employees (66 of them skilled) plus foreman, managers etc., 16 April 1940.

238. Interview, Needham (1985), and above this chapter.

239. E.g. D/AF 557, Cunningham to Cargill, 14 May 1945; D/AF 577, Cunningham to Harvey, 23 November 1951.

240. D/AF 553, Cargill to Cunningham, 27 December 1944. D/AF 9-10, Minutes, 17 March 1948, 26 November 1952, 7 July 1954, 17 November 1955, 23 November 1956 - Tubby, Adcock, Cargill, two cashiers etc. celebrating long service.

241. D/AF 10, Minutes of A.G.M., 7 July 1954 for praise from Mr. Shaw or D/AF 586, Cargill to Cunningham, 25 November 1956.

242. D/AF 557, Cargill to Cuningham, 10 August 1945. D/AF 606-608, Discussions of the C.F.A. seeking to make ironfounding more attractive as a career. D/AF 557, Chaimakers' file, 24 December 1945 etc., return by C.I.C.A. to the C.F.A. includes details of employment, turnover of employees, numbers of apprenticeships etc., with observations thereupon.

243. D/AF 553 and 557, Cargill to Cunningham, 15 October 1943 and 10 August 1945.

244. Interview, Needham (1985).

245. D/AF 554, Harvey to Cunningham, 30 October 1943; D/AF 573, Cunningham to Harvey, 27 December 1950; D/AF 557, Cunningham to Cargill, 20 June 1938; D/AF 9, Minutes, 27 February - 27 March 1943 concerning L.O. Tubby's patents for track fittings.

246. See note 235 above and D/AF 572-573, Cunningham/Cargill and Cunningham/Harvey correspondence, 27 - 29 December 1950.

247. Private information, A Gracie, 1984.

248. D/AF 10, Minutes, 26 November 1952. It renewed the lease of Macnees' premises. D/AF 540, Macnees to Anderston, 11 October 1938.

249. D/AF 9, Minutes, 26 November 1948 and 16 March 1949.

250. D/AF 569, Harvey to Cunningham, 25 May 1949.

251. D/AF 576, Cargill to Cunningham, 17 February 1951. Summersons' directors' fees and directors' salaries (£27,400) exceeded their dividend payments (£16,500). Perhaps the prevailing tax regime made this more attractive to the dominant family manager/shareholder. Cargill, his attitudes perhaps old fashioned, could not believe that many sets of shareholders would tolerate such a state of affairs. Railway and General also took to a new ethos of company cars and pension schemes during the early 1950s. Railway and General Minutes, passim.

252. D/AF 10, Minutes, 8 May 1952; D/AF 9, May meetings of board each year from 1943; D/AF 348, Salaries and Fees Book.

253. D/AF 348.

254. D/AF 9-10, Minutes of A.G.M.s for details proxies and attendances.

255. See Appendix 3. Calculated from D/AF 127-135. Annual returns, Share registers etc. The liquidation of The Charlotte Trust, Watt's tax avoidance vehicle, in 1947, brought a clutch of Watts to the share register.

256. D/AF 130, Registers of shareholders, 1952-58.

257. D/AF 130; D/AF 1, Articles of Association; D/AF 8-10, Minutes, passim. For Mrs. La Terriere's estate (£412,500 with Duty at 65% charged upon it) see GD 282/12/296 Sederunt Book, Davidson and Syme papers, Scottish Record Office.

258. Share values had declined during 1938/9. Watt was alarmed by the uncalled liability on several of the insurance shares, and generally in a funk. D/AF 545-546, 548, Cunningham/Cargill, Cunningham/Harvey, Cunningham/Watt, Cargill/Watt correspondence, July 1940.

259. D/AF 9, Minutes, 4 December 1941, 1 June 1944, 18 December 1946. D/AF 548, Anderston/Tilneys, stockbrokers, Liverpool, correspondence, July 1940 and after. By 1941 equity shares were "virtually being handed out for nothing". R.B. Weir: A

History of the Scottish American Investment Company, (Edinburgh, 1973), p.25.

260. D/AF 9, MInutes, 6 March 1946.

261. Anderston was, perhaps, from the 1930s, investing indirectly in modern manufacturing.

262. D/AF 9, Minutes, 19 May 1949. £3,750 was absorbed by the dividend, leaving £5,711 in the investment reserve. During 1949/50 £5,620 profit was made on the sale of investments - D/AF 9, MInutes, 17 May 1950.

263. £136,000 overdrawn in December 1957 but in credit by March 1958. D/AF 126, Published Accounts, 1957/8; D/AF 488, Cunningham to Harvey, 31 December 1957.

264. Interest rates for the twenty years from 1932 remained low.

265. D/AF 586, Cunningham to Cargill, 25 November 1956; or D/AF 556, Cunningham to Watt, 26 May 1944 when capital was £90,000 and liquid reserves £120,000.

266. D/AF 586, Cunningham to Cargill, 17 February 1956 - moving into gilts following a rise in bank rate in the hope of capital appreciation on a subsequent fall of rates.

267. In the base years (1935-37) Anderston made very little profit.

268. D/AF 548, Cunningham/Watt correspondence, 17 December 1940 and following; D/AF 547, Instructions to auditors (Moores, Carson and Watson), 21 December 1940 and continuing correspondence to 1944: Anderston/Moores Carson and Watson, Anderston/Davidson and Syme and Cunningham/Watt.

269. See Chapter 7 resepecting the auditors' attitudes and D/AF 556, Cunningham to Watt, 26 May 1944. In 1939/40 accounts £18,676 of trade creditors were hidden within £40,300 "creditors and credit balances". D/AF 548, Cunningham to Watt, 1 June 1940.

270. D/AF 548, Watt to Cunningham, 17 December 1940.

271. D/AF 554 and 556, Cunningham/Harvey and Cunningham/Watt correspondence, 24 - 26 May 1943; for 1942/3 the compromise was a dividend increase of 1¼% and £2,000 added to reserves.

272. Couper was a Glasgow shipowner, i.e. one of Anderston's, by now, few business shareholders; and D/AF 554, Cunningham to Harvey, 19 July 1944.

273. D/AF 555, Moores, Carson and Watson to Anderston, 18 October 1944.

274. See letters from Campbell, D/AF 553, 13 October 1944. Various of these are included in D/AF 553, 555-558 and 561, Cunningham/Cargill, Cunningham/Harvey and Cunningham/Watt correspondence, 1944-45 especially in D/AF 557,

Cunningham/Cargill, 3 November - 5 December 1945. D/AF 9, Minutes, 2 March 1945 concerning the Board of Trade's interest.

275. To whom Campbell transferred some shares. Couper's presence was intermittent.

276. D/AF 562, Cunningham to Cargill, 5 July 1947 and generally Cunningham/Cargill and Cunningham/Harvey correspondence, 1947. Possibly any outside interference would have provoked a similar response but Campbell had poked into things from time to time for over 20 years.

277. The tax advantage. There was no capital gains tax and the interest on an overdraft could be used to diminish 'profits' and hence the tax liability upon them.

278. See generally: D/AF 9, Minutes of A.G.M.s, July 1945 - June 1948; D/AF 557, 562, 568 for Anderston/Campbell correspondence, 1945-49, particularly 29 June 1949 from Campbell; same, Cunningham/Cargill correspondence, particularly 3 November - 5 December 1945 and 5 July - 20 August 1947.

279. D/AF 557, Cargill to Cunningham, 20 July 1946. As yet there appeared no need to increase the marketability and price of the share through fear of asset-stripping (share price heavily discounted below net asset value) or nationalisation (increase share price to obtain better compensation).

280. D/AF 557, Cargill to Cunningham, 18 December 1946; D/AF 9, Minutes, 1946 passim.

281. D/AF 562, report by Cunningham to Cargill, 5 July 1947.

282. D/AF 562, Cunningham to Cargill, 11 April 1947. Davidson and Syme had been kept in the dark deliberately.

283. D/AF 557, Anderston/Campbell correspondence, September - December 1945. The incidentals would have cost £3,000.

284. D/AF 562, Cunningham/Cargill correspondence, 12 April - 27 August 1948 and 5 July - 20 August 1947; D/AF, same to same, 16 August 1946.

285. D/AF 562, Cargill to Campbell, 26 June and 9 July 1947; Cargill to Cunningham, 14 July 1947.

286. D/AF 569, Cunningham to Jack Edwards, a member of the Dawson family, 17 June 1949, asking to be given first refusal of any shares for sale. The purchasers, Adlers, passed on 34 shares to the managing director of the Anglo-Eastern Finance Corporation, who was a director of various other trusts.

287. The continuation of Differential Profits Tax into the late 1950s (Rubner loc cit) encouraged dividend restraint which kept down share prices.

288. Company law was modified to permit this in the 1980s.

289. The number of shareholders rose by c.35%, 1953-58. D/AF 130, share register, Smith Patterson had divided its £1 shares into 4/- units; Head Wrightson's £5 shares had become £1 in 1932 and 5/- in 1957; Railway and General's shares had been cut to 2/0 units in the 1950s, Stock Exchange Year Books.

290. D/AF 587, Anderston to Macnees, 7 January 1957 respecting Railway and General's results (see Appendix 1). Under the control of H.J. Baldwin's land and buildings were written up, margins were cut and tonnages increased.

291. D/AF 9-10, Minutes, 17 January 1951, 6 May 1953, 27 November 1957. The company still declined to publicise itself to shareholders for fear of telling competititors too much. D/AF 579, to M.V. Sowerby, 11 May 1951.

292. Stock Exchange Year Books. In part this might be to circumvent the Attlee Government's appeal for dividend restraint - D/AF 572, Cunningham to Cargill, 8 September 1950. Head Wrighton's ordinary share capital rose from £472,500 to £2,658,000 by capitalising reserves (100:562.5). Summersons' from 100:900; Smith Patterson's 100:494 (including part-capitalisation as prference stock); Anderston 100:278. When the raising of fresh funds to preference stock are accounted for, the Head Wrightson figure becomes 100:450 and that for Summerson's 100:302.

293. See Appendix 1. Few private ledgers survive for these rival companies, a full series for none of them. Sheffield Record Office for the annual reports and accounts of Darlington Railway Plant and Railway and General. TW 227-228, 238, 440, 451.

294. D/AF 10, Minutes, 28 November 1951.

295. Cargill believed that the scheme sponsored by Davidson and Syme to re-organise the Westburn Sugar Refineries into one manufacturing company and another investment company had a similar inspiration - D/AF 576, Cargill to Cunningham, 11 December 1950. Paradoxically this scheme, which had to be taken as far as the House of Lords for approval, forged a new path for asset strippers - A.C. Blair, Davidson and Syme, W.S. - two centuries of law (c.1980).

296. D/AF 562, Cunningham/Cargill correspondence, 6 February - 27 March 1947.

297. D/AF 562, Cargill to Cunningham, 27 March 1947 quoting Moores, Carson and Watson's confirmation that the board could pay the bonus dividend without a time-consuming consultation of the shareholders.

298. D/AF 562, Cargill to Cunningham, 15 April 1947, and see above note 286. There was no loss of confidence by the body of shareholders who remained as passive as ever. When M.V. Sowerby complained at the lack of information, Cargill was quite pleased that he had been interested enough to complain.

299. D/AF 576, Cargill to Cunningham, 21 March 1951.

300. D/AF 563 and 569, Harvey/Cunningham correspondence, 1 September 1947, 1 April 1948, 2 April and 20 May - 20 June 1949. Harvey feared, 1951/2, a Labour victory under a left-wing leader in the 1955 election. His attitudes may not be untypical of his kind - the man of modest independent means who, until securing the directorship of a Cornish port and mineral company, where his son K.N.L. Harvey was managing director, had no earned income bar fees from Anderston. An increase in directors fees was in the private interest of Anderston's directors as were the bonus dividends which provided them with further funds to purchase Anderston shares. Harvey could also be seen to be doing his duty as the shareholder/family director in directing more funds through to the proprietors - his constituents. D/AF 588, Cunningham to Cargill, 11 May 1956 contemplating a further bonus dividend etc.

301. Whyte had been right hand man to J. Frater Taylor whom the banks had sent in to re-organise Pease's during the 1930s. It seems that Pease and Partners having suffered from the nationalisation of its iron and coal assets hoped that, were the iron trades nationalised, a holding company would not be. There would be more scope for financial juggling to obtain better compensation either through holding most of the reserves and investments within the holding company or, if it too was nationalised, having obtained a higher stock market rating for the holding company than for its parts. Negotiations began before the 1951 General Election.

302. For all of the preceding see D/AF 576, Cunningham to Cargill, 29 September - 29 November 1951, with replies; and D/AF 577, Cunningham to Harvey, same dates, and latter's replies.

303. D/AF 580, Cargill to Cunningham, 28 June and 4 August 1952, D/AF 580, Anderston/Davidson and Syme correspondence, 10 July - 6 August 1952. D/AF 581, Harvey to Cunningham, 3 August 1952 et seq. James la Terriere had told Harvey on 20 July but Harvey did not pass on the details immediately. The La Terrieres had to face high death duties. Sooner or later they would be sold. D/AF 581, Cunningham/Moores, Carson and Watson, Glasgow (Anderston's auditors) correspondence, 30 July - 1 August 1952.

304. D/AF 580, Cunningham to Cargill, 18 August 1952. D/AF 584, Cunningham to Harvey, 9 April 1954. Blair understood (D/AF 580-581, 20 November 1952) how important it was that La Terriere did not sell as this was expected to open the gates to other sales. By December (D/AF 581, 11 December 1952, Harvey to Cunningham), Whyte had gone to Perthshire and been refused an audience. The panic ceased. Pease's offered 48/6d. per share; the price at which the La Terriere shares were sold in 1954. viz 37/- (D/AF 10) valued the business at £330,000 or £11 per share on the old capital.

305. D/AF 130, Share register.

306. D/AF 586, Cargill to Cunningham, 25 November 1956.

307. D/AF 10, Minutes, 26 November 1952.

308. Or the renewal of Railway and General's plant once de-requisitioned. See Appendix 1. The excessive caution of Watt in respect of depreciation may have continued. Table 8.10 above indicates a far smaller growth in Anderston's fixed assets than those of various competitors.

309. See above this chapter.

31. See above Chapters 5 to 7.

311. D/AF 130, Share register: Needham, the Secretary and MacIntosh the Bolt Shop manager, both bought their first shares in 1957/8. D/AF 489, 8 May 1958, Cunningham to Harvey on the financial results.

312. D/AF 587, Cunningham to Harvey, 16 June 1957. D/AF 589, Cunningham to Isabel Cargill, 14 July 1959. Pease and Partners was liquidated in 1959 having been reduced, in manufacturing terms, by nationalisation, to little more than its foundry. It had become a larger chairmaker than Anderston (see Chapter 6 and above, this Chapter) and realised the game was up.

313. D/AF 10, Minutes, 19 February 1958; D/AF 126, Annual Accounts; D/AF 130, share register.

314. D/AF 10, Minutes, 19 February and 9 July 1958.

315. Interviews: Hanlon (1987), Needham (1985).

316. See Chapter 6 and above, this Chapter.

317. See note 308 and D/AF 636, Hanlon's report, 1959.

318. See above, this Chapter.

319. Interview: Needham (1985) and see above.

320. D/AF 10, Minutes, 15 October and 19 November 1958, and see above. Grant Lyon survives and its track record of expansion in the 1950s was extremely encouraging.

321. Minutes, 14 May 1959 (with Evans of Leeds) and D/AF 489, Cunningham to Harvey, 13 November 1958. Anderston considered buying the small Newgate Foundry in Barnard Castle, a customer, to bring its customers to Anderston's foundry which was working a four day week. The prospect was not sufficiently attractive.

322. D/AF 591, Cunningham to Harvey, 9 and 12 June 1959. Discussing Blair's opinions.

323. D/AF 592, Cunningham to Jack Edwards, a member of the Dawson family and reply, 6 - 19 July 1960; D/AF 589, Cunningham to Isabel Cargill, 14 July and 1 December 1959 "this is the third slump which I have seen and as we came through the previous two successfully, I am hoping that we may make history repeat itself...".

324. D/AF 591, Cunningham/Harvey correspondence, 8 May - 17 June 1959; D/AF 590, A.C. Blair of Davidson and Syme to Cunningham, 8 June 1959: Reports of Needham's meetings with Davidson and Syme there. Interview with Needham (1985). The contrast with Anderston earlier attitudes to the window dressing of accounts is illuminating. Anderston seemed uncertain whether it was seeking solutions to problems caused by its prosperity or by its failure. Blair was a director of the Bank of Scotland and the British Assets Trust (Ivory & Syme). Like his predecessors, he was, individually and professionally, deeply involved in Edinburgh financial circles.

325. See generally J. Johnson and R.A. Long, British Railway Engineering, 1948-80 (1981) chapter 9.

326. D/AF 589, Isabell Cargill to Cunningham, 30 November 1959.

327. D/AF 592, Cunningham/Edwards correspondence, 6 - 19 July 1960.

328. D/AF 591, Cunningham/Harvey correspondence, 24 June - 17 July 1959. Harvey believed that Anderston had done well from Tilneys' advice; D/AF 591-592, Anderston/Greigs stockbrokers, Glasgow (successors to Moore and Snodgrass), correspondence, 1959-60; D/AF 490-491, Out letters to Tilneys, 1959.

329. D/AF 490, Anderston to Davidson and Syme, 17 November 1959.

330. D/AF 490, Anderston to Davidson and Syme, October - November 1959. Anderston minutes, 11 November 1959; Anderston circular to shareholders, 27 November 1959 therein.

331. D/AF 490, Anderston to Davidson and Syme, 17 November 1959.

332. Inventory of Cargill's personal estate (£8,666 of which Anderston shares represented 65%), SC58/42/207 of 1958, Scottish Record Office.

333. D/AF 636, Hanlon report, 1959; D/AF 490, Anderston to Davidson and Syme, 23 November 1959.

334. D/AF 490-493, out letters, October 1959 - October 1961, generally, particularly D/AF 491 to Harvey, 4 May 1960 and D/Af 492, to same, 2 November 1960; Anderston, Minutes, 28 June 1960.

335. D/AF 492, out-letter to Henry Boots, Sheffield, 2 December 1960.

336. Anderston, Minutes of A.G.M., 21 July 1960 for Cunningham retirement. He remained chairman and was to receive an allowance. Circular to shareholders, 16 December 1960 regarding Tubby's appointment. For the closing period the only sources are Anderston's minutes and private ledger, (with Evans of Leeds), one file regarding Anderston in the hands of Dundas and Wilson, Edinburgh; correspondence D/AF 589-593, 1959-61 incomplete; D/AF 490-493, out letters, October 1959 - October 1961.

337. Anderston Minutes, 24 November 1960, 12 April 1961, D/AF 492, out letter to Harvey, 28 February 1961, c.£16,500 was expended.

338. Only 6 shareholders attended the 1961 A.G.M., and circular of 28 June 1960.

339. D/AF 491, out letters to Tilneys, stockbrokers, Liverpool and Greigs, stockbrokers, Glasgow, August 1960.

340. Anderston Minutes, 6 August 1959.

341. D/AF 490, out letters to various newspapers, 3 November 1959. Salary c.£1,200 - 1,400 p.a.

342. Anderston Minutes, 28 June 1960 and circular to shareholders of the same date.

343. Anderston Minutes, 2 December 1959 and 6 January 1960.

344. £2,000 and the promise of a directorship. D/AF 491-492, out letters to Management Selection, 29 June, 15 September and 20 December 1960 and D/AF 592 passim. The first candidate's pulling out despite the offered salary's being increased may underline the hopelessness of the task. Anderston Minutes, 28 February 1961 and circular to shareholders, 16 December 1960.

345. D/AF 492, out letter to Harvey, 10 March 1961; D/AF 491, out letter to Harvey, 1 April 1960; D/AF 492, out letter to Harvey, 2 November 1960. Anderston Minutes, 28 February 1961.

346. D/AF 589, Cunningham to Isabell Cargill, 14 July 1959.

347. D/AF 492, out letters to Peat Marwick , Middlesbrough, 10 March 1961.

348. D/AF 493, ibid. Instead the Darlington Railway Plant, with whom R. & G. was suspected of colluding, left S.A.X.A., 17 April 1962, having previously declined to join C.I.C.A. (it was a maker of points and crossings chairs), 11 June 1958 - both Darlington Railway Plant and Foundry Minutes, Thomas W. Ward collection, Sheffield Record Office.

349. A paradoxical result of attempts to make more efficient use of iron and scrap through controlling and revising the iron mixture re-melted in the cuplas. Needham interview (1985). D/AF 491, out letters to Stanton, 24 June - 30 September 1960. D/AF 592, Anderston/Dorman Long correspondence re scientific analysis of faulty segments. Segments for the new Blackwall Tunnel (£153,750) were the largest order in hand in late 1961.

350. Anderston Private Ledger (Evans of Leeds); D/AF 492, out letters to Harvey and Cunningham, 28 February - 16 March 1961. D/AF 498 to Harvey, 5 July and Bank of Scotland, 20 September 1961.

351. Anderston Private Ledger - the directors sought no fees for 1961/2. Dundas and Wilson, Anderston file contains details of the charge (5 June 1961) and its execution (19 December 1961). See also Anderston Minutes, 5 January 1962.

352. Anderston Minutes, 1960-61; D/AF 492-493, out letters to the Bank of Scotland, 1961.

353. Monopolies Commission Report (1951).

354. J.R. Hume and M.S. Moss, Workshop of the British Empire, p.50 and The Times, 5 March and 4 April 1962 for North British Locomotive Co. Locomotive building at Darlington ceased in the mid 1960s. Vulcan Foundry (locomotive builders) survived as part of English Electric whose expertise fathered its successful move into diesel-electric locomotive production. In general the independents closed down except where they had some specialism, e.g. Hunslet Engine Co. with industrial locomotives. North British after years of heavy losses - £1.3m in 1959, £472,000 in 1960, £645,000 in 1961 realised that the game was up and headed for voluntary liquidation - blaming a lack of rationalisation, too great a concentration on steam etc. Pedestrian footbridges and hydraulic elevators for multi-storey car parks had been its last fling (The Times op cit). Beyer Peacock , another large exporter of steam locomotives, found that orders had dried up and that it was enjoying little success with diesels. It abandoned locomotive building in 1965/6 "we will not stay in the business to lose your [the shareholders'] money". The Times, 29 June 1966. The firm survived. Parts of the business were sold and plants at Chard and Leiston retained for making agricultural machinery, into which the company had moved in the 1930s. The Times, 8 and 28 April, 17 September and 12 October 1965, 17 and 29 June 1966. £94,000 had been absorbed in special write offs, depreciation, redundancy payments etc. in 1965/6. From 1967 the company was back in profit with brighter prospects than for many years.

355. Philip Riden, Rebuilding a Valley (Cwmbran Development Corporation, 1988) p 181.

356. The Bolt Shop had, conveniently, blown up and burnt down during demolition. Anderston Minutes, 21 January 1961. For Apex see Anderston Minutes, 12 April 1961 and Needham, interview (1985).

357. Anderston Minutes, 12 July 1961. Needham was, with hindsight, sceptical of the possibilities of success. D/AF 492, out letters to Cunningham, 16 March 1961 and D/AF 493, out letters to Cunningham, Harvey, Davidson and Syme, Apex and the Industrial and Commercial Finance Corporation, 29 March - 21 June 1961. The final scheme required £35,000 capital from Anderston, £25,000 from Apex, £40,000 loan for working capital from Anderston and £10,000 loan from Apex, i.e. £110,000.

358. Anderston Minutes, 21 November 1961 and 5 January 1962, Dundas and Wilson; Anderston file includes Whitton's report and a hint of Anderston's approach to Stanton.

359. Whitton's report, 1 December 1961, is summarised at the end of this chapter.

360. Needham interview (1985).

361. Dundas and Wilson's Anderston file. Wards was contacted (9 May 1962) after previous discussion, to arrange a bid. The offer was made on 31 May 1962, the board's circular to the shareholders recommending acceptance was sent out on 7 June 1962. The last share transaction had been at 5/3d. as late as 14 November 1961; the current quotation was 1/6d. - 2/6d. (5 July 1962).

362. Dundas and Wilson: Anderston file. Tubby's statement to staff, 4 May 1962. Orders in hand (Anderston Minutes, 7 June 1962 was £23,241 sleepers, £8,640, points and crossings and c.£6,000 for the foundry).

363. Times Review of Industry, June 1962, p.48 and September 1962, p.46.

364. Dundas and Wilson: Anderston file, 7 June 1962.

365. Dundas and Wilson: Anderston file, 25 June 1962 for approach to Davidson and Syme by Evans. Same, 5 July 1962, circular to shareholders notifying them of Evans's offer and the withdrawal of Wards' offer in time for the A.G.M. on 10 July 1962. Neither bidder would provide compensation for loyal staff who had stayed on to keep the plant in a workable state. The pensioners to be compensated were: 24 labourers (average age 75); 10 foremen and cashiers, aged 60-82 with 40-50 years' service; Findlay the retired Points and Crossings manager (68 with 51 years' service); MacIntosh, his successor (65 with interrupted service since c.1913); and Mrs. Adcock, overall £312 per mensem.

366. Anderston Minutes, 14 August 1962.

367. Dundas and Wilson: Anderston file, Correspondence F.K. Tubby/Davidson and Syme, 14 February - 10 August 1963.

368. Dundas and Wilson: Anderston file, Macnee & Co./Davidson and Syme, 3 February - 17 March 1963.

369. G.C. Smith a clerk/cashier who had succeeded Needham remained for some years with the new regime. For the fate of Anderston's plant and freehold see Private Ledger and Minute Book, both with Evans of Leeds.

370. Dundas and Wilson: Anderston file. F.K. Tubby to A.K.L. Harvey, 24 September 1962.

371. See Chapter 5 and above this chapter (note 354 etc.). Diversification may have been the un-doing of Summersons (information Mr. Hunter). Tolliday, p.36 points to other examples in the steel industry of the 1920s/30s. Invariably diversification required investment which diminished liquid assets and/or increased borrowings at a time when the concern might already be under pressure due to the decline of its core business.

372. D/AF 591, Cunningham to Harvey, 8 May 1959.

CONCLUSION

The history of the Anderston Foundry can be used to confirm various stereotypes: the successful businessman who devotes less time to the business once he has established himself as a landed gentleman; the decline of business families into pseudo aristocrats; the diffusion of capital in business into rentier hands, this last, largely, through the changing nature of the erstwhile business families. Professional management may be seen as triumphing but not prospering. Small scale production or old fashioned plant with a reluctance to invest in new machinery and new products fits another caricature as does the dominance of restrictive practices. Here might be proof that co-operation in the 1930s was concerned more with the security of individual firms than their efficiency and that of industry, that the pursuit of rational goals, insofar as they could be discerned, by individual firms need not work to the advantage of industry, nor, necessarily, of the firms themselves. Family influence may be detected long after family control had passed. What is unusual is the laying bare of foundations of collusion. Its peak, in the 1930s and 1940s, may now be seen as an iceberg. Submerged lay the skein of formal and informal agreements which had flourished from the 1880s, i.e. from the earliest dates practicable in the case of such products as steel sleepers.

2550 agreements were registered under the 1956 Restrictive Practices Act; despite rearguard actions over 80% of these had ceased to exist a decade later - albeit that they may have gone underground or revised their terms to avoid registration.[1] That a firm so dependent for so long on such methods of business as Anderston should have failed in that decade may seem un-remarkable. There are, aside

from its poor handling of its last few years, several ways of viewing Anderston's demise.

With hindsight Anderston's survival through almost 70 years of drift seems more remarkable than the extinction to which it was doomed. Business relying on exports (the domestic market had been the most dynamic sector of the economy from the 1930s), selling from a high cost declining world power, railway products, in the era of road and air, to customers whose links of political dependency were being cut, could not survive. Corroboration, aside from the failure of many of Anderston's collaborators, is provided by the closure of the North British Locomotive Company, Britain's largest private builder. But other collaborators, sharing many of Anderston's difficulties, survived - some still do so - to cater for the continuing, but reduced, demand for railway products. The survivors are marked out by flexibility and adaptability, often associated with diversification and amalgamation: a conglomerate such as G.K.N. had many other irons in the fire.

Absorption into an engineering conglomerate, e.g. Ward's or into a contracting firm, e.g. Henry Boot's could provide access to: capital; technical and managerial expertise; full time representation abroad; privileged links to suppliers and customers. Complete packages of railway products and finance for them could be offered. Not all independents have disappeared: Beyer Peacock, painfully, amputated its main business (locomotive building) to allow its healthy limbs to survive.[2] Orderly liquidation of assets and realisation of property pointed to the course of action which Anderston should have pursued.

The iron, coal and steel industries, the export of industrial staples and the railway systems had grown together and collapsed

together. Unless Anderston found new products in whose manufacture it could prosper it was doomed: new products per se were not enough. Diversification could exacerbate the weakness at the core of the business.[3]

It has been alleged that the promotion of restrictive practices was part of a package to improve Britain's international competitiveness. Success was mixed. The encouragement of cartels to negotiate with foreign cartels, to apportion export business might, temporarily, have propped up Britain's share of such business as had happened with the Rail Makers' Association in times past. Possibly oligopoly through collusion was, after a short period of competition, replaced by the oligo poly of amalgamation. The panacea of the later 1960s was industrial re-organisation to create large units capable of competing abroad. In conjunction with railway nationalisation (at home and abroad) various businesses were reduced to bilateral monopolies (or oligopolies).[4] One British Steel plant is the country's sole rail and sleeper manufactory. After c.1970 the Horwich Foundry ('privatised' in 1988) dominated base plate supply and British Railways baseplate purchase. Anderston had been increasingly reliant upon subcontracts postwar: the small, passive recipient of tenders through London was an anachronism.

Failure to change with the times points to Anderston's ultimate fall: it would have been completely uncharacteristic had Anderston managed change successfully. It was less the hopeless victim of adverse trading patterns and impersonal forces than a willing collaborator in its own destruction. An anti-competitive risk avoiding ethos had long been embedded in Anderston's psyche, it had arisen as a rational response to particular (internal and external) circumstances. From the 1920s, when competition or risk taking were

demanded, Anderston could not supply them. Those who might have led Anderston to adapt and survive were not those whom the incumbent management would recruit. That management was incapable of the task. In its final half-century Anderston's record of growth in turnover, assets and profits compared badly with its competitors. Eschewing risk it avoided both its pitfalls and opportunities.

Arguments used to explain Britain's relative economic decline may be applied with equal suitability (or otherwise) to Anderston. Newer firms starting from a small base naturally experienced greater relative growth. Sluggishness was a facet of maturity: its comparable record of growth was half a century earlier. Anderston enjoyed the benefits of an early start: others could learn from its mistakes. Whereas rivals were in the hands of entrepreneurs, Anderston had outgrown such a phase and was in the hands of management. Rivals had newer plant, but also greater freedom of action: Anderston was already linked into an industrial and trading structure (it seems to have locked itself in) as Tees Side Bridge was not.

However understandable the constraints acting within and upon Anderston, there was nothing inevitable about the form and timing of its failure except its management view that making money was less important than making track fittings. Their vision was constrained as though by a ring of their own tunnel segments. Greater investment in mechanisation post war, a willingness to renounce independence before profits renounced Anderston, to abandon collusive arrangements before they collapsed, might have brought Anderston time to redirect its activities. When, however, it had had such time and money, it had done nothing. Accumulated reserves which had swamped the manufacturing assets in Anderston's balance sheet for forty years

could, and probably should, have formed the basis of something more than stock market speculation. If not, the manufacturing business could have been closed or sold, piecemeal, during the 1920s and 1930s and the business of an investment trust embraced openly.

Instead the firm clung to manufactures, manufacturing methods and sales techniques which, largely, it had carried forward from the 1890s to the 1950s. It did not realise when the final crisis was upon it; its responses to that crisis were diffuse and unconvincing. After so long as a loyal team player it could not break the mould and act decisively. Had it done so it might still have failed; by not doing so it was certain to fail.

> "Over the past century... high among the internal checks upon British economic growth has been a pattern of industrial behaviour suspicious of change, reluctant to innovate, energetic only in maintaining the status quo"[5]

The attitudes prevalent in the Anderston Foundry may be paradigmatic of those throughout Britain's staple industries.

Anderston's latter day managers were not so grand that they were absorbed into an élite as their 19th century predecessors had been but their obsession with playing the game by the rules seems to confirm Wiener's view of the cultural absorption of the middle classes into pseudo-aristocratic value systems. The firm's principal shareholders, whose influence remained strong, at least to 1939, were pseudo-aristocrats. Anderston's leaders were naturally fashioned by the prevailing ethos of the times as competition gave way to collusion and corporatism in industrial life.[6] Anderston had peaked as a firm contemporaneously with Britain's peak of economic and world power: both declined together. Times would become hard for a medium sized power in the later 20th century as they would for a medium sized company. The scale of the competition had changed.

In the 1950s, as in the 1920s, Anderston's management was "well dug in",[7] resistant to change, its horizons narrowed by its lack of a wider business experience. The loyalty inspired in long-serving managers, steeped in a conservative, anti-competitive ethos, attuned to orderly internal promotion into dead men's shoes, however admirable, was entirely unsuited to dealing with a changing environment. So firmly had Bunten stamped his mark upon the business and upon his subordinates that thereafter the firm was run as a monument not to his achievements but to his methods. Business by influence and connexion had waned in his lifetime but collusion, initially a means of maintaining Anderston's trading position, which was, itself, a development of the Muir/Bunten era, was persisted with to become an end in itself. In the late 1920s and 1930s Anderston devoted much effort to restoring the Chair Association which, despite not working significantly to Anderston's benefit, was felt to be better than having no Association at all, i.e. competing.

A firm such as Anderston had obligations to its shareholders (real people, many known to the management), which combines with their near complete separation of ownership and control could overlook.[8] It was better to decline work at certain prices than join misguided competitors in chasing prices ever lower. Keenness was not a business virtue (Percy Donald and Potter in the 1920s, G.K.N. and Railway and General in the 1950s); it smacked of ungentlemanly sharp practice, of not playing the game.[9] The company was more willing to tolerate adversity than to seek to mitigate its effects: "Our field of operations both at home and abroad is continually becoming less and we can do nothing about it".[10] War and post-war prosperity brushed aside the thoughts of the late 1930s that some change was called for. Once again, with existing plant fully occupied and

existing methods of business deemed to have assisted this happy outcome, there was little incentive for change. In adversity resources were to be conserved, not dissipated on novelties. The Second World War came to disguise the unsolved problems left by its predecessor and postpone the search for solutions.

One such problem was the large reserve fund built up by Anderston which, embarrassingly, made the company worth more dead than alive and forced the pursuit of policies to prevent (in the interests of the management) such a liquidation. Investment of the fund in new products might have disrupted it: risk was too much of a risk. Instead, the fund produced strong insulation against the effects of the depression. Anderston could afford to stand above the fray of price cutting as its competitors, largely, could not. They gained in the 1930s at the expense of Anderston, with its ostrich-like posture. Not for Anderston the pressures from creditors and bankers which enforced changes of management and soul searching at Pease and Partners or the Darlington Railway Plant and Foundry. Those in charge of Anderston from 1927 onwards sought to improve the efficiency of the business, without great expenditure, to make better those things which the firm had always made. Beyond that they, who were still in charge thirty years later, had no strategy. If profits could be made from making railway chairs so much the better; if not, losses should be minimised. To cease making chairs, or to seek profits from manufacturing new products, was all but unthinkable. Light castings were introduced not as a serious substitute for traditional products, but as a convenient means of helping, temporarily, to take up spare capacity."

The board members would not have regarded themselves as entrepreneurs. Their shareholders were principally their

predecessors' descendants many of whom were as wedded as they to the continuance of the business, and few of whom were active investors. Such shareholders could provide no alternative to the existing management; only when the company was in particular difficulties, e.g. 1912 or 1927, did they seek to involve themselves. Family and other links between the board and the Buntens helped resolve certain questions informally.

The interests of the management and the shareholders might diverge but the two groups remained, personally, long-intertwined. Rentier shareholders were risk avoiders, not profit-maximisers; a policy of safety first, congenial to the management, provided a path for minimising friction between the two groups. If relations were good the risk of liquidation was lessened. Anderston was not alone in maintaining larger inner reserves and publishing uninformative accounts (e.g. Ibbotson Brothers in 1932) - although the trend was against it. Those few shareholders who knew anything about business, e.g. James Campbell, were aware of this: their views were of little account. Long serving managers were, by their own lights, loyal to long serving employees - the voluntary retiral and redundancy payments seem ungenerous by modern standards. Mrs. La Terriere, the largest shareholder, had no desire to extinguish her father's creation provided that she received a modest return on her shares. Watt approved of introducing more efficient methods but moaned about the resulting loss of jobs. Perhaps, by the 1930s, the business served no purpose, as Campbell alleged, but that of providing employment and income for the managers and directors, and some 500 employees. Investment in specialist plant and personnel, ever without the safety net provided by collusion, operated as a barrier to exit of particular firms from particular lines of business.[12] Anderston,

with well written down plant, and the experience of Glasgow could, unlike many competitors, afford to quit but it had no need to, no desire to and nowhere else to go.

The balance of power within the company acted as a constraint inter-wars. The sense of personal obligation to the shareholders was one cause for the repayment of capital in 1959/60 just as the obligation to the employees might have kept the plant open longer than should have been the case. In the 1920s, as in the late 1950s, the firm suffered from an ageing chairman-managing director, shortly to retire, completely disoriented by recent events. In both cases, they decided that the business should continue in the hope that all would come right which, in the former case, it seemed to.

Rivals with a greater sense of purpose prospered - Tees Side in the 1920s, Railway and General and G.K.N. in the 1950s. These were firms which lacked Anderston's commitment to the status quo being either interlopers or renegades, who had carefully calculated what was required by way of self interest. Anderston's self interest required collusion and order. The first group of firms could advance by destroying or destabilising the industry's structure (or by taking advantage of events such as railway groupings and nationalisations which had such an effect). Once such competition had proved effective, existing firms should have felt free to match it - most of them did so. Anderston shewed neither the will nor the inclination: it would not hazard its reserves as a war chest for retaliatory price cutting; it was last out and first in to any arrangements to limit competition. Taking risks might secure a better future for the firm: a quiet present, undisturbing to shareholders was preferred. The golden age could be encouraged to return by devoting more effort to restoring and maintaining collusion (seen, falsely, by Anderston and

others, as a precondition for the return of prosperity rather than as a result of it) than to securing orders.

To Anderston and others, an efficient firm breaking into any industry and breaking down prices was a problem. Business was synonymous with friendly arrangements to limit competition and keep up prices to the benefit of less efficient producers whilst avoiding such high prices and profits that fresh capital and competition would be attracted. The control of prices and wages in the 1940s kept Anderston happily free from having to make awkward decisions - costs were simply passed on to the customer. In the early 1920s Anderston was timid, compared with various competitors in keeping prices up, in the late 1920s it was timid, compared with the same competitors, in cutting prices.

In the 1930s, rationalisation and re-organisation of industry through officially sponsored mergers, the encouragement of industrial self-government such as that of B.I.S.F. in the steel industry or of the National Shipbuilders Securities with its industrial levy to cut out surplus capacity, pointed to goals which Anderston shared.[13] Modern thinking had caught up with Anderston. There were proper levels of prices to be sought, not those which a free market would establish. Competition was no longer seen as benign but as wasteful, unfair and destructive: group loyalty and general prosperity for the many were more important than profit maximisation and great prosperity for the few.[14] Anderston's obsession with the mechanics of collusion was, in the atmosphere of the 1930s, unexceptional. Anderston and its collaborators were however, victims of the more successful organisation of the steel industry by B.I.S.F. and of the tariffs imposed by the British government as part of the arrangement. With the development of the international steel

cartels, bilateral negotiations between British trade associations and their foreign counterparts was rendered possible, coming within a broad framework of understanding; B.I.S.F.'s effect on British price levels had rendered it necessary for exporters.

Opinion moved on. Cartels, desirable and respectable in the 1930s and 1940s, were persecuted from the 1950s. The social democratic-corporatist consensus settled upon public monopolies as being good, and private oligopolies as purveyors of bad (restrictive) practices. Private suppliers to public monopolies such as British Railways were to be denied the means of repaying its quaint customs in kind. Anderston had survived depression and was now selling plentifully its traditional products by the usual means. The persistance of both the business and its methods had been vindicated by events. Anderston was no longer the leading chairmaker, but it was a leader of the Chair Association and thus played a leading part in the rearguard actions to preserve the old ways. More prescient companies cut loose from the Associations to outflank them and their members: G.K.N. which had quit previous Chair Associations when it suited, made peace with the new order at British Railways. Anderston had bemoaned the damage done by association breakers in the past - it never contemplated that it might be in its own interests to become one. Where it had threatened such action in the past, e.g. in the bolts business interwars, it was with a view to securing revised, but more securely based, arrangements in place of faltering or unsatisfactory ones. Anderston craved certainty: witness its policy in respect of its light castings business. Just as new chairmakers would sooner or later wish to quit competing and embrace collusion, Anderston 'competed' in light

castings only because it had assured customers and contracts, and jumped into the arms of the B.I.A. when the terms were right.

Anderston had once sought opportunities; now it repudiated, as disruptive, the change in which opportunity was embodied. In the absence of the chronic failure of its policies there was no means of enforcing change: those in charge of Anderston were steeped in its history and did not wish to; shareholders were ignorant of the nuts and bolts of the business; Cunningham and Watt had no understanding of what change was practicable and were more adept at playing the stock market.

In decline Anderston had become a consumer of security whereas, as the leading light of the original Chair Association, it had provided security in the market. Its preferences and attitudes mirrored those of the nation: more aggressive conduct in the 1920s, would have reaped dividends in a larger share of chair and segment business in the 1930s repaying, perhaps, the initial outlay. Concilatory attitudes to the more ambitious members of C.I.C.A. and S.A.X.A. may be seen as appeasement from weakness to postpone the war of competition. Poor alliances were better than no alliance: severe action was reserved for those who would not be conciliated.

Anderston's rulers drifted inter-wars in a storm of foreign competition, tariffs, changing patterns of world trade and currency parities, loosening imperial links and conflicting nationalisms within the empire. The rulers of Britain and its staples industries were clinging to or searching for old certainties, forced to react to events they could no longer be certain of influencing. Whether the attitudes and aptitudes of Britain's rulers articulated those of hundreds of Anderstons, or Anderston embodied prevailing orthodoxies is irrelevant: the world position of Britain and the trading position

of Anderston kept step. New territories and markets were acquired in the later 19th century; the increased political independence of S. Africa and India from the imperial power manifested itself in economic affairs in the twentieth. Anderston was increasingly reliant on colonial or loyal markets which, as influence and empire continued their decline post-1945, and enemy industries destroyed during the war revived, pointed to a crisis.

With hindsight it is easy to suggest different courses of action which might have caused Anderston to survive. Those in charge of it made rational decisions in the light of particular circumstances. That is not to say that the decisions they made were, in the circumstances, the only ones possible. They could not see the future; they were, however, lacking in foresight to an unusual extent. If something was not broken they saw no need to fix it: to prevent the break was beyond them. A heavy speculative investment in new products with no guarantee of success might have proved fatal for the managers and the business. Interwars, to sacrifice current security for uncertain future prosperity risked disturbing the relationship with the shareholders who might liquidate the business before the future could arrive. To sell the business would solve the shareholder question and the problem of competing with large groups. Terms which were acceptable to the managers could have been reached but they had no wish to lose their independence and, unlike Tees Side Bridge, could not guarantee to deliver the shareholders. Post war prosperity liberated the managers from the shareholders: controls and great pent up demand made diversification affordable but unnecessary (as in 1919), and impracticable.

The retarding effect of the founder's gentrified descendants upon businesses which they continued to direct (with the assistance

of managers) has been considered in various accounts of entrepreneurial decline[15]: in relation to Anderston the view needs qualifying. Most of those managing Anderston after Bunten's death would have seen themselves not as entrepreneurs but as ironfounders. They were administrators. In many other medium sized firms large family shareholders might long survive active participation in business - other shareholdings also tended to longevity. The interests of such holders, now rentiers of varying scale, might weigh heavily upon later managers whose own descendants might follow a similar pattern. Managerial dynasties divorced from the founding family might arise as in Bairds, the Scottish iron business where, by the late 19th century, the Bairds had flown to landownership and public service to be replaced by the Whitelaws and McCoshs who, ultimately were to do much the same.[16]

The social structure of Britain in the early 20th century witnessed a merging of the landed, trading and industrial elites, already indistinct, into one monied class.[17] A vast group of middling people existed, from retired colonels in Cheltenham to members of the Dawson family in the coastal towns of the south of England. Through mortality, capital in firms such as Anderston was dispersed more widely but always into hands further removed from business whose interest was in safe, unspectacular returns with few risks. Shareholders were individuals, neither institutions with expectations and expertise nor anonymous names on a long list. Despite their lack of useful knowledge or connexions (businessmen knew businessman, rentiers knew rentiers) and their usual passivity, such shareholders could not (to 1939) be ignored. Anderston had the worst of all worlds: large shareholders incapable of taking responsibility for the business, occasionally viewing it as a source

of out relief for members of their families; stolid management unlikely to be able to change the business dramatically, even had it wanted to.

There is no simple corelation of patterns of ownership and control with behaviour. Firms with active second and third generation family involvement, such as Head Wrightson or Summerson's, proved as willing to adopt aggressive pricing policies to win business (1920s/30s) as Tees Side Bridge which, as reborn under J.B. Peat could be classified as a first generation business - ownership and control rested together. A firm such as Darlington Railway plant whose principal shareholders and directorate were synonymous proved loyal to cartels despite severe financial difficulties during the 1930s, a contrast to its behaviour under the same control in the 1900s. Whereas the financially stretched Ebbw Vale company was an aggressive price cutter, the financially stretched Bolckow Vaughan was not. Such firms forced to assess where self interest lay, as Anderston was not, reached differing conclusions.

Smith Patterson, Railway and General and Anderston, all limited companies with a few large shareholders and incomplete separation of ownership, management and direction, were loyal to arrangements and prudent in their commitments interwars. Post war the first became part of a small conglomerate without changing its policy; the second changed policies prior to various changes in ownership. Managerial inclination and the balance of power within a company, usually slipping from owners to managers, helped determine behaviour.

Old wealth, naturally and with good cause, fears competition. Anderston's various ownership and managerial interests were reconciled by inactivity: all ultimately paid for it. It may be supposed that other long established businesses with long established

ownership - interests had reached a similar point of development. The managers being suited to running a business under such constraints were not well suited to changed circumstances.

Anderston, having survived the inter-war years unscathed, continued to look down on competitors who shewed more acuity in their behaviour. In the 1920s competitors' losses had seemed a just reward for sharp behaviour. Anderston, never obliged to cast too critical an eye over its methods, could carry forward into the 1950s the methods and some of the mental luggage of the 1890s. The lack of change in the business inter wars and the experiences and (supposed) lessons of those times proved fatal to the survival of the company in the late 1950s, when, believing that it was seeing a recurrence of events of thirty years before - there were close parallels in surface detail - Anderston prepared to fight the previous war again.

Anderston had revised the wrong lesson. The real one was that times change, businesses and countries develop and decline: they cannot, as Anderston would have preferred, stand still in isolation. Markets that were gained can be lost, methods successful in one generation may fail in another. From the 1920s one may detect the orderly management of decline. Anderston's demise, a combination of internal weakness, technological backwardness and a want of new ideas with the structural problems of the British export economy and its staple industries, is less remarkable than the length of time it took to occur. Anderston's management recruited in its own image, one of narrow vision, so that it could not break the mould. It was too proud of its past achievements to want to. Small firms have been criticised for the low educational attainments of their managements - mediocrity knowing nothing higher than itself, recruits mediocrity. Under practical men Anderston flourished: it collapsed as a

manufacturing and financial entity under a university educated engineer and an accountant, neither of whom understood the practical matters.[18]

There is no such thing as a typical company: each is necessarily different in detail. I wish to suggest that despite surviving for an untypically long period (163 years), to achieve which had required resilience and dynamism (once upon a time), there is much revealed in this study which is unlikely to be atypical when considering the more successful concerns of the industrial revolution, remembering that failure is probably more common than success.

There is little evidence that the structure of the business owed anything to strategy: family connexions, ambition and chance were predominant. What was possible for the firm at a given point owed much to internal considerations, to a balance of interests which included the outside interests of certain leading managers and shareholders. Structure determined strategy.[19]

Footnotes: Conclusion

1. D.F. Channon, The Strategy and Structure of British Enterprise, pp.22-27. In many ways similar to the first wave of mergers of the 1880s and 1900s where merged companies with little rationalisation of their operating units, might be little more than trade associations reborn. See P.L. Payne "Industrial Entrepreneurship and Management in Great Britain" in P. Mathias and M. Postan eds., The Cambridge Economic History of Europe, vol.7, pp.204-220.

2. See generally Appendix 1 below and Chapter 8 above.

3. See above Chapters 5 and 8 respectively and S. Tolliday, Business, Banking and Politics, pp.36-37. Many modern examples exist of conglomerates created by diversification whose waning core product performs better than expensive and ill-judged purchases, e.g. Imperial Group. Note also Harland and Wolff's mixed record of successful diversification in the 1970s noted by Diane Hutchinson and Stephen Nicholas in "Modelling the Growth Strategies of British Firms", Business History, vol.29, no.4 (1987), p.59.

4. Channon passim.

5. M. Wiener, English Culture and the Decline of the Industrial Spirit.

6. Wiener, pp.148ff; Channon, pp.89-90, 221; P.L. Payne, British Entrepreneurship in the 19th Century, (1974), p.27, cites the Buddenbrook phenomenon; R.E. Caves et al., Britain's Economic Prospects, (1968) looks at conservatism in British management; D.C. Coleman, "Gentlemen and Players", Economic History Review, series 2, No.26, (1973) addresses attitudes.

7. C.E. Needham interview, 1985.

8. "The strangest thing is that at the present time the large amalgamated firms who are on the verge of ruin and who are indebted to their bankers for several millions are the firms who seem to go out of their way to take work at any price...", D/AF 519, Anderston to Dowson and Dobson, 19 April 1933, and see generally Chapters 5-7 above.

9. See Chapters 5, 6 and 8 or, for a particular example, D/AF 568-569, Cargill/Cunningham, Harvey/Cunningham and Anderston/ G.K.N. correspondence, all 1950.

10. D/AF 531, Anderston to Railway and General, 18 May 1936, also D/AF 494-495, Cargill/Harvey correspondence, 1923-27, especially 27 March - 1 April 1924.

11. See Chapters 6-7.

12. L.B. Hannah, The Rise of the Corporate Economy, (1976), pp.135-136.

13. Hannah, Chapter 3 and pp.154-158.

14. Hannah and Channon passim. Wiener, pp.150-153, for the businessman as a public servant. S. Tolliday, Business, Banking and Politics, and others, investigate the interfaces of the three activities named. See L.F. Urwick, The Meaning of Rationalisation and A.F. Lucas, Industrial Reconstruction and the Control of Competition for contemporary enthusiasm.

15. Wiener, chapter 7 and Payne, British Entrepreneurship, p.27.

16. Payne loc cit. drawing on T.J. Byres in P.L. Payne ed., Studies in Scottish Business History, (1967). See A. Slaven and S.G. Checkland eds., Dictionary of Scottish Business Biography, for various of the individuals.

17. W.D. Rubinstein "Wealth Elites and the Class Structure of Modern Britain". Past and Present, 76, 1977, and his other writings noted in Appendix 2, sub J.C. Bunten.

18. Entrepreneurial failings were always present in the economy. With the increased competition felt by Britain from abroad, or by once successful, established firms from new ones (the macro and micro sides of the coin) the deficiencies become more obvious. See Payne, British Entrepreneurship for examples of the general. Small firms possibly required practical men. Their operations, management structures etc. were simple - many, having reached a manageable size (in terms of ownership and control) had no wish to grow. Expansionist firms required different managerial skills and attitudes from those of satisfied firms in which those managers not attuned to the prevailing ethos might become restless and leave.

19. Tolliday, p.159.

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