The role of communication in the development of Afghanistan

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Abstract of thesis

Afghanistan became a meeting point of several civilizations in early history due to the fact that most of the important commercial highways connecting east and west passed through this country. As a result the country became the cradle of Buddhic and Greco-Buddhic cultures and the centre of several empires.

At present, the Afghans are again trying to make Afghanistan the meeting point of east and west. This time not by animals and caravan routes, but by building modern highways and airports, which in addition to providing facilities for the goods in transit through Afghanistan will facilitate the internal communication of the country. It is the aim of this thesis to discuss the importance of communications both internal and external, with particular reference to the geographical problems which inhibit the development of communication in the country, making its improvement costly and difficult. Massive mountain ranges, vast deserts and rivers separate the social and economic regions in the country and isolate Afghanistan from the outside world. To these may be added the problem of variable climate, uneven distribution of population and most important of all the lack of sufficient capital.

The second aspect of the thesis is the attempts which have been made for the development of communications by a government fully aware of the importance of communications; a large part of the developmental budget and of foreign aid was spent on this sector of the economy in both the development plans 1956-67. The efforts to improve communications need to be stepped up further, to hasten the development of agriculture, industry, trade and above all the social and political integration of the country. Moreover Afghanistan must be increasingly linked with the outside world.

The Role of Communication in the Development of Afghanistan

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BY

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C O N T E N T S

Note

Pages 142 and 184 do not appear. The error is regretted. H. Amin

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Preface

Of all the factors preventing the economic development in Afghanistan, the problem of communication is one of the most serious. This thesis will discuss this problem with special reference to environmental difficulties, and the strenuous attempts which have been made to improve communications in recent years.

Because of the superficial nature of work done by some authors on communications and transport in Afghanistan it was essential to carry out further fieldwork for this thesis. The fieldwork included in some parts of this literature was conducted by the author as part of a continuing research project in the Institute of Geography at the University of Kabul.

The lack of statistical data added formidable difficulties in presenting a comprehensive picture of the country's communication and transportation system.(1) In future it may become possible to present a detailed thesis using statistics, but for the present it has been necessary to manage without adequate statistics.

Dr. Gregory Frumkin of the Geneva office of the International labour organization who served as United Nations statistical advisor to Afghanistan states. ".....the student, especially the westerner, must not be deceived by the statistical vacume in this country and by its primitive technical level. In western countries people are accustomed to learning about a country's conditions through statistical and similar information.

(i) The first report about the economic progress of the country was published in 1959 by Ministry of Planning (established in 1957)

Books, reports, balance sheets are the main investigation tool of a student. In Afghanistan he has to discover and study things on the spot. A book or a report far from being the starting point of an enquiry, will be its terminus.(i)

I would like toexpress my deep gratitude to my superviser Dr. G. H. Blake without whose help and constructive criticisms this work would not have been possible. I am grateful to the British Council for providing the ways and means and to the staff of the Geography Department of the University of Durham who unselfishly made available all their facilities. Last but not least I am equally grateful to the University of Kabul, Afghanistan, who gave me leave to study in this country.

(i) Michel, A.A., The Kabul, Kunduz and Helmand Valleys and the national economy of Afghanistan, p. 6.

CHAPTER ONE

AFGHANISTAN'S HISTORICAL ROLE FOR COMMUNICATIONS

This study concerns the importance and development of transport and communications in Afghanistan, which are of fundamental importance to the economic development and the social and political integration of the country.

The early civilizations of Afghanistan from 200 B.C. onward owed much to its strategic position. The country was the meeting point of the ancient civilizations of China, India, Iran, Greece and Rome, and trade and cultural exchange between these countries took place on the highways which pass through Afghanistan. Consequently prosperous and populous cities like Balkh, Bamian, Kapisa, Kabul and Hadda in various parts of Afghanistan sprang up on these highways, and they became the centres of trade, learning and craftsmanship which spread from them throughout Asia as far as Japan.

The strategic importance of Afghanistan was reduced with the increase of sea-borne trade notably after the opening of the Suez Canal, which greatly diminished overland trade. Afghanistan not only lost its position commercially, but also lost touch with other civilizations. As a result the country sufferred a serious decline on all social, economic and political fronts. The invasion of barbarian tribes of Central Asia were another cause of decline, during which all the

prosperous cities of Afghanistan were destroyed and the population massacred. This resulted not only in economic isolation but also in the political disintegration of the country.

During the Nineteenth and early Twentieth centuries Afghanistan once more became strategically significant as a buffer state between British India in the south and Russia in the north. During this time the feudal system was strengthened, and there was for a long time civil wars between different tribes to gain political control often with the help of foreign powers. Furthermore the "closed door" policy of Afghanistan until the first half of the 20th century, caused the economic condition of the country to deteriorate further. Highways and bridges were destroyed and passes remained closed.

With the general economic deterioration especially in the means of transport and communications the administrative and political control of the central government over outlying provinces became weak. As a result there were numerous revolts against the centre and the government was constantly busy in maintaining peace and order and political unity in the country, all the financial and human resources at the command of the government being employed for this purpose. The government could not afford to pay attention to the economic development of the country. It was only as late as 1930 that a strong central government with effective political and administrative control over the country came into being. Since then there has been great awakening and the government is working towards the social and economic advancement of the country. The people

too have started taking a keen interest inthe economic development of the country.

In this struggle for economic development, the improvement of communications was given top priority with the commencement of the First Five Year Plan (1956-62) the main task being both the construction of new highways and the improvement of existing ones. A large part of the development expenditure was allocated for this purpose. The emphasis on the development of means of communications and transport is understandable in view of the fact that the development of agriculture, industry and trade both internal and external, depends on the availability of these facilities. The difficulties faced in providing adequate transport facilities are largely due to the extraordinary topography of the country, and to its land-locked location. More labour, time, and capital resources are required to develop communications than in almost any other country.

Afghanistan or "the land of Afghans" is one of the largest land-locked nations inAsia forming the north-eastern part of the Iranian plateau. It is located between 60°-30' and 75°E, and between 29°-30'N, and 38°-30'N. It lies near the heart of the continent and has long been a region of transit and one of the most strategic areas of central Asia. It's history goes back at least 5,000 years, both archaeological and historical remains providing arguments for placing Afghanistan among the areas of more ancient civilization, and the part played by it inthe development of human thought and culture are well known. It was the

home land of Aryan people, the forefathers of the Indo-European races, and flourished as a centre of culture at a time when Babylon and Egypt were serving the cause of human civilization.(1)

Assyrian inscriptions reveal a great movement of tribes from Central Asia (Northern Afghanistan) southwards in the eighth and seventh centuries B.C. In the middle of the seventh century, Cimmerian tribes, inalliance with the Kingdom of Van and other semi-civilized peoples of the mountain tracts, attacked Assyria. Behind them pressed the Scythian hosts, the real instigators of the conflict. Southward movements across Hindu Kush included the Bactrian Greeks, the Sakas, who displaced them, and the Kushans, who displaced the Sakas. Ephtalites and Turks followed, and finally Chengiz Khan and his Mongols, and their Kinsmen, the Mughals.

Afghanistan retained all the positive elements of these incoming cultures. For a time indeed, Bactria (Afghan Turkistan) was one of the great centres of civilization. It was here that the Aryans for the first time settled down, cultivated lands, built cities and laid the foundation of a rudimentary form of democratic state in which the people had a say in the administration of their country. Situated in the heart of Asia, Afghanistan naturally became even in those distant days the crossroads of migratory peoples and the meeting ground of great civilizations of the world, Aryans, Bactrian, Greco-Bactrian, Greco-Buddhist and finally Islamic. Similarly it was a great centre of world trade and served as an entrepot of thought and merchandise between East

and West.(2) Because trade is obviously a matter of movement, it postulates a producer and a consumer, that is to say a beginning and an end. Taste and fashion refine upon the barter of the crude necessities of daily life; commercial interest preserves old contacts.

Prehistoric Bactria, legendary city of Zoroaster and mentioned in the Zend Avesta, is believed to be buried under the mounds and crumbling walls which enclose a vast enclave near Balkh and Mazari-Sharif. Later in recorded time the old city of Bactria became a central Asian hub of caravan routes, one road forming the northeast spoke to China, another running southeast to India, a third southwest to Syria and the Mediterranean, a fourth northwest to Samarkand, Bukhara, and the other great oasis cities such as Meru and Khiva. Bactria provided winter quarters for Alexander the Great before his Indian invasion and was, for subsequent centureis, the centre of numerous Greco-Bactrian kingdoms.

Long before the Greeks appeared in Asia, the lower Helmand valley, the ancient Zaranca (Darangiana of modern Seistan), and the rich valley of Herat were Iranian strongholds. Iranian tribes occupied the country during the Aryan migrations in the second and first millennia B.C., and Cyrus (559-529 B.C.) ruled the region as part of the Achaemenid Empire. That is to say, throughout these regions ancient Iranian cities, the settled capitals of Iranian culture, opposed the fluctuating tribal anarchy of the Iranian fringe. Strabo says that Herat (Aria) and Meru (Margiana) were the richest districts of this frontier tract, by which he

means that they were the most highly populated. From Kurdistan to Afghanistan, through modern Iran, Central government and diplomatic relations have always been maintained against a shifting background of tribal life. Aria abutted upon Bactria and the ridge of Hindu Kush, which bounded it. Drangiana stretched from Carmania northward, to beyond Kohi-Baba, where it met Aria. Arachosia, the country of the Arghandab, also belonged to Aria and extended eastward to the Indus. Strabo and Ptolemy agree with Huen Tsang(3) that Gandahara consisted of the lower Kabul valley between the Kunar and the Indus, that is to say, the Jalalabad valley and the Peshawah plain, including the hill tracts lying in between, as far as Bajaur through which early trade routes ran to India. The survival of these tribal names is of the greatest significance, though our knowledge concerning them is admittedly vague. At any rate the traditional tribalism of the region and its persistent individuality must be given fullweight. Mr. Codrington who had been on a long expedition to Afghanistan wrote as follows,(4)

> "History shows that they have known how to extend their dominion, westward to Herat and eastward to Swat, at times adventuring even across the Indus, to found kingdoms and colonies in the heart of India. Upon the foundation of this long-standing tribalism is built the independent kingdom of Afghanistan of to-day. Its green valleys, surmounted by barren mountains and stony downs, are not merely peripheral to Iran or India. Nor have they been merely corridors of advance for invading hosts. As the antiquities

Bamian and Ghor, and the ancient silver mines of Andarab and the Begram treasure prove, they are not sites of passage, but centres of culture.....1.. This is true, not only of the valleys of Hindu Kush, but of Central Asia as a whole. Our knowledge of such matters is, indeed, scanty and much work remains to be done..... It is however clear that we have not only to settle the problems of the contacts of the classical civilizations of Iran, India, and China, but also to envisage the fundamental problem of Central Asian tribalism, that subtle compound of seeming opposites, nationalism and federalism, the tradition of republicanism and the recurrent expediency of personal leadership..... Huen Tsang, says that the country had two capitals, cities of considerable size, well equipped and defended. The walled city of Ho-si-na is probably Ghazni itself, while the second capital is certainly Mukur. The existence of walled cities in this essentially tribal area is of particular interest. The Kandahar-Ghazni-Kabul road is of great antiquity and it is clear that in the Kabul valley the tribal organization of the skirts of the hills, the Kohi-Daman, coexisted with the Royal capitals, merchant cities and religious centres, of which Huen Tsang writes, the towns as trade centres were polyglot and international. Round them lay the gardens, and beyond lay the dominion of the tribed, occupied with the maintenance of their traditional land, water, and grazing rights, and the inter-tribal balance of power, but jealously watchful as to their rights of taxation over the highroad and its caravans."

Similarly to the north the complex of parallel ridges and valleys, which lie between Pamir and Herat, has naturally played a special part in the development of traffic between India and China; the lines of communication with Persia lay to the south and included the open sea-ways of the Persian Gulf, which also served the Mesopotamian and Black Sea routes. The advance of the Greek dynasties towards the Indus, and their final retreat from the Oxus under Barbarian pressure, must have played a critical part in opening these routes to Indian trade. The objective was the Chinese market, for the West was already served by easy routes to the south.

In 329 B.C. Alexander entered the country of the Hindu Kush (Afghanistan) and led the Macedonian army up the long gentle slopes by Ghazni, across the watershed into the Kabul River valley, spending the winter in the Kohi-Daman valley north of Kabul where he found a city, Alexandria - under the Caucasus, either on or near the site of Kapisa (Begram) overlooking the Ghorband River. From here Alexander set off in the spring of 328 B.C. across the Khawak Pass to conquer and colonize the rich lands of the Oxus Valley. In 327 B.C. he returned to the southern side of the mountains, whence he moved down the Kabul River towards India, and crossed the present Pakistan frontier between the Kunar and Panjkora rivers in southern Chitral, and so the first of the great conquerors of whome we have record passed out of the country of the Hindu Kush never to return.

The invasion of Afghanistan by Alexander the Great is one of the most significant events in the history of the country.(i) For the first time Greek mythology, philosophy and art were introduced to the country, and above all Alexander instituted trade with Afghanistan which continued long after his death. Alexander left behind him the nucleus of a colonial empire. A Greek kingdom was established inwhat is now north-western India, Afghanistan, and a part of Russian Turkistan, following the conquest of these areas by him.(7) With varying fortunes this kingdom, known as Bactria, (Fig. 1) survived until almost the beginning of the Christian era, making it the last independent Hellenistic kingdom. Its successor, the Kushan empire (Fig. 2), continued to be under strong Roman-Hellenistic influence until its last remnant fell to the Moslems in 751 A.D.

For many centuries these states controlled the trade routes which connected the three great cultural and productive centres of India, China and the Mediterranean, of which Japan was the eastern terminal. The Bactrian and Kushan states eliminated middle men, made trade easier, facilitated the exchange of ideas, and placed Hellenistic and Roman cultural influences in the midst of the trade routes.

After the death of Alexander (323 B.C.) this area, along with the eastern portion of his Empire fell to one of his generals, Seleucus. Although the Selencid dynasty which he founded soon lost the Indian part of its new kingdom to Chandragupta I, an Indian prince who had served under

(i) "according to Strabo, the inhabitants of Bactriana and Sogdiana used to lead a nomad existence before Alexander came and their manner of life was altered by the Conqueror."(6)

the Persians and Alexander, it continued to hold the area north of the Hindu Kush. The powerful but short Maurya dynasty, both continued the Persian traditions and was affected by new Greek influences. (130 B.C.)

The Greek governor of Bactria and Soghdiana, Diodotus, successfully detached his provinces from the seleucid Empire about 250 B.C. The Bactrian kingdom expanded rapidly to include the land from the Aral Sea on the west to the Tarim Basin on the east, and from the Syr Darya or Amu River on the north to the delta of the Indus River on the south. The annals of this Greek kingdom have been lost but the outline of its rise and decline have been painstakingly worked out from coins, and occasional references to it by Greek, Roman and Chinese writers. Such evidence indicates that Bactria maintained close contact with the other Hellenistic states by trade, exchange of ambassadors, and dynastic marriages. In about 167 B.C. the Bactrian kingdom was split into two parts. The house of Demetrius which was descended from Diodotus I ruled to the east of the Jhelum River, and the house of Eucratides, which was closely related to the Seleucids, held the land west of the river with its capital in Gandahara, the name given to the region which extended from the function of the Kabul and Kunar rivers to the Indus river. These two kingdoms lasted for over a century until weakened by their struggle with each other. The expansion of the Hsiung-nu or Huns at the beginning of the second century B.C. threw Central Asia into turmoil which eventually had serious consequences for India and South-west Asia. A hitherto inconspicuous nomadic tribe, the Yueh-chi, were reduced to vassalage

to the Hsiung-nu as were most of the people of the Tarim basin. The greater portion of the tribe fled to the Dzungarian Basin where they displaced the Saka. The Saka in their retreat successfully invaded the Bactrian kingdoms, provinces of Sogdiana and Bactria (modern Balkh). In about 125 B.C. the Yueh-chi followed the Saka into Sogdiana and Bactria, as far as the Hindu Kush and the Saka retreated into Parthia. As the Saka and the various tribes of the Yueh-chi gradually filtered into India and founded new states they increasingly came under Greek-Indian and Parthian influence. The most powerful of the new states was founded by the leading Yueh-chi tribe, the Kushan.

The new Kushan states and the Saka states absorbed Hellenistic cultural patterns quickly. This influence was strengthened as trade increased with the Mediterranean after the Kushan empire expanded and firmly held the Inner Asian trade routes.

By the middle of the first century A.D. the Kushan under their ruler Kadphises I had crossed the Hindu Kush and assumed control of the Kabul River valley and Gandahara. The Kushan Empire continued to expand into India. The first two Kushan dynasties were periods of great artistic and intellectual achievements. At its zenith the Kushan kings were among the most powerful rulers of their time. They warred with the Parthians on their western frontier and in the north-east maintained relations with the great Han dynasty of China, so that the silk caravans from Pekin could pass freely on their way through the Pamirs to Balkh and so southward across the Hindu Kush to India.(8)

The Kushan kings adopted Buddhism, and took over whatever remained of Greek-Indian culture. In the first century B.C. Greek as an official language had begun to disappear and was replaced by Iranian tongues. Under Ashoka, and especially under Kanishka (who ruled about the end of the first century A.D.)(i) the Buddhist religion, spread through northern India. Kanishka sent missionaries to Kandahar, Kapisa, Bamyan, Bakhtar, and along the great silk route to Mongolia and China and other countries of the Far East to carry the teachings of Buddha into further Asia.

It was at this time that Buddhist centres were firmly established in parts of Afghanistan, making the country a great centre of the religion of Sakiamundi Buddha, and Afghanistan remained the stronghold of Buddhism until the year 900 A.D.

The Kushan Empire at its maximum extent included the province of Bactria and Sogdiana, the Tarim Basin, modern Afghanistan, the Punjab, the Indus valley and Sindh as far as Patna (Fig. II). During the first century A.D. trade flourished because stable conditions prevailed along the trade routes with strong governments ruling in the Mediterranean area and China. Roman records indicate that this was probably the maximum period of trade and direct contact between the three great cultural centres. Quite recently many bronzes of Roman or Alexandrian provenance, were found in the great city sites of the north-west and at Begram in the upper Kabul valley, which suggests close contacts

(i) The dating of Kanishka's reign is a controversial subject in early history. Dates for the beginning of his reign range from 58 B.C. to 378 A.D. but the most commonly accepted date is 78 A.D.

with the Roman world in the first and second centuries A.D. the ruling classes acquired a taste for imported Roman bronzes and Syrian glass in the first century A.D. their importation cannot be associated with the extension of Parthian power into India in the second and first centuries B.C., for none of the Roman objects are earlier than the second half of the first century A.D. It is noteworthy that Sassanian coins of the third century are common throughout the Kabul valley and north-western India, indicating highly organized commercial, if not political influence.

Kushan power was greatly reduced by the expansion of the Sassanian Empire, and finally destroyed by the Hephthalites, or White Huns at the end of the fourth century.

In the third century A.D. Persia revived under the Sassanian dynasty which exercised increasing control over the land trade routes as its power expanded. Contemporary with the deterioration of the Kushan Empire, there was a weakening of the economic and political strength of Rome. Trade was carried on with the Sassanians but it was interrupted by many wars and high tariffs. The sea route between Egypt and India continued to be important with occasional interruptions. The importance of the silk road was further reduced when the Byzantine Empire acquired silk worms and started to produce its own silk from about the middle of the sixth century. The rise of the Moslems in the seventh century placed a new group of middlemen between the Mediterranean, India and China, but there is no doubt that the civilization of Islam was

mankind's highest achievement in the Middle Ages, and Afghanistan played a brilliant role in the world wide civilization of Islam.

We have seen in the history of early empires the importance of Bactria (Balkh) and Kapisa (Begram) as centres from which further expansion took place, but during the governorship of the Mogul Empire (A.D. 1504-1747) which was established by Zahir-ud-din Muhammad Babur in 1504, Kapisa had disappeared, and Kabul some forty miles to the south, had taken its place as a centre of trade and commerce, through which ran the main trade routes across the passes from Central Asia and from which radiated the principal strategic high roads into India.

The Major Trade Routes:- Topography and climate were always critical in fixing the overland trade routes, but frequently political conditions and relations of the states modified locally the use of sections of the route.(9) At the eastern end of the silk road, natural conditions made the Kansu Corridor the easiest approach to China, while high mountains with deep valleys and heavy vegetation made approach on the southwest of China difficult. The Jade Gate barrier west of Tun-huang, marked the entry to China proper. West of the Jade Gate barrier the load varied according to political conditions. The southern route followed the fortified banks of the Salo-Ho, skirted the southern edge of the Lap Nor to Misan and then followed a line of oases formed by rivers emerging from the southern mountains to Kashghar. But when political conditions permitted, use was

made of a road, known later as the Central Route, which led directly from Ansi to Kurla and from there followed the numerous oases of the southern edge of the Tien Shan. The power and efficiency of the Han government is indicated by its success in keeping this road open to traffic.

In the first century A.D. a series of campaigns by Kushans against the Huns opened up a new and easier route, known as the northern route. The northern route was only slightly longer than the central route and had the advantage of more numerous oases. From Kashghar the main road followed the Kashghar river past the stone tower, crossed a divide and descended the Qizil-Su to the city of Bactria (modern Balkh), where it joined the road leading to Peshawar and the Indus valley. A less important road which could be used when the northern road was closed by political disturbances led south from Kashghar, joined a road from Yarkand and entered the Pamirs. One branch of this road followed the upper reaches of the Oxus River, down the Wakhan Valley, through Badakhshan to the Kabul valley and Peshawar. (Fig. II) A branch of the latter road crossed the Wakhjir Pass in north-eastern Afghanistan and by way of Gilgit and Srinagar reached Taxila. Passes at an elevation of over 15,000 feet reduced the value of the road to Srinagar except at times when the other roads were closed. The roads which converged on the Punjab Plain then proceeded down the Indus valley to Patala (or Minnagara), at the head of the Indus delta and Barbaricum, the seaport located on a distributary of the Indus River. A more direct route than the ones from the Tarim Basin through India to the Arabian sea, existed in the land

route from the Tarim Basin west across the mountains to Samarkand and through Parthia to the Syrian coast of the Mediterranean Sea. The early Bactrian kingdom was closely connected with the Seleucid Empire and most of the time it appears that trade and cultural relations could be easily maintained by the overland routes. The rise of Parthia in the eastern part of the Seleucid Empire in the later half of the third century B.C. did not at first destroy the value of this route, but eventually fighting and high charges made it difficult to maintain. By the end of the second century B.C. most of the trade between India and the Mediterranean passed through the Red Sea. The Romans during the first century B.C. conquered the Hellenistic kingdoms in the eastern Mediterranean and inherited their struggle with Parthia. Intermittent warfare carried on for centuries between Rome and Parthia, made the use of the overland route uncertain. But according to the archaeological investigation and from the information supplied by documents one may conclude that there was a similar trade between Central Asia and the Roman Empire. Natural commodities (pepper, silk, rubies, furs, ivory and skins), and manufactured goods (silk textiles, cotton cloth and sugar) travelled through Afghanistan from Asia to the Mediterranean ports and finally the Roman Empire, inaddition to local trade and activity on the grat road between China, India and the Mediterranian world, which went through several cities of ancient Aryana. Afghanistan kept her position and again it was the meeting point of east and west. Commercially this period was also of great importance, both land and sea routes permitting an exchange of goods

from China and India to Rome. Overland routes were important during the first two centuries A.D., but some sea-borne trade existed between India and Rome, as was conclusively proved by excavation at Aridamedu on the south-east coast of India. The major east-west land route from China at this time skirted the Gobi desert and entered Chinese Turkistan (Sinkiang) at Tun-Huang turning north-west past Turfan and Uramchi (Tiwa) and passing through the Dzungarian gates, then continuing across the Central Asiatic steppes south of Lake Balkhash through Tashkand, Samarkand and Bokhara. From these last named centres the route led south to Balkh, Bamyan, Begram (Kapisa), Kabul, Peshawar and Taxila and on the Indian Ocean.(10) The high altitude Hindu Kush passes leading into the Kunduz and Ghorband valleys were not however the only gateways to India. The history of the Saka invasion of India via Seistan demonstrates the importance of the southern routes, which are accessible from the north, once the low-level Sarakhas-Herat gate has been forced. Southward the ancient trade routes from Baghdad, via Isfahan to Kerman, and so forking to Kandahar and the Bolan Pass, provided an easy and well organized high road to India. Moreover the records make it plain that from very early times the northern Iranian route, the ancient Royal Road, from Tehran to Meshed found its natural continuation to India, via Farah and Kandahar, so turning the gates of Hindu Kush and joining up with the southern Kerman routes. From Kandahar there was a choice of two groups of routes, the first centred upon the Gumal leading to the markets of Dera Ismail Khan, the second upon the Tochi leading to Bannu the site of the ancient Akra.

Professor V. Minorsky has greatly furthered our knowledge of these regions by the notes he has added to his translation of the Hudud-al-Alam written by an anonymous geographer, who presented his work to the Amir of Guzganan in 982 A.D. For him, and he was obviously an inhabitant of what is now Northern Afghanistan, the country had four approaches. All Transoxiana, Ferghana, and Khorasan, and especially the town of Gurgan in Khwarazm, were gates to Turkistan. Of all the available roads, the Meru-Balkh road, at that time, alone was called "The Royal Road". Somewhere in the region of Wakhan, was the gate of Tibet; while the gates of India were Bust and Parwan, opposite modern Charikar. Thus at the Charikar bridgehead two main systems of communication united, the dramatically direct routes from the Oxus, the Royal Road, via the high passes of Hindu Kush, and the roundabout, lowlevel, open road via Farah, Kandahar and Ghazni. Beyond Jalalabad a choice of easy passes leads through Bajaur to the peshawar plain and its ancient cities.(11)
In the upper Kuram valley (southern Afghanistan) there are no archeological remains. Huen Tsang passed through this region on his way southward to Varana. He describes it as being mountainous and thickly forested, but it was not until the days of Mongols that the gate of the Kuram became notorious.

Nature of the Trade:- Fragmentary records and, increasingly, the results of archaeology give considerable information concerning the commodities which passed over these trade routes. While the nature and extent of the trade between India and the Mediterranean area is best known for the

period of Augustus and afterwards, the trade was well established in the Greek period. Much of the wealth of the Seleucid kingdom and Parthia was due to this trade. Ivory, silk, spices, and medicine reached the Mediterranean. Other aspects of the trade are indicated by Greek glass of the second century B.C. found in China and Greek-Bactrian coins containing nickel which came from China.

The wark of Alexander had broken down the barriers which had previously separated the Mediterranean world from Inner Asia, and those barriers were not set up again when Iran, Bactria, Saghdiana and the upper valley of the Indus broke off from the Empire of the Seleucids. Not only did Greeks and Hellenized orientals go to all these countries for many foodstuffs and raw materials required by their industries, and not only did they export their manufactured goods to them, but they were able to use the great routes which ran through those regions connecting the shores of the Mediterranean with Central Asia and the Far East in one direction and with Arabia in the other. At the same time, the ships of Ptolemaic Egypt began to sail through the Red Sea, to pass the strait of Babel Mandab and to navigate the Indian Ocean.(12)

On the Eastern Mediterranean, an active movement of goods, foodstuffs, raw materials, flowed from the coasts of Egypt and Asia to European Greece and the West. Some of these goods were produced in the countries which sent them, others had come from further away, and only passed through.

Alexandria exported corn, textiles and paper produced by Egyptian agriculture and industry; it also sent the spices of Arabia and India all over the Mediterranean world. Asia Minor supplied the counties of the Mediterranean seaboard with celebrated wools, the saffron and timber of Cilicia, the famous wines, parchment and bronze of Chalybes. Asia Minor and the Mediterranean world traded extensively with India via the great road which ran from India and Bactria by the Caspian gates. (Fig. 2)

The chief imports of the Hellenistic-Roman area were silk, spices of which pepper was the most important - and incense, and ivory. The major exports from the Roman Empire were: gold and silver, plates, woolen and linen textiles, topas, coral, glass vessels, and wine. From India come cotton, cloth, indigo, spices, semi precious stones, pearls, ivory, Kashmir wool, steel swords and furs. Central Asia (including Afghanistan) contributed rubies, lapis lazuli silver, turquoise, various gums and medicine. China sent raw sild to Rome, Central Asia and India, furs (from Siberia and Manchuria) and many spices to both India and Rome.(13)

Archaeology has verified the western classical accounts of the trade and revealed additional trade items. Chinese pottery has been found in Roman tombs in the Rhine valley, an ivory figurine of Indian workmanship was found in Pompei, the Hellenistic Roman glass has been found in Japan. Excavations at Taxila, Arikamedu and Kapisa have yielded bronze and stucco statues of Roman Gods, Roman bronze and iron weights, blown glass, crude glass, Italian wine jars and great hoards of coins of Bactrian, Roman and Kushan origin. The stucco statues and medallions

originated in Alexandria. Begram which is the site of Kapisa, a royal city of the Kushan about forty five miles north of Kabul, has been the source of many items from the Hellenistic sections of the Roman Empire. Begram has also revealed lacquer from China associated with objects from Rome and ivory from India. In the Tarim Basin Sir Aurel Stein has found coins of Bactrian, Kushan, Roman and Chinese origin which show the amount of trade through this area.(14)

But it must be remembered that, since all this trade had to be carried on by animals especially horses and camels, the roads themselves were quite simple and narrow, and in most parts had to follow the course of rivers, and mountain ridges. Bridges were also simple, made of stones, wood and sometimes rope; brick made bridges appeared in Afghanistan during Mogul rulers in India. Thus the distances were long, Chi-Fah-Hian, one of the Chinese pilgrims to these areas in 400 A.D. showing the distance between Peshawar and Hadda (9 km. south of Jalalal-ad) as long as 197 km. Moreover after every 35 km. there had to be a caravan serai or a rest house, where they could rest and change the animals. The protection of these highways was the responsibility of every government and administrative unit.

Intercultural Exchanges:- Establishing the exact influence of the three great cultural centres of China, India and the Mediterranean world, on each other is a major problem. At times when middle men were eliminated and the centres were in direct contact, a situation was created favourable

for cultural exchange. The Greek-Bactrian and Kushan states had far reaching influence on the development of Buddhism. The Kushan rulers adopted many of the policies of their Greek predecessors including the encouragement of the indigenous religions.

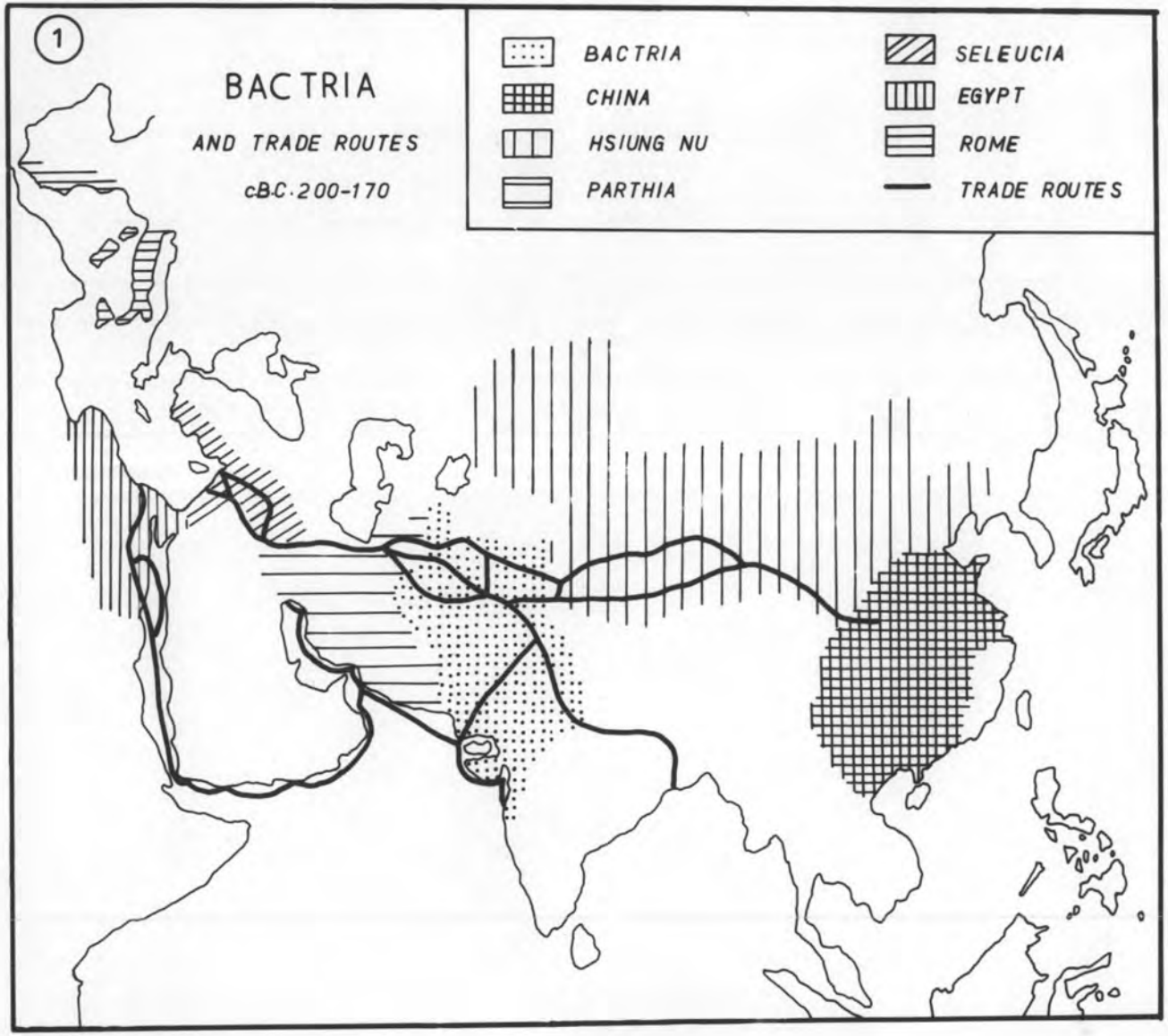
The story of Buddhism in Aryana (Afghanistan) is important for two reasons.(15) First, "Greek objectivity probably was the main factor in the change from abstract to humanistic renditions inart and from introverted inaction to a more extroverted expression in philosophic terms". Secondly, Buddhism travelled north to China, Mongolia, and Japan through or from today's Afghanistan. According to the French historian Grousset, Afghanistan was "the principal propagator of Buddhist art and literature throughout Chinese Turkistan and into China itself". When the Chinese records show us the Yue-chi missionaries crossing the oases of the Gobi desert to found communities at Lo-Yang, or coming over the sea as far as Annam, we know now that these were monks coming from Balkh, from Begram or from Jalalabad. The Afghan valleys have thus been the centre for the dispersion of ideas of the Indo-European world on the march towards the Far East. Therefore the influence of the art of Bamyan and Kakrak from the 4th to the 9th centuries can be detected right into the heart of the Chinese Turkistan, as far even as Japan.(16) There is evidence that there was also an exchange of ideas in medicine, astronomy, mathematics, cartography and other scientific information which stimulated the thinking in all three areas.

Finally it may be said that the establishment of a strong outpost of Hellenistic culture on the main trade routes connecting the three early cultural focal centres of the Mediterranean, India and China brought these centres into closer contact than before and speeded up the process of trade and cultural diffusion. The economy, philosophy religion, science and arts of all three were influenced by this contact. And without doubt Afghanistan has often been the meeting place of these people. Standing on the high road between eastern and western Asia, and on the fringe of the empires which rose and fell in Persia and India, it has been affected by the stream of migration from further Asia in the north, and by the ebb and flow of conquest from the west and south. And for at least a thousand years Bactria (modern Balkh) which now stands near Mazari-Sharif in northern Afghanistan with walls seven miles in circumference was once among the largest and most important cities of Asia, and a point of traffic divergence west, south and east, where the camel caravan route from India met the routes from Persia and China.(17) Professor Arnold Toynbee describes it as follows:

> "The inhabitants or people on the fringes of the old world such as I am, peoples whose countries once lay in the western half of the Roman Empire, may believe the European saying that all roads lead to Rome, but this is not true. I think that half of the world's roads normally lead to Aleppo which is the historic road

centre of Syria, and the other half lead to a place whose name is now little known in Afghanistan just at the southern foot of the Hindu Kush mountains, where all the transit from Central Asia, which is now the Soviet Union, to the Indian sub-continent has taken place."(18)

Afghanistan lost some of its importance as a crossroad between east and west, when the seas became more accessible. But with the advent of the air age the country is regaining its old position. Located on the shortest air routes between Europe and the Far East, it will once again be the meeting point between the east and west.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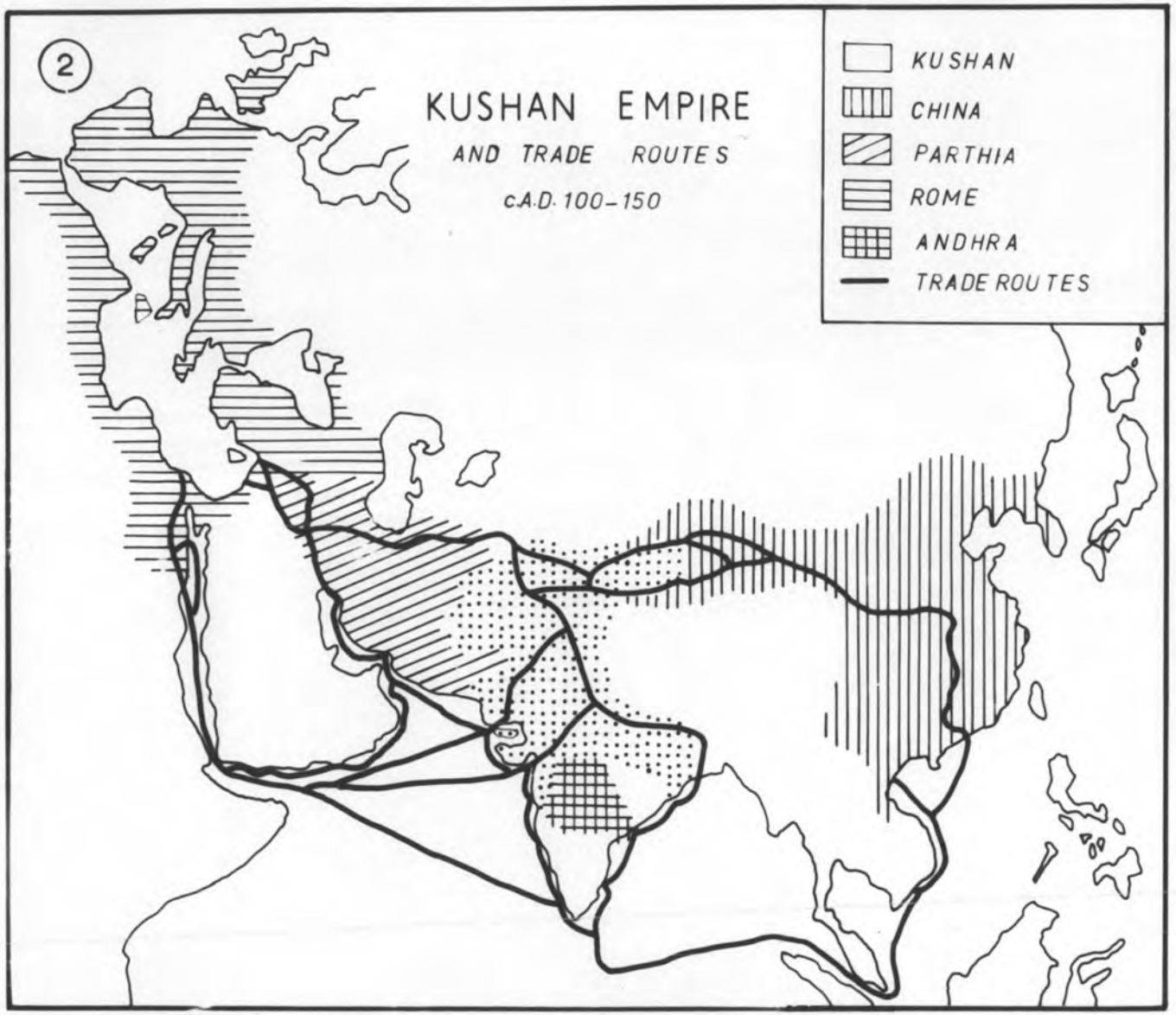
2
KUSHAN EMPIRE
AND TRADE ROUTES
c.A.D. 100–150
KUSHAN
CHINA
PARTHIA
ROME
ANDHRA
TRADE ROUTES

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CHAPTER TWO

INTERNAL AND EXTERNAL PROBLEMS OF COMMUNICATION

Afghanistan is a mountainous country which occupies the northeastern portion of the arid Iranian plateau, and is completely landlocked, the nearest sea being 500km. from the Afghan border in the south. Even its approaches to its neighbours are limited.(1) The greater part of the country is either arid or semi-arid, with extremely rugged terrain, ranging from the glacier-capped peaks of the Hindu Kush in the northeast to the swamp andddesert lands of the south. Moreover Afghanistan is a large country, with an area of 270 thousand square miles, rather more than twice the size of the United Kingdom. It stretches westward for more than 1,350 km. from the Pamirs on the border with China, to Chakhansur on border with Persia, and for 900 km. southwards from Amu River on the Russian border to Pakistan. Within this area a wide range of climatic and physical conditions, notably in altitude, and rainfall is to be found. Many of the valleys narrow into gorges; many of them are steep and their rivers torrential. These are the main obstacles in the development of modern communications. Much work will have to be done, and a large amount of money must be spent. In this chapter we will discuss these problems in detail.

I: The Impact of World Conditions: Afghanistan has had a strategic position throughout history. Centuries ago (Chapter One) it was the crossroads of Asia, when the main east-west trade routes passed through its northern and southern plains and over its mountain passes before the development of water borne trade between Europe and the Far East. Later it formed a

highway of conquest for powers to the east and west as well as for the Mongols and Turks from the north. During the nineteenth century it became a prize sought by the expanding Russian and British empires. Towards the beginning of the twentieth century, it served both these powers as a buffer state.

During the thirteenth century Afghanistan experienced the invasion of the Mongol hordes led by Genghis Khan. In 1220 he had reached the Oxus; when the unfortified city of Balkh surrendered, he ordered the massacre of all its inhabitants and the destruction of the entire city with its innumerable mosques, schools, and other public buildings. Herat, Bamyan, and Ghazni met the same fate. Behind him he left ruin and desolation. The population was decimated. The great cities were reduced to vast expanses of rubble. For the next hundred years the country of the Hindu Kush lay prostrate under the Mongal grip. In 1370 Timuri-Lang (Tamerlane) a descendent of Genghis, led Turkish hordes from his capital Samarkand to conquer another empire. On several occasions he crossed the Hindu Kush, the most famous was in 1398 when he invaded India, leaving in his wake another trail of destruction.

The ravages of war upon war, the wholesale destruction of its cities and irrigation works, and the massacre of large sections of its population by Mongol hordes reduced Afghanistan, once the seat of important civilizations, to poverty and obscurity. It became an isolate country, closed and forbidden to all except a few persistent adventurers, and withdrawn from the comity of civilized nations.(2) The country has depended ever since

on a primitive agricultural economy as the principal means of livelihood. From this time on until the rise of the Pushtuns in the eighteenth century, no native dynasty ruled in Afghanistan.

Since 1747 the independent kingdom of Afghanistan has been ruled by members of two families of the Abdali tribe, which was established by Ahmad Shah, and included all parts of Afghanistan and the provinces of Tus, Nishapur, Seistan, Kerman, Baluchistan, Kashmir and Peshawar as far as Delhi. Ahmad Shah's second son and heir, Timur Shah moved his capital from Kandahar to Kabul, and ruled for twenty years (1773-1793) over an extensive but insecure empire. He left twenty-three sons, but failed to nominate an heir. During the next quarter of a century the Durrani princes plotted and intrigued for possession of the Afghan throne while their empire fell apart around them. Three different brothers briefly secured the throne, one of them twice, each soon falling victim to the family intrigues.(3) Their treachery was not confined to each other, but extended to their loyal supporters and advisors in the Muhamadzai family. After these brothers had executed the Muhamadzai chieftan and blinded his eldest son, the Muhamadzais had had enough. They rose inrage, and in 1818 the youngest son, Dost Muhamad, defeated the current Sadozai ruler near Kabul. Although the Muhamadzais continued to acknowledge a purely nominal suzerainty to the Sadozais, they gradually assumed full control and in 1835 Dost Muhamad proclaimed himself Amir of Afghanistan. But there was little left of the great Durrani Kingdom. In the north Balkh had asserted its independence, while Meru and Kushk had been taken by Tsarist Russia. To the east the

Sikh governor of the Punjab, Ranjit Singh, declared his intention to retain control. The British took over Baluchistan, and the Sindh rejected Afghan rule. In the west the refugee Sadozais established themselves in Herat, and other Muhamadzai brothers took control of the provinces south of Ghazni. Finally Dost Muhamad had come to the Afghan throne at the same time that two great empires were expanding. The British in India were moving north, the Russians in Central Asia moving south. Eventually only the land of the Hindu Kush remained between them. Afghanistan, straddling the natural mountain barrier between these two empires, became a pawn in the great power struggle of the nineteenth century - and eventually a buffer state.(4)

When Dost Muhammad asked the British for help against Sikhs, Herat was also under siege. The Russians had encouraged the Persian Shah to snatch Herat while the Muhamadzais were struggling to secure the Afghan throne from the Sadozais. Shah-Shuja then turned to the British for assistance, which he eventually obtained with the help of coincidental political events. During the first Afghan war (1838-1842) he was placed on the throne of Kabul, while Dost Muhamad first fled to Bokhara, then submitted to the British, and finally was called back as ruler to Kabul. And before he died in 1863, he succeeded in unifying Afghanistan in about the form it is today.

In the struggle for power among Dost Muhamad's sons, Sher Ali eventually succeeded to the throne in 1868. During his reign negotiations between London and St. Petersburg resulted in a loose agreement that Russia would respect the northern boundary of Afghanistan as roughly on the Oxus River, and that the country was to be considered outside the

sphere of Russian influence. However, difficulties that flared between Britain and Russia in 1877 were disastrous to Sher Ali. At a time when external pressures were building up which were to prove most detrimental to the interests of Afghanistan, the expansion of the Russian Empire through Tashkand and Samarkand and to within striking distance of the Amu Darya.(5) These events had thoroughly aroused the British in India. Negotiations to establish a common policy with the Afghans failed, and in 1878 the arrival of a British envoy, who was halted by Afghan troops at the Khybar Pass. As a result war was declared and British columns entered Jalalabad and Kandahar. Sher Ali fled north to seek help, only to be advised by the Russians to return to his capital and make peace with the British. He died in Mazari-Sharif a few months later, a broken man. The British forces quickly defeated the Afghans and started making agreements with the wrong leader Yakub Khan, who was not the accepted chief of all the chiefs. The British representatives sent to Kabul in 1879 as the result of the peace treaty were murdered by rebellious Afghans a few weeks later. The three British armies still intact moved forward immediately and occupied Kabul and Kandahar. This was the furthest extent of British "forward policy" which held that protection of British India against Russia required the British to control the natural frontiers all the way to the northern slopes of the Hindu Kush.(6)

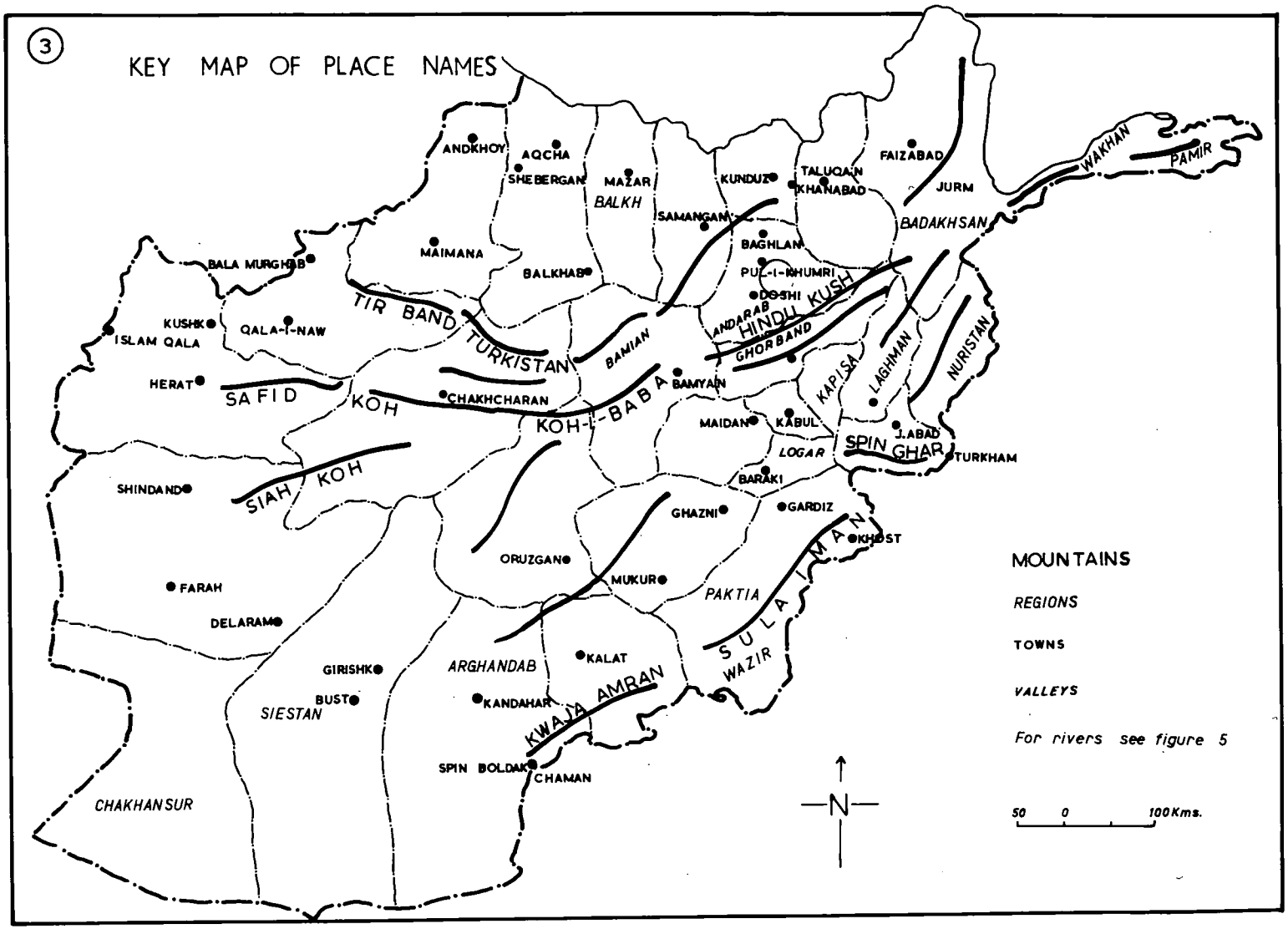
Yokub Khan was succeeded by his nephew Amir Abdul Rahman (1880), who soon proved to be the forceful and tireless figure for whom the country had long been waiting. This necessitated breaking down the feudal and tribal

system and substituting one grand community under one law and one rule. In 1901 Habibullah succeeded to the throne, and ordered the construction of the first hydroelectric power project, industrial plants, and modern roads. But the outbreak of World War I brought internal stresses to Afghanistan, and soon after the war he was assassinated and succeeded by his son Amanullah. Having gained independence as a result of third Anglo-Afghan war in 1919, Amanullah quickly abandoned his father's isolation policy and embarked upon a series of drastic and forced reforms in an effort to modernise his country. At the end of 1927 King Amanullah toured a number of Middle Eastern and European countries. The political and social institutions of Europe impressed him and when Amanullah returned from Europe he endeavoured to introduce similar political and administrative forms in Afghanistan. But the king's attempts in this field were strongly opposed by the more conservative elements of the population, and led to a revolt in 1929, which caused his abdication, and during the ensuing period of almost one full year of Civil wars the throne of Kabul witnessed one of the most dramatic events of its history, when a highwayman named Bacha Saqau (son of the water carrier), siezed power and began a period of appalling terror, torture, and extortion. The Afghans were now faced with the necessity of ridding the country of this new curse. Afghanistan was rescued from Bach Saqau by Muhamad Nadir Khan, but after three years in 1933 he was also assassinated, and succeeded by his son Muhamad Zahir Shah, the present ruler.

This was the story of Afghanistan from thirteenth to twentieth centuries, which change it from a centre of civilization to the most isolated and backward country in Asia, during which there was no attempt to achieve economic progress and modernization of the country.

Ever since world trade shifted from the cumbersome overland transport routes between Asia and Europe to the ocean lanes and the route through Suez Canal, communications through Afghanistan have lost their economic significance. Having remained outside the territorial limits of the British Empire and Commonwealth, the country did not reap the benefits of strategic rail and road networks, as did its neighbour India. In fact Afghanistan's involuntary role as buffer state between Russia and British India discouraged foreign companies and governments alike from contributing to the growth of modern communications within it. Its deeply rooted love of political independence deprived it of the technological reward of incorporation in a larger entity. The need for a broad economic development programme indicated by the low productivity in agriculture, and the average income of the Afghan people, has long been recognized by the government. This realization was heightened in the pre war decade and the early post war years, when the serious trade deficit in the country's economy made itself felt.

II. Relief and Structure: The second most important problem in the development of communication especially construction of roads in Afghanistan is the physical structure and topography of the country, because more than two thirds of the country is mountainous. The heart of


3
KEY MAP OF PLACE NAMES
ANDKHOY
AQCHA
SHEBERGAN
MAZAR
BALKH
KUNDUZ
TALUQAN
KHANABAD
FAIZABAD
JURM
WAKHAN
PAMIR
SAMANGAM
BADAKHSAN
BAGHLAN
MAIMANA
BALKHAB
PUL-I-KHUMRI
DOSHI
BALA MURGHAB
TIR BAND
HINDU KUSH
ANDARAB
GHORBAND
KUSHK
ISLAM QALA
QALA-I-NAW
TURKISTAN
BAMIAN
KAPISA
LAGHMAN
NURISTAN
HERAT
SAFID KOH
CHAKHCHARAN
BAMYAN
KOH-I-BABA
MAIDAN
KABUL
J.ABAD
SPIN GHAR
LOGAR
TURKHAM
BARAKI
SHINDAND
SIAH KOH
GHAZNI
GARDIZ
KHOST
SULAIMAN
ORUZGAN
MUKUR
PAKTIA
FARAH
DELARAM
WAZIR
GIRISHK
ARGHANDAB
KALAT
BUST
SIESTAN
KANDAHAR
KWAJA AMRAN
SPIN BOLDAK
CHAMAN
CHAKHANSUR
N
MOUNTAINS
REGIONS
TOWNS
VALLEYS
For rivers see figure 5
50 0 100Kms.

the country is the Hindu Kush, a massive mountain range which soars between the steppes of Central Asia and the desert and plains of the Indian Sub-continent; elsewhere, level land in the mountains is restricted to flood plain ribbons or high level peneplain remnants. It is true that the mountains with peaks rising to a height of more than 20,000 feet, dominate some of the most beautiful and fertile valleys in the world, and much has been written in praise of the tranquility of the Sylvan scenery which even today, is still as it was centuries ago, and among her lofty hills is to be found some of the noblest scenery in the world. But for the engineer who wants to build roads it is very difficult to develop communications along these rugged mountains and barren deserts, because the greater part of the country is arid or semi-arid with extremely rugged terrain, ranging from the glacier-capped peaks of the Hindu Kush in the northeast to the swamp and desert lands of the south. In the most mountainous areas roads must follow the direction of the river valleys for long distances. Certainly in this case road construction in the valleys is complicated by the need for elaborate engineering works both above and below road level, to control floods from the mountain side, and damage by river. As a result the cost of roads construction will be double or more, and difficult. The high number of labourers, heavy mechanical equipment and a long period of construction will be required. Moreover it is very difficult to estimate the actual and exact cost of any project. For instance the estimated expenditure for construction of roads during the First Five Year plan was Afs. 1.5 billion. But by the end of the plan the total expenditure was more than Afs. 4.5 billion for the same projects.

TABLE I: Comparison of estimated construction costs on roads in mountains and plains. (In Afghanis)

Name of the road	One-Km. of road on plains	One-Km. of road on mountains
Kabul-Kandahar	3,657,215	
Jabulsaray-Doshi (including Salang tunnel)		21,086,016
Kandahar-Herat	6,784,661 (Concrete)	
Doshi-Qizil Qala	4,936,846	
Kabul-Mahipar	1,600,000	
Mahipar-Sarobi		6,400,000
Sarobi-Sarkondu		6,000,000
Sarkondu-Jalalabad	2,700,000	
Jalalabad-Turkham	2,770,000	

SOURCE Calculated from survey of Progress 1959, 61-62, 63 Ministry of Planning, Kabul, Afghanistan.

Afghanistan displays three principal topographical regions, characterised by as many descending levels of altitude. First the Hindu Kush and its auxiliary ranges, lying roughly east to west, diverging westward. These central mountain ranges sharply divide Afghanistan into two parts. Not until 1933 was there an automobile road across the mountains. Second, the generally barren and rugged foothills of these ranges; third, the gently sloping plains and steppes watered by rivers flowing from the ranges; and the unproductive desert waste lands.

In the far northeast corner of Afghanistan the Himalayas break up into the Pamirs, the Karakorum, and the Hindu Kush, which is the most important range of mountains in Afghanistan, and which has led some writers to refer to the country as the "Land of Hindu Kush". The term Hindu Kush first appears in the writing of Ibu Batuta who crossed them in about 1334 A.D. He described the snow-capped Khawak Pass (13,000 feet) north of Kabul:(7)

> ".....another reason for our halt was fear of the snow, far on the road there is a mountain called Hindu Kush, which means slayer of Indians, because the slave boys and girls who are brought from India die there in large number as a result of the extreme cold and the quantity of snow. The passage extends for a whole day's march. We stayed until the warm weather had definitely set in and crossed this mountain by a continuous march from before dawn to sunset. We kept spreading felt cloths in front of the camels for them to tread on so that they should not sink in the snow....."

The highest peaks of this towering massif rises in the northeast to over 20,000 feet (Tiraj Mir, 25, 426 feet). The range continues westward at ever diminishing heights until it fades out in a series of low ridges at the Iranian border some 1,232 Km. away. This means that, although it is a formidable divide, the Hindu Kush is not an impassable barrier. Though they are rugged and tricky, the main passes are usually open for caravan traffic for nine months of the year. The line of perpetual snow is generally at altitudes over 13,000 feet, but two of the principal passes

are below this level, while the higher passes can generally be crossed by pack animals from May to October (see table 2).

The eastern Hindu Kush extends 422 km. from the Pamirs to the Khawak Pass. The extreme northeastern part of this branch, at its point of juncture with the Pamirs forms the boundary between three systems of drainage. The central part of this range between Kabul and the Kunar Rivers to the south and Kataghan, Badakhshan in the north up to the high range between the Mandal (12,300 feet) and Khawak Passes, forms the rugged country of Nuristan, which is an area difficult to cross. It is mountainous, with high passes, snow-capped peaks and dense forest known as the Asmar forests.(8)

The western Hindu Kush is situated between the Khawak Pass and Dandan Shikan Pass (8,830 feet). The length of this almond shaped mountain is 255 km. and its greatest breadth is 106 km. But in the region of Khawak it is only 28 km. wide. The average height of this range is 14,000 feet. This branch of the Hindu Kush is totally barren and devoid of vegetation. To the northeast of this range lies the valley of the Andarab and to the northwest of it is the valley of Sorkhab and to the south the valleys of Ghorband and Panjsher. To the west these great mountains gradually descend to the lesser range of Kohibaba, Ferozkoh, and Paropamisus.

The Kohibaba range lies between the Hindu Kush mountain and Ferozkoh. Its length is 220 km., and its average height is more than 13,000 feet. Its summit Shahifoladi (16,874 feet) 35 km. south of the Aqrobat Pass overhangs the sources of the principal rivers of the country.

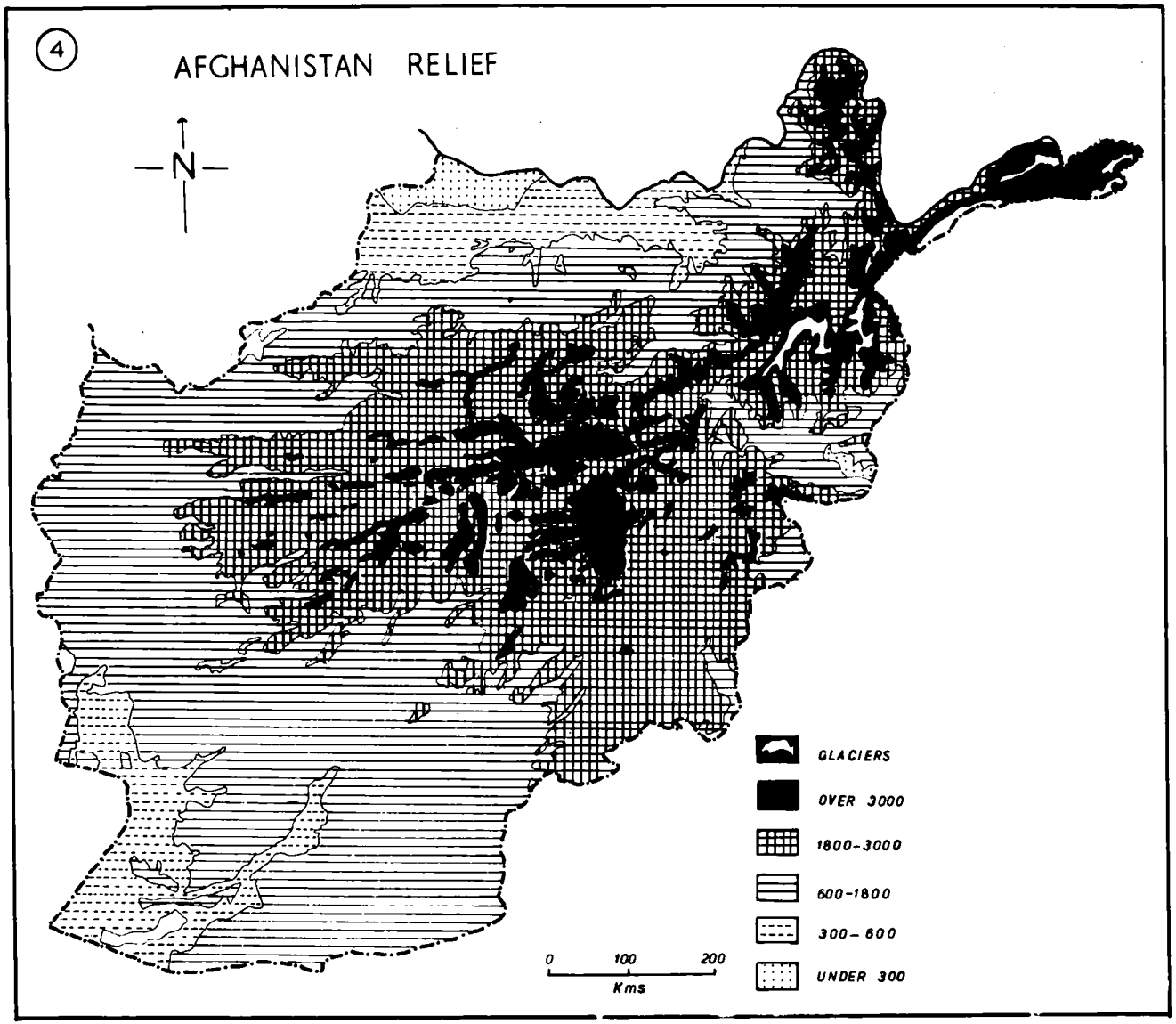
This range, a high, rugged, desolate and almost pathless tract forms a continuous part of the continental chain of mountains in which during the long and severe winter even the few highways become impassable. It has been described as a rolling barrier, tableland, wrinkled and intersected by narrow mountain ranges with peaks attaining 13,000 to 17,000 feet.(9) Ferozkoh is a double range of mountains lying roughly parallel to the Tir Bandi Turkistan, its northern branch is known as Safid Koh (White Mountain) while the southern range is generally known as Siah Koh (Black Mountain). The name Parapamisus is now applied to the small range of mountains lying to the extreme East of Badghis province in northern Afghanistan, commencing at the western extremity of the Ferozkoh and terminating on the Iranian border. It separates the Hari Rud from the Murghab valley.

Another mountain range in northern Afghanistan is Tir-Bandi-Turkistan. It's length is about 220 km., and ranges from east to west, just to the north of Ferozkoh in the province of Mazari-Sharif. Its highest peak, Zangalak, is 11,500 feet high.

Among the other mountain systems which radiate from the Pamirs are the south-west trending ranges near the present artificial boundary between Afghanistan and Pakistan. These include the Spin Ghar or "White Mountain" taking its name from the snow with which it is always covered. It stands to the south of the Hindu Kush and is separated from it by the valley of the Kabul River. It extends 167 kms. from the Khybar Pass to the Logar valley south of Kabul. The Spin Ghar overlooks the Afridi country.

Terah, and forms the southern boundary of the eastern province, separating the Nangarhar province from Kabul and Paktia provinces, and Logar province from Paktia, rendering the development of roads very expensive, and even sometimes impossible. It means that if some one wants to reach Paktia or Khost from Jalalabad by car, which is less than 35 km away, he must take a long journey to Kabul and from Kabul to Paktia (about 500 km.) A high ridge of this range runs south and passes through the Jaji country and then proceeds in a southerly direction forming the mountainous country of Jadran in the southern province and extends farther south to the left bank of the Gomal River. The ridge slopes downwards in the southern part of the Waziri country, where the Gomal River passes through this range but rises again in the Shirani country and forms the lofty mountains of the Kussay Ghar.

The eastern range of mountains in Afghanistan consist of the Sulaiman Range. This range beginning in the Pamirs and the Hindu Kush, runs towards the southwest and extends nearly to Baluchistan. Between the latter and the desert of Registan is the southern most offshoot of the Afghan mountain between Kandahar and Quetta. As the mountains spread westward, they dwindle in height and gradually give way to plunging valleys, tree less plateaus, wind-swept plains, and sun-baked desert. This is a country of extremes, of contrasts, of great heights and narrow depths, of towering masses, of jagged rock hanging over the churning foam, of icy streams, of sparkling crests, of snow over deep gorges of shadow.


4
AFGHANISTAN RELIEF
N
GLACIERS
OVER 3000
1800-3000
600-1800
300-600
UNDER 300
0
100
200
Kms

The remainder of the country (some 40,000 square miles consists of the desert area north and south of the lower reaches of the Helmand River. Most of southern Afghanistan is empty, so dry and lifeless that only a few nomads can find pasture for their sheep and camels. A series of local desert names are employed, but the area is part of the greater Iranian waste which extends from the Zagros to the Sulaiman mountains. On the right bank of the lower Helmand is a broad alluvial plain known as the Dashti-Margo or the desert of death. On the left bank is the Registan, a sand-choked reddish area which stretches to the Pakistan border.

III. Climate: Afghanistan has no coastline and therefore does not benefit from the sea's mild and moist weather, all Maritime influences being excluded by the southern ranges of mountains along the Afghan border, while any precipitation they cause does not penetrate into Afghanistan. Similarly many of the northern winds blowing over Siberia do not penetrate Afghanistan sufficiently to affect the weather a great deal, although those which do, make winter rather severe in many parts of the country. Being cut off from the monsoon system of the Arabian Sea by its eastern and southern ranges Afghanistan has a typical continental dry climate, with seasonal extremes of heat and cold, very marked differences between day and night temperatures, and rapid transitions from one season to the next. On the other hand the climate of Afghanistan varies with elevation and exposure, ranging from Alpine and Subarctic in the high northeast to absolute desert along the Amu Darya and the Helmand River. The north is generally

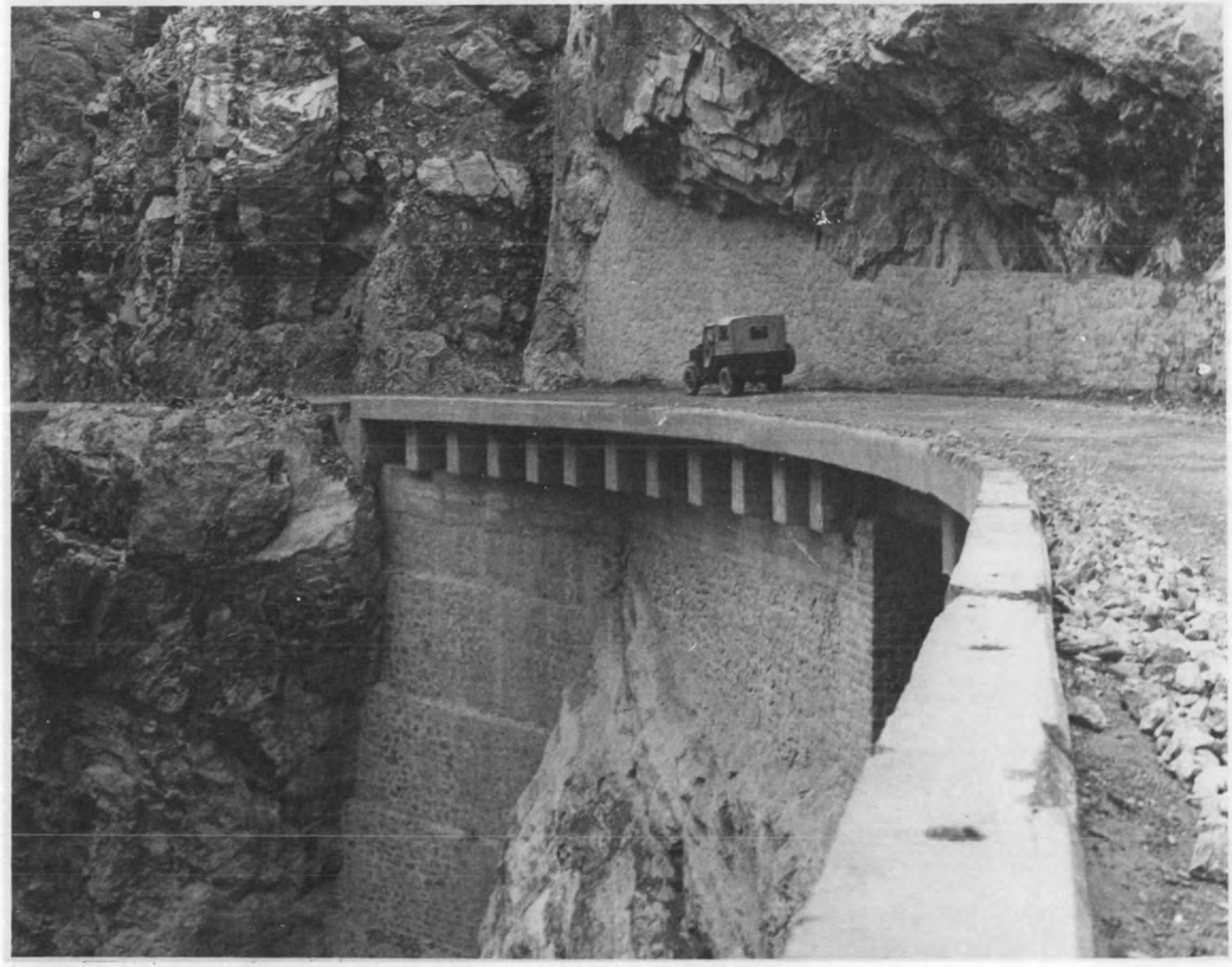


Plate 2 Retaining walls of this kind greatly increase the cost of road construction.

colder and drier than the south. Thus there are areas where the summer months are intensely hot, and there are other places where the weather is extremely mild in summer. Also no clear distinction can be made between the rainy and dry seasons. Depending on the origin of the moist air rainfall varies from year to year. For example, in April 1958 Jalalabad had a rainfall of 17 mm., whereas in 1959 precipitation totalled 123 mm. for the same month. Nor is it uncommon for 30% and sometimes up to 100% of the monthly rainfall to occur within a period of 24 hours. Except for summer showers in the south-eastern area rainfall and snow occur between October and April, although there may be local showers and thunderstorms sometimes accompanied by hail often quite severe for a day or two. The average annual rainfall for the country as a whole is estimated to be less than twelve inches. With such low rainfall and relatively high temperatures it is not surprising that the relative humidity is very low especially during the summer months. Kabul has an 8 A.M. yearly average of 65 percent, and at 4 P.M. the humidity drops to 36 percent, afternoon figures in the summer and autumn fall below 24 percent, figures for Kandahar are similar. In comparison with an annual precipitation of seven inches, measured evaporation from an open pan shows a yearly total of 74 inches.(10)

Climatically speaking Afghanistan can be divided into three regions (i) high regions, (ii) regions of intermediate height, and (iii) lowlands.

(i) The High Regions are composed of mountains and river valleys where generally speaking, the climate is cold and the temperature range

indifferent seasons is considerable. Places above 7,500 feet generally have longer winters, sometimes extending to about seven months. Nuristan, Pamir and a large section of Badakhohan and Hazarajat have this kind of weather. (Areas above 12,500 feet are mostly uninhabitable and are usually covered with perpetual snow). North Central Afghanistan with its high ranges, has winter snow cover at altitudes of over 7,000 feet, above 15,000 feet the peaks retain this cover for ten months of the year, closing mountain passes for weeks or even months. (See table two) For example the passes between Wakhan and Pamirs in the north-eastern part of the country with heights between 12,000 and 15,000 feet are closed for several months during the cold winter, and for this period of at least five months there is no contact between these two regions. The same is the situation on the roads between Kabul, and the northern and eastern parts of the country. For instance there are still more than one thousand men employed full time by the Ministry of public works along the new highway to the north during winter to keep the road open from damage by heavy snow and icefall. These conditions were frequently encountered during the construction of this highway which took more than five years.

TABLE 2: Seasonal closure of passes

Pass	Height (in feet)	Months closed
Kashin	18,500	July to June (11 months)
Broghil	12,460	December to March (3 months)
Dandan-Shikan	8,830	December to February (2 months)
Sheptal	15,000	October to May (6 months)
Wilian	16,000	October to April (7 months)
Kharzar	15,000	October to May (6 months)
Khawak	13,000	December to April (4 months)
Khaknol	11,450	December to February (2 months)
Salang	12,300	December to March (3 months)
Shibar	9,800	December (1 month)
Bamyan	8,900	December (1 month)
Kaoshan	14,340	October to June (8 months)
Til	11,640	December to February (2 months)
Agrobat	10,255	December to February (2 months)

SOURCE: Ministry of Public Works, Afghanistan.

Areas between 4,000 and 7,500 feet, such as Kabul, Ghazni, Katawaz parts of Badkhshan, Paktya and Hazarajat, the upper Kunar valley and others have a milder climate and four distinctive seasons. Summers are not very hot. Winters can be cold.(11) The Kabul valley system and the southern regions receives moderate rain and snow in the period from November through April, with snow remaining on the ground for several

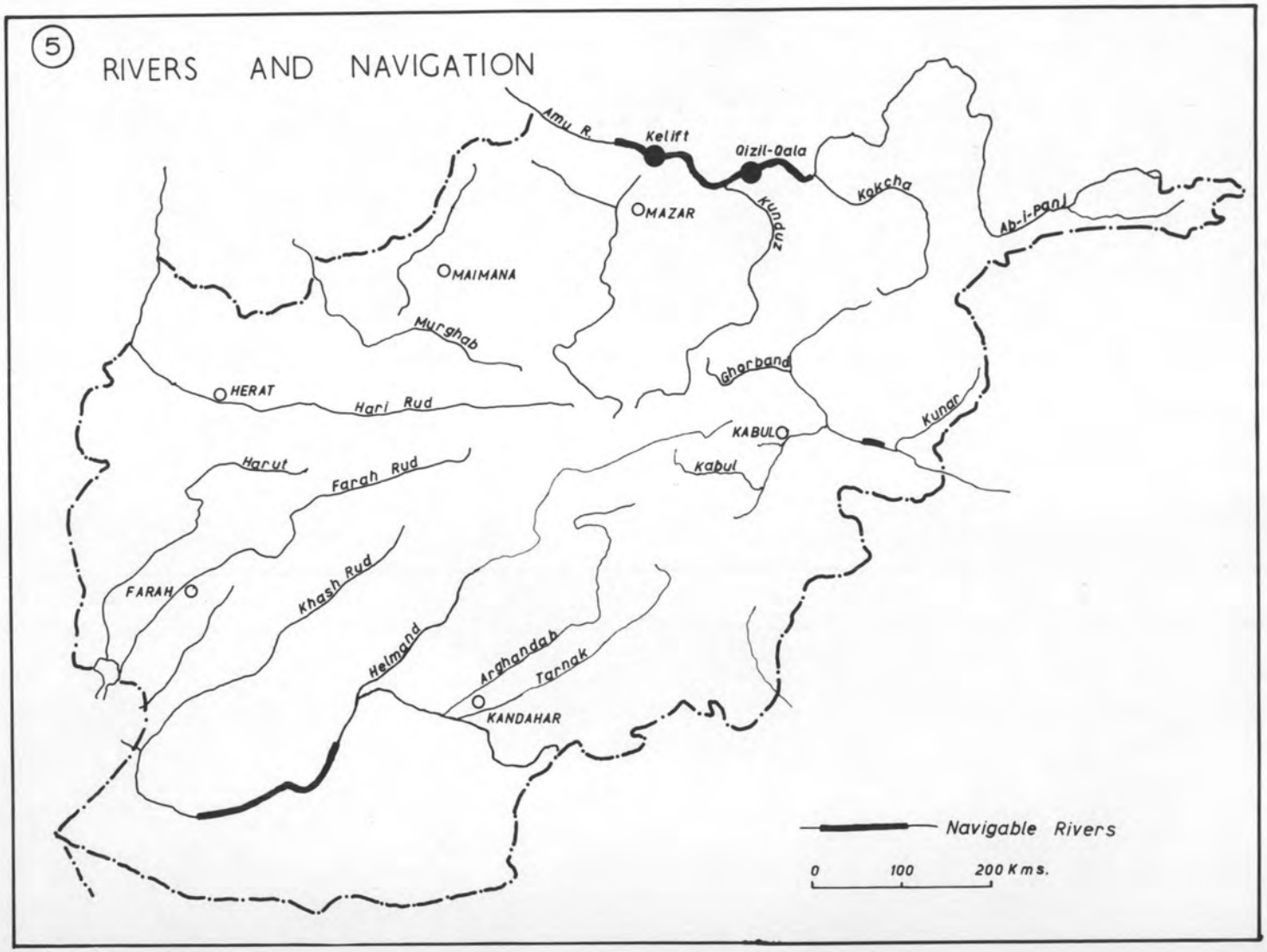
weeks during the coldest months. Summers are cloudy and hot, but the nights bring colder weather. Average mean temperatures for Kabul are 32°F in January, 68°F in March, 72°F in May and 51°F in November. Fog is almost unknown. Some 140 km. south of Kabul in Ghazni at 7,280 feet, winter temperatures drop to as low as -10°F or -15°F and snow may lie on the ground for three months.

(ii) The second category includes places at heights between 2,700 and 4,000 feet, such as the northern slopes of the Hindu Kush, the foothills of the Ghor mountains, Kandahar, and the lower valley of Hari Rud. These places have a hot summer, but their winter is not very cold. At Kandahar, farther south at 3,462 feet January extremes fluctuate between 70°F and 14°F, while July has a range from 108°F down to 35°F.

(iii) The Lowlands are areas below 2,700 feet, and include parts of northern Afghanistan, the entire south-western part and the lower Kabul valley. The summer temperature is extreme, reaching about 120°F in the sun, the nights and winter temperature are warm, rainfall is the lowest in the country. The northern Amu Darya is affected in winter by an Asiatic high pressure which brings rain, snow and frigid winds, while in summer temperature may reach 105°F. Seistan and the south-western piedmont receive no snow, and scanty rain in winter. There is in fact, almost no precipitation in the extreme southwest. It is oppressively hot in summer, warm in winter, and pleasant in spring before the sun burns off the wild vegetation. To the south-west and west there are also summer winds, where they sweep out of Inner Asia through the gap between the end of the Parapamisus and the Elburz mountain system from June to September, and carrying hot air, brown

dust and sand in a generally north to south direction which may reach a velocity of 100 miles an hour. This is also called the 120 days duststorms.(12) Thus topographical difficulties are made more severe by climatic factors. In the winter heavy snow blocks roads and damages road surfaces; in the spring, a fast runoff of vernal rains and melting snow due to denudation, flows from the mountains carrying enormous quantities of debris of different sizes and attacking all man-made structures with a force that must be seen to be appreciated.

IV. Rivers: (Figure 5) Unlike many other counties of the world, in which the rivers are the main source of transportation and communication, in Afghanistan they are an extra burden and obstacle which the development of communication especially transport on roads is facing, and has to be solved. Because Afghanistan is a land-locked country, moreover its rivers offer little advantage as a means of transport owing to their gradient in many regions and to their meandering deltaic characteristics in the lower portions of the country. In spring most streams are in spate, while during the remainder of the year they can not even dependably transport a dug-out craft for any distance. These ancient type ferry boats are used on the Kabul river and Khanabad river in the northern province. Other boats are made from inflated hides and their navigation is a very skilled art due to the swift current in the river. Afghanistan's main drainage systems are those of the Helmand and Amu Darya, and the Kabul rivers, but only the Kabul and its tributaries reach the ocean, by way of Indus river. From its source, near the Onai Pass, some fifty miles west of the capital,


5
RIVERS AND NAVIGATION
Amu R.
Kelift
Qizil-Qala
MAZAR
Kunduz
Kokcha
Ab-i-panj
MAIMANA
Murghab
HERAT
Hari Rud
Ghorband
KABUL
Kunar
Kabul
Harut
Farah Rud
FARAH
Khash Rud
Helmand
Arghandab
Tarnak
KANDAHAR
Navigable Rivers
0
100
200 Kms.

the Kabul river flows through a succession of tectonic basins at different levels which are separated from one another by barren ranges and are filled with ancient lake and river deposits. The river then passes Kabul and the hilly country of Mahipar, Laghman, Jalalabad and Dekah, finally breaking through the mountains north of the Khybar Pass. (about 352 km. of the Kabul river flows in Afghanistan). This river runs mostly through fertile and highly cultivated areas, but is largely unnavigable, only below Jalalabad and Laghman provinces does it become navigable and then only for rafts and flat-bottomed barges.

Second in size within Afghanistan is the Amu River, the ancient Oxus. The river rises at 13,400 feet in Lake Victoria (Zarkul) near the Wakhan corridor, among the glaciers of the Pamir plateau, where the Abi-Panj, as the rivers upper reaches are called, flows through deep gorges in tableland as high as 13,000 feet. Navigable after 968 Kms. the Amu Darya widens to 1,500 yards at Termez with depth between 10 and 30 feet depending on the season, and is used by Soviet vessels and Afghan traders in ports of Qizil Qala and Kelift. This river finally having travelled about a thousand miles from the Pamirs, flows across Soviet territory into the Aral Sea, and for 1,196 kms. forms the Afghanistan-U.S.S.R. border. These are only two tributaries from Afghan soil after the river enters the plains the Kokcha and Kunduz. All other streams are exhausted in the irrigation of land before reaching the Amu River. (Fig. 5)

Another river, first in length and volume, is the Helmand River which has a length of about 1,232 kms., starting from mountains 12,000 feet high

which lie 44 kms. west of Kabul and ending along the Iranian border in a series of ill-defined swamps in a low land whose lowest elevation is 1,526 feet in the Chakhansur basin.(13) (Hamuni Helmand Lake) For the first half of its course, the Helmand flows through rugged and barren highlands, and the gorges of Hazarajat, essentially treeless, roadless and uninhabited. It is not navigable in this course. Northwest of Kandahar it leaves the mountains and winds its way, in many places with a braided course, across the nearly flat desert, and is of no economic importance. Although below Grishk the Helmand is over 300 yards wide and as much as 10 feet deep, (Fig. 4) it is not used for navigation. Here irrigation supports a few expanding oases, green patches, in a vast expanse of sand. The Helmand and its tributaries drain all of south-western Afghanistan.

There are other important rivers, but none are navigable, the Hari Rud from which Herat derives its name, emerges from the Kohibaba range and flows past Herat to the west, finally turning north to form the frontier with Iran. The Murghab River rises south of the Tir-Bandi-Turkistan, enters more open country, as it passes the village of Bala Murghab and for a short distance serves as the Russo-Afghan border.

From the above summary we may conclude the following concerning the rivers in Afghanistan, according to their importance in the development of navigation and transportation.

1:- The rivers of Afghanistan are mostly short and swift owing to the topography of the country. Many streams cut through high ridges in

deep antecedent canyons. Rathjens has mapped four dozen of these deep gorges, while Griesbach has written of them as follows:

> ".....some are exceedingly narrow like the Yakhdara ..... south east of Maimana, scarcely wide enough to admit an unladen mule being driven through with considerable difficulty. I have seen elsewhere, as for instance the course of the Andarab, below Faughan where the river is in a narrow gorge and enclosed by vertical walls of limestone, some 1,500 feet in sheer height above the stream bed. Most of the rivers flow from south to north and hence from transverse valleys through the ranges of Turkistan. They have eroded gorges where they cross anticlines and formed wider valleys with side streams when on a syncline."

There are few rivers in Afghanistan which flow in flat areas. An exception is the Halmand river and its tributaries, but in these areas the economic activity and exchange of goods is poorly developed. Nowhere along the Helmand or its tributaries is there a town of more than a thousand people.

2: Rivers are also shallow owing to sand deposited over the years as a result of deforestation in the catchment areas. All rivers except those few which flow from the Hindu Kush itself diminish almost to nothing after the snow has melted. For example the Farah River which is some 704 kms. long, drains a large area south of the Hari Rud valley, flowing past the town of Farah it is finally absorbed in the Hamun, and in the summer, dries up completely. The same is true of the Surkhrud, Khashrud, Tarnak, Lohgar, Arghastan, Murghab or even Kabul (in its upper reaches) and

Helmand rivers. Because the central Helmand valley receives from four to eight inches of rainfall, all of it in winter, were it not for heavier precipitation in the mountains much of it in the form of snow, the river would scarcely contain any water in summer, in fact the lower course was dry for sixty two days in 1902.

3: Most important of all is the disposition of the rivers as a result of the topography of Afghanistan. Roads in all directions have to cross these rivers and streams several times. This factor was one of the most important barriers to the movement of materials and goods in the past, and constitutes serious problem in the development of transportation, especially construction of roads at present. Before the construction of new highway between Kandahar and Herat, Cressy wrote of the road linking these two cities as follows:

> "Three days are usually necessary for the 401 mile trip, but there are so many unbridged streams to cross that the bus has been known to require nine days. The prudent motorist will carry extra gasoline, water and preferably extra leaves for the springs of his car."

Similarly the main road to the north in one section, blasted out of the perpendicular walls of gorges, crosses the river more than seven times in a distance of eighty kms.

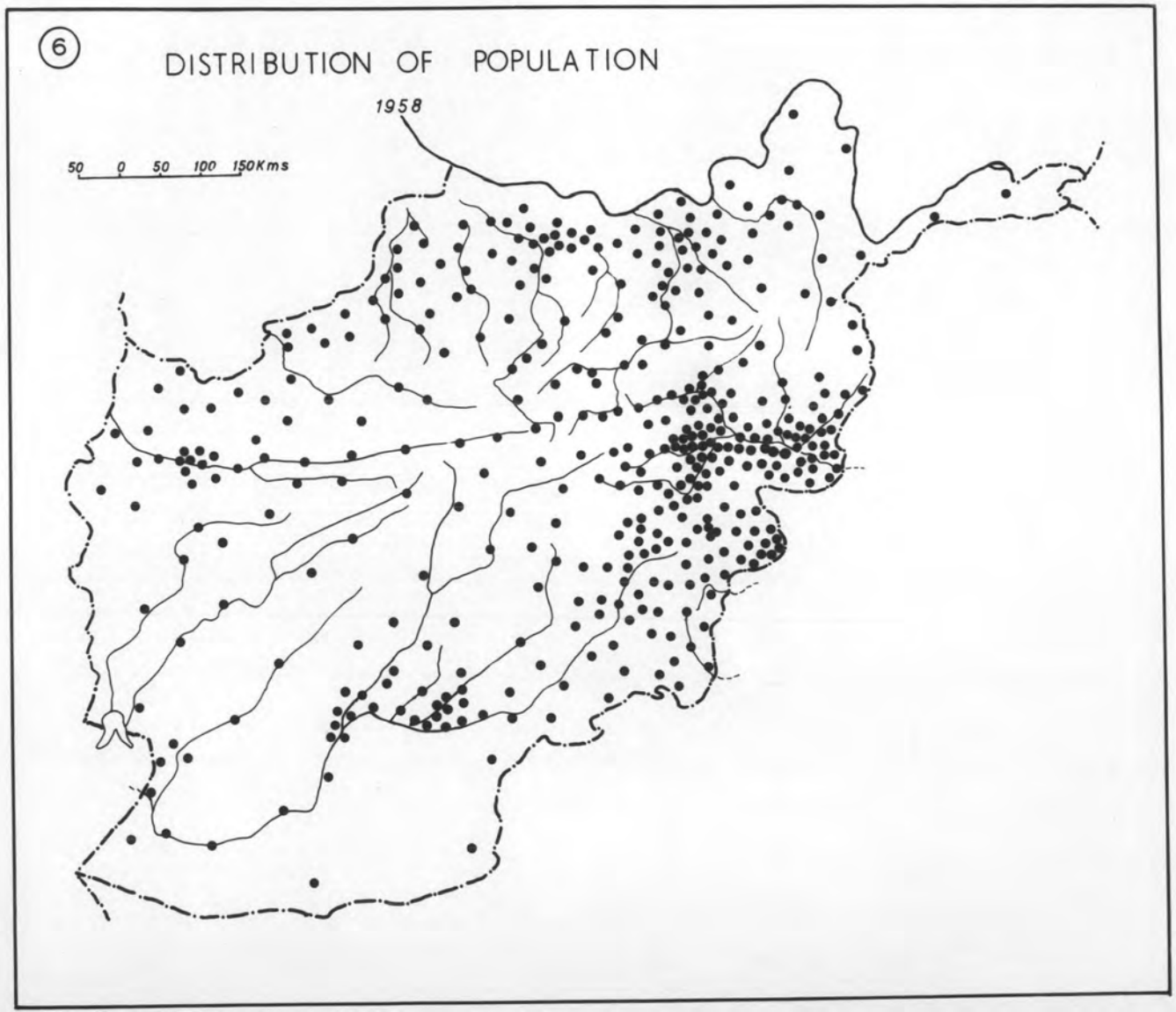
4: Another difficulty is the heavy transport of silt in almost all the rivers and streams of the country. More than 75% of the entire country is completely devoid of surface vegetation and forests are wilfully destroyed by the local inhabitants for the production of charcoal and firewood.

In the spring the fast runoff of vernal rains and melting snow carries enormous quantities of stones and sand which attack all man-made structures. Floods from melting snow resulting from a sudden rise in temperature often cause damage as bad as or worse than that wrought by torrential storms.

Incongruous as it may appear in this arid land, water is the worst enemy of road construction. Winter and spring rains falling upon barren and rocky soils are not absorbed to any great extent but run off rapidly and unpredictably. A stream which carries a flood in one season may carry only a trickle for several succeeding years. Hence it is almost impossible to determine safe minimum sizes for bridge openings and culverts without running into prohibitive expanses. A flood of large proportions has rock moving capacities almost unimagineable to one who has not observed the piles of alluvial debris left in the dry wash beds. Rocks up to three feet in diameter may be moved by flash floods with sufficient force to demolish almost any type of bridge pier. Furthermore, the drainage channels of an alluvial fan may entirely change these courses, ripping out a road where no need for preventative barrages or culverts could reasonably have been foreseen. Since most of Afghanistan's roads have to be built across alluvial fans to avoid the rough topography above and the shifting sands below them, the only practical outlook is to expect to have washouts and the ensuing delays from time to time. In fact, both American and Soviet engineers have adopted the practice of constructing concrete dips to carry roads across streams rather than build expensive bridges which may be wrecked by the load content of flash floods. These dips can be forded at low water and can be cleared of rubble with a few hours after

serious floods have subsided.(16) A German mission report stated that in June 1959 on the Kabul River with a period of nine hours the river rose 0.75 metre, while the discharge increased from 139 $\frac{m3}{sec}$ to 377 $\frac{m3}{sec}$ from snow runoff. This movement of silt, stones and boulders is rapidly filling up existing storage dams. The Sarobi hydroelectric power reservoir for example, when commissioned in 1957 had an average depth of 8 metres, today its management reports an average depth of only 4 metres, and many islands are appearing above the surface of the water.(17) It is hoped that the recent introduction of advanced road building techniques will result in roads and bridges better able to withstand these conditions.

V. Distribution of Population: Another problem which makes the improvement of transportation and construction of roads very costly is the distribution of population in Afghanistan. The winter snows from the mountains provide the water that is the lifeblood of Afghanistan; without the mountain streams the country would be desolate, for rainfall averages no more than 11 or 12 inches yearly throughout the country. The four principal river streams of Afghanistan divide the country roughly into four sections and all the main factor in determining the location of the centres of population. Regions of fairly heavy population density are few in number. (Fig. 6) They include Kabul and its vicinity, the river valleys in the general region of Kandahar, the Hari Rud valley and Herat, and the strip between the northern slopes of Hindu Kush and the Amu Darya valley. The population density of 24 persons per square mile for Afghanistan compared with 24 for Iran, 29 for Texas and 50 for United States, and anyone who has


6
DISTRIBUTION OF POPULATION
1958
50 0 50 100 150Kms

travelled extensively in Afghanistan or flown over large areas of it by plane would be agreeable that the country is very sparsely settled. (The total population of Afghanistan was about 15 millions in 1965). Not only are there vast barren lands in the south and southwest as well as the remainder extensive mountainous areas such as Badakhshan, Paktia, Nuristan, large parts of Qataghan, and all of Wakhan, and Pamirs, that are unsuitable for settlement, but even in the populous valleys and river basins, towns and large villages are few and far between. For instance the distance between the four main populated centres of Kabul, Kandahar, Herat and Mazarisharif is not less than 700 Km., separated from each other by natural barriers like mountains and deserts (see Fig. 4). The average density figure however conceals extremely wide differences from place to place. From the standpoint of population distribution the most significant region of Afghanistan is the south-eastern part of the country, specifically in the Kabul valley and in other valleys opening eastward. Here is located the largest city, Kabul with some 500,000 inhabitants, the seat of the national government. This region accounts for only 10 percent of Afghanistan's 270,000 square miles, and contains more than one quarter of the total population, and is therefore, one of the more closely settled areas in the country. The urban centres fall into three general groups with great distances between each other (Fig. 3). Towns of more than 75,000 people (Kabul, Kandahar, Herat and Mazar), towns of between 25,000 and 75,000 (Andkhoi, Jalalabad, Maimana, Qunduz and Tashqurghan) and some 20 towns of about 10,000 people. The larger urban centres owe their size to their

location on the bank of a stream or river at a major intersection of trade routes, and with few exceptions, the population levels of these trading centres have remained unchanged for decades.

Shortage of labour: One method of assessing the level of economic development is to examine the degree to which agriculture on the one hand and mining, manufacturing, commerce, transportation and various services, on the other hand provide employment for the people. In an agricultural and nomadic country such as Afghanistan however, more than 85 percent of the population are engaged in agriculture and pastoralism. Creating the problem of shortage of labour for industrial development. It is very difficult to persuade countrymen to stay in industry since they find it very hard to adapt themselves to a settled life in an urban community. Curiously the lack of considerable rural-urban migration is one of the country's big problems, for it is already difficult to find workers for new projects. The problem is more serious in the field of communications and road construction which requires a large number of workers.

In 1956 (the beginning of the First Five Year Plan) when the government envisaged big road construction projects, the problem of labour became more and more serious. To meet this problem the government established a "Work Force Army" of more than 20,000 men to achieve the objectives of the plan. Another important factor which has retarded development in the past and is proving a serious bottleneck today, is the acute paucity of professional and technical skills at all levels. Experience has proved that development of human resources has to keep pace with, and in the case of certain crucial sectors has to be ahead of investment in material resources. Education and

training were therefore an integral part of practically every single project or programme (Chapter 3 and 4) included in the plans. As a result, apart from a general extension of educational facilities a real effort has been made to overcome the existing shortage of manpower and professional skills, and considerable attention has therefore been given to the expansion of technical, vocational and professional education.(18)

VI. Finance: Another problem in the development of communication which is of no less importance than those already mentioned is the problem of internal finance to meet the many needs posed by the underdeveloped state of the country's economy. The national income is very low and the revenue of the country depends on a few agricultural products the price of which is variable every year for economic and political reasons. Every sector of the economy calls for investment, so that the most pressing needs must be distinguished and top priority be given to the most important projects and programmes. In addition the technological lag appears so great, and the need for large-scale, deferred-amortization projects so vast, that only national and supranational agencies can attempt to underwrite the capital intensive projects so necessary to bring such development into being. In the case of a nation so remote and resource-poor as Afghanistan, lacking moreover the advantages of well-established ties with political or economic blocks, it is inevitable that the government take the lead in development, using its established authority to direct and control the utilization of the resource-base and of any created or borrowed capital surpluses. Neither domestic nor foreign capital can be expected to invest in Afghanistan on a scale sufficient to provide the desired rate of economic growth. In the

case of transport and construction of roads this problem will be remarkable if we compare the Afs. 15 billion national income of the Afghan government with the Afs. 6 million cost of one kilometer road construction, in a country so vast and the needs for improvement of communications very urgent.

The economic changes which Afghanistan has undergone in the last thirty five years are reflected in the evaluation of its money and banking system and the difficulties this system now faces. Until 1932 the sale and purchase of gold and silver bullion and the exchange of currency was handled by individuals over whom the government exercised no effective control. The situation was radically changed in 1932 with the establishment of Banki Milli Afghan, which also assumed responsibility for the country's currency and its value outside the country. In 1938 the national assembly authorized the Ministry of Finance to hold gold, silver and foreign exchange as a reserve equivalent to half the value of the notes in circulation. In 1939 Da Afghanistan Bank the first government bank was opened to act as a fiscal agent for the Ministry of Finance. At any rate, it can be safely stated that the conditions which prevailed in Afghanistan from 1929 to 1946, during which period the Afghan government concentrated upon maintaining a stable matrix for laissez-faire enterprise, have gone the way of the prewar pound sterling.(19) Beginning in 1946 with the hiring of Morsison Knudson Afghanistan Company and especially after 1950, the Afghan government has assumed primary responsibility for initiating and coordinating economic development projects in the country.

Despite the foreign aid which Afghanistan has been receiving in recent years, the development projects of the First and Second Five Year Plans (1956-67) have involved enormous outlays by the Afghan government itself. By 1958-59 actual government expenditures for both developmental and ordinary purposes had exceeded Afs. 1.6 billion or four times the level of the first post war years. Estimated public expenditures were to surpass the Afs.2billion level by 1960. Although the actual public revenue has exceeded actual expenditures in recent years, the government has borrowed heavily from the State Bank founded in 1939. The outstanding balance of loans, including interest due was Afs. 1.4 billion on March 1960. To this must be added an outstanding public foreign debt of $115,456,385 at the same date. The total public debt amounted to some $186,972,677 of which slightly over 60 per cent represented foreign indebtedness. During the fiscal year which ended on March 1965 the government tried to reduce its reliance on loans from the banking system, through the introduction of measures to increase revenues and to limit public sector expenditures to the level of 1965. Credit to the public sector amounting to Afs. 4,604 million at the end of October 1964 was over 70% larger than the end of October 1963 and marked a rise of 13% since the end of June 1964 alone. An exchange reform was designed to reduce cost-price distortion which have resulted from depreciation in the free market rate of the Afghani and to provide increased incentives for the export of Karakul and Wool.(20)

The following table summarises the financial situation of Afghanistan before the five year plans.

TABLE 3: Afghan government finance, 1949, 1955 (in million Afghanis)

Fiscal year (a)	Revenue	Expenditure	Balance	State Bank	Loans	Investment by public	Cash Holding
1948-49	318	400	-81	74	0	0	-7(b)
1949-50	387	462	-74	81	0	0	7
1950-51	473	670	-196	109	89	0	2
1951-52	549	713	-165	41	125	0	2
1952-53	614	830	-216	86	153	0	22
1953-54	698	838	-141	90	74	0	23
1954-55	744	1,141	-397	200	197	6	0

(a) March 21-March 20

(b) Minus sign means decrease in cash holdings

SOURCE: Government of Afghanistan, Ministry of Finance.

In table 3 the gradual or rather slow increase in the revenue is shown while the rise of expenditure is very sharp and remarkable. The gap between these two figures became wider with the establishment of First Five Year developmental plans in 1956, and Second plan in 1962. The second Five Year Plan (1962-67) envisaged a total outlay of Afs. 44,500 million which was more than three times the actual expenditure incurred during the first plan (1956-62). Of the total outlay investment amounts to Afs. 31,353 million, representing about fourfold increase over the actual of the first plan. (see table 4)

TABLE 4: Comparison of outlay during Two Plans (in million Afghanis)

	First Plan (actual)	Second Plan (estimated)	Percent increase over the First
1. Investment	8,371	31,353	374
2. Ordinary	6,305	13,147	208
Total	14,676	44,500	303

SOURCE: Government of Afghanistan, Second Five Year Plan p. 10

The following table shows the scheme of financing the total Second Plan outlay.

TABLE 5: Pattern of financing the Second Five Year Plan (1962-67)

	Amount (million Afs.)	Percent of Total
1. Domestic revenues	15,000	33.8
2. Sale of wheat	100	0.2
3. External assistance	24,741	55.5
a. Consumer goods	5,663	12.7
b. Economic, technical etc.	19,078	42.8
4. Private participation in investment	268	0.6
5. Loans etc., to cover the deficit	4,391	9.9
6. Total	44,500	100.0

SOURCE: Government of Afghanistan, Second Five Year Plan, P. 13

In the present efforts, to raise the level of consumption above subsistence and to expand Afghanistan's productive capacity, the basic problems other than those connected with agriculture and stock raising, involve manufacturing and foreign trade. To this we may add the recurrent political troubles over transit trade, foreign exchange problems, and a low per capita national income. For instance the relatively productive urban trades have produced in 1959 an annual per capita income of about Afs. 2,700 or $65. Agricultural per capita income was $52 in 1961.

Moreover the country is far from self-sufficient. More than half of its textiles and sugar requirements, and all of its steel and chemicals are imported, although a variety of consumer articles are fashioned from local copper, scrap iron and wood. Like most non-industrialized countries, it must import all its machinery and motorized vehicles. Therefore with few natural resources, at the present time Afghanistan depends for most of its consumer goods (except food) and for all producer goods on imports. It has a few specialized export industries which in part compete with domestic consumption for the scarce agricultural resources. Exports provide for badly needed imports and a substantial proportion of the national cash income. Thus government revenues and the amount of exchange between city, village and nomads depend on exports.(21)

Agriculture provides 72 percent of the national income and employs 85 percent of the country's working population. The remaining 28 percent of the country's income is more or less equally divided between industry, trade, and services, forestry and miscellaneous sectors. (see table 6).

Much of the production is for subsistence requirements directly without being exchanged in the market. Exports probably make up the largest element in the national cash income.(22) But the unstable value of exports reflects a shift both in volume and in prices abroad. Imports have been marked by a steady upward movement, in line with the demands of the economic development programmes and the upward trend in import prices. (see table 7)

According to figures published by the Ministry of Planning, Afghanistan's balance of payments for the year 1964-65 was characterised by a marked loss of convertible currency. Official foreign exchange receipts for the same year amounted to $40.8 million, a decrease of about $3.5 million from the 1963-64 figure. Convertible currency earnings fell from $17.5 M. to $12.6 M.

TABLE 6: Afghan net national product estimated value, 1953, 1954

	Million Afghanis	Percent of total
Agriculture	9,000	72.0
Wheat	4,085	32.7
Fruit	1,020	8.2
Furs, Hides, Wool	680	5.4
Other Livestock	1,000	8.0
Dairy Products	1,000	8.0
Others	1,215	9.7
Industry	800	6.4
Trade/services	1,000	8.0
Fuel (wood at present)	800	6.4
Miscellaneous	900	7.2
Total	12,500	100.0

SOURCE: Ministry of Finance, reproduced from United Nations, "Economic survey of Asia and Far East", 1954, p.57.

Total imports (less commodity loans and grants, but including U.S. technical assistance of $12.5 M. in 1963-64 and $11.2 M. in 1964-65) rose from $124.3 M. in 1963-64 to $142.1 M., an increase largely attributable to the import of capital goods for development purposes from U.S.S.R., Czechoslovakia, Poland and China. Another cause of the rise was the increase in imports of consumer goods. Export earnings fell from $73.9 M. in 1963-64 to $69.7 M. in 1964-65, in spite of bigger shipments of fruit to India and Pakistan. Development loans and grants amounted to $75.3 M., compared with $65.4 M., in 1963-64.(23)

TABLE 7: Afghanistan's foreign trade by country for 1965-66 in thousand U.S. dollars and thousand Afghanis

EXPORTS	$	Afs.
U.S.S.R.	17,525.5	1,258,684
U.S.A.	10,972.7	788,058
India	4,870.8	349,822
U.K.	12,283.2	882,183
W. Germany	5,524.2	396,749
Pakistan	9,649.6	693,032
Czechoslovakia	1,151.0	82,667
Other Barter Countries	7,407.0	531,967
Total Exports	69,972.1	5,025,400

TABLE 7: (continued)

IMPORTS	$	Afs.
U.S.S.R.	18,154.6	1,303,867
U.S.A.	3,740.4	268,637
India	4,988.7	358,286
Japan	7,696.6	572,377
Pakistan	3,989.6	286,532
W. Germany	3,722.3	267,336
U.K.	2,909.4	208,953
Czechoslovakia	3,918.3	218,412
Other Barter Countries	1,657.7	120,349
Other Countries	5,442.6	390,886
Loan and grant imports	74,473.7	5,348,702
Total Imports	130,984.9	9,407,337
Total foreign trade excluding loans and grants	126,483.3	9,084,035
Total foreign trade including loans and grants	200,957.0	14,432,737

SOURCE: Middle East Economic Digest, October 1966, p.17

Finally Afghanistan's acute shortage of foreign currency has been brought about by the large amount of money in circulation as a result of big construction projects, and the consequent demand for consumer goods which have to be imported. Foreign aid so far received during the first two years of the Second development plan (1962-67) totals some $142.2 M. of

this sum. The U.S.S.R. has contributed $86.1 M., the U.S.A. $44.65 M., West Germany $1.8 M. and Czechoslovakia $1.21 M. The total amount of foreign trade assumed to meet the needs of the plan was estimated at $734.15 M., of which the U.S.S.R. has committed itself to $330.65 M., the U.S.A. $350.32 M., West Germany $44.01 M., and Czechoslovakia $6.33 M. Total foreign assistance received from these and other sources during the first plan (1957-62) amounted to slightly over $210 M.

The bulk of the Soviet aid has gone into industry, power, irrigation and roads. Projects aided by the U.S.A. include the Helmand valley irrigation scheme, the building of roads and air fields. Assistance from West Germany has so far been utilised mainly for the improvement of Kabul's electricity supply. In addition a $28 M. loan from China, and a $1.07 M., loan from United Kingdom must be taken into account.(24)

The results of these extensive foreign aids and loans is far from the subject of this thesis, but the backwardness of Afghanistan from the financial point of view is worth stressing. We have seen the limited revenue of the government with its dependency on export of a few agricultural products, and the low per capita income of the people of Afghanistan, which is not sufficient for the economic development of the country, a country that in every sector of the economy requires improvement and needs a large amount of capital investment. To develop communications the needs are desperately urgent, and its development extremely costly. Thus the lack of adequate financial resources are more serious in this sector of the economy and the use of foreign money is extensive. Indeed, the annual average of 200 km. of roads constructed during the first and second development plans

is a remarkable achievement in view of the financial and environmental difficulties encountered.

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CHAPTER THREE

ROAD TRANSPORT

There are few countries of the world that lack both water and rail transport facilities as does Afghanistan. All imports must come by air or be transported over long and precipitous overland routes. The nearest port for the transfer of heavy cargo to Afghanistan is Karachi in Pakistan. From Pakistan shipments are moved to to the railhead on the Afghan-Oajustab border west of Peshawar, thence by road via the Khybar Pass to Afghanistan. Since Karachi is the main sea port for Afghanistan any improvement in access to the sea depends on favourable relations with Pakistan.

Similarly, there is no railway in Afghanistan, because of the mountainous nature of the country and distribution of population (see Chapter 2). The development of railways would be very costly. Political events in the eighteenth, nineteenth and early twentieth centuries were also some of the most important obstacles to the construction of railways. During the last quarter of the nineteenth century the British built some railways to the boundaries of Afghanistan, notably the Quetta-chaman railway and also the railway between Peshawar and Landi-Kotal near the Khybar Pass. During the same period the Russians developed their railways in Central Asia and extended many lines to the neighbourhood of Afghanistan's northern boundaries and even reached them. For example the Bokhara-Termes and Stalinabad railway line. Both British and Russian railways were built for strategic need, and as a result both of these powers kept close watch on each other's influence in Afghanistan. Thus neither of them could build railway lines through Afghanistan. (Fig. 13).

The unfavourable external circumstances, as far as transportation is concerned, were aggravated by two internal obstacles. In the first

place, nature and climate are hostile to any road builder in Afghanistan; he must overcome high intervening altitudes, or narrow rocky gorges or hot dusty and inhospitably deserts. Also, despite its great elevation, the Hindu Kush the main mountain range of Afghanistan which completely separates the Indus and Oxus River systems, is traversable at several points, partly because it is deeply penetrated by river valleys on both sides and partly because it consists of only a single main range. It is remarkable that the Passes over this range are much more intimately related to the drainage pattern than they are in any other section of the border mountains. Proceeding from east to west, the main instances are as follows.(1)

(a) The Dorah and nearby Mandal Passes between the Upper Kunar river in Chitral and a headstream of the Kokcha. This route bypasses Kabul, but as it reaches altitudes of between 14,000 and 15,000 feet, the road is only open during part of the year.

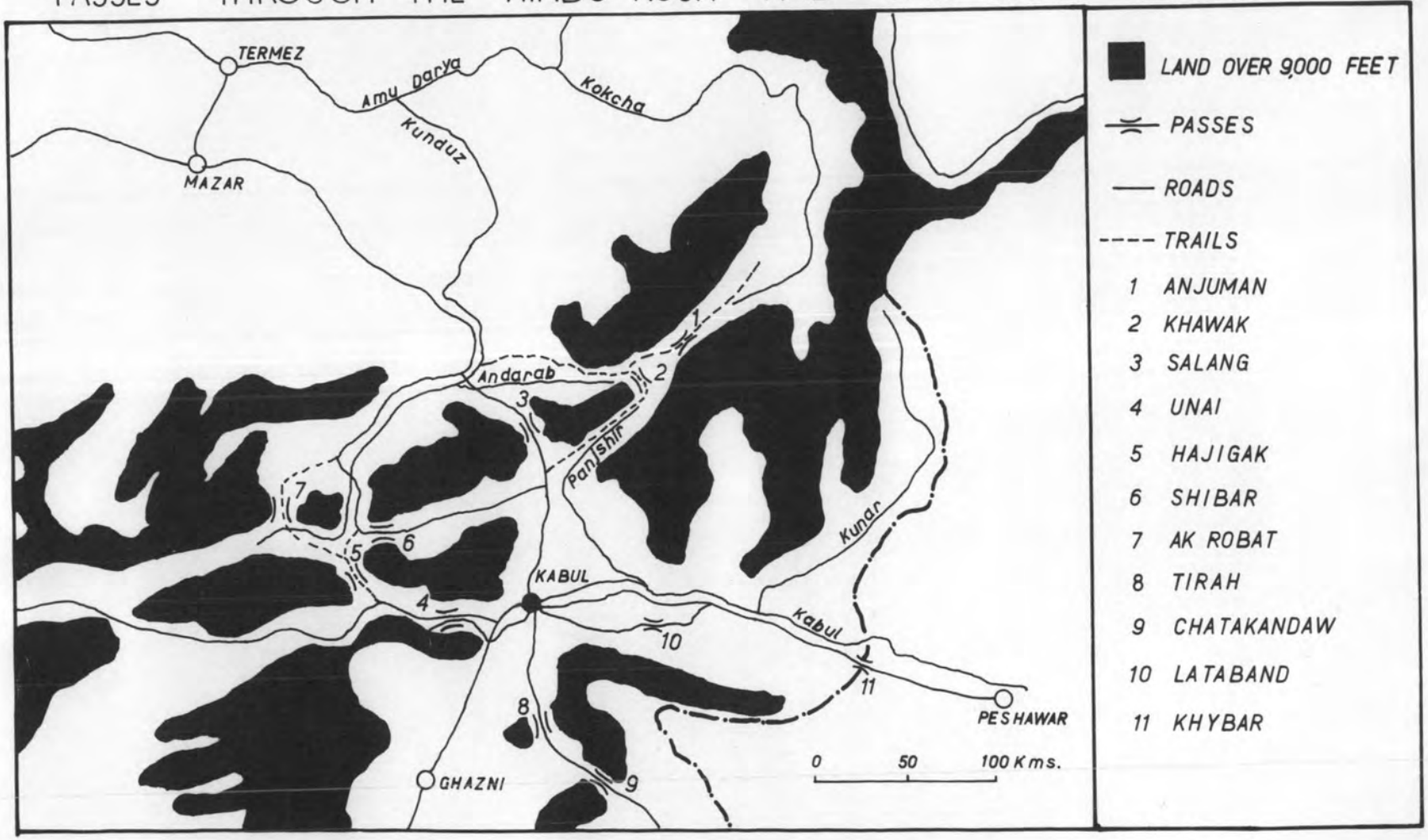
(b) The Khawak Pass, of 11,650 feet, is approached by the Panjsher tributary of the Kabul River and provides access to the Andarab which feeds into the Kunduz.

(c) The Salang highway crosses more directly from Charikar to Doshi by means of a tunnel through the main chain, which was only completed in the late 1964's.

(d) From Charikar a road leads westwards up the Ghorband valley and over the Shibar Pass to the Vale of Bamian at a height of between 8,000 and 9,000 feet. From here it is possible to go down the main Kunduz stream to Doshi and beyond.

7

PASSES THROUGH THE HINDU KUSH AND SPIN GHAR RANGES



(e) Alternatively, a caravan route leaves the vale of Bamian towards the west by the Bakkok Pass, skirting the northern flanks of the Kohi-Baba, and then turns northwards over the Akrobat defile to the sources of the Balkhab, which it follows down to the plain at Mazari-Sharif.

(f) Instead of approaching the mountains from Kabul by way of the Ghorband Valley and Charikar, it is possible to move westwards from Kabul up a tributary of the river of the same name and over the Unai Pass to the sources of the Helmand. From this point, the Kohibaba can be crossed by the Hajigak Pass to Bamian. Alternatively, the Kohibaba can be rounded on its south-west side to gain access to Daolatyar on the Hari Rud, which can thence be followed downstream to Herat. As a link between Herat and Kabul it is of secondary importance to the more roundabout but much lower way through Farah, Kandahar and Ghazni.

Condition and development of roads before World War II

Before 1920 nearly all communications in Afghanistan, and between Afghanistan and foreign countries were done by camel caravans and other animals. The construction of modern roads started after World War I. Most of the roads between Kabul and Kandahar, and Kabul to northern Afghanistan were built after 1920. Kabul, court of the kings of the Afghan Durrani tribe has risen toeminence during the past 200 years, and is now the main exporium of trade and the focus of the country's transportation. From Kabul roads radiate to the four points of the compass, of which the most important is the northern road running up from India and Pakistan through the Khybar Pass to Kabul, thence through the gorges of the Hindu Kush to

the plains of northern Afghanistan.(2) But the great difficulty about all roads in Afghanistan, and particularly those radiating from Kabul, is that they are liable to be blocked by snow for several weeks in the year. Kabul stands at a height of about 6,000 feet in a broad open valley, and all exists from it are over passes. The road to the north crosses the Shibar Pass; the west road crosses the Arghandeh Kotal just outside Kabul and then rises again to the Unai Pass; the road to Kandahar crosses some very high ground for scores of miles before reaching Ghazni. The south road up the Logar and on the Pakistan border in Khost and Waziristan must face the Altimur Pass (11,000 feet) before dropping down to Gardez and the lower lands of Katawaz beyond. Only in the case of the road eastward to Jalalabad and Peshawer does there seem any possibility of the problem being solved.

When, however the Afghan Kingdom was gradually consolidated under the Amir Abdul Rohman and Habibullah, and the advent of the motor vehicle made swifter and easier travel desirable, it became increasingly necessary to open up road communication which would carry fast-moving traffic and be passable for as much of the year as possible. Abdul-Rehman connected Kabul and Kandahar by a good fair-weather road; Habibullah made the Peshawar-Kabul road fit for motor traffic; it was to Amanullah, who ascended the throne of Afghanistan in 1919, to perform that far more difficult feat of carrying a road through or over the Hindu Kush. Therefore King Amanullah (1919-1929) was the first to attempt to find a passage for wheeled traffic through the Hindu Kush, to connect northern and southern Afghanistan by a direct route.(3)

He drove his cart-road up the Ghorband Valley over the Shibar Pass and down its western slopes and ravines till it reached the river of Bamian, at a point where turning northward it enters the great gorge of the Darrai Shikari, that stupendous ravine which cuts right through the main ridge of the Hindu Kush. But Amanullah's engineers turned back as others had done before them, from that fearsome rockbound way and took their road up the Bamian river, and Akrobat Pass to the summit and there they left it unfinished. A few years later Amanullah tried again, and this time entrusted the task of constructing a road to Russian engineers. They surveyed all other possible routes and finally chose the Salang ravine, but the revolution of 1929 put an end to their efforts. Thus it was that when Nadir Shah ascended the Afghan throne (1 30-33) the problem of how to connect the Oxus and the Indus Valleys by a direct motor road was still unsolved. Political necessity the prescience of a born administrator, and a real knowledge of the country he was dealing with, furnished King Nadir Shah with an understanding of the problem confronting him and a spur to drive him to the completion of a most formidable task. The Key to the problem was the fact that the Shibar Pass, is much lower than the main ridge of the Hindu Kush to the north of it, and the Kohibaba range to the south. Once across the Shibar (which is rarely snow bound in winter) the route runs downhill all the way to the plains of Turkistan. It was a much better way, but it was by no means an easy road to survey or to build. For nearly forty miles the river runs through a series of most formidably gorges and no man had ever traversed them from end to end. The road was however completed in 1933 a few months before King Nadir Shah's death.

The opening of a motor road across the Hindu Kush has stimulated internal traffic between northern and southern Afghanistan, and has become vital to the economic and political integration of the country. The distance is 686 Km. between Kabul and Mazari-Sharif on this well-graded gravel road over the Shibar Pass which is the lowest Pass directly through the mountains.

TABLE 8: Comparison of distanced from Kabul over Hindu Kush

Pass	Altitude (feet)	Distance from Kabul (Kilimetres)
Khawak	11,640	396 to Khanabad
Shibar	9,800	686 to Mazar-i-Sharif 575 to Khanabad
Salang	12,000	445 to Mazar-i-Sharif 334 to Khanabad
Unai	11,000	
Hajigak	11,000	563 to Mazar-i-Sharif via Bamian
Akrobat	10,255	

Source: Norton Ginsburg, "The Pattern of Asia" London, p. 689.

Also, it is obvious that by way of the circular road through Kandahar and Herat, the gradient is much easier for the highest elevation reached is merely 6,000 feet, but the distance between two cities on this route is 2130 kilometres. Daily traffic north of Charikar on the Shibar route has been estimated from 100 to 200 vehicels,(4) but now with the construction of the new highway, the beginning of trade with Russia, and expansion of production and industries it is estimated to be more than 1,000 vehicles a day.

The second road which is of chief interest and importance is the Peshawar-Kabul road. Before 1937 this was the only old road which followed

the historic route used mainly in the first and second Afghan wars from Jalalabad via Gandomak, Jagdalik and the Khurd-Kabul Pass. It was also King Amanullah's ambition to have a direct road following the course of the Kabul River, but the upper part was considered too difficult, and British engineers who surveyed the country in 1925-26 advised against it. So the previous road over the Lataband Pass was selected and constructed mainly by German engineers. This road was opened to traffic in 1938, the road from Kabul then went over the Lataband Pass and joined the original road not far from Jagdalak.(5) In 1945 however the lower portion of the road running from the foot of the pass along the Kabul River to Jalalabad was opened, and the old road has now been entirely abandoned. The journey which was formerly very difficult to make in one day became possible in seven or eight hours after 1945, and can now under favourable conditions be done in two or three hours. The Afghan government however have all along been hankering after the direct alignment through what is known as the Tangi-gharu, and during the war a Polish engineer offered to carry out this project, which he maintained feasible. The Afghans jumped at the offer, and a considerable amount of work was done, in spite of the fact that the Afghans had only the most primitive machinery and few explosives. Two out of three tunnels were constructed in most precipitous country, leaving only the last tunnel which was some 200 meters long, to link up the two ends of the road.

Development of Roads after World War II

Since the years between the two world wars and mainly since the Second World War the Afghan Government has worked with an indefatigable energy

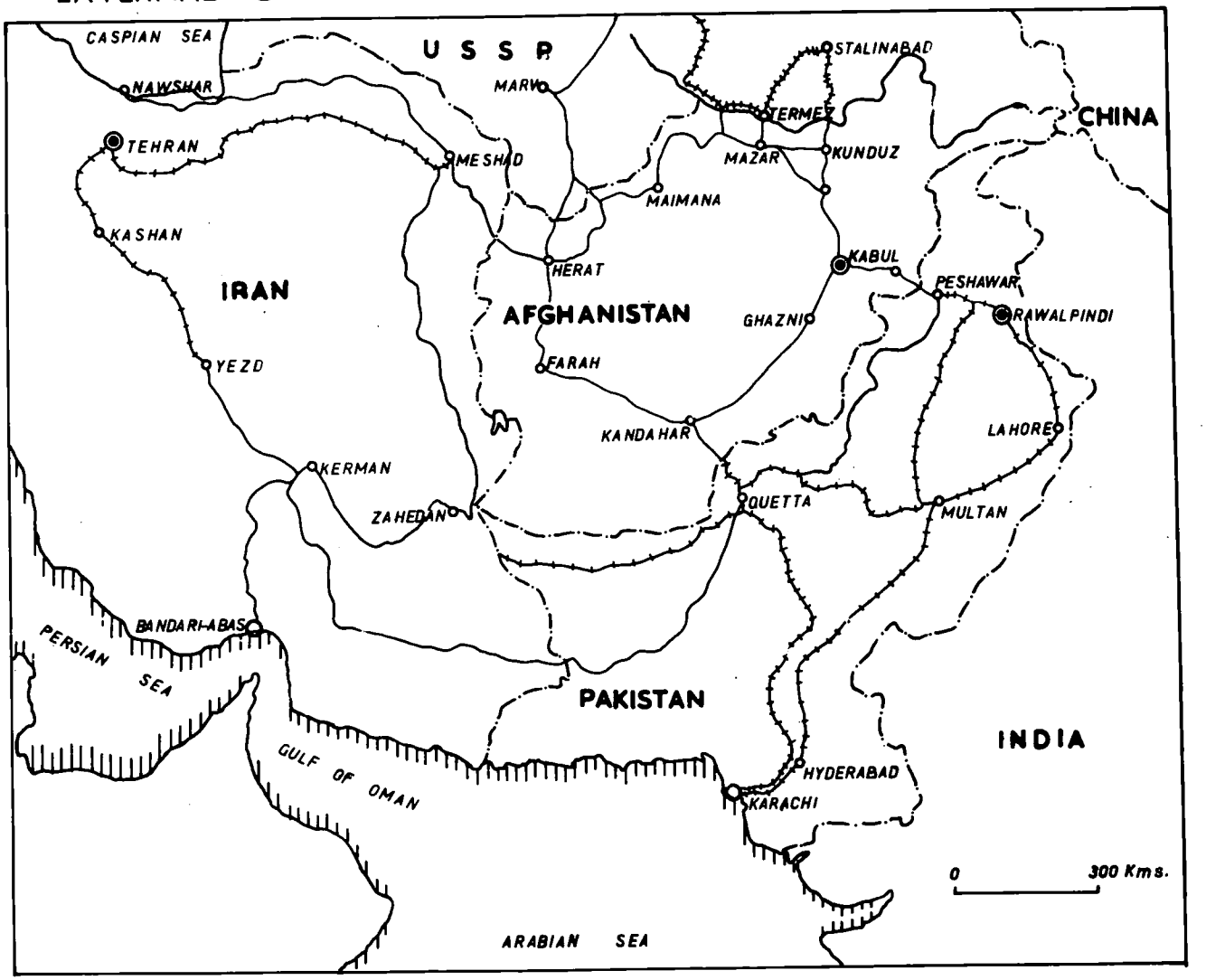
to develop the network of roads in the country. The target was first of all to create at least a few big roads to connect the different major provinces and centres of population. The government wish to secure better communications with the neighbouring countries, to facilitate the external trade of Afghanistan. Since 1930 the government has had contracts for road construction with both German and American engineers and road building companies.

During the Second World War, when imports were severely restricted but exports of Afghan lambskins to America were still possible, the Afghan government built up a considerable dollar reserve, a good part of which they decided to expend on improving communications. A contract was entered into with the American firm of Murison Knudsen to construct a good road from the Baluchistan border to Kandahar and subsequently to re-align and improve the main road from Peshawar to Kabul, but the estimates originally made were too optimistic, and the funds immediately available have only been sufficient to carry out the road to Kandahar. Thus the new roads before the beginning of the five year plans (1956) in southern Afghanistan were mainly built by American Murrison Knudsen Company.

External links: Russia sealed here control of the Oxus frontier by the construction of the Trans-Caspian Railway, which left Krasnovodsk in 1880 and reached Samarkand in 1888. The completion in 1905 of the railway link from Orenberg to Tashkand appreciably shortened the journey from the Russian capital to this frontier line. There are several places of entry into northern Afghanistan from Soviet Turkistan; along the Hari Rud at Zulfiqar

(13)

EXTERNAL COMMUNICATION BY LAND



by railroad from Meru toward Herat, the line ending at the border of Kushk; along the Murghab River between Marochaq and Bala Murghab, and at several points along the Amu Darya, notably from the Soviet towns of Kelift, Termiz, and Qizil-Qala (Shirkhan Bandar), all of which have rail connections on the Soviet side of the River.(6)

In Iran's eastern provinces two towns are starting points for entry into western Afghanistan. From Mashad a 420 km. long motor route runs to Herat and somewhat longer route goes by way of Zulfiqar. These roads may receive increased traffic in the near future as a result of the Afghan - Iranian transit agreement signed in the spring of 1962. Coming out of the town of Nusratabad in Persian Seistan twenty miles from the lower Helmand River and the Afghan border, a caravan route lead to Farah, which is connected by road with Herat, Girishk and Kandahar. (Fig. 8).

The equivalent of the Trans-Caspian Railway on the east side of Afghanistan would be the line along the Indus. But from here the frontier can only be approached by a few extended roads and railways which pass through virtually unadministered territory and require constant protection. Between the narrow-gauge railways up the Tochi valley to Banu and that of the Gomal River to Tank, for example, lies a vide tract of tribal country, Waziristan, which is a virtually independent "Switzerland" of the frontier zone.

The British administration made a virtue of necessity, and used this frontier tract as a valuable training-ground for the regiments which had to police it. At the same time, Afghanistan considered that her best trading prospects, as well as the richest opportunities for her money-

lenders, lay eastwards, and her main links with the outside world before partition of India in 1947 were through the Khybar and Bolan passes. These routes outflank the wide eastern frontier zone, the one on the north, the other on the south, and open the way along easy roads to the Afghan Capital Thus two roads lead into Afghanistan from Pakistan. On the east the age-old entrance to Afghanistan is through the Khybar pass from Peshawar in Pakistan along a modern highway, which leads to Jalalabad and to Kabul. Next in importance is the road from Quetta to Kandahar.

Inside Afghanistan the so-called "great circle" route leads from Kabul through Ghazni to Kandahar, thence to Grishk, Farah and Sabzwar to Herat. From Herat the route continues north-east through the mountains of Parapamisus (Sabzak Pass 2,500 metres) to Maimana, then to Andkhoi, Shibarghan, Balkh, Mazari-Sharif and Tashgurghan. There one branch continues east to Kunduz, Khanabad, Fayzabad and Jurm, and Wakhan Corridor. (Fig. 8). The main road leads south-east through narrow gorges and valleys to the present Salang Pass and former Shibar Pass, thence from Shibar eastward through Ghurband Valley to Charikar or through Salang Valley and Awlang to Charikar, and from there southward to Kabul. The main direct road between Kabul and Herat runs east-west through the rugges central mountains. It is motorable only with great difficulty through Onai Pass, down in the Obi and Herat. The northern branch of this road continues by the Hajigak Pass (3,700 M) to the valley of Bamian and from there again to northern Afghanistan. But the highest passes from 4,000 to 5,000 M or more are in the north-east on the roads connecting Nuristan

to Badkhshan and the Pamirs.(7) Another, further east between Kabul and northern Afghanistan, which is partly motorable follows the Panjsher Valley through Kaoshan Pass, or through the Khawak Pass to the Andarab Valley, still higher there are roads between Nuristan and Badakhshan and from Pamires and the Chinese border to Wakhan and Badakhshan, which are not motorable and not even useable by animal caravans throughout the year. The same is true of roads in the forested and mountainous province of Paktia.

Accelerated development of the nation's transportation system took place during the first (1956-62) and second (1962-67) five year plans, with the beginning of construction of a network of paved roads, the acquisition of a fleet of commercial vehicles, and with the establishment of service and repair shops capable of maintaining all types of automotive equipment ingood operating condition. Therefore the removal of the main obstacles to development in transportation and communication attracted high priority in first two plans. Between 1956 and 1967 more than 50 percent of the development budget was spent on the development of transport and communications The large volume of road construction undertaken during this period was necessitated by the inadequacy of existing roads to carry economically and speedily, the increased traffic, that would result from the development effort being made in all sectors of the economy. The construction programme included the building of arterial highways, secondary roads and the improvement of existing roads, because in the first stage of economic development, motor transport was seen to be the most economical and logical means of movement of both goods and people.

On May 29, 1958 a transit agreement was signed between Afghanistan and Pakistan. One aspect of this agreement was the improvement in relations between the two countries, Pakistan having agreed to exclude goods in transit to Afghanistan from customs or other domestic taxes. Other new facilities obtained by Afghanistan include the establishment of special areas and sheds for in transit goods to Afghanistan in the port of Karachi, and also in Peshawar, Chaman and Wagha. Valuable time will clearly be saved by the waiving of Pakistan customs formalities. In addition the railway lines will be extended to Afghan territory from Chama nad Landi Kotal in Pakistan to Spin Boldak and Turkham in Afghanistan and new roads will be constructed between Kabul and Kandahar and Spin Boldak. The work of a United Nations Conference at Geneva on the Law of the Sea (1956) in which the position of land-locked countries was closely considered, undoubtedly helped to make the agreement possible; also arising from these conferences Afghanistan hopes to have a merchant fleet of its own. Furthermore neither country was able to finance the developments with their present resources, and as a complement to the Afghanistan-Pakistan agreements were signed in Washington on June 30, 1958 between the United States International Co-operation Administration, Afghanistan and Pakistan, by which Afghanistan received $18,993,000 for the asphalting of the Kandahar Spin Boldak road and for surveying, widening and asphalting of the Kabul-Kandahar road. Pakistan received $7,708,000 to help it to implement its side of the transit agreement, and to improve its north-western railway, bridges and other installations on the 1105 km. railway between Karachi, Quetta and Chaman near the Afghan border. Therefore a large part of U.S.

assistance to Afghanistan has so far been spent on the road connection with Pakistan, which will increase the demand for commercial vehicles, on all weather roads from Kabul to Pakistan by way of Turkham and the Khybar Pass; and also along the new highway from Kabul to Kandahar and Spin-Boldak. Furthermore in 1964 two U.N. special fund loans were approved for Afghanistan, the first a three-year loan of $811,000 to be used to survey a direct road from Kabul to Herat. The loan will provide for the services of consulting engineers and special equipments.

Although construction of the major highways is being accomplished primarily with financial and technical assistance from the U.S.S.R. and U.S.A. over 30 percent of expenditure during 1956-62 period was local currency, most of which was expanded on local raw materials.

Administration of the construction programme is the responsibility of the Ministry of Public Works. The Ministry made a significant contribution in supplying training in various trades and an equally valuable service was performed in organizing and furnishing army labour units. These units have contributed significantly to the progress that has been made. Personnel of the Units received training and became an integral part of the development programme. As an indication of the scope of the programme over three thousand persons received specialized training during construction of the Kabul-Qizil Qala highway. Another large scale training course was organized at Herat in 1960. Since then, over 2,700 have received training as mechanics, vehicle and equipment operators, bricklayers, electricians, and in other mechanical skills. The Ministry's Supervisory Department has the responsibility and

technical facilities for supervising the entire highway system in Afghanistan, and for undertaking the immediate repair of any damage done to bridges, drains, etc. on these roads. It is the duty of this Department moreover to supervise asphalting work on highways included in five year plans, and to co-ordinate all aspects of transport. For example, the supervision of the import of various types of machinery for road construction, topographic surveys, research, and provision of spares of all kinds are the responsibility of the Department.

During the first five year plan period, construction work progressed on the key sector of the highway ring around the country. In total 1,573 km. of the main ring and 232 km. of connecting access roads to the borders were built. Some parts of the ring Herat, Maimana, Mazari Sharif and Pulikhumri was not rebuilt for some years but in 1965 with finishing off of Kabul-Qizil Qala highway the work has been started on this highway. The main highway system was therefore a semi-circle around all the country. During the First Plan period (1956-62) a total length of over 2,000 km. were under construction. Although all the new construction was not fully complete during that period it accommodated an increased volume of traffic and significantly contributed to the development effort. The construction of about 774 km. or 38% of the total planned was actually completed. Of this amount 494 km. were paved with asphalt or concrete, and in addition a significant achievement of the period was the paving of 60 km. of Kabul streets. The remaining work was completed during the second five year plan (see table 9).

TABLE 9 ROAD CONSTRUCTION AND CAPITAL EXPENDITURE 1956-66

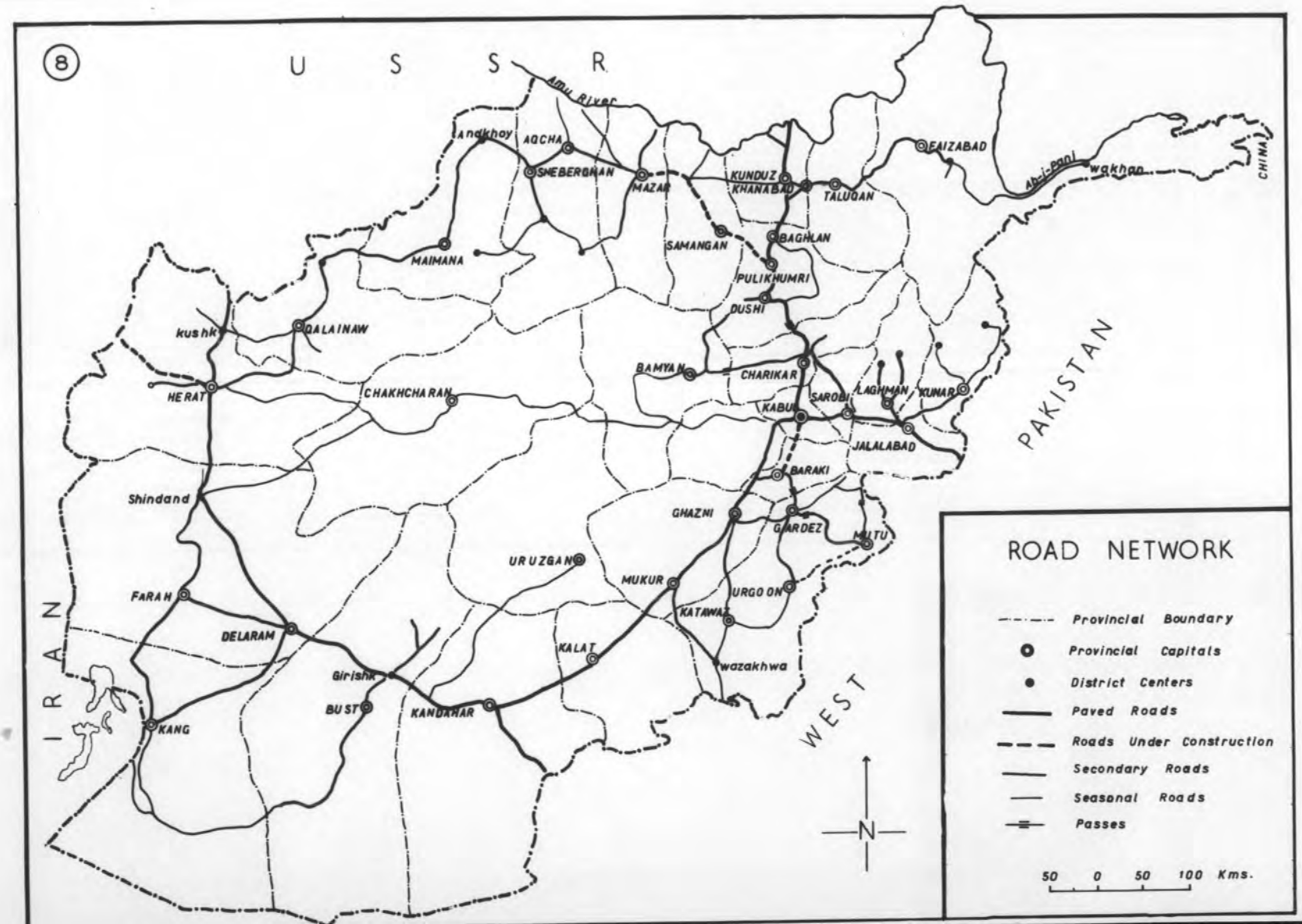
Name of projects	total length in Km	Completed before 1964	Expenditure before 1964 in millions	During 1964 in Km	Expenditure during 1964 in millions	by the end of 1964 in Km	by the end of 1966 in Km	Expenditure in first 5 year plan in thousand	Expenditure in the 2nd plan in thousand	REMARKS
Kabul-Tur Kham	232	175	$ 7.42 Afs 594.06	26	$ 0.15 Afs 50.37	199	232	Const: 497,023 Asph: 196,110	Const: 271,000 Asph: 121,000	Part of the asphalting cost is provided through a U.S.A. grant.
Kabul-Jabul saraj	77	45	$ 1.21 Afs 178.42	20	$ 0.80 Afs 13.62	65	77	Asph: 112,523	Asph: 28,000	foreign exchange requirements of the project are provided by a U.S.S.R. loan and partly grant.
Salang road and tunnel	108	100	$ 31.33	8	$ 0.80	108	108	1,066, 930	482,000	.. .. ..
Doshi-Qizil-Qala	214	-	$ 5.92 Afs 322.48	72	$ 2.02 Afs 76.23	72	214	Con: 421,906 Asph: 5,341	Con: 184,000 Asph: 313,000	(including Kabul Jabalussaraj)
Kabul-Kandahar Spinboldak	594	223	$ 29.88 Afs 178.73	120	$ 9.72 Afs 3.00	343	594	662,596	914,000	foreign exchange requirements provided by U.S.A. loan and grant.
Kandahar-Herat Turqhundi	670	446	$ 52.70 Afs 563.24	203	$ 11.97 Afs 157.28	649	678	1,569, 640	3,031, 000	with the financial and technical assistance of U.S.S.R. and partly loan.

TABLE 9 cont.

Name of projects	total length in Km	Completed before 1964	Expenditure before 1964 in millions	During 1964 in Km	Expenditure during 1964 in millions	by the end of 1964 in Km	by the end of 1966 in Km	Expenditure in first 5 year plan in thousand	Expenditure in the 2nd plan in thousand	REMARKS
Kabul-Kargha	20	20				20	20	26,034	77,000	for the construction and asphalting of the road between paqhman and Karahar with a total length of 49 Kilometres.
Kabul-Paqhman	30	30				30	30			
Kabul-Pul-j-Alam	67						20			
Puli Khumri-Mazar Shiber qhan	320		Afs 2.00		$ 1.46 Afs 8.00		10 excluding Asphatting			will be completed with the assistance of U.S.S.R.
Herat-Islam Qala	124				$ 0.13 Afs 0.60		49 under construction		404,000	will be completed with the assistance and loan from U.S.A.
Three bridges in Nangarhar			$ 3.90 Afs 67.20		$ 1.04 Afs 23.69	214 Completed	completed	$ 4.94 Afs 67.20	211,637	foreign exchange requirements of the project provided by U.S.S.R. loan.
Total	2464	1039	$132.36 Afs 2520.63	449	$28.09 Afs 452,40	1486	2032	$4.94 Afs 4,558, 103.20	6,036, 637	

Major Highways in Afghanistan: A basic requirement for Afghanistan's projects of economic progress, which will be discussed in Chapter 5 is an efficient system of communications. The pattern she has adopted (fig. 8) is one of road and air links, with no help from railways. The road plan is based on a circuit of improved highways, which passes through or alongside the peripheral provinces and links Kabul, Mazar, Herat, Kandahar, Farah and Ghazni. The most spectacular improvement on this link is the new Salang Highway between Charikar and Doshi at the crucial passage of the Hindu Kush. Elsewhere it has been made more efficient and perennial by the construction of bridges, such as the Alchin bridge over the Kunduz River, and the Dilaram bridge at Kandahar. From this basic circuit of roads, branches which proceed to the frontier districts are sometimes of excellent quality, like those to the Oxus ports of Kelift and Qizil Qala and the new highway from Jalalabad to Turkham, or from Kandahar to Spinboldak. These important achievements have made possible increased production and industrialization in the country.

1. Kabul-Turkham Highway: The historic eastern gateway to Afghanistan is by way of the Khybar Pass, which for the past forty centuries has witnessed waves of invaders pouring through toward the plain of India, and plays a major role in the foreign trade of the country. West of the Khybar Pass for forty miles, the landscape is dry and lifeless. Though the new irrigation project of Darunta Chanal will soon change it into a fertile and most productive land in the country. The road then enters the oasis of Jalalabad, set in a fertile plain along the Kabul river, where irrigation water has transformed the steppe into a verdant garden. The road west to


8
U S S R
Amu River
Andkhoy
AQCHA
SHEBERGHAN
MAZAR
KUNDUZ
KHANABAD
TALUQAN
FAIZABAD
Abi-Panj
wakhan
CHINA
SAMANGAN
BAGHLAN
MAIMANA
PULIKHUMRI
DUSHI
kushk
QALAINAW
BAMYAN
CHARIKAR
HERAT
CHAKHCHARAN
SAROBI
LAGHMAN
KUNAR
KABUL
PAKISTAN
JALALABAD
BARAKI
Shindand
GHAZNI
GARDEZ
MATU
URUZGAN
MUKUR
URGOON
FARAH
KATAWAZ
DELARAM
KALAT
wazakhwa
Girishk
BUST
KANDAHAR
KANG
IRAN
WEST
N
ROAD NETWORK
Provincial Boundary
Provincial Capitals
District Centers
Paved Roads
Roads Under Construction
Secondary Roads
Seasonal Roads
Passes
50 0 50 100 Kms.

Kabul sees a continuation of the same contrast between dry landscape and irrigated fields. As the traveller continues westward along the road, the country-side becomes more rocky and one sights occasional glimpses of distant snow peaks, and a succession of barren passes carries the highway to 7,500 feet elavation. Furthermore it enters the gorge of the Kabul River where major engineering operation has opened a modern road to capital.

This important highway which connects Kabul and Central Afghanistan with the important agricultural regions centred on Jalalabad and Laghman, is one of the main foreign trade routes with India andPakistan. It is 232 Km. long to the border and 10 meters wide of which 7 meters have been asphalted. The construction work on this highway was started in 1956, mainly by Afghans under the supervision of few engineers from Czechoslovakia and afterward the United States, Afs 693 million or about 63% of total estimated cost were expended during the first plan period. 175 km. of road bed were completed and 154 km. asphalted during this period.

TABLE 10: Total construction work on Kabul-Turkham highway

1.	Levelling	1,300,000 cubic metres
2.	Stone works	1,100,000 " "
3.	Concretes	234,000 " "
4.	Protective Walls	108,000 " "
5.	Tunnels	7
6.	Drains	263
7.	Bridges	44 (long) and 227 (small)

Source: Government of Afghanistan, Ministry of Public Works

Asphalting of this highway was started in 1958 under an agreement signed with U.S.A., and it was opened for traffic in 1964. Financial and technical assistance for asphalting and engineering of the road was given by the government of U.S.A. The benefit from this highway according to amortization of vehicles and petroleum etc. is estimated to be Afs. 67,500,000 annually. The Koebig and Koebig report(8) quotes data from the Ministry of Planning indicating that freight traffic in 1956-57 was several times as great between Kabul and Turkham as between Kandahar and Spinboldak, even excluding internal shipments.

TABLE 11: Freight traffic on Kabul-Turkham and Kandahar-Spinboldak highways 1956-1957

Item	Kandahar-Spinboldak	Kabul-Kandahar	Kabul-Turkham	Total
Export (tons)	15,000	2,000	60,000	77,000
Import (tons)	18,850	2,000	56,000	76,850
Internal (tons)	-	56,000	15,000	71,000
Total	33,850	60,000	131,000	224,850

Source: Koebig and Koebig report, table 1, based on letter from Ministry of Planning, September, 1957.

According to these estimates, the export-import volume through Turkham (116,000 tons) is almost 2.5 times that through Spinboldak, one must realize however, that of Afghanistans exports via Turkham are bound for India, and that most of these travel by truck across northern Pakistan.

2. Kabul-Kandahar-Spinboldak highway: Just as the road from Kabul to Peshawar is the chief gateway, from Kandahar to Quetta and beyond the Karachi road is the principal avenue for the south. Both routes meet railway at the Pakistan border. From Kandahar a good road extends south-east to the border railhead at Chaman, sixty miles away. This road which runs through rocky mountains alternating alluvial plains, was one of the country's first modern highways. Proposals have been made for a parallel railway to Spinboldak which might be continued to Kandahar or even Kabul. The Spinboldak road built in connection with Helmand valley project, is part of a network of high speed asphalted roads, which have already demonstrated the value of good roads to the intra regional economy particularly in expediting the collection and export of fruits. The Ministry of Planning has estimated that in 1956-57 two-thirds of the tonnage transported over the Kabul-Turkham, Kabul-Kandahar and Spinboldak roads consisted of imports and exports in roughly equal shares.

The most important road connecting ten central and eastern provinces with three productive and historical provinces of Ghazni, Kandahar and Helmand is the Kabul-Kandahar highway with a total length of 483 km. The first half of the road from Kandahar to Kabul follows the dry, rocky valley of the Tamok River and then climbs over high passes to the Kabul Basin. Ghazni is midway to Kabul and was once the fortress capital of medieval empires which accumulated immense wealth derived from trade with India. At one time this commerce amounted to 5 million dollars worth of indigo a year. There numerous settlements and considerable irrigated agriculture en route produce some surplus of fruit for export to Pakistan and India.

The construction and asphalting work started in 1961, after surveying by U.S. engineers in 1957, and opened for traffic in 1966, ahead of schedule, although the original timetable had to be drastically revised when the two year break in relations between Afghanistan and Pakistan and the closing of the frontier to all traffic interrupted the supply of cement and heavy equipment, asphalt had to be transported overland from Iran, over the Russian part of the road, at considerable cost. The project except the Kandahar-Spinboldak section largely consists of constructing a new road over an old one, with some changes in alignment to reduce the distance between Kabul and Kandahar by some 30 km. Some Afs. 663 million or 43% of total estimated cost were spent during the first plan period, and approximately 124 km including 114 km. of the Kandahar-Spinboldak highway and 8 km. of Kandahar streets were completed during the same time. This road will be an important factor in the development of the southern part of the country, and in addition it is an important route to Pakistan and plays a major role in the country's foreign trade. As Koebig and Koebig report indicates, that 45 percent of the present cost can be saved by using the proposed route via Quetta, Spinboldak and the Kandahar-Kabul highway rather than the route via Peshawar. (see table 12). But it must be mentioned that with improvement of road between Kabul and Peshawar and provision of transfer facility savings to the cost of shipment via Peshawar would reduce it by 81/8 Rupees or $17.16 at official rate used in table 12. Thus the ratio of costs between the two routes would be reduced to $92.84 to $61.00.

TABLE 12: Comparative costs and transit time (in Rupees) shipment of 2,000 lbs. merchandise from Karachi to Kabul.

Item	Present cost through unbounded shipment via Peshawar	Estimated cost through transit facilities via Spinboldak
Port of Karachi		
Handling, inspection etc.	56/8	30/0
Port Trust Dues (estimate)	50/0	50/0
Railway Charges		
to Peshawar	146/8	
to Spinboldak		100/0
Lorry		
Peshawar to Kabul at Rs.700 for 4 tons or $.20 per ton-mile	175/0	
Lorry		
Spinboldak to Kabul at $0.04 per ton-mile		71/0
Border Transfer		
Handling, Cooliage, Storage,	45/0	20/0
Scaling, etc. Clearing and	25/0	10/0
forwarding	25/0	10/0
Totals:		
in Pakistan Rupees	523/10	291/0
in U.S. Dollars	$110.00	$ 60.00

Source: Koebig and Koebig Report, table 7, p. 25 and p. 11.

TABLE 13: Total construction work on Kabul-Kandahar highway

1. Levelling	60,600,000	Cubic metres
2. Stone works	7,760,000	" "
3. Asphalting	3,322,000	" "
4. Bridges (large	29	(with total length of 2,100 metres)
5. Culverts and syphons		with a total length of 4,891 metres.

Source

The road is 10 metres wide of which 7 metres have been paved. Construction is being done by Americans, financed by a grant from the U.S. Agency for International Development, which include some $44,640,595. Some of the domestic cost of this highway is provided by government of Afghanistan which contributed some Afs. 163,540,595. Also it has been completed with the daily work of 1600 to 3500 Afghan workers and 49 to 130 American engineers and supervisors.

3. Northern Highway: Before 1956 there was only one road connecting the capital with the northern provinces of Afghanistan; it was built in 1931 during the reign of King Mohammad Nadir Shah. At that time Afghanistan was not in a position to undertake difficult road construction, therefore it was thought best to follow the easiest route (from the technical point of view). Thus the road was built from Kabul to Charikari and the Ghorband defile, over the Shibar Pass and through the Shikari defile to Doshi and from there to Pulikhumri, Kunduz and Mazari-Sharif (Fig. 8) the main handicap of this route is the long detour which it imposes from Charikar

to Doshi. There is only one practicable passage through the formidable barrier of the Hindu Kush on the straight line from Charikar to Doshi, and that is the Salang Pass at an altitude of 3540 metres. Even then it was necessary to dig a 2.7 km. long tunnel. But when the previous road to the north was built in 1931, it was impossible to practice such a task; technically and economically the country could not have borne the burden of such an enterprise today. However with the technical assistance that is furnished to Afghanistan by Soviet Union, this project has passed from the realm of imagination to that of reality. The labour corps of the Ministry of Public Works guided by engineers from the U.S.S.R., has undertaken the construction of this important highway. This new road which was part of the general project of road improvement and construction from Kabul to the north, branches off at Charikar from the former road and joining it again at Doshi (see the map of roads).

The Salang highway project was part of the first five year plan, which later on divided into three separate projects. Construction of this road was planned to be executed in sections: Kabul-Charikar (1957-60) Charikar-Doshi via Salang Pass (1958-61), Doshi-Kunduz (1957-60) and Kunduz-Qizil Qila (1957-59).

A. Kabul-Jabalussaraj road is 77 km. long and from 10 to 11 metres wide from which 7 metres has been paved. The construction work started in 1957 and after some delay, was completed in 1965, completing the link to Salang.

B. Salang highway: the Hindu Kush mountain range as mentioned in Chapter two divides the north and the south of Afghanistan, and has long

been a formidable barrier to communication. But now a modern paved road passes through these mountains, going from Jabalussaraj in the south to Doshi in the north, and covering a distance of 107 kilometers. The main part of this link is a 2,676 meter long tunnel at an altitude of over 3,000 meters. The idea of piercing the mountains at the Salang Pass was thought of nearly 40 years ago, but because of lack of resources, the project could not be undertaken. In 1956 a Russian team of experts started preliminary surveys and studied the extremely difficult terrain from Awlang to Haft Tanur, which is parallel to Doshakh. The survey showed that a tunnel would have to be bored at an altitude of 3,360 meters in the most rugged part of one of the Hindu Kush peaks. A contract for the construction of the highway was signed between the Ministry of Public Works and the Institute of Techno-Export of the U.S.S.R. on April 8, 1958. Work on the highway was begun in August when the snows melted and continued thereafter under very hard weather conditions and snow falls without interruption. Afs 1,606 million or about 61% of the total estimated cost was expended during the first plan period, and during this period subgrade stone and gravel courses and attendant structures were completed for a distance of 378 km., and also 124km. of road have been asphalted. Work on the road has been divided into three phases:

a. from Doshi to Doshakh in the north (52 km)

b. from Doshakh to Awlang (24km. including tunnel)

c. from Awlang to Jabalussaraj (32 km.)

the Salang highway was completed on November 23, 1964. There are 27 large and 40 small bridges on this road which are built of iron girders and

concrete slabs, with 358 culverts and 1230 meters of protective walls, 92 residential buildings and a modern hotel. Also as the highway runs through areas where avalanches are common, a total of 4,972 meters of protective roofing have been built over the road protecting it from falling rocks, snow and water.

The tunnel is 7.5 meters wide, with spacious side walls on both sides. It's height is 7.1 meters up to the arc, and from the arc to the ceiling is another 5.25 meters. A number of generators have been installed to light the tunnel and provide fresh air. Throughout the 2,676 meter-long tunnel, exhaust pumps have been installed with a capacity of 300,000 cubic meters of air per hour, sufficient for 1000 vehicles. At intervals of 300 meters there are large comfortable cabins for use in emergencies.

The Salang tunnel has reduced the distance between the southern and northern parts of Afghanistan from 307 kilometers to 107. The journey from Kabul in the south to Pulikhumri in the north, wich used to take two days by car, over difficult unpaved roads, now takes only five hours. The highway is six meters wide, and is asphalted throughout. All along the road workshops have been built to repair cars, trucks and other vehicles. These workshops are open all the year round. The largest bridge spanning the highway is near Doshi and is 140 meters long. The whole volume of construction work of this highway is estimated to have been 8,436,800 cubic meters. The total cost have been 2,256,203,698 Afghanis excluding maintainance charges. From the above mentioned volume Afs. 19,791,406 represents the total expenditure incurred by the govenment of Afghanistan and an $12,257,367 which represents the contribution of the government of

U.S.S.R. through a loan agreement. The total estimated benefit from the construction of this highway, in regard to amortization of vehicles petroleum and consumption of time etc. will be Afs. 200,000,000 annually. Also this road is the main trade route with Soviet Union and other countries by transit through U.S.S.R.

C. Doshi-Qizil Qala: The construction work on this highway which is 214 kilometers long and linking the Salang tunnel with the Russian border in Qizil Qala was started in 1957 and in spite of such natural obstacles as hills and gorges, and the fact that climatic conditions for most of the time were almost unbearable. After some delays it was completed in November 1965. The width of the road is from 10 to 12 meters of which 7 meters have been asphalted (near cities from 9 to 12 meters). One of the major problems involved in completing this road has been the construction of the Alchin bridge on the Kunduz river. The preliminary steps for the construction of this bridge were taken in the second year of the plan (1957-58). Construction work begun immediately, and before the beginning of the third year the bridge was opened. The main advantage of this bridge lies in the fact that the distance between Kunduz and Qizil Qala can now be covered in one hour instad of in eight hours. The length of the bridge is 120 meters, and its breadth is 8.9 meters, while the maximum weight is capable of supporting 60 tons. The total construction work on this part of the northern highway included 21 large bridges, 384 syphons with a length of 5,378 meters, 329 culverts, 5,537,102M^3 of levelling and 1,919,428M^3

of stoneworks. The total expenditure of this highway is $12,114,022 and Afs. 511,354,147, including the financial and technical assistance of the Soviet Union.

4. Western Highway (Kandahar-Herat-Turghundi): This is the first concrete paved highway in Afghanistan. At the end of May 1959 an agreement was signed with the U.S.S.R., providing for Soviet aid for the the reconstruction of the 680 km. road between Kushkak, in the extreme northwest, and the important southern junction at Kandahar, linking Arghandab, Kushk, Grishk, Dellaram, Farah, Shindand, Herat and Khush Rabat, This highway which is suitable for heavy motor traffic, is 12 meters wide of which 7 meters are paved. Also it is 90 kilometers shorter than the previous road. It crosses the passes of Khush Rabat 1582 meters (73 km. south of Turghund), Shahbig 1717 meters (169 km. south of Turghundi) and Chori 1385 meters (380 km. from Turghundi).

This road which will be a part of Trans Asian Highwayis suitable for daily movement of 5,000 vehicles, with a maximum resistance of 8 tons of each, and a speed of 100 km. per hour. Also this road is important in that it will be a factor in the development of southern and western parts of the country, which will connect the Kabul and Kandahar with Helmand, Farah and Herat provinces, the most developing industrial and agricultural regions of the country. The city of Herat lies in the productive Hari Rud valley where cultivated land extends for a hundred miles. The history of the city reveals that this is one of commanding sites of antiquity, on the watersheds

between two worlds; when the Mongols destroyed the city and massacred its people in both 1232 and again in 1398, the population was estimated at over a million. In the fifteenth century again Herat was a greate centre of literature and art. From here two roads lead across flat desolate country to the nearlby Soviet and Iranian borders, each about seventy miles distant. Herat handles a substantial share of Russian and Iranian imports, including gasoline for all southern Afghanistan. The nearest railways are at the Soviet frontier and at Meshhed about a hundred miles inside Iran. As a result this road is playing a major role in the foreign trade of the country. With the completion of this highway the consumption of fuel has been reduced to 40 percent. The construction of this highway started in 1960, involving 13,000 Afghans and 600 Soviet specialists, and was completed in 1965. It's technical and foreign exchange needs were met by the Soviet Union, and domestic costs were met by Afghan government funds. The total estimated cost was Afs. 4.6 billion of which 1.5 billion were expended and 97 km. of paving completed during the First plan.

During five year period of construction of the road more than 6,000 Afghan workers learned the use of modern technical equipments and machinery, through training schools in Herat where they work part time for a period of six to eight months. Also along this highway in different places, bridges, post offices, buildings, residential houses for road workers and maintenance depots every 100 km., and hotels have been built. There are 38 large bridges among which the bridge of Dellaram on the Khashrud River with a length of 273 meters, Galabid 100.50 meters, Harirud (Pushtun) 410.7 meters, Farahrud 326 meters, Adraskan 100.50 meters,

Helmand 340 meters, and Arghandab with a length of 156 meters are of great importance. Furthermore on this highway more than 61 drains with a total length of 10,149 meters and 1,960 syphons and culverts have been constructed. Among the hotels two of them, in Herat (119 km. from Turghundi) and another in Farah (318 km from Turghundi) are important. These hotels are built in a modern and pleasing style. They are identical in design and provide 40 rooms, and a restaurant for 125 people, a swimming pool electricity and all kinds of facilities for passengers. The expenditure on this highway from Afghan government sources and excluding the financial and technical assistance of U.S.S.R. was Afs. 3,031,000,000.

In addition to these main highways some construction work has been done on the 80 kilometres Kargha and Paghman roads, which were completed in 1966, and joins the two well-known tourist sights of Kabul.

5. Pulikhumri-Mazar: survey and design for construction and asphalting of the 320 km. long road in the northern Afghanistan has been compl ted, in accordance to an agreement signed between the government of Afghanistan and U.S S.R. in 1963. The construction has been started since 1965, and is expected to be finished in 1968. This highway which will be built by technical and credit assistance from U.S.S.R., will be a new road (except in few parts near Khalm, Balkh and Shibarghan) and will connect several northern provinces of Baghlan, Kunduz, Samangan, Mazar and Shibarghan, and cities of Pulikhumri, Khulm, Aqcha and Balkh, which are rich in mineral and agricultural resources. It will be 40 km. shorter than existing road.

6. Herat-Islam Qala: An agreement was signed in 1964 between Afghanistan and the Government of U.S.A. for the survey, construction and asphalting

of 124 km long road between Herat and Islam Qala (Iranian border) the construction work on this road after survey in 1965 began early in 1966. The total cost of the project is estimated to be:

1. for construction: $431,616 (by Afghanistan)
   $6,312,048 (U.S. loan)
2. for asphalting : $60,384 (by Afghan government)
   $1,145,450 (U.S. loan)

The $7.7 million loan of U.S.A. to Afghanistan is repayable in forty years. This all-weather highway which will facilitate production and marketing within Afghanistan, provide easier access to the Iranian border and is eventually expected to form part of a trans Asian highway from Turkey to Vietnam and India through Afghanistan. As a result it will also play a major role in the development of country's foreign trade with Iran and other countries of the Middle East.

7. Kabul-Puli Alem: The road between Kabul and Pali Alam to the south was also surveyed in 1965. The construction and asphalting of this 70 km long road which includes of Kabul-Paktia highway in the extreme south of Afghanistan started in July 1966. Work is being carried out by Afghan engineers and workers who learnet the use of modern technical equipment during the construction of the Kabul-Qizil Qala and Herat Kandahar highways.

8. Asian Highway: The Asian highway is the name given to a project initiated by the United Nations, or to be precise, E.C.A.F.E., its regional commission in Asia. The proposal to promote the Asian Highway System was first considered at a meeting of E.C.A.F.E.'s highways and highway transport sub-committee in November 1958. The basic idea was to establish an international highway system naturally linking existing main roads all the way

between Vietnam and Iran, and then bringing them to a minimum standard. Eventually, the Asian Highway network will encompass some 55,000 km. of roads, including main highways and feeder roads.(9) The Asian Highway will be reminiscent of the ancient caravan routes between Europe, the Middle East and Africa, and will produce great economic advantages. It will provide movement within each country and facilitate overland international trade, for many of Asia's traditional Commodities, which now moves between countries by circuitous sea routes, could be moved more economically by road and be independent of rising ocean freight rates. Besides developing trade, the Asian Highway would stimulate tourist traffic within Asia and enable lower income groups to enjoy the wonders of the great continent. The Asian Highway would also open new vistas for the hundreds of thousands of small villages in the densely populated areas of the region. Road transport will continue to provide a major means of inland transport. It provides direct and indirect employment and thus contributes to economic and social advance. Which will be of great importance for a land-locked country like Afghanistan. When eventually completed the Asian Highway system will serve an area of about 6½ million square kilometres with a population of over 700 million.

A regional application has been submitted to the United Nations Special Fund for financial assistance in undertaking preinvestment surveys, including the economic and engineering possibilies in Afghanistan, Iran and Pakistan and the need for the re-alignment and for filling of gaps. As a result, the Managing Director of the special Fund engaged a firm of engineering consultants to examine the application and to make recommendations

regarding urgent and essential requirements. This work was completed and the report submitted. The UN Special Fund has sanctioned the pre-investment survey of the direct route from Kabul to Herat in Afghanistan. This road which is connecting Kabul and Herat directly through central Afghanistan, is the second branch of Asian Highway in Afghanistan. The first branch is connecting Herat to Kandahar and Kabul and then to Pakistan.

Since the UN - TV and radio team travelled on the Asian Highway in mid-1964, passenger and freight traffic from Turkey into Iran has increased considerably. Well over 10,000 passenger cars were estimated to have passed through the border in 1965. Some of the cars were intended for delivery to dealers and distributers in Tehran but most of them proceded through Iran to Afghanistan, Pakistan and other countries.(10)

In Afghanistn, a modern 10-12 metre wide motor highway of 680 km. length has been completed from the Soviet-Afghan border through Herat where it picks up the Asian Highway to Kandahar. From the Iranian-Afghan border to Herat, the road is presently under construction. In Kandahar the Highway turns into a north-easterly direction towards Kabul, which is 480 km. long and is already asphalted. Of Russian design are also the first motor inns which have been built on Asian Highway in Herat and at Farah Rud, about half-way between Herat and Kandahar.

From Kabul towards the Pakistani border and the Khyber pass the highway leads through some of the most awe-inspiring mountains with rock fares descending almost vertically into the gorge of Tange Gharu. Construction of this road was completed in 1964.

Of the total stretch of 1.411 km. of Asian highway passing through Afghanistan, 570 km. are already concreted, about 717 km. are asphalted, and 124 km. are under construction.

In addition to highways discussed above there are more than 6073 kilometres of all-weather but unpaved roads in Afghanistan connecting several provinces. There are many thousands of kilometres of smaller roads and caravan routes of secondary importance few of them useable in all weathers, and many of purely local importance.

ROAD TRANSPORT: In Afghanistan there are no railroads and waterways, and aviation is not greatly developed. Therefore the only modern means of transporting passengers and cargo are buses and trucks. In some parts of the country animals are still used for transport, especially between villages and small towns, but they are decreasing gradually and being replaced by vehicles. (See table 13). The number of cars and trucks imported since 1951-52, the great part of which are trucks, are as follows:

TABLE 14:	1952-53	531
	1953-54	265
	1954-55	892
	1955-56	500
	Total	2187

Source: Government of Afghanistan, Ministry of Planning

But parallel to the construction and development of roads during the five year plans, in order to meet the increasing requirements for cargo and passenger vehicles, the importation of a considerable number of trucks and passenger cars has been carried out. In addition the plan included the

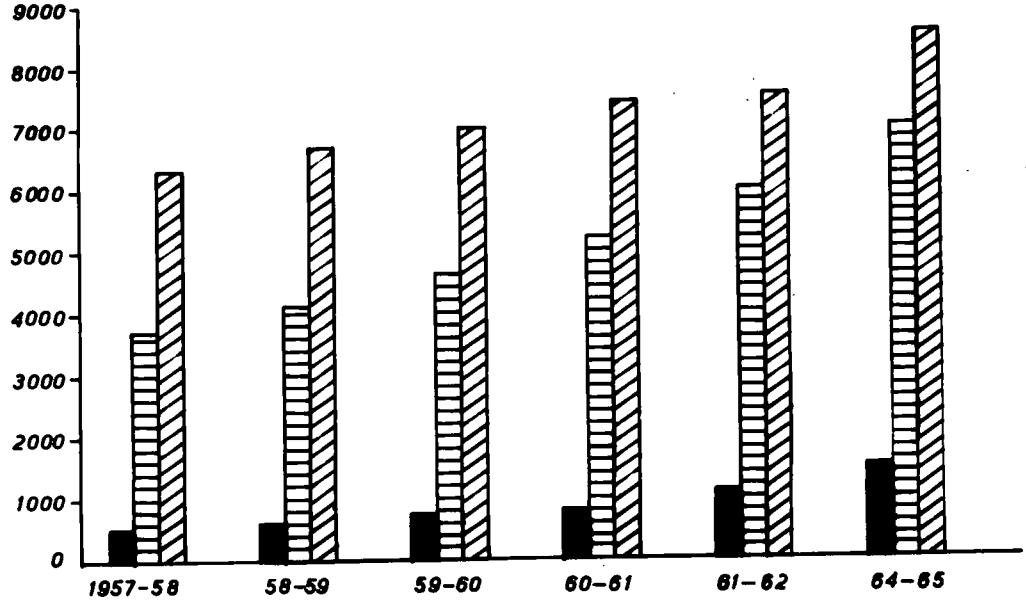
TABLE 15: Number of persons per vehicle - selected countries (1956)

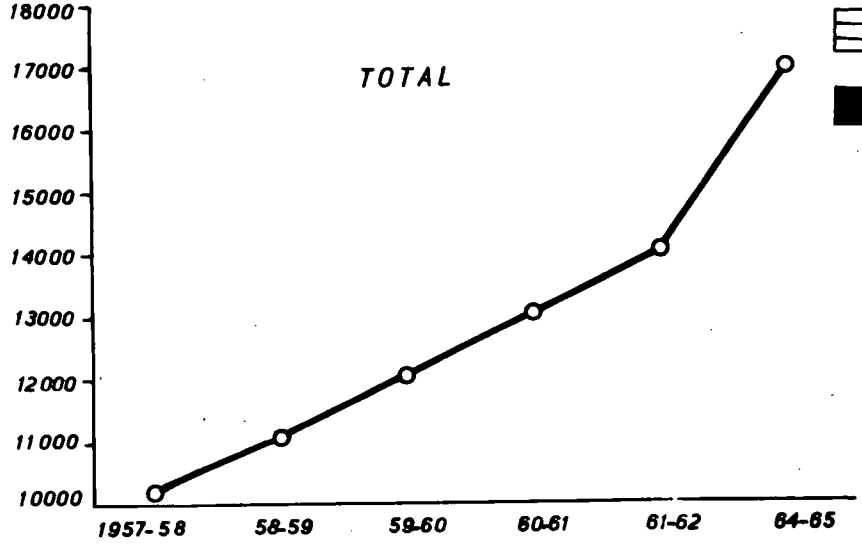
	Population 1956 (1000)	Number of Cars	Number of trucks	Persons per vehicle Car	Truck
Afghanistan	12,000	1,500	4,500	8,000	2,670
Ethiopia	20,000	15,100	6,100	1,325	3,280
British Somali land	640	280	600	230	107
Taiwan	9,240	5,590	7,270	1,650	1,270
Sudan	10,300	8,500	11,000	1,210	940
Jordan	1,470	4,000	3,900	370	380
Paraguay	1,600	4,500	2,500	360	640
Syria	3,970	12,300	13,600	323	292
Surinam	220	1,820	1,000	121	220
Haiti	3,350	5,300	3,400	630	990
Denmark	4,470	248,200	113,900	18	39
Iceland	164	10,800	5,800	15	28

Source: J. Humlum, La geographie de l'Afghanistan, P. 338. 1959

9

NUMBER OF VEHICLES IN AFGHANISTAN 1957–1965





establishment of automobile repair and maintenance shops in various parts of the country. Available records show that 2,153 trucks were imported apart from those imported for developmental projects, and military vehicles, obtained from the Soviet Union or Czechoslovakia. During the first plan period imports by year were:

TABLE 16:

1956-57	1,012
1957-58	957
1958-59	371
1959-60	369
1960-61	444
Total	3,153

Source: Government of Afghanistan, Ministry of Planning

Most of the trucks imported had a cargo capacity of over 5 tons, and more than 100 were of 10 to 20 tons capacity, and were largely of Russian and American origin. Trucks from U.S.S.R. including 150 buses and a number of Taxis, were obtained through the general loan agreement with that country. Those from the U.S.A. also were obtained through loan agreements, for example Afghanistan has received 100 Coal trucks under the $800,000 loan of June 1957. At the same time United States lent Afghanistan $2.45 million of which $1.7 million was allocated to import 100 petrol tankers, plus 900 eight and ten ton truck-chassis, on which the Afghans build their own bodies. The remaining money was allocated to import spare parts, as well as the materials and equipment needed to build repair and maintenance shops. Again on November 1963 the U.S. Agency for international development

authorised a loan of $2 million for the Afghan government to buy general and special duty trucks, tyres, spares and lubricants, the trucks being purchased in U.S.A. and sold to private users in Afghaniston.

At the end of the first plan period the number of trucks in operation exceeded more than seven thousand, of which about one half were new and modern. The number of trucks in operation registered with Kabul traffic department were:

TABLE 17:

1956-57	6335
1957-58	6645
1958-59	7001
1959-60	7425
1960-61	7744
Total	35,150

Source: Government of Afghanistan, Ministry of Planning

As a result public passenger transportation by motor vehicles increased sharply during the same period. Bus routes have been established in the larger town and cities and the services have become popular with the public and replaced the animal caravans (see chapter one). Inter-city services have been established between many communities in the country in which modern buses and trucks adapted for passengers carriage were utilised. Buses registered by years at the first plan period were:

TABLE 18:	1956-57	496
	1957-58	637
	1958-59	824
	1959-60	966
	1960-61	1058
	Total	3,981

Source: Government of Afghanistan, Ministry of Planning

Also the number of passenger cars increased during the plan period, data obtained from the government monopolies indicates that 697 cars of various types, were imported only during first three years of the plan, and over 1,300 in the entire five years.

The Afghan government in 1954-55 set up a joint state-private transport company in Kabul to faster the import and operation of trucks, and to arrange programmes for private companies, which are not well organized. In addition government is offering strong inducements to establishment of similar facilities in other cities. By allocating such companies, foreign exchange at 25% below the market price, by exempting new vehicles from import duties, and by exempting individual truck-owners from the income tax. As a result in Kabul alone 46 private transport companies have been established during first three years of the first plan, and now at the end of second plan (1966-67) there are more than eighty such companies in Afghanistan. In addition to these private companies, a bus company in Kabul is the only organization for the transportation of passengers. It was established in 1941, with a primary capital of Afs. 2 million, but by 1960 the capital of

this company with the financial assistance of U.S.A. had reached to Afs. 22 million, and now (1966) it is more than Afs. 40 million. This company now had 276 buses serving mainly in the Kabul city and between Kabul and several provinces regularly. The total annual distance covered by company in Kabul alone is estimated to be more than 4,746,316 kilometres.

According to the statistics of 1962-63, the total number of 1060 buses in the country were carrying annually between 2.5 to 3 million passengers (from 6800 to 8200 daily), but there are differences between several provinces in that movement depends upon the distribution of population, and varies according to the seasons of the year. For instance the daily traffic between Kabul and Parwan Province (65km. north of Kabul) during the summer and especially holidays are estimated around 3000, and between Kabul and Paghman it is more than 10,000 during the same time, but it is not more than 100 between Kandahar and Chakhansur provinces.

Finally it is hoped that a fleet of 5,500 trucks plus 500 buses will be adequate for some time, if 600 to 700 replacements are procured annually. It is also hoped to increase utilization from the present 30 percent of the truck fleet's capacity by doubling the present 50 mile average daily run and increasing the load factor.

The increase in number of motor vehicles has of course caused a sharp rise in fuel and lubricant requirements, as well as necessitating expanded facilities for their transportation and storage. The primary source of motor fuel and lubricant is the Soviet Union. The Afghan government is the sole distributor of gasoline through stations operated by the monopolies.

As a result of this control the price is fixed and the freight rates and bus fares have been maintained at reasonable and stable level.

WORKSHOPS: All the machines and items of mechanical transport imported into Afghanistan require constant maintenance and repair, and if facilities for this were not available the machinery and vehicles would be lost to the country without having fully served, the purpose for which they were imported. This in turn damages the nations economy. So to reduce such heavy losses the establishment of several repair workshops for vehicles in various parts of Afghanistan is required, and has been under-taken as part of the economic development plans. In addition to normal maintenance and repair work the shops were designed to be centres for training engineering and technical personnel and skilled workers.

The largest shop is the Jangalak installation, built in Kabul in 1960 with the technical assistance of U.S.S.R. The shop was designed to make complete overhauls of about 1400 motor vehicles of various types annually. This shop is also capable of making a limited variety of automotive replacement parts.(12)

The second facility was constructed in Kabul with the co-operation of the International Co-operation Administration of America. It is capable of repair and making complete overhauls of more than 500 vehicles annually, in addition to being provided with equipment for the construction of bus bodies etc. A third repair and maintenance facility of the same capacity has been constructed in Kandahar with the technical and financial assistance of U.S.A.

In addition to these principal repair and maintenance centres several small shops of various capacities have been established in different parts of the country, and with the establishment of these shops the availability of spare parts has been considerably improved.

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CHAPTER FOUR

AIR TRANSPORT

In the course of its first half century air transport has become one of the worlds major industries with a turnover of more than $7,000 million (£2,500 million) a year. The airlines of the world operate in the forefront of technological progress. They exist in the most international of all commercial environments. They have brought every part of the world within a few hours of every other, and, in so doing, they have brought about a revolution in world trade, in business contacts, and in methods of diplomacy. But the situation was different in Asia, before the World War II. Even in 1920 the countries of Asia were self-contained and units whose communication with the rest of the world were slow and laborious, the life-lines of the communities of Asia and Africa were the steamship routes. But the aeroplane changed this in only about ten years. Journey times were reduced from weeks todays, days to hours. In this way the aeroplane was one of the major factors in the advancement of civilization amongst half the population of the world.(1) One encouraging aspect of the post-war boom in air transport is the way in which remote and little-known countries have suddenly become accessible; before the war the determined traveller who ventured into such places usually wrote a book on his experiences. Today he merely complains that his flight was thirty minutes late or the hostess was slow in clearing away his lunch tray. If this is an anti-climax toadventure it is also a monument to human ingenuity and effort and nowhere is it better demonstrated than in Afghanistan.(2)

Although the camel and the yak still move people and goods across Afghanistan's frontiers and through its interior, the traveller need not depend on them for either international or local transport. Direct flights arrive in Kabul from Frankfort, Beirut, Tehran and New Delhi. It is also possible to take a spectacular leap by air from Tashkent in Soviet Uzbekistan to Kabul, overflying mountain barriers that would require months of land travel. But the development of air transport in Afghanistan has been very slow as a result of the causes mentioned in Chapter Two. Yet for a land-locked and mountainous country such as Afghanistan the significance of air transport as a vehicle of economic, social and cultural development cannot possibly be over-emphasised. Therefore Air Transport serves a vital need within Afghanistan where distances between cities and productive nodes are great and topography is an inescapable obstacle to direct and rapid surface movement.(3)

For the first time in 1926 the Russians began operation of an air courier service from Tashkent to Kabul via Termez twice a month. After 1930 several European airlines expanded their service in Asia. The most interesting and adventurous achievements during this long range delivery programme came in the summer of 1936 when a team from the German Company D.L.H. (Luft Hans) set and to explore a shorter route to China, via east Turkistan (now Sinkiang). This involved flying over the formidably Pamir mountains and across many hundreds of miles of unmapped arid country of Afghanistan. They left Kabul on 24th August, 1937, and this was the beginning of commercial flights over Afghanistan. On April 1938 a further sector was opened to Tehran and from there to Herat and Kabul by Luft

Hansa (established in 1926). After 1940 Himalayan Aviation, a Calcutta Charter Company founded in 1947 started operation in Afghanistan on the routes from Karachi to Kandahar and Kabul, and from there to Zahidan (Iran).(4) During the same pre-war period the government of Afghanistan established a department of Civil Aviation within the Ministry of Foreign Affairs for the first time. Several contracts were signed with the governments of India and Persia for the establishments of regular air services between Afghanistan and these countries, especially concerning the transportation of Afghan fruits and pilgrims to Mecca, because it was not until some years after the second world war that the transport a Hadj pilgrims by air aroused public interest, and several airlines shared in this traffic. During the second world war although Afghaistan had a neutral policy, the Department of Civil Aviation was transferred to the Military Airforce Authority. But afterwards in 1945 as a result of increasing need for Civil Aviation, the government established a separate department for this purpose. This department developed to an independent authority in 1956.(5)

In 1951 the Iranian Airlines Company began its regular flights between Kabul and Tehran with their Dakota aircraft which had stops at Meshad and Herat. Similarly a Dakota of the Himalaya Airlines of India after going to the cities of Calcutta Karachi, Zahidan, and Kandahar stopped in Kabul. In addition the Trans-Aviation Company like the Air Jipute and Indamar companies started their operation to Afghanistan during the years 1952, 1953 and 1954.

Indamar was started in India by an American, Peter Baldwin. He began operating in Afghanistan on a contract basis carrying pilgrims as far as

Jeddah (Arabia). Business developed from that into a year-round operation, and a separate company was formed under the name of Afiana Afghan Airlines in 1957. Enormous progress has been made in Civil Aviation since the late 1950's when both American and Soviet aid became available to Afghan Aviation.(6) Also the air transport of pilgrims began in the early 1950's when, apart from a small cadre of the educated elite, the country had practically no one immediately available for training in techniques demanded in civil aviation. However Afghanistan was one of the original signatories to the Chicago convention, and it was in the early 1950's that I.C.A.D. started its expanded programme of technical assistance.(7) The government was therefore able to call on the organization for help and a redoubtable Ple, Waclaw Makowski was the first technical expert sent to advise on the establishment of basic facilities required by the country's embryonic air service. He studied all possibilities and proposed the construction of an international airport in Kandahar. Subsequently the United Nations sent a specialist to help the Afghan government in surveying and planning the airport. However it was one thing to buy communications and meteorological equipment from abroad, and quite another to teach young men with only primary school education how to operate an airport.

The development of the Afghan Civil Aviation Authority, in 1957, facilitated the development of air transport. This authority which employs 11,000 people to run eight airports, its own headquarters and a steadily meteorological service, is now responsible for the construction and improvement of airports, establishment of communication facilities and finally organization of all air transport affairs. Contracts have been

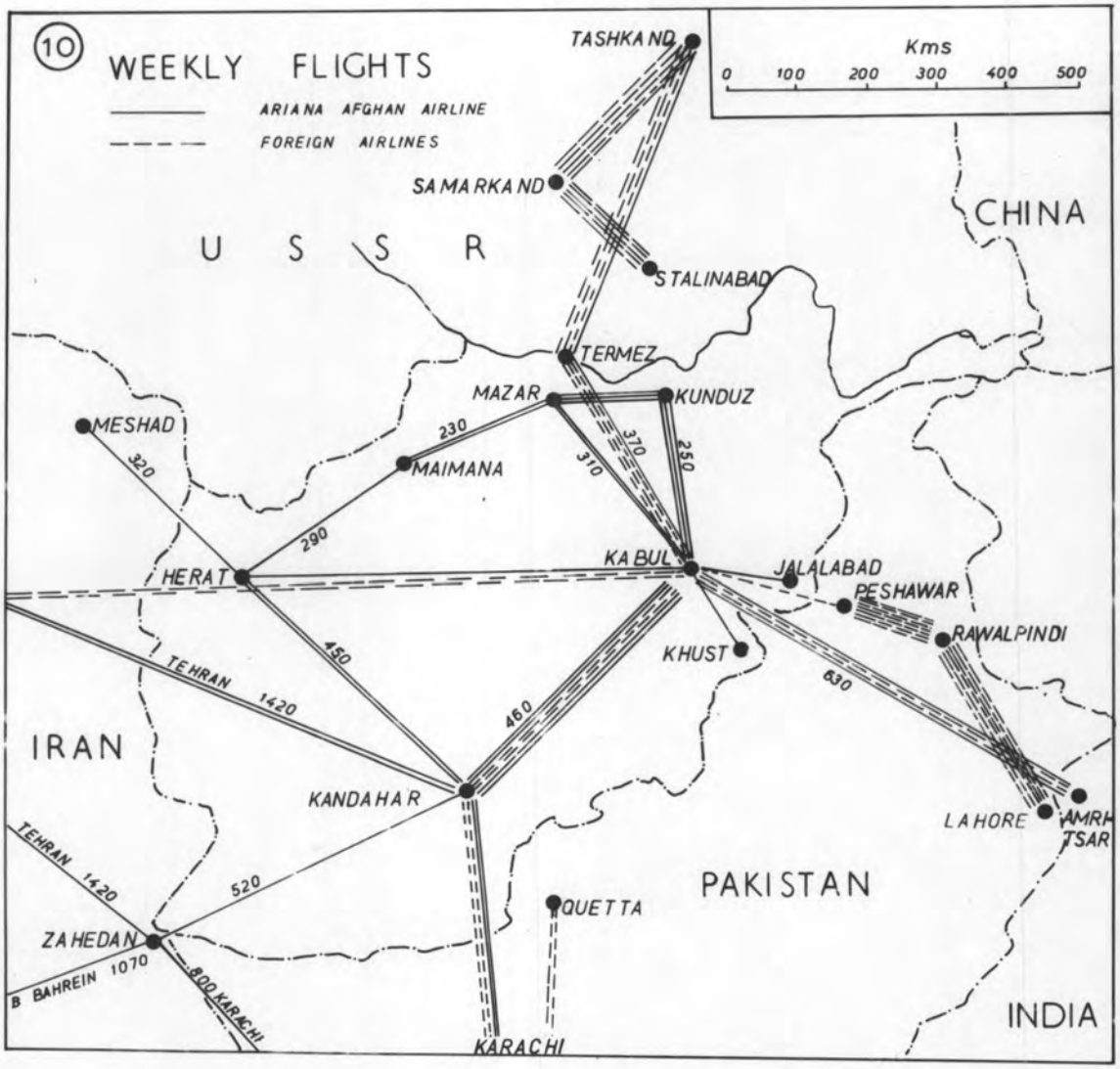
signed by this authority with the governments and Aviation Companies of Soviet Union, Pakistan, Turkey, Austria, United Kingdom, Holland W. Germany Lebanon, U.A.R., India, Belguim, France, Switzerland, Poland, Iran and Iraq for the improvement of air transport in the country.

Despite these achievements, air services in Afghanistan are not adequate. Studies are now being made of the financial and flying problems involved, but transport problems are not new to Afghanistan. It is said that ten years ago, when the first domestic air service started between Kabul and Mazari Sharif, on the other side of the Hindu Kush, the disembarking passengers would rush to the nearest telephone to assure their friends who had seen them off that they really had completed a normal week's journey in less than three hours.

In view of the country's geographical location and its mountainous terrain, the development of air transport received a high priority in the first five year plan by the establishment of the Afghan Air Authority, an autonomous agency, to administer civil airports and air routes, because in Afghanistan the air freight service is of great value in minimizing the time needed to secure spare parts or technical assistance, which in the past has seriously delayed operation in various Afghan industries. The value to public health in being able to secure and distribute vaccines and personnel by air is inestimable, and also certain exports such as Karakul (Lamb skin) are valueable enough to be flown out to ensure on-time delivery or to take advantage of unusual marketing opportunities. Therefore great strides were made during the first plan in the development of air transport;

work on several airports was started and a major part of it was also completed. The Ariana Airlines was established, which in addition to its internal services connecting the capital with a number of major cities, linked the country with important international centres. Extensive steps were also taken for the training of air personnel and for the provision of navigation aids and meteorological facilities. The basic task in the fields of air transport during the Second Plan (1962-67) was the completion and expansion of the works initiated during the first plan, which includes, besides the construction of airports, modernisation of equipment, training of personnel technical and meteorological aids maintenance and repair facilities, and improvement of air services. (8)

In June, 1956 the United States extended through I.C.A. both a grant of $9.56 million and loan of $5 million for air transport development. The project included construction of the international jet airfield at Kandahar, the rebuilding of various provincial airports, improvement in communication, and navigation aids, organization and training for the Afghan department of Civil Aviation, and equipment, and support for the Ariana Company. To carry out these projects a Civil Aviation team joined the I.C.A. mission in Kabul. In January 1960 the United States made available an additional $2.8 million to carry the Aviation programme. Soviet assistance for air development in Afghanistan was at first concentrated on military airports, the provision of military aircraft, and the training of jet pilots. Two jet fields, one at Mazari Sharif and one at Begram some 35 kilometres north of Kabul, were rushed to completion between 1956 and 1960. The unpaved field in Jalalabad was also improved to accommodate jet fighter planes, the same is the case with the construction of a new jet


10
WEEKLY FLIGHTS
ARIANA AFGHAN AIRLINE
FOREIGN AIRLINES
Kms
0 100 200 300 400 500
TASHKAND
SAMARKAND
STALINABAD
U S S R
CHINA
TERMEZ
MAZAR
KUNDUZ
MESHAD
MAIMANA
230
320
370
310
250
290
HERAT
KABUL
JALALABAD
PESHAWAR
RAWALPINDI
KHUST
TEHRAN 1420
450
460
630
IRAN
KANDAHAR
LAHORE
AMRITSAR
TEHRAN 1420
520
QUETTA
PAKISTAN
ZAHEDAN
BAHREIN 1070
800 KARACHI
KARACHI
INDIA

airfield at Shindand near Farah. In 1957 the Russians undertook to enlarge the Civil Airport at Khwaja Rawash, some 9 km. outside Kabul, to provide a 280 metres runway suitable for medium jet and turbo-prop. planes.(9) Topographical conditions make it impossible to locate a long range jet field close to Kabul, because on the eastern side the airport is very close to Kabul, and from other three directions it is surrounded by hills and Russian funds were provided under a $100 million loan agreement signed by the U.S.S.R. and Afghanistan in January 1956.

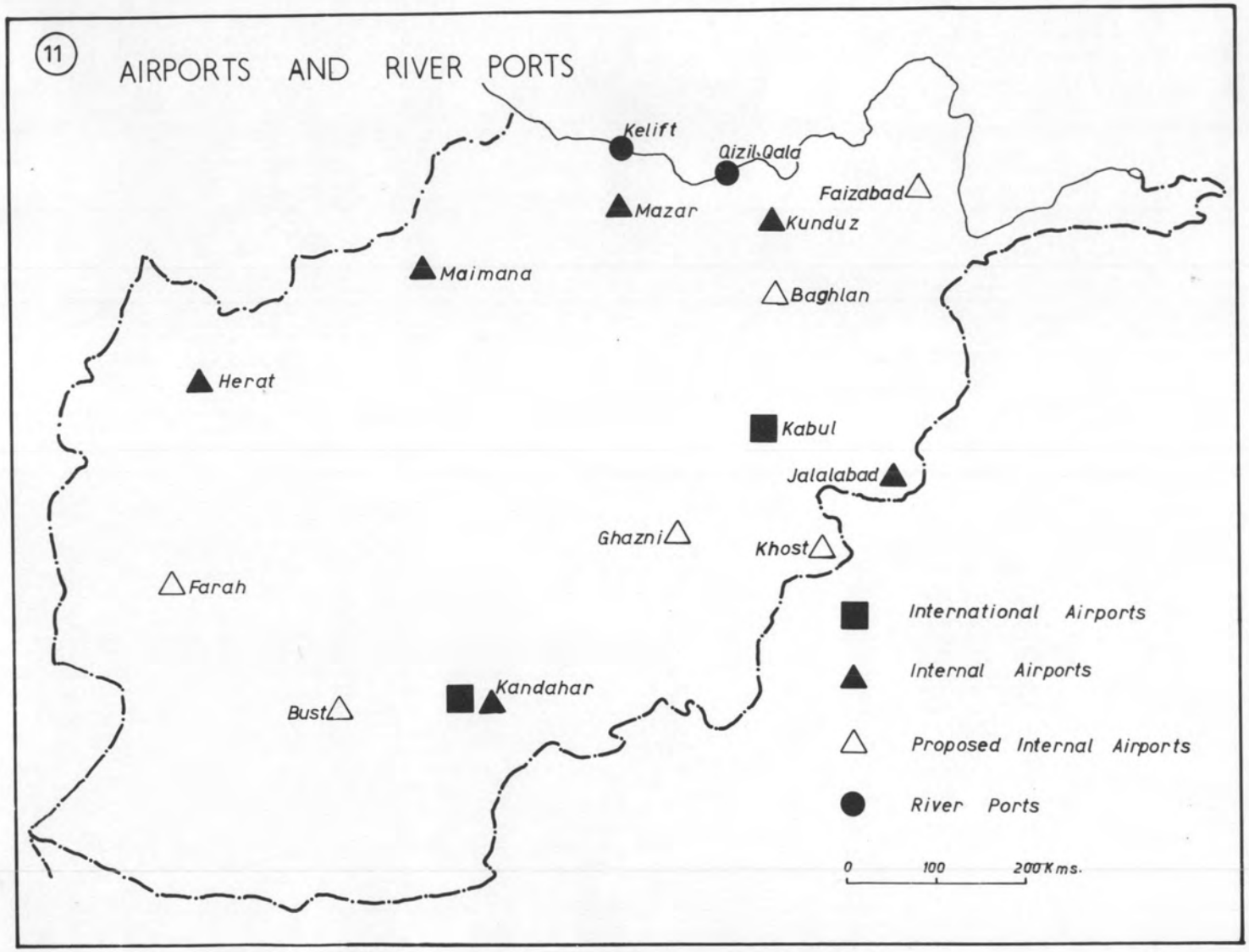
Today Afghanistan which is larger than France, Belguim and Holland combined, has eight airports, two of them open to international traffic. (Fig.11) The staff have all been trained either at Kabul or Kandahar. The Civil Aviation school at Kandahar was sponsored by American A.I.D. while that of Kabul was aided mainly by I.C.A.O. Many graduates from these two schools continued their training in the United States, and a smaller number have studied in Europe and Russia.

No one would pretend that Afghanistan, which has only entered the world of air transport within the past 15 years, is now able to operate the most sophisticated and efficient services, but it can offer something which is very valuable to a number of the worlds major airlines. That is a short cut between Europe and the Far East, which does not cross over any communist country. Until recently the route was poorly served by navigational aids, and the Afghan government did not encourage airlines to overfly its territory. All this has now changed, and there are probably somewhere in the region of 100 flights per week over the Teheran-Delhi-Tehran route and return flights per week could save between $50 000 and $100,000 a year in reduced flying time on the short cut over Kandahar. Moreover it offers exceptionally

stable weather conditions. The inter-tropical front never comes as far north and the dry continental air mass over southern Afghanistan makes cloud or precipitation a rare phenomenon throughout most of the year. The government is forced to levy a small charge for the maintainance of the navigational facilities, but it has been kept down to $25 per flight, which is very small in relation to the savings which airlines can make when using these facilities.

AIRPORTS: To facilitate air travel between the capital and the various provinces, the improvement of existing airports was necessary. Therefore after agreements with the international Co-operation Administration of America, it was arranged that a number of airstrips would be built in some Afghan cities. Five such airstrips at Herat, Baghlan, Kandahar, Jalalabad and Kunduz were included in the first plan.(10) The total estimated cost of airports during the first plan was Afs. 267,490 million plus $10.500 million from the foreign assistance, excluding the construction of airports at Begram and Kabul (two of the country's most important construction projects).

Afghanistan now has one international Civil jet field at Kandahar three military jet fields at Mazari Sharif and Shindand, and the following domestic Civil Airports, which can handle the larger piston-planes as well as Turbo-prop. and medium-range jets: Kabul, Kandahar national, Herat, Mazari Sharif, Maimana, Kunduz and Jalalabad. Plans have been drawn up for smaller air-fields at Lashkargah, the headquarters of the Helmand Valley Development Authority and province, and a centre of growing population and at Ghazni, an administrative centre and of importance for tourists. A provision of about Afs. 25 million for each of the two airports was made during the second plan (1962-67). A third airport was envisaged at Nangarhar at a


11
AIRPORTS AND RIVER PORTS
Kelift
Qizil-Qala
Faizabad
Mazar
Kunduz
Maimana
Baghlan
Herat
Kabul
Jalalabad
Ghazni
Khost
Farah
Kandahar
Bust
International Airports
Internal Airports
Proposed Internal Airports
River Ports
0
100
200 Kms.

total cost of about Afs. 158 million. Furthermore an airstrip at Baghlan in northern Afghanistan has been surveyed during the first plan, and the site of Hassan Tal airstrip chosen. When it is completed during the third plan (1967-72) the transport of merchandise from north to Kabul and the outside world will be much easier. Similarly survey work on the Khost airstrip in southern Afghanistan is being conducted, emergency landing strips have been laid out at Jabul-Saraj, Faizabad, Farah and other sites. Under the second plan about Afs. 29 million has been provided for the installation of maintenance equipment, and completion of ancillary works on the airports of Herat, Kunduz, Mazar, Maimana and Nangarhar.

Kabul International Airport: An agreement for the construction of the Kabul airport was signed with Soviet Techno-export Agency in May, 1959, and work begun in July, under the administration of Ministry of Public Works, with the financial and technical assistance of the U.S.S.R. The government of Afghanistan met the internal cost of the project. The major part of this work lay in the construction of runways, taxiways, hangars electrical and water installations, houses central heating, and road works along the airport. It was planned to have the work on the Kabul airport entirely completed within three years. Runway and taxiway were completed by the end of first plan (1962). Communication centres and technical aids have been installed in the second plan (1963) together with oil storage tanks and other necessary works, with an expenditure of Afs. 85 million during the second plan (1962-67). The total construction expenditure for this airport was estimated at Afs. 267 million, but changes and modification increased the estimated construction cost to Afs. 475 million. The runways at Kandahar and Kabul international airports are designed to accept the

heaviest jet aircraft now in commercial service. Kabul airport is a land mark in the history of air transport in Afghanistan, and links it with some of the important international air routes (Fig. 10). The terminal building is of modern construction, and conforms to international standards, and is equipped with the latest communication facilities.

In addition to a complete meteorological station, which is equipped with the latest instruments, a number of auxiliary buildings and garages have been constructed. The concrete runway is 2800 metres long.

Begram Airport: Work on the construction of this airport, which is a military airport began in February, 1958, and by September, 1959, 90 percent of the concreting work and 60 percent of the buildings were finished, and by the end of 1960 the airport was entirely completed. The runways have a length of 3,000 metres and width of 54.4 metres, while the total area of the airport is approximately 63,200 square metres. Runway work was finished on June 1959, 32,000 cubic metres of concrete having been used. Most of the hangars were also finished in 1959. The taxiways are 4.3 km. long, and their date of completion was June 1959. Furthermore a drainage system 5,520 metres in length has been constructed to collect and take away excess water from the airport. Several accommodation houses have been constructed for airport officers, transformer station has been finished, and also a road leading to the airport has been asphalted, of a total length of 10 km. Furthermore there is a hospital, clinic, and other structures for various purposes. Approximate total cost of Begram airfield was $3,300,000 of which 60% was paid for in dollars ($1,900,000) and 40 percent in Afghan currency (Afs. 26,400,000).

Kandahar International Airport: In October, 1957 the U.S. international Co-operation Administration announced the signing of a contract for the equivalent of over $3 million for the construction of this international airport. The construction plans for this international airport have been approved by the Afghan government authorities in 1958. Therefore during the second year of the First Five Year Plan an agreement was signed with the Morrison Knudson Company of U.S.A. according to which the construction of the entire technical structure at this airport was to be undertaken by that company, administrated by the Afghan Civil Aviation Authority. The construction work was started during 1957, and by September 1959 all the technical constructions of the airport were completed. This airport is destined to become the most important one in Afghanistan, and one of the largest in Asia. It will be able to accommodate the latest type of modern jet aircraft and take cope with high traffic densities.

In addition to an efficient terminal building, a hotel has been constructed at the airport itself to provide for passengers in transit. The airport is situated about 15 km. south of Kandahar City and comprises an area of 42 square kilometres, at an estimated elevation of 1009 metres above sea level. It has been built with the help of the U.S.A. under a programme to help the development of Afghanistan's air service by the Morrison Knudson Afghanistan Company. The construction of the following items comprise the aims of the technical part of this project.

1. An asphalt runway 3,200 metres long and 45 metres wide.
2. The latest type of runway lights.
3. Three high speed turn-off and connecting taxiways
4. A large air conditioned hangar. 75 metres long and 50 metres wide, able toaccommodate the largest types of aircraft.

5. An apron 82 metres long and 57 metres wide.

6. Several depots for the storage of goods in transit or otherwise.

7. A hydrant fuelling system for the rapid refuelling of aircraft, especially jet propelled airlines.

Architectural and engineering services for the non technical parts of the airport's construction was being provided by the "pacific architects and engineers" firm of Tokyo, which included the following:

1. Transmitter building

2. Communications centre building, which included an air traffic control centre for the whole of Afghanistan.

3. Building and facilities for stand-by generators.

4. Freight building.

5. Terminal building, which is a two storey building.

The latter is able to accommodate more than 100 passengers at one time. Built over the two storey passenger section is an air condition control tower. The completion of the Kandahar airport will bring substantial economic benefits. It will also add to the prestige of the country as it is anticipated that many international airlines will use this airport. Finally the immense effort put into this project will eventually result in another new landmark on the road to progress of Afghanistan.

This international airport was opened to traffic during the first plan (1960). Some of the buildings (hotel, dispensary, fire brigade and communication centre) which were taken in hand by the end of the first plan, were completed in the first year of the second plan (1962-65). An amount of a out Afs. 128 million was allocated for this project during the second plan.

Herat Airport: This airport ranks third in importance, after Kabul and Kandahar. A new terminal building, an asphalt runway 2000 metres long and 45 metres wide, and auxiliary buildings were completed during the first plan period. The work was accomplished by the Air Authority with the technical and financial assistance of the U.S., A.I.D. Because the former runway of the Herat airstrip was found to be unsuitable for use during the winter months, arrangements were therefore made to prepare another new and modern runway.

Kunduz Airport: The Kunduz airport is part of the large programme to link together, by air the more important industrial, commercial, and administrative centres of the country. The new terminal building and an asphalt runway of 2000 metres long and 45 metres wide, and auxiliary buildings were completed with water and electric systems during the first plan.(11) Construction work was performed by the Air Authority with the technical and financial assistance of the United States of America. The remaining work of asphalting and stabilization of runway, taxiway, and parking area, installation of fuel reservoirs and generators, and garages fire brigade and power plant was completed during the second plan.

Mazar Airport: A new terminal building, two temporary dwelling houses and other structures were completed during the first plan period. Installation of petrol reservoir and generator, fire brigade building, generator building, communication building and water tower was completed during 1963 and 1964. This airport has a runway of 3000 metres long and 45 metres wide.

Nangarhar Airport: The Nangarhar airport is considered to be an extension of Kabul airport. A major part of the constructionwas completed earlier. The new terminal building, radio and secondary buildings

and an asphalt runway 1850 metres long and 45 metres wide was completed with water and electric system, illumination and marking of runway taxiway and parking area and installation of petrol reservoir during the first plan. The work was done by the Air Authority with assistance from the United States.

Maimana: A new terminal building and a gravelled runway were completed and put into operation, and repair to the existing radio station were made during the first plan.

Sabzwar: This airport which is a military airfield and was not originally included in the plan, also reached the final stages of completion by the end of first plan. The airport is very modern and capable of taking heavy jet aircrafts, and has been constructed with the assistance from Soviet Union.

Air Communication and Meteorology: Another most important element in the implementation of the economic plan and development of the economy of the country especially agriculture and civil Aviation is a meteorological service. It also plays an important role in international co-operation, because it is obvious that all-weather airports supported by a modern system of meteorological and navigation stations in Afghanistan will serve both to reduce effective distances within the country and to improve its contacts with the outside world. Therefore it was important to organize and strengthen the meteorological service of the country. The Royal Afghan Meteorological Institute was established in 1955, and several steps have since been taken to train national personnel and establish weather stations and dissemination

centres all over the country. The World Meteorological Organization of the United Nations has rendered valuable assistance by way of training of personnel, sending specialists and technical equipment.

With beginning of development plans in 1956, the following suggestions and proposals were made to organize the meteorological service.

1. Since local air services have already commenced, it was essential that the meteorological institute set up necessary stations for the airports of Kabul, Herat, Mazar, Maimana, Kandahar and Jalalabad. These stations must possess weather forecasting equipment. Furthermore it was necessary to establish second and third class observatories in towns such as Faizabad, Baghlan, Ghazni, Gardiez, Paghman, Laghman, Khost and others. With the help of these stations necessary information on weather conditions affecting aviation, agriculture and dam construction could be collected. Naturally such information will make it possible to prevent much loss, both physical and financial and much useless expenditure.

2. According to the international agreement published by W.M.O. Afghanistan should have two central observatories one in Kabul and another in Kandahar which must be equipped with radio sound. In addition one station in Jalalabad which should perform four pilot ascents per day and two ordinary stations in Mazar and Herat were necessary.

On the basis of these requirements, and in accordance with practical and financial capabilities, the following recommendations were made for the development of meteorological service during the first plan.(12)

a. establishment of at least 20 observatories.

b. establishment of at least 5 pilot balloon stations.

c. establishment of at least two radio sound stations.

d. construction of a number of laboratories, workshops, depts., etc.

e. provision of vehicles required for the supervision of the stations.

f. preparation of the two forecast stations.

During the First Five Year Plan the Meteorological Institute in Kabul was completed and all equipment installed. Eight Third Class weather observatories were established in Kandahar, Kunduz, Baghlan, Herat, Nasar Ghazni, Jalalabad and Darulaman (Kabul). Three balloon stations were opened in Kabul, Kandahar and Kerkamir. 200 transmitter sets of radio sound for weather forecasting were received and a forecasting section was opened in Kabul, and workshops and laboratories were set up. Furthermore the construction of a laboratory building as an annex to the meteorologic institute in Kabul was completed and opened during third year of the first five year plan (1958-59). Similarly the construction of the residences for meteorologic personnel in Dushi, Baghlan, Paktia, Badakhshan, Ghazni, Kandahar, Maimana, Nasar, Laghman, and Darulaman was commenced.

To provide necessary information and guidance to aircraft besides the communication centres at Kabul, Kandahar and other airports which was completed during the first plan, in the second plan it was proposed to establish communication centres at Delaram (Afs 3 million) Wasa Khwa (about Afs. 2 million) and Kalat (Afs. 3 million). In addition during the same period meteorological stations at Kandahar, Obe Murghab, Farah, Daulatyar, Chakhansur Maimana, Laghman, Khost and Bamyan were established (total provision for these being about Afs. 81 million). Thus within a ten years from 1956 to 1966, the government of Afghanistan was able toincrease the number of these stations from one ill-equipped and ordinary station in Kabul in 1955 to

more than 35 well equipped and modern stations in several provinces of the country.

Education and Training: Extensive efforts were made during the first plan to train Afghan nationals in different branches of aviation. Courses were instituted in air navigation, radio communication, and traffic management at different airports, and a number of air personnel were sent abroad for advanced training. In order to meet the growing requirements for trained personnel, it was proposed to extend further the training programme, in co-operation with the Ministry of Education and the Kabul University. The first plan also provided for comprehensive training in all phases of air transport. Schools for training pilots and aircraft technicians were opened in Kabul and Kandahar, organized courses for training in radio operation, motor mechanics and other technical trades and skills were also given at Kabul. Of equal importance, administrative personnel were given training in all phases of airline operations such as scheduling, sales and ticketing, passenger handling and similar functions, with the assistance of Pan American World Airways. Thus the Air Authority, with the co-operation of an international civil aviation organization and the U.S. Federal Aviation Agency, has established a modern radio communication and air navigation system along the domestic air routes. By 1960 a training programme in the operation and maintenance of the system was established with the assistance of C.A.A., and about 500 students received technical education at Kabul and Kandahar aviationtraining centres. The facilities established for training in civil aviation by the Afghan Air Authority can be listed broadly under three headings.

1. Training Centre: Since 1958 a number of high school graduates from Kabul have been accepted into the training centres for advanced training in communications, mechanics and air traffic. Theoretical and practical training is given to these students by Afghan and foreign teachers. The centre had 100 students at the end of 1965, during the same time 15 have been sent to the U.S.A., United Kingdom and India specialised training.

2. The technical high school: This school situated in Kabul, has a department of Aviation. Students from the 11th and 12th grades of the high school receive special training from foreign and Afghan teachers, and on finishing high school they are accepted for further training at the Khwaja Rawash Centre in Kabul.

3. The Aviation Course: This course was established in 1957, and, accepts students from 6th grade level. After three years of instruction in this course the graduates are accepted at the training centre and receive higher theoretical and practical education there.

Training in meteorology is divided into four courses.(13)

1. Weather forecasting: The need for this did not become apparent until the Afghan Airlines began their regular services. A course was therefore begun at Kabul into which graduates in science of the university of Kabul were accepted. The course is one year long, and some of its graduates are sent abroad for higher and more specialised training.

2. Radio Sound:/ The use of pilot balloon for collecting information about weather conditions is also new in Afghanistan, a course has also been established in this subject.

3. Technicians Course: The purpose of this course is instruction in the use and repair of meteorological equipment. Graduates of highschool level are accepted into it and receive training from Afghan and foreign teachers, some graduates of this course have also been sent abroad for higher training. There are four meteorological workshops in the country for radio sound equipment, repair of self recording equipment, and general repair.

4. Observer's course: The training given here is in the use of meteorological equipment in observing weather conditions. A good number of students have already graduated from this course and are at work in meteorological stations throughout the country. In connection with this course a model training centre was established in Darulaman (Kabul) for practical training. In addition to courses mentioned above a meteorological section was opened in Kabul University in 1959, which provided instruction in the different branches of meteorology and use of equipment.

It was envisaged to train the following categories of personnel during the second five year plan (1962-67)

Table 20: Personnel undergoing air training 1962-67

	Category	Period of Training Course	No. that obtained
1.	Radio technicians	one year	15
2.	Weather observors and Radio operators	two years	43
3.	Diesel and motor	18 months	20
4.	Air traffic control	9 months	57
5.	Fire fighting	18 months	14

Source: Ministry of Planning Second Five Year Plan, p. 49.

A sum of Afs. 61 million has been provided for the training programme during the same period.(14)

Ariana-Afghan-Airlines: The Ariana Afghan Airlines Company was established in 1955. At the time 49 percent of its shares was in the hands of the Indamar Company of India, while the Afghan government had a 51 percent shareholding belonged to Afghan institutions such as Da Afghanistan Bank, Government monopolies, the co-operative departments, the Civil Aviation department, and the commercial Bank. At the beginning of 1958, as a result of separate agreements, the Indamar Company's share was purchased by the Pan American Airlines company, which was thereupon considered an important shareholder.(15) On the basis of another agreement between Afghanistan and U.S.A., 25 specialistsstarted work with Ariana Agghan Airlines in the field of training and administration. The company which was capitalized at $ one million, and two DC-3 aircrafts as equipment, started to receive substantial technical aid from America. However in 1958 Arian's DC-3 aircraft connected Kabul, Mazar, Herat Kandahar, and Kunduz, and from summer 1958 Ariana had two weekly connections with foreign countries.(16)

1. from Kabul to Tehran, Damascus and Beirut (13 hours)
2. from Kabul to Kandahar (5 hours), and from Kabul to Amratsar and Delhi (6 hours).

On 11 September 1959 a DC-4 service was opened to Frankfort, via Kandahar, Tehran, Beirut, Ankara and Prague. In the second year of the plan (1958) two DC-4 aircraft were purchased and put to use for the passenger traffic.(17)

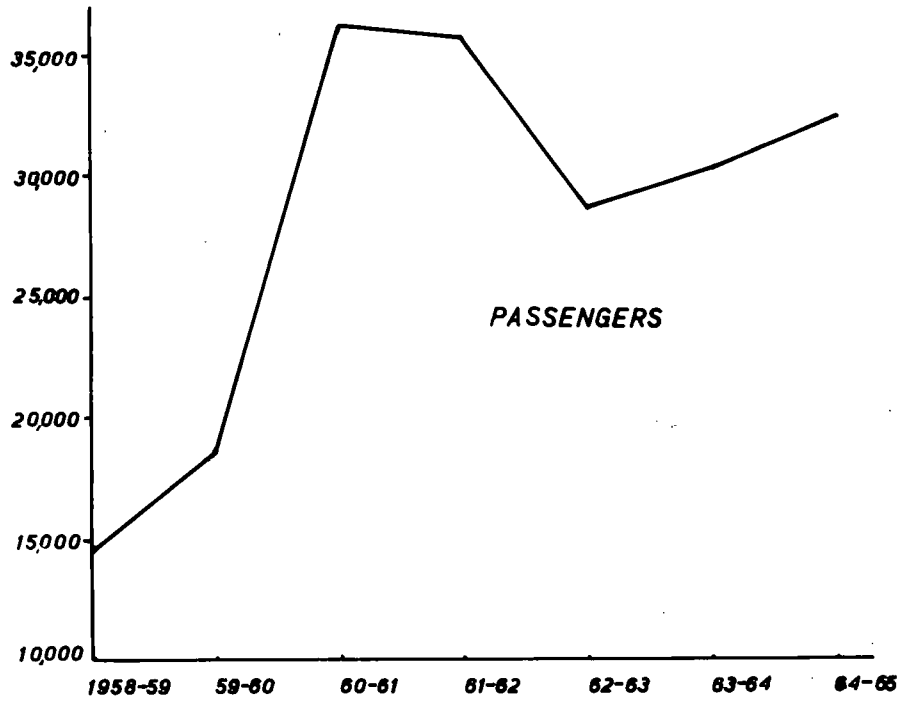
In third year of the plan one DC-4 airplane was replaced with a DC-6 aircraft. During the fourth year of the plan (1960), 11 pilots and [illegible] air-mechanics went abroad fro further training. Training in all phases of airline activities was commenced for Ariana personnel in Afiana Airlines training schools established in Kabul and Kandahar. In 1960 the U.S. development loan fund approved a $700,000 loan to Ariana Airlines, to help it buy a DC-6 aircraft. This was the first D.L.F. loan to Afghanistan. The aircraft, with spare parts, tools, and ground support equipment was purchased in the United States of America. Again in 1963, the U.S. Agency for International Development granted a loan of $2,62[illegible],000 to the Afghanistan government for purchasing a DC-6 and two Convairs for Ariana Afghan Airlines. The planes were again purchased in the U.S.A. At that time Ariana had one DC-6, one DC-4 and four DC-3 aircrafts operating on internal and external routes. The loan was to be repaid in dollars in 40 years with an annual interest of three-quarters of one percent. The Afghan government lent the money to Ariana for repayment in Afghan currency in ten years at 3.5 percent interest.

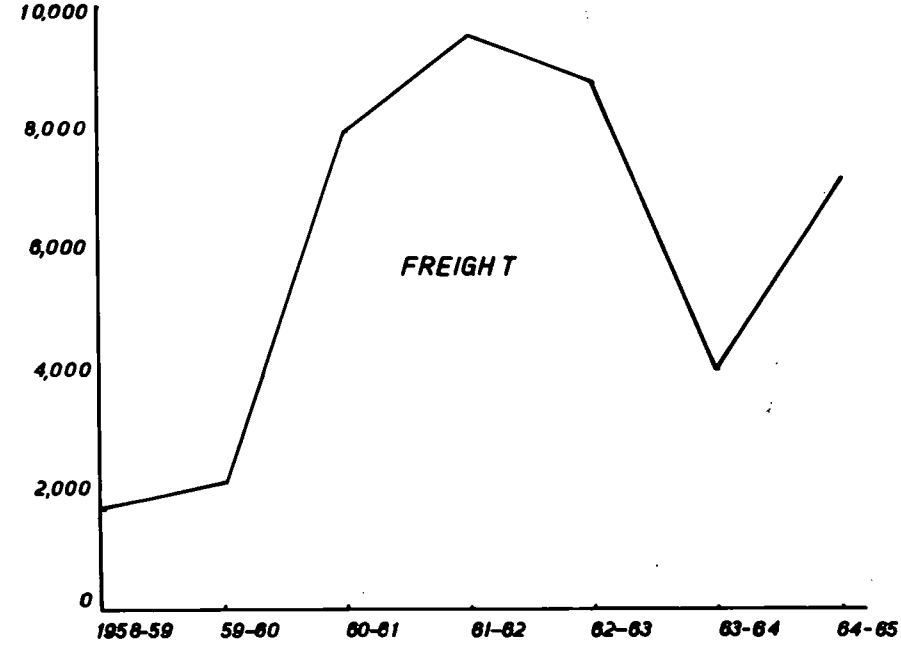
During the second plan it was proposed to improve and extend the internal and external services of the Ariana Airlines. Thus the Airline needed to acquire several new planes for this purpose. A sum of Afs. 171 million was allocated for the programme during second plan (1962-67). In order to extend the services and scope of the Ariana Afghan Airlines various projects agreements have been signed with the Soviet Union, India, Pakistan, Iran, Lebanon, Turkey, Austria, W. Germany, and Holland, and

12

PASSENGERS AND FREIGHT CARRIED BY ARIANA AIRLINE

1958—1965





also several Afghan delegations have gone abroad during last years to attend civil Aviation conferences and have succeeded in introducing Afghan Aviation to other countries. In 1964 an agreement was signed between the Afghan Air Authority and the Soviet Civil Aviation regarding flights of Aeroflot planes over Afghanistan. As a result Aeroflot planes flying between Moscow and Karachi and other south-east Asian cities, are now using the Kabul and Kandahar international airports. Among the connections with the foreign countries we must notice the regular service by Pakistan International Airlines which had twice a week flights on the line between Kabul, Kandahar, Quetta, Karachi, and a daily departure between Karachi, Lahore, Rawalpindi and Peshawar. In summer 1958 however there was still no air connection between Afghanistan and Pakistan, due to the political dispute over frontier areas of Pashtunistan, which have existed for years between two countries. But during 1964 an agreement was signed between P.I.A. and the A.A.A. on improving air services between two countries. At that time Ariana had a weekly service between Kabul and Delhi, but under the new agreement Ariana have to stop at Lahore. The same are the plans for establishment of a regular service on the Kabul, Jalalabad, Peshawar and Kabul, Kandahar, Quetta routes. According to these agreements at present P.I.A. planes are operating regular twice weekly flights on the route from Karachi to Kabul via Lahore, or Quetta, Kandahar.

Since 1 58 Iranian Airlines had a weekly departure on the following lines (1) Tehran, Kandahar, Karachi, (2) Tehran, Meshed, Herat, Kandahar, Kabul. But at the present time Iran Air runs a Boeing 707 service twice

a week between Kabul and Tehran, and the same is the case with K.L.M. which since 1957 have two departures every week between Kabul and Karachi sometimes stopping in Kandahar.(18)

TABLE 21: Durations of flights in minutes (Ariana Airlines)

Kabul-Amritsar	200-220
Kabul-Kandahar	90-110
Kabul-Mazar	80
Kabul-Termez	90
Termez-Tashkent	120
Kabul-Kurduz	50
Kunduz-Mazar	40
Mazar-Maimana	60
Maimana-Herat	80
Herat-Meshhad	80
Kandahar-Herat	105-110
Kandahar-Tehran	265-280
Kandahar-Karachi	125-155
Karachi-Quetta	170

Source: J. Humbum, La geographie de l'Afghanistan p. 333.

The Ariana Airlines which flies over 30,000 passengers and 7 million tons kilometres of freight per year, not only cover the whole of Afghanistan, but also fly from Kabul and Kandahar to Tehran, Beirut Mecca, Karachi and Delhi, and new agreements have been signed as a result of which the Ariana

planes will also go to Moscow, Damascus, Ankara, Prague, Frankfort and Berne, and may possibly extend to London and New York.(19) Today the company owns a fleet of two DC-6s, two DC-3s and a Convair 440, and employs 30 pilots, all but two of whom are Afghans. Four of the five flight engineers are Afghans. This in itself is quite an achievement in a country which is still predominantly pastoral and agricultural. Current schedules provide for domestic services between Kabul, Kandahar Mazar-Sharif, Herat, Maimana, Khudaz, Jalalabad and Khost. Short-range regional services utilizing DC-3 aircrafts, are provided to Amritsar and Delhi (India). Long range services using Convair and DC-6 aircraft are provided to Tehran, Damascus, Beirut, Frankfort and Jeddah, the later for the Hadj only.

Although an Afghan air network is just in the primary stages, and connection with foreign countries are still undeveloped, there is no doubt that in the near future air traffic will assume considerable importance in this mountainous country with difficult road communication and no railways. There are few countries in the world where the modern progress of aviation is of such significance as in Afghanistan. Afghanistan hopes that the excellent jet field at Kandahar will become a main stop over on flights from Europe to the Far East, since it offers up to 600 fewer air miles than Karachi on certain routes. Success will depend largely upon the efficiency with which refuelling and servicing operations can be performed.

TABLE 22: The growth and activity of Ariana Afghan Airlines, 1958-65

	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65
Km flown in (1000)	900	1130	2382	2885			
hours flown	3600	4500	9000	8747			
Passengers flown in (1000)	22	27.5	42.5	41.2	28.8	30.3	32.7
Passenger flown/Km in (1000)	14850	18600	36258.5	35738.8			
Capacity for passengers or chairs/Km in 1000	27000	33800	82208	70124			
Percentage of Use for passengers	55%	55%	44%	51%			
Freight flow ton/Km in 1000	1670	2090	7956	9494.5	8742	3965	7121
Capacity for freight ton/ Km in 1000	2880	3600	14139.2	17020.6			
Percentage of Use in Freight	58%	58%	47%	49%			

Source: Government of Afghanistan, Ministry of Planning, Survey of Progress, 1962, p. 20. Table 1.

Afghanistan's access to the sea: Water transportation is of course the ch
cheapest for long distance bulk transportation. If land-locked Afghanistan is the "Switzerland of Asia", the Karachi is its Genoa. The Amu Darya, however, is not a Rhine, and can be used only for large shipment of petroleum and other commodities as far as the Qizil Qala port. The Soviet Union provides transit privileges for shipments between Europe and Afghanistan, but this route is expensive and can be almost as time consuming as shipment via Karachi.(20) But as a result of increasing trade between Afghanistan and the Soviet Union, and moreover regular blockade of Karachi port for Afghanistan by the government of Pakistan, water transport development on

TABLE 19: Drawn by Author, Institute of Geography, University of Kabul, Afghanistan

DISTANCE TABLE OF AFGHANISTAN ROADS IN Km

AQCHA																																						
AIBAK																																						218
ANDKHUI																																					320	102
Islamqala																																				712	1032	814
BALKH																																			888	176	144	74
BAMIAN																																		253	1141	669	173	343
BAGHLAN																																	270	269	1157	445	132	343
PKUMRI																																37	254	239	1127	415	95	313
TURKHAM																															436	473	472	675	1399	851	531	749
T.QRGHAN																														959	159	189	403	800	958	256	64	154
TALUQAN																													174	582	146	109	470	254	1142	430	241	328
J.ABAD																												474	487	86	328	365	398	597	1325	773	453	671
CH.SUR																											1221	1416	1431	1279	1416	1453	335	1214	566	1038	1358	1140
CH.KAR																										1123	223	285	298	297	164	237	185	439	1321	615	299	453
KH.ABAD																									253	1338	476	32	142	550	114	77	347	222	1485	398	209	427
D.ABAD																								597	622	927	845	498	324	919	483	513	697	244	648	58	338	170
DILARAM																							927	1068	815	202	900	1530	1073	982	1371	1408	990	1098	328	1322	1044	1271
DUSHI																						933	531	162	180	1241	314	194	207	388	48	85	185	287	1347	463	143	361
SALANG																					76	857	580	211	253	1168	265	243	216	336	121	134	133	296	1274	472	216	401
SABZWAR																				1120	945	174	654	671	978	258	1071	1112	938	1145	1097	1134	1153	894	254	722	1044	824
SBULDAK																			531	693	769	367	1185	902	647	679	740	930	1063	816	812	849	824	979	789	1253	907	1101
SH.GHAN																		1140	787	476	400	1060	133	335	191	1045	414	967	193	1018	360	362	375	124	777	65	257	50
GHAZNI																	691	446	678	242	315	607	822	453	200	826	293	485	458	367	363	400	375	538	928	714	458	630
FARAH																725	828	478	140	967	1043	133	765	1174	925	23	1081	1210	1183	1092	1088	1125	1100	902	410	833	1183	944
QALANAW															406	804	492	931	295	1244	650	139	359	785	942	553	1366	817	643	1288	802	839	1065	496	289	427	741	532
KALAT														858	510	228	906	243	563	457	533	400	1023	668	415	711	508	700	673	582	578	615	590	753	817	929	673	867
KANDHAR													133	721	377	345	1039	101	426	590	666	267	1084	801	548	578	641	833	806	715	711	748	723	885	680	1062	806	1265
T.GHUNDI												679	812	288	393	927	776	784	253	1269	1345	412	643	1069	1227	614	131	1101	927	1390	1086	1123	1340	935	247	711	1038	799
Q.QALA											1340	883	755	1065	1265	540	974	989	1351	298	222	880	841	117	340	1466	563	149	165	633	201	238	520	231	12	909	103	376
KUNDUZ										91	1043	797	664	759	1065	449	309	899	1054	208	131	789	440	26	249	1375	472	58	116	546	110	73	429	196	1084	372	180	270
KABUL									314	405	1162	483	350	1208	860	135	556	584	913	107	180	750	687	318	65	1061	158	350	323	228	228	241	240	403	1167	579	323	517
GARDIZ								122	436	525	1384	605	472	1330	982	102	678	706	1035	229	302	879	1036	440	187	1183	280	472	445	354	350	363	362	525	1339	701	445	639
GRISHK							724	602	916	1007	560	125	252	596	260	248	1182	226	300	709	782	127	1049	920	667	329	760	957	952	834	830	867	842	1198	555	1117	925	1119
MAIMANA						977	1108	769	472	769	571	1012	1208	287	693	1081	205	1113	582	662	363	855	72	498	655	840	927	530	356	1001	515	619	769	209	576	140	460	242
MUTUN					957	1007	116	238	552	643	1400	721	588	1244	1098	218	794	822	1151	345	418	995	1152	550	303	1299	396	588	561	470	466	503	478	641	1455	817	580	755
MAZAR				619	338	1170	543	421	134	225	909	896	757	625	990	550	135	1005	920	314	238	1124	266	200	356	1457	579	232	58	653	210	247	461	26	914	198	122	96
MUKUR			667	329	913	845	213	246	560	651	1408	250	117	1454	629	96	802	351	676	353	426	581	933	564	311	828	404	600	569	478	474	511	486	649	917	825	569	763
MATAK		325	500	317	848	681	201	79	235	326	1083	562	429	1287	939	214	477	663	992	28	101	829	608	239	14	114	239	721	244	311	149	186	161	324	1246	500	244	438
HERAT	1118	793	790	1022	452	431	906	1039	924	1221	123	556	693	165	270	804	657	661	130	1150	815	304	524	950	1104	506	1197	982	808	1271	1271	1284	1283	768	124	592	912	694

Amu Darua River began during the first five year plan. Although as mentioned before none of the inland rivers are yet commercially navigable, (see Fig. 5) construction of a modern river port at Qizil Qala, on the Amu River, during the First Plan period (1956-62) was a significant contribution to transport development of the country, and development of a second river port at Kelift on the Amu River also was a substantial contribution to development programme. The cost of this port of the first plan was estimated to Afs. 1,444,522,000.

It is estimated that the volume of goods coming via Qizil Qala on the boundary with U.S.S.R. will increase during the coming years therefore during the Second Plan (1962-67) it was proposed to enlarge the capacity of this port together with that of two other ports on the same river, namely Kelift and Toshguzar. The scheme inter alia provides for mechanisation, construction of additional godowns and residential buildings, and deepening of ports. A substantial portion of the work was done in the first plan; the remaining part of the project has been completed in the second year of the second plan (1963) at anestimated cost of Afs. 36 million.

The conclusion of a five year transit agreement between Afghanistan and Iran, in the spring of 1962, provides an alternative, though still costly, route from Herat to the railhead at Meshhad and, theoretically would also permit Afghanistan to use the Persian Gulf port of Bandar Abbas. There are however, no adequate road connections to Bandar Abbas at present. The United States used its good offices with Afghanistan and Pakistan to secure transit privileges for Afghanistan across West Pakistan, both from Karachi, and on the land route to Amritsar in India. As a result a transit

agreement was signed in 1958 between Afghanistan and Pakistan, but it has fallen foul of the Pushtunistan dispute. Pakistan insists that she is not "blockading" Afghanistan, but the endless delays, inspection, and disputes over collection and subsequent refund of customs duties have the same effect, and as long as this situation continues Afghanistan is, in effect paying exorbitant transportation costs for heavy imports. Such costs represent a continuing drain on an economy that is already heavily burdened. (Fig. 13.)

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CHAPTER FIVE

THE ECONOMIC, SOCIAL AND POLITICAL ASPECTS

"Transportation is an economic function, which creates the utility of place, and to a lesser degree, that of time. It is one of the tools required by civilized man to bring order out of chaos. It reaches into every phase and facet of our existence. Viewed from every standpoint - economic, political and even military, it is unquestionably one of the most important industries in the world. Moreover reduction of the cost of transport increases flexibility in the location of industry, in the exploitation of the natural resources, and in the achievement of industrial efficiency. In other words accessibility vitally affects the economic position of many parts of the underdeveloped world, and changes in accessibility have had striking results in a comparatively short time."(1)

In a land locked mountainous country like Afghanistan the results of any improvement in the system of transport will be remarkable. Numerous examples could be cited of the rapid growth of production for the market following on the establishment of communications. Well known instances include cotton production in the northern provinces, Herat and the Helmand valley, which was greatly stimulated by the construction of new highways and provision of markets, production of fruits in Kandahar, Kabul and other provinces. This is because the transition from a subsistence to a market economy involves a multiplicity of small changes, introduction of new crops to an area, clearing of land in new regions to extend cultivation, development of trading, connections and routes, and improvement in transportation,

which have to be carried out by individuals with or without complementary government measures, using foresight, adapting ideas and taking risks . Moreover an important potential source of capital formation in the early stages of economic development in a country like Afghanistan, is the improvement in the quality of certain assets, especially roads. This enables manufacturers, traders, and others to reduce working capital relative to the volume of activity undertaken; it becomes possible to reduce, relative to output, stocks of materials and the volume of goods in transit. The saving in working capital in effect provides the means for further additions to fixed capital. Therefore, expenditure on roads has always been one of the most important economic services provided by government in Afghanistan. Because without roads, and very often airways as well, trade cannot develop. The money economy which we willdescribe later, depends on people producing for sale. If the goods they produce cannot be moved because there are no roads or other means of transport, then people will have to remain in the subsistence economy. It is not surprising therefore that governments have always concerned themselves with roads and other transport facilities, especially in the present time that the government is making commendable efforts to bring new lands under cultivation and to industri lize areas where basic raw products can be transformed into marchantable goods for foreign exchange earning, and to educate its people to the way of a more abundant life. The sole of transport in all these sectors is significant. For instance the Kabul-Qizil Qala highway will provide a stimulus to coal exploitation, to cement production, to textiles and goods industries, to the cultivation of cotton, sugar beets, and other

commercial crops. As well as providing ready communication with developing oil and gas areas in the northern parts of the country. Because a resource such as land, a mineral deposit, or a forest may not be used in production when it is economically inaccessible, a natural resource is valueless when the cost of co-operant resources and the cost of transporting resources and products exceed the price that product can command in the best available market, if a natural resource is valueless, it will not be profitable for anyone to use it, even if the user does not have to pay for it. Similarly the road from Kabul to Jalalabad and Turkham will serve as a mainline of communication with existing hydro-electric installation at Sarobi and for the construction at Naghlu, Mahipar and Darunta power projects on the Kabul River, and also for the extensive Jalalabad irrigation scheme. This road will also provide a means of communication to stimulate trade with the provinces of Nangarhar, Laghman, Kunar and Nuristan.

I: The social and political significance of transport

The social and political implication of transport and communication are immense in Afghanistan. One often hears that we live in a shrinking world, a statement that becomes significant when one contemplates the possibility of national and international travel. The exchange of ideas, of goods, cultural and political philosophies can only be classes as being advantageous. Moreover since the end of 19th century, the world has made tremendous strides in increased living standards and in the enjoyment of unique products through increased trade, both inter-regional and international.

In Afghanistan scarcely thirty years ago, it was only the wealthy people who enjoyed the benefits of products from distant lands, or even

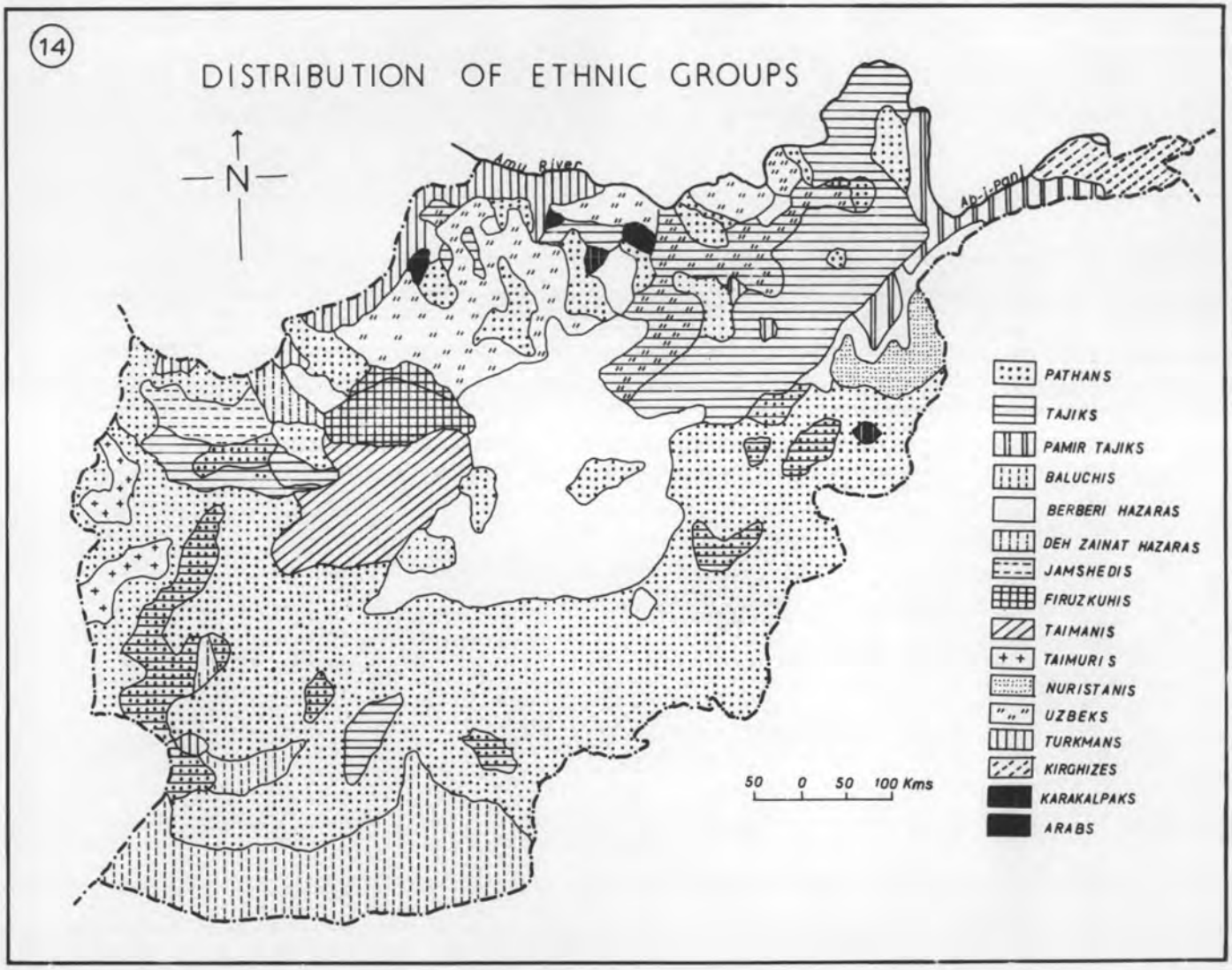
from remote regions of the country. The development of transport has made such products available to all. Consequently, the real standard of living has improved substantially. Now even a relatively small and isolated community will have available products from many foreign lands, and most parts of Afghanistan, and the consumer can enjoy an increasing variety of choice at a minimum expenditure.

One of the factors that impeded social and political integration was the vast size, and the great distances which separated the various provinces. The arduousness of travel between different areas was also accentuated by inhospitable terrain and deserts, mountains and forests. This was particularly true of the pre-1930's. Even from the geographic and the traditional centre of political power, the distances to the corners exceeded 100 miles, a formidable stretch in a land where the slow animals, oxen, yak, horses and camels, still remain the most common carriers. Therefore separation and centrifugalism in Afghanistan were encouraged not only by the large size of the country, but also by lack of transport routes until modern times.(2) To these we may add the dominating physical and cultural barrier (see chapter one and two) lines which impeded integration, unequal distribution of wealth and population and the diversity of races and languages, each of which exacted varying degrees of fealty from the group involved and thereby accentuated obstinate parochialisms.

Fundamentally, modern Afghanistan is a nation-state relatively recently forged from a variety of ethnic groups and feuding tribes. The cultural themes and goals of Afghanistan are comparatively unique. This country, sometimes known as the "crossland of Asia" has been a mixing

(14)

DISTRIBUTION OF ETHNIC GROUPS



bowl of numerous races and a battleground for a great variety of invaders. Thus evolved a great variety of different ethnic groups, speaking different languages and dialects.(3) According to a recent research by the Institute of Languages of Kabul University (1966). There are 33 different languages and dialects existing in the country. But generally speaking, there are three major groups based on racial characteristics and languages; Mongolian people speaking Turkic languages, Caucasian people speaking Indo-Iranian languages, and Mongolian people speaking Indo-Iranian Languages.(4)

The largest group is the Pathan, or Pushtun, numbering about 8 million out of the total population of 15.7 million (1965). Most of them speak Pushto, an Indo-Iranian language, but in so many different dialects, for instance the Pushto of Kandahar province and western Afghanistan is different from that spoken in southern, or eastern Afghanistan. Another Caucasian group, the Tadjeks, about 3.5 million live mostly in the west around Herat, and in river valleys in the south, though a few are found in the Hindu Kush and the Wakhan corridor; they speak Persian, and are mostly farmers, artisans, and traders.

The second major group, closely related in language to the peoples of Soviet and Chinese Turkistan, are Mongolians principally Uzbeks and Turkmans, who speak Turkic languages. There are about 1.5 million of them living mainly in the north and northwest; some are nomadic sheepherders, some sedentary farmers, and some traders.

The 1.5 million people in the third group are Mongolians speaking ancient forms of Persian, who engage in sedentary farming or semi-nomadic

herding; mostly in the central parts of the country. Other minor groups include the Nuristanies in the inhospitable mountains of Hindu Kush, and the Baluchi nomads in the southern portion of the country in Chakhansur province.

Racial differences within the Afghan population should not be exaggerated but they cannot be ignored in an analysis of social conditions, for they are linked with marked differences in the way of life, dress, occupation, and status of the various people. Afghan society is built on family and tribal units. With the gradual settling down of the tribes, the village community has become increasingly important. Nevertheless, family tradition and cohesion are still at the core of Afghan life. Most of the ethnic groups, specially the nomadic population, still have a more or less recognisable tribal structure.(5) The Afghan family resembles very closely other tribal societies of both the Near East and Central Asia. It includes the head of the family, his wife or wives, his unmarried children, his married sons and their wives and children. All family members, young and old, are regarded as the common responsibility of the entire family. The eldest male, as head of the family, has complete authority over his household, and the position of family patriarch generally passes to the eldest son.(6) The family unit is the smallest in the tribal structure. Closely related families joint together to form a clan. The clan joins with other clans to form a sub-tribe, which in its turn, unites with other sub-tribes to form a tribe. The leader of the tribe is the Khan, usually a member of the most aristocratic family group in the tribe. The Khan is responsible for the protection and prosperity of his people,

as well as for settling disputes and carrying out decisions of the Jirgah (tribal council or assembly). Struggle for political power between contenders and for economic values between tribes often led to continuing feuds which became almost an inherent characteristic of the tribal social structure(7) (see Chapter two).

In spite of this apparent heterogeneity of population the country has developed into a nation with distinct cultures and customs of its own. Regardless of language or origin, almost the entire population is Moslem. Islam is the state religion, and the mosques everywhere are not only religious centres, but centres of social and cultural life, and also educational centres. In other words, the difficulties of life between mountain, desert, and invaders have not robbed the Afghan of his concept of the dignity and equality of the individual. In fact, this pastoral society has made the tribesman a determined democrat. The Afghan is a fiercely proud and democratic individual and there are few barriers of class in his society. The tribesman meets his chief on an equal footing, the tenant has access to his land lord, the servant to his master, and even the king is regarded as the first among equalls.(8) But regarding the country as a meeting point of many peoples, with the result that the present tribes of the country have varied backgrounds, based on ethnic origins of the invaders who have entered the country over the centuries. there can be little doubt as the great contribution which communication and improvement of transport has made to the social and political unity of the nation. Because by means of transport, institutions and customs, laws and language, will make rapid progress in reaching every part of the country. News papers and periodicals, containing the seeds of improvement,

civil, scientific, moral and religious, will be dispersed with rapidity. Villages and small towns will gradually exchange their dialects for the national tongue, by increased frequency of communication with other places and persons; and customs and superstitions that have for ages resisted the progress of other agents, will be increasingly challenged.

Therefore transportation improved the level of human understanding and education in a direct fashion by facilitating the movement of books newspapers, various art forms, and indeed by the movement of people themselves. In other words the development and improvement in communications, construction of modern roads and bridges will also directly influence the development of education in Afghanistan. For example, the remoteness and isolation of a town such as Faizabad is notable. This remark applies to many other towns and most villages. As we mentioned before distances are not excessive but the bad roads, the difficult gradient, and the hazards of broken bridges, or deep river fords impose great delays. These circumstances have a bearing upon (a) the centralized control of education (b) the inspection of schools, and (c) the outlook of the students. As to inspection when this has to be done on horse-back, taking several days, visits must be infrequent and the influence of the inspector small. Regarding the outlook of pupils, there are few students able to visit any other town, than the nearest to that in which the school is situated. Boys at Andkhoy, for example, had never visited Balkh, and know almost nothing of its history, geography, people and economy(9) in reality, or the students at Laghman don't know about Nuristan, which is not more than thirty miles from the school in the same province. Indeed, one of the

main factors which is preventing the development of education is the lack of adequate transport facilities and a good and efficient road network.

The first modern school was opened in Afghanistan about 60 years ago. Until then education Afghaistan had not been centrally organized.(10) Parents sent their sons to nearby mosques where they were taught by mullahs some families employed private instructors for their children. During the reign of the present king, a large number of primary, middle and high schools have been opened all over Afghanistan. It is now obligatory to provide a primary school in every city with a population of over 5,000 towns. The total number of students at present is well over 600,000. The Ministry of Education has taken up programmes to provde basic education facilities for 50 percent of Afghanistan's school-age children by 1980, and 25 years after that every school-age child will have facilities for primary education.(11) But there is still a long path ahead before general literacy is achieved. In spite of the progress of the last decade relatively few children are attending school although education is free and compulsory.

Similarly an active and nation-wide health service will be impossible to develop without adequate transport facilities. Much suffering and many complications and deaths could be avoided if patients could receive prompt attention. All complicated cases have to come to Kabul, which means that patients must often travel for days or even weeks. The percentage of deaths in the hospital is high because most of the patients go there only as a last resort. Moreover it has been estimated, that 15 percent of the live infants born at Kabul province die in their first year of life.(12)

In the villages people long depended on local healers who acquired their medical lore from Persian and Arabic books now centuries old. Many put their faith in herbalists whose small shops are found in many bazaars. The development of modern health services began in 1931; in 1934 the Ministry of Public Health was established; and in 1956 the Institute of Public Health was founded. In 1960 there were only 56 hospitals in Afghanistan with a total of 1,800 beds and with some 220 doctors attached to the hospitals.

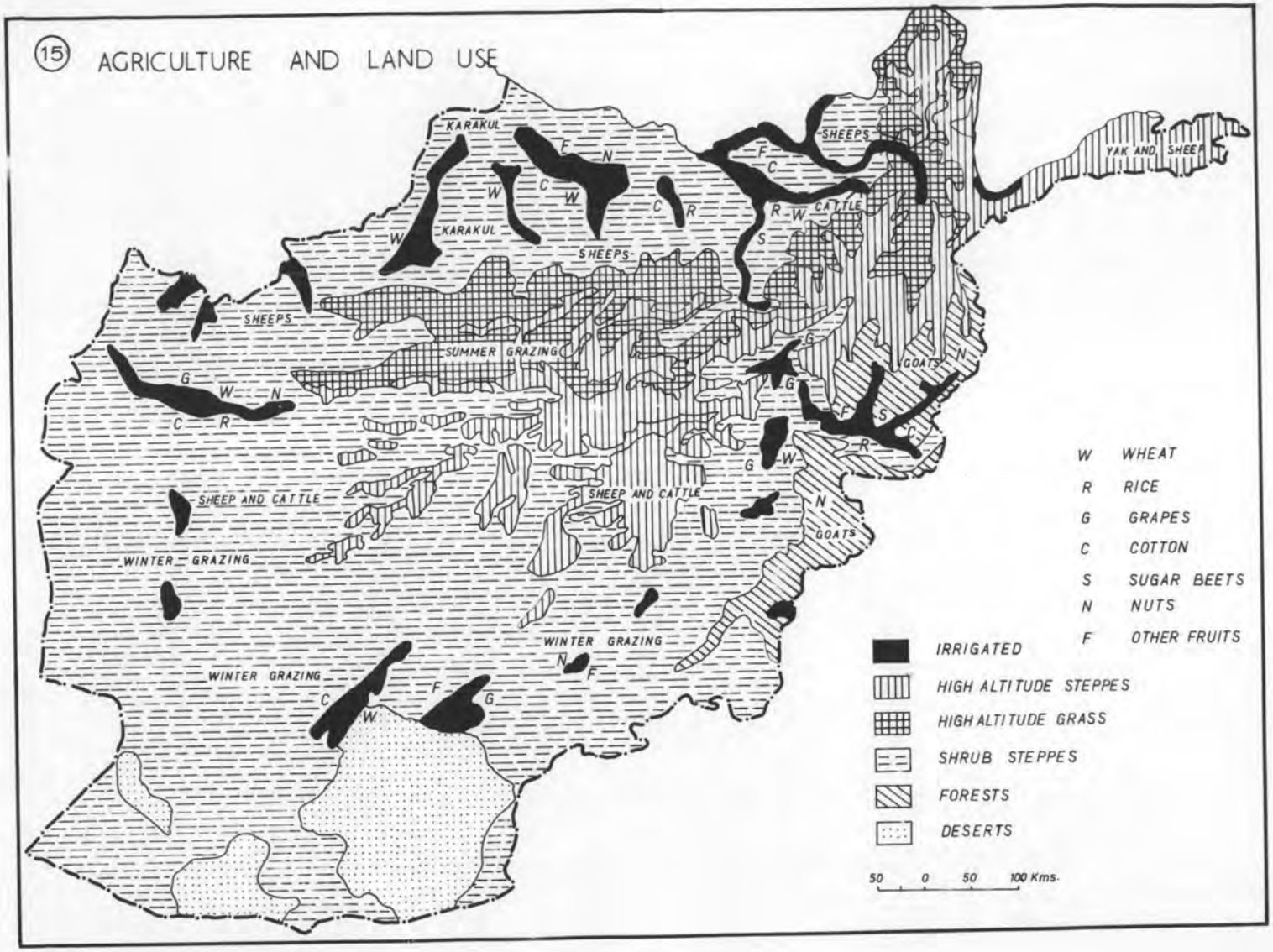
At the present time along with other sectors of the economy, education and health services are rapidly progressing. Because it is obvious that education and medical services are of economic importance. Educated and healthy people make better and more efficient producers than people who are ignorant, illiterate, and sick. In other words the hoped for acceleration of Afghanistan's economic evolution will depend very basically upon effective utilization of its manpower, involving an improvement in health services and a revision of the educational system to provide a vastly increased number of skilled labourers, technicians, and managers.

From the political point of view, at the present time the government is working hard to achieve a uniform and centralized administration of the country, to eliminate strife between its different factions, to channel peoples energies into economic activity instead of wasting it in tribal feuds, and to create a developed and powerful Afghanistan, it is necessary to build new highways and to improve the communication system in the country. Because a certain minimum of internal communication is a condition of the existence of any state, even a feudal one. The service of justice and

defence, the levying of taxes and the transport of news are almost impossible without a road system. Moreover both on an international and national level, transportation tends to breakdown provincialism and tribalism and to broaden the outlook of individuals, with a resulting increase in tolerance and understanding. In the case of Afghanistan the country has inherited a desperate population some parts of which have little relation to one another, while others are in continuous strife. Therefore psychological factors such as divergent languages and ethnic strains, and physical factors, such as the natural barriers of mountain ranges, deserts and rivers, have made national unity difficult to realize. The independent disposition of the Afghan tribes has caused domestic crises from time to time. The vigorous, irresponsible Afghan temperament and the inaccessibility of many tribal strong holds have made possible the continued autonomy of numerous tribes, an autonomy which was sustained even against the great Mogul and British Empires, and which can still challenge the central government on occasions. Thus the vast improvements in the existing road and communications network are required not only for Afghanistan's agricultural and industrial development, but also for strengthening governmental ties with outlying provinces, many of which are separated from administrative centres by wide deserts and high mountain ranges.

II Significance of transport in development of agriculture

The basic structure of Afghan society for centuries has been tied to agriculture. Currently 85 percent of the people derive their existence from farming and pastoral activities. Therefore Afghanistan's living standard has been determined by the country's agricultural output and the markets for it. It means that Afghanistan is self-supporting in food (except for tea and sugar), and in cotton and wool, the two raw materials most important to its industries. Moreover substantial surpluses of fresh and dried fruits, nuts and above all nonprocessed animal products such as hides and lamb skin have been consistently produced, with the bulk of them exported. Wheat is grown almost everywhere. Large urban communities, such as Kabul and Kandahar, supplement local supplies by purchases from surplus wheat areas, particularly Herat. In an average year about two million tons are marketed. Cotton is becoming an important crop, since it thrives up to altitudes of 5000 ft. Moreover its quality is said to be superior to that grown in nearby countries, and is readily marketable outside Afghanistan. Therefore cotton which was produced primarily in northern province has recently been introduced in the Helmud area, and Herat province, which in turn has brought into existence modern textile mills. Fruit growing is also an important part of Afghan agriculture, and many varieties of apples, pears, peaches, quinces, apricots, cherries, pomegranates, figs, melons and grapes are raised. Some experts believe that several of these fruits may have had their origins in the upland valleys of Afghanistan. Substantial quantities of dried grapes and apricots as well as fresh fruits and vegetables are exported to India and Pakistan annually.


15 AGRICULTURE AND LAND USE
KARAKUL
KARAKUL
SHEEPS
SHEEPS
SHEEPS
YAK AND SHEEP
CATTLE
SUMMER GRAZING
GOATS
SHEEP AND CATTLE
SHEEP AND CATTLE
GOATS
WINTER GRAZING
WINTER GRAZING
WINTER GRAZING
W WHEAT
R RICE
G GRAPES
C COTTON
S SUGAR BEETS
N NUTS
F OTHER FRUITS
IRRIGATED
HIGH ALTITUDE STEPPES
HIGH ALTITUDE GRASS
SHRUB STEPPES
FORESTS
DESERTS
50 0 50 100 Kms.

A major problem that Afghan agriculture faces is the distribution of its products. Poor roads and limited transport equipment, combined with slow-moving Pack animals using a network of trails, have impeded large crop movements, although enough roads have been improved to connect the commercial centres with year-round motor service. Thus the governments plans call for the further improvement and hard surfacing of the four links most important to the country's contact with its export markets. For instance through Peshawar and Quetta, faster and more reliable transportation services are essential to the marketing of perishable fruits and vegetables in Pakistan and India. Moreover of the total area under cultivation, 75 percent lies north of the Hindu Kush range in the valley of the Oxus river, while the most thickly populated area is found in the valleys tributary to the Kabul River between the central plateau and the Pakistan borders. To the southwest the Helmand river supplies water to new lands being developed by large projects. Therefore among the requirements for a well balanced development of Afghanistan are a larger and more dependable supply of fuels and power, and animproved transport and communication system.

Animal husbandry is also being expanded rapidly. Meadow and pasture lands (32,000 km^2) now support an estimated 30 to 35 million livestock. This prevalence of land suitable for grazing makes animal husbandry an important element of the economy. Afghanistan's Koralul (lamb skin) producing provinces are Kataghan, Nazar and Farah. These provinces produce nearly ten million pelts annually, from which nearly 3 million pelts are exported. Fat-tailed sheep yield an estimated

130,000 tons of wool annually. (Much of the wool is used in carpet weaving).

Again the increase in production of these materials depend mostly on their access to markets and provision of more reliable and cheap facilities by the Hazarajat, is sparsely populated. Cut through by numerous river valleys and fairly rich in local pasture lands, its development must await an extension of modern roads and transport facilities.

Afghanistan's forests and woodlands represent 1.5 percent of the total area. The dense natural forest, generally coniferous are situated mainly in the southern, eastern and northeastern parts of the country. A large proportion of the estimated 10,000 km^2 of timberland consists of shrubs and miscellaneous trees whose commercial value is low at the present time, due to lack of transport facilities and the seasonal destruction of timber or brick bridges. Therefore provision of these facilities, and better markets for this industry, will be first of all helpful in raising the standard of living of the inhabitants of these areas, because their economyis at present dangerously dependant on production of wood. And secondly and indirectly in the development of forests and finally the economy of the country.

At the present time cro yields are low in Afghanistan, and thousands of acres of potentially fertile land lie unused for want of irrigation facilities. In addition the variety of climate and elevation permits the cultivation of both temperate and semitropical products. In most low-land areas there are two growing seasons and with irrigation even three

crops. But the problem is that the present road network makes it difficult to bring food from where it is grown to where it is in greatest demand.

During the last ten years strenuous efforts have been made to develop agriculture by providing irrigation facilities and introducing modern methods of cultivation. Steps have been taken to reconnoitre and carry out preliminary surveys for providing irrigationwater to more than 1,500,000 acres of land. Therefore during both plans (1956-67) emphasis was placed on agricultural expansion. The plans provided for the construction of dams on several rivers, and it was estimated only during the first plan that these irrigation schemes would bring 325,000 acres of land under productive cultivation. Now first of all for these large agricultural projects which includes construction of dams and etc., a large amount of heavy equipment, machinery and material is required, which have to be imported from foreign countries over a long distance. Therefore, the improvements in the field of transport will directly affect the total cost of the projects, with time saving. For instance, the Helmand valley development project in southwestern Afghanistan which had been started in 1946 with the assistance from U.S.A. covers almost one-half of the country's total land area (the Helmand and its tributary, the Arghandab, have an estimated runoff of 10,000 million cubic meters annually) and is one of the largest projects in the country. It requires thousands of tons of material and equipment such as cement, machinery, and fertilizer annually. The role of transport cost will be significant in the total cost of the project, if one compares the journey from Chaman on the Pakistan border to Kandahar and Helmand valley, previously on unpaved and unbridged

roads which had to take two days or even some times more, whereas today it can be done in eight hours without any delay. Therefore the Morrison Knudson Company of the U.S.A. which was responsible for the project recommended the construction of the new Chaman-Kandahar-Helmand highway, to facilitate the import of heavy equipment. The same is the case with Nangarhar canal project with its 75 km. long canal, and the Sardeh dam in Ghazni, which irrigate a total of 200,000 acres of land. These two projects will be completed with assistance from the Soviet Union, all equipment being imported from Russia, via Qizil Qala port, Kunduz, Kabul and then to Nangashar or Ghazni. Instead of three days it is now possible with the construction of new salang highway to make this journey in less than ten hours without any difficulty and delay. Thus the population of Afghanistan has ample room to increase, even to double without economic danger, provided the resources of the country are developed. There is a large amount of land in the Kunduz river valley, in northern, southern and south-western Afghanistan which can be brought under irrigation.

Specialisation in agricultural products: The system of specialisation in agriculture, which is now one of the main targets of the government, for the development of agricultural production in the country, also directly depends upon an efficient system of transport and good roads. By moving goods and materials to other points, it becomes possible to maximise the economic advantages of specialisation. Before adequate transport facilities were developed it was necessary for each geographic region either to produce what was needed or to do without those products which would have been impossible or uneconomic to produce. But now with the provision of communication facilities each economic region can concentrate

upon the goods and services for which it is best adapted either through natural occurrence or through historical development. The products and services of each of these specialised areas can then be exchanged with the products and services of other areas for mutual benefit. Consequently transportation enhances the productive efficiency of an economy by making specialization feasible. The principle is that the country must use its land, labour and capital to produce what is most valuable, if it is possible to take land, labour and capital away from producing one thing and to put them into producing something else which is of great economic value, then the country becomes richer. The most obvious example of such a change in Afghanistan is when land and labour are taken away from producing a subsistence crop and used for producing a crop for sale. For instance the cultivation of cotton in Kunduz Valley, sugar beets in Baghlan, rice and sugar cane and tropical fruits in Nangarhar and grapes in Parwan. (Fig.15). Specialisation also makes it possible to use very expensive machinery which greatly increases production. Large amounts of capital can only be used when there is specialisation.

In Afghanistan specialisation has not been carried very far. Most people produce a lot of the things they need, for themselves, in other words people are both consumers and producers, which is a subsistence economy or subsistence production. Thus the economy of Afghanistan is a mixture of two kinds of economy. A small proportion of people, particularly those in the towns depend mainly on the money they earn, others, such as farmers in the remote districts of Badakhshan, Nuristan, Chitral etc., earn only a little money and depend mainly on subsistence production.

Table 23

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COMPARATIVE REGIONAL ADVANTAGES FOR PRODUCTION OF KEY COMMODITIES INCLUDING POWER AND TRANSPORTATION CONSIDERATIONS

COMMODITY	KABUL REGION Upper Basin	JALALABAD REGION	KUNDUZ REGION Valley Proper	MAZAR-NEHMANA REGION	HELMAND REGION Arghandab Area	HELMAND REGION Helmand Area
COTTON	Large-scale cultivation excluded by climate and by competition of food crops for land. Ginned cotton can be brought to new Gulbahar mill from Kunduz Region although route needs improvement. Short-run power shortage possible.	Large-scale cultivation excluded by competition of other crops such as rice and sugar cane. Area can easily be supplied with imported cotton piece goods from West Pakistan, and later with goods manufactured at Gulbahar.	Excellent conditions for growth but no large expansion of irrigated area likely due to high capital costs. Best located area with respect to existing processing facilities and for exports to or via the Soviet Union.	Expansion of irrigated area is inhibited by a lack of capital and probably by a lack of water as well. Area will continue to supply its ginned cotton to Pul-i-Khumri and for export to or via the Soviet Union.	Best potential area for cotton cultivation. Water, land and labor are available. Test plantings indicate suitability of region for growth of cotton. Region needs cash crops. Sufficient hydroelectricity available in near future for gins, later for mill. Region is well-situated for exports via Pakistan and could also supply part of Gulbahar's needs, especially if transport between Kandahar and Kabul is improved as proposed by Koebig & Koebig.	
SUGAR	Sugar cane is excluded by climate, sugar beets by competition of food crops for land. Area will continue to import its sugar needs from other regions or from Pakistan.	Short growing season and two diseases make large-scale cane supply problematical. Factory now in experimental operation is obsolete. Area would have to compete with sugar imported from Peshawar with no great transportational advantages towards Kabul.	Excellent conditions for sugar beet growth, but crop must compete with wheat and cotton for land, water, labor. Baghlan factory could double its 55,000-ton capacity if assured of supply. Kar Kar coal is ample for refinery, but transport to Kabul poor.	No present production since there is no processing plant and no demand for beets. Area can be supplied either from Baghlan or by imports from U.S.S.R. No serious transport obstacles, and little prospect of local sugar production developing in future.	Barring a large-scale development of the Kunduz Valley, this Region has the best potential for sugar beet cultivation. Water, land and labor are available. Trials indicate that sugar beets do well, and they fit into a desirable rotation pattern. Region needs cash crops, is too remote to be supplied from Kunduz, now imports sugar. Power potential for refinery is good, but fuel would have to be brought in unless process were completely electrified. Region's fruit-processing industry ensures local expanding market.	
CITRUS FRUITS	Climatically excluded, but paving of Gorge Road should facilitate import of well-packed fruit from Jalalabad.	Only present area of production but expansion is hampered by disease and competition of other crops.	Climatically excluded by Considerable improvement in internal transportation will be necessary before this Region can afford to import citrus from Jalalabad Oasis.	low winter temperatures.	Climatically favorable, with sufficient land, water and labor available. Experimental plantings have been made and should be successful at least in Shamalan, Darweshan and Chakansur areas.	
DECIDUOUS FRUITS AND NUTS	Problem is not one of increased production but of disease and quality control with better handling and packing. Area second in exports to Pakistan and India. Paving of Gorge Road will facilitate transportation, reduce damage to fruit in shipment.	Problems are similar to those of Upper Basin. Area not as important in deciduous production as in citrus, but its deciduous fruits and nuts are more conveniently located for export to Pakistan, India, than are those of Upper Kabul Basin.	Insufficient information is available on status of this industry in the North. Presumably could improve quality of its exports to U.S.S.R. Ships only nuts to Kabul Region, and these present no great problems of packaging and transport.		First-ranking fruit exporting region with excellent market in Pakistan. Needs include disease and quality control, better packing and perhaps refrigeration. Local industry has lagged in taking advantage of domestic and foreign markets. Power, roads excellent.	*Summer temperatures may* be excessive for some varieties, but if experimental plantings are successful area offers greatest potential for expansion of deciduous fruit production. Electric power assured for processing needs. Road system excellent if properly maintained.
CATTLE HIDES AND LEATHER	Only area with a modern tannery capable of large-scale production. Capacity of 120,000 hides per year is only 1/10 to 1/8 utilized due to poor collecting system and lack of incentive for farmers to preserve and sell hides.	Improvement of transport links with Kabul should permit sale of area's hides for processing there, but proximity to Pakistan may result in continued reliance upon imported leather and leather goods unless Kabul prices are reduced.	Present demands met by small, local tanneries using crude techniques and vegetable reagents, and by imports of chrome leather and leather goods. Region could support one or more large-scale modern tanneries if incentive and collection problems are solved. Kunduz Valley would have sufficient electricity and coal to support such a tannery, using chemicals imported from the U.S.S.R. or West Germany. Region undoubtedly has large but untapped hide resources.		Present demands met largely by imports of chrome leather and leather goods from Pakistan. Kandahar bazar has large cobbler and harness section. Kandahar Industrial District will include a modern tannery. Electric power will soon be assured, and if pasture-economy is adopted in some of Helmand areas the supply of superior hides can probably be greatly improved. Transportation system is adequate to facilitate collection of hides through improved organization.	
SHEEP AND GOAT SKINS	Kabul tannery could process 50% more skins for both domestic use and export of a higher-quality product. Supply problems similar to those of cattle hides, but potential even greater once organized.	Improvement of transport should allow better collection and export of superior skins. Shipment to Kabul for tanning hardly economic, but a central tannery could be established in Jalalabad.	Extension of the cooperative organizations now handling karakul could improve quality and quantity of skins collected for processing in central tanneries or in local tanneries with improved methods and materials. Problems of animal health and nourishment similar to those of karakul (below). Transport no serious problem as skins are compact and unbreakable, but incentive and quality control problems must be solved first.		Several factors combine to give Region excellent prospects in skins: irrigated pastures on the new Project lands, plus intensified use of these lands by nomads with their large flocks could greatly increase supplies; proposed Kandahar tannery would process skins; good roads offer easy collection and export of hides, preferably after tanning at Kandahar or in local but modernized tanneries.	
KARAKUL	No local production. Kabul serves as the collecting and clearing center for exports. AOA has broken Bank-i-Millie monopoly on export financing by establishment of the Karakul Cooperative.	No local production. Improvement of the Kabul-Torkhma road will make it easier to transport karakul from the warehouses in Kabul to the railhead at Peshawar, but some skins may continue to be flown abroad.	This is the traditional and well-established region of karakul production, and it is unlikely to be displaced by any other in Afghanistan. But in order to meet foreign competition the karakul industry, with the help of newly-established cooperatives, must devote increasing attention to its range, feed and water requirements as well as to veterinary care and improved breeding practices. Development of new color strains is promising. Skin tanning and grading needs attention. No particular transportation problems involved.		No present production nor real likelihood of future development of karakul breeding because Region lacks proper grazing vegetation as well as herdsmen familiar with karakul raising. But the local breeds of broadtail sheep, providing pelts for export, as well as wool, need the same attention to feed, water, health and breeding as do the karakul. HVA and ICA extension programs are essential to assist herders and settlers in providing such attention.	
WOOL	Kabul is the center of a good "woolshed" extending back into the surrounding mountains. As usual, collecting facilities need improvement, and the Wool Exporting Company has been established to promote it. The AOA woolen mill is very obsolete and needs replacement of its equipment and wool cleaning facilities.	Not much information is available on wool production in the Jalalabad Oasis. Presumably, climate is not conducive to heavy fleece. The Kabul-Torkhma road provides a good export route, but any local wool exported is probably not cleaned, sorted or baled very satisfactorily	Because of the predominance of karakul sheep in this Region, there is comparatively little production of wool as such, although the mature karakul females are shorn. Most of the production goes into cottage industry for weaving of coarse cloth and fine carpets. There is no woolen mill in the North and prospects for establishing one cannot be evaluated on the basis of the limited information available.		This region probably produces and markets more wool than any of the others, but a large part of it is exported, on the hoof or otherwise, by nomadic herders. With the adoption of an irrigated pasture economy in the Helmand, production could be increased and organized so that more of the clip comes onto the domestic market. Cleaning and grading facilities need much improvement and this should be done in conjunction with enlargement of the woolen mill at Kandahar. Sufficient electric power will be available and roads for collection and export are good.	

Source: Michel A.A. "The Kunduz, Kabul and Helmand valleys and the national economy of Afghanistan" Washington D.C. 1959. p. 402.

In order to achieve and maintain a specialised system of production in agriculture, and to introduce the money economy in the country, an efficient and adequate transport system is required. The system which will increase the production of crops, and affects foreign trade, industries and needs of the country. Because it is obvious that in influencing the cost of production, transportation affects the usefulness and also the relationship between various productive-factors. Land values and use are prime examples of this effect. (see table 2)

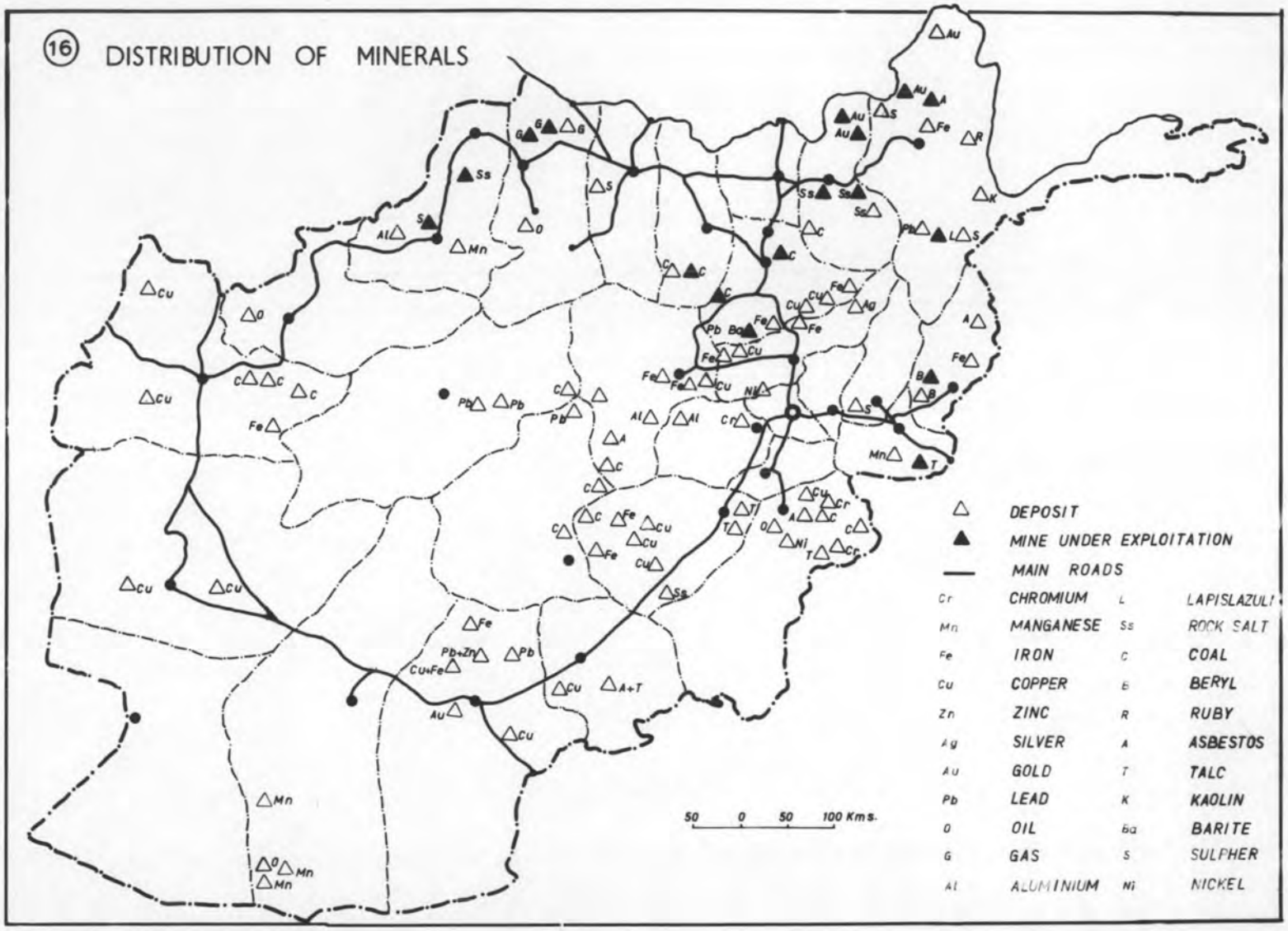
III. The effect of transport on exploitation of mineral resources

Much work has been done on the geological survey of the country by various agencies since 1930. It is known that the country is rich in minerals, and has a number of commercially valuable mineral deposits. But its mountainous nature, and its remoteness from the sea besides inadequate internal transport facilities make the profitable exploitation of this source of wealth a matter of extreme difficulty. Afghanistan's minerals can be divided into the following categories.(13) (Fig. 16)

1. Building materials: granite, marble and alabaster are found in the generalarea of Kandahar, Heirmand, Nazarejat, and Kabul.

2. Precious and semi precious stones: Rubies have to some extent been mined in the vicinity of Jalalabad, Lapis lazuli is prevalent in substantial quantities in the Badakhshan province, and beryl in the Paktya and Nangahar provinces.

3. Non ferrous metals: Chrome deposits estimated at 180,000 tons are located in the Logar province; lead-zinc in Kandahar, Farah, Parwan, and Herat provinces.


16 DISTRIBUTION OF MINERALS
DEPOSIT
MINE UNDER EXPLOITATION
MAIN ROADS
Cr CHROMIUM
Mn MANGANESE
Fe IRON
Cu COPPER
Zn ZINC
Ag SILVER
Au GOLD
Pb LEAD
O OIL
G GAS
Al ALUMINIUM
L LAPISLAZULI
Ss ROCK SALT
C COAL
B BERYL
R RUBY
A ASBESTOS
T TALC
K KAOLIN
Ba BARITE
S SULPHER
Ni NICKEL
50 0 50 100 Kms.

4. Ferrous metals: ferrous metals in the form of magnetite and haematite are found in Kandahar (6 million tons), at Jalulsaraj (8 million tons) and in Herat province (3 million tons). Iron ore deposits in the Hajigak region north of the Hindu Kush were recently estimated at 2 billion tons of haematite (63% iron) and several other parts of Afghanistan (Fig. 16). But these deposits are not yet being exploited.

5. Coal: Coal reserves are placed at 115 million tons, although the final figure is expected to be considerably higher. The largest deposits are at Dari-suf in the northern part of the Hindu Kush.

6. Petroleum: Quite recently petroleum and natural gas have been discovered in the Mazar i sharif district, at Sheberghan and Andkhoy in northern Afghanistan. A prospecting programme covering an area of 43,000 square kilometres has been completed. Plans are also under way to establish an oil refinery provided present investigations prove exploitation to be economically feasible. The local consumption of petroleum products are low, and production for export too costly (again due to the land-locked location of the country and inadequate communications) for a petroleum industry to be developed. The present urgent need for unrefined oil for heating and the surfacing of motor roads, however makes the programme economical. Natural gas deposits exceeding 72 billion cubic metres have been discovered in the Shibarghan province in northern Afghanistan and production of gas from this field is scheduled to start in 1967. Projects for exploitation of these gas deposits include: (1) a pipeline northward from the gas deposits into the U.S.S.R.; (2) a second pipeline to Mazari-sharif; and (3) a thermal power plant and

a fertilizer factory at Mazari-sharif.

7. In addition large reserves of Talc are found (10 million tons) in the Nangarhar province. Sulpher is estimated in excess of 600,000 tons and is found in the Mazar and Badkhshan provinces.

One of the limiting factors in the exploitation of these extensive deposits in Afghanistan is the lack of transport facilities to haul to the refining and industrial centres. For instance from the extensive coal-bearing strata which have been located in the Hindu Kush, the only mine that is sufficiently accessible to work is at Ishpushta on the north road south of Pulikhumri, from which Afghanistan obtained only 33,746 metric tons in 1958-59, while the estimated national demand for coal was around 100,000 tons. Jabulsaraj cement plant alone requires more than 10,000 tons per year. Similarly in exploitation of coal from Kar-Kar (near Pulikhumri in northern Afghanistan) transport is an inescapable need. At Kar-Kar a United States loan made possible, the acquisition of 104 coal trucks, but not until a projected tunnel under the Salang Pass cut the distance by 200 kilometres and eliminated some of the worst of the mountainous route. Now with the construction of this highway, Kar-Kar is able to deliver 100 metric tons of coal daily to the cement plant at Jabulsaraj. Additional tonnage will be needed by the expanding Kunduz Valley industry which also will call on the Kar-Kar mines. The problems related to exploitation of the coal deposits of Dari-suf are even greater. Although this major deposit may ultimately be the answer to Afghanistan's need for industrial coal, it can be exploited only

experimentally until it is possible to provide housing for the miners, timber for pit props, and mainly transport facilities to haul the product once it is out of the ground. The total production of coal in 1964-65 raised up to 113,000 metric tons after the construction of the northern highway and expansion of industries in the country.

Similarly, large deposits of rock salt in Badakhshan, supplemented by brine deposits in Andkhoi and Herat supply the country's needs, but further development of its exploitation should wait until construction of new highways and secondary roads, since it has to be carried by camels and other animals.

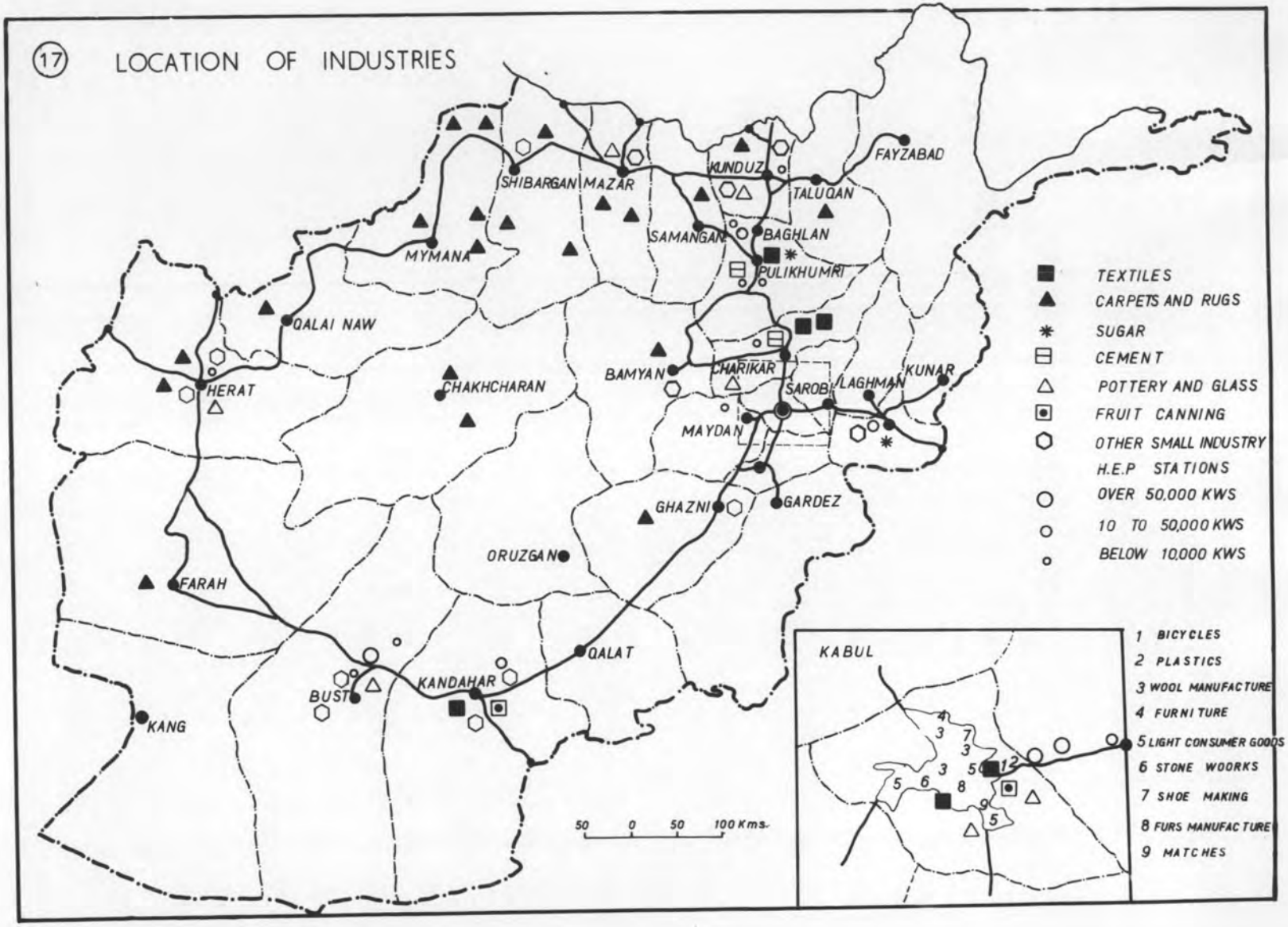
There are also large deposits of iron ore in the Badian province, only about 500 km. from both northern and southern borders, but its location is such that the transport costs make its mining uneconomic.

There are many other instances of known supplies of natural resources in various parts of Afghanistan which depend on improvement in economic accessibility before their utilisation becomes worthwhile. (Fig. 16).

IV. Industry In terms of available resources, Afghanistan's industrial potential considerably exceeds its present ability to mobilize capital for development. Consumer goods industries predominate in Afghanistan's currently limited stage of industrial development. Before the adoption of the current five-year plans (1956-57), practically no comprehensive and overall industrial programme was followed. When the plan was first put into operation industrialisation was still suffering from a number

of adverse factors. Most important of these were the poor conditions and high cost of transport, which in some cases made any industrial activity almost impossible. By integrating and industrial programme with the development of transport facilities, the training of personnel and the exploitation of agricultural and mineral resources of the country the plans sought to create the proper climate for rapid industrial progress.

Textile production, controlled by the private sector, is Afghanistan's principal industry, employing about one-half of the country's industrial labour force. Two large cotton mills of the Afghan Textile Company, the country's largest single industrial company, use most of the 50,000 bales of cotton consumed annually in Afghanistan. Textile production increased from 14.5 million square metres in 1956-57 to 21.4 million square metres in 1958-59 and to 55 million square metres during 1964-65 with the establishment of Gulbahar and Jangalak factories. Moreover before the implementation of the plan no noteworthy cement industry existed in Afghanistan. The first cement factory was built in Jabulsaraj, with a capacity of 100 tons per day during 1959, the second cement factory was established in Pulikhumri, with a capacity of 200 tons per day in 1963. But after the construction of the new highway to the north, and the increasing demand for cement the production increased from 300 tons per day in 1963 to 500 tons per day in 1965. Previous to that time the government had to import the cement which was required in eastern and southern projects of the country, from Pakistan, because as a result of high transport costs it was economical to import rather than to produce.


17 LOCATION OF INDUSTRIES
FAYZABAD
KUNDUZ
SHIBARGAN
MAZAR
TALUQAN
SAMANGAN
BAGHLAN
MYMANA
PULIKHUMRI
QALAI NAW
HERAT
CHAKHCHARAN
BAMYAN
CHARIKAR
SAROB
LAGHMAN
KUNAR
MAYDAN
GHAZNI
GARDEZ
ORUZGAN
FARAH
QALAT
KANDAHAR
BUST
KANG
50 0 50 100 Kms.
TEXTILES
CARPETS AND RUGS
SUGAR
CEMENT
POTTERY AND GLASS
FRUIT CANNING
OTHER SMALL INDUSTRY
H.E.P STATIONS
OVER 50,000 KWS
10 TO 50,000 KWS
BELOW 10,000 KWS
KABUL
1 BICYCLES
2 PLASTICS
3 WOOL MANUFACTURE
4 FURNITURE
5 LIGHT CONSUMER GOODS
6 STONE WOORKS
7 SHOE MAKING
8 FURS MANUFACTURE
9 MATCHES

It was also mainly due to the provision of transport facilities and construction of roads that with a small amount of capital two porcelain factories were built by the end of the first plan (1956-62) one in Kabul with a capacity of 1,250,000 pieces, and the other in Mundus with a capacity of 100,000 piece per annum. Both units receive their raw materials from Badakhshan and Nangarhar provinces.

The improvement of transport was one of the most important factors helping the modern development of industries in the country. Production of coal (as mentioned before) and which is the main source of energy had been increased from 19,540 tons in 1957 to 112,00 tons during 1965. (two coal fields of Ishpushta and Kar-Kar in northern Afghanistan were mechanized during the first plan). Among the main industrial consumers of this coal, are the cement works at Jabalsaraj, the sugar factory at Baghlan, the big flour mill in Kabul, and the textile mill at Gulbahar.

Another difficulty without an adequate transportation system is the time lost in receiving goods and services, and the accompanying high insurance premiums that have to be paid. Moreover long distances from world markets and high transport costs have protected the local market for African products. The ready availability of such domestic raw materials as cotton, wool, sugar beets, and hides, and of such miscellaneous minerals as lime and clay, makes it unlikely that domestic manufacturing enterprises will be incapable of producing goods at prices lower than those imported; there are even possibilities for new production where domestic manufacture would be cheaper even if the raw materials had to be imported. It would also be profitable to invest in machinery and tool repair shops

which could service the increasing amount of farm and transportation equipment.

Except for mining, Afghan industry currently produces exclusively for domestic consumption. Moreover except for cotton textiles, sugar and cement, most of the industrial activities are on a modest scale and not yet geared to supply a national market. Both local and small scale industries, which are so common in Afghanistan have been due to a lack of trade relations between various economic regions. Even today, one region may have surplus production (or at least unused capacity) for which it has no outlet, while another may suffer from shortage and be forced to import supplementary supplies from abroad. Although the economic organization of Afghanistan still resembles a wide sea dotted with islands of economic activities, recent and continuing improvements in transportation are altering this pattern. The new roads not only provide vastly improved connections with the points of entry on the borders but serve to tie the country together across and around the Hindu Kush range, without which the assembly, processing, distribution, and export of materials and products would be impossible. Communications represent the core of the "infrastructure" of the Afghan economy. (see Chapter three).

V. Tourism and its relation with transport

This activity is sometimes referred to as an "industry" and it certainly does represent a means of exploiting natural resources. It may also be

considered an "invisible export" since it brings in foreign exchange with no material resources leaving the country. Afghanistan certainly possesses the raw materials for tourism, for both the natural and the archaeological wonders of the country are extraordinary. Indeed the vast expansion of international tourism in the last decade has not left Afghanistan untouched. The development of fast air travel, enhanced by the advent of the jet age, has brought Afghanistan within reach of everyone in a matter of hours.(14)

Until about 1950, Afghanistan was little known or visited by people from the outside world. Indeed the few who ventured to reach the Afghan borders were discouraged from crossing into the country. The government today is well aware of the importance of tourism as a valuable economic, cultural and socialfactor. Owing to their geographical similarities Afghanistan is often called the "Switzerland of Asia". But if Afghanistan is to become the Switzerland of Asia, it should aim at the development of a substantial tourist traffic, which would have the effect of helping the country's economy and lessen its isolation. To bring about this development however much requires to be done; roads, and other transport facilities have to be improved, and good hotels and other facilities should be available, which the modern traveller now expects. If this can be done the traveller will find himself not only in one of the most interesting countries of Asia but among friendly people who can be relied upon to display the traditional hospitality of their race. Recently various explorations have uncovered priceless finds from the Graeco-Buddhist, Kushan, and Islamic periods. Not only can the best of these be inspected in the

Kabul Museum, but in most cases it is possible to visit the actual digs, many of which are still in progress.(15) Afghan Turkistan is the classical Bactria, and here was once the ancient and famous city of Bactra, later Balkh, founded by early Aryan settlers. Here arts and crafts flourished before the Christian era, and a great trading centre routed caravans from China. Here Zoroaster is supposed to have lived and expounded his religion. Later Alexander's army made Bactria the centre of Greek administration in the East. In Buddhist times, still before the birth of Christ, Balkh was a great seat of religion. Another city is Mazar-i-sharif which is a famous Moslem pilgrimage site, for here are found the extensive and magnificent buildings alleged to be tomb of Ali, the son-in-law of the prophet Muhammad.(16) Old Ghazni is now in ruins, a great area of mounds and rubble punctuated by tow towers of victory - all that remains today save crumbling fortifications to remind one of the resplendent eleventh century city that was the capital of the great Mahmud. To the south lies Kandahar, one of the richest provinces in Afghanistan, famous for its delicious fruits. The first independent monarch of modern-day Afghanistan, Ahmad Shah Durrani, made the city of Kandahar his capital in 1747 and was buried there. In the Sistan are remains of Sassanid Cities (third to seventh century A.D.) half-buried beneath the shifting sands. Bust which was later on to become the summer capital of Ghaznavids, was founded in the seventh century by Arabs. Herat in the west is one of the better preserved of the older Afghan cities. It was a great seat of learning and a centre of Persian art during the fifteenth and sixteenth centuries, when the Timurid Kings built architectural masterpieces, monumental in scale and delicate in detail.

As for natural assets, the scenery of the snow-capped Hindu Kush and its outliers, the beauty of the forested areas in Nuristan, and the views of cultivated fields from many mountainroads are exceeded only by the incredible lakes at Bandi-Amir, high in the central plateau. These lakes are conveniently located with respect to the great Buddhas carved into the cliff at Bamian. A new and more direct route has been built from Kabul to Bamian.

Since 1958 the number of tourists to Afghanistan has been steadily increasing. In the light of a rough estimate, tourist trade brought about 50 million Afghanis to the country in 1964, and more than 75 million Afghanis in 1965. It is hoped that within the coming two to three years the network of national highways, linking all the historical, cultural and commercial as well as provincial towns with the capital city Kabul will be completed (see Chapter three). This will enable tourists to arrange more organized tours to places of interest quickly and in a short time.

Part of the proposed Arian Highway from Herat to Kabul via Kandahar and Ghazni is already in existence, (Chapter 3) but a short and more direct route to Kabul passing through the most charming and fascinating natural views of central Afghanistan, will add yet another attraction to the rapid development of the tourist industry in Afghanistan. In view of the expanding tourist traffic, the Afghan tourist organization (established in 1958) proposes to acquire more luxurious vehicles and thus provide more comfortable and reliable transportation to foreign visitors in the country. In addition the Ariana Afghan Airlines DC-3, DC-6 and Convairs are doing a commendable job bringing tourists to Afghanistan from the west, north and south, the the nearest points of contact being Tehran, Karachi, and Delhi. The

management is seriously considering adding some jets to the Ariana fleet. Finally good transportation facilities and comfortable hotels are the two basic necessities for handling tourist traffic more efficiently and profitably. As a well-known European writer has put it "The Afghans, always proud of their past, are proudly plunging into the future, trying to achieve in decades what they have missed in centuries of isolation."(17)

VI. Domestic and Foreign trade:

In a cash economy, towards which Afghanistan is progressing where goods are produced for sale, the production of goods is only a beginning. Once they are made the goods must be carried or transported to the people who buy them. Without means of transport, roads, railways, or rivers, there can be no trade. Moreover many goods and services used by Afghans come from abroad. They are imported into Afghanistan from other industrial countries and include manufactured goods like cloth, petroleum and sugar, and producer goods such as engines, machinery, steel etc. (table 24). Afghanistan's own products which consists of mainly agricultural raw materials and partly minerals are exported to countries outside Afghanistan (table 25).

Afghanistan's trade takes the form, therefore of exporting raw materials in exchange for imports of manufacturers. On the one hand, the agricultural products of Afghanistan have to be carried to the international borders, and on the other hand imported manufactured goods are carried in the opposite direction. Though trade occupies a relatively small portion of the total economically active population, traders and their employees are believed to earn as much as 12 to 14 percent of the total national income. Freedom of domestic trade prevails except for a few government monopolies and controls.

TABLE 24: Afghanistan's imports: for 21st March 1965 to 20th March 1966 (excluding loan and grant imports)

	Sugar	Tea	Rubber tyres and tubes	Cotton Fabrics	Fabrics excluding cotton	Automobiles	Trucks	Bicycles	Footwear
Unit of Quantity	Metric tons	Metric tons	1,000 units	1,000 metres	1,000 metres	Number	Number	Number	1,000 Pairs
U.S.S.R.	24,887	687	7	7,290	1,211	450	430	257	798.8
U.S.A.	-	115	4	63	25	42	173	-	973.7
India	63	3,375	35	17,955	2,830	-	-	3,449	17.2
Japan	1	42	107	630	14,480	-	-	1,338	306.5
Pakistan	756	3	-	9,826	679	-	-	34	193.5
Germany	5	11	2	4	19	137	3	-	11.2
U.K.	5	-	32	7	76	136	168	4,225	1.9
Czechoslovakia	-	64	-	142	7	-	-	-	4.3
Other Barter Countries	11	585	-	-	78	-	-	75	39.1
Other Countries	47	79	1	17	593	12	1	25	165.8
Total	25,775	4,961	188	35,934	19,998	778	775	9,403	2,512

Source: Middle East Economic Digest, October 1966, p. 23.

TABLE 25: AFGHANISTAN'S EXPORTS FOR 21st MARCH 1965 to 20th MARCH 1966

	Unit of quantity	U.S.S.R.	U.S.A.	India	U.K.	Germany	Pakistan	Czechos-lovakia	Other Barter Countries	Other Countries	Total
Casings	1000 coils					38.2	7.7	80.0		1,948.2	2074.1
Fresh fruit	Metric tons			3191.6			38,421.7				41613.3
Dried fruit and nuts	.. ..	13,193.1	3619.4	9548.5	161.2	54.9	4571.3	540.5	1404.2	1375.5	34468.6
Fresh and dried veg.	.. ..	75.0					1475.0				1550.0
Oil seeds	.. ..	22943.7		63.6			29806.6	488.5		184.1	53486.5
Hides and skins	1000 skins	644.9	7.4	25.3			47.7	115.2	61.2	397.7	1299.4
Karakur skins	.. ..		550.7		952.6					1.1	1504.4
Other fur skins	.. ..	53.0	1.0		23.4		5.0	117.5		7.6	207.5
Wool	Metric tons	1078.4	284.5	135.6		18.5					1517.0
Cotton	.. ..	11949.4			496.7	2,041.9		587.8	205.3	622.0	15903.1
Medicinal herbs	.. ..	0.3		158.0			327.6			22.8	508.7
Carpets	Square metres.	1104	1074		113713	262132	22			169032	547,077

Source: Middle East economic digest, October 1966, p. 20.

No ethnic group has a monopoly over any part of trade, but the fact is that the local distribution of foreign and domestic produce, due to lack of transportation facilities, is made difficult for the following reasons:

1. Distribution of imported goods has been difficult, because imported merchandise enters the country (when the Pakistan border is open) through only three or four major customs points all at a considerable distance from the largest consuming areas. Storage and transport facilities are inadequate. Domestic production suffers similarly from erratic distribution. Kabul and Kandahar bazaars, the main trading points, have chronically low inventories and suffer serious price fluctuation reflecting the availability or storage of goods. Some of the more important products, tea for example, enter the country through just two customs bureaus Chaman and Turkham. The result is that the burden on the distribution and transport system is heavy. Exportable domestic products also heavily tax the distribution system. For example Karakul skins must be collected in the northern plain areas, wholesaled at Mazar and Maimana, marketed in Kabul, and exported by air or through Turkham, or Chaman to New York and London. If transit facilities through Soviet Union territories become permanently preferable, the distribution burden inside Afghanistan would be lighter for raw cotton, wool and skins, but not fruits and nuts. Thus Afghanistan's most immediate and acute foreign trade difficulty is its lack of direct access to the sea. All external trade was to go across Pakistan and sometimes India. Karachi's inadequate harbour facilities must often be supplemented by those of Bombay, 880 km. further away from Peshawar railhead, (Fig. 13.) especially in the past when overland transport facilities between the productive regions in Afghanistan

and Karachi were badly overtaxed, roads in Afghanistan were narrow and long, and the railroads in Pakistan slow and continuously in need of repair. Traffic on both was handicapped by shortages of coal, gasoline and spare parts.

2. The production of domestic commodities with marketable surpluses is highly localized due to special physical conditions. Herat's marketable surplus grain supplies, for example have a long way to go to reach Kandahar or Kabul or foreign markets. Much the same holds for the raw cotton supply of the north, and the fruit supply of Arghandab valley in Kandahar, or Parwan province. For this reason until the beginning of this century and even until 1930 there was no export of fruits from Afghanistan. But after 1930 the new roads which were constructed to the north, east, and south, joined Kabul, Kandahar, and northern Afghanistan with the border of Pakistan. Almost at once fruit began to be produced for export. Production increased rapidly, with the improvement in transport facilities, and today a large part of the money income of the local peoples in these regions comes from producing fruits for export. ($6,130,200 in 1965 from fresh fruit and during the same year $17.877 million from dried fruit mainly to Pakistan, India and Russia). This development of the fruit trade had nothing to do with geography. The soil and climate of those regions have not changed. Fruits could always be grown, and they were grown as a subsistence food crop. It was the new demand for them when they could be carried cheaply by the asphalted roads to foreign markets (India and Pakistan) that created the export industry. Moreover no modern large scale producer could sell his output on a local scale; for example the plant producing sugar in Baghlan (northern province) could probably produce in few days enough to satisfy the local

needs for a year. But the economic rational of this operation is that the large scale output is sold on a nation wide basis. Such marketing processes would be either impossible or economically inefficient without an adequate transport system. Equally important will be the isolation of the production centres from the financial and administrative centres, where traders could obtain financial and government assistance.

3. Physical obstacles and inadequate transport facilities make distribution costly and risky. High rugged mountains, deserts, unfordable rivers, and severe winters make communication extremely costly. Market information on prices and supplies reaches producers and consumers too late. But even if the interchange of commercial information were more efficient, the costly and slow means of transport, apart, from the main highways discussed in Chapter Three would make it difficult for supply to adjust to commercial intelligence. Moreover a producer selling a consumer goods in a wide area for obvious reasons finds it desirable to quote a uniform price in the entire area. Thus a seller of a commodity which is marketed on a nation-wide basis will wish to establish a single price throughout but clearly, any substantial variations in freight rates will make this impossible or at least highly impracticable. By equalizing the supply of commodities and by making them more widely available, transport helps to eliminate imperfections, if transportation did not exist. Consequently, transportation again enhances the productivity of the economy by removing or at least by diminishing certain market imperfections. Therefore from a marketing point of view, the function of transport is to move goods from the point of production to the point of consumption, in the quantities required, at the times needed, at a

reasonable price. It may be noted however, that the level of consumption tends to be low not only quantitively but also qualitatively in that there is little variety in the available consumer goods, and there is often no assurance of reasonable continuity of supply. Transport costs are high because technically efficient transport equipment and good roads are lacking. This limits the availability of perishable or bulky commodities.

In Afghanistan like other under-developed countries these differences (imperfections of market, price, and flow of goods) are generally wide because of poor communications. The narrowness of markets is also reflected in wider price fluctuations within a season and between seasons as well as in larger price differences. Monthly price quotations issued by the Kabul Chamber of Commerce show that the seasonal prices of many common commodities, especially such perishables as meat, fresh fruits, and vegetables, may vary as much as 50 to 100 percent or even more in the course of a year in different areas and in different scale. For example a sheep worth 10 dollars in one town may have been bartered for 60 lbs of rock salt in a mountain valley only 100 miles away, or the cost of a pound of tea may increase by one or two percent between Kabul and a provincial capital, but it can double over the next less than 50 miles of roadless mountain ranges, or at times a Seer (16 lbs) of wheat has sold for Afs. 17 in Maimana when the price in Kabul, seven hundred kilometres away, was from Afs. 40 to Afs. 50. The freight cost between the two points being prohibitive, Maimana grain went begging, while Kabul lacked adequate supplies.(18)

Finally as this section has brought out, marketing is very much influenced by transportation rates and technology, and therefore any improvement in the process will transmit themselves into reduced prices or improved services for consumers.

4. There are not enough storage facilities for either domestic or foreign products. Only since 1954 has the government succeeded in erecting gasoline and grain storage facilities in Kabul, Herat, and in the north.

Furthermore domestic trade has been hampered by a lack of uniformity for measurements, of length, area and weight, since units are in use which may have different values in different parts of the country or when applied to different commodities. Officially the country has adopted the metric system but in practice the "Kabul" system of weights sometimes with slight differences predominates among large business units, and in the eastern parts of the country. There are many other barriers also, both on the side of demand, and of supply, which prevent a given flow of resources achieving maximum satisfaction, but as mentioned above one of the greatest is physical separation.

An efficient and well-developed system of transport and communication is basic to economic and social development. A transport programme for Afghanistan has to take into account the land-locked position and the extremely mountainous terrain of the country, on the one hand, and its fast changing economic and social settling, on the other. In the absence of access to sea, foreign trade of the country has to depend mainly on cheap and efficient road transport. Again, economic development will inevitably increase the volume of traffic of both men and materials as new

areas are opened up for cultivation and new industries set up in diverse parts of the country. Furthermore, development of transport itself will act as an accelerator.

Moreover in order to promote national unity and to achieve modern industrialization Afghanistan needs a well developed communication system to link the provinces with the central government. Barriers to the development of a sense of statehood have been the great mountains and expanses of desert, the inaccessibility of many villages and towns, the inability of Afghans to identify with other Afghans. Isolation historically tied people to their clans but not to their nation. The need for improvement in transport and communication is thus important not only to a developing technology but also the process of blending into a sovereign state the divergent ethnic parts.

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CHAPTER SIX

THE FIVE YEAR PLANS AND CONCLUSIONS

Although for thousands of years cities and empires prospered and declined in the land we know as Afghanistan, and for centuries it was a major crossroads for trade and conquest in central Asia, few nations in the world of today have remained so isolated and untouched by modern ideas. It was only in 1950s for instance that Afghanistan opened its doors to foreign visitors.(1) At the present time although Afghanistan has the resources to improve the lot of its people, the transition to a modern economy will be long and difficult. Many problems must be attacked simultaneously if progress is to be made on any front. The economy of the country itself will not be able to provide the large amounts of capital required for economic development, and outside aid is essential. While preserving its independence, and its neutral position in world affairs, Afghanistan is willing to obtain economic assistance wherever it can, from the United States from international organisations, from the Soviet bloc, and other countries.

In terms of communication the nation requires policies which will encourage maximum efficiency in the performance of transport. Because the transportation system is not, for the most part, an item of direct consumption, but as mentioned in Chapter V, it is a service required in connection with virtually all production throughout the economy. A part of the cost of nearly all goods and services purchased by the public represents payment for transport of one kind or another. Hence a reduction in the cost of transport enhances the national product and enlarges the opportunities of all for the consumption of direct goods and services.

Moreover reduction of the cost of transport in relation to other things increases flexibility in the location of industry, in the exploitation of natural resources, and in the achievement of industrial efficiency. There is, in fact, a multiplier effect for the quantity of improvement in the transport function is multiplied by the time goods reach the ultimate consumer. Therefore there is little doubt that more efficient transport and communications would have helped to demonstrate the economic unity, which Afghanistan is now trying to achieve, and which in turn has provided the foundation of the political unity in the country. As a result, as we have seen in previous chapters modern systems of transport especially on roads has in a short period of time, grown into a major factor in the economy. Future growths and development seem to be favourable but many problems are present. Natural conditions in Afghanistan make the transport of goods difficult. Transport today is much quicker and cheaper than before the roads and new highways were built. But compared with many countries transport in Afghanistan is still slow and costly. One reason is that in Afghanistan goods have to be carried very long distances. Another reason is that Afghanistan's roads, particularly in the east and central parts of the country, thus it costs much more to build roads of this kind than to build them on level or gently sloping ground. Furthermore many of Afghanistan's rivers are not very good for transport; the depth of water changes greatly from the wet season to the dry season, so that they can be used only by very small boats or canoes at some times of the year.

Truck transport seems best suited to the bulk moving needs of Afghanistan's economy. The major bulk commodities now requiring transportation are coal,

salt rock, cement, cotton, sugar and gasoline. Therefore truck transport is the primary means for moving raw materials to industrial sites and manufactured goods to wholesale or retail houses. Trucks also carry exports to ferries on the Oxus for trans-shipment to the Soviet Union, or to the railheads in Pakistan, and bring back imported goods and commodities. A limited amount of special air freight comes in from abroad. But as has been suggested, these commodities, are produced neither in the volumes nor in the concentrations necessary to justify railroad construction. The topography of the country also militates against railroads in many areas. It is possible given amicable political, relations that the railhead in Chaman in Pakistan might eventually be extended to Kandahar to handle import-export trade, but it is equally possible that Afghanistan may escape the "railroad age" entirely.

Certainly, a combination of vehicle transport on improved roads, oil and natural gas pipelines along certain routes, and internal and foreign air connection is the ideal transport system for Afghanistan at present. The further extension and maintenance of the highway system is the responsibility of the public sector of the economy. Roughly speaking the role of the government in road building and maintenance is of recent origin, with the first government aid coming in 1930 for the construction of the northern highway. Since that time the government has begun to enter the road building area, but on a small scale. Although much discussion had taken place for some years, the first permanent plan of government for development of communication, and construction of new highways took form in 1956 with the establishment of First Five Year Plan. Prior to this time highways were

largely local in nature and were generally, the responsibility of townships or provinces, which was satisfactory for the local traffic of the day. It must be noted however that not until the 1950's was there a real understanding of an inter-city highway system.

Finally one of Afghanistan's most serious handicaps in the past has been the lack of adequate transportation facilities; there are no railways, nor navigable waterways, and only limited air services. The road network is inadequate to meet the needs of either internal or external trade. Afghanistan's long era as a buffer state between Russia and Britain discouraged the creation of a modern transport within the country. Most of the roads even today are narrow, rough, and poorly maintained, with bridges and culverts (constructed by German engineers in the 1930's) long since washed out by floods. Many of them are closed by winter snows or by rockslides during spring floods. Nature has made integration of Afghanistan extremely difficult. High altitudes, narrow rocky gorges, hot dust, inhospitable deserts, and extremes of weather make road building very laborious and maintenance expensive.

Before 1950 two main routes handled almost all Afghanistan's imports and exports. One went from Kabul to Jalalabad and then through the Khybar Pass to Peshawar in West Pakistan. Trade with the U.S.S.R. was nominal until recently. Therefore the relatively slow economic development of so much of Afghanistan has been largely the outcome of difficulty of movement and transport. In the north and south, east and west the camel and horse-carte have played a major economic role but few large areas can pose so many obstacles to travel as central and southern Afghanistan, where the

massive mountain ranges has proscribed draught animals; for centuries it has kept out wheeled carts and given no incentive for the development of cart-tracks and roads. Instead a pattern of human porterage on footpaths through bush and forest evolved. Human porterage is highly expensive, inefficient and a prodigal use of man power better employed in a more productive capacity. Modern developments of transport in Afghanistan have not replaced the forest paths and animal traffic, for they have become feeders to the modern transport system and may well be used more now than ever before. They have proved particularly suitable for bicycle traffic and provide the lowest tier of the transport system that links farms, hamlets, and villages.

The rivers of Afghanistan have not proved very suitable as large scale media of transport (Chapter two). Their regimes are highly seasonal, with flood discharges many times the average discharge; channels at times of the year are shallow and variable. Thus river transport has had far less development than might have been expected although parts of the Amu, Kabul and Helmand are used commercially (Fig. 5).

The penetration, annexation and opening up of Afghanistan occurred after the 1930's, and most of the roads were built after that time; the last decade (1956-66) however, saw increasing development in road transport. These highways could offer relatively speedy bulk transport for commerce and passengers, and could facilitate administration and the imposition of law and order, but they were exceedingly costly to build and operate.

The range of variation of relief of climate in Afghanistan is very great. Trucks have to operate in a temperature range 20° to 110°F, at altitudes from 500 to over 15,000 feet, in perpetual snow and dusty semi-desert conditions. The problem of torrential rains, in some places lack of ballast. or the lack of fuel or water, all have to be overcome, while distances to be covered are long and population and freight sparse. Consequently most highways in Afghanistan have been built only where there was assured freight to make the high cost of construction a worthwhile proposition. More roads are unsurfaced and of little value in the rainy season while in the dry season corrugations on the surface and choking dust render them unpleasant and reduce the lives of vehicles. Lorries require servicing and minor repairs after 800-900 km. and on dirt roads the average lorry is written-off after two years service. Road building continues apace all over the country and the number of vehicles in use grow appreciably every year, both a symptom and an expression of growing economic development with underlying implications of greater movement and social intercourse among Afghanistan's peoples.

Airways, as well now play a most important role in Afghanistan's social and economic life. Civil Aviation facilities and services are being developed by the government. Both the U.S.A. and U.S.S.R. are helping with the construction and improvement of airports. The Ariana Afghan Airlines Company, jointly owned by the government (51%) and Pan American (49%) operates scheduled services between the principal cities of the country. Moreover Ariana and a number of foreign airlines operate a multiplicity of routes across the country linking it with Europe, Asia, America and Africa. Little freight can stand the cost of air transport and the amount

of cargo carried is still small. The real impact of airways on the country is in overcoming the obstacles of distance and environment, bringing large and isolated parts of the country within a few hours of the advanced countries whence administrators, advisors, and technicians are sought.

FIVE YEAR PLANS:- Deliberate development as a conscious goal of state policy is not new to Afghanistan. Systematic attempts were made in the late nineteen twenties to open up communications, develop industry and introduce administrative and social reforms. A seven year programme of development was under consideration when the second world war forced its postponement; at the end of the war development activities were resumed and several projects in the Helmand Valley were taken up. These efforts, however were not integrated into a national plan and amounted to limited development planning for a region.

A rise in the standard of living and improvement in the social welfare of a people are products of strong and well-organized economic institutions. Because of failure to exploit Afghanistan's rich natural resources and their lack of modern technology, the economy of the country is weak and the standard of living relatively low. Improvement of this situation is possible by utilization and exploitation of the country's varied resources and increasing productivity, providing work for the people, and training a labour force To achieve this, it was necessary to draft development projects and programmes. After scientific studies it was necessary to bring such activities and programmes within the framework of a general development plan and to launch them on a fixed schedule. The system of the "guided economy" which corresponds to the economic and social needs of the country and follows an established

policy, had been adopted by the government. This system also required the preparation and launching of a development plan to guide the government and private enterprise and to establish a suitable economic organization on the basis of these requirements. A general development plan was thus formulated after a series of studies and investigations which took into consideration the lack of statistical data and experience in planning. It is obvious that every sector of the economy needs improvement and developments, so that the most pressing needs must be distinguished from lower priority requirements and first priority be given to the most important projects and programmes. It is necessary that all development projects and programmes be brought within a general scheme according to relative importance.

Because of its importance to the economy agriculture was given priority in the first five year plan of the country (1956-62). Afghanistan is an agricultural country with 85% of the people deriving their livelihood from farming and pastoral activities, and the country's foreign trade depends entirely on agricultural products.

The development of communication and roads was second only to agricultural development. Improvement of roads and transport services will contribute to the realization of other projects included in the plans. Very little attention has been paid to the construction and maintenance of roads in the past. It was considered that completion in the period of the plan of road projects initiated since 1953-54 would satisfy the present needs of the country. By the end of five years (1957-62) about 1000 kilometres of main roads were to be improved and asphalted. Adequate funds were

allocated for the maintenance and repair of roads. These improvements of roads resulted in the saving of millions of dollars through saving of gasoline, lubricants and spare parts, and reduced depreciation of cars and trucks. In regard to transport 18,000 to 20,000 trucks and automobiles were to be imported along with sufficient spare parts. New repair workshops were planned in different parts of the country. At that time the number of vehicles was small in relation to the rapidly increasing transportation requirements, and in the first five year plan (1956-62), sizeable sums were allocated to import the number of trucks shown in Table 26.

TABLE 26: Vehicle imports under the First Five Year Plan

1956-57	3500 Trucks
1957-58	3000 "
1958-59	3750 "
1959-60	4500 "
1960-61	5000 "

Source: Government of Afghanistan, the five year economic economic development plan, Kabul, Afghanistan 1957.

In addition the government devoted attention to encouraging individuals to import trucks. The monopoly excise tax was reduced from 18% to 12% and from 12% to 8%. The foreign exchange required for the purchase of trucks was made available at the industrial rate. But the existence of more trucks is not sufficient for the development of transport. Proper utilization is also important, and this in turn is related to other factors, three of which are:

1. improvement and paving of roads and provision of other necessities to facilitate transport, especially the elimination of curves and construction of bridges so that they will be able to support 25 ton trucks with trailers;
2. establishment of motor workshops to repair trucks and autojobiles rapidly. Although there were at that time (1955) a few small private workshops, they were adequate neither in number nor efficiency. Therefore in the five year plans consideration was given to the establishment of modern workshops in five provinces beginning with Kabul;
3. facilitating the provision of spare parts and lubricants required by trucks at all times and all places. Although at that time (1955) spare parts were available in various automobile shops, with the expansion of transport and importation of increased numbers of vehicles, additional facilities and greater supplies were necessary. Therefore when orders for automobiles and trucks were placed, 10% of the spare parts required was included in the order. Foreign exchange for this purpose was made available to the department concerned at the industrial rate.

To facilitate air travel between the capital and the various provinces, the improvement of existing airports and the construction of new airstrips were necessary. The inauguration of the Afghan Ariana Airlines was another important step forward in the transport of cargoes both human and materials. This phase of the first plan includes the Kandahar and Kabul international airports both of which are capable of receiving all types of aircraft, and those of Jalalabad, Mazar and Herat. Expenditure on airfields in the first five year plan (1957-62) is shown in table 27.(i)

(i) A total of $350 million was expended for development in Afghanistan first five year plan (1957-62) mostly on infrastructure projects. (1$ = 45 Afghanis)

TABLE 27: Expenditure on airfields in First Five Year Plan (million Afghanis)

1956-57	106.5
1957-58	43.53
1958-59	40.52
1959-60	40.52
1960-61	40.52
Total	267.59

Source: Government of Afghanistan, the five year economic development plan, 1957.

The launching of the first five year plan in September 1956, was in every sense a land mark. It symbolised the new spirit and vision of the people of Afghanistan. Measured in terms of outlay (about 15 billion Afghanis), the plan was perhaps a modest one devoted mainly to the infrastructure; but in as much as it was the first comprehensive and coordinated attempt at development its importance could not possibly be measured in money. Its achievements were impressive. It laid the foundation, in the more crucial sectors, for a later take-off. A network of highways and air transport was provided, the full economic and social impact of which is yet to be known.

At the beginning the total cost of the plan was estimated to 5,708,512,000 Afghanis. The average capital investment thus amounts to 1,141,722,400 Afghanis, which was eight percent of the national income of 12.5 billion Afghanis. 75 percent of the development plan's expenses had to be paid from the nation's own income and resources and the remaining 25% had to come from loans. The total amount of foreign currency needed for the plan was 196 million dollars. The importance and preference of the various sections

of the national economy can be seen from table 28.

TABLE 28: Expenditure on various sections of the economy: (1956-62)

		Amount (Million Afghanis)	Percentage of total
1.	Agriculture and irrigation	2,294.3	43.7
2.	Transport and communication	1,165.1	22.2
3.	Industry	727.7	13.8
4.	Public services	652.7	12.4
5.	Mines	242.7	4.62
6.	Miscellaneous	165.3	3.15

Source: Government of Afghanistan, Ministry of Planning, Afghan progress in the third year of the plan, Kabul, September 1959.

The governments total administrative and ordinary expenditure during the first five year plan amounted to 5,081.3 million Afghanis, which brought the total figure for the nation's ordinary and developmental expenditure to 10,789.4 million Afghanis. But the actual total cost of the plan both for developmental (Afs. 8,371 million) and ordinary (Afs. 6,305 million) expenditure was 14,676 million Afghanis.

The second five year plan began on the 21st March, 1962. It aroused a keen interest in the country and was given a close scrutiny by the national assembly. The Ministry of Planning (established in 1957) played the key role in its formation; while other ministries and development agencies were responsible for the making of their respective plans, the task of co-ordinating and integrating them into a national plan fell on the former.

But unlike some other developing countries where economic policy is conditional by a preconceived ideology, planning in Afghanistan generally emanates from certain basic facts of the economy. The country is fortunate in not having to contend with an explosive population or mass unemployment. It's population is no doubt growing at a faster rate than before and there is also appreciable underemployment particularly in the rural areas; but taking into account the existing and potential resources the situation is in no sense alarming. Apart from its obvious agr cultural potential, nature has endowed the country with ample natural resources, only a fraction of which have so far been harnessed. These basic facts have shaped public policy and determined the broad strategy of development.

In terms of transport and communication the experience of the first plan showed that economic development as a whole was bound up with the development of a modern system of communication. The main task in this connection was the completion of the works carried over from the first plan, as well as further extension of the transport and communication network so as to link the main producing centres with one another and with the consuming areas. Moreover, in a land-locked country like Afghanistan the transport system has to be oriented to the requirements of foreign trade. About 2000 km. of modern highway including new and carryover projects had been constructed during the second plan (1962-67). In the sphere of air transport the importance of which can not possibly be overstressed, the objective was the completion of the international airports of Kabul and Kandahar and the construction of Shindand and Naugarhar airports. Simultaneously several new routes were envisaged for the Ariana Afghan Airlines.(2)

The second five year plan envisaged a total outlay of Afs. 44,500 million, which was more than three times the actual expenditure incurred during the first plan. Table 29, gives a comparative picture of outlay during the two plans. (million Afghanis)

TABLE 29: Comparative Outlay during the two plans (1956-67)

	first plan	second plan	percent increase over the first plan
1. investment	8,371	31,353	374
2. ordinary	6,305	13,147	208
Total	14,676	44,500	303

Source: Ministry of Planning, second five year plan, Kabul, August 1963, p. 10.

Sector-wise allocation of investment outlay during the second plan is shown in table 30.

TABLE 30: Investment outlay during the Second Five Year Plan (1962-67)

	Amount(million Afs.)	Percent of total outlay
1. Agriculture and irrigation	7,360	23.5
2. Industry, mining and power	10,508	33.5
3. Transport and communication	8,006	25.5
4. Social services	3,510	11.2
5. Miscellaneous	1,969	6.3
Total	31,353	100.0

Source: Ministry of Planning, second five year plan p. 12.

More than three-fourths (79 percent) of the proposed outlay on transport and communication during the second plan had been devoted to roads. The second five year plan as can be seen in table 30 put greater emphasis on development of industry and agriculture but retained the major priority for transport and communications. On the basis of experience in the first four years of the plan, development outlays for the whole plan period were expected to total about $737 million (78% of the plan target), with the following sector distributions: transport and communication as much as 37%; industry and mines (including electric power) 32%; agriculture and irrigation 16%; and other (including social services) 15%.

In terms of transportation the plan envisaged an investment outlay of more than Afs 7,802 million distributed among the different programmes (Table 31):

TABLE 31: Distribution of investment on different sections of transport
(in million Afghanis)

A.	Surface transport:	6,263
	1. Roads and bridges	6,227
	2. River transport (Ports)	36
B.	Air transport	1,172
	1. Airports	836
	2. Meteorology and air communication	104
	3. Education and training	61
	4. Asiana Afghan Airlines	171

Source: Ministry of Planning, second Five Year Plan, p. 115-116

Roads (excluding municipal and other roads of local significance) were the responsibility of the Ministry of Public Works. The programme comprised

carryover projects of the first plan as well as new works, the former naturally received the first priority. Works included can be seen in table 32.

TABLE 32: Carryover and new projects during the second Five Year Plan (1962-67)

I. Carryover projects: Name of project	Total Length (Kms)	Work remaining to be completed	Date of completion	Outlay million Afs.
Kabul-Turkham (construction)	232	62	1964-65	271
Kabul-Turkham (asphalting)	232	77	1965-66	121
Kabul-Gizil-Qala(excluding Salang)	297	88	1964-65	184
Kabul-Jabulsaraj (asphalting)	75	38	1965-66	28
Dushi-Qizil Qala (asphalting)	218	215	1965-66	313
Salang	108	54	1964-65	482
Kabul-Kandahar-Spinboldak	625	615	1965-66	914
Torghundi-Herat-Kandahar	660	580	1965-66	3,031
Poghman-Kargha	119	26	1965-66	77
II. New Projects:				
Herat-Islam Qala	125	125	1967-68	404
Mahmood Khan bridge			1962-63	25

Source: Ministry of Planning second plan p. 46.

In addition to the projects in table 32, three metal bridges in the Naugarhar province (namely, Behsood, Kama, and Asmar) carried over from the first plan were completed during 1964-65, with an expenditure of Afs. 211 million. Construction of two metal bridges in Kabul and another one to Laghman province were also completed during the second plan period. Also proper

surveys for the construction of additional roads have been undertaken. Road construction machinery worth Afs. 161 million has been purchased during the plan period, and construction work on the Puli-Khumri Mazar and Kabul-Pali Alam roads has been started.

Throughout this study, we have made references to the existing road network of Afghanistan and its generally unsatisfactory condition for the convenient and rapid movement of persons and goods which is essential to an integrated economy. In a country which has no railroads, and where air transportation has topographic, climatic, and economic limitations, the highway assumes primary importance as the means of assembling and marketing local products, of distributing imports from beyond the regional or the national frontiers, and of moving persons in response to social or economic needs and desires. This statement was true a thousand years ago, when tow of the major "silk routes" passed through Afghanistan, converging at Balkh, and it will remain true for some time into the future, even if trucks and buses entirely replace the camel and the donkey as carriers and even if a greatly expanded air fleet and all-weather airports are provided. Judging by the amount of over-crowded bus traffic today the Afghan has lost none of his love of movement, and even when population distribution attains a greater degree of coincidence with economic resources it can be expected that social as well as trading propensities will maintain a high degree of mobility among the people.(3)

The existing road network of Afghanistan may most readily be described as a huge circle around the central mountainous mass, which is pierced only

where the great north road was cut through the Banian-Surkhab gorge in the 1930's or the construction of Salang tunnel in 1964. This circle connects Kabul with the major cities of the north, northwest, south and southwest (see map 8). Branching out from this huge circle are the northern feeder routes from Herat to Meshad or to Kushka, from Mazari Sharif to Kelift and Termes, and from Kunduz to Qizil Qala and Faizabad. South of the mountains, the two feeders from Kabul through Jalalabad and the Khybar pass to Peshawar and from Kandahar through Chaman to Quetta have historically been of greatest importance for trade as well as for military movement. Recent government efforts at road construction have been almost exclusively concerned with these feeders, a fact which underscores the importance attached to foreign trade in the economic life of Afghanistan.

Generally speaking, the transport industry in Afghanistan is to all intents and purposes, still in the early stages of development. Although it has enjoyed great growth it has existed on a national basis for only a few years. Even twenty years ago, the industry was essentially local or regional in nature, and the interchange of freight was a precarious operation.

A synoptic view of the communication system of Afghanistan may be obtained from the map of the airways and roads, and the large tracts of the country remote from main transport routes. It is also apparent that there are wide differences in the standards of the roads. Only a small part of the total is tarred, and the standard of the other roads varies greatly from place to place, and from season to season. Moreover, despite the relatively high level of road development in Afghanistan, the road density is extremely

low, at any rate in European terms. In the United Kingdom there are 2.03 miles of roads per square mile of land area, whereas in Afghanistan the figure is 0.015, in Uganda it is 0.14 and in Kenya 0.10. Therefore counting approximately 2500 miles of "all-weather" but unpaved roads and 1500 miles of "seasonal" roads in 1955 (i) the road density in Afghanistan was about .016 linear miles per square mile, or .0004 linear miles per person of the settled population. Iran in 1956 had only .008 linear miles per square mile of roads of all types, but this represented .0007 linear miles per person. Pakistan in 1957 had about ten times the linear road mileage per square mile found in Afghanistan, but only the same small fraction of linear mile per person as found in Iran. India in 1956 had .252 linear miles of roads per square mile, but only .0008 linear miles per person. For what the comparison is worth, the Unites States had 1.15 linear miles of road per square mile and 2 linear miles per person in 1957.(5)

Of the 6500 odd kilometres of roads in Afghanistan which were fit at one season or another for motor vehicles, less than 400 were fit for operation at an average speed of 50 km. per hour or more. These would include 65 miles stretch from Spinboldak to Kandahar, the 90 miles road inter-project roads, some of them located on canal berms, connecting Grishk through Nadi Ali and Marja or Shamalan to Darveshan in Helmand Province. It was also included 88 km of paved and improved roads in the Charikor and Kunduz valleys.

Vehicles were also critically deficient. As late as 1955 only 4000 trucks and buses were licensed, which may be contrasted with 60,000 in Iran,

(i) Based on estimates of 3845 kilometres of all-weather roads and 2226 km. of seasonal roads in 1955(4).

54,000 in Pakistan, 330,000 in India and 66 million in the United States. Of the 1,750 private cars, few operated outside the larger metropolitan area of Kabul, Kandahar and Herat. As no railroad system has been laid out within the Afghan borders, all transport is by caravan, cart, truck, bus or aeroplane. Indeed it seems likely that Afghanistan has already bypassed a railroad age, partly because of the engineering difficulties involved. Today trucking seems more practical. Donkeys, mules, and camels trudge over the high passes beyond the reach of vehicles, and in the Wakhan corridor and Pamirs, the Yak is the only beast of burden that can survive in that altitude (3000 to 4000 metres above sea-level). Trade that is carried on by nomads accounts for an estimated 20 to 25 percent of inter-regional and international trade.

In terms of air transport, although substantial growth has taken place in passenger and cargo movements, the transportation of freight and people still accounts for a very small part of the total ton-miles of service performed in the movement of goods and people in the country, and it needs further development. It is obvious that the airline industry differs in several basic respects from the motor industry; opportunities to establish a profitable airline are geographically limited, whereas motor carriers can operate to and from innumerably points. The airlines moreover, have to persuade people to use their facilities. Another major problem is the need of more adequate financial operations due largely to the increasing costs of capital equipment. These problems are likely to be overcome as the scale of operations increases.

The future need for transportation services depends clearly upon the scope of economic activity to be carried on. Transportation development is necessary, both qualitatively and quantitatively, since the efficiency of transport media must be improved despite the need for increased facilities, particularly in terms of road transport. Roads and road transport provide an ideal means of connecting the widelyscattered rural communities, opening up new areas todevelopment, widening the domestic market, and performing the diverse types of transport functions related to the processes of industrialization and economic growth. These facilities in Afghanistan are grossly inadequate and need to be developed extensively. Such an expansion, however, would require very large investments, and the possibilities of a "big push" in this field would be determined by the availability of resources. In the meantime, utmost emphasis will have to be placed on measures directed towards deriving maximum benefits from the existing facilities and from each unit of investment to be made. Therefore, the following measures will need to be taken to ensure a healthy growth of the communication system.

1. A careful classification or categorization of roads to avoid over investment in relation to traffic density;

2. Evolution and use of low cost road-building techniques, based on local materials.

3. Development of effective organizational, institutional and financial arrangements to ensure efficient construction and proper maintenance of different categories of roads.

4. Concentration of effort on the completion, within the plan period, of individual projects, or parts, so that benefits from investments are realized quickly.

5. Execution of highway projects in stages, in conformity with prescribed geometric standards and specifications, so that each stage conforms tothe anticipated volume of traffic in the short run, and the highway is developed in gradual stages to take higher volume and loads of traffic.

6. A major handicap in planning for the development of road transport is the lack of statistical information in this field. The exact position of the road transport fleet and its activities are not known. There is no information about how much of what commodities is handled by road transport and between what points or areas. In the absence of these details, it is impossible to determine with any exactitude the present or potential role of road transport or each highway in the economy. Specialarrangements will have to be made for the collection, compilation and analysis of data with a view to ensuring an adequate development of road transport services.

7. Notwithstanding the rapid progress made during the first and second five year plans (1956-67), the commercial motor transport industry is still in a very under-developed state. The number of buses and trucks is grossly inadequate compared to needs; whatever vehicles are available are generally not fully utilized due to inefficient operation and poor maintenance, and barring a few well-organized firms, the industry is made up of small individual operators, who are unable to organise and develop the industry along modern, progressive lines, and to provide a reliable and efficient service. Therefore the industry which is almost entirelyfinanced by private enterprise, needs considerable improvement both as regards its performance and organization, and the development of indigenous capacity for the assembly of commercial vehicles and spare parts to meet the country's total requirements.

8. Provision of adequate repair and maintenance facilities to ensure optimum use of available fleet. In addition the training of drivers and mechanics should be developed.

9. Encouragement the use of trailers with buses and trucks, where justified by traffic and road conditions, to increase transport capacity at low cost.

10. Encouragement of the formation of transport syndicates and co-operatives to ensure an efficient service.

11. However the sharp increase in motor traffic, mainly trucks, is concentrated largely upon Kabul, and beyond the major routes lie thousands of hamelts and villages accessible only via seasonal roads, or trails best used by donkeys, camels and yaks (in the mountainous areas) therefore the construction of secondary and feeder roads to meet the needs of the short distance, light traffic in rural areas and newly developing regions of the country should be undertaken, and the strengthening and expension of the existing road network should be carried forward.

12. Another shortcoming is that the administrative machinery for the control, regulation and promotion of the road transport industry is not adequately organized to take care of the greatly expanding requirements. Moreover the cost of transport is not the same per ton-mile for all commodities over all distances. Because of these variations in cost a tariff under which the same charge, equal to the average per ton-mile cost, is made for all traffics will not be satisfactory, for some traffics will be charged less than the value of the resources, they utilize. It is

also a fact that there are important differences in the circumstances in which transporters operate which affect their ability to determine the relationship between charges and their costs, for instance a light, bulky commodity will cost more per ton-mile than a commodity which is of small bulk in relation to its weight. Similarly traffic which involves empty return haulage is more costly than traffic for which no such special provision is required. A given ton-mileage of traffic may be more costly if it has all to be handled over a short period of time than if it is evenly distributed through the year. However, in addition to these facts sometimes even under the same circumstances the costs are different, which is the result of competition between private companies and individual owners, which requires the control of government authorities. Therefore the central, provincial and regional transport authorities, need to be reorganised and strengthened so as to be able to perform their regulatory and promotional function effectively. The advance notice of rate changes must be given, published rates must be open to public inspection, all claims for damage must be investigated and justified and so on. It can be seen that, if these regulations are observed, there would be little opportunity for discrimination.

13. Adequate arrangements should be made for providing essential credit facilities to private operators.

14. The present state of affairs in the field of passenger bus transport demands a serious consideration of the extent to which the public sector should step into this field. In the fast developing urban areas in particular, where the problem needs urgent attention, it is necessary that passenger transport is organised not mainly on the narrower consideration of profit-making, but

as a public utility so as to provide a safe, reliable and reasonably comfortable service. Such an improvement in public transport will also attract persons in higher income brackets and will thus have the advantage of reducing the demand for private carssand incidentally reducing congestion on roads. These objectives can best be met by entrusting the management of passenger and road transport in the urban areas to the government sector, with maximum participation that it can obtain from the private sector in financing and manggement. It can begin with the big urban centres and then spread to other areas as more experience is accumulated.

15. In the countryside, transport facilities are particularly inadequate. Considering the general tendency on the part of truck operators to favour bigger and more lucrative routes, it seems necessary to ensure that essential requirements of the rural areas are adequately met. For instance, the permit issuing authority could require that every operator licensed to run a service on an all weather, unpaved road of the same zone, thus providing essential village-to-market service.

16. Past and current economic developments in Afghanistan and increased domestic, and international movement have resulted in a sustained growth of both air passenger and air cargo traffic. The Civil Aviation Authority is forging a viable air transport system with promising prospects. The need for further development of the system to provide increased and high speed mobility throughout the country still persists and bigger efforts are needed to improve and enhance the scope of the activity, particularly on the domestic front. The aim will continue to be to provide and to further develop, safe, economical and well

co-ordinated air services. Urgent action is necessary to improve and expand the existing airports and other Aviation facilities and to evolve economical methods of airport construction, to build up the indigenous capabilities and to provide the required equipment for the construction of appropriate kinds of airport facilities. Moreover emphasis will have to be placed on the training programmes in all aspects of Civil Air Transport industry and on the provision of adequate maintenance facilities for the equipment in use. Rapid changes in techniques and equipment make it all the more necessary.

References Chapter Six

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Appendix A
Sources for the Figures

1. Bactria and trade routes B.C. 200-170.

   Source: Manchester C.A., The Greek-Bactrian and Kushan Kingdoms of agents of cultural exchange p. 389, Fig. 1.

2. Kushan empire and trade routes, A.D. 100-150.

   Source: Manchester C.A., The Greek-Bactrian and Kushan Kingdoms as agents of cultural exchange p. 390, Fig. 2.

3. Key map of place names.

   Source: Afghan Cartographic institute October, 1965.

4. Afghanistan relief.

   Source: Humlum, J. La Geographie de L'Afghanistan, 1959, p.15, Fig. 15.

5. Rivers and Navigation.

   Source: United Nations: Multiple-purpose river basin development, p. 2, Fig. 2.

6. Distribution of population.

   Source: Humlum, J. p. 97.

7. Passes through Hindu Kush.

   Source: Price, W.C., South-West Asia, London 1966. p. 181, Fig. 35.

8. Road network.

   Source: With some changes from map of Afghanistan drawn by Aminullah and printed in Kabul, Afghanistan 1964.

9. Number of vehicles in Afghanistan 1957-65.

   Source: Drawn by author - information from Ministry of planning Kabul, Afghanistan.

10. Weekly flights.

    Source: With some changes from Humlum, J. La Geographie de L'Afghanistan p. 332.

11. Airports and river ports.

Source: Drawn by author, information from Afghan Civial Aviation Authority.

12. Passengers and freight carried by Ariana Airline 1950-65.

Source: Drawn by author: information from the Ministry of Planning Kabul, Afghanistan.

13. External communication by land.

Source: International Larousse atlas, Southwest Asia, Map 13A.

14. Distribution of ethnic groups.

Source: Wilber, Donald, N. Afghanistan p. 37.

15. Agriculture and land use.

Source: Ernest Reiner, Afghanistan focus Vol. XV No. 5, January 1965, p.3.

16. Distribution of minerals.

Source: United Nations: Multiple purpose river basin development 1957, p. 5, Fig. 2.

17. Location of industries.

Source: Drawn by author: information from Ministry of mining and industry, Kabul, Afghanistan.

Appendix B

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