

T
63

PORTS, ROADS AND RAILROADS

IN LEBANON AND SYRIA

by

EDWIN B. OWEN

Thesis submitted in partial fulfillment of the requirements for the Degree of Master of Arts at the American University of Beirut.

**Beirut, Lebanon.
15 April 1951.**

TABLE OF CONTENTS

	<u>Page No.</u>
Introduction	I
Chapter I. <u>PORTS</u>	1
1. Ports of Lebanon: Introduction	1
2. Port of Beirut	3
a) Port Facilities	12
3. Port of Tripoli	19
a) Port Facilities	25
4. Minor Ports of Lebanon	29
5. Ports of Syria: General	32
a) Secondary Ports of Syria	34
6. Port of Latakia	35
Chapter II. <u>ROADS</u>	41
1. Highways, Syria and Lebanon: General	41
2. Highways: Lebanon	43
a) Road Network	49
b) Governmental Organization	54
c) Highway Breakdown	56
d) National Highway Policy	59
3. Highways: Syria, General	64
a) Connecting and Transfer Points	75
b) Road Network	78

	<u>Page No.</u>
e) Governmental Organization	82
d) Highway Breakdown	85
Chapter III. <u>RAILROADS</u>	86
1. Syria and Lebanon: General	86
a) Organization and History	92
b) Administration of Syrian and Lebanese Railways	101
2. The Railroads in Lebanon	106
3. The Railroads in Syria	110
4. Detailed Description of the Railways of Lebanon and Syria	115
BIBLIOGRAPHY	127
APPENDIX	
1. Statistical Tables	131
2. Maps	143

I N T R O D U C T I O N

The passage of the centuries has seen little development of transportation in Syria and Lebanon. The greater portion of land transport needs up until the latter part of the 19th Century was met by animal transport. The needs of sea transport were met by small coastal sailing vessels which, though a bit primitive, carried on a brisk trade. What is the most singular is that this rudimentary state of transport existed down to the dawn of the 20th Century, and one can say without too much exaggeration that until Syria and Lebanon came under the control of the Western Powers in the First World War period, these states were largely using the means of circulation common to the latter Middle Ages. The various transportation schemes which had been attempted here and there were due to foreign enterprise, for the most part French. However, in the course of development by foreign powers, the rail network lacked coordination, inspired as it were by military and political needs, and little adapted to the economy of the region. These same observations, -- same cause and same effects -- apply to the junction line ⁽¹⁾ between Haifa

(1) See page 21.

II

and Tripoli by way of Beirut, which was constructed during the early part of the Second World War. This line, hastily constructed along the seashore, at times right along the open beach, is but little suited for commercial use. ⁽¹⁾

However, since the separation of the countries of Syria and Lebanon shortly after the end of the First World War, there has been a reasonably impressive development in the internal and external transportation systems of these two countries. This development seems quite remarkable when it is considered that near the turn of the century the communications and transportation systems in both Syria and Lebanon could be classified as little more than primitive. At this epoch the camel and the donkey were the principal medium of goods and passenger transport throughout the greater part of the region, and during the Nineties the wife of the French consul at Beirut described the Beirut-Damascus road as being impassable for her town carriage beyond the five kilometer mark. ⁽²⁾ This must have been at a point somewhere between Hazmiah and Furn al Shabbak. It is true that shortly after 1890 work had begun on various railway lines, but these were confined

(1) Jacques Weulersse, Paysans de Syrie, et du Proche Orient, Gallimard, Paris, 1946, page 139.

(2) Mme. Saint-Gene Taillander, Ce Monde Disparu, Paris 1947, page 27.

mostly to the coastal and western regions, and filled but a small void. As mentioned above, the bulk of passenger and freight traffic was transported by beast, or by carriage where suitable roads existed. The only bright spot in the entire transportation picture was that of ocean transport, sail and steam. Since ancient times the coasts of Syria and Lebanon have witnessed a thriving maritime goods and passenger traffic, both coastal and foreign.

It is our intention to furnish a physical description of the land and sea transportation systems of Syria and Lebanon and the status of the same. Furthermore, an indication will be given as to the lines along which transportation is presently developing in the two countries, without, however, attempting to indicate any development trends which are not confirmed by actual, concrete evidence, either of an organizational nature or actual construction.

The subject of transportation in Syria and Lebanon will be discussed under the following three general headings:

- I. Ports
- II. Highways
- III. Railways

In the discussion of each of the above three subjects the following considerations will govern:

A physical description

The present stage of development

Limitations of the present system

Governmental policy, if any

In the main, the discussion will be confined to a treatment of the internal transportation systems, but when the case warrants, it will be necessary to diverge and discuss particular subjects in their international aspect or setting. This deviation will be necessary, for example, when discussing the railway system of Syria in order to understand more completely its raison d'etre, and to indicate possible trends of development for a particular aspect of transportation, such as the Port of Latakia. Then again, when considering the present status and development of the Port of Beirut, it becomes necessary to consider the tremendous international transit trade passing through Beirut as a result of the operations of Lebanese and Syrian merchants in the international export-import trade.

The development of internal transportation in Lebanon and Syria has, in the main, taken place during the past fifty years. In former times these territories occupied a key position across the east-west trade routes of the world. The opening of the Suez Canal and the replacement of animal transport by mechanical means during

the 19th Century has meant the loss of much of her former transit trade. The location of the two countries ⁽¹⁾ on the seaboard of a great land mass brought about an early development of coastwise and ocean going shipping which, however, had declined considerably by the middle of the 19th Century. Furthermore, the opening of the Suez Canal prevented any awakening since most commerce was diverted southward through the Canal. But with the increased importance attached to rapid means of transportation and communications to supply the internal needs of both Syria and Lebanon, and the strategic position of these two countries astride the Middle Eastern land bridge, their transportation systems have undergone great development. This took place at first under the auspices of two of the western imperial powers, Germany and England, at the beginning of the 20th Century; then, after the First World War, at the hands of the Mandatory Powers, France and England; and then finally, during the era of independence, by the expression of the countries themselves to fulfill their own internal and external needs and demands for communications and commerce.

(1) Syria and Lebanon are, in reality, one geographic unit and can hardly be dealt with separately in this consideration.

THESIS ON

'PORTS, ROADS AND RAILROADS IN SYRIA AND LEBANON'

by Edwin B. Owen

A PRECIS

During the Golden Age of the Middle East, transportation in Syria and Lebanon was effected by many caravans winding back and forth over the deserts of the interior, and by numerous sailing ships calling at the cities along the sea littoral. These two modes of transport were adequate and efficient for conditions of life during that era. In terms of actual development and organization both systems were doubtlessly way ahead of that existing in the regions of Europe. However, after the collapse of the Arab Kingdom, the Middle East fell into a dormant state of affairs from which it was not to arise until the early years of the Twentieth Century. The caravans continued to plod along over the land, and the sailing ships to slip along the coasts, but no development took place. However, now the pattern has changed. As a result of forces coming in from the outside, the Middle East is undergoing development in transportation activities. The reasons for this are two; first to provide communications on an international pattern in view of the strategic position of the Middle East, and second, in response to the internal communication and transportation needs of the countries themselves who are developing tremendously under the impact of new forces. In addition, there is an accompanying development of the peoples and these two Arab states from within themselves, in order that they

may take their place in the modern world.

Looking back, we see that the first developments in transport were due to foreign powers who were seeking to gain a hold in the Middle East as outlets for their industrial production or due to a desire for colonies. However, in the course of development by foreign powers, the rail network, to cite one example, which was the first to be developed, lacked coordination. The constructing powers built the rail lines only in response to their own needs and desires and with a view to profit, as was logical. There was little thought given to possible future needs of the countries themselves, not to development according to the economic needs of the regions. As pertains to roads, none were built by the western powers since there was no immediate need when viewed from the commercial angle. When, in the Eighteen Eighties, the Port of Beirut was built, it was because it was a good investment and needed to serve the immense transit trade passing through Beirut. Since no other ports were then needed for large operations along this portion of the coast, none were constructed. The works existing at Tripoli were sufficient for the little traffic that called there and all large vessels could call at Beirut only some fifty miles to the south. Because, up until recently, the economic potentialities of the region were limited, it was logical that transportation development should be proportionately limited. The developing forces came from the outside and thus were only interested in practical and profitable ventures. It is only recently, when the impetus

has come from within the people or nation that any great development has taken place, and this for the most part, has been confined to the realm of road construction and automotive transportation. The ports along the Syrian and Lebanese coasts have not undergone any great change in late years because the traffic calling at these places is not of sufficient volume. Consequently, the states concerned do not see investment in a program of harbor development as sufficiently profitable to warrant the outlay of great sums of money. The same general considerations apply to the railroad picture. Certainly it must not be forgotten that in such cases where a program of construction or improvement is desirable, the amount of money needed is not always available at the moment, but that future provisions will be made for such projects if the case warrants.

The Port of Beirut is adequate for the traffic which passes through it. Beirut, alone among the other ports treated in the thesis, i.e., Tripoli and Latakia, not to mention the various minor ports along the littoral, is doted with modern handling and storage equipment. At both Tripoli and Latakia modern equipment is very limited, and that which is available is quite out-moded. Both these latter places are undergoing light programs of development and improvement but these programs are but limited and have as yet but little affected the capacity of these ports. However, some progress is being made and will help to bring facilities in both localities up to date. Beirut is the only port which can accept

ocean going vessels of deep draft inside the harbor for operations along wharf-side. In the other two ports, large vessels must lie off-shore in a roadstead and rely on lighter operations for movements to and from shore. Since a great deal of merchandise is carried by sail- and motor-powered coasters of shallow draft, the larger ports as well as the minor ones, handle quite a bit of such traffic, the volume of which reaches large proportions during certain periods. It must be considered that the Syrian and Lebanese coasts are very lacking in locations suitable for deep-water ports, and the off-shore waters are shallow and very exposed to winds during the winter months, thus making them untenable during bad weather.

There are considerable numbers of oil tankers calling along the coast but these have but little occasion to call at the regular ports as all oil is out-loaded by underwater pipelines, and thus the tankers do not have to use port facilities.

Up until the time of the First World War there were but few roads at any place in Syria and the Lebanon. The single main artery was that from Beirut to Damascus. The reason for this is plain; there were few wheeled vehicles and no automobiles. However, immediately after the war the French occupation authorities undertook a great program of road development and construction. This construction program is now being continued under the direction of the Syrian and Lebanese governments who have taken up where the French left off. At the moment the road network in the two countries

gives adequate access to the various regions of the two states, and so the emphasis is now being placed on widening and improvement of roads. The most importance is given to improving national and international highways and the creation of fast, modern turnpikes between the larger cities to provide facilities for heavy, high-speed traffic. Of special interest are the efforts of the highway departments to open modern, wide boulevards through and within the cities and towns where special traffic problems exist. However, all this construction work is being done by primitive hand means, which though effective, is slow and costly. The developments in road and highway construction are opening up the two countries to automobile transport, but it is also having an adverse effect, which is, that automobile transport, because of its cheapness, is gradually supplanting the railroads in the transport of merchandise and passengers. Even though there are agreements between Syria and Lebanon to the effect that transit traffic must be carried by rail, and the two governments are continually endeavoring to divert as much traffic as possible to the railroads, these are but temporary or stop-gap measures. So, automobile transport is predominant and is increasingly encroaching upon the railways. This is serious because the railways have been losing propositions for years. Even though they lose money they must be kept alive since they are economic assets to the countries, or any country, if run properly. If the railroads were allowed to suspend operations, automobile

transport and the highways as they are now would not be able to carry the share of traffic which the railways had been carrying. In neither country is there any government policy to ensure the coordination of rail and highway traffic and so unrestricted competition is the result.

The highway policy of Lebanon is to connect Beirut with the important cities and towns in order to promote trade and tourism. That of Syria is to improve the existing highways and to connect the Jazirah region to the area around Aleppo and Latakia in order to open the rich but undeveloped lands of the Jazirah. As a whole, both the Syrian and Lebanese highway systems are adequate for the present economic and administrative needs of these two states. Highways connecting the main centers of population are satisfactory, though the state of maintenance leaves a bit to be desired.

In the entire regions of Syria and Lebanon, there are 832 miles of railroads, both standard and narrow gauge track. Most of the interior of Syria is arid and unpopulated and so it is in western Syria and the Lebanon, in spite of the mountains, that the railroads have been constructed for the most part. The Syrian railway system forms a disconnected series which does not operate for the best interests or most advantageous economy of the country as it serves but a limited area, and serves that poorly. The system is made up of standard and narrow gauge sections of track

which are neither commercially nor administratively efficient for Syria as an entity. Few countries are so badly endowed with even passable railroads for so large an area as is the Republic of Syria.

Now we must consider that the railway system of Syria is closely bound up with that of Lebanon and that the two can hardly be considered separately. The entire system was constructed at a period when Lebanon was an organic portion of Syria and the whole was a part of the former Ottoman Empire. Therefore the railways were laid out and constructed without regard to any national boundary or particular national interest. As a result, the Syrian railway line from Damascus to the north of Syria passes in and out of Lebanon, changing gauges on the way. The railway from Aleppo to the Jazirah region runs inside the Turkish border for the major portion of its length. Then, as indicated above, the operation of the railways of the two countries has shown an annual financial deficit for several years. The equipment is worn out and out-moded. There are no funds for the purchase of new equipment.

Lebanon is adequately served by its present railway system, but the railways here are also losing money. They carry only freight for the most part, as automobile transport carries the passenger traffic. Since the end of the Second World War, the Hama-Tripoli line has been carrying a large amount of freight.

but the Beirut-Damascus line up over the Lebanon and Anti-Lebanon Ranges and the Rayak-Aleppo line have been steadily losing traffic, the latter mostly because of the Customs Break of March 1950. The line from Beirut to Tripoli carries a considerable amount of traffic, but the section of this railway to the south of Beirut has been out of operation since the Palestine situation. In both countries automobile transport gets most of the traffic due to its greater efficiency and greater frequency of trips between towns and principal cities. Heavy freight continues to travel by rail in some cases, but huge tractor-trailers are used to carry goods which are too heavy for the narrow gauge line up over the mountains from Beirut.

To sum up, the transportation systems in Syria and Lebanon are adequate for the needs of the countries themselves. The ports and roads are in fair, but the railroad situation is deteriorating. The railroads are in poor physical condition and not suited to the needs of the countries they serve. Neither country can afford replacement of equipment or reconstruction of lines. Some progress is being made in road building, and a little construction is being carried out in some of the larger ports. However, all such activity is limited as the governments concerned do not have available the large sums of capital necessary for such operations.

C H A P T E R I

P O R T S

1. Ports of Lebanon; Introduction

Despite the widening of Lebanon's mercantile interests, particularly during the immediate post-war years when huge accumulations of foreign exchange were held by Lebanese capitalists, investments were diverted chiefly to trade channels for quick profitable turnovers. Although the economy of Lebanon is primarily agricultural, her wealth is derived principally from commercial transactions and trade for which her geographic situation is particularly appropriate. The mountainous barrier which forms most of present day Lebanon dominates a series of littoral plains, mere or less crowded together and narrow, but nonetheless fertile. The mildness of the climate, abundance of water and facilities offered to navigation have rendered this narrow coastal land, thanks to its privileged position connecting Asia and the Mediterranean, one of the favorite domains in the formation of history. It was in this land that the development of Phoenicia took place around Byblos, Sidon and Tyre. Too, in the region later prospered several of those metropolises of the Greek and Roman Orient, Antioch

(1) See Map No. 1 in Appendix.

and Laodicea, the present day Latakia, to its north, and more to the south, Berytus the Beirut of today, and then more to the south, Caesarea in Palestine. ⁽¹⁾ Here was the theater of the Wars of the Crusades and the stage for the brisk trading activity carried on by the Echelles du ⁽²⁾ Levant.

Lebanon's two naturally protected harbors at Beirut and Tripoli enable her to maintain her position as a leading world trade center without the development of foreign or domestic trade fleets, even though this position is to a considerable extent dependent upon foreign trade. In Lebanon the emphasis has been placed rather on trade encouragement through the easing of trade ⁽³⁾ restrictions and the establishment of free ports. Coast-wise shipping, though not strictly a part of the internal transportation system, does serve domestic commerce and ⁽⁴⁾ condition its development. It is carried on by a foreign and domestic trade fleet which is composed of some fifty four vessels, for the most part sailing and motor sailing

(1) Weulersse, Paysans de Syrie, page 19.

(2) See page 95.

(3) State Department Report 227, Am. Leg., Beirut, 24 May, 1950.

(4) Said B. Himadeh, The Economic Organization of Syria, Beirut, 1936, page 189.

vessels, which ply between Lebanese ports and ports in southern Turkey, Syria, Cyprus, parts of the Palestine coast and Egypt. Of these vessels only one has a net tonnage exceeding 1,000 tons and seven exceeding 100 tons net. Some twenty vessels of this fleet are wooden sailing vessels powered by sail alone; thirty are wooden sailing vessels with auxiliary engines and three are motor barges. It should be noted that the majority of the sailing vessels range in net weight from five to ten tons.

Lebanese vessels are for the most part individually owned and operated; no shipping companies, even of moderate size, have been formed. ⁽¹⁾ Furthermore, no shipbuilding is carried on in either Syria or Lebanon which might furnish vessels larger than medium sized coasters, and those vessels which could be classed as ocean going, cargo carrying vessels have been acquired from other ⁽²⁾ countries.

2. Port of Beirut

Beirut, the capital of Lebanon and a key communications center is one of the most important merchant towns

(1) State Department Report 227, Beirut, 24 May, 1950.

(2) Shipbuilding is limited to the construction of wooden craft and even facilities for large ship repairs and maintenance are negligible.

(1)
of the Middle East. It is truly one of the gateways of Asia. Beirut or Berytus was one of the less famous Phoenician cities but its name occurs in the Tell al Amarna letters which date from the Fifteenth Century B.C. It was completely destroyed by an earthquake in 551 A.D. but had been more or less built up by the coming of the Muslims, even though far from its former splendor. (2)
It was a flourishing Levantine port and trading station in the Fifteenth Century, but it first became pre-eminent a couple of centuries later in the time of Fakhr al Din (1595-1634) and his successors. For many years Beirut has connected Lebanon, Syria, Jordan, Iraq, Iran, the south of Turkey and the north of what was formerly Palestine, to the commerce and travellers of Europe, Africa and the other overseas lands with trade and interests in this land which we call the Near and Middle East. It gives access to the pipeline from Iraq which reaches the sea at the refinery and works at Tripoli, and also to that from Su'udi Arabia which has its sea terminus to the south of Sidon. (3)

(1) Dr. Georges Samne, La Syrie, Paris, 1920, page 168.

(2) Encyclopedia Britannica, Article, Beirut.

(3) Blue booklet issued by Compagnie du Port, des Quais et Entrepôts de Beyrouth, Edition Publicite, Beirut, 1949, page I.

The city of Beirut has spread prodigiously. In less than a century the surface area of the capital has increased tenfold and its population is fifteen times greater than in 1860. ⁽¹⁾ This rapid development, which has been shared by other Lebanese towns, has created housing and traffic problems, to mention only two of the many, since the construction to cope with this large rise in population was started. Shabby buildings rise in front of new ones, streets are crooked and traffic movement is becoming difficult. Means of good public transport are insufficient. The city lacks wide streets and adequate arteries of access and exit. ⁽²⁾

In the city of Beirut, Lebanon possesses a port which is adequate for the traffic which now passes through it. However, its capacity could be increased by more handling equipment and storage facilities, such as larger and more modern warehouses. Also, steps should be taken to provide more cranes and heavy lifting equipment, the development of general warehouses, existing and proposed, the construction of grain silos with proper handling equipment, and the development of rail lines permitting

(1) In 1860 the area of the city was 112 hectares, inhabitants 20,000. In 1950 the area of the city was 1700 hectares, inhabitants 300,000.

(2) State Department Report 95, Am. Leg., Beirut, 19 Sept. 1950, page 23.

direct unloading of ships onto rail cars at the wharves and quay-sides. ⁽¹⁾ However, while the Lebanese government contemplates future extension ⁽²⁾ of the docking areas, no expansion of present storage and stocking facilities is projected, and it is believed that any such future development will be left to private capital.

The development of Beirut is of comparatively recent date when compared with that of other ports on this coast. Its site has much to recommend it, but the mountains behind form a more formidable obstacle to its expansion than the country to the east of its old rivals, Tripoli, Sidon, Acre and Haifa, a disadvantage partially remedied by the tremendous development in the Lebanese overland communications and transport, also of recent date. Of late, Haifa has been relegated to the role of supplying only the new state of Israel, and her traffic with other regions of the Near and Middle East has been diverted through the port of Beirut.

⁽³⁾
In 1888 a group of French shareholders in the Compagnie Ottomane de la Route Beyrouth-Damas founded, with the help of several banks, a Compagnie Ottomane du port,

(1) Gabriel Menassa, Plan de Reconstruction de l'Economie Libanaise, Beirut, 1950, page 304.

(2) See Map No. 3 in Appendix.

(3) La Syrie et le Liban, sous l'Occupation et le Mandat Français, 1919-1927, Berger-Levrault, Nancy, page 155.

des quais et entrepôts de Beyrouth. Under French direction and supervision, port construction was started in 1889 and completed in 1894. ⁽¹⁾ This construction consisted of building the following harbor works:

- a) The northern mole 2625 feet long and a jetty, called the west quay, 1149 feet long, all enclosing a basin of 57.5 acres, three fifths of which was in water 26 feet deep.
- b) 3282 feet of wharves.
- c) Customs house and police station.
- d) Floating quay of 30 tons capacity, a bonded warehouse and lifting facilities.

During the First World War, the port and equipment were allowed to fall into disrepair and were partially ruined, ⁽²⁾ but afterwards during the early twenties, the restoration of the port was put into the hands of a Société Anonyme called the Compagnie du Port, which was associated with the railway company then operating the Beirut-Damas railway, this latter also a French operated concern. With the development of Haifa, then the chief port of Mandated Palestine, and the frequent congestion of Beirut harbor, improvements were decided upon. In 1934, an extension

(1) Opus citus, page 156.

(2) Ibid.

program was laid down by the French High Commissioner.

This comprised the incorporation of the Bay of Saint Andre by the prolongation of the northern mole, called the Jetee du Large, and the building of a new eastern breakwater.

The Compagnie du Port likewise proposed ⁽¹⁾ to install electric cranes and to enlarge the west quay from 1149 feet to 1200 feet in length. In addition, 656 feet of new wharves were to be constructed, the entrance deepened, and warehouses and refrigerating plants built. A free zone was to be established for the transport of merchandise to other Near Eastern countries. These construction projects were begun in 1934 and were completed in 1939. The port was re-arranged and increased in depth so that now vessels of up to thirty feet draft can come alongside of a good many of the docks. ⁽²⁾

The physical port now consists of the northern mole, called the Jetee du Large, which extends northeast from Ras al Shamiyah for a total length of 4203 feet; 1710 feet from its outer end an arm projects at right angles for 195 feet with a lighthouse at its extremity. Twenty one hundred

(1) Report 93, Am. Leg., Beirut, 19 September 1950, page 27.

(2) The Port of Beirut is capable of handling 500,000 tons of foreign trade goods, as well as 100,000 tons of coastal traffic annually. Gibb Report for Lebanon, Introduction, page 7. For Statistics on traffic at the Port of Beirut, see Appendix; Tables I, II, and III.

feet east of the inner end of the northern mole is the western quay, call the Quai Militaire, ⁽¹⁾ which is 450 feet in width and which projects northwards from Ras Madawar for 1200 feet. Between the inner end of the northern mole and the Quai Militaire is the old Main Quay. Nine hundred feet east of the Quai Militaire and roughly parallel to it is the new eastern breakwater-quay, 1140 feet in length. These latter two quays enclose an outer basin of about sixty five acres in extent. The southern side of this basin consists of a quay of 1000 feet length built on reclaimed land. The fill for the reclamation of this land was brought by railway cars from the area of Beirut Municipal Airport at the time when it was being constructed by the French Occupation authorities during the thirties.

At the present, the port of Beirut is given under a concession to and operated by the Compagnie Française du Port, des Quais et Entrepôts de Beyrouth which exploits the following:

- a) The Bonded Warehouses, for the benefit of the Lebanese Customs.

(1) Another name for the Quai Militaire, which is still used in some circles is the Coaling Wharf, after its use during the days when Beirut was a coaling station and this wharf was used as a huge coal storage yard and depot.

- b) General warehouses
- c) Free zone
- d) Harbor station
- e) workshops and maintenance facilities
- f) Ligherage

Various services are independent of the Port Company and are either state or private concerns. These are:

- a) The office of the Port Captain
- b) Piloting
- c) Quarantine
- d) Beacons
- e) Port police
- f) The Customs

Beirut city is built facing north on the massive promontory of Ras Beirut, which projects into the sea about three miles west of Nahr Beirut. The port of Beirut is situated in the Bay of Saint Andre which itself is a part of the larger Bay of Saint George. The harbor consists of artificial basins protected by the jetty called the Jetee du Large which is 4203 feet long. Beirut harbor affords about 111 acres of sheltered water in depths varying from seven to fifty-four feet. The entrance is 810 feet wide with a depth of fifty feet. There are four different anchorages:

- a) Outside the harbor, exposed to west and north-west winds.
- b) Outside the harbor entrance, but in the lee of the north mole or, as it is otherwise called, the Jetee du Large.
- c) Alongside the quay in the outer basin where there is room for eight to twelve vessels.
- d) In the inner basin which holds about ten vessels drawing from seventeen to thirty three feet.

Because of its limited size, free swinging anchorage is not possible within the artificial harbor. Temporary anchorage is available in the roadstead northward of the port. Just north of the Jetee du Large three or four berths are available in depths of from thirty six to thirty eight feet. However, the bottom in this area is rocky under a thin sand and mud veneer and holding is poor. ⁽¹⁾ The position is exposed to the north and west, and during winter is subject to a heavy sea during westerly winds. There is also temporary anchorage available in the southern end of the Bay of Saint George, where there is some protection from westerly and south easterly winds. Even though the zone available for anchorage is limited -- about eight

(1) Navigational Information, Port Directory, 6th U.S. Fleet, Section B. - Port of Beirut, 1949, page 3.

hundred yards wide between the five and the twenty fathom curves -- vessels of any size can anchor here, and there is sufficient space for five or more berths in thirty feet of water. Here, too, the holding is poor. (1)

During the winter months, strong westerly winds may set a heavy swell in the roadstead. On such occasions the harbor basin is affected and port operations interrupted. Vessels alongside the wharves may surge so heavily that, in order to continue working cargo, they must shift to buoy moorings. Because of the swell, the maximum permissible (2) alongside draft for vessels at the wharves is two feet less during the winter months than that for the summer months. During the summer months the prevailing wind is south-westerly or south and its influence is not felt in the harbor or in the roadstead. (3)

a) Port Facilities

Beirut, has ten wharves, which occupy the entire length of the waterfront in the artificial harbor, and

(1) Ibid

(2) Opus citus, section on Weather and Winds

(3) Gibb recommends that the main breakwater be extended, and that an east breakwater, in addition to the present one, be constructed further along the bay in order to insure calm water in the inner basin during all seasons.

provide a total of 6513 linear feet of wharfage. An additional 1085 linear feet is available at the unprotected outer side of the 'Digue Abri', the new breakwater pier constructed in 1938 and which encloses the harbor on the east. On the basis of depths alongside, the wharfage within the harbor is distributed as follows: (1)

<u>Depths alongside</u>	<u>Wharfage</u>
28 to 35 feet	1025 linear feet
20 to 28 "	2804 " "
6 to 14 "	2684 " "

Of the above, the 2684 feet is suitable only for lighter wharfage, and is located for the most part in the 'Old Basin' as, with the exception of the wharfage along the west side of the 'West Quay', depths in the 'Old Basin' are shallow. The deep water berths are located in the 'New Basin' and along the sides of the 'West Quay'. Those piers with over twenty feet alongside permit the simultaneous berthing of about seven ships of heavy or medium tonnage, the cargoes of which can be consigned directly to the warehouses which are located along the wharves. Moreover, nine to ten ships of various tonnage can tie up at mooring buoys installed in the 'New and Old

(1) Report 93, Beirut, page 27.

Basins'. For these ships the loading and unloading of cargo is effected by the medium of lighters of from fifty to two hundred tons capacity. Vessels loaded with coal berth at a 990 foot pier which is especially equipped to unload directly onto railway cars. Ships loaded with inflammables are not received within the port, but are discharged in a special area at the northern end of the Bay of Saint Andre.

Cargo is unloaded from vessels by means of ship's tackle but, once on the piers it is handled by numerous cranes varying in capacity from one and a half to five tons each, as well as by monorail overhead cranes in the warehouses and some mobile cranes of from two and a half (1) ton to six ton capacity each.

1. Cranes and handling equipment.

a) Located on piers

<u>Quantity</u>	<u>Description</u>	<u>Capacity (metric tons)</u>
2	Mobile gantry cranes	3
2	Pivot cranes, mobile	6
2	" " fixed	3
2	" " "	1
1	Automotive pivot crane	6
1	" " "	3
2	Automobile crane	2 1/2
8	Mobile platform elevators	2 1/2
2	" " "	3
4	Electric tractors	-
75	Platform trailers	-

In addition to cargo handling equipment ashore, there are three floating cranes, one of fifty ton capacity, another of thirty tons, and one crane of one ton capacity. These have no power of their own but are towed around by one of the eighteen or more motor launches which perform odd tasks within the port. These launches vary in horsepower from ten to twenty-five horsepower capacity. There is one tug of three hundred horsepower capacity, but this is not used for docking purposes. Finally, there are approximately one hundred barges and lighters of various types and which range in capacity from five to thirty-seven tons apiece.

All of the piers in the port, as well as the 645,000 square feet of open storage areas in direct proximity to the warehouses, are served by railway. These railway lines

b) Located in the warehouses:

<u>Quantity</u>	<u>Description</u>	<u>Capacity (metric tons)</u>
24	Overhead suspension cranes	3
2	Picot suspension cranes	1

In addition, there are located various endless chains for handling goods, rugs and other small parcels. There are variable numbers of 3-ton capacity horse drawn wagons which handle cargo in the port, both on the piers and in the warehouses.

have a combination standard gauge-narrow gauge, three-rail track. This rail clearance greatly facilitates loading and unloading of merchandise within the port area, as most of the port quays, open storage areas and warehouses are served by rail. (1)

A considerable area of the port is set aside as a Free zone and as such is withdrawn from Customs control. This consists of:

- a) 247,570 square feet of covered public warehouses
- b) 28,580 square feet of open-storage public warehouses (open air)
- c) 269,100 square feet of covered private warehouse.

The Port Company, which operates the port of Beirut, is equipped to receive and store both imported and exported merchandise, as well as that in transit. The present capacity for such operation is: (2)

- a) Customs warehouses
 - 1. 265,000 square feet of covered bonded warehouses
 - 2. 51,670 square feet of open-storage bonded warehouses (open air).

(1) Pamphlet issued 17 June 1950 by 'Compagnie du Port' entitled 'Inauguration de Raccordement du Port de Beyrouth a la voie normale'.

(2) Blue Booklet, 'Compagnie du Port', Beirut 1949, page v.

b) General warehouses

1. 50,000 square feet of general storage public warehouses.
2. 8,600 square feet of general storage free warehouses.

Of the above warehouses, the last cited, or the free warehouses, receive either locally produced goods, upon which no customs charge is made, or customs-cleared merchandise. The public warehouses are placed under the control of the Customs. Merchandise can be directly unloaded from the ships into these warehouses or after its passage through the Customs warehouses. All open storage facilities are public. Goods which can resist the weather such as iron, wood, vehicles, etc., can be stored in the above open storage areas. (1)

In addition to the above storage facilities, there is a refrigerating and freezing plant in the port area which has a capacity of 423,000 cubic feet. This is a modern plant with chill rooms, freeze rooms, and quick freeze tunnels, (2) and which was built in 1949. It is equipped for the storage and freezing of all varieties of perishable

(1) Seaports and Harbors - Lebanon, Report 17, Am. Leg., Beirut, 12 July, 1950, page 2.
Open storage areas are called 'terre plains'.

(2) Information, 6th US Fleet, Section C on Beirut, Port Facilities, page 6.

feeds. In addition, it normally produces 120 tons of
(1)
ice daily.

Beirut is an auxiliary oil bunkering port, and has storage facilities for a total of 443,140 barrels of petroleum products of all types. (2) Tankage is distributed among several installations concentrated eastward of the harbor on the shores of the Bay of Saint Andre. Over 75% of the total capacity is owned by the Shell Oil Company and the Socony-Vacuum Company. These last two companies' tanks are served by floating pipelines, and seaberths for tankers are provided at the offshore end of each line. Three mooring buoys are installed at the Socony-Vacuum berth and four at the Shell berth. Both berths are very exposed and holding ground is poor. In addition to the above installations belonging to American companies, the 'Compagnie Française des Petroles' has four steel tanks of a total capacity of 95,338 cubic feet.

(1) Blue Booklet, 'Compagnie du Port', Beirut 1949, page 9.

(2) Breakdown of tankage as given by Lebanese Ministry of National Economy on 17 July 1950 is:

<u>Type</u>	<u>Capacity</u> (in barrels)
Motor Gasoline	120,310
Kerosene, gas oil & fuel oil	249,287
Aviation gas	26,092
Motor benzine, industrial ether & misc.	14,370
Various black & white products. /cell.	33,181
Total	443,140 bbls.

3. The Port of Tripoli

Tripoli, Lebanon's only other port of any importance, lies at the northern end of the republic and serves as a distributing center for North Lebanon and Western Syria. Tripoli, today, consists of two towns -- that is, al Mina, Tripoli on the sea, located on the north shore of the peninsula to the west; and Tripoli city, which lies on the banks of the river Nahr Abu 'Ali or Nahr al Qadisha, one and a half miles east of al Mina and one mile south of the seashore. The two towns are connected by a good road, along which there is such building activity that it is probable that the two towns will be merged in the not too distant future.

In reality, Tripoli's port is located near al Mina, but for the purposes of this discussion we shall refer to the Port of Tripoli. The city proper lies at the mouth of the Nahr Abu 'Ali at the northern extremity of the Lebanese mountain mass. It is the western gateway to the Homs-Tripoli Gap which leads to the great northern Syrian plains and the interior of Syria through the Ansariyah mountains and Mount Lebanon. Both Tripoli and al Mina stand on a delta-like promontory or projection extending in a westerly direction into the sea, and al Mina faces north-easterly on a low rocky ridge and to the west of where the

(1) See Map No. 2 in Appendix.

Mahr al Qadisha or Abu 'Ali reaches the sea. The port consists of a roadstead protected by a breakwater and a number of concrete wharves along the shore. Strong winds in winter, from northwest to northeast, make the roadstead unsafe for an average of about one month per year.

The commerce of Tripoli is very much less than that of Beirut in spite of its better geographical position. Whereas Beirut imports the majority of manufactured goods coming into the Middle and Near East, Tripoli handles but a small fraction of them. Her exports are mostly agricultural products, and, since the late thirties, petroleum and its products. The former are the produce of the fertile plain of Akkar to the north of Tripoli, the produce of the region lying around Homs ⁽¹⁾ through the Homs-Tripoli Gap, and that of the northern Beka'a. The economic life of the town is maintained chiefly by soap and olive oil industries, the facilities of the Iraq Petroleum Company which has the terminus of its pipeline a short distance to the north of the city, and citrus fruit growing, mainly for export. In the eight years before the Second World War, ⁽²⁾ some 160,000 tons of

(1) Dr. Georges Samne, La Syrie, Paris, 1920, page 167.

(2) Gibb Report on Lebanon, Chapter xiii, Ports: Tripoli.

foreign trade goods were handled annually, of which 38%
was outward tonnage. ⁽¹⁾ In addition, 50,000 tons of foreign
trade goods to and from sailing vessels passed through the
port, and over one and one half million tons of petroleum
were exported. In 1945 foreign trade rose to a peak of
315,400 tons, but fell to 216,800 tons in the following
year due to the general decline after the end of the war.

The importance of Tripoli has increased since
the early days of the Second World War as a result of the
completion of the northern branch of the pipe line from
the Iraqi oilfields, the construction at the north of the
city of a small refinery and topping plant by the Iraq
Petroleum Company, and the connection of Tripoli to Beirut
by the standard gauge, Tripoli-Beirut section of the HBT
railway built by the British military authorities in 1942. ⁽²⁾

The port of Tripoli, with its standard gauge line
inland to the Rayak-Aleppo railway has better rail clear-
ance to the interior than has the port of Beirut, which is
linked to the above line by a narrow gauge line (racked
in some places) over a difficult mountain route. But the
port of Tripoli is a shallow draft port and as such its
possibilities are limited since there is little quayage

(1) For Statistical data on Traffic at Port of Tripoli
see Appendix; Table IV.

(2) See note on the HBT railway on page I, Introduction.

suitable for berthing large ships. Only vessels drawing less than seven feet ⁽¹⁾ may come alongside the wharves, and larger vessels must anchor in an anchorage of about four fathoms just off the port area. The shallow water area in the anchorage is protected from southeast to southwest by land, and partly from the north by a breakwater 3,000 feet long on an azimuth of sixty seven degrees. There are gaps, however, between the heel of this breakwater and the land, through which, under westerly winds, disturbed water enters the harbor. Vessels requiring deep water, about thirty feet depths and more, must lie a mile or so offshore. The depth of the harbor is gradually being reduced by sand brought in through the above mentioned gap at the western extremity of the port, and by silt from the Abu 'Ali River. ⁽²⁾

Furthermore, Tripoli is the only other Lebanese port which has enough traffic to justify the construction of a maritime harbor. ⁽³⁾ Notwithstanding the fact that

(1) Seven feet depth will accommodate only lighters and shallow draft coastal sailing craft.

(2) Gibb Report for Lebanon, par. 311.

(3) Le Commerce du Levant, Beirut, 25 Nov. 1950, page 2, states -- 'A parliamentary commission has decided to allocate, of the seventy six million Lebanese Pounds assigned to the current large plan of construction, the sum of ten million Lebanese Pounds for the enlargement of the Port of Tripoli.' Note: Even though there exist plans for enlarging the port and building longer and more effective breakwaters, it is doubted in many

Tripoli is strategically located, the local physical condition and the type of ocean bottom do not lend themselves to such a project. To construct a port at Tripoli would be a very costly operation. ⁽¹⁾ It would necessitate the installation of modern handling equipment in order to discharge rapidly the ships that can tie up back of the presently existing jetty. Furthermore, it would necessitate the construction of warehouses and grain silos. ⁽²⁾

In 1909 the Societe du Chemin de Fer Damas-Hama et Prolongements received the concession for the exploitation of the port of Tripoli. Prior to the First World War the harbor ⁽³⁾ consisted of a fairly well protected stone jetty, 150 yards in length, which projected at right angles from the shore 800 yards to the west of the Lion's

circles whether this project will be pushed to any great extent due to the fact that present traffic does not warrant it, and even though the port were greatly improved it is doubtful whether this fact would attract more trade or traffic to the Tripoli region due to the limited economic potentialities of the interior regions which are served by this port. However, during the last visit of the writer to the port of Tripoli, preparations were being made to build up the Free Zone, and extend the quay next to the Port a Mahannes out into deeper water.

- (1) G. Menassa, La Reconstruction, etc., Beirut, 1948, page 304.
- (2) Report 93, Am. Leg., Beirut, 19 Sept. 1950, page 26.
- (3) La Syrie et le Liban, 1919-1927, page 158.

(1)
Tower. As now, lighters and barges transported cargo from ships anchored a mile offshore in the roadstead to the wharves located along the shore. A railway line to the wharves was completed in 1911 from Homs in Syria. This line was torn up by the Turks during the war, but replaced soon after the Allies took over administration of the country. In addition to the stone quay which was the main wharf, there were other wharves, mostly of wood construction, but located farther to the west near al Mina. During the war of 1914-1918 much damage was done to Lebanon by the retreating Turks and the port of Tripoli and its facilities fell into decay and disuse as a result of political and economic conditions. During these years the port silted up. However, in 1921, (2) the port was dredged to permit the landing of the heavy material designed for the reconstruction of the Homs-Tripoli railway line. (3) Other damages to the port installations and the port proper were also repaired at this time. As before the First World War, the Tripoli wharves are now operated by the DHP railroad company, and the Port is operated by a concern called the Societe des Travaux Mari-

(1) See Map of Tripoli in the Appendix, Map No. 4.

(2) La Syrie et le Liban, 1919-1927, page 158.

(3) Ibid.

times at Urbains. During the French Occupation a lighter basin was built and the main jetty was enlarged to its present size.

a) Port Facilities

The harbor of Tripoli is about one square mile in area and thirteen to twenty-one feet deep. There is room to anchor five vessels of from 300 to 400 feet in length and of not more than eighteen feet draft, ⁽¹⁾ but there is little wharfage suitable for berthing large ships.

There is a 3300 foot long breakwater to protect the anchorage and this breakwater runs east north east from a small rocky island located just off al Mina. At the inner or western end of the harbor there is a jetty 375 feet long and 34 feet in width. This jetty projects from the Customs House and is sheltered by two small islands. Only small vessels of not more than six feet draft can draw up inside of this jetty. About 600 yards to the west of the Lion's Tower which is at the northeastern end of the port there is a lighter basin, which has depths of from two to eight feet alongside. This is formed by a

(1) Report 17, Am. Leg., Beirut, 12 July, 1950, page 6.

jetty, 1290 feet long, and which projects northwest from the shore towards another L-shaped jetty, 210 feet long, which in turn projects eastwards from an area of reclaimed land. The west side of the basin is formed by this area. The entrance between the two jetties is 150 feet wide.

Warehouses and storage buildings, covering an area of about 13,400 square feet, lie along the wharves between al Mina and the railway station. The Customs warehouses can hold 2500 tons of goods, and other warehouses in and about the port can hold a maximum of 24,000 tons. It is not expected that this capacity will increase in the near future unless the Government carries through plans relative to the development of the port. In the port area, there are 27 crude oil tanks, each of a capacity of 12,000 tons and one 500 ton capacity tank for the storage of benzine.

The only wharf in Tripoli having warehouses on it is the 'Port a Mahannes' wharf. Three general warehouses, having an area of 10,858 square feet, are located at the southeast side of the port. There are three more general warehouses located at the southwest side of the port, which have a total area of 26,910 square feet of floor space. There are no special warehouses for use by the Free Zone, ⁽¹⁾ as in Beirut, nor are there any private

(1) A spokesman for the Lebanese Ministry of National

warehouses.

Open storage space at the port of Tripoli is a bit more abundant, and this too is, for the most part, located around the 'Port a Mahannes' wharf which is owned and operated by the DHP Railway Company. ⁽¹⁾ There is a storage space located at the southern side of the port with an area of 32,292 square feet, and another at the eastern side with an area of 43,156 square feet. The Shaykh Affan wharf, which is used solely for the loading of citrus fruit and cereals has an area of 2422 square feet, but there is no storage space around it. Then, there is the Grumblatt wharf, which contains 16,146 square feet of storage space, and which is only used for the unloading of goods imported for consumption in Tripoli.

Conveying cargo from ship to shore is done by lighters, which bring the goods to the wharves. Transportation of cargo from the wharves to storage is done by trailers (horse or vehicle drawn). ⁽²⁾ For the lighter operations there are approximately sixty-eight lighters

Economy recently announced 'that works for the improvement of the Free Zone of the Port of Tripoli would soon start. The 'Service for the control of Concessionary Societies' has recently completed the plans relative to this project.' 'Le Commerce du Levant', newspaper of Beirut, 11 Nov. 1950, page 2.

(1) Report 17, Beirut, page, 5.

(2) Ibid, page 6.

available at Tripoli. In addition to the lighters there are about twelve small tugs used for movements within the harbor such as towing and berthing operations. From ship to lighter all cargo is handled by ship's tackle, but at the wharves there is some handling equipment available. These consist of several light cranes of one and a half ton capacity on the al Mina jetty and some heavier cranes of three to five ton capacity on the wharf at the lighter basin (Port a Mahannes).

Generally no hazardous goods are received at the Port of Tripoli, since there are no storage facilities for them. In case such merchandise arrives it is usually stored in the warehouse at the Iraq Petroleum Company topping plant, four miles northeast of the port. (1)

The out-loading facilities for the IPC pipeline lie about five miles northeast of the port. There are three loading berths, 2600 feet apart, located in water with an average depth of fifty feet. There are four mooring buoys at each berth at which ships secure by the stern, anchoring with their own anchors head to wind. At each berth there are two twelve-inch pipelines between 4,000 and 5,500 feet long. The rate of loading is about 1,000 tons

(1) Opus citus, page 7.

per hour at each berth. The tank farm at the pipeline terminal has a capacity of 250,000 tons in its storage tanks.

4. Minor Ports of Lebanon

There are several other ports in Lebanon which are of minor importance. The only traffic entering these ports are an occasional coaster, and locally operated fishing boats, the most of which latter can be pulled up on the beach at night. Among these minor ports which are worthy of mention are:

Shakkah, an anchorage nine miles southwest of Tripoli, and which lies in the southwest corner of the Bay of al Hari. It is sheltered from the southerly winds by the great promontory of Ras al Shakkah. The anchorage serves a cement works and is visited by more small vessels than any other port along the coast, with the possible exception of Beirut. The traffic is very one-sided as practically all cargo is cement loaded for export at the cement plant. The only facilities here are a concrete jetty, five hundred feet in length with fourteen and a half feet alongside. It is served by an overhead railway which runs to the cement works. Depths of six to ten fathoms are found one mile offshore.

Jubail or Jbail, a roadstead of minor importance⁽¹⁾ which lies about twenty miles north of Beirut is located at the base of a spur from Mount Lebanon. The harbor at the port is a natural cove. In distant times, this port was the principal maritime center of the Syro-Lebanese coast,⁽²⁾ firstly owing its wealth to the forests nearby, but which forests had disappeared by the Roman period. The port, which is now silted up, lies west of the village and consists of a cove formed by two great flat reefs and two jetties. It can only shelter small craft.

Juniah,⁽³⁾ which is situated eight or nine miles north of Beirut, and located on the southern shore of the Bay of Juniah, offers a fairly good anchorage.⁽⁴⁾ The bay affords a fair shelter in summer months from southerly and easterly winds. Vessels anchor about two miles offshore in five to eight fathoms of water.

(1) Jacques Edde, Geographie: Syrie-Liban, Beirut, 1941, page 80.

(2) Ibid.

(3) The newspaper, Le Commerce du Levant, Beirut 25 Nov. 1950 stated, "The port of Juniah is now outside the jurisdiction of the Beirut Port Company, and that the Lebanese Customs has stopped the collection of those taxes on merchandise unloaded at Juniah which heretofore had been credited to the profit of the Beirut Port Company."

(4) Edde, page 80.

The port of Sidon was the former outlet for the Damascene industry, but it too is now silted up and is used solely by small sailing vessels. In late years it had a slight period of revival due to its use by importers of certain foodstuffs (coffee, rice, sugar, etc.) to avoid the high rates imposed by the Beirut Port Company on the importation of these products through the port of Beirut.⁽¹⁾ The port is located twenty one miles south of Beirut, and is built on a promontory with an island offshore, like many Phoenician towns. There is a small natural harbor improved by artificial works. Depths in the harbor are from one to six feet. A couple of miles to the south of the town of Sidon, the pipeline from Su'udi Arabia reaches the sea and has underwater lines running to oil tanker loading buoys located offshore. At this location an L-shaped jetty is being constructed for the use of small boats and barges used in maintenance of and other operations concerned with these underwater oil lines, as well as other terminal activities which might require the use of small craft.

The ancient port of Tyre, which during several centuries in antiquity was the principal port of the entire Mediterranean, is now but a simple harbor for small

(1) Edds, page 80.

(1)
fishing vessels and such coasters as might have occasion to call. The town is thirty nine miles to the south of Beirut and is on a low peninsula which was, at one time in the past, an island. The island was nearly a mile in length from north to south, and two harbors, the Sidonian on the north and the Egyptian to the south, were on either side of the neck of land which now joins the islet to the mainland. The north harbor, the only one which is presently used, consists of a small bay enclosed on the north by a stone and cement jetty. The maximum depth of the water within the port area is six feet.

5. Ports of Syria: General

Although Syria has extensive land frontiers bordering on five states most of her foreign trade is with overseas markets. The reason for this is that these bordering states are, like Syria, agricultural and desire manufactured products in exchange for their agricultural produce. As her agricultural produce is generally of a low unit value Syria needs cheap transportation. Thus she has long needed access to a seaport since ocean transport still offers the cheapest transportation for the above discussed

(1) Eddé, page 80.

(1)
type of goods.

On the Syrian coast of the Mediterranean, there are many anchorages, but no modern deep water harbor with calm water in all weather and access thereto in all winds. Therefore, by far the large bulk of Syria's overseas trade has been accustomed to pass through the Lebanese ports of Beirut and Tripoli, in consequence of this short-coming in her communications and transportation system. A small volume of shipments has, however, gone through the port of Latakia in the north, and the Syrian government now plans to develop this location into a modern

(2)
port. The present harbor has partially sheltered anchorages and an inner basin with sufficient depths for ships of about three thousand tons tonnage. The government authorities are endeavoring to divert as much Syrian export and import trade as possible through Latakia in order to lessen the country's dependence on Lebanese ports. During the greater portion of the year it is practicable for ocean going vessels to lie in the roadstead and transfer cargo to shore by means of lighters. Outgoing cargo is handled in the same fashion for the

(1) Alexander Gibb Report on Syria, par. 401.

(2) To furnish year round protection a breakwater will have to be constructed. For details on the development of the port of Latakia see Section 6, Port of Latakia, this paper.

most part. American, British, French, Italian, Greek and other lines make frequent stops at Latakia. Export traffic handled consists largely of cereals with some wool and tobacco going to the United States. Construction materials, textiles and luxury items are being currently imported. (1)

a) Secondary Ports of Syria

These secondary ports which handle coastal traffic only are Jabalah, lying about fourteen miles southeast of Latakia; Banias, about twenty-five miles south southeast of Latakia, and which is presently being developed by the Iraq Petroleum Company as an outlet for a proposed, future oil pipeline from the Mosul oil fields; and the island of Rouade or Ruad (Arabic, Arwād), which lies about two miles to the southwest of the town of Tartus. This latter, located about twenty-eight miles north northwest of Tripoli, also has a small port which handles a minimum of coastal traffic. These small ports are only small natural harbors which, in most cases, had been improved in the days of the Phoenicians or the Romans, but which are now silted up so

(1) Summary of Basic Economic Information, Commercial Section, Am. Leg., Damascus, Syria, 3 July 1950.

as to prohibit their use by any but small fishing craft and an occasional coaster. It is worth while to mention the isle of Arwād, as the anchorage just off the island is regarded as the best on the Syrian coast. The old harbor, which is in a bay on the east coast of the island, formerly contained two basins separated by a broad jetty. This harbor is now much silted up. However, the French, during the thirties, temporarily restored the jetty and improved the harbor which now has depths of from six to (1) eighteen feet.

6. Port of Latakia

(2)
Latakia, the only Syrian seaport of any importance, is opposite the island of Cyprus and lies about 125

(1) The isle of Arwād is the center of a small wooden sailing craft building industry, and supplies the needs of the greater portion of the Syrian and Lebanese coast in small wooden sailing vessels.

(2) During the year of 1950 approximate traffic at Latakia was:

Imports 117,243 tons. Exports..... 147,539 tons. Furthermore, it is estimated that about 300 vessels of all kinds called at Latakia Port during the year 1950. This information has been taken from various issues of the Beirut newspaper, Le Commerce du Levant, issues published from 11 December 1950 to 24 February 1950. The Syrian Government does not apparently issue statistics on port movements at the present so this information has to be culled from various trade journals and newspapers.

miles north of Beirut, Lebanon. It is a small city of about thirty three thousand inhabitants and is located on a low-lying promontory called Ras Ziyaret. There is an open roadstead, unprotected save from the east, and a small natural basin improved by artificial works. This basin is roughly quadrilateral in shape with a rectangular extension at the southwest corner. The entrance to the port has a channel width of 180 feet with charted depths of twenty-one to twenty-two feet. One vessel at a time, with a maximum length of 330 feet can enter and moor. (1) Only small draft coasters can tie up alongside the quays. There are depths of seventeen to twenty feet alongside the quays for most of their total length, though at places alongside the depth is only one to three feet. In the small rectangular extension there are depths of eighteen feet. (2)

Ordinarily large ships other than small craft and coastal steamers anchor in the roadstead in depths of up to forty-two feet and from there they discharge cargo into lighters working alongside. Port facilities for the handling of cargo, incoming or outgoing, are very limited at

(1) Dimensions of Quays and depths alongside:

<u>Name</u>	<u>Length</u>	<u>Depth Alongside</u>
North Quay	1075 feet	11 feet
South "	600 "	11 to 20 feet
East "	400 "	10 to 18 feet
West "	700 "	9 to 20 feet.

(2) See Map of Latakia, Map No. 5.

the present time. There are two or three hundred men available for discharging cargo and about twenty non-self propelled lighters for transporting cargo from ship to shore. (1) There are two tug boats for movements in and about the harbor. Until recently there was only one two and a half ton hand-operated crane for cargo handling, but during the month of December 1950, the Syrian Ministry of Public Works announced (2) that two stationary cranes of fifteen tons capacity each and one mobile crane of two tons capacity had been installed. In addition to the above and in connection with the improvement of the port of Latakia to make it the 'Port of Syria', the government has undertaken the construction of tanks to contain inflammable materials, which tanks will be used to furnish fuel oil (mazout) to vessels calling at the port. These, and the recent installation of a twenty ton weighing platform especially adapted for weighing automotive vehicles and their loads, greatly increase the capacity of the port and further its

(1) Le Commerce du Levant, 14 February 1951, page 2, "During the month of February 1951, the port authorities of Latakia took delivery in Egypt of three boats, each of 1000 tons capacity, which will be used in the trans-shipment of merchandise at the port of Latakia."

(2) Le Commerce du Levant, 6 December 1950, page 2.

(1)
modernization. Up until the present, the lack of proper handling equipment has limited the daily capacity of the port to a maximum of 2000 tons of the easiest type of maneuverable cargo.
(2)

The Alexander Gibb Report for the Economic Development of Syria recommends Latakia as a natural port. This report considers that Latakia is the natural outlet on the Syrian coast for the city of Aleppo, on the North Syrian Plain, which is the center for the trade of fifty percent of the entire population of Syria, situated as it is in the center of a large populated region. Aleppo is seventy miles by highway from the port of Latakia. The usefulness of the port of Latakia might be limited by the fact that it is not served by any railroad at the present. Notwithstanding limitations in communications and transportation facilities in the Latakia region, the government has decided to go ahead with a development scheme for the

-
- (1) L'Orient, Beirut, 1 November 1950, page 2, "The newspaper 'al-Balad,' of Damascus, denounced the slowness of the construction being undertaken at the port of Latakia. They draw notice to the fact that recent rains have caused considerable damages to merchandise which was stored out in the open due to the lack of even the most rudimentary warehouse facilities at the port area."
- (2) Le Commerce du Levant, 24 February 1951, page 2, 'For month of January, 1951, traffic at Latakia, Imports... 21,337, Exports... 18,447. For Statistics on Traffic at Latakia, 1938-1948 see Appendix, Table V.'

port and has caused preliminary surveys to be made. A Port Company has been organized ⁽¹⁾ and the government has been endeavoring to sell shares in this company, of which shares only 5,000 out of a total of 240,000 has been subscribed to by the first of November 1950. ⁽²⁾

The final specifications for the development of the port of Latakia have been made public to those interested agencies which will accomplish the final projects ⁽³⁾ of construction. The projected construction will be:

- 1) A breakwater, the principal one, which will be about 4,450 feet in length and which is to protect the two basins which will have depths of from 18 feet to 35 feet.
- 2) Construction of a main wharf or quay.
- 3) Construction of a second wharf at the eastern extremity of the present basin.

(1) Speech of Syrian Premier Khalid al 'Azm on 28 January, 1950, ... "The capital of the port company will be 24,000,000 Syrian Pounds and the concession for the exploitation of the Port of Latakia will last for a fifty year period at the termination of which the government will reclaim both the concession and all installations which the company will have established."

(2) L'Orient, 1 November, 1950, quoted from 'al Balad', Damascus, 31 October, 1950.

(3) Le Commerce du Levant, 24 February, 1951, page 2.

- 4) Filling in of all the area or surface behind the east wharf of the interior basin and likewise of the entire surface or area behind the main wharf.

C H A P T E R I I

R O A D S

1. Highways, Syria and Lebanon; General

When the Allied Forces arrived in Syria and Lebanon during the latter part of the First World War, they found, with the exception of a few roads of local interest in the region of Lebanon, but two principal roads of through communication. The first of these was that artery from Beirut to Damascus which had been built by a French company and had been opened to traffic in the year 1865. This road had been well maintained until 1883, but since that year, the same year in which the above mentioned company had been dissolved, the road had fallen into such disrepair that, at the eve of the war, it was hardly passable. During the course of hostilities the Turkish authorities had repaired it to some extent, but it required a thorough reconstruction in order to render it passable to automotive traffic. Secondly, there was the Beirut-Tyre road, which had also been constructed by a French concession. During the course of the war this had been allowed to fall into neglect and was not in a

suitable condition for use by motor vehicle traffic by
(1)
1918.

In the Lebanon a great number of routes connecting the more prosperous communities had been constructed by the inhabitants of those communities on their own account prior to 1914. The most of these were poorly constructed and followed more or less irrational or impracticable courses. (2) What with hairpin curves, steep and irregular slopes, narrow bridges built at dangerous places thus giving the roads many sharp bends at precipitous locations on slopes, and with retaining walls that had been loosely built, these arteries were hardly practicable, much less suitable for automobile traffic. (3)

The Service of Public Works which was created by the French authorities immediately after the arrival of the French armed forces in Syria and Lebanon set about restoring as fast as possible the roads which the military units would need in the administration and supply of the occupied areas. It was only in 1921-1922 that work could begin on an overall plan which had been drawn up after a thorough consideration of the geographical, political

(1) La Syrie et le Liban, 1919-1927, page 170.

(2) Ibid.

(3) Same, page 177.

and economic conditions ⁽¹⁾ of the two countries, which were, at that time, administered and generally considered as one unit. This Service of Public Works was given, firstly, the responsibility of determining and executing those road construction projects which were of general interest and necessity; and secondly, of determining and aiding the execution of those projects which were considered to be of strictly local interest. ⁽²⁾

2. Highways: Lebanon

Before the turn of the present century wheeled vehicles were fairly uncommon in Lebanon and therefore few roads were constructed. During the First World War impetus was given to the opening of new roads and the amelioration of former carriage roads as a result of emphasis now being placed on rapid communications and the use of the automobile in modern warfare. Furthermore, it can be said that it is solely by means of automobile transport that Syria and the Lebanon were opened to modern conceptions of circulation, but this development was

(1) La Syrie et le Liban, 1919-1927, page 170.

(2) Himadeh, page 179.

effected without a period of transition, passing abruptly from a mediaeval economy to the motor age. ⁽¹⁾ Only with the coming of the French administration was road construction in Syria and the Lebanon conducted under a more or less systematic program; which program gave due consideration to the economic needs of the country as well as to the political and strategic factors involved. The highways to be constructed and maintained at that epoch were divided into two main categories:

1. Those highways which were considered to be of general interest to the country, either because they constitute channels of through transportation, or because they connect the more important centers of population, and
2. Secondary routes which were of distinctly local ⁽²⁾ importance.

The coming of the automobile signalled a new era in the development of transportation and communications in Lebanon. ⁽³⁾ At present it plays a most important role in the internal affairs of the country, especially in view of the fact that it is gradually supplanting the

(1) Weulersse, page 140.

(2) Himadeh, page 179.

(3) Opus citus, page 186.

railways in the transport of merchandise and passengers. In addition, it serves to give the country a new importance in international and Middle and Near Eastern relations and diplomatic affairs. However, this role is somewhat minimized because of the recent and intense development of air transportation in and out of Lebanon as a result of its strategic international position. ⁽¹⁾ Then again, at the moment there is an agreement between Syria and Lebanon to the effect that all merchandise passing through Syria in transit to other countries must be shipped by rail transport. ⁽²⁾ However, this is an artificial measure, and is designed to keep the railroads of Syria alive and to cut down on the annual deficit which amounts from railroad operations within the country. On the whole, highway transport ⁽³⁾ is predominant in Lebanon and rail transport is not favored because of its slowness. The Beirut-Rayak railway line up over the mountains to the interior is used only for certain heavy goods, and the DHP railway is used

(1) Opus citus, page 186. Also see Map No. 7 in Appendix.

(2) Le Commerce du Levant, 14 February 1951, page 2.

(3) Commercial road transportation in Lebanon, as in Syria, is handled by many small firms. There are no government regulations governing the establishment of motor transport lines, however, the authorities do attempt to regulate fares and to establish definite routes. The main control on the establishment of truck and taxi concerns is that a permit must be obtained by the firm from the Municipality for the parking of vehicles outside taxi and bus stations.

mainly for the relatively long-haul shipment of goods into northern Syria and Turkey. These, together with the provision that all transit traffic passing through Syria in transit to other countries must be carried by rail, limit the use of rail in the transport of a large percentage of freight. Recently another blow was dealt to the railways both in Syria and the Lebanon when the Council of Ministers of the Jordan Government decided that commercial agreements and trade contracts between Jordan and foreign countries must specify that the delivery of the product or goods specified in such agreements or sales, must be effected through the port of 'Aqaba. ⁽¹⁾

As refers to the situation in Lebanon, highway transport is favored by the fact that the Lebanese government does not concern itself with either competition between motor carriers, which in turn cause low rates for highway transport, nor in coordinating truck and motor operations with other forms of transportation, in this case, rail.

As has been indicated above, it is only within recent years that the road network has undergone a systematic program of development. The Lebanese government, in cooperation with Syria, has made a commendable attempt

(1) Le Commerce du Levant, 14 February 1951, page 2.

to increase and maintain the road system. (1) Even though this road network is quite important today, it is considered that they have a long way to go before reaching a complete stage of development. Above all, the mountain routes, which tap a thriving summer resort region, require a good deal more of attention. In view of this need the technical services of the Lebanese Government (2) are giving thought to this matter and have already launched several important projects. (3) The internal highway policy of Lebanon is to connect Beirut with important cities and villages of the country by good highways in order to promote trade and tourism. In the pursuance of this policy, the budget is heavily taxed, as much for maintenance as for an expensive program of improvement and extension. (4)

The actual lay-out of Lebanon's road network is largely influenced by the presence of the coastal mountain range, (5) which ranges from a maximum elevation of 3300 feet

-
- (1) Lebanese Government international highway policy centers around the connection of Lebanon with Syria and Jordan; Beirut being the main port at present for these countries.
 - (2) Lebanese roads are maintained at the State's expense.
 - (3) Jacques Edde, Geographie; Liban-Syrie, Beirut 1941. page 177.
 - (4) G. Menassa, page 302.
 - (5) See Map No. 1 in Appendix.

in southern Lebanon to a height of 10,000 feet in its northern part. The two principal routes in the country are (1) the coastal highway running from Nakoura on the Israeli border ⁽¹⁾ through Beirut and up through Tripoli to the Syrian border, and (2) the Beirut-Damascus road which climbs from Beirut up over a mile high pass through the mountains. This latter road is without doubt the most important stretch of highway in the Republic of Lebanon and great efforts have been made during the past few years to develop it into a first class freight and passenger ⁽²⁾ highway.

Secondary feeder routes run east from the coastal highway up to the mountain towns. In the north of Lebanon these secondary roads are not inter-connected by any north-south road other than the coastal road. A good road runs the length of the broad Beka'a Valley and connects with Lebanon's only three east-west routes at Marjayūn in the southern part of the country, at Ohtaura on the Beirut-Damascus highway and at Homs in Syria on the Tripoli-Aleppo

-
- (1) This highway is now closed due to the rupture of relations between the states of Israel and Lebanon.
 - (2) The heaviest traffic is normally found on the Beirut-Damascus road. Trucks carrying grain from Jordan and Syria for consumption in Lebanon and for overseas shipment from Beirut port are usually loaded on their return trip with imported and locally manufactured goods, fruits and vegetables. Normally in summertime there is a considerable increase in bus and automobile traffic.

road.

The highway system in Lebanon may be considered adequate for the national economy as a whole. All highways constructed within the last twelve years ⁽¹⁾ are in good condition, although a good many of them still require widening. At the present, some of the main routes such as the Beirut-Zahlah and the Beirut-Tripoli highways are being widened and safety and direction marking signs are being installed. Direction signs are put at intervals of five kilometers on the main highways and show the name of the next town and the distance thereto in kilometers. On a few mountain roads, walls about twenty inches in height are built on the 'drop side' of the road. Where such walls are not built, stone posts are sometimes installed along the shoulders of the roads as a warning or danger sign to motorists. However, in Lebanon, most mountain roads have neither walls nor sign posts.

a) Road Network; Lebanon

(2)

The roads of Lebanon may be divided into three categories:

(1) The roads which have been constructed within the last twelve years comprise about fifty percent of all the roads in Lebanon. State Department Report 33, Am. Leg., Beirut, 26 July 1950.

(2) See Map No. 6 in Appendix.

- a) Arterial roads, corresponding to roads of national interest and international importance.
- b) Main roads, corresponding to roads of regional interest and of importance from an internal point of view.
- c) Secondary or local roads, which link local areas with the arterial and main roads.

Following the above stated road category breakdown we shall first consider the East-West arterial roads. Any through route which runs inland has to cross the range of the Lebanon, and, if it is going any further inland, i.e. into Syria, the Anti-Lebanon mountain range also. Six routes connect the Lebanon to the interior, but only three of these can be classed as arterial. ⁽¹⁾ From south to north these are:

- a) Zahrani-Nabitiyah-Marjayūn. This route is now of little importance, as it carries only a small amount of vehicle traffic.
- b) Beirut-Dahr al Baidar-Ohtaura-Damascus. This route is the most important of all the East-west highways. It carries the greater portion of the traffic out of Beirut and is the direct outlet to the sea for the southern part of Syria.

(1) Gibb Report for Lebanon, par. 227.

e) Tripoli-Homs. This route is the main outlet to the sea from the northern and central parts of Syria. It joins the coastal north-south route just north of Tripoli.

Secondly, we shall consider the South-North Arterial routes, of which the main South-North trunk route runs along the coast from the southern border of Lebanon at Nakoura, through Tyre, Sidon, Beirut and Tripoli, thence across the northern border into Syria. This route carries a fair amount of traffic at present, and though such traffic may increase slightly in the future, it is not considered that this increase will overload the capacity of the present highway. ⁽¹⁾ In any case, the extensive developments and improvements being effected along this route should take care of any normal increase in vehicular traffic. The other South-North trunk route lies inland between the ranges of the Lebanon and Anti-Lebanon mountains along the floor of the Beka'a Valley. This route has decreased in importance considerably of late years, and is considered an arterial road simply due to its geographical

(1) Gibb Report on Lebanon, par. 228. Gibb was writing in the early part of 1948 in this connection, and since that time there has been a tremendous program of construction and improvement on this coastal trunk road, the final portion of which program is now being completed in the vicinity of Tripoli.

position, even though the road itself will not carry any great amount or weight of traffic.

Next, we consider the main roads, the system of which in Lebanon serves two purposes. First, there is the normal one of inter-communication and the connection of areas to the arterial routes. Secondly, and this applies much more to Lebanon than to any other country in the Near and Middle East, there is the problem of opening up of areas to tourists and visitors. The main road system of Lebanon is, with few exceptions, quite adequate to cope with these purposes.

Then last of all, there is an adequate network of secondary roads in the country, the purpose of which roads is to connect the various local areas to the main road system.

Both arterial and local roads present major problems within the towns. In order to relieve the present traffic congestion, road widening projects have been planned and in some cases have been put into execution or completed. In addition, a well intentioned but sometimes confusing system of one-way streets is being tried out. Among the factors contributing to traffic congestion in the cities and towns of Lebanon are the following: narrow roads, comparatively unrestricted car parking, the siting of

garages and workshops in narrow streets, lack of pedestrian control and insufficient and inadequate sidewalks, faulty design of road intersections and junctions, the mixture of slow and fast moving traffic, and the lack of efficient through communications. The greatest single factor in traffic congestion is the excessive number of taxis in the country. The congestion they cause, particularly in the city of Beirut, is serious. The percentage of available parking spaces occupied by them is very high, and the lack of road discipline of their drivers is frequently the cause of bad traffic snarls and subsequent delays.

The indifferent state of some of the roads in Lebanon suggests that the present road system is greater than the maintenance organization can adequately handle. In spite of this, many new roads are under construction which in their turn will require maintaining. It is true that some roads during the war years were carrying heavier traffic than in normal times, and others were hastily constructed under war conditions and with inferior materials due to the exigencies of war time demands. This probably accounts for the fact that, up until recently, there has been a considerable balance of maintenance outstanding which must be made up and which, furthermore, should

normally take priority over new construction.

b) Governmental Organization; Lebanon

The governmental Ministry of Public Works is charged with the responsibility of all highway construction and maintenance in Lebanon. There are no provincial highway departments. The Highway and Construction Department which comes under the Ministry of Public Works is broken down into the following sections or offices:

- (a) Technical Bureau
- (b) Construction Bureau
- (c) Asphaltting Bureau
- (d) Expropriation Bureau
- (e) Executive Bureau for the region of North Mount Lebanon
- (f) " " " " " " South " "
- (g) " " " " " " North Lebanon
- (h) " " " " " " South Lebanon
- (i) " " " " " " the Beka'a

The Highway and Construction Department presents plans for the construction of new highways, which plans were previously prepared by the Technical Bureau, to the Minister of Public Works who, in turn, passes them to the Chamber of Deputies for study and approval. After obtaining

the approval of the Chamber, which allocates the budget for the construction and repairs to be carried out in the current year, the Director of the Highway and Construction Department gives instructions to the Executive Bureaus of the regions concerned to commence the necessary construction operations. The work is given out to private contractors by the bid method. The Technical Bureau prepares all the plans for highway construction and repair, and these plans are executed by the contractor. The Construction Bureau administers all government construction⁽¹⁾ of both highways and public buildings. The Asphaltting Bureau takes care of highways to be asphalted by the Ministry of Public Works and supervises the asphaltting done by contractors. The Expropriation Bureau estimates the value of lands and other properties which are to be expropriated for road right of way, or other allied construction, and pays the necessary indemnities to the owners. The remaining five bureaus are charged with the execution of the actual work projects in their respective regions.

(1) In Syria, the Chief Engineer of the Ministry of Public Works, which office corresponds to the Construction Bureau of the Lebanese highway organization, is responsible not only for highways, but for all phases of public works activity. There is no exclusively highway organization as such in Syria, included in the national government organization.

c) Highway Breakdown

The Lebanese highway network is broken down in the following table. ⁽¹⁾ All roads listed in this table are all-weather surface roads. However, the Beirut-Damascus road over the mountains is sometimes rendered temporarily impassable by snow during the winter months in the vicinities of Dahr al Baidar. The same is true in the vicinities of Hedath al Jubbah and The Cedars above Bacharrab.

(a) Highways of General Interest (primary highways, all asphalt)

<u>Roads</u>	<u>Length in miles</u>
Beirut-Arida (to Tripoli)	72.5
Beirut-Nakoura (to Haifa)	68.8
Ohtaura-Homs	62.5
Beirut-Wadi al Harir (to Damascus)	40.6
Zahrani-Banias	40.6
Zabdu-Machgara (in lower Bekk'a)	28.1
Arak (near Tell Ahad)-Tell Kalakh	25.0
	<hr/>
Total	338.1

(b) Highways of Regional Interest (by regions and construction types)

(1) Report 93, Am. Leg., Beirut 19 September 1950, page 28.

<u>Roads</u>	<u>Length in miles</u>
1. Mount Lebanon	
a. unimproved earth and non-surfaced	67.5
b. waterbound macadam	111.3
c. asphalted	265.0
	<hr/>
Total	443.8
2. North Lebanon	
a. unimproved earth and non-surfaced	29.3
b. waterbound macadam	93.7
c. asphalted	156.2
	<hr/>
Total	279.2
3. South Lebanon	
a. unimproved earth and non-surfaced	48.1
b. waterbound macadam	77.5
c. asphalted	159.4
	<hr/>
Total	285.0
4. Beka'a	
a. unimproved earth and non-surfaced	6.2
b. waterbound macadam	7.5
c. asphalted	45.6
	<hr/>
Total	59.3
(c) Secondary Roads	
1. Mount Lebanon	
a. unimproved earth and non-surfaced	93.7
b. waterbound macadam	158.1
c. asphalted	87.5
	<hr/>
Total	339.3

<u>Roads</u>	<u>Length in miles</u>
2. North Lebanon	
a. unimproved earth and non-surfaced	38.1
b. waterbound macadam	29.3
c. asphalted	18.2
	<hr/>
Total	85.6
3. South Lebanon	
a. unimproved earth and non-surfaced	50.
b. waterbound macadam	44.3
c. asphalted	28.7
	<hr/>
Total	123.0
4. Beka'a	
a. unimproved earth and non-surfaced	81.85
b. waterbound macadam	150.0
c. asphalted	51.85
	<hr/>
Total	283.7
(d) Total Highways	
1. Primary Roads	238.1
2. Regional Roads	1067.3
3. Secondary Roads	331.6
	<hr/>
Total	2237.0

d) National Highway Policy: Lebanon

Since the introduction of the motor vehicle into Lebanon, the government has been engaged in a struggle to develop the highway system to handle the even increasing numbers of passenger cars, buses and trucks, ⁽¹⁾ both light and heavy, that are pouring into the country. This task, combined with the desire of the government to develop its road network along the lines of the internal highway policy as stated above, ⁽²⁾ creates a definite problem. It is considered that the solution of the land transport problem is most obviously to clearly establish the following three main thoroughfares which would have their logical starting point at Beirut, capital, center of communications and by far the most important city in Lebanon. ⁽³⁾

These are the Tripoli road, which is a link with Turkey and Europe; the Damascus road which is the link with the East, Iraq and Iran; and the Sidon road which is the link with the South, Israel and Egypt. These three routes exist now but, for the most part, they are too

(1) For Statistics on Motor Vehicles in Lebanon, see Appendix, Table VI.

(2) Page 47, above

(3) Report 93, Am. Leg., Beirut, 19 Sept. 1950, pp 26 & 28.

(1) narrow in many portions and inadequate for modern transport needs. Heavy, high speed freight and passenger traffic cannot fail but to find them unsatisfactory. It would cost a great deal to make major changes in roadway or road widths because of existing buildings constructed along the roadway. It has been found more economical to plan entirely new thoroughfares to pass through open land or slum areas outside of towns and villages, since the present automobile highways were built along the former animal and carriage trails which followed the path of least resistance throughout the country and in their passage through the towns. When the original towns were built up no attention was paid to roads or to their passage through the town. Furthermore, in the course of road construction at times in the past little attention was paid to the widths of the roadway through the towns. Therefore we find, for the most part, that the width of the road in built up areas is barely more than sufficient to let two horse-drawn carriages to pass, let alone modern automobiles and trucks.

(2)

(1) Road widths in Lebanon are generally as those outlined for Syria. See page 64, Note 5.

(2) A good illustration of such difficulties is the exit from Beirut towards Tripoli. The beginnings of this road now correspond to the Beirut-Antelias road which

The three highways mentioned in the preceding paragraph are projected to be ninety feet wide at their beginning in Beirut, and in the suburbs and villages they will be even wider. An exception is the Sidon road which will start off one hundred and twenty feet in width because it will also serve as a main boulevard linking Beirut with its future main residential district at the south of town. The new Damascus road will by-pass Furn al Chabbak by way of Chiah to avoid the congestion in the center of Beirut city and along the Rue de Damas. The Chatila Roundabout ⁽¹⁾ in the south of town near the Golf Course will be the center of the new Greater Beirut. From there roads will lead to the new Khalde Airport and to the summer resort regions. The Sidon road will skirt the coast and a straight avenue will lead to the new town of

is about five miles in length. It is too narrow for the traffic passing along it, and the alignment incurs several dangerous curves and corners. Widening and re-alignment are necessary, especially through the villages along this route, but whether this work would be more or less costly than the opening of an entirely new line between Beirut and Antelias, would depend chiefly upon the cost of expropriating the additional land necessary in each of the cases.

- (1) This is formed by the junctions of the new road going to the Khalde Airport with road from Jnah (St. Simon and St. Maxim) and with the road coming from Chiah, all three of which come together near the entrance to the Golf Course.

(1)
Greater Beirut. These three main thoroughfares will begin at the harbor area of Beirut and will be tied together by a system of three grand belt roads, two of which are already in existence. One of them is the Rue Fu'ad le Premier, the other runs across the open land in the city's suburbs, but the remaining of these belt roads is still only an idea or drawing on paper. It will be called the Commercial Belt Road and is planned to reduce the congestion at the center of town and should eliminate the endless traffic jams at Bab Edriss and Place des Martyrs.

In the above consideration, improvements were recently made to the Damascus road in its passage through the mountains and the Tripoli road near the town of Batrun. Although road work is in progress in many sections in and around Beirut, traffic in the city itself is a difficult problem which has been the subject of much discussion and study. Blame for traffic congestion generally falls on the two street car routes which operate through narrow and tortuous streets of the city. (2) However this is only one phase of the problem. Motor vehicles overcrowd the city and the number of taxis is said to be one fourth of

(1) Most of these described projects are in various stages of construction, mostly by sections rather than as a whole.

(2) Report 93, Am. Leg., Beirut, 19 Sept. 1950, page 26.

(1)
the total car population in the entire country. The transport of passengers within Beirut by tramway, buses and taxis is a special problem in itself. There are about seventy five trams in circulation during peak periods of the day. To these are usually attached about sixty trailers to increase capacity. The normal capacity of a tram and its trailer is about eighty five persons, but in rush hours as many as one hundred and fifty persons are carried. This slows down the trams and causes further congestion in the traffic as the trams begin to crowd up on the lines as a result of this disruption of their schedules. There are no figures available of the number of buses and taxis circulating in Beirut, but for the number registered in Lebanon as a whole see the Appendix, Table VI. The same considerations applying to passenger transport apply to freight transport for the most part, (2) but congestion in this aspect arrives mostly in the port area and in those warehouse and wholesale market areas contiguous to the port area.

Traffic to be carried in Beirut is of two kinds. First, there is the commercial traffic which is fairly

(1) Report 93, Am. Leg., Beirut, 19 Sept. 1950, page 26.

(2) Gibb Report for Lebanon, par. 255.

steady throughout the year. The second type of traffic is the holiday or tourist traffic. This latter principally uses the same routes as commercial traffic in and around Beirut, but its destination is usually the center of town rather than the port area as in the case of commercial traffic. It is essentially seasonal traffic but it becomes extremely dense for short periods during the course of the year.⁽¹⁾

3. Highways - Syria: General

As a whole, the Syrian highway system is adequate for the present economic and administrative needs of the country.⁽²⁾ Asphalt roads connect all the major cities in Syria. Whereas the main roads are not wide by United States standards,⁽³⁾ they are adequate for the normal

(1) Opus citus, par. 258.

(2) Alexander Gibb Report on Syria, paragraph 366.

(3) Fifteen feet is the normal width of Syrian major highways. In the United States a width of twenty feet is considered standard for a traffic flow up to 700 vehicles an hour in peak periods, but allowance must be made in Syria for a much larger proportion of slow moving traffic. The volume of traffic in peak periods on the main roads of Syria is not likely to exceed the figure of 400 an hour. Gibb Report for Syria, par. 341.

(1)
transportation needs of the country. The Government is currently contemplating increasing the width to six meters (eighteen feet). The most pressing need for new road construction is in the Jazirah where Syria grows a good share of its wheat and other agricultural products. This area at present is very poorly served by road connections.

There is an all weather road between Aleppo and Dair al Zor, (2) but the roads within the district (Euphrates muhafazat) are mostly dirt and all but impassable in rainy or winter weather. Highways connecting the main cities are generally quite satisfactory, although maintenance since World War II has not been very good and some roads badly need resurfacing. There are adequate highway connections with Lebanon, Turkey, Jordan and Iraq, as well as what was formerly Arab Palestine. All communications with Israel have been cut off since 1948. (3)

The roads of Syria may be divided into three categories:

- (a) Arterial roads, corresponding to roads of general interest and of international importance.

(1) Report 63, Am. Leg., Damascus, 21 February 1950.

(2) See Map No. 7 in Appendix.

(3) This has caused a great neglect in the maintenance of those roads in Syria and Lebanon which are located near the Israeli borders, as these roads are no longer used at their exits into Israeli territory.

- (b) Secondary roads, corresponding to roads of regional interest and of importance from an internal point of view.
- (c) Local roads, which link local areas with the arterial and secondary roads.

In addition to the fine weather desert route from Baghdad to Damascus, which is used by trans-desert buses, Syria's internal system of communication is linked to the Haifa-Baghdad road (all weather) by an all-weather road through Dera'a. This Haifa-Baghdad route follows the pipeline through Jordan, a few miles from the Syrian border. The great disadvantage of the present desert route is that it terminates at Damascus, which is separated from the sea by two ranges of high mountains. The result is that vehicles suitable for the desert cannot be used in the final stage, and goods and passengers have to be trans-shipped into lighter vehicles capable of crossing the mountains.

With the exception of the trans-desert traffic, there are no freight or passenger carrying organizations, i.e., motor transport lines as we know them in the United States. All transport is owned privately and one is not permitted to buy a new commercial vehicle without putting the one which he already owns out of circulation. Around

1934 the French, for economic reasons, limited the number of trucks, buses and taxis and decreed that, in order to acquire a new vehicle, the owner had to buy a car of the same capacity as his old one and the former one had to be removed from commercial circulation. The vehicle could either be sold for scrap or for use other than commercial transport, such as for agricultural use, private institutions, etc. During the past war when Syria's transport needs increased, additional numbers of vehicles were permitted but were given special registrations. ⁽¹⁾ In 1947, the Government authorized truck owners possessing such special registrations to exchange them for ordinary ones in payment of a fee of a thousand Syrian pounds. ⁽²⁾ In addition, old trucks could be replaced with new ones of any size on the condition that the old trucks were removed from commercial transport use. ⁽³⁾ However, the only way to obtain a new vehicle other than by replacement of an older

(1) This same arrangement was made in Lebanon.

(2) The Registration Fee for vehicles of over 3-ton capacity has been fixed at 3000 Syrian Pounds, and for those utility vehicles called 'pick ups', the fee has been fixed at 1500 Syrian Pounds.

(3) Le Commerce du Levant, Beirut, 22 Nov. 1950, states 'that upon the decision of the Syrian authorities to increase the number of trucks and other vehicles allowed in circulation by 25%, the present transport owners and operators showed great opposition to such a measure.'

one was to buy a license from some other individual who desired to dispose of a license purchased by him under the quota system at some time in the past. There are transport garages and travel bureaus which use privately owned cars or buses and who might share with owners of other cars in a sort of association, ostensibly non-commercial in character, in order to get around the above regulation which restricts the number of buses and cars which can be engaged in commercial activity. Up until recently, the licensing system in Syria has resulted in the formation of many small transportation companies with practically no opportunity or possibility for them to expand their services. (1)

In the city of Damascus, the government controls the routes for the various bus lines, the number of passengers the buses can carry, the schedules and the rates. Outside of Damascus, even though the authorities are endeavoring to regulate freight rates for buses as well as freight carrying vehicles, there are no regulations at

(1) As of 1 January 1950 there were, in the Republic of Syria, 910 taxis, 4642 buses and trucks, and 31 diesel motor vehicles. As of 1 January 1947, there were no more than 4600 motor vehicles registered in all of Syria, according to par. 355 of the Gibb Report for Syria. For statistics on Motor Vehicles in Syria up until the end of 1948 see Appendix Table VIII.

the moment. Rates are governed primarily by the laws of competition and vary with the season, destination and carrier, and in many localities the practice is to 'charge all that the traffic will bear.' The only control the Government possesses is that if truck rates reach too high a level then the authorities can lower railway rates, however, this is not too effective viewing the slowness and inefficiency of the railroads. There is no attempt by the governmental authorities to foster or restrict competition among motor carriers other than to restrict the total number of such. This limitation tends to facilitate combinations in restraint of trade. (1)

A feature of the freight and passenger transport services in Syria is the great number of small operating companies which, on the whole, provide cheap transport over a wide network of services. They are very useful factor in opening up the country and helping to broaden

(1) In Damascus, the Tramway and Electrical Company has the concession for transportation (passenger) in the city. It would like to operate buses in addition to electric cars but as the government does not want it to have a complete monopoly it allows private individuals to operate the buses. No company is permitted because, among other reasons, it would give grounds for complaint by the concessionary company. Some of these private individuals may sometimes form together in an 'association', see previous page, but there is no company as such. Report 187, Basic and Annual Highway Report, Am. Leg., Damascus, 6 October 1950.

the outlook of the rural communities. Such unrestricted and oftentimes out-throat competition has, however, its drawbacks. Small operating concerns open up services which they are unable to maintain, either because they are forced out of business or because their machines break down and cannot be replaced due to lack of sufficient capital. There is therefore little regularity of service. Machines are not properly serviced and are run until they break down, which frequently occurs on the road leaving passengers and freight stranded for variable periods of time. Services competing with each other on the same routes run at dangerously high speeds. Finally, many services are run in uneconomic competition with the railway.

(1)

Again there is no specific policy with regard to international highway transport. The Government does assist trans-desert transport, buses, trucks and taxis plying between Beirut or Damascus and Iraq and Su'udi Arabia. If vehicles are bought new and imported directly to a Syrian or Lebanese port and slated for trans-desert traffic, they are exempted from Customs duties, or any

(1) In Lebanon there is no longer any transport of passengers by rail except by auto-rail from Beirut to Tripoli, due to the results of competition with highway transport.

of the usual taxes which other trucks, buses or taxis would have to pay. This only applies to trans-desert traffic. Some protection is given local transport by requiring that a truck entering Syria from a foreign country must be loaded. This is to ensure that Syrian trucks carry as much of Syrian exports as possible to neighboring countries. Outside of the above practice Syria has no policy concerning international transport. (1)

As in Lebanon, there seems to be no attempt to coordinate highway transport with other forms of transportation, which in Syria and for that matter, most of the Middle East, would mean railway transportation. Under the existing system it would be difficult as the Government has no effective control over rates and schedules outside of the city of Damascus, although it is preparing legislation to grant it such control. (2) The railway network is not sufficiently developed to compete seriously with highway transport except in restricted areas. The standard-gauge, government owned Lignes Syriennes de Bagdad runs from Aleppo to Tell Kotehah where it crosses the Syro-Iraqi border and becomes Iraqi Railways. Its usefulness as a

(1) Report 187, Am. Leg., Damascus, 6 October 1950.

(2) Such preparation was going on in October 1950, but no further information has appeared up until the present time.

means of transporting wheat and other agricultural produce from the Jazirah region is limited by the fact that part of the line which parallels the border between Syria and Turkey runs for the most part in Turkey with no branching lines into Syria.⁽¹⁾

A private line, the Damas Hama et Prolongements, partially government subsidized, connects Aleppo with Beirut and Damascus via Rayak in Lebanon. Its usefulness is also limited by the fact that the line is standard gauge to Rayak and then narrow gauge to both Beirut and Damascus, which break in gauge requires trans-shipment of goods and passengers. The problem has been further complicated by the abolition of the Customs Union between Syria and Lebanon on 14 March 1950. This means that merchandise shipped by rail from Aleppo to Damascus would have to pass through both Syrian and Lebanese Customs stations twice. Another government-owned line, the Hedjaz Railways, also narrow gauge, connects Damascus with 'Amman via Dera'a. These lines are principally used in transporting agricultural crops. Many important sections of Syria, such as Latakia, Syria's port, have no railroad

(1) This particular line was constructed under the Ottoman Empire and thus this border did not then exist as these regions were all integral portions of the Ottoman Empire which existed as such up until the time of the First World War.

connections at all. It may thus be seen that Syria's railroads on the whole do not provide efficient or adequate transport either for passengers or freight. There is, moreover, no policy as to the relationship between highway transport and rail transport except on a piecemeal basis. At the moment, for certain refugee supplies for Jordan, rail transport has to be used, but this is primarily to prevent smuggling. For the same reason transit traffic through Syria, with the exception of fuel oils and gas, transported by oil trucks, must be carried by railway. Occasionally, rates will be lowered on the railway to bring about a reduction in truck rates ⁽¹⁾ but this is a haphazard and infrequent move, and really not too effective. Truck transport and buses dominate ⁽²⁾ the Syrian transportation system and it is likely that they will continue to do so until the Syrian Government received sufficient funds to finance the modernization and expansion of the present railway system. ⁽³⁾ The two means of transportation are closely inter-related but in Syria, with its comparatively long distances and small volume of traffic,

(1) See page 69, above.

(2) Alexander Gibb Report on Syria, par. 332.

(3) Report 187, Am. Leg., Damascus, 6 October 1950.

road and rail transport should not ⁽¹⁾ as a rule be duplicated if maximum efficiency is to result. If there is uncontrolled competition between these two forms of transport one or the other will lose in efficiency and become uneconomic.

From the foregoing it becomes evident that there is little control of highway transport and that there is no definite policy to ensure the coordination of rail and highway traffic. At the moment highway transport dominates the Syrian transportation scene despite its generally higher freight rates. Still, the only real traffic competition is between highway and railway transport as, more or less, a natural course of events. To reiterate, the railroads suffer from the inadequacy of their routes, the small amount and poor quality of their equipment and the slowness with which they travel. As to the inadequacy of their routes, there are few branches off the main lines while there is no rail service at all to the main Syrian port, Latakia. ⁽²⁾

(1) Gibb Report on Syria, par. 332.

(2) Le Commerce du Levant, Beirut, 13 December 1950, states that the Syrian Ministry of Public Works has just drawn up the terms of contract relative to the construction of a railway line which will connect Latakia with Aleppo and with the Euphrates. The purpose of this line is to facilitate the transport of products emanating from the two latter regions to Latakia.

Their lack of equipment is well exemplified by the transportation situation in the Jazirah. From the Jazirah to Aleppo railroad rates are cheaper than those of highway transport. Despite this advantage railway lines can only transport 100,000 tons of agricultural produce because of a shortage of railway cars. ⁽¹⁾ Since the economic separation with Lebanon, the transport of goods by rail between Aleppo and Damascus has been practically negligible. ⁽²⁾

a) Connecting and Transfer Points.

In Syria the transportation system, both external and internal, is characterized by a series of connecting and transfer points. This is more evident in Syria than in Lebanon and hence is worth mention as a specific part of the body of this paper. These connecting and transfer points, which might well be called truckheads or railheads, depending upon the situation, are located where two transportation media meet, or where one medium ends and the other begins. These connecting and transfer points are located for the most part, along the borders of these

(1) Report 187, Am. Leg., Damascus, 6 October 1950.

(2) As mentioned earlier in this paper, this line passes in and out of Lebanon by way of Rayak.

regions where there is either inadequate or no railroad transportation, which could apply to the most of the Republic of Syria.

There are four main transfer points, ⁽¹⁾ Aleppo, a combination rail and truck head, Latakia, a truckhead serving a port, various railheads in towns along the railway running through the Jazirah region, and finally Beirut. There is no railway connection between Aleppo and Latakia as Beirut, up until the Customs break, had been used almost exclusively as Syria's main port. Despite this break, and the Syrian Government's attempt to encourage the use of the port of Latakia, most of Syria's international trade other than wheat exports still passes through the port of Beirut. ⁽²⁾ This latter is connected with Damascus, Homs, Hama, Aleppo, and by extension, with the Jazirah, by both rail and highway transport, and thus is the most important transfer point of the Syrian transportation system even though outside of the state of Syria. At the present time the bulk of commodities to and from Beirut are carried by truck transport.

Concerning the first of the transfer points mentioned in the preceding paragraph, Aleppo is the transfer

(1) See Map No. 2 in Appendix.

(2) Report 187, Am. Leg., Damascus, 6 October 1950.

point for agricultural produce transported by rail from the Jazirah and destined for the port of Latakia, since such produce has to be off-loaded at Aleppo and re-shipped by truck to Latakia. As previously noted Latakia is Syria's only major port and is of course a transfer point for land and water transport. Its importance and the role it plays in Syrian transportation may become intensified if present plans for its development as a port are carried out, and if the project of connecting it to the interior with a railway line is realized. (1)

Then finally, the Jazirah rail line is considered as a collective transfer point, as motor transport can contact it at various places along its length. Agricultural

(1) Le Commerce du Levant, Beirut, 6 December 1950, page 2, states that, "contrary to the general impression, the Customs rupture between Syria and Lebanon does not seem to have much affected the traffic movement at the port of Beirut. This is due (probably) to the fact that Latakia is still in the project stage of development, (and so its capacity is still limited), and also to the fact that only at Beirut can the expedition or reception of cargoes of considerable weight or volume be assured. Furthermore, the movement of traffic at Beirut has a tendency to be amplified when atmospheric conditions affect the utilisation of the port of Latakia. At the end of September 1950, and covering the previous three month period, exports from Beirut were 144,516 tons as against 77,692 tons for the same period in 1949 when the Customs Union was still in effect. Imports even advanced slightly, from 607,431 tons for the 1949 period, to 613,208 tons at the end of September 1950.

produce that is not trucked to the coast or to other parts of Syria, is transported by motor vehicle to the different railheads located along the railroad running through the northern portion of the Jazirah and from there shipped on by rail to the proper destination in Syria, or to foreign markets.

b) Road Network: Syria

Before the Customs separation with Lebanon, the Syrian highways, considered in order of their importance as far as the density of traffic carried on them, were as follows:

Damascus-Beirut. This road has both economic and political significance in that it is the most direct communication between the capitals of Syria and Lebanon, and also provides Syria with access to a deep water seaport. From Damascus agricultural produce for export and for sale in Lebanon are transported while a large share of Syria's imports are brought back over this route. It has a fairly heavy passenger traffic in so far as the Lebanon is both a winter and summer resort for the Syrians. Furthermore, this road carries much business inasmuch as Beirut was, and still is to a lesser extent, a distribution center for the interior.

Homs-Tripoli. Freight traffic over this road is much the same as that on the Damascus-Beirut road. The passenger traffic is not as heavy as that carrying merchandise to the interior. The highway is important as it provides access to the ports of Tripoli and Beirut and also because it is more suitable for the heavy trans-desert vehicles coming from Syria, than is the mountainous Damascus-Beirut road. This latter road has many curves and steep grades in its crossing of the Lebanon and Anti-Lebanon ranges, while the Homs-Tripoli highway is comparatively flat as the route traverses the low Homs-Tripoli gap. Traffic is heavy despite the fact that a rail line parallels the route.

Damascus-Homs-Hama-Aleppo. This road is important both as an internal route and as an international truck route. The heaviest traffic is probably between Homs and Aleppo where the agricultural produce from the region around Homs and Hama is carried to Syria's commercial capital, Aleppo. This route is also the main link between Syria's political and commercial capitals.

Aleppo-Latakia. Agricultural products ⁽¹⁾ for export are carried to Latakia while imported merchandise

(1) Wheat, cotton, liquorice, leather, tobacco comprise the greater portion of these exports. Same, page 167.

is brought back for the Aleppo-Homs-Hama area. (1) This road will increase in importance if and when the Latakia port project is completed and the road is improved so as to render it suitable to handle heavy and fast moving freight transport.

Aleppo-Alexandretta in the Hatay. This road is now reportedly replacing that from Beirut as a route for the importation of heavy machinery for northern Syria and the Jazirah. (2)

Damascus-Dara'a. This road is important as an international route (Syria-Jordan-Palestine) and as a means of transporting the agricultural products of the Hauran, Syria's southern agricultural region, to the Damascus markets. Many of Jordan's imports and exports have, until recently, been flowing over this route. (3) Because of the

(1) Le Commerce du Levant, 11 November 1950, page 2.

(2) Report 187, Am. Leg., Damascus, 6 October 1950.

(3) Recently the Jordan Government announced that they were to undertake the development of the port of 'Aqaba on the Gulf of 'Aqaba and subsequently to divert imports and exports through this port. Even though vessels would have to pass through the Suez Canal to reach 'Aqaba from Europe and the Mediterranean, it is felt that this would effect considerable economy in transportation charges as the fees on goods going through the port of Beirut are quite high.

Palestine problem, which has cut off the Damascus-Qunaytra-Haifa and the Beirut-Haifa routes, it is the main thoroughfare to the Arab part of Palestine, now annexed to Jordan.

With the development and completion of the Latakia port project there is likely to occur some shift in traffic movements from Beirut to the Latakia region in the north. It has already been said that there have been some change in traffic density over the Beirut-Damascus road since the Customs separation, even though no official reports have come forth with such information. It is felt, however, that the Damascus-Beirut ⁽¹⁾ highway will always be heavily travelled as, unless there is a complete economic break with Lebanon, there will always be the transport of a considerable quantity of merchandise to and from Beirut, and a fairly heavy passenger traffic to Lebanon's winter and summer resorts, ⁽²⁾ as well as to the steamship and airplane passenger and travel services operating in Beirut.

(1) Le Commerce du Levant, 25 November 1950, page 2 states that "Statistics published by the Syrian Ministry of National Economy state that 85% of Syria's imports of a value of 33,000,000 Syrian Pounds came through Beirut during the three months prior to 25 November 1950. From the 15% remaining, 6% were received at Latakia and 9% came in by highway or railway transport from neighboring countries.

(2) Report 187, Am. Leg., Damascus, 6 October 1950.

e) Governmental Organization

The Ministry of Public Works and Communications is responsible for the maintenance and construction of Syrian highways. Within the Ministry the Secretary General and the Director of Public Works head the highway organization, such as it is. For actual implementation of highway projects and maintenance supervision, the Ministry has divided Syria into four regions: North, East, South and West, with a chief engineer over each region. Each of these regions has a technical bureau charged with the study, designing, drafting and checking of projected, current and completed road construction. Under the chief engineers are nine district engineers responsible for highway work within each of the nine districts (muhafazats) of Syria. Within the various municipalities the municipal authorities maintain, construct and finance their own roads. Such work is often done in conjunction with the Ministry of Public Works and Communications but the primary responsibility rests with the municipality.

Within the Ministry and in the field those who are concerned with highways unfortunately have other duties. The Secretary General is the administrative head of the Ministry while the Director of Public Works, the chief and

the district engineers are responsible not only for highways, but for all phases of public work activity. There is no exclusively highway organization as such in Syria.

Although the Director of Public Works has the primary responsibility for highways, the Director of Communications is also concerned. He is in charge of coordinating the various means of transport in Syria and is consequently concerned with the development of the highway network. In addition, he is responsible for safety regulations, ⁽¹⁾ certain taxes connected with transport, and the registration and licensing of all types of motor vehicles. With the exception of registration, taxes on transportation activities and safety measures, his connection with highway problems is essentially at a policy level.

Motor vehicle taxes and regulations are established by the Directorate of Communications within the Ministry of Public Works. Within the Directorate the Department in charge of Land Transportation Means is responsible for motor

(1) Safety markings are confined mostly to indicating winding roads and in this respect are quite adequate on the main roads. They are almost non-existent on secondary routes. There are very few signs to indicate cross roads, bad sections of the road, etc. Marking of routes for directions on the main roads is fair. Mileage stones are located at five kilometer intervals on the main highways. They indicate the name of the next town and the distance thereto. Route directions on the secondary routes are poor. Report 187, Damascus, 6 October 1950.

vehicle taxes and regulations. The taxes are actually collected by the Treasury Department in the Ministry of Finance. In addition, there is a municipal tax called the 'octroi',⁽¹⁾ which is levied by the municipal authorities on each new car that is registered in the municipality.

The Department of Indirect Taxes within the Ministry of Finance is responsible for fuel taxes. These are collected by the Treasury Department through the control of the Directorate of Foreign Trade in the Ministry of the National Economy. None of the revenues of these taxes are earmarked for highway construction or allied activity, but are deposited in the general revenue.

Plans for new highway construction are submitted each year to the Ministry by its four regional engineers.⁽²⁾ These plans are considered by the Secretary General and the Director of Public Works together with the Minister of Public Works and Communications. These three draw up the final draft which is included in the Ministry's budget. The budget is first submitted to the Council of Ministers and then to Parliament which has and exercises the right

(1) A tax paid on certain classes of merchandise upon its entry into a city. Nouveau Petit Larousse, Illustré.

(2) On all construction projects the Ministry maintains four of its personnel as inspectors. The whole project, however, is under the supervision of a district or regional engineer.

of allotting appropriations for specific road projects. The financing of these highway construction projects is done almost completely from government appropriations since, as mentioned above, proceeds from taxes on gasoline and motor vehicles, etc, are all assigned to the general revenue. Outside of its budgetary allotment the Ministry has no other source of revenue.

d) Highway Breakdown: Syria

The following table gives an estimate of the total Syrian road mileage at the end of 1949. ⁽¹⁾

<u>Type of Road</u>	<u>Length in Miles</u>
(a) Unimproved earth & non-surfaced	
1. All weather	2500
2. Dry weather	625
(b) Improved earth, sand gravel or crushed stone	2500
(c) Waterbound Macadam	2500
(d) Macadam surface treated with:	
1. Bituminous concrete (coating over concrete)	2000
2. Asphalt	187.5
(e) Miscellaneous	3.1
Total	<u>10,315.6</u>

(1) Report 187, Am. Leg., Damascus, 6 October 1950. These figures are an estimate. The latest official statistics only cover until the end of 1948. These statistics are broken down by a different method of road classification, and road lengths are shown by zone. See Table VII, in appendix.

C H A P T E R I I I

R A I L R O A D S

1. Syria and Lebanon: General

Syria and the Lebanon possess 832 miles of railway -- 546 miles of standard gauge line (4 feet 8 1/2 inches in width), and 272 miles of narrow gauge (3 feet 5 1/2 inches in width) which include 20 miles of rack-railway. The total area of the two countries is about 58,300 square miles and one might consider the total mileage inadequate at first sight. But most of Syria is semi-arid steppe or desert with a population density of about twenty-five persons per square mile, and it is in western Syria and the Lebanon, in spite of the mountains and rugged terrain, that the railroads have been built for the most part.

Before the First World War, the Baghdad road, together with the Hedjaz railway, was looked upon as constituting something of a unit often referred to as the Turko-German system. The remaining railroads, however, have in common only the element of being under the management of French societies or concessions and possess no other unifying principle. ⁽¹⁾ A further lack of unity arises from

(1) In 1936 Himadeh came to the conclusion that the so-called 'system' of Syrian railways was not one system at all

the fact that these railways are of different gauges. In some cases the narrow gauge was decided upon, according to Himadeh, because of lower cost of construction. (1) In some other cases the narrow gauge was chosen because of the nature of the terrain. (2) However, viewing the high costs of trans-shipment of goods at the junctions of the narrow and standard gauge, the operation of the railways of Syria and the Lebanon would be more economical and convenient in the long run if they were all of one gauge, preferably the standard. This gauge is international, being common throughout most of Europe, Turkey, Egypt, Iraq and Iran. For an example, let us consider the railway system in the country of Syria. This system forms a disconnected series which cannot be expected to operate for the best interests and most advantageous economy of the country, (3) as it serves only a limited area (4)

but a combination of two different systems. He was writing at the time of the Mandate, and before the two countries were separate political and economic entities.

- (1) Himadeh, page 184.
- (2) N. Verney and G. Dambmann, Les Puissances Etrangères dans Le Levant, en Syrie et au Liban, Paris 1900, page 213.
- (3) Article, Les Voies Ferrées au Liban et en Syrie, in 'Les Cahiers de l'Est', Eleuthere Elefteriades, vol. iv, Beirut, 1946, page 65.
- (4) Gibb Report for Syria, par. 367.

of the country. It is made up of two gauges, and only the narrow gauge system enters the capital city of Damascus. On the line which enters Damascus from Rayak and Beirut, gradients are steep and curvature frequent and sharp. Widening some sections of the narrow gauge, in order to arrange a convenient and economic through-running normal gauge system would be very costly necessitating high banks, deep cuttings, long tunnels and extensive bridging. The standard gauge lines in Syria have flatter gradients and easier curves but do not enter the southern regions of Syria, their access from Homs being only by a devious and tortuous route through Lebanon. The situations of the two systems with their break of gauge and the long unserved portion of about 106 miles in Syrian territory between Homs and Damascus, are neither commercially nor administratively efficient for Syria as an entity. ⁽¹⁾ These two systems are isolated from the Euphrates Valley and much of the adjacent Jazirah and do not serve the port and the rich area around Latakia on the coast. For example, since there is no rail transport to the Euphrates Valley and the Jazirah there is no inducement to growers to raise surpluses for sale in distant markets while the present

(1) Gibb Report for Syria, par. 367.

high transport rates are in force. ⁽¹⁾ Until cheap transport becomes available it is probable that the 495,000 acres of rich alluvial lands in this area will remain undeveloped. ⁽²⁾ To reiterate, the existing railway system conforms neither with the present geographical boundaries of Syria nor with the economic structure of the country. There is no direct link between Damascus and the South on the one hand, and Aleppo and the North on the other. The fertile regions of the Northeast have no railway connection with the populous regions of the West. Many railroad lines on which Syria must depend for the distribution of her produce pass through the territories of neighboring states, i.e., Lebanon and Turkey, and so, since the Customs break, rail traffic between Damascus and northern Syria by way of Rayak in Lebanon has been practically brought to a standstill due to relations between the two countries. For these reasons and because the produce of Syria is basically agricultural and of low unit value requiring inexpensive transport, ⁽³⁾ which can be best answered by rail transport, it is quite evident that her railway system is not altogether

(1) Produce has to be trucked to stations along the line and truck rates are high, thus cutting down eventual profits from the sale of the produce.

(2) Gibb Report on Syria, par. 373.

(3) Les Puissances Etrangères dans le Levant, page 207.

satisfactory.

What is most important is that the railway system of Lebanon is closely bound up with that of Syria and the two cannot be considered separately. (1)

The operation of the railways of Lebanon and Syria has shown an annual financial deficit for many years. (2) The railways have failed to capture a proper share of the increased traffic, both freight and passenger, that has become available as a result of resumed and intensified economic activity since the war, and on some lines the tonnage carried has been growing gradually less each year since 1946. Total receipts have risen above the figures for pre-war years because rates have been increased, but when higher costs are considered, the ratio of revenue to expense has in fact fallen. (3)

This state of affairs is due, in a measure, to unrestricted competition from road transport, even though

(1) Gibb Report on Lebanon, Introduction, page 7.

(2) Ibid.

(3) Basic and Annual Railway Report, Am. Leg., Beirut, 27 December 1949. 'Increasingly heavy operational costs and the perennial deficit which, by the agreement concluded between the DHP and the Governments of Syria and Lebanon, must be borne by the two governments, is the chief factor governing the railway tariff structure. Efforts to increase revenues in past years have resulted in 20 to 30% tariff increases.'

there are other causes. However, as has been previously indicated there seems to be no indication of governmental activity in either of the two countries to regulate rail and route competition or even to organize the operations of these two modes of transport for the greater benefit of the public. Nevertheless, whatever the causes and effects of this unhealthy financial situation we must not forget that the railways are an essential part of the communications systems of these two countries and should be preserved for the public good, even though it is thought that road transport is faster, more efficient and, temporarily perhaps, more economic. This becomes more urgent of necessity when it is considered that the present financial situation may lead to the closing of sections of the railway lines. Finally, the financial condition of the DHP operated system as well as the other systems in Lebanon and Syria is extremely serious for the Governments of the two countries. If the fall in traffic continues at the present rate the DHP company might be compelled to suspend operations on one or even more sections of their lines; and the first to be affected would probably be the Beirut-Damascus line. These railways are an essential part of the communications system and national economy of the two countries. They are no less necessary than the highways which, as they are now,

would be inadequate to carry the additional traffic at
present moved by the railways. (1)

a) Organization and History

As the railroads were all built when Syria and Lebanon were one political and economic unit let us consider the railway systems of the two countries together and discuss them collectively. The principal standard gauge line, from Rayak in Lebanon to Aleppo, runs parallel to the grain of the country; in the south following the depression between the Lebanon and the Anti-Lebanon, which depression is called the Bekà'a Valley; and in the north skirting the eastern slopes of the Jabal Zawiyah. The line from Tripoli to Homs takes the gap between Jabal Ansariyah and Mount Lebanon and is of standard gauge, but that from Beirut to Damascus has to cross the more difficult Lebanon and Anti-Lebanon, where gradients are steeper and the alignment necessitates many sharp bends. For this branch a narrow gauge was chosen and twenty miles of it had to be equipped with rack rail. The most expensive part of the narrow gauge Beirut-Damascus railway to maintain and operate is in Lebanon, that is, the whole of the

(1) Gibb Report for Lebanon, paragraphs 292 and 293.

rack gradient, which is 21.7% of the total length of the line, and 54.5% of the Lebanese portion. (1) The same narrow gauge was used in the south for the line along the deeply incised Yarmuk Valley, from Samakh on the southern shore of Lake Tiberias in former Palestine, to Dera'a; and likewise for the Hejaz railway in Syria south of Damascus. Nonetheless, the new line from Haifa in Palestine along the coast to Tripoli, despite the difficulties caused by the coastal mountains, is standard gauge. (2)

The railways of Syria and Lebanon, all single track lines comprise the following:

<u>Standard Gauge</u>	<u>Length (in miles)</u>
(1) Main line from Rayak to Aleppo	206
(2) Branch line from Homs to Tripoli	63
(3) Two sections of old 'Baghdad Railway'	
(a) Maidan Akbas-Aleppo-Cheban Bey	113
(b) Tell Ziman-Tell Kotehek	44
(4) Coast line from Ras al Nakoura to Tripoli	120
Total	546

(1) Gibb Report on Lebanon, par. 275.

(2) Not considered in the above is the 60 centimeter military railroad constructed by the French in 1925 from Ezra'a to Suwayda. Following information as result of telephone conversation with office of the Hejaz Railway, Damascus, Syria on 11 April 1951. 'The rails of this line from Ezra'a to Suwayda in the Jabal Druze have recently been taken up'. Refer to Map No. 2, in Appendix.

<u>Narrow Gauge</u>	<u>Length (in miles)</u>
(5) Beirut-Rayak-Damascus (including 20 miles of rack rail)	90
(6) Damascus to Dera'a	
(a) Branch from Ezra'a to Suwayda (1) (60 cm. track)	28
(b) Branch from Dera'a to Bosra eski Sham	24
(7) Samakh to Dera'a and Nessib	54
	<hr/>
	Total 272

Only the lines Beirut-Rayak-Damascus, Tripoli-Homs-Aleppo and Homs-Rayak were constructed in the exclusive interests of Syria and Lebanon. These particular railway lines connect, in reality, the ports of Beirut and Tripoli with the two great market centers of the interior, Damascus and Aleppo. In 1892 and 1893, as the French influence was then predominant in the two, at that time, regions of the Ottoman Empire, it was to French societies that concessions were given for the construction and operation of these railroads. Moreover, the construction of the particular Beirut-Damascus rail line came as a result of a road transport enterprise which had been operated between Beirut and Damascus since 1856 by a French Company. (2)

(1) Track now taken up, see preceding page.

(2) Electeriades in 'Les Cahiers de l'Est', page 156.

The 'Echelles du Levant'⁽¹⁾ were by this time engaged in a brisk and flourishing merchant trade which required fast - and sure - transport to carry merchandise and travellers from Beirut to the interior and vice versa. Furthermore, the main impetus to railway construction in Syria and Lebanon has come from French enterprise, most of the work being carried on with French capital.⁽²⁾ As mentioned above the French had early obtained from the Ottoman Government a concession to carry passengers and goods by road between Beirut and Damascus. The enterprise prospered⁽³⁾ and it was therefore natural that railway construction should be taken up by French interests. The 'Societe de chemins de fer Ottomans Economiques de Beyrouth-Damas-Hauran'⁽⁴⁾ was formed in Paris in 1891 and in June of that year it secured the concession to build a narrow gauge line from Beirut to Damascus, and thence to Mazarib in the Hauran. This was opened in August 1895, but its value was seriously impaired five years later when

(1) This name was given to those merchant port of the Mediterranean formerly or still under Turkish domination, notably Istanbul, Smyrna, Alexandria, Tripoli, Beirut, etc. *Nouveau Petit Larousse, illustre.*

(2) Himadeh, page 181.

(3) Les Puissances Etrangeres dans le Levant, page 239.

(4) Opus citus, page 239.

the Turkish Sultan 'Abd al Hamid decided to construct the Hedjaz railway from Damascus to Medina, the northern section of which would run parallel to and compete with the Mazarib line of the French company. The Damascus-Amman section of the Hedjaz railway was opened on 23 August 1904, and at first relied on the Beirut-Damascus section of the French line for its outlet to the sea. The Hedjaz administration, however, became dissatisfied with the arrangement and, in 1906, completed a branch line of its own from Dera'a to the port of Haifa.

Meanwhile the French company had obtained from the Ottoman Government ⁽¹⁾ a concession in June 1893 to build a standard gauge line from Damascus to Homs, Hama, Aleppo and Biridjik ⁽²⁾ on the Euphrates and with a branch to the coast. The purpose of this line was mainly strategic hence the company was given a 'guarantee of receipts'. Before it was completed, however, the Ottoman Government gave the concession for the Baghdad Railway to German interests and the route of this line northeast of Aleppo ⁽³⁾ seriously

(1) Two Lebanese, Hassan Beyhoum and Joseph Neutran obtained the primary concession from the Ottoman Government but called in French and Belgian capital and technicians, from among whom the French company was eventually formed. Opus citus, pages 240-241.

(2) Biridjik is now in Turkey. See Map No. 2 in Appendix.

(3) Himadeh, page 181.

affected the prospects of the French concession. (1) Difficulties were adjusted and the French company, which now became the 'Societe Ottomane du chemin de fer Damas-Hama et Prolongements' (DHP), built the standard gauge railway from Rayak, on the Beirut-Damascus line (narrow gauge) to Aleppo, and which latter place was reached in 1906. Junction was effected at the same place with the Baghdad railway in 1914. The standard gauge line between Tripoli and Homs was opened in 1911, but was torn up by the retreating Turks and Germans in 1918 and had to be rebuilt after the cessation of hostilities.

The 'Baghdadbahn' which, from 1900 to 1914, headlined the current political chronicles of these newspapers and reviews which were concerned with the Eastern Question, was conceived as the principal artery for railway transportation in Turkey; to cross the country from the northwest to the southeast. The concession for this railroad was granted in 1902 to the Anatolian Railway Company and modified (2) in April 1903 when the 'Societe Imperiale Ottomane du chemin de fer de Bagdad' was formed, which same society was to construct a standard gauge railroad from Kunya in Turkey to Baghdad passing by Adana, and

(1) Richard Coker, The Heart of the Middle East, London, 1925, page 150.

(2) Opus citus, page 129.

from Baghdad to an undetermined point on the Persian Gulf by the way of Basra. The concession was to last for ninety nine years. Construction on the 'Baghdadbahn' started immediately after the signing of the concession grant on 5 March 1903. Work was pushed as fast as the numerous financial and political difficulties would permit and by September of 1918, the railway was in operation from Haidar Pasha on the Bosphorus to Nissibin on the north Syrian Plain. (1)

A great deal of money and time were required for the construction of this rail line. In 1919, before the line had been fully completed, Turkey's southern provinces were detached from her and formed into independent states. It is thus that Syria inherited the 'Lignes Syriennes de Bagdad'. This railway leaves Maidan Akbas, a point on the Turke-Syrian border, passes through Aleppo and then leaves Syria at Tell Kotehek on the Syro-Iraqian border. It connects the 'Taurus Express' line from Europe with the Tripoli-Homs-Aleppo line and the Damascus-Rayak-Aleppo railway on the one hand, and with the Basra-Baghdad-Mosul-Tell Kotehek line on the other hand. (2)

The construction of the Hedjaz railway, commenced

(1) Eleeteriades, in 'Les Cahiers de l'Est', page 166.

(2) Ibid.

in 1900, was justified in the eyes of the public as a religious work, and which would greatly facilitate the pilgrimage to Mecca. However, political and military motives ⁽¹⁾ played as great a role in its construction, since it would assure positive and rapid communication between the heart of the Ottoman Empire and the immense wilderness of Arabia. This line reached Dera'a and 'Amman in 1903, Ma'an in 1904, Madawara in 1906, Madain Salah by 1907 and finally entered Medina in the fall of 1908. ⁽²⁾

The railroad was, however, practically entirely destroyed beyond Ma'an during the hostilities of 1914-1918, and at the present is not operated beyond the latter mentioned locality. That portion of the line between Damascus and Dera'a, seventy six miles in length, is the only part located within the boundaries of Syria.

Very little construction took place between 1918 and 1940. During World War I the railway lines which had been given in concession to French societies by the Ottoman Government underwent quite substantial damages, the least of which were the result of the lack of maintenance. Several lines, as those of Damascus-Mazarib and Homs-Tripoli had their rails taken up entirely for use in the region

(1) Eleuthere Elefteriades, Les Chemins de fer en Syrie et au Liban, Beirut, 1944, page 166.

(2) Opus citus, page 175.

of Nissibin, their equipment taken out of the country, stations pillaged, burned or destroyed in some manner, rolling stock worn out and their funds confiscated. Such was the condition at the war's end of those railways which had been operated by French concessions, especially those of the company called 'Damas-Hama et Prolongements', when their personnel returned with the victorious Allies to re-commence railway operations within the Mandated Territories. As soon as the Allied had re-entered Syria and Lebanon, works of reconstruction began. In addition various works of extension to the Hedjaz and Baghdad rail-⁽¹⁾ways were accomplished by the concessionary societies. After the French authorities had reconstructed those portions of the railroads damaged or destroyed by the German and Turkish armies in the course of their retreat during October 1918, and had replaced tracks in those places where they had been taken up, these same authorities in 1933 continued the 'Baghdadbahn' across the Duck's Bill of the Jazirah on the Euphrates between Tell Ziman, near Nissibin to Tell Kotehek near the Iraqi boundary. Here they arrived in 1935 and in 1937 the junction of the railway from Mosul to Tell Kotehek was effected at the latter locality by the construction of a railroad in Iraqi territory. In 1940,

(1) La Syrie et le Liban, 1919-1927, page 162.

the opening of the Baghdad-Mosul line completed a stretch of standard gauge railway that stretched from Haider Pasha to Basra on the Shott al'Arab. ⁽¹⁾ Even though the DHP had resumed possession and operation of its lines in 1919, the Damascus-Mazarib line, which had also been torn up, was not worth relaying since the Hedjaz railway was parallel to it, and thus duplicated it. ⁽²⁾ Then in 1924 the DHP took over the administration of the Syrian section of the Hedjaz railway, even though this was not under concession. This section included the line from Damascus to Dera'a and from Samakh to Messib, a total of 130 miles of narrow gauge track. ⁽³⁾

b) Administration of Syrian and Lebanese Railways

Administration of the Baghdad railway was complicated. It crossed the Syrian boundary at two points north of Aleppo, and ran just inside Turkish territory, from Choban Bey to Nissibin. Agreement was reached in 1922 that the entire line from Bozanti in the Shakit gorge,

(1) Elefteriades in 'Les Cahiers de l'Est, vol. iv. page 167.

(2) Elefteriades, Les Chemins de fer en Syrie et au Liban, pages 169 and 187.

(3) La Syrie et le Liban, 1919-1927, page 163.

west of Adana in Cilicia, to Nissibin should be worked by a French company, known first as the Chemin de fer Cilicie-Nord Syrie, ⁽¹⁾ and later as the Societe d'Exploitation des chemins de fer Bezanti-Alep-Nissibine et Prolongements (BANP). The western sections and branches were gradually acquired again by treaty or purchase by the Turkish Republic, and on 1 July 1933, when the BANP was finally liquidated, the rest of the lines in Turkish territory passed to Turkish control. The operation of the sections of the above line which are located in Syria, from Maidan Akbas to Aleppo and from Aleppo to Choban Bey, and which meet at Muslimiyah, about eight miles north of Aleppo, was taken over by a new Syrian company, a subsidiary of the DHP, called Lignes Syriennes de Bagdad. ⁽²⁾

Then, when administration of the railways in the Levant States was surrendered to the joint control of the Syrian and Lebanese Governments in October 1943, the only system within Lebanon was the Chemin de fer Damas-Hama et Prolongements (DHP), which continues to operate lines from Aleppo to Hama, Homs and Rayak in Lebanon, from Homs to Tripoli the port of north Lebanon, and from the capital Beirut to Rayak and on to Damascus. Also operated by the

(1) La Syrie et le Liban, 1919-1927, page 165.

(2) Ibid.

(1)
DHP at that time were the company known as the Lignes Syriennes de Bagdad, which connected the original DHP line at Aleppo to link the Levant States with Turkey and Iraq, and the Hedjaz Railway. Only the trackage of the Hedjaz railway which lies within the borders of Syria came under the jurisdiction of the DHP.

In 1941 and 1942, the British Ninth Army constructed a railway line between Nakoura on the southern border of Lebanon and Tripoli in the north of Lebanon. This line was to continue the Egypt-Haifa line constructed by the British in World War I. The Tripoli-Beirut section of the new standard gauge line duplicated much of the former trackage of the Tramways Libanais, ⁽²⁾ all but a couple of

-
- (1) An agreement reached in 1925 between the DHP and the mandatory Lebanese and Syrian Governments guarantees the subsidization of DHP operations by both governments. The DHP has operated at losses averaging from 500,000 to 2,000,000 Syro-Lebanese Pounds since 1930, though operations from 1937 to 1939 were profitable as were war-time troop transport operations. Subsidies covering the annual DHP deficit are paid by the two governments in proportion to DHP mileage in the territory of each. Elefteriades, Les Chemins de Fer en Syrie et au Liban, page 94.
- (2) The Tramways Libanais has ceased to operate as an independent line. A portion of the original, narrow gauge track still exists to a point about two miles northeast of the Beirut city station yards, passing over the former Tramways Libanais railway bridge which is built over the Nahr Beirut near where it flows into the sea. The Beirut-Tripoli standard gauge line uses the former TL roadbed at the above two mile point onward until the TL's former terminus at Ma'almain, from which latter place a new roadbed had to be constructed over the re-

miles of which were taken up and its equipment diverted to other uses. The Nakoura-Beirut-Tripoli railroad was purchased from the British by the Lebanese Government in 1946, and that portion between Beirut and Tripoli, the only section now in operation, is now operated by the DHP for the account of the Lebanese Government.

In March of 1945 a protocol signed by the DHP and the Syrian Government placed the Syrian section of the Hedjaz railway under the administration of the Syrian authorities. ⁽¹⁾ A similar protocol signed 30 June 1948 transferred to the same authorities the administration of the Syrian portion of the Lignes Syriennes de Bagdad. ⁽²⁾ Prior to these protocols, the DHP administered all the Syrian and Lebanese railways as a whole, but the component systems were largely worked as individual undertakings. This was necessary owing to the different gauges, and the varying strength of permanent way structure (bed and rail), which tended to confine locomotives and rolling stock to

mainder of the distance to Tripoli to accommodate the new trackage. The section of TL trackage in use is utilized by oil tank cars between the port and the oil depots located just north of the Nahr Beirut. Field trip, 7 February 1951.
See Map No. 6 in Appendix.

(1) Basic and Annual Railway Report, Am. Leg., Beirut, 27 December 1949.

(2) Ibid.

the section of the line for which they were constructed.

Policy question pertaining to the operation of the DHP system are decided by the Syro-Lebanese Common Interests Council (Conseil Supérieur des Interets Communs) which administers the Customs Union linking the two countries. The authority of the Common Interests Council does not, however, include decisions concerning the DHP operated Beirut-Tripoli line, which is jointly administered by the Lebanese Ministries of Public Works and Finance, nor to the Syrian section of the Lignes Syriennes de Bagdad and to the Hedjaz railway, which latter two are exclusively the concern of the Syrian authorities.

Agreements on administrative levels have been reached by the several railways operating in Lebanon, Syria, Turkey and Iraq concerning interchange of traffic, equipment and revenues. Under these agreements, equipment entering one country from another should, after unloading, be returned directly, loaded or empty, to the country of origin without further operation in the country of destination. Revenues from freight rates and passenger fares extending beyond national boundaries are paid at the point of departure and distributed to railway lines beyond the border by the collecting company. Customs formalities involving passenger traffic are completed at frontier stations

only; freight shipments are subject to customs formalities, including export and import permits, at points of departure and arrival.

2. The Railroads in Lebanon

Lebanon is served by one railroad system, the DHP, which is composed of four sections of approximately 250 miles total length. The line from Beirut to Rayak is narrow gauge, that from Rayak to Homs is standard gauge, as are the Beirut-Tripoli⁽¹⁾ and Tripoli-Homs lines. This latter line is a branch or spur of the Aleppo-Rayak railway. The Beirut-Rayak-Damascus line, the only narrow gauge line in Lebanon was the first to be put into operation, in 1895. The remainder were all opened between 1902 and 1911, with the Nakoura-Beirut-Tripoli line being opened in 1942.⁽²⁾ As in Syria, there are adequate locomotive, wagon and

(1) The Beirut-Nakoura section of this line is not now operating.

(2) On all the lines concerned in Lebanon there are a total of fifty-seven steam locomotives and four diesel railcars. The railcars are twelve years old and of the steam locomotives forty-five are over forty years old. The same applies to Syria as regards the age of its locomotives in general. Syria is not known to have any diesel railcars. There are a total of 124 carriages and baggage wagons and 827 freight cars and other special vehicles, giving a total rolling stock of 951 units. All these are over twenty-four years old, and 871 of them, or 91.6% are over thirty-five years old. Gibb Report on Lebanon, par. 228.

carriage repair shops, equipped with the necessary machinery for rolling stock and machinery maintenance at Rayak, Beirut and Tripoli.

Except for the Beirut-Tripoli sector, on which rapid diesel-engine trolleys are operated, railway passenger traffic between Beirut and Damascus and intermediate points has been eliminated by more rapid and convenient motor cars and by bus services. Competing truck transport in Lebanon and Syria increasingly encroaches upon the volume of light freight handled by the DHP between Damascus and Beirut, and between Beirut and Tripoli.⁽¹⁾ Truck transport again has the advantage of greater efficiency and greater frequency of trips between principal cities. Heavy freight continues to travel by rail, even though very heavy equipment such as generators, storage tanks and heavy construction equipment have to be carried up over the mountains by semi-truck trailers. DHP officials seem to be pessimistic about coordinating rail and truck transportation due mainly to the lack of governmental assistance in this regard.⁽²⁾

(1) The Beirut-Damascus line probably suffers more than the others from road competition, its tortuous course and steep gradients, including the rack sections, causing so slow a service that it no longer appeals to passengers.

(2) Basic and Annual Rail Report, Am. Leg., Beirut, 27 Dec. 1949.

During the war the railways carried an exceptional amount of traffic and the records of that period must be discounted in ascertaining the general trend. ⁽¹⁾ In fact, while on the Homs-Tripoli railway there has been a slight upward trend after the sharp decline towards the end of the war, the Beirut-Damascus and Rayak-Aleppo lines are still rapidly losing traffic, despite the marked increase in the volume of merchandise imported and exported. Since the Customs break occurred a further decline may well be expected. It is interesting to note that increases in freight traffic over the Homs-Tripoli line correspond closely to the increase in port traffic at Tripoli since the end of the war, but the greater volume of goods handled at the port of Beirut during this same period, however, did not result in greater traffic on the Beirut-Damascus railway. ⁽²⁾ The Rayak-Aleppo trunk line, with the connection to Tripoli and the more recent link from Tripoli to Beirut (and through to Haifa), is of much economic importance. Nevertheless, the traffic returns of this line have been disappointing almost from its inception.

Though DHP operated railways service the principal

(1) For statistics on railway operations in Lebanon see Appendix, Table IX.

(2) Gibb Report for Lebanon, par. 228, Section 'Traffic'.

industrial and agricultural regions of Lebanon, no plans for modernization, extension or improvement of their potential service capacity have been formulated. Operating at considerable losses each year, which must be borne by the Lebanese Government, there is a strong probability that the railway lines in Lebanon will eventually disappear, according to some sources, ⁽¹⁾ leaving Syria as the principal rail link for long distance shipments to other Near Eastern countries. In this respect, the Lebanese Government does not seem to evidence much interest in reviving the operation of the section of the Nakoura-Beirut-Tripoli railway, which runs south from Beirut and which has been out of operation for the past few years due to the disturbances in the former Palestine region. The reason for this could be that all demands for transportation in this area of Lebanon are fulfilled by truck and bus transport, and operations on this section would not be economically feasible, much less profitable. The Beirut-Tripoli section of this line is being operated by the DHP for the account of the Lebanese Government but under control of the Director of Communications. With the exception of fifteen tank cars, this line has no motive power or rolling stock of its own.

(1) Basic and Annual Railway Report, Beirut, 27 December, 1949.

but has been loaned such equipment as needed for its operations by the DHP company.

3. The Railroads in Syria

(1)
Syria is served by three railroads. The 'Chemin de fer Damas-Hama et Prolongements' connects Damascus and Beirut by a narrow gauge line. The broad gauge section of the DHP in Syria comes down from Aleppo through Hama and Homs and connects, through Lebanon, (2) with the Beirut-Damascus narrow gauge line as well as having a spur from Homs to Tripoli where it meets the broad gauge coastal road from Beirut. The 'Lignes Syriennes de Bagdad (LSB)'

(1) a) Rolling stock in Syria at the end of 1948 was 153 locomotives, 179 passenger cars and 1,907 freight cars. The total volume of passenger miles in 1948 was 31,800 and of ton-miles was 73,000. Report 60, Hedjaz Railway Project, Am. Leg., Damascus, 25 June, 1948.

b) Following statistics obtained as result of an interview with Director of Communications in the Ministry of Public Works, Damascus, Syria, on April 12, 1951.

Railway Traffic at end of 1949

Number of passengers carried	50,550
Average distance travelled by each passenger	95.9 miles
Total number of civilians carried	49,177
Total number of military carried	1,373
Total No. of tons carried by Syrian Railways	275,400
Average distance each ton was carried	71.9 miles

(2) The line Damascus-Aleppo is little used since it is roundabout - totaling 255 miles, necessitates transshipment from one gauge to the other, passes in and out of Lebanon, and is said to be less secure against pilferage than the rapid, direct truck route.

which connects Aleppo and Baghdad, passes in and out of Turkey en route. It joins the Turkish railway system and, thus, the whole European network. The third railway, the 'Lignes Syriennes de chemin de fer du Hedjaz (CFH)' runs south from Damascus through 'Amman to Ma'an in Jordan. (1) There are adequate locomotive, wagon and carriage repair shops, equipped with the necessary machinery for rolling stock and machinery maintenance at Homs, Hama, Aleppo and Damascus to cite the more important workshops.

Aleppo, the most populous city in Syria with some 330,000 inhabitants, has a standard gauge railway connection of 164 miles over a 3% gradient to the deep water port of Alexandretta in Turkey, but with which there is now little traffic except for the export of about 3,500 tons of liquorice. The city also has a direct standard gauge railway connection of 190 miles with the shallow port of Tripoli. Damascus, with 290,000 inhabitants has only the slow and expensive 6% and 7% rack railway to the deep water berthage of Beirut. Homs, the third city of Syria, with a population of 100,000 has a direct connection of sixty-three miles on the standard gauge railway

(1) The lengths of these railroads in Syria are as follows:

<u>Railroad</u>	<u>Length (in miles)</u>
DHP	232.4
LSB	153.0
CFH	145.1
Total	<u>530.5</u>

to Tripoli. Hama, between Aleppo and Homs, also has rail connection to Tripoli. From the above we can see how poorly served Syria is with rail connections to the coastal regions, and the long distance which must be overcome in the transport of goods and passengers to and from the interior. The railways connecting Syria with Jordan are simple of operation. Through communication is made on narrow gauge lines from Damascus to 'Amman, and for the type of country through which they pass, the lines are reasonably economical to operate. However, there is much highway competition over good road surfaces to Derá'a and 'Amman. Except for the simple operating narrow gauge routes to Jordan, all external traffic must go up over the mountains to Beirut when going by way of Lebanon, and all that going to or by way of northern Syria must be trans-shipped at Rayak to standard gauge track.

Few countries are so badly endowed with even passable railroads for so large an area as Syria. ⁽¹⁾ The existing plant is most sketchy and in a very poor condition. Worst of all, there is no direct rail link within Syrian borders between the capital, Damascus, and the other cities. To reach the nearest large city to the north, Homs, there is only a narrow gauge line going to Rayak in Lebanon,

(1) Report Number 59, Am. Leg., Damascus, Syria, 5 August, 1947.

where it meets a standard gauge road from Homs which change in gauge requires reloading of freight and transfer of passengers. From Homs one line runs to the Lebanese port of Tripoli, as mentioned above, necessitating another border crossing with its resultant stops and delays. Finally, there is the inconvenient line from Aleppo to Baghdad, which passes in and out of Turkey. From Damascus and south there are two narrow gauge strips of road, one running to Haifa in Israel and which is now immobilized by the destruction of a bridge at 'al Hammah on the former Palestine border, and the other line goes to Ma'an in Jordan.

Before the railroad system can be rehabilitated, however, it is considered ⁽¹⁾ necessary that the matter of future ownership and management will have to be determined. While the Hedjaz road, originally built by the Turkish Government reverted to the Syrian Government as of 1 March 1945, the DHP road is still in the hands of the French company with its main office in Paris. Furthermore, the government is saddled with the task of straightening out the deplorable financial situation of the railroads. The ⁽²⁾ DHP has been operating with a large monthly deficit

(1) Report 59, Am. Leg., Damascus, Syria, 5 August, 1947.

(2) With the exception of the narrow gauge line of the Hedjaz Railway from Damascus to the Jordan frontier with its branches to Bosra eski Sham and to Al Hammah on the Palestine frontier, the railways in Syria are

which has to be made good by the Syrian Government to the French 'concessionaires' under the kilometric guarantee of the original franchise. Both the Hedjaz line and the 'Lignes Syriennes de Bagdad' have been operating at an overall loss during the past few years. ⁽¹⁾ In addition to financial difficulties the rolling stock on most Syrian railroads is both short and obsolete and there exists a great lack of spare parts. ⁽²⁾

operated by a concessionary company, the DHP, as has been previously mentioned. The Hedjaz Railway is owned and operated by the State, while the lines known as the 'Lignes Syriennes de Bagdad', though owned by the State of Syria, are operated by the DHP.

- (1) Report 'Recent Syrian Railroad Developments', Am. Leg., Damascus, 6 March 1948.
- (2) In the 'Nida al Watan', of 9 November 1950, Beirut, and in the 'Rawad' of the same date, Beirut, it was announced that the DHP Railroad Company had requested and had been refused a loan by the Syrian authorities. It stated that this loan was to be for forty-five million French francs and seventy-thousand Swiss francs, and that it was to be used to purchase equipment and spare parts for maintenance of that equipment already on hand. The company stated in its application that the railway line between Syrian and Lebanese territory was threatened with suspension in the near future by reason of the lack of spare parts and proper rolling stock, and that furthermore, seventy locomotives were lying idle as a result of a lack of repair pieces and the necessary spare parts to effect repairs.
The chief suppliers of railway equipments, parts and accessories are Switzerland (locomotives) and France (rolling stock) which explains the requests for sums in the two currencies.

4. Detailed Description of Syrian and Lebanese Railways. (1)

1. Rayak to Aleppo: The first section from Rayak to Homs passes north through the Beka'a. The population here is scattered, and the railway usually passes some distance from the small towns. It was constructed primarily for military purposes, and additional sidings and passing loops were at first laid in open country halfway between stations. These are now used as ordinary stations.

The line rises from 3,100 feet at Rayak to the watershed north of Ba'albek at 3,690 feet, and then descends more gently to 1,630 feet at Homs. The Beka'a plain is gently undulating, but bounded by high mountain ridges and traversed by numerous wadis and drainage channels.

For most of the way, the main Metulla-Homs road (2) runs alongside the railway, crossing it several times, or is from one to three miles distant from it.

Homs is the junction for the line to the port of Tripoli, which takes the agricultural produce from its plain to the coast. From Homs the line follows the east, or right bank of the Orontes, keeping between the river and the Aleppo road for fourteen miles. It crosses the river five miles north of Tell Bissah and follows the

(1) Refer to Map No. 2 in Appendix.

(2) Metulla is on the Palestine frontier in Lebanon.

valley for another four miles to Harb Nafsah, but then strikes across the treeless but well cultivated plain of Hama. Towards Hama the line rises slightly on to the edge of the plateau west of the town and overlooking the Orontes.

Three miles north of Hama the line crosses to the east or right bank of the Orontes for four miles, and ascends an undulating plateau as far as Umarjim, the highest point (1,432 feet) in this section. It then descends gradually for over forty-three miles to the Kuwaik Su, crosses this river near Vudahi, and follows the west or right bank for about seventeen miles, with a slight rise towards Aleppo which has an elevation of 1,220 feet.

Between Rayak and Homs no embankments nor cuttings of importance were required. The largest works are masonry bridges, six to twelve feet long, or small iron bridges over streams or gullies. North of Homs there are even fewer works than before, for the country is drier and there are fewer wadis and drainage channels than in the Bekk'a. The only bridges of any size are those over the Orontes fourteen miles north of Homs and three miles north of Hama.

2. Tripoli to Homs: This line from Tripoli, the

second part of Syria which forms a most important economic outlet for the agricultural produce of northern Syria, (1) takes the gap between Mount Lebanon and Jebel Ansariyah.

The coast is followed for ten miles to Al Abdah, close to the coastal road, but the line then strikes inland crossing several streams in the plain of Akkar. It keeps near the Tripoli-Homs road, continually crossing it; the widest divergence is east of the plain of Bukaiyah, where the railway follows the Wadi Khalid and the road climbs Jebel Nasriyah to Hadidah. From Tripoli to Khirbat al Tin, a distance of fifty-six miles, the line rises steadily, but the steepest climb is from Akkari to a small pass overlooking Tell Kalakh. In the narrowest part of the gap, between Akkari and Tell Kalakh, it follows the south or left bank of a tributary of the Nahr al Kabir, and then descends slightly to cross the plain of Bukaiyah. Here the line follows the Wadi Khalid in a semi circular curve southwards, rising to Khirbat al Tin, where there is an extensive view over Lake Homs. The descent is gradual to the town of Homs, the Orontes being crossed again before the station is reached. None of the streams crossed required large bridges and there are few other engineering works of any significance.

(1) See page 19, Section on the Port of Tripoli.

3. The Baghdad Railway: The sections of the Baghdad railway are those between Aleppo-Maidan Akbas and Aleppo-Choban Bey in the west and from the frontier near Nissibin to Tell Kotehak across the Duck's Bill in the east.

In the west, the line from Maidan Akbas runs past Muslimiyah to Aleppo, reverses, and passes Muslimiyah again where it branches northeast to Choban Bey. From Choban Bey it runs just inside Turkish territory to Nissibin and then crosses the Duck's Bill to Iraq.

The line from Muslimiyah to Maidan Akbas climbs the eastern slopes of Jabal Siman northwest to Katma, beyond which it swings in half a circle round a spur of the Kurd Dagh, descending first a tributary and then the main stream of the Afrin Su to the station of Kutk Kulak. Beyond this place it ascends the tributary valley of the Ak Darah, crosses the Kurd Dagh beyond Raju, and descends to the valley of the Kara Su, which it follows to the Syrian boundary. There are many cuttings, tunnels and bridges, including a bridge four miles beyond Raju with a total length of 865 feet.

The line from Muslimiyah to Choban Bey crosses the Kuwaik Su eight miles from Muslimiyah and follows the valley to Ayun, where it turns north-eastwards through steppe

country, crossing many wadis, and rises gently to Choban Bey past Akhtarín. There are no engineering works of any importance in this section.

The far eastern section from Nissibin to Tell Kotchak presents no engineering difficulties. The steppe is undulating and the only obstacles are small affluents of the Jagh Dagh.

4. Ras al Nakurah to Tripoli: This line links Egypt, Palestine (now Israel) and north Syria, even though traffic is at present suspended on the Nakurah-Beirut section. It follows the coastal plain and the coast road very closely the whole way, generally keeping between the road and the shore, sometimes even running along the sandy shore, but occasionally crossing over. In the south it has to cut into the cliff face at Ras al Nakurah and Ras al Abyad, where severe curves and grades were necessary. Many small bridges and four hundred culverts cross the rivers between Nakurah and Beirut, the largest of these bridges being over the Litani, five and a half miles north of Tyre, the Nahr Awali, three miles north of Sidon, the Nahr Damur, two miles south of the town by the same name, and the Nahr Beirut. The line by-passes Beirut city railway station but is connected to the port by a spur ⁽¹⁾ and

(1) See page 15, section on the Port of Beirut.

trans-shipment facilities have been installed at the Beirut HBT where the new line crosses the metre or narrow gauge line to Damascus.

North of Beirut the line continues along the shore, still keeping close to the coast road. The construction of this section of the railway was more difficult than the Nakoura-Beirut section as the mountains rise very steeply close to the shore; bridges are necessary to cross the rivers - the Nahr al Kalb, Nahr Ibrahim and Nahr al Jawz. The line cuts under the great promontory of Ras al Shakkah (1) by a tunnel seventeen hundred yards long, two miles north of Batrun, and connects with the standard gauge line to Homs at Tripoli near the harbor area at El Mina.

5. Beirut to Damascus: This line links the two great cities of the south and is an outlet for goods as far away as Iraq. The tonnage of goods transported would have justified the construction of a standard gauge line with double track, but because of the steep passage across

(1) The road also passes through another tunnel at this point. The highway tunnel is located a bit above but less inland than the railway tunnel. During the past war, the Australians constructed a bypass to this highway tunnel by way of the village of Hamate in case the tunnel was blocked by demolitions. The railway tunnel is very vulnerable, and damage to it would effectively put the Beirut-Tripoli railway line out of operation.

Mount Lebanon and the Anti-Lebanon a narrow gauge track with slopes of seven in one-hundred and curves of three-hundred foot radius was built. Even so, the line could not be constructed without a rack rail.

From Beirut harbor the line follows the shore on stone revetments and arches and passes round a cliff, then runs through a rocky promontory in a tunnel one-hundred sixty-four yards long to enter Beirut town station. (1) From Beirut the railway takes a general east southeasterly direction and roughly the same route as the Damascus road, ascending the foothills of the Lebanon on the left bank of the Nahr Beirut valley. The ascent is steep almost from the beginning and the rack rail commences only four miles out of the town. It becomes much steeper after about six miles, and there are two reversing stations at 'Araya and 'Aley. The line continues to rise steeply through rock cuttings and with a gradient of one in fourteen, passing from the cultivated hill slopes and woods to bleak, bare, stony uplands. The highest point of the line, twenty-four miles from Beirut, is reached at the mountain pass of Dhar al Baidar (5,059 feet) either side

(1) There are two stations in Beirut, one to the north east of the port area near Nahr Beirut where it goes into the sea, and one near Furn al Chabbak on the same river and called the HBT (Haifa-Beirut-Tripoli) station.

of which the line passes through a tunnel. From the pass the railway, closely followed by the main road, descends rapidly towards the Beka'a by rack rail as far as Ohtaura, where the rack rail ends. This village is at the cross roads formed by the Matulla-Homs and the Beirut-Damascus road, and here the railroad parts company with the main Damascus road and follows the foothills of Mount Lebanon northeast to Zahlah (Zahle); the country is fairly broken in this section and there are several culverts across wadis. From Zahlah the railway strikes across the Beka'a to Rayak crossing the Litani and its affluents.

From Rayak the railway continues eastwards, and penetrates the Anti-Lebanon by the valley of the Wadi Yafufah. At Jisr al Rummanah the railway turns south and rises, though less steeply than in the Lebanon, to the watershed (4,610 feet) south of Sarghayah, between the Yafufah (Litani) and the Barada. The railway then follows the Zabdani depression nearly thirteen miles to Al Takkiyah, where the valley contracts and turns southeast. In several places the river valley becomes a narrow defile, and near Suk Wadi Barada the railway passes through a tunnel. Beyond Ain Fijah it turns south, and near Hamah it is joined by the Beirut-Damascus road before the two pass through the Rabwah gorges, crossing and recrossing

the Barada. Once through the gorges the railway enters the Damascus oasis, reaches the Baramkah station northwest of Damascus, and, skirting the western suburbs of the city, arrives at its terminus in the Hedjaz station. In the last section several bridges not exceeding sixty feet in length and a tunnel one hundred and eighty yards were necessary to negotiate the deeply incised Barada valley.

6. Damascus to Dera'a: This line serves both the Hauran and Jabal Druse. It goes in a southerly direction from Damascus, and has branch lines east to Suwayda (60 centimeter or 1 foot eleven and one half inches in gauge), and to Bosra Eski Sham. This line is also linked to Jordan by the continuation of the Hedjaz railway. Although the Hedjaz railway was originally built to transport pilgrims, it is now used for commercial purposes. The line is duplicated by the Dera'a-Damascus highway which lies to the west of the railway.

The line starts from the Hedjaz station and passes through the gardens of the oasis, which gradually give way to a well cultivated plain. At the foot of Jabal al Aswad the line turns east to cross a pass in the mountain range. It then descends the valley of the Nahr al A'awaj, crossing

the river, and skirts the west flank of Jabal Ma'ani past Kiswah, the highest station, to Masmiyah. The line turns west again here, and skirts the edge of the Lajah lava mass, with the Hauran plain stretching out to the west. From Ezra'a, the junction for the sixty centimeter branch line to Suwayda, the line strikes out across the Hauran for the twenty mile level stretch and then descends to Dera'a leaving the Lajah to the east.

Bridges crossing the small wadis on this line are inconsiderable. The largest is a sixty foot masonry bridge between Damascus and Kiswah across the Nahr al A'awaj. The stations between Damascus and Dera'a have water tanks of 5,600 gallons supplied from wells by steam pumps. There is no water tank at Jabab.

The branch line from Ezra'a to Suwayda is about twenty-eight miles in length and is of 60 cm. gauge. It was built after the Druse rebellion in 1925. The line strikes southeast across the Hauran to Harak, where it turns east and starts to rise gently into the foothills of the Jabal Druse. The ascent is easy and few engineering works were needed. From Umm Walad the railway turns north northeast to its terminus at Suwayda, the capital of the Muhafazat of the Jabal Druse. This line is not now in operation and the rails have been taken up.

Three miles east of Dera'a the branch line to Bosra eski Sham turns off and follows the Wadi Zaydi south-east about one mile north of the river bed for the greater of its way. It crosses the stream at Tayibah, whence it turns more to the east through Ghasm to Bosra eski Sham.

7. Samakh to Nassib: This is the Syrian section of the narrow gauge line which links the Israeli port of Haifa with Dera'a, and continues thence to the Jordanian frontier.

The line at Samakh lies below sea-level in the Jordan valley. It enters the Yarmuk Valley, which is narrow with steep sides and crosses the Syrian frontier three miles from Samakh. The railway climbs fairly steeply and passes from one side of the river to the other by girder bridges; there are many deep cuttings and some tunnels. Eighteen miles from Samakh sea-level is reached. The line continues to wind up the valley at the foot of steep slopes, ascending at a gradient of about seventeen in a thousand. At Makaran, twenty miles from the frontier, the railway crosses to the right bank just above the confluence of the Nahr al Ihrar and turns up the valley of this stream, then about three miles farther it re-enters the Yarmuk valley higher up the side. Fifteen miles east of Makaran

the railway follows the Wadi Maddan up to Tell al Shahab on the edge of the Hauran plateau. From here the line crosses the plateau rising gently past Mazarib to Dera'a, the junction with the main Hedjaz railway. The line to 'Amman goes southeast from Dera'a crossing the Wadi zaydi two miles before Kum Gharz, the junction for Bosra eski Sham. Here the line turns south southeast for seven miles past Nassib to the Jordan frontier, twice crossing a tributary of the Wadi zaydi.

The steep ascent from the Jordan valley, which is six hundred and seventeen feet below sea-level at Samakh, and the narrowness of the Yarmuk valley, have necessitated many engineering works, cuttings, tunnels and bridges, three of the latter exceeding three hundred and sixty feet in length. Of these bridges, the Israelis blew up the one at Al Hammah.

B I B L I O G R A P H Y

A. Reports; Lebanon

1. State Department Report 227, American Legation, Beirut, 24 May, 1950.
2. State Department Report 93, American Legation, Beirut, 19 September, 1950.
3. Alexander Gibb Report for the Economic Development of Lebanon, London, 1948.
4. Navigational Information, Port Directory, Sixth United States Fleet, 1949 edition.
5. Seaports and Harbors Report 17, American Legation, Beirut, 12 July 1950.
6. State Department Report 33, American Legation, Beirut, 26 July, 1950.
7. Basic and Annual Railway Report, American Legation, Beirut, 27 December, 1949.

B. Reports; Syria

1. Alexander Gibb Report for the Economic Development of Syria, London, 1947.
2. Summary of Basic Economic Information, Commercial Section, American Legation, Damascus, 3 July, 1950.
3. State Department Report 63, American Legation, Damascus, 21 February, 1950.

4. Basic and Annual Highway Report 187, American Legation, Damascus, 6 October, 1950.
5. Hedjaz Railway Project Report 60, American Legation, Damascus, 25 June, 1948.
6. State Department Report 59, American Legation, Damascus, 5 August, 1947.
7. Recent Syrian Railroad Developments Reports, American Legation, Damascus, 6 March, 1948.

C. Books

1. Mme. Saint-Rene Taillander, Ce Monde Disparu, Paris, 1947.
2. Said B. Himadeh, The Economic Organization of Syria, Beirut, 1936.
3. Dr. Georges Samne, La Syrie, Paris, 1920.
4. Gabriel Menassa, Plan de Reconstruction de l'Economie Libanaise, et la Reforme de l'Etat, Beirut, 1950.
5. La Syrie et le Liban, sous l'Occupation et le Mandat Francais, 1919-1927, Berger-Levrault, Editeurs, Nancy, 1927.
6. Jacques Edde, Geographie: Syrie-Liban, Beirut, 1941.
7. N. Verney and G. Dambmann, Les Puissances Etrangeres dans le Levant, en Syrie et au Liban, Paris, 1900.
8. Richard Coke, The Heart of the Middle East, London, 1925.
9. Eleuthere Elefteriades, Les Chemins de fer en Syrie et

au Liban, Beirut, 1944.

10. Saïd B. Himadeh, The Economic Organization of Palestine, Beirut, 1938.
11. Jacques Weulersse, Les Paysans de Syrie, et du Proche Orient, Gallimard, Paris, 1946.

D. Dictionaries

1. Nouveau Petit Larousse, Illustré, Paris, 1948.

E. Pamphlets

1. Blue Booklet issued by Compagnie de Port, Des Quais et Entrepôts de Beyrouth, Édition Publicité, Beirut, 1949.
2. Pamphlet issued 17 June, 1950, by the Compagnie du Port de Beyrouth entitled, Inauguration de Raccordement du Port de Beyrouth à la voie normale, Beirut, 1950.

F. Articles

1. Eleuthere Elefteriades, Les Voies Ferrées au Liban et en Syrie, in the magazine, Les Cahiers de l'Est, vol. iv, Beirut, 1946.

G. Newspapers

1. Le Commerce du Levant, Beirut.

2. L'Orient, Beirut.
3. Nida' al Watan, Beirut.
4. Al Rawad, Beirut.
5. Al Balad, Damascus.

H. Miscellaneous

1. Speech: Given by Syrian Premier Khalid al 'Azm, 28 January, 1950, Damascus.
2. Paper entitled: (in Arabic Language)
'What the Ministry of Public Works (Roads and Building Department) has realized in the fields of Roads, Buildings and other Development Projects.' dated 19-23 July, 1950, Beirut.

I. Encyclopedias

1. Encyclopedia Britannica.

TABLE I

TRAFFIC AT THE PORT OF BEIRUT

(from page 15, Statistical Bulletin, Fourth Trimester, 1950
Ministry of National Economy, Beirut, Lebanon, Vol. No. 4)

Years & Months	Vessels Entering		Goods (in tons)		
	Number	Total Tonnage	Imports	Exports	
1949	1801	2,328,044	806,075	143,094	
1950	2109	2,561,307	832,475	219,006	
1949	Jan	138	202,630	90,721	9,268
	Feb	126	173,159	77,093	9,374
	Mar	124	165,855	71,564	7,396
	Apr	128	176,137	67,331	10,380
	May	146	201,941	56,699	7,042
	June	126	161,073	44,630	7,880
	July	158	172,817	49,475	4,774
	Aug	183	231,288	78,354	6,446
	Sept	184	211,231	71,564	15,132
	Oct	180	248,173	79,539	19,586
	Nov	168	216,937	74,085	17,396
	Dec	140	166,803	45,020	28,420
1950	Jan	147	214,087	81,579	17,350
	Feb	107	171,403	36,838	21,703
	Mar	169	214,425	71,141	15,411
	Apr	153	204,074	48,479	13,788
	May	182	218,371	51,449	12,063
	June	161	222,974	81,661	12,777
	July	165	247,129	90,712	13,436
	Aug	208	220,106	83,500	18,007
	Sept	215	209,098	67,849	19,981
	Oct	196	218,225	82,696	19,719
	Nov	201	199,501	61,430	26,569
	Dec	205	221,914	75,141	28,202

TABLE II

Traffic at the Port of Beirut, incoming and outgoing, during the year of 1950 by nationality of vessel.

1. During the year of 1950, 1,316 steamships and 788 sailing vessels with total tonnages, respectively of 2,496,473 and 64,254 tons called at Beirut, and discharged, respectively, 779,058 and 51,694 tons of goods.
2. During the same year, 1,309 steamships and 780 sailing vessels with total tonnages, respectively of 2,492,121 and 64,015 tons left the port of Beirut with total outgoing loads, respectively, of 186,976 and 36172 tons of goods.

The breakdown of these vessels by nationality is as follows:

	Arrival			Departure		
	No.	Tonnage	Goods (in tons)	No.	Tonnage	Goods (in tons)
Italian	253	402,954	79,990	254	404,860	22,884
English	181	306,394	210,571	180	304,793	23,144
Norwegian	116	266,213	73,404	115	264,713	12,855
Turkish	94	187,545	7,702	92	187,052	9,412
Egyptian	83	138,505	25,057	83	138,505	14,593
American	74	394,664	124,326	74	394,664	18,282
Swedish	74	92,230	39,794	72	90,291	5,149
Greek	61	105,895	8,444	62	106,379	11,641
Yugoslav	55	90,949	23,270	54	89,578	8,456

TABLE II (Continued)

	Arrival			Departure		
	No.	Tonnage	Goods (in tons)	No.	Tonnage	Goods (in tons)
Danish	53	105,591	36,590	53	105,725	11,051
Dutch	47	50,488	18,881	48	50,881	3,820
German	35	39,141	21,777	35	39,141	10,833
Panamanian	31	41,960	23,091	31	41,960	2,845
Spanish	26	44,413	23,817	26	44,413	8,679
Lebanese	26	6,219	2,500	24	5,838	2,757
French	24	118,517	14,791	24	118,517	5,981
Belgian	22	23,778	15,708	23	25,111	8,581
Hungarian	15	6,345	3,558	14	6,044	2,003
Polish	11	17,885	6,342	10	16,889	344
Syrian	6	2,124	1,217	6	2,124	941
Su'udi Arabian	6	1,440	78	6	1,440	888
Rumanian	5	15,473	7,609	5	15,473	182
Honduras	4	17,556	2,705	4	17,556	-
Bulgarian	4	1,332	773	4	1,332	27
Finnish	3	4,945	398	3	4,945	80
Swiss	2	1,746	5,094	2	1,746	-
Argentinian	1	4,666	2	1	4,666	1,212
Indian	1	4,451	516	1	4,451	-
Costa Rican	1	1,772	-	1	1,772	-
Monaco	1	1,182	803	1	1,182	336
Cyprus	1	100	250	1	100	-
	1,316	2,496,473	379,058	1,309	2,492,121	186,976

Source: Le Commerce du Levant, Beirut, Lebanon, 10 Feb. 1951, page 2.

TABLE III

Imports and Exports of Port of Beirut (1938-1948)

(from page 63, Bulletin Economique de la Chambre
de Commerce d'Alep, 1949)

In Metric Tons

Year	Imports	Exports
1938	348,115	118,422
1939	364,003	97,246
1940	218,396	33,280
1941	94,545	2,935
1942	264,416	2,544
1943	190,690	1,276
1944	156,159	27,414
1945	216,735	22,501
1946	223,052	44,410
1947	308,183	47,017
1948	577,510	41,443

TABLE IV

Imports and Exports of Port of Tripoli

(from page 64, Bulletin Economique de la
Chambre de Commerce d'Alep, 1949)

In Metric Tons

Year	Imports	Exports
1938	95,723	72,521
1939	94,181	86,998
1940	44,778	43,389
1941	109,545	2,499
1942	165,655	1,258
1943	172,132	23,685
1944	205,091	66,148
1945	239,168	76,606
1946	44,756	14,303
1947	47,960	19,511
1948	96,577	17,212

TABLE V

Imports & Exports of Port of Latakia
(1938 to 1948)

(from page 64, Bulletin Economique de la
chambre de Commerce d'Alep, 1949)

In Metric Tons

Year	Imports	Exports
1938	11,220	19,563
1939	18,686	43,297
1940	5,256	9,717
1941	1,884	1,550
1942	786	1,569
1943	1,543	391
1944	2,376	3,435
1945	729	10,044
1946	2,775	7,880
1947	5,212	13,679
1948	18,536	6,389

TABLE VI

Statistical Information on Vehicles in
Lebanon, 1948, 1949, 1950.

(from page 17, Statistical Bulletin, Fourth Trimester,
1950, Ministry of National Economy, Beirut, Lebanon,
Vol. No. 5)

	1948	1949	1950
A. Passenger Cars			
a) Private			
1. Ordinary	5615	6608	8,036
2. Concessionary Societies	215	285	328
3. State-owned	134	147	176
4. Municipal-owned	11	26	27
5. Diplomatic	119	139	149
6. Consular	12	18	26
b) Taxis	1948	1964	1,981
Total	8,054	9,187	10,723
B. Autobuses			
a) Private			
1. Ordinary	(56)	(93)	(113)
2. Concessionary Societies	-	-	-
b) Public Rental ⁽¹⁾			
1. Ordinary Registration	305	313	318
2. Special Registration	287	274	248
Total	648	680	679

(1) Ordinary Registration is that registration granted

(continued on next page)

TABLE VI (Continued)

	1948	1949	1950
C. Trucks			
a) Private			
1. Ordinary	1052	1263	1229
2. Concessionary Societies	249	470	522
3. State-owned	151	192	215
4. Municipal-owned	111	111	126
b) Public Rental ⁽²⁾			
1. Ordinary Registration	642	647	680
2. Special Registration	266	284	247
Total	2471	2967	3019
D. Motorcycles	(605)	(741)	(850)
Total	605	741	850

previous to World War II.
 Special Registration is that registration granted during World War II, over and above the established legal quota of motor vehicles.

(2) See note (1) on preceding page.

TABLE VII

Road Network in the Republic of Syria
by Type of Road & Zone, in miles (at end of 1948)

(from page 174, Statistical Handbook, Syrian
Ministry of National Economy, 1949).

Type of Road & Name of Zone ⁽¹⁾	1946	1947	1948
Tarred Surfaced Road ... Total	1195	1358	1519
Southern Zone	517	537	669
Northern Zone ⁽²⁾	517	656	677
Western Zone	161	165	173
Rolled Gravel Roads ... Total	750	634	662
Southern Zone	356	259	298
Northern Zone	311	300	296
Western Zone	83	75	68
Non-Surfaced Dirt Roads. Total	2045	2100	2717
Southern Zone	917	682	1207
Northern Zone	612	637	659
Western Zone	516	781	851
Grand Total, all Roads	3990	4092	4898

(1) The Syrian Ministry of Public Works divided the country of Syria into three districts:

(a) Southern Zone, which includes Damascus, Homs, Hama, Hauran, and Jabal Druze.

(b) Northern Zone, which included Aleppo, Jazirah, and Euphrates.

(c) Western Zone, which includes the Latakia region.

(2) Recently the Northern Zone has had the districts of the Jazirah and the Euphrates separated from it, which two districts now make up the Eastern Zone. The total road network in the Eastern Zone, which appears in the table above included in the totals for the Northern zone are:

(a) Tarred Surfaced Roads	201 miles
(b) Rolled Gravel Roads	118 "
(c) Non-surfaced dirt Roads	567 "

TABLE VIII

Statistical Information on Vehicles in Syria,
by district (at end of 1948)

(from page 175, Statistical Handbook, Syrian
Ministry of National Economy, 1949).

	Total	Southern Zone Damascus	Northern Zone Aleppo	Western Zone Latakia
A. Passenger Cars				
a) Private				
1. Governmental	365	189	156	20
2. Diplomatic	49	49		
3. Consular	11	11		
4. Ordinary	1371	410	894	67
b) Taxis	2911	1207	1627	77
Total	4707	1866	2677	164
B. Autobuses				
a) Private	--	--	--	--
b) Public Rental ⁽¹⁾				
1. Ordinary Registration	1197	505	562	130
2. Special Registration	41	20	21	-
Total	1238	525	583	130

(1) See note (1) on Table VI Statistical Information on
Vehicles in Lebanon, 1948, 1949, 1950.

(continued on next page)

TABLE VIII (Continued)

	Total	Southern Zone Damascus	Northern Zone Aleppo	Western Zone Latakia
G. Trucks	:	:	:	:
a) Private	:	:	:	:
1. State-Owned	317	95	204	18
b) Public Rental (2)	:	:	:	:
1. Ordinary Registration	3220	1183	1881	156
2. Special Registration	746	506	217	23
Total	4283	1784	2302	197
D. Motorcycles	(753)	(301)	(415)	(37)
Total	753	301	415	37
E. Total of all Vehicles (excluding motor- cycles)	10,228	4175	5562	491

(2) See note (1) on Table VI Statistical Information on Vehicles in Lebanon, 1948, 1949, 1950.

- Southern District - Includes the districts of Homs, Hama, Jabal Druze and the Hauran.
- Northern District - Includes the districts of Euphrates and the Jazirah.
- Western District - Includes the district of Latakia.

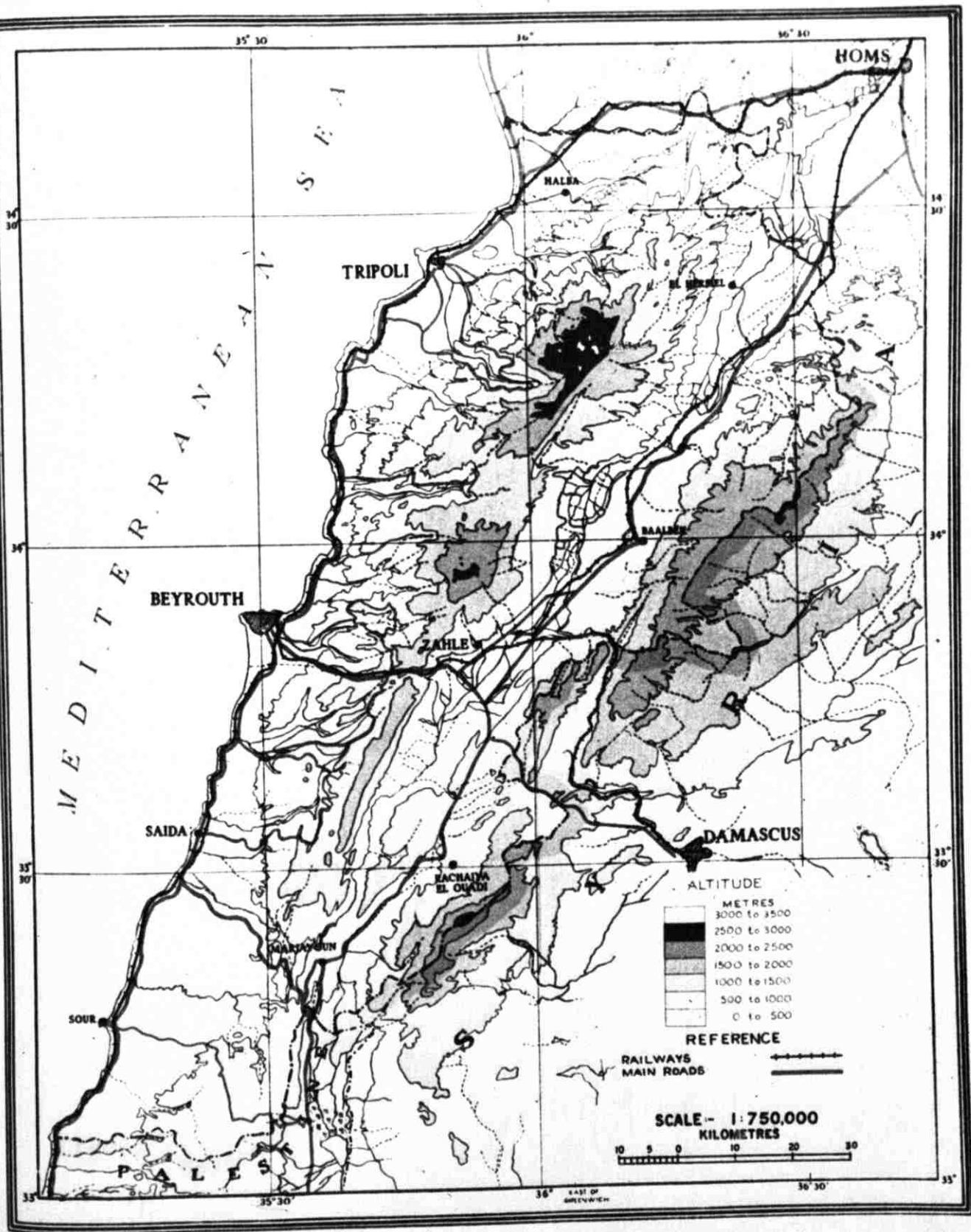
TABLE IX

(1)
**Passengers and Goods Transported by Railroads
 in the Republic of Lebanon**

(from page 16, Statistical Bulletin, Fourth Trimester,
 1950, Ministry of National Economy, Beirut, Lebanon,
 Vol. No. 4)

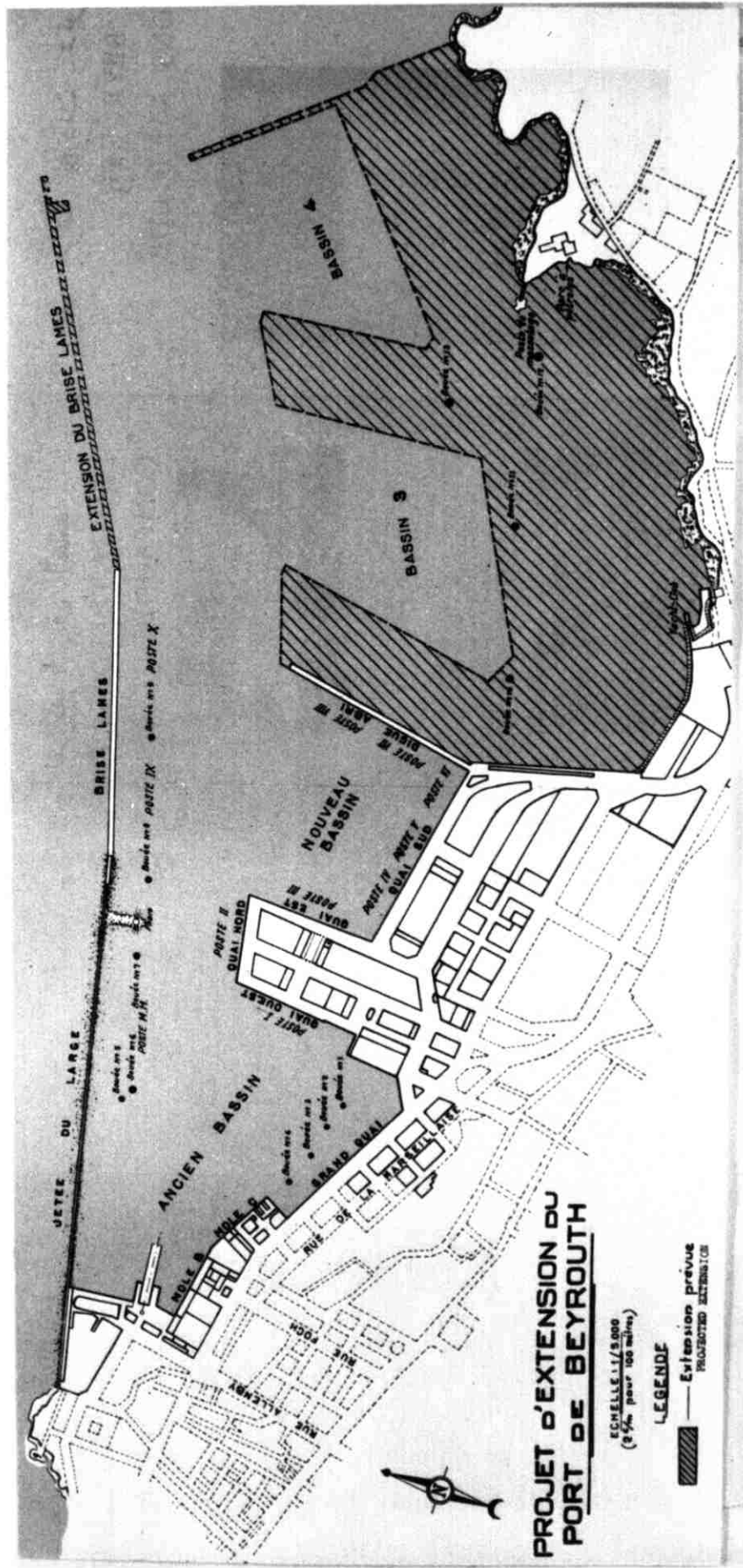
Years & Months	No. of Passengers	Tons of Goods
1949	67,000	516,000
1950	57,000	597,000
1949		
Jan	4,000	44,000
Feb	5,000	34,000
Mar	7,000	45,000
Apr	9,000	40,000
May	7,000	46,000
June	6,000	38,000
July	5,000	40,000
Aug	6,000	41,000
Sept	6,000	45,000
Oct	4,000	50,000
Nov	4,000	51,000
Dec	4,000	42,000
1950		
Jan	5,000	39,000
Feb	4,000	34,000
Mar	4,000	40,000
Apr	5,000	44,000
May	5,000	49,000
June	5,000	51,000
July	5,000	55,000
Aug	5,000	57,000
Sept	5,000	46,000
Oct	5,000	55,000
Nov	5,000	59,000
Dec	4,000	68,000

(1) Over the two rail lines located within Lebanese Territory, i.e., the DHP and HBT, and only the traffic over the Lebanese sections of the DHP railway are reported, even though this railroad continues into Syria.



SIR ALEXANDER GIBB & PARTNERS,
 CONSULTING ENGINEERS,
 QUEEN ANNE'S LODGE,
 WESTMINSTER, S.W.1.

GENERAL MAP OF LEBANON
MAP No 1



PROJET D'EXTENSION DU PORT DE BEYROUTH

ECHELLE 1:1/2000
(2 1/2 cm pour 100 mètres)

LEGENDE

▨ — Extension prévue
PROJECTED EXTENSION

MAP No. 3

TRIPOLI



- | | |
|--------------------|--------------------|
| 1. La Ghazala | 17. The Castle |
| 2. Medina Ghazala | 18. Medina Ghazala |
| 3. Medina Ghazala | 19. Medina Ghazala |
| 4. Medina Ghazala | 20. Medina Ghazala |
| 5. Medina Ghazala | 21. Medina Ghazala |
| 6. Medina Ghazala | 22. Medina Ghazala |
| 7. Medina Ghazala | 23. Medina Ghazala |
| 8. Medina Ghazala | 24. Medina Ghazala |
| 9. Medina Ghazala | 25. Medina Ghazala |
| 10. Medina Ghazala | 26. Medina Ghazala |
| 11. Medina Ghazala | 27. Medina Ghazala |
| 12. Medina Ghazala | 28. Medina Ghazala |
| 13. Medina Ghazala | 29. Medina Ghazala |
| 14. Medina Ghazala | 30. Medina Ghazala |
| 15. Medina Ghazala | 31. Medina Ghazala |
| 16. Medina Ghazala | 32. Medina Ghazala |

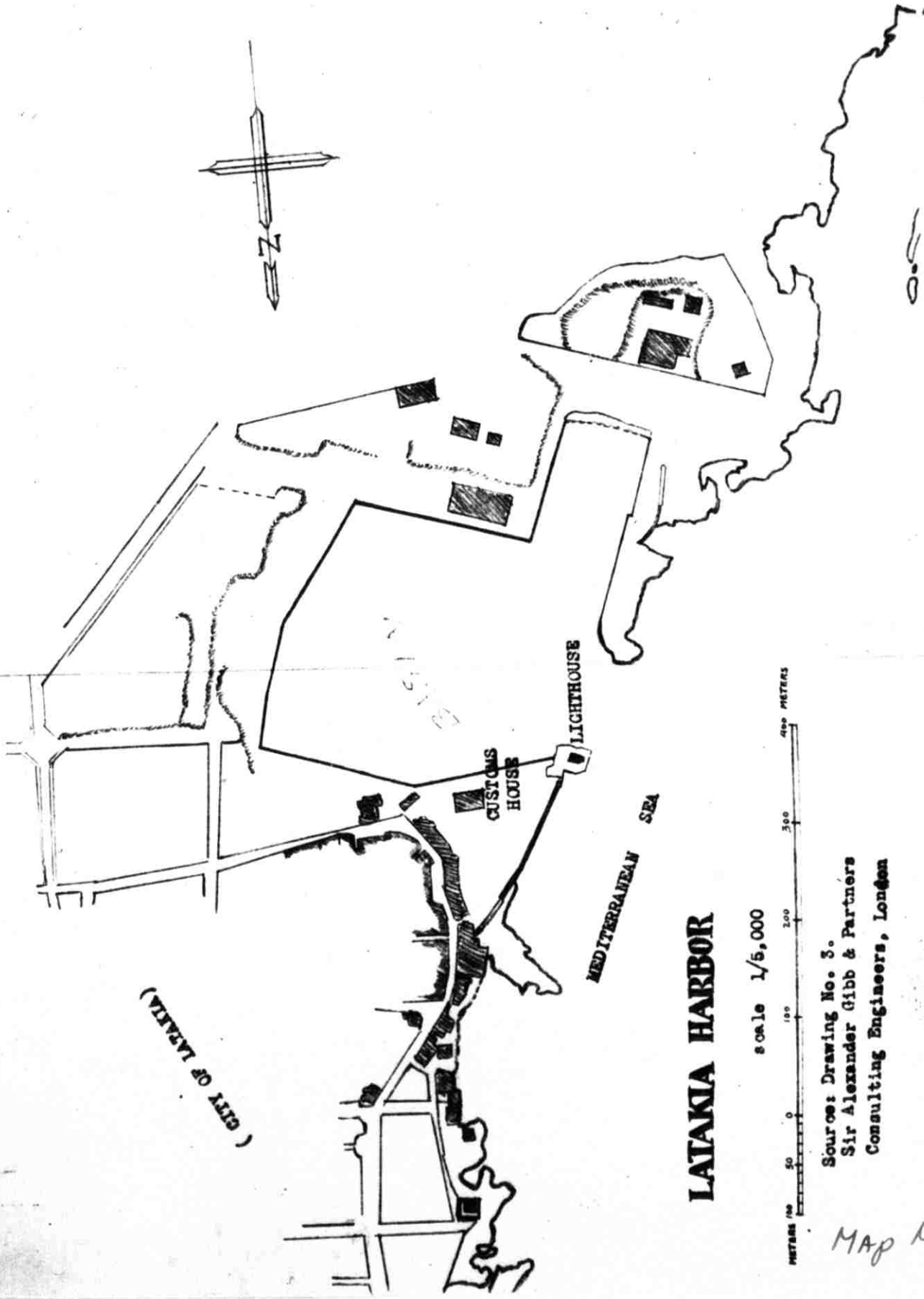


MP CATOHL BEYROUTA

EDICE PAR LA S.E.T.

MAP
No. 4

(VIEWED TO THE S)



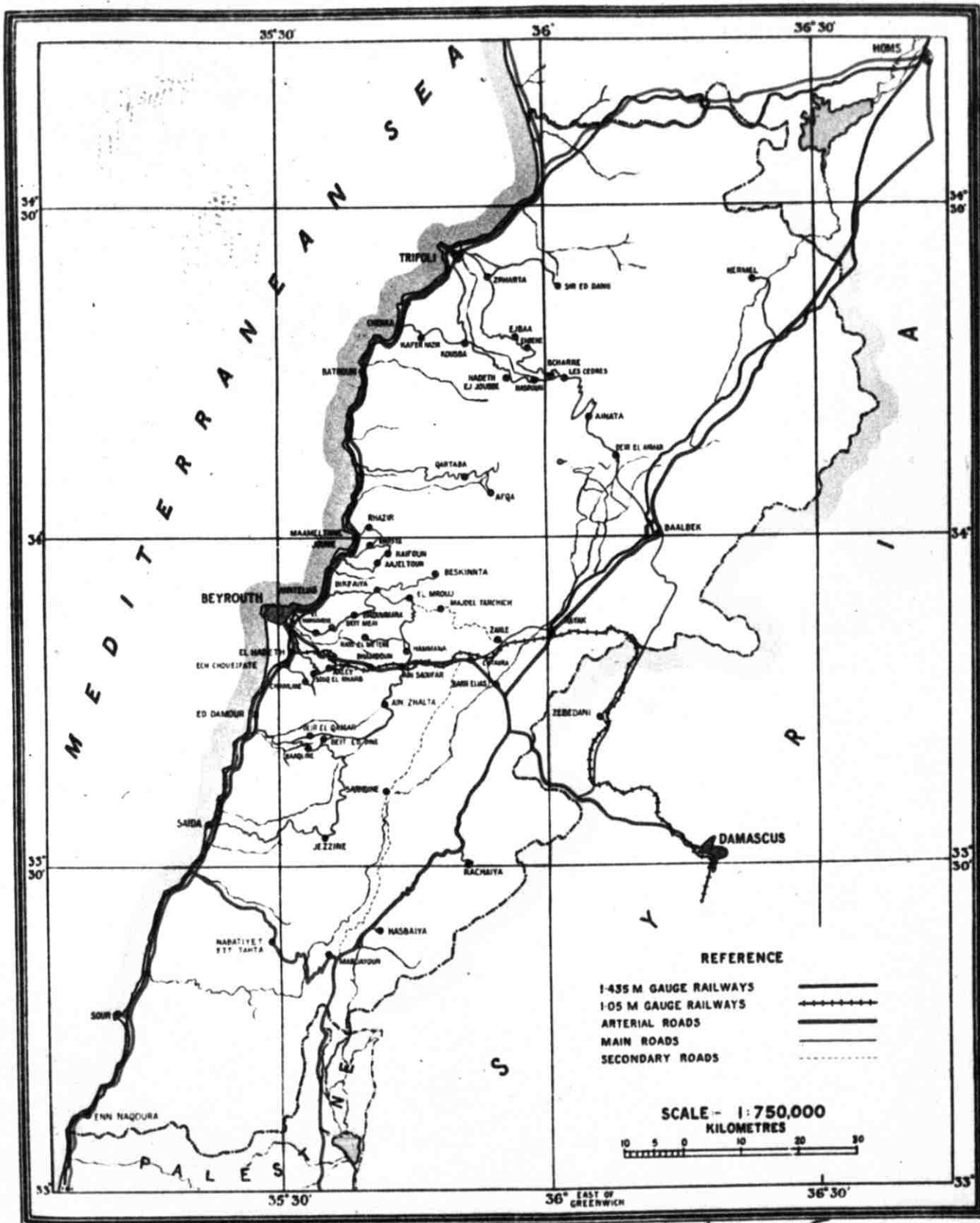
LATAKIA HARBOR

scale 1/5,000



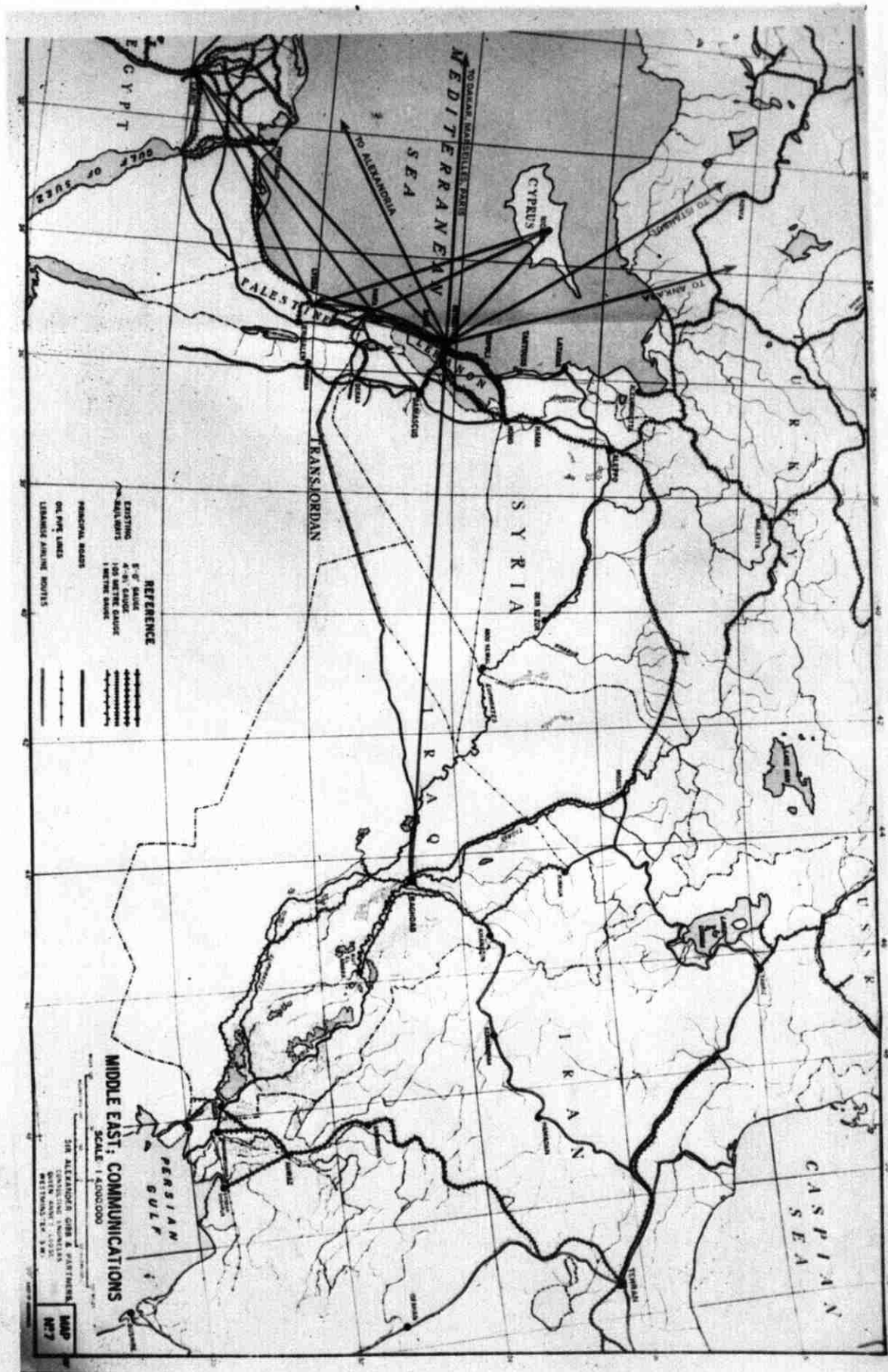
Source: Drawing No. 3.
Sir Alexander Gibb & Partners
Consulting Engineers, London

MAP No. 5



SIR ALEXANDER GIBB & PARTNERS,
CONSULTING ENGINEERS,
QUEEN ANNE'S LODGE,
WESTMINSTER, S.W.1.

LEBANON
ROAD AND RAIL COMMUNICATIONS
MAP No 6



REFERENCE

5 FT GAUGE
 4-10 GAUGE
 100 METRIC GAUGE
 1 METRIC GAUGE

EXISTING TELEGRAPHS
 PRINCIPAL ROADS
 ON PROPOSED LINES
 PROPOSED AIRLINE ROUTES

MIDDLE EAST: COMMUNICATIONS

SCALE 1:4,000,000

SIN ALEXANDER GIBB & PARTNERS
 CONSULTING ENGINEERS
 BATHING, ST. 3, W.

MAP NO. 177