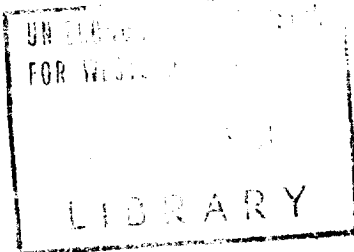




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Transport and Communications
Among Developing Countries *

* Report on the State of Transport and Communications Among Developing Countries submitted by the UNDP Administrator to the High Level Meeting on the Review of Technical Co-operation among Developing Countries (Geneva, 26 May - 2 June 1980) and submitted to the Eighth ECWA session on the basis of Decision 1/2 of this meeting.

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among developing countries

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Item 9 (b) of the provisional agenda

REPORT ON THE STATE OF TRANSPORT AND COMMUNICATIONS
AMONG DEVELOPING COUNTRIES

Report of the Administrator

Corrigendum

Page 11, paragraph 23, last line

The last line should read

06,000 tons deadweight

Page 12, paragraph 27, first line

For Red Sea read Gulf and Red Sea

Page 16, paragraph 41, fifth line

For Western Asian read Western Asia

Page 18, paragraph 49, fourth line

For buildings read building



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REPORT ON THE STATE OF TRANSPORT AND COMMUNICATIONS
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Report of the Administrator

Summary

Recommendation 30 of the Buenos Aires Plan of Action endorsed by General Assembly resolution 33/134 emphasized that the strengthening of transport and communications among developing countries was a necessary condition for TCDC to become a major element in the development process and called on all Governments of developing countries to make specific and sustained efforts to strengthen, improve and maintain all means of transport and communications between their countries. Because of the obvious primacy of transport and communications as the foundation for all co-operation among developing countries, including ECDC and TCDC, the Administrator presents to the high-level meeting this paper on the state of development of modern transport and communications among developing countries.

The paper reviews briefly the historical developments in transport and communication: the self-reliant South-South relationships of the ancient and medieval period, the break-up of this linkage in the period of European expansion, and the colonial and post-colonial dependence of the countries of the South on the North. It examines the transport and communications imbalances that exist between North and South and provides subsectoral assessments of the present state of development of modern transport and communications among developing countries and makes some general observations and recommendations for improvement of the transport and communication links among developing countries. Volume II (maps, diagrams and tables) helps to compare the quantity, quality and ownership of the transport and communications infrastructure in the North and the South.

* TCDC/5 (vol. II) contains maps, diagrams and tables.

Acknowledgements

This report was prepared in co-operation with the relevant United Nations specialized agencies and the regional commissions. The Administrator expresses his appreciation to the Transport Divisions of ECA, ECWA, ESCAP, ECLA and to UPU, IMCO and the Shipping Division of UNCTAD for their reports and documentation on transport and communications. The present document has drawn considerably on this material. Special thanks are due to ICAO for its "Survey of the development of air traffic between developing countries 1954-1977" and to ITU for its report "The ITU and technical co-operation among developing countries". Both studies were specifically done by these two agencies for the present report and they have been extensively used in it. The historical aspects of transport and communications are based on a study made by consultant Ms. Rehana Ahmad. Extensive use has been made also of the report on sea and land transport prepared by consultant Dr. A. D. Couper, Professor of Maritime Studies at the University of Wales. The Administrator acknowledges with much appreciation their contribution to his report.

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I. HISTORICAL PERSPECTIVE

A. Ancient and medieval trade and transport links in the South

1. Long-distance travel and transport in the South originated in pre-historic times and spread widely with the growth of the ancient civilizations of Egypt, Mesopotamia, China and India. It is accepted by scholars that the earliest oceanic voyages were undertaken by the maritime peoples of the Indian Ocean from the Red Sea to the China Seas, and that a dynamic trade flourished among them which continued into the Middle Ages: the Arabs, the Persians, the Indians and the Javanese were active at sea. Indian ships sailed directly to East African ports thanks to the techniques of monsoon shipping well-known to the maritime nations of the Indian Ocean. By the twelfth century the Chinese traders were travelling as far as East Africa, in bottoms that were several times wider than the flagships of Columbus. Marco Polo described these Chinese junks as decked, double-planked, double-bilged against stranding and fitted with water-tight bulkheads. Overland routes were equally important in the early history of Asia, Africa and Latin America. Western Asia was served by a network of overland routes. The fabled incense roads originated in southern Arabian ports and in the Hadramaut (see vol. II, fig. 1). By the third century A.D. there were at least four trans-Asian routes, one of them the Silk Route (Syria-Turkestan-China, vol. II, fig. 2). In South-East Asia, there were intricate networks of inter-island trading systems reaching as far as China and northern Australia (see vol. II, fig. 3). In pre-colonial Africa there were three main groups of trans-Saharan routes from Songhai, Ashanti, Kanem to Morocco, Egypt, Libya and the markets of the Magureb. Six different routes converged on Timbuktu, which rivalled many markets of the North. On the other side of the continent the great urban civilizations of East Africa, like Zimbabwe, flourished due to their strategic location connecting the maritime trade of the Indian Ocean with the inland trade of the interior (see vol. II, fig. 4).

2. The long-distance trade of pre-colonial Asia and Africa was a system of international specializations and vigorous exchanges, based largely on bulk goods. This can be seen from the enormous number of trade routes - oceanic and overland - the number of countries participating in these exchanges, the regularity of voyages, tonnages of ships, sizes and types of caravans, the types of commodities exchanged such as rice, textiles, salt, horses and timber, and the number of traders and trading communities that arose in widely dispersed and numerous trading centres.

3. Less detailed information is available regarding South America. Spanish chronicles speak, however, of the Indians' familiarity with the sea. Interregional communications among peoples of Mesoamerica prior to colonization were extensive. The Incas had a well-constructed highway system as well as a relay messenger system (see fig. 5). The Aztecs had constructed a network of roads criss-crossing the two great highlands. Trade carried on over long distances, provided intimate links between the Aztecs of Mexico and the Mayas of Yucatan. Colonization destroyed the basis of this economy by reorganizing it in the service of a metropolitan market. Despite the massive destruction of the system and its records, enough evidence exists to establish that Mesoamerica, like countries of Asia and

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Africa, possessed a complex and rich system of regional exchanges, a highly developed infrastructure to facilitate these exchanges and an extensive body of sophisticated technical knowledge which ranged from agriculture to architecture, metallurgy to manufacture and pharmacopeia.

4. This variety and scope of exchanges in what is now the developing world involved transfers of technology such as navigational techniques, gun-casting and gunpowder, paper and printing, dyes and alloys. Clearly the trade routes of the pre-colonial era were the great arteries whereby knowledge travelled from one country to another and even in the seventeenth century there could be no claims in the North for technical superiority in transport over the South.

B. The colonial period: the severance of South-South links and the establishment of North-South-North linkages

5. Technological and trade links in the South began to break up after the opening of the Cape route to India in 1497. The South-South linkages were destroyed not by the North's productive system or commercial enterprise, but by its superiority in military techniques. The process of severance of the ancient trade and transport links took various forms in different parts of the world. In Latin America the destruction of the traditional structure was complete. In Africa, the destruction of the eastern ports ruined the Zimbabwe empire; in the Persian Gulf, the capture of Hormuz spelled doom to the Arab merchants as well as to the overland caravan routes. The commanding position of the Arabs was completely destroyed within 15 years of the Portuguese arrival in the region. The fall of Malacca in 1511 was disastrous to the economies of Indonesia and the Philippines, which were important to the transit trade between China and India and to the spice trade of the region. The arrival of European gunboats along the West African coast in search of gold and slaves adversely affected the trans-Saharan trade routes and caused the political and economic decline of North Africa. Some areas south of the Sahara were also drawn into the slave trade with corresponding decline in their productive systems. The scramble for colonies in Africa in the late nineteenth century destroyed any remnants of the continent's autonomous system of linkages.

6. By 1760, there was a recognizable world "colonial" trading system. By then, commodities were drawn to Europe from every part of the tropical world and populations moved from one part of the world to another for employment on plantations (fig. 6). Land use was beginning to change in many parts of the world to meet the requirements of European commerce. Africa, the greater part of South America and much of Asia became extensions of the industrial maritime powers of the North, as sources of raw materials and food. The colonial transport system was constructed mainly to serve colonial military, political and economic interests. The spatial aspects of the colonial inheritance can be appreciated by comparing the density of roads and rails (see vol. II, figs. 7, 8) within Europe and North America with the paucity of roads and railways in the developing continents. Merchant shipping became highly concentrated under the flags of the northern nations, and even telecommunications systems developed in mid-nineteenth century mainly served the colonial administrations.

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7. The concentration on production of primary products by many of the developing countries, the intricate web of transport routes, communication channels, trading relationships and financial flows were largely determined to suit the needs of the more developed countries. Many of the less developed countries become large scale primary producers and several of them have remained so.

II. IMBALANCES IN TRADE, TRANSPORT AND COMMUNICATIONS BETWEEN NORTH AND SOUTH

8. As figure 9 (vol. II) shows, the greatest proportion of exports from developing regions is destined for the developed countries and relatively little is directed to other developing countries, even in the same region. There is a growth of trade between the developed countries as seen in figure 10 (vol. II), and a rising level of exports from the developed to the developing countries. The level of trade between the developing countries is by contrast relatively low and the over-all growth has been slight over the years. This is attributable to the paucity of inter- and intraregional links, the low level of transport infrastructure and the imbalances in the ownership and control of transport in the world.

A. Maritime transport

9. Developing countries are highly dependent on international seaborne trade (see vol. II, table 1). They generate, on average, about 40 per cent of world seaborne trade, and bulk commodities, which dominate seaborne trade, flow primarily towards the developed countries from developing countries. General cargoes of manufactured goods move mainly between developed countries but they are also principal imports of the developing countries, increasingly transported in container vessels. Currently the bulk of crude oil, 90 per cent of which originates in developing countries, is transported in ships of the developed countries or in tankers beneficially owned by them and registered under flags of convenience. The developing countries have very minimal participation in container shipping and only small presence in bulk and hydrocarbon sectors (see vol. II, table 3). The imbalances in shipping are reflected in the ownership of sea transport. Figure 11 (vol. II) shows the flag divisions among the developed, developing socialist and "open registry" (flags-of-convenience) countries. It may be noted from figure 12 (vol. II) that the percentage of tonnage under developed-country flags has been declining slightly in recent years, while the tonnage under the flags of convenience has increased considerably in the period 1965-1977. This apparent decline in developed-country tonnage is due to the transfers of many of their ships to flags-of-convenience registry. (See vol. II, table 4 for beneficial ownership of open registry fleets.) Since the developing countries are trade dependent, freight rates play a significant role in the marketing of developing-country products. There is also a predominance of all types of ships on order for the developed, market-economy countries (see vol. II, table 5).

B. Air transport

10. In spite of the progress in aviation made in developing countries since the 1950s, the airlines and airports of these countries are still very small compared with those of the developed countries. The airlines of the developed countries are receiving more than four fifths of total world airline revenues and holding some four fifths of world airlines assets. Most developing countries are better linked by air to developed countries than among themselves; and in many cases it is easier to travel between developing countries by a circuitous routing via a developed country than direct. Figure 13 (vol. II) shows the international traffic carried within and between regions on scheduled air services in 1977.

11. Since airlines from developing countries tend to be smaller, their levels of costs tend to be considerably higher due to their lack of economies of scale, high fuel costs and airport user charges, the average length of flight stages, the effect of differences in the average load factor on each route group and other factors. These factors, particularly fuel prices and landing and associated airport charges have an effect on the level of fares in each region and between regions (see vol. II, table 2).

C. Land-surface transport (highways and railways)

12. The imbalances in transport infrastructure established during the colonial period have continued into the 1970s. With over 70 per cent of the population and 64 per cent of the land area, the developing countries have only 23 per cent of road mileage, 22 per cent of road vehicles, 15 per cent of railway freight ton miles. The openness and lack of linkage of the road and rail networks in the South compared with the density and linkages of the roads and railways in the North are seen from figures 7 and 8. Table 6 gives the volume of motor vehicles in use in 1976 in the various regions of the world and table 7 shows the railway traffic globally and by regions.

D. Communications

13. The imbalances in communications are equally striking. In 1950 the telephone densities per 100-population in Africa, Asia and South America were 0.4, 0.2 and 1.5 respectively, against 3.3 and 17.6 for Europe and North America. Since then the growth has been slow in contrast to the rapid increases in telephone densities in the north (see fig. 14). ITU reports that currently (1979) 17 high-income industrial countries have a telephone density of between 27 and 74 per 100 inhabitants, whereas 30 least developed low-income countries have an average telephone density of 0.37 per 100 population. Direct communication circuits south-south between continents and between major regions were practically non-existent. The situation changed dramatically in the 1970s thanks to the new satellite communications technology. Now direct communication south-south is possible, although with increased dependence on developed-country technology.

14. In the field of broadcasting (transmitters and radio receivers) according to the UNESCO Statistical Yearbook for 1977, Europe including the USSR and North America in 1976 had between then two thirds of the total number of radio broadcasting transmitters (see vol. II, table 8). With regard to radio receivers the developed countries had a total of 788 million radio receivers or 696 per 1,000 inhabitants in 1976. The developing countries had 165 million in 1976 or 83 per 1,000 in 1976 (see vol. II, table 9). As regards television transmitters according to UNESCO, the situation was worse. In 1976 there were 24,980 television transmitters in the world. Out of these only 1,140 were in developing countries, i.e. 4.5 per cent of the world total. There were 341 million television receivers in developed countries compared with 43 million (12.6 per cent) in the developing countries or 22 television receivers per 1,000 inhabitants in developing countries, against 301 in developed countries.

15. Nearly 80 per cent of the news-style information circulating in the world originates with the major transnational news agencies. 1/ The developing countries are overwhelmingly dependent on these news services of the industrialized countries for their receipt and output of newsflow. As of 1976, 65 per cent of the world's population, in developing countries, enjoyed only 17 per cent of world book production. Expressed in number of titles published relative to population, the developing countries had 49 per million inhabitants, the developed countries 434 per million. The imbalance in redistribution of books may also be inferred from the fact that UNESCO's 1976 listings of "authors most frequently translated" cite only four from developing countries out of a total of 116 worldwide. 2/

E. Postal services

16. In the colonial period, north-south routing dominated postal relations. Mail conveyance between colonies of different metropolitan Powers was via metropolitan States and this continued even after the introduction of airmail in the 1930s. By the 1950s local airline networks improved intraregional mail links in the south but it is still not possible to send mail from one country of the south to another without routing it through a former metropolitan country in Europe. This is particularly true of Africa. This may be seen from figure 15 which shows the south-south and south-north-south routing used for airmail between developing countries of the same region and neighbouring regions in the 1970s. The time delays and the additional costs involved impose added burdens on the developing countries.

III. FUNCTION OF TRANSPORT AND COMMUNICATIONS IN THE NIEO

17. The imbalances referred to in the previous chapter must be removed to reduce the economic distance between the north and the south. Political independence had

1/ The five major agencies are Agence France-Presse (AFP), Associated Press (AP), Reuters, United Press International (UPI) and Tass.

2/ UNESCO Statistical Yearbook, 1976. The four were Khalil Gibran (Syrian Arab Republic), Mao Zedung (China), Pablo Neruda (Chile) and Rabindranath Tagore (India).

not brought with it economic liberation to the countries of the south. Historical and commercial links reinforced by an infrastructure of transport and communications, kept them tied to former metropolitan powers for the capital, skills, services and other development support needs. Systematic changes were and are still needed in the existing economic order to take the developing countries out of their condition of dependence on the developed countries, a dependence which is both the result and a contributory cause of their underdevelopment. The sixth special session of the General Assembly in 1974 called for a new international economic order and its Programme of Action emphasized that collective self-reliance and growing co-operation among developing countries would further strengthen their role in such an order. It urged that all efforts should be made to promote an increasing and equitable participation of developing countries in the world shipping tonnage, to arrest and reduce the ever-increasing freight rates in order to reduce the costs of imports to, and exports from, the developing countries and to ensure the early implementation of the code of conduct for liner conferences.

18. Other modes of transport and communication are equally important to economic integration. Highways and railways are necessary for access to the interior regions of the developing countries and for landlocked countries' access to the sea. They will provide alternative, less expensive trade, tourist and cultural contacts among continental neighbours and will contribute to regional integration. River transport has been neglected but it is an inexpensive mode of transport, useful for bulk cargo, with low energy consumption and it needs to be given high priority for regional integration. An efficient and economically viable air transport system is an essential element in economic development. It facilitates the conduct of public and private business both domestic and international and it constitutes a key factor in the development of tourism and foreign trade in manufactured goods and perishables. It is of particular importance to developing island countries and landlocked countries whose economies are hampered by lack of access to overland or sea-transport and to developing areas in general because of their often inadequate means of surface transport and their remoteness from major market areas.

19. Improved telecommunication, broadcasting, mass communication media and postal facilities in and among developing countries are essential for collective self-reliance and economic integration. The majority of the means of communication, with the most powerful resources and techniques, are at present concentrated in a small number of highly developed industrial countries. There is a growing concern among developing countries to liberate themselves from specific historical circumstances, which still characterize their communication and information systems and to utilize communication for a much more active role in national development. This concern has led to the initiative for the creation of a new international information order as an integral and logical development in the search for a new international economic order and the designation of 1983 as World Communications Year under the auspices of the International Telecommunications Union, to emphasize communications as an important element of the infrastructure for all aspects of development.

20. ECDC has a crucial role to play in redressing the transport and communications imbalances and in laying the foundations of the new international economic order. Among the objectives of ECDC, the Buenos Aires Plan of Action gave considerable importance to transport and communications. Improved transport and communications enhance the role of ECDC in the development process. The transport sector also provides a promising area for ECDC since transport problems must be dealt with at all levels and relevant experience can be exchanged in areas where the physical conditions and requirements are similar. Emerging development imperatives in transport and communications, identification of technical capabilities and needs of developing countries, the collection and dissemination of information, exchange of experience in adaptation and adoption of technological progress in equipment and machinery and integrated transport planning and implementation call for intensification of technical co-operation among developing countries.

IV. SUBSECTORAL ASSESSMENT OF THE PRESENT STATE OF TRANSPORT AND COMMUNICATIONS AMONG DEVELOPING COUNTRIES

A. Maritime transport

21. The United Nations Programme of Action on the Establishment of a New International Economic Order specifically called for an increasing and equitable participation of developing countries in the world shipping tonnage and a reduction in freight rates. One of the over-riding influences in shipping was the monopoly power of the conference lines. The UNCTAD Code of Conduct for Liner Conferences which is in the process of being ratified aims at removing this monopoly power and bringing into the open the levels of conference freight rates and the processes of conference decision making. The adoption of the Code will enable developing countries to expand their liner fleets to a capability of carrying 40 per cent of their general cargo trade.

22. Another important proposal relating to the participation of developing countries in world shipping tonnage was the resolution TD/Res/120(V) adopted at UNCTAD V at Manila relating to equitable participation by developing countries in the transport of bulk cargoes and the phasing out of flags of convenience. Bulk traffic, which accounts for 80 per cent of world tonnage, is still mainly in the hands of the developed countries. As called for by the resolution the UNCTAD secretariat, in consultation with other related agencies, is studying the repercussions of phasing out open registries or flags of convenience. The prospects and problems of maritime transport are briefly referred to under each region:

Africa

23. The aim of African countries is to capture 40 per cent of the traffic of the regular shipping lines in accordance with the provisions of the Code of Conduct. At present only a few African countries control 15 to 20 per cent of the regular shipping traffic. By the end of 1978, the African national ocean-going merchant fleet had attained nearly 6 million tons deadweight, involving 298 units. (The world tonnage, as of 1 July 1978, was 641 million tons.) Even for bulk traffic the African shipping companies are in an unfavourable position. The fleets are generally old; the vessels are small and only a few countries have companies with more than six ships. Coastal shipping is not much developed. In 1978 there were only 62 vessels recognized as providing a coastal shipping service, totalling 86,000 pennyweight (dwt.).

24. The African coastline contains more than 80 seaports, of which about 49 are major international ports. Only a few of these ports are well managed and efficiently operated; most of the ports suffer from serious deficiencies in their operation. A serious obstacle to maritime transport development is the shortage of skilled manpower at all levels. UNDP is supporting two regional training centres in Africa (Abidjan and Accra) and investigating the possibility of tackling this problem on a global scale. To improve the existing situation and to develop African-owned shipping 52 maritime-transport and 108 maritime-ports projects, at a

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total estimated cost of \$320,040,000 and \$2,240,760,000 respectively, were recommended by the African Ministers of Transport in May 1979, for international financial support. ^{3/}

Western Asia

25. Most of the shipping services of the region, including the tanker fleet, are provided by international shipping, making its trade heavily dependent on, and indirectly controlled by, foreign shipping interests. The oil-exporting countries, generating more than half the world's oil traffic, own only about three million gross registered tonnage (grt.) of tanker tonnage. The Arab Maritime Petroleum Transport Company (AMPTC) owned by nine Arab States is the largest local tanker company.

26. The dry-cargo trade of the region is carried in foreign ships belonging to powerful conference lines, non-conference lines and independent operators. One important development is the establishment of the United Arab Shipping Company (UASC) which is a consortium of six Gulf countries. It has 58 ships aggregating more than one million dwt. tons. Greater efforts are needed to develop further national/multinational merchant marines. The coastal, short-sea services in the region mainly provided by country craft are poor, entailing delays and fluctuating freight rates. The role of coastal shipping is important in regional and national integration and requires study and assessment.

27. In 1977/1978 the Red Sea ports had some 220 berths handling annually about 47 million tons. The ongoing port development plans, when completed by 1982/1983 will increase berthage in the Red Sea and the Gulf ports to over 400 berths. This capacity is expected to be more than sufficient to meet future increase in cargo demand over the next several years.

28. There is an acute shortage of well-trained personnel. Currently the training needs are for some 4,000 ports and shipping managers. Extensive, long-term training programmes at all levels are necessary. The new maritime Academy at Basra in Iraq, and another being established near Jeddah in Saudi Arabia will, with the Regional Arab Maritime Transport Academy in Alexandria help raise the level of maritime expertise. Shippers' organizations have been weak, and efforts are required to strengthen them.

Latin America and the Caribbean

29. All but two of the Latin American countries are maritime nations and 90 per cent of the region's trade is conducted by sea, yet the region as a whole has poor port facilities. There are 12 million grt. of shipping in the region. ECLA points out that the Latin American fleets have grown slowly in the second development decade. Brazil, Argentina, Colombia, Ecuador, Peru and Venezuela have shown the fastest rates of growth and the fleets of Brazil and Argentina have also increased significantly the quantities of national cargoes carried under their own

^{3/} "United Nations Transport and Communications Decade for Africa 1978-1988", E/CN.14/726, vol. I: Global strategy and plan of action, first phase, 1980-1983.

flags. These two countries have also substantially increased their shipbuilding and joint shipping enterprises for overseas trade have been organized in the region. The Latin American countries have made efforts to free themselves from dependence on foreign flag shipping and have cultivated new markets in the South including those of Western Asia, Asia and Africa. But Latin American trade is still mainly with countries of the North. In Central America there are very few nationally owned ships though there is high dependence on overseas trade. The ports in Guatemala, Honduras, Costa Rica, El Salvador, and Nicaragua have improved significantly over the past five years due to joint efforts in co-ordinating port activities and the work of TRANSMAR in projects supported by UNDP/UNCTAD.

30. An efficient regional shipping service is clearly indispensable for any possible economic integration of the Caribbean. Intraregional trade has grown and is carried by three different cargo services - the regionally owned West Indies Shipping Corporation (WISCO), the foreign-owned ocean shipping lines and the small privately-owned vessels. The establishment of NAMUCAR in 1975 (Multinational Greater Caribbean Maritime Shipping Company) through the co-operative efforts of Jamaica and Trinidad and Tobago and the countries of Central America is a major step towards wider regional co-operation. UNCTAD and IMCO will initiate a project to foster co-ordination and rationalization of national and regional maritime activities in the region. Since intraregional general cargo traffic is expected to grow in volume the port and shipping systems in the Caribbean need to be improved to meet this regional need, though the major ports in the region - Kingston (Jamaica), Port-of-Spain (Trinidad) and Bridgetown (Barbados) - are adequately equipped to handle present traffic. There is an inadequacy of trained personnel in port and shipping management and for seafaring in many countries of Latin America and the Caribbean.

Asia and the Pacific

31. This vast region continues to be a heavy net importer of shipping services. The shipping services absorbed by the region's international trade contain a particularly large element of liner shipping, and the region's dependence on cartelized liner services is relatively heavy. While the developing ESCAP region accounts for about 17 per cent of the volume (in weight) of world trade, its share in the value of world exports is only about 8.5 per cent since freight costs per unit weight continue to be a relatively large proportion of the FOB value of exports.

32. The growing resistance to increasing freight rates has given an impetus to the process of creating institutional infrastructure, for instance, the establishment of maritime industry authority (MARINA) in the Philippines, setting up of South Pacific subregional shipping line; freight study units in seven countries; co-operative action by commodity communities and by ASEAN and RCD, and the L-2 scheme for economic statistics of shipping. Shippers in the developing countries through mutual co-operation and organization of shippers' councils have been trying to acquire countervailing power against the cartel policies of international shipping conferences. The success in their negotiations with the conferences has been limited, except where they have clear alternatives like availability of non-conference liner services or availability of local institutions

to consolidate cargoes of major commodities like natural rubber, timber and palm oil. For the classic raw materials of developing ESCAP countries the required bulk carriers or tankers are not available to the developing countries to the required extent. For ocean fleet acquisition, technical and financial co-operation among the developing countries needs to be fully explored. The impact of new shipping technologies, like containerization, is already being felt and there is a legitimate feeling that containerization could lead to labour-displacements. A major task in this regard is to adapt ports, the infrastructure and facilities of inland transport and the commercial and procedural practices connected with international cargo movements to the requirements of new techniques. Though considerable improvement in port development has been taking place, the organizational and manpower development of ports is seen to be lagging behind their physical development.

B. Air transport

33. The over-all difficulties common to many countries of the South in air transport are lack of capital for equipment, lack of financial resources to sustain pioneering routes, scarcity of skilled personnel, high operating costs, preference of developed country passengers for own national aircraft, diseconomies of scale, inadequate airports, limited traffic South-South, restrictions between States.

Africa

34. At the end of 1976, the African countries were operating 377 aircraft, many of them no longer up to user requirements. The African Civil Aviation Commission (AFCAC), which has primary responsibility for promoting the development of air transport in Africa at the international level estimated in 1978 that the additional needs between 1978-1982 were 171 aircraft including 60 long-haul wide and medium-bodied aircraft and 68 medium and short-haul aircraft. In 1977 the International Civil Aviation Organization (ICAO) estimated that less than half of the African international airports had runways with the minimum length of 2,000 metres and that only one quarter had runways more than 3,000 metres long. Thus the airport infrastructure is clearly inadequate to meet the new generation aircraft.

35. In its policy on bilateral air transport agreements, AFCAC puts a great emphasis on development of air links between its member States. The African Airlines Association (AFRAA), recognizing that economic and social development of African countries must depend on a parallel development of air links across Africa, is proposing a plan for the restructuring of the air transport network. The main intercontinental links, predominantly North-South, are to be supplemented by the establishment or a strengthening of transverse routes across Africa. The proposed system should guarantee the transport of passengers and goods from any point on the African continent to any other African point within 24 hours. One of the essential preconditions to the application of this system is a liberalization of air traffic rights between African States.

36. Within the framework of the United Nations Transport and Communications Decade for Africa (1978-1988), the programme of action for the first phase approved by the African Ministers of Transport emphasizes the need to achieve financial stability of the African airlines, to create an intra-African network, to modernize the fleet and to improve airport infrastructure and superstructures as well as air navigation systems at a cost of \$US 1,502 million. 4/

Latin America and the Caribbean

37. Many airlines in the region have problems of generating working capital, many airports need expansion and the documentation and clearance procedures require improvement. In regional air transport a study that ICAO made in Latin America and the Caribbean in 1978 suggests structural changes to achieve rationalization of routes, fleets and maintenance facilities, and co-operative agreements between carriers in order to reduce or stabilize air transport costs. Another problem highlighted was the need to maintain attractive international fares and rates to assist the expansion of tourism and foreign trade.

38. The regional problems of air transport in the Caribbean are similar to those of sea transport. To economize the region's resources and achieve maximum benefit, three or four airports should be developed to handle extraregional traffic. There are three major carriers: Air Jamaica, British West Indies Airways (BWIA), and Leeward Islands Air Transport (LIAT), which with Guyana Airways might eventually consider the advantage of a combined Regional Airline to provide passenger and cargo services within and without the region.

Asia and the Pacific

39. The region is well provided with air services except between East Asia and Africa. In the South Pacific a leading role was played by the South Pacific Bureau for Economic Co-operation (SPEC) in association with ICAO in promoting the creation in 1979 of an Association of South Pacific Airlines. The Orient Airline Association based in Manila has led to co-operation between member airlines. The ASEAN Regional Transport Survey, completed in October 1971, recommended an investment of \$328 million for air transport in the subregion.

Arab States

40. The establishment of air links between Arab States has been influenced by the Marrakech Declaration adopted by the Arab Civil Aviation Council (ACAC formerly CACAS) at its thirteenth session in December 1974. The Declaration called for the liberalization of traffic rights between Arab States and this has contributed to an increase of air links between Arab States generally and between the Maghreb States and the other Arab States in particular.

4/ Ibid.

C. Land transport (road and rail)

1. Highways

41. Emphasis on road transport is pronounced in the transport development plans of the South. There are four continental highway projects aimed at linking the continents intraregionally and interregionally. These are the Trans-Asian Highway System, the Pan-American Highway System, the Trans-African Highway System, and the Western Asian Highway System. The principle followed by each country is to raise the level of selected roads to an internationally agreed standard and to extend these roads to frontiers. The current situation is briefly reviewed:

Trans-Asian Highway System

42. The Asian Highway project grew out of a 1959 decision of the Economic Commission for Asia and the Far East (now ESCAP) to develop a network of international highways linking all the countries between Viet Nam and Iran. Priority Route A-1 (9,467 km) from Iran to the Socialist Republic of Viet Nam, considered one of the most important routes in the network, is 95 per cent complete. It starts at Bazargan (Iran-Turkey border) and ends at Ho-Chi-Minh City. The missing links are in Burma (423 km) where six major bridges are still to be constructed. Priority Route A-2 (95 per cent complete) starts from Chasr-I-Shiria (Iran-Iraq border) and passes through Iran, Pakistan and India to Indonesia. Missing links are in Nepal, Burma and a short length in India (see vol. II, fig. 16).

43. Currently efforts are being made by ESCAP to ensure efficient utilization of the highway network through harmonization and standardization of frontier formalities, improvement of the existing services and facilities over the network for development of travel and tourism and to see the missing links completed. The Asian Highway covers 66,000 km and connects with the European Highway network at the Iran-Turkey border and with the Middle East Highway network at the Iran-Iraq border.

Pan-American Highway System

44. The Thirteenth Pan-American Highway Congress of the Organization of American States, at its Caracas meeting in December 1979, approved the Final Plan of the Pan-American Highway System, which consists of eight longitudinal highways, eight transcontinental highways and two circular routes. The entire system (see fig. 17) when completed will link all the countries of the region, provide direct access from the Pacific to the Atlantic Seaboard, facilitate connexions to major cities in the interior and promote the integrated development of the continent. The completion of the Pan-American Highway from Alaska to Argentina initiated in 1929, is delayed by the Darien Gap of 400 km between Panama and Colombia. Sections of other projected highways within national boundaries are being planned, improved or under construction by individual Governments. Since non-tariff barriers are a major obstacle to intraregional trade and transport, ECLA is working toward the removal of these barriers.

Trans-African Highway System

45. On the initiative of the Economic Commission for Africa five major trans-African highway projects are currently in progress on the continent: the Mombasa-Lagos Trans-African Highway, the Dakar-Ndjamena Trans-Sahelian Highway, the Lagos-Nouakchott Trans-West African Highway, the Cairo-Gaborone Trans-East African Highway and the Algiers to Lagos Trans-Sahara Highway. In addition there are four more trans-African highways planned: Tunis-Nouakchott; Massawa-Ndjamena; Tripoli-Windhoek; Lobito-Beira. As will be noticed from figure 18, the realization of this highway programme will provide access to any African country by road from any point in Africa and, given liberalization and facilitated border policies, the region will for the first time be fully integrated. Of the first five trans-African highways, financial resources are required for engineering studies and detailed designs for 6,432 km and for the construction of 10,695 km. The road programme approved by the African Ministers of Transport involves the implementation of 127 projects, 74 of which require specific studies prior to implementation. The trans-African and international highways account for 50 per cent of the road programme. (For a detailed list of road projects under the Transport and Communications Decade for Africa 1978-1983, see document E/CN.14/726.)

Western Asia Highway System

46. Development of the international highways in the ECWA region, over the last six years, has been accorded the highest priority in the development plans and programmes of all member countries. A total length of 36,000 km of paved roads existing in the region in 1974 increased to approximately 51,200 km in 1978. Eighteen thousand three hundred thirty-five km of national roads in the region are used for international traffic, providing long-distance highways for intraregional traffic. Considerable development of these international highways has taken place in the recent past. Despite significant progress achieved in highway construction, much work still remains to be done on the completion of missing links and the upgrading of the substandard sections. The main missing links are (a) the route between Al-Mukalla and Hawf (560 km) in Democratic Yemen, which is partly under design and partly under construction as an improved earth track; (b) in Oman, where no road exists to connect Raysut (near Sallalah) to the border of Democratic Yemen (110 km). If these gaps are linked there would be an international highway around the Arabian Peninsula.

47. Major international highways linking the Middle East with Europe and Asia and other regional highways are being improved or constructed by the countries through which they pass (vol. II, fig. 19). For example, Syria and Lebanon are upgrading the Europe/Middle East Coastal Route (EMI) from Kassab on the Turkish border through Lattakia and Tartous in Syria to Zahrani in Lebanon. Iraq is planning the improvement of the Middle East/Asia Inter-Continental Highway (MA2). When these are completed there will be a complete network of high standard international highways linking the countries of the region among themselves and with Europe and Asia. ECWA is developing co-operation with ECE for road and rail links with Europe and with ESCAP for links with Asia. A major difficulty for overland freight industry arises from complicated transfer formalities, varying transit taxes, operating restrictions and tariff differentials.

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48. The Economic Commission for Western Asia has prepared a study for a master plan for the development of an integrated transport system for western Asia. 5/ A meeting of an intergovernmental working party was convened in March 1980 to review the findings of the Study and to make recommendations on the follow-up programme.

2. Railways

49. The full potential of the railways for intra- and interregional trade and passenger traffic has often been curtailed by the character and orientation of the inherited national systems. The new developments have five basic aims: (1) the formation of intraregional networks by connecting existing railways; (2) building new lines; (3) modernization and standardization of the system; (4) the provision of interregional links; (5) reduced transit times and energy conservation in transport.

Asia

50. The primary aim is for a basic railway link between Singapore (and Indonesia at a later stage by rail ferry) and Istanbul which will provide connexions with Europe, USSR, the Middle East and Africa. The missing links are about 2,000 km with bridges, feeder lines and rail ferry connexions. The gaps include 1,400 km between Bangladesh and Thailand, and 600 km in Iran between Kernan and Zahidan. Extensions are planned into landlocked Nepal and new networks to Afghanistan plus an alternative exit for Laos via Viet Nam (see vol. II, fig. 20).

51. The construction of the missing links and the modernization of existing links are to be promoted by ESCAP. The reductions in distance by using rail compared with sea are 1,885 km, Bangkok to Calcutta, and 2,255 km, Bangkok to Chittagong. UNDP supported the Trans-Asian Railway project until 1976. Since then Japan has been providing financial support for the technical studies and for the co-ordination of the Trans-Asian Railway project. An Asian Railway Union is being planned to provide an institutional mechanism to develop interregional co-operation in the railway sector.

Western Asia

52. The railways could play a significant role in the ECWA region's trade with Europe. The European railways are already linked through the Turkish railway network to the Syrian and Iraqi railways (vol. II, fig. 19). Plans are under active consideration by the Governments concerned for linking Medina in Saudi Arabia to Amman and Damascus and thus reviving the old Hijaz Railway. From Medina the plan covers connexions to Riyadh and Jeddah. Once these links are completed Jordan and Saudi Arabia will be connected by rail to Europe via Syria and with the Far East via the Iraqi network.

5/ E/ECWA/TRANS/2.

Latin America (vol. II, fig. 21)

53. Rail transport, like road transport, is of great significance as an alternative to sea transport for trade among Latin American countries. Overland transport tends to be along the five well defined international corridors. The Atlantic corridor links Argentina, Brazil, Paraguay, and Uruguay. The rail system in this corridor, which is the most important for intraregional trade, requires standardization due to breaks in gauge at river crossings. The railways of Argentina and Uruguay (same gauge) have yet to be connected. In the southern trans-Andean corridor, gauge standardization is required between Chile and Argentina. The possibility exists also for a southerly rail link between Zapala, Argentina and Lonquimay, Chile (200 km). This will eliminate transshipment and consideration is being given for such a link. In the Buenos Aires-Lima transcontinental corridor, the railways from Buenos Aires are of one-metre gauge and are continuous to the Chilean ports of Antofagasta and Arica. Another route to the port of Matarani requires transshipment across Lake Titicaca for connexion with Southern Peruvian line at Puno. The Sao Paulo-Lima transcontinental corridor - the principal means of transport from the Brazilian port of Santos to Santa Cruz in Bolivia - is a metre-gauge railway and requires modernization. The Pacific Andean corridor linking the Andean countries of Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela contains little rail infrastructure. ECLA is concentrating its efforts on facilitating trade through removal of non-tariff barriers.

Africa (vol. II, fig. 22)

54. The condition of the track and rolling stock and the management of all the African railways are relatively poor. They call for better training of middle management and supervisory staff, rehabilitation of tracks and rolling stock, standardization, improved railway access to the sea for land-locked countries, extensions of networks to connecting points in adjacent countries and construction of trans-African railways network. In the programme adopted by the African Ministers of Transport within the framework of the United Nations Transport and Communications Decade for Africa, special emphasis is placed on land transport, both road and railway, which accounts for 56 per cent of the programme. The total cost of all railway projects in the first phase is \$3.2 billion. 6/

D. Inland waterways

55. The inland waterway systems have tended to be neglected and lack integration with other transport media in almost all the developing regions.

Asia

56. Inland water transport for international trade remains largely unexploited in the region. The joint exploitation by riparian neighbours of the common waterways continues to be an arduous task, though it receives institutional backing on the required scale in the case of the Mekong Basin.

Latin America

57. The full potential of the great rivers of South America is not fully exploited. The high costs of highway construction in these areas should justify consideration of the possibilities of improving river transport, for example - harnessing the River Plate and Amazon River systems for transport and combining it with other modes of transport for economic integration.

Africa

58. The possibilities and benefits offered by the great rivers and lakes of Africa for transport are yet to be exploited. During the Transport Decade, special attention will be paid to the major international rivers offering transport possibilities and capable in particular of serving land-locked regions of the continent as well as the Sahel region. The inland water transport programme of the Transport Decade for Africa ^{7/} consists of 57 projects at a cost of \$86.2 million.

Western Asia

59. The Tigris River is for the time being the only inland waterway in the region which offers some transport potential. The section between Basrah and Baghdad (800 km) is being planned and equipped for a minimum annual capacity of 500,000 tons. Three dams and associated locks are being built for the multiple purposes of irrigation, flood control and transportation. This will ensure the minimum year-round draft for navigation of river barges and tugs. The main benefit of inland water transport facilities would be to take large volumes of low-volume commodities off the roads and railway in the crucial transport corridor between the Gulf and Baghdad area.

E. Multimodal transport

60. The "container revolution", together with the concept of global distribution which is associated with it, gives increasing importance to global intermodal transport of goods from departure point to final destination. Multimodal transport normally relates to combinations of ports and sea and land transport in international trade. Developing countries are considering the benefits of introducing and extending multimodal transport operations. For this it is necessary for planned investment to take place in all modes of transport so that each is adapted to the use of modern technology. The primary aim is to provide door-to-door services over a total system. This usually involves containers or other units. Planned investment also applies when containers are unshipped at ports as the transport system has to be able to cope with the clearing of such cargoes quickly.

61. The approach needed is for developing countries to assess the appropriateness of linked systems on a multimodal basis. The wholesale adoption of containerization is now seldom advocated, but rather a phased adaptation. There

^{7/} Ibid.

is a legitimate feeling that containerization can lead to labour-displacements. Quite a major task will be to adapt ports, the infrastructure and facilities of land transport and the commercial and procedural practices connected with international cargo movements to the requirements of new techniques. The African Transport Decade programme has nine multimodal projects costing a total of \$43.15 million. 8/ These projects include among others, a study on the establishment of a regional transport documentation and research institute, study on the development of containerization and technical assistance to set up multimodal operators, etc.

F. Telecommunications

62. The launching of the Early Bird Satellite in 1965 by the International Telecommunications Satellite Organization (INTELSAT) opened a new era in telecommunications. The advantages of satellite communication are numerous. For distances over 2,000 km it is cheaper to transmit via satellite than via terrestrial telephone lines; a satellite has a large capacity, up to 24,000 telephone channels, 24 colour television channels or 500 megabits of data per second or various combinations of voice, television and data; physical terrain problems are eliminated; contact can be made with any part of the world; educational programmes can be provided to widely scattered areas. The development has reached the stage where direct communication South-South is possible. More than 100 developing countries/territories have satellite facilities for international and domestic telecommunication traffic.

63. ITU, with the collaboration of UNDP, has directed a major part of its development co-operation towards the interconnexion of national networks of developing countries and their integration into a global telecommunication system. ITU has promoted and is supporting many regional projects for bringing the developing countries together.

Pan-African Telecommunication Network (PANAFTEL)

64. One of the best examples is the PANAFTEL network, which ITU with the co-operation of all members of the Organization of African Unity (OAU), ECA, the African Development Bank (ADB) and UNDP is implementing to establish a telecommunication network which would enable African countries to contact each other without having to communicate via Europe. Despite the complexity of the design and implementation of such a vast network, the spirit of co-operation in Africa has already enabled the installation of 18 international automatic telephone exchanges and international telex systems in 35 countries. Forty-two satellite earth stations for international traffic are being installed or in operation. Bilateral and multilateral funds have been made available for the implementation of PANAFTEL network shown in figure 23. The Transport Decade objective is to complete the implementation of essential components of the network. By the end of the Decade, calls between and within African countries should be possible by automatic operation subscriber-to-subscriber. The interconnexion of PANAFTEL with

8/ E/CN.14/726.

the world network especially to Europe in the north and to the Middle East and Arabian network to the east is an objective during the Decade.

Inter-American Telecommunications Network

65. Since the creation of the Inter-American Telecommunications Commission (CITEL) close co-operation has existed between this Commission and ITU on regional and national telecommunications development. ITU regional advisers are rendering technical assistance to countries in Latin America and the Caribbean area in connexion with plans adopted by CITEL for the development of an inter-American telecommunications network.

Asian Telecommunications Network

66. Since 1960 ITU has, in collaboration with ESCAP and with the active co-operation of 14 countries of the region, been promoting the establishment of the Asian telecommunication network (fig. 24 shows the extent and complexity of the network with links stretching from Iran to Indonesia). A notable feature in the implementation of this network is the provision of specialists by one country of the region to assist another. On certain routes such as Indo-Nepal and Indo-Sri Lanka there is also financial co-operation of these countries. The network will be a powerful tool in regional integration. The existing telecommunication links, consisting of high-frequency radio communications, of the small island States of the South Pacific, do not provide satisfactory service. With financial support from UNDP, the ITU in co-operation with the South Pacific Bureau for Economic Co-operation and the administrations of the countries concerned is developing an operational system of earth stations linking the islands.

67. The recent establishment of the intergovernmental Asia-Pacific Telecommunity in co-operation with ITU and ESCAP and hosted by Thailand, is expected to play a significant role in dealing with telecommunications developmental problems in the region.

Middle East and Mediterranean Network

68. No effective lateral telecommunications link existed between the Arab countries. The Arab Telecommunications Union, ARABSAT, and the telecommunications administrations of 28 countries co-operated in a major feasibility study undertaken by ITU in 1973 for the establishment of a complex network to satisfy the present and future needs of all countries in the region. When implemented the network will use coaxial, and microwave systems, submarine cable systems and satellite systems.

G. Communication

69. The increasing debate on the structure and ownership of news flows, the role of transnational news wire and audio-visual agencies, imbalances and cultural bias in the content of South-to-North reportage resulted in the UNESCO General Conference

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Declaration on the Contribution of the Mass Media ^{9/} and various resolutions concerning the establishment of "a new, more just and more effective world information and communication order".

Basic news flow

70. There were three broad patterns of response by developing countries to the news flow dependency on the five major transnational news agencies: (1) In the past 10 years there has been an increase in the number of national news agencies established by developing countries, mainly for national news gathering and dissemination. Some 30 developing countries still lack such national agencies. (2) There is now evidence of concern to establish and strengthen regional exchange systems among agencies of developing countries. In 1976, the Caribbean News Agency (CANA), with UNDP/UNESCO support, became an independent regional agency and now links 13 countries. In the Arab world, the Union of Arab News Agencies, chartered by the League of Arab States, comprised 18 Arab agencies as of 1977, and several agencies with multicountry scope including Middle East News Agency (MENA). In 1979, the Organization of African Unity formally launched the Pan-African News Agency (PANA) with headquarters at Dakar. And in the same year, meetings under UNESCO aegis in Asia brought closer prospect of the establishment of a regional exchange system among news agencies of Asia and Oceania, where services such as Depthnews already operate. In Latin America discussions have continued towards comparable exchange systems. (3) There were developments at the interregional level as well. At the 1976 fifth summit conference of non-aligned countries in Colombo, formal approval was given to the establishment of the Pool of News Agencies of Non-Aligned Countries, which had already been functioning with the assistance of TAIJUG, the Yugoslav News Agency. Membership of news agencies in the Pool has now increased from 45 at the outset to 65, each voluntarily contributing two to three news items daily into the total flow. The Pool has 14 regional centres based in national news agencies. Its activities assisted by UNESCO include help to countries in building national news agencies and programmes of training for journalists, in close collaboration with regional training institutions, and co-ordinated efforts in such fields as tariffs for news transmission and equipment standardization. Another development interregionally is the expansion of the Inter-Press Third World News Agency (IPS) which started originally in Latin America and, in collaboration with the Pool and with national agencies, now serves some 37 developing countries.

Newscarrier facilities

71. In innumerable cases, because there is no standard direct telecommunications link between one developing country and another, the filing of a news story must be via the North at commensurately high costs. The communications

^{9/} Declaration on Fundamental Principles concerning the Contribution of the Mass Media to Strengthening Peace and International Understanding, to the Promotion of Human Rights and to Countering Racialism, Apartheid and Incitement to War (20C/20/Rev.22), November 1978.

satellites have brought the developing countries closer but the use of satellite links depends on the construction of a tariff for South-South transmission of news which interregional, regional and national agencies can afford. A formula has now been worked out providing for a special charge - fully covering circuit rental through the satellite but on an "at cost-plus" basis - which can be as low as \$US 180 for a 24-hour two-way channel, instead of a "traditional" cost closer to \$2,000 a month.

72. The decision to enable this much lower and operationally affordable South-South tariff (perhaps to be called "Press Bulletin Service Third World Rate") rests with each Government of a developing country that has satellite linkage. The first Governments formally to establish this special tariff were Sri Lanka and Malaysia in 1979. This is one of the major break-through actions in expansion of South-South information flow capacities. As one of its early responses to the Buenos Aires Plan of Action, UNDP in early 1979 launched a special feasibility survey through IPS Third World News Agency to identify the possibilities for use of combinations of existing satellite links at this new rate, with microwave and line, to organize a daily new "Development Information Service" that could link as many developing countries as possible, and ultimately all developing countries. The survey has demonstrated that such a service is both feasible and after a few years of necessary special funding, can become self-sufficient through subscriptions by user-institutions.

H. Postal services

73. The major problem common to all the developing countries concerns the rerouting of mail and the need to improve mail exchange. This was one of the priority areas of technical co-operation activities of UPU for 1974-79. UPU implemented several regional and national projects, mainly financed by UNDP to improve mail exchange, through regional advisers, training of national postal personnel in regional institutes and providing operational teams to solve specific problems related to mail routing.

74. Much is still to be done to improve the exchange of mail in developing countries, in particular in Africa (see vol. II, fig. 15). In the Transport Decade 10/ programme, 58 projects have been included, aimed at improving intra- and extra-African postal communication. UPU in consultation with ECA will hold in 1981 a "Regional Mail Routing Conference" for all African countries to study the main obstacles to postal co-operation among African countries. In Latin America and the Caribbean plans for mail routing are being prepared by UNDP-financed UPU advisers.

75. The UPU Congress held in September/October 1979 in Rio de Janeiro set the improvement of mail conveyance and delivery as one of the priority areas for UPU attention in the period 1980-1985.

V. CONCLUSIONS AND RECOMMENDATIONS

A. General observations

76. This paper does not deal with TCDC modalities as such but recognizes that improvement of transport and communications facilities between developing countries is an important requirement for enhancing co-operation among these countries on a larger scale. The factual information summarized in this paper shows that the transport and communications imbalances between North and South and the gaps South-South are very great; and although much has been done to remove them more massive investments and technical co-operation programmes are required to meet the current development needs.

77. The fact that many of the patterns of transport and communications developed to serve the old economic order, with its North-South emphasis, means that some radical changes have to come about in the orientation, composition and functions of many aspects of transport and communication - in effect NIEO requires a new transport order. A fundamental requirement for the future is, therefore, a comprehensive grasp of the role of transport in the NIEO. This will involve better statistical information on major raw materials, food, and manufacturing goods surpluses and shortfalls between the countries of the South; evaluations of the intra- and interregional economic integration; and the application of trade facilitation arrangements.

78. In all sectors there are common problems of shortages of capital and scarcity of skills. Much can obviously be done on a regional basis to obviate these. In particular, the human resource development requirements in the transport and communications sectors, at all levels, are immense. Emphasis has to be laid, therefore, on training more course developers, developing regional institutes, and using modern training methodologies and equipment to achieve training-goals, like those employed by ITU in the UNDP-assisted CODEVTEL project in telecommunications.

79. The simplification and standardization of procedures in trade can reduce delays and costs and generate additional trade flows. There are several regional and international treaties and conventions including the IMCO Convention on Facilitation of International Maritime Traffic. UNCTAD's role has also been expanded in this important area through the 1975 "Special Programme on Trade Facilitation" (FALPRO). GATT likewise sought to liberalize trade and UPU and ICAO co-operate to facilitate airmail. There is still much to be done on a regional basis if the transport improvements towards intraregional trade are not to be frustrated by institutional and organizational frictions to the flow of trade between developing countries.

B. Suggestions and recommendations

Maritime transport

80. The suggestions and recommendations on maritime transport as well as those on land transport in the following paragraph are those of the consultant. They

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also reflect some of the views expressed by the regional commissions: (1) The implementation of the Code of Conduct for Liner Conferences gives opportunities for developing countries to increase their participation in existing shipping and to cultivate new trade, interregionally. There may, in fact, be more opportunities for overseas trade between developing regions than between nearest neighbours. This is a field of maritime transport which requires a more thorough investigation. (2) Because of the high costs of unitized shipping, in particular, and the need to rationalize regional services, more multinational shipping lines owned and managed by and between the developing countries are required. They could prove particularly valuable in the South-East Asian and Caribbean context where local shipping may have to take over more feeder roles as overseas trade concentrates into fewer pivot ports. (3) The combined resolution of UNCTAD V relating to cargo sharing in bulk trades and the phasing out of flags of convenience already provide negotiating strengths to developing countries vis-à-vis vertically integrated multinationals which purchase raw materials FOB and arrange the shipping. Developing countries can negotiate shares in bulk transportation under bilateral trade agreements and enter into joint ventures. They can also export on a CIF basis and nominate ships for carriage. (4) In relation to choice of ships for national fleets, developing countries clearly have to consider the impact of these on the transport sector as a whole. In many cases the purchase of bulk carriers and the consolidation of cargoes may prove more economical on a regional basis than full containerization. (5) When the decision is made to adopt high capacity capital-intensive shipping then regional concentration of capital, co-operation in routing, and land and sea-feeder services, often become requirements. This has still to be advanced in ports of Africa and Latin America. (6) With the wide choice of technology available and the speed of change, it is necessary that correct appraisals are made of alternatives, opportunities taken to introduce flexible combined systems in a multimodal approach, and job creation appraisals made, before introducing containerized systems. (7) The close interdependence between regional ports and the high costs of new technology make it essential that region-wide policies are adopted in relation to port unitization. (8) Of particular importance is the further spread in the South of Freight Study Units, which can standardize and collect regional statistics, analyse the services, and assess the demand for shipping on a regional basis. These should extend to multimodal transport. (9) The development of regional shipowners' organizations is equally important for rationalization of trade, ship repair facilities and formulation, with the administration, of shipping policies. (10) A vital element is training of management personnel. The requirements are extensive and growing, and many countries could benefit from the new training developments being explored by UNCTAD on a regional basis. (11) In every case, efforts have to be made to improve and standardize seagoing training in line with the IMCO Convention on Levels of Training and Certification. Training equipment (e.g. ship manoeuvring simulators and training vessels) is so expensive and training staff so scarce, that duplication must be avoided and real efforts made for regional integration. (12) The "Informal sector" of transport, which in sea transport often involves vast numbers of small vessels which trade inter- and intraregionally, plays an important part in the economies of many developing countries. It is essential that the "Informal sector" of river and sea transport is not allowed to decay by default in the face

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of new advances in technology. Studies are still required in most areas, of the part played by these craft, their future role in resource and energy conservation and on improvements that can be made. (13) In several regions there appears to be a need for further harmonization of national regulations, laws, shipping policies and taxation systems, to enable regional fleets to develop and the system to be rationalized. (14) In the Caribbean further efforts appear to be required for rationalization of ports improvement and development, along the lines of UNDP supported TRANSMAR in Central America. (15) In the South West Pacific it seems likely that the intraregional "Forum Line" may require support in order to service the more geographically disadvantaged islands. (16) Studies are required at regional levels for the rational implementation of the 40:40:20 principle of the Code of Conduct and the resolutions of UNCTAD V concerning entry into bulk shipping and phasing out flags of convenience.

Land transport

81. In Asia, the completion of the Asian Highway and the Trans-Asian Railway networks is important for inter- and intraregional relationships. Lack of finance would appear to be the main problem in closing the gaps that exist in both networks. The implementation of the Final Plan of the Pan-American Highway System will require massive investments. The completion of the Darien gap will provide unbroken road linkage between South and Central America. More attention would appear to be necessary for intraregional railway improvement and development in South America. The major problem now, however, is the need for trade facilitation between several countries. An intergovernmental working group reviewed the many recommendations in the Master Plan Study in respect of roads and railways in Western Asia for follow-up action at national and international levels. A major need is in the facilitation of transit formalities. The implementation of the road and rail projects identified by the African Ministers of Transport for the first phase of the Transport Decade is of the highest importance for the economic and physical integration of this continent.

Inland waterways

82. In many developing countries, inland water transport continues to suffer from a relative lack of sufficient interest due to financial and managerial constraints on developing this vital alternative transport mode. The plans drawn by the African Transport Ministers for development of African inland waterways need international financial support.

Pipelines

83. Pipeline technology offers many advantages for intra- and interregional trade and its relative neglect by developing countries needs to be reviewed.

Transport users

84. A further requirement is for Transport Users Councils in Africa (advocated by ECA), and in Latin America as, even with national and regional shipping lines, transport users may be disadvantaged in the face of shipping and transport organizations aimed at good rates of return.

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Air transport

85. The following recommendations to expand South-South air links have been made by ICAO. It is important that developing countries should unequivocally wish to create new and expand existing air links between themselves so as to facilitate the flow of goods and people among them. The capital and financial difficulties involved in the expansion of South-South air links need to be recognized and overcome. The possibility of setting up a development fund to subsidize part of the losses of pioneer routes during their development stage may be considered. The airlines of developing countries should draw up joint promotion plans, introduce incentive fares and freight rates. A detailed study should be made to identify the trade opportunities that creation of new air links would provide. The possibility of overcoming the disadvantages of their relative smallness through co-operative arrangements between airlines and civil aviation authorities of developing countries, on a global or regional basis, should be considered. This could include: (a) arrangements for joint procurement, progressive standardization and joint maintenance of flight and other equipment; pooling of equipment, spare parts and facilities. (b) capacity sharing arrangements and/or pooling of services and revenues by groups of airlines. (c) joint planning for improvements of ground facilities such as installation of night landing facilities, upgrading of runways and other movement areas to enable better utilization of aircraft and reduce maintenance costs due to wear and tear of equipment; also, seeking other joint solutions to improve aircraft utilization and productivity. (d) standardization of training in aviation disciplines throughout the developing countries taking into account ICAO's guidance on the subject and pooling of technical and appropriate administrative personnel.

86. An order of priorities will have to be established of the required South-South links, which should serve as a basis for the preparation of a phased and orderly programme of introduction of new South-South air links and strengthening of existing ones; the possibility of achieving this through increased utilization of existing resources and rationalization of systems should be given detailed consideration. A new approach by the developing countries is necessary regarding the exchange of traffic rights among themselves. This may include a provision for pooling of services by airlines and a more liberal exchange of fifth freedom traffic rights. Arrangements should be made for an exchange of technical experience and information amongst the airlines, airport authorities and departments of civil aviation of developing countries in the spirit of the development of technical co-operation among developing countries.

Telecommunications

87. The following comments have been made by ITU: The inadequacy of telecommunications services and facilities in the developing countries, especially telephones and radio broadcasting facilities, prevents the achievement of development targets in many fields of economic activity. Efforts made so far to improve this situation have not been commensurate with existing needs and also continue to be subject to manifold constraints prevailing in the developing

countries, such as an over-all shortage of capital, lack of foreign exchange, lack of trained personnel and training facilities, lack of planning expertise, problems resulting from equipment incompatibility and maintenance, problems resulting from low population density coupled with a predominantly rural population, inappropriate technologies, and lack of co-ordinated intersectoral planning. However, a solid basis has been established by the ITU for the planned and co-ordinated development of a world telecommunication network and for development co-operation. In order to obtain better results, the above-mentioned basis should be strengthened within the framework of an integrated international development strategy. In the present circumstances the ITU expects that, in close collaboration with the UNDP, it should be possible to extend to developing countries more efficient support in the field of telecommunications orientated, in particular towards the strengthening of economic, social, political and cultural integration on the regional and multinational levels; the development of human resources; the acceleration of self-reliance; the transfer of technology; and assistance to rural areas and poorest populations. In such a context greater attention could be given to the least developed countries and to TCDC.

Postal services

88. Efforts have to be made to reduce the burden of the indirect routing of mail between the developing countries of Africa and to improve services generally throughout the South. UPU, in its programme for the next five years, will give priority to improving mail conveyance and delivery especially in rural areas, as well as in the international service.

Communications

89. (a) Participating radio and/or television authorities of developing countries could select a limited number of development topics of wide common interest and co-operatively produce broadcast materials that would constitute genuine exchanges of experience in those specific development fields. (b) Since radio has under-exploited capacity to carry "straight news" about other developing countries that many newspapers in developing countries cannot accommodate for physical space reasons, it could carry much more South-South material already available over telecommunication circuits than may currently be the case. (c) It is still generally cheaper to publish a book in a developing country than in an industrialized country. Yet it has failed to get adequate South-South distribution due to attitudinal factors, like a continued ingrained notion that books "of value" almost inherently come from the North, especially in academic and technical fields. Attitudinal barriers require planned intervention to be overcome. Under the aegis of appropriate interregional foundations or other institutions, developing countries' appropriate intellectual leaders could move to establish a system of awards for a declared range of books by authors of and in developing countries, of value to all other developing countries, in given disciplines, but with built-in provisions for the necessary translation and distribution of the selected award-winning titles in all participating countries. Intergovernmental organizations could assist in the financing of such schemes. (d) In the context of human communication and information needs among developing countries, the roles of professional and technical associations duly acknowledged in the

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Buenos Aires Plan of Action, need positive developmental encouragement. Means must be found to initiate information-flows among professional and technical people and associations in the South. Similar expansion of active links and information-flow among universities and research institutes is vital for comprehensive South-South communication. (e) Telecommunication is proving to be a potentially powerful and at the same time low-cost instrument for South-South information flows and should be exploited. Other technologies with similar potential are microfiche materials for low-cost multiple-copy distribution of study and reference materials to fixed user-points in other developing countries, and cassette sound tapes for distribution of a wide range of technical discussion material. Joint production of educational technical programmes on inexpensive and easily distributed videotapes, such as those now being undertaken among Arab television stations and envisaged as part of the programme of the new TCDC interregional project supported by UNDP and UNESCO, can be greatly expanded.



Technical co-operation among developing countries

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26 May-2 June 1980, Geneva
Item 9 (b) of the provisional agenda

REPORT ON THE STATE OF TRANSPORT AND COMMUNICATIONS AMONG DEVELOPING COUNTRIES

Report of the Administrator

Volume II

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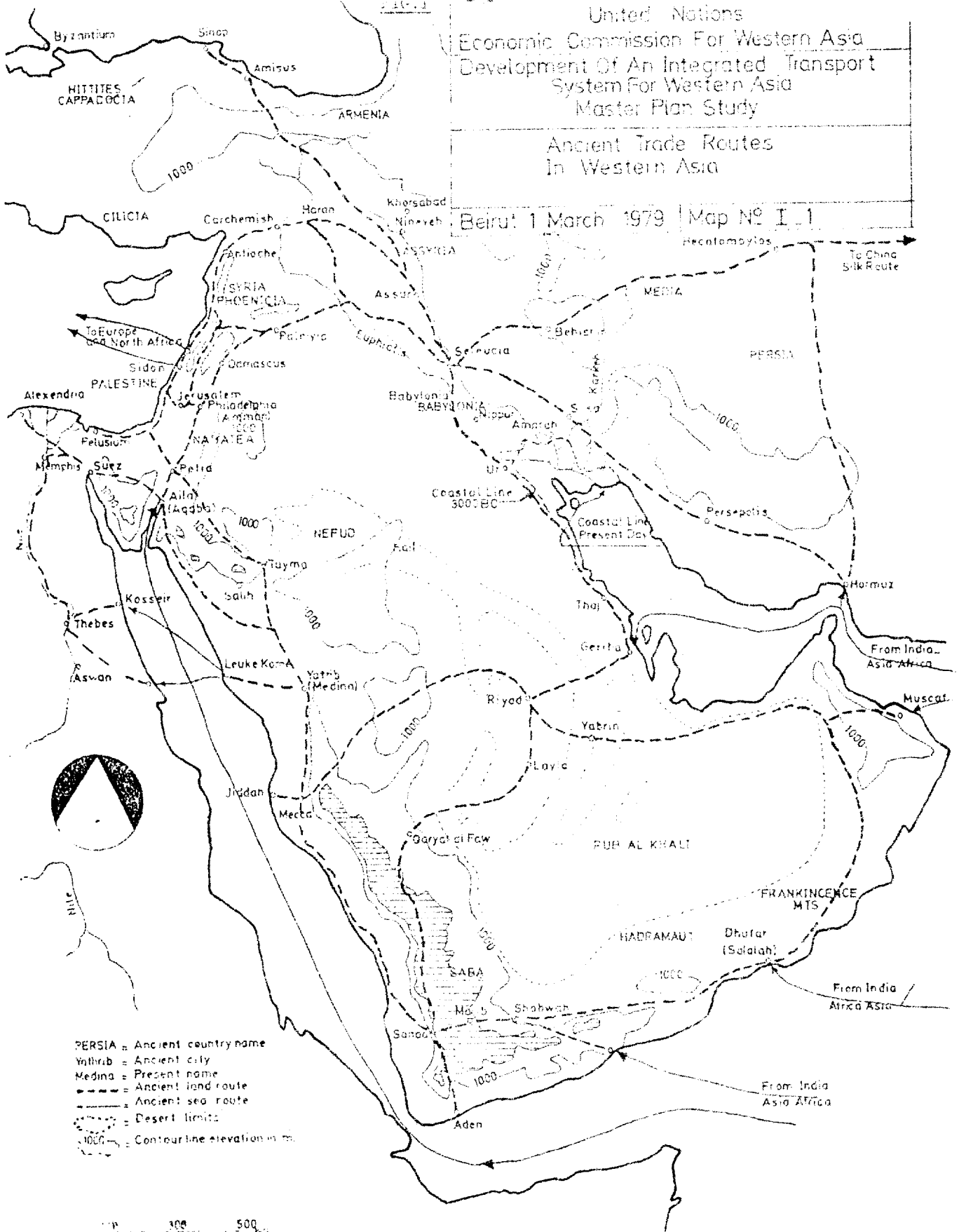
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FIG. 1

United Nations
Economic Commission For Western Asia
Development Of An Integrated Transport
System For Western Asia
Master Plan Study

Ancient Trade Routes
In Western Asia

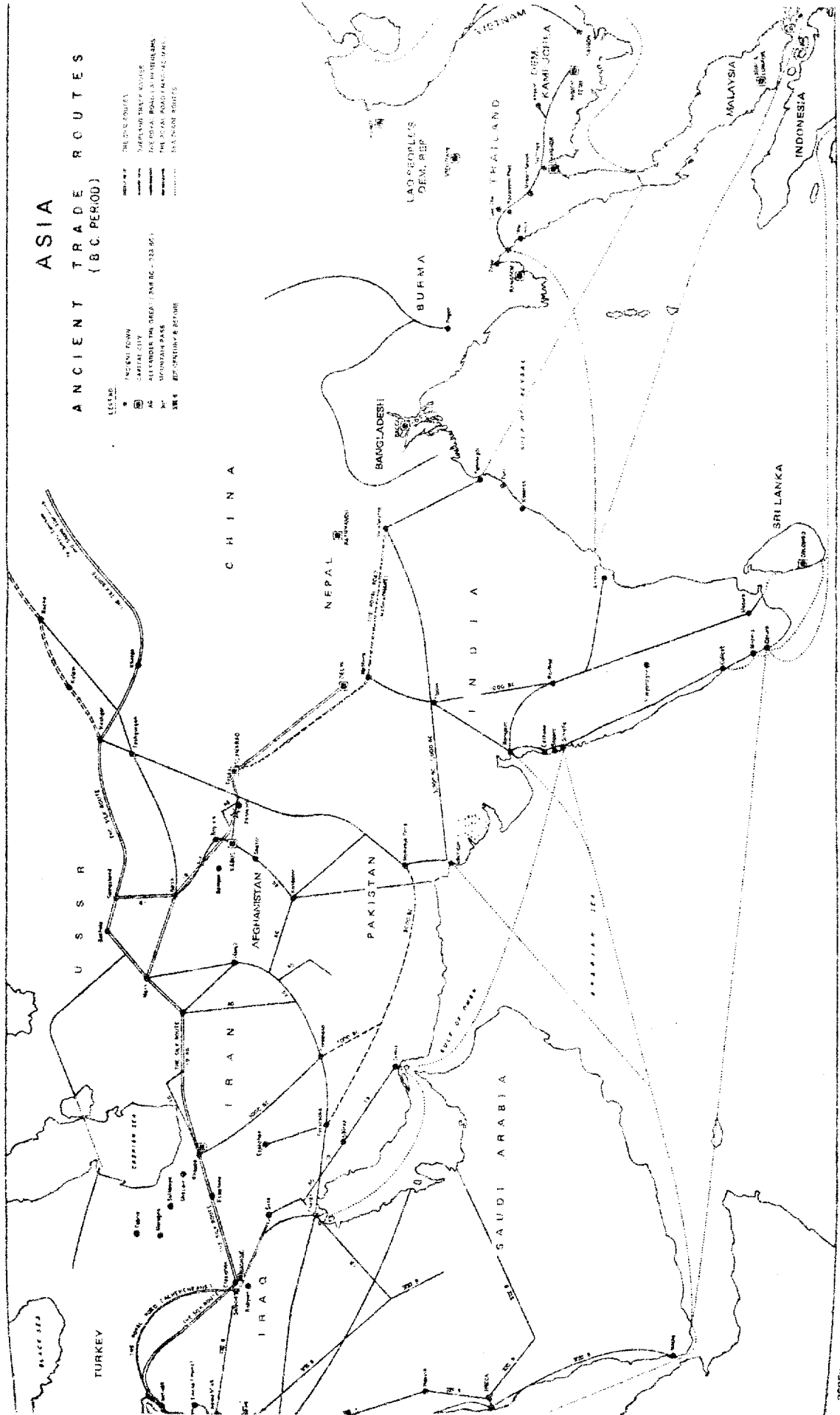
Beirut, 1 March 1979 | Map No. I-1



- PERSIA = Ancient country name
- Yathrib = Ancient city
- Medina = Present name
- - - = Ancient land route
- — — = Ancient sea route
- = Desert limits
- 1000 = Contour line elevation in m.

0 100 200 300 400 500 km

Fig. 2



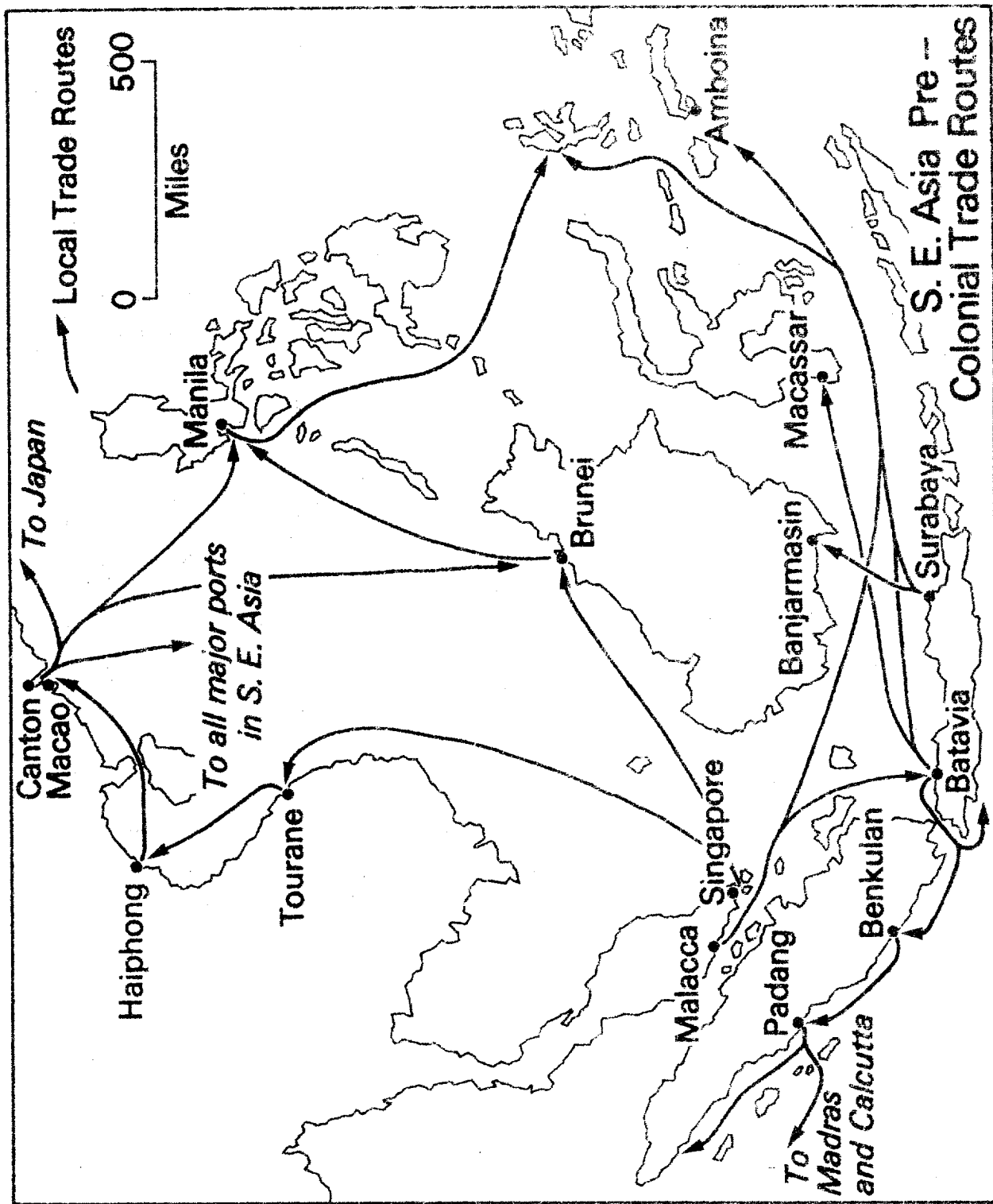
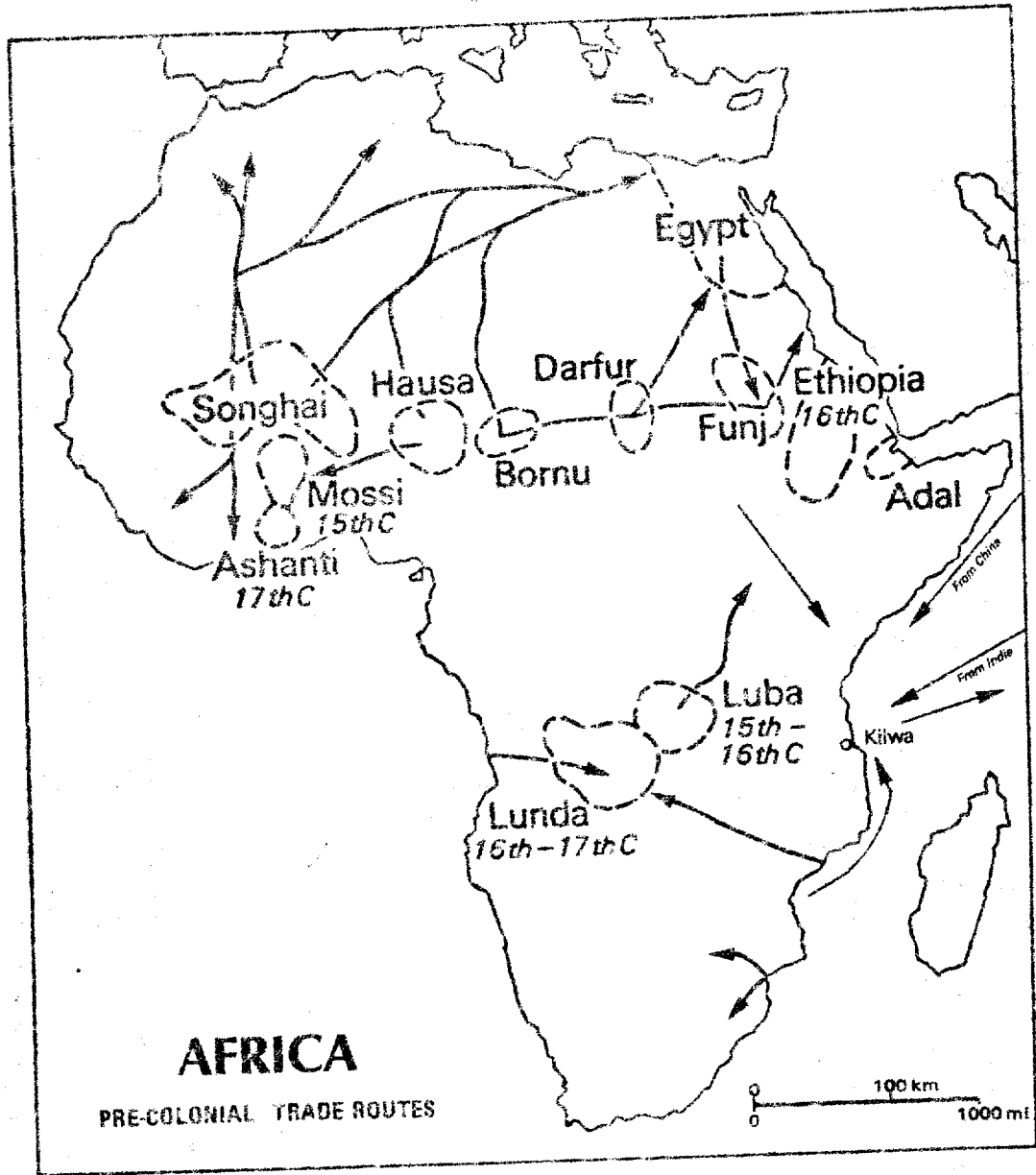


Fig. 4

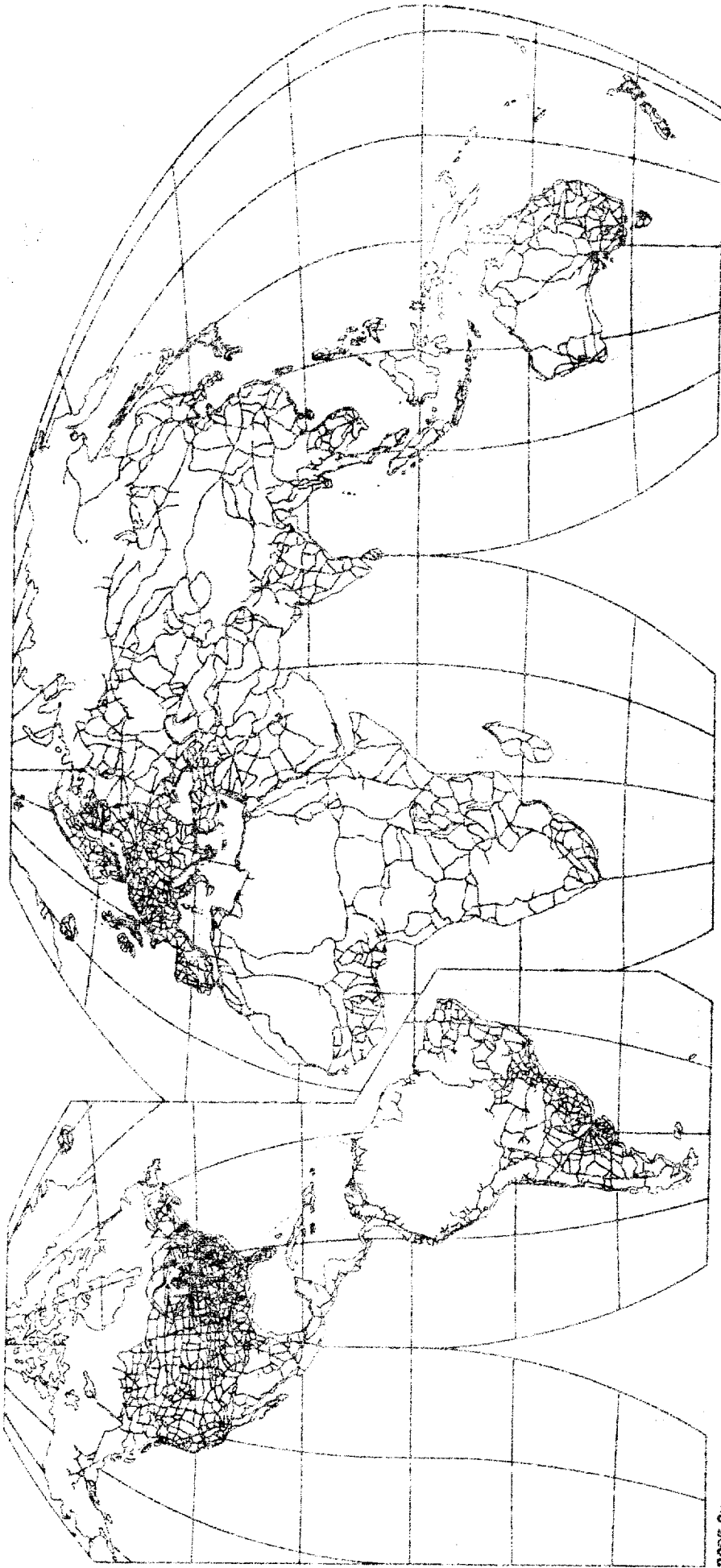


3085.1x

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Fig. 7

WORLD - Principal roads

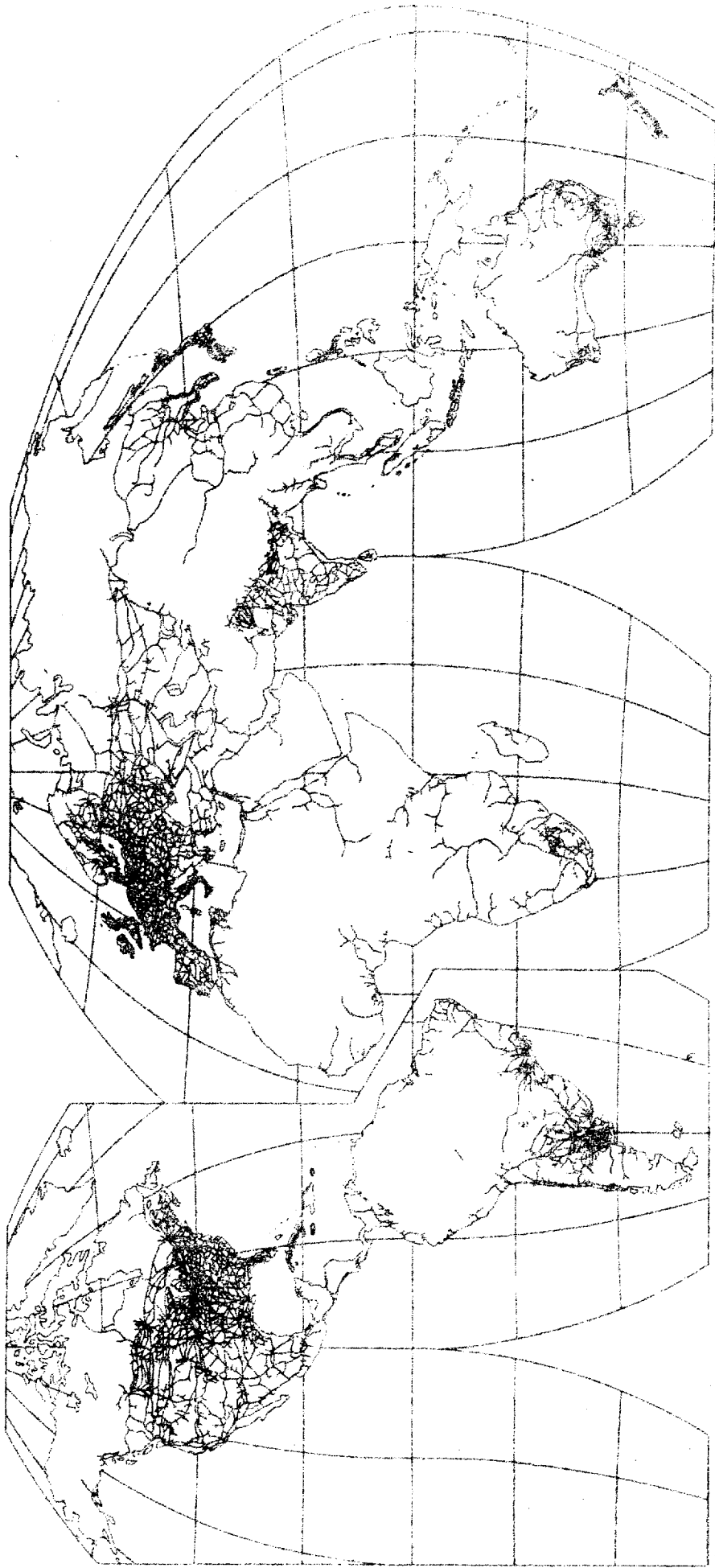


3085.0x

(Selected highways only in densely served areas)

W O R L D — Principal railways

Fig. 6



3085.2x

(Selected railways only in densely served areas)

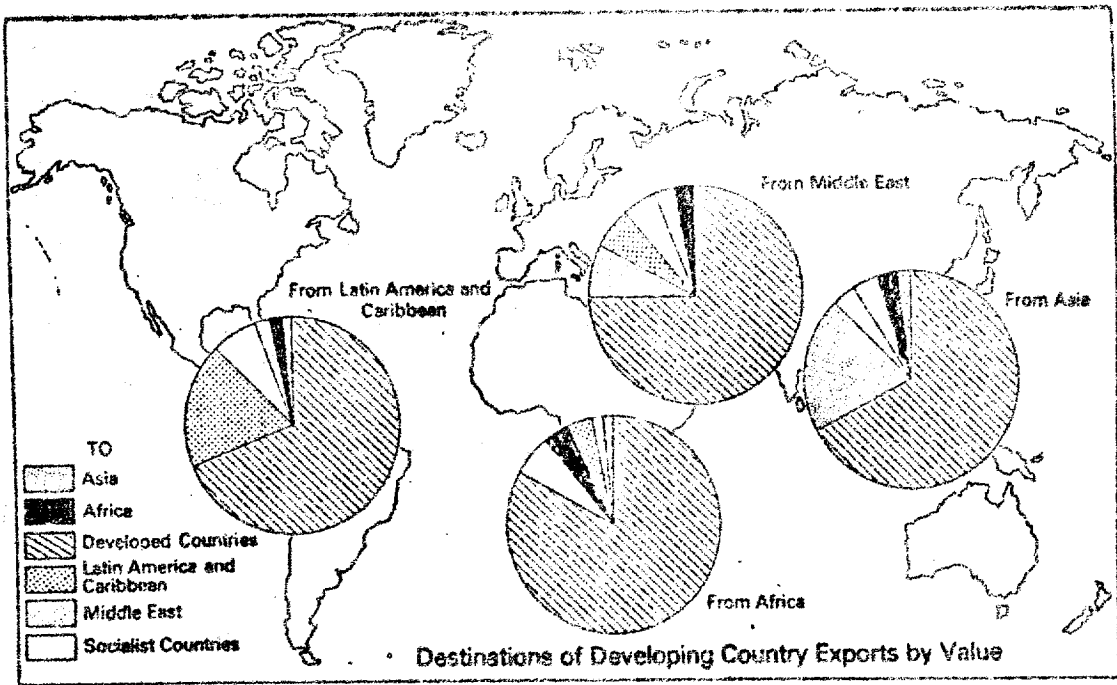
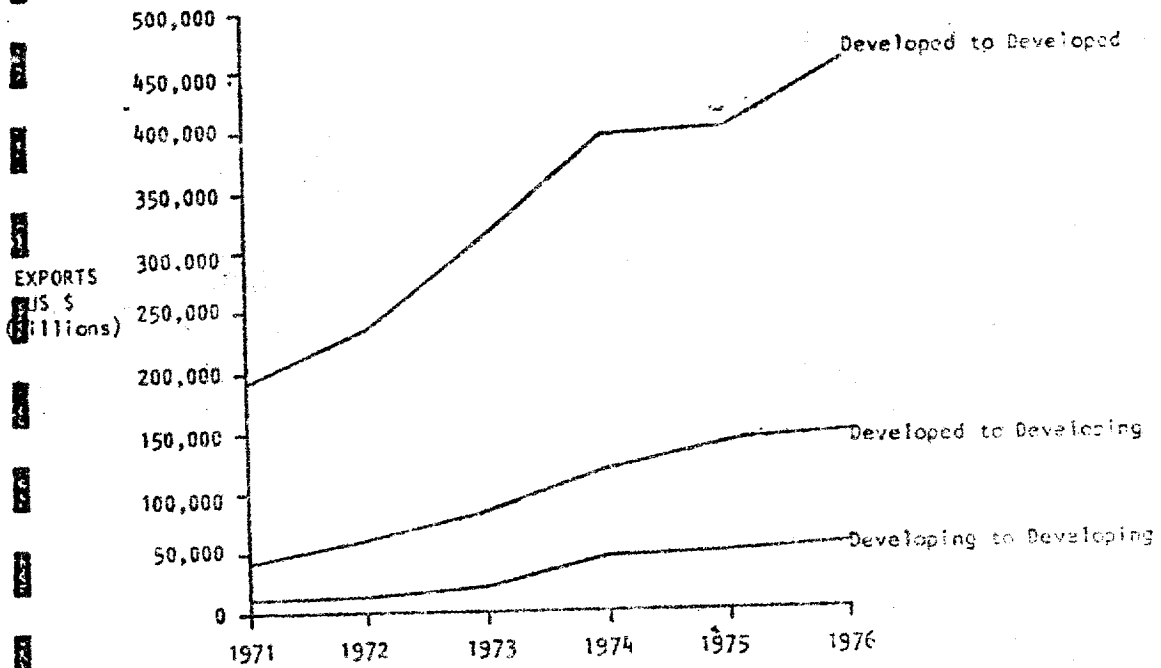


Fig. 10

Trade by value between developed and developed countries and developing and developing countries



Source : I.B.R.D.

Fig. 11

World Fleet Flag Distribution

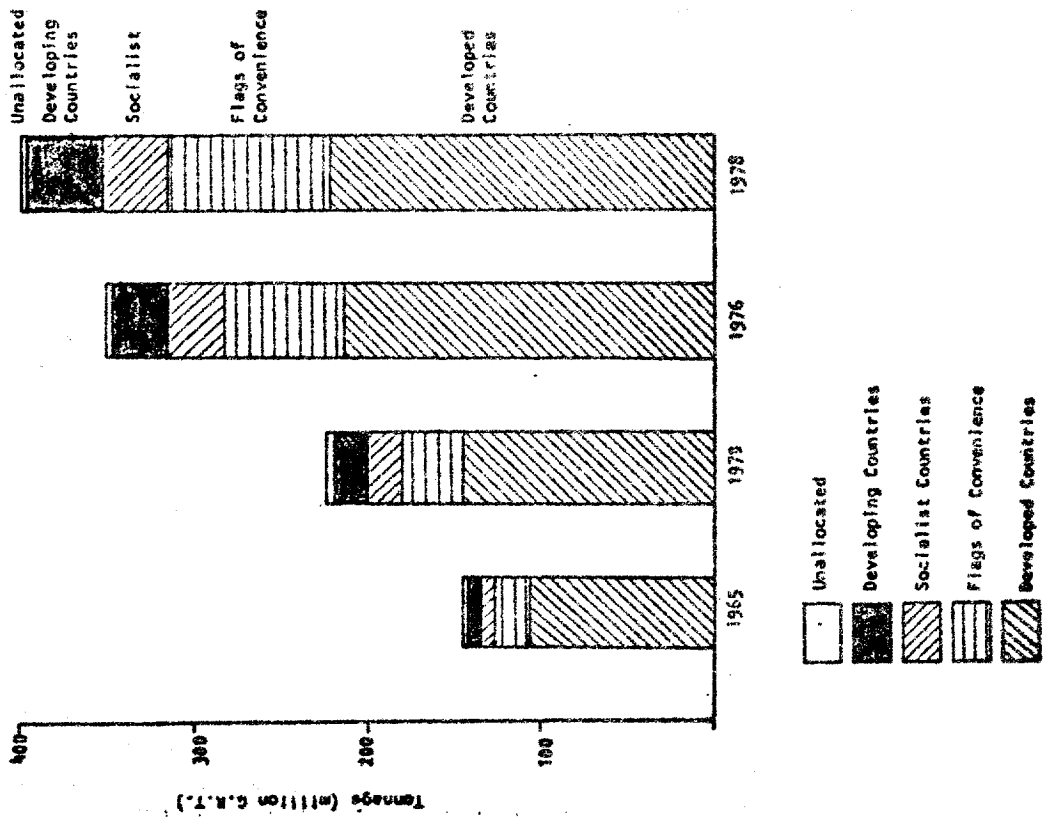
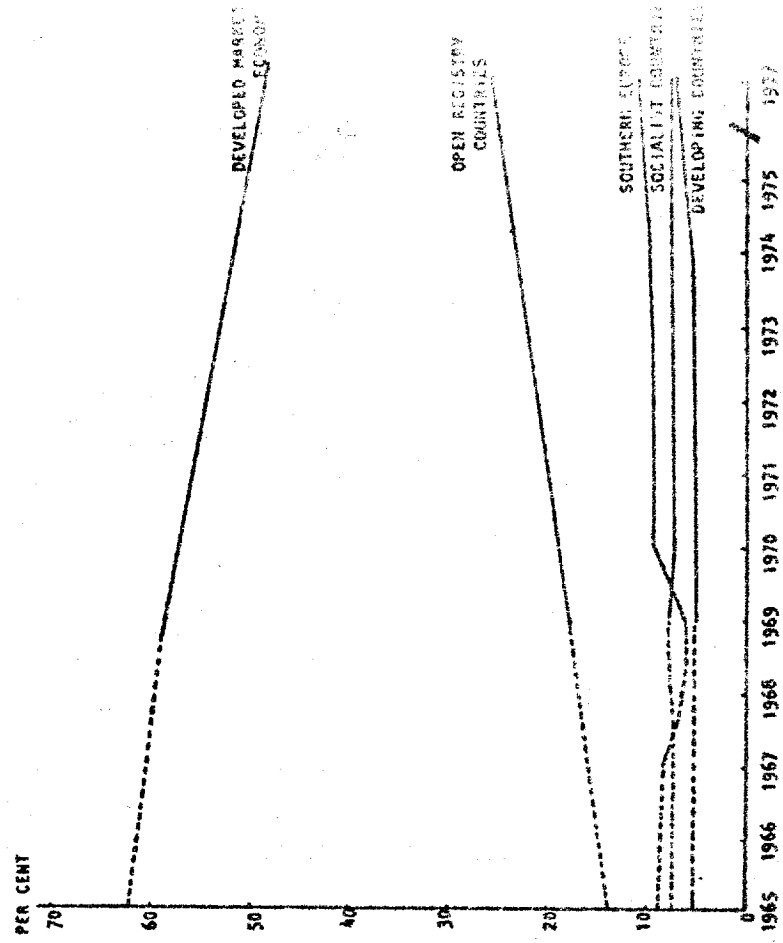


Fig. 12

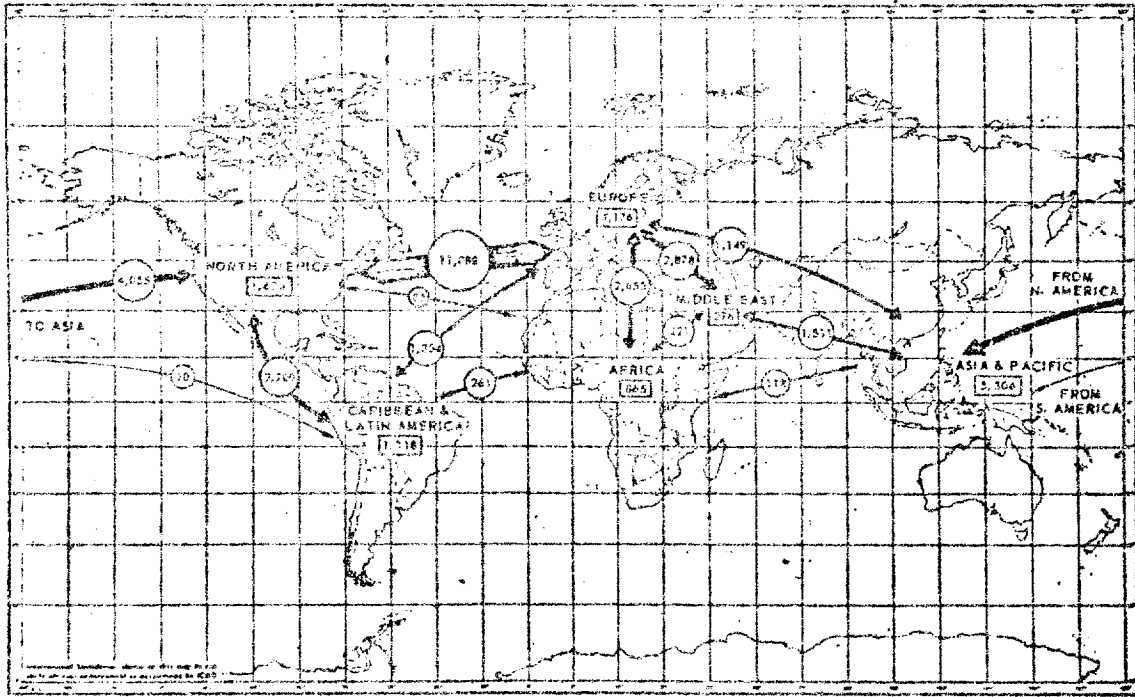
Trends in the growth of the percentage share of the World Tonnage of Merchant Ships by Groups of Countries of Registration, 1965-1977.



Source : UNCTAD 1978

Fig. 13

INTERNATIONAL TRAFFIC CARRIED WITHIN AND BETWEEN REGIONS ON SCHEDULED AIR SERVICES IN 1977
(REVENUE TONNE KILOMETRES)



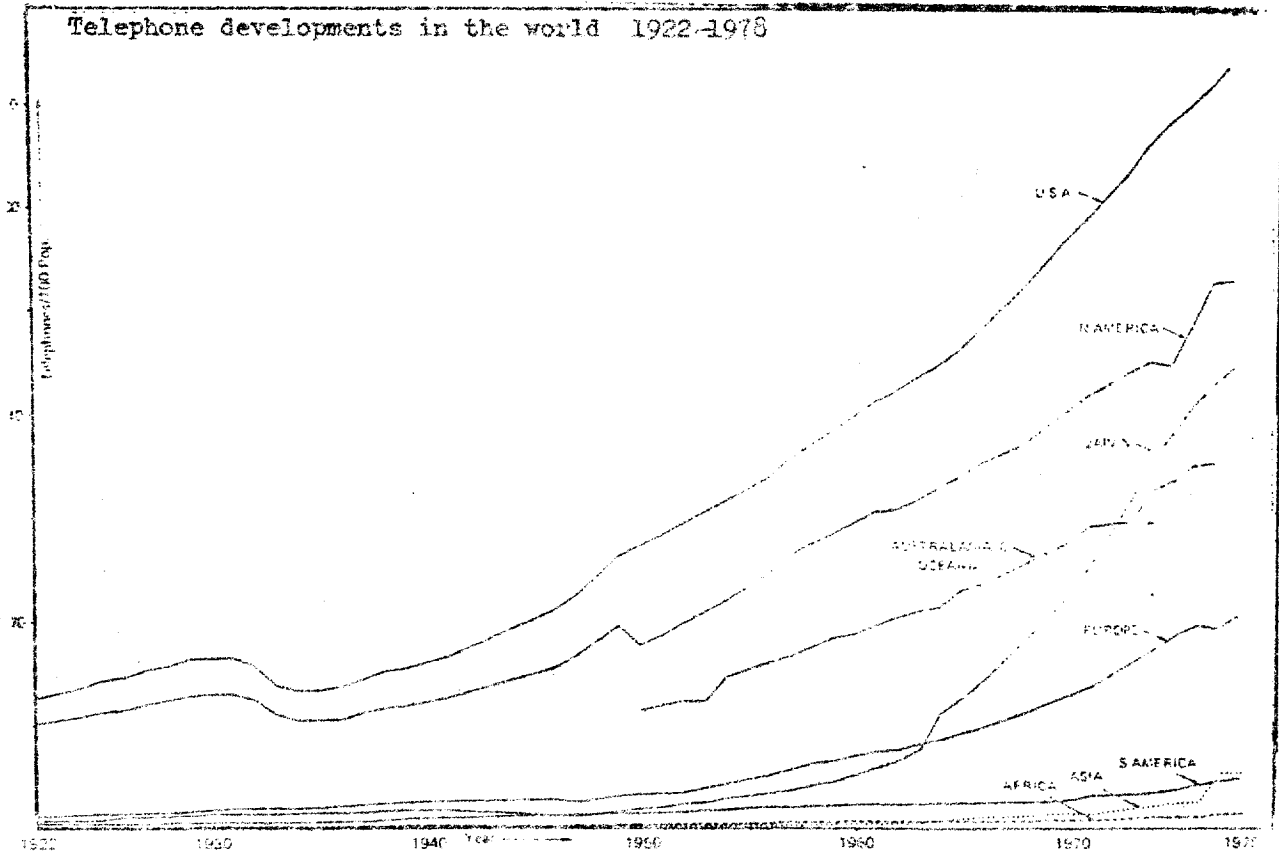
SOURCE: APPENDIX 2.2

NOTES: INTERNATIONAL TRAFFIC CARRIED WITHIN REGION

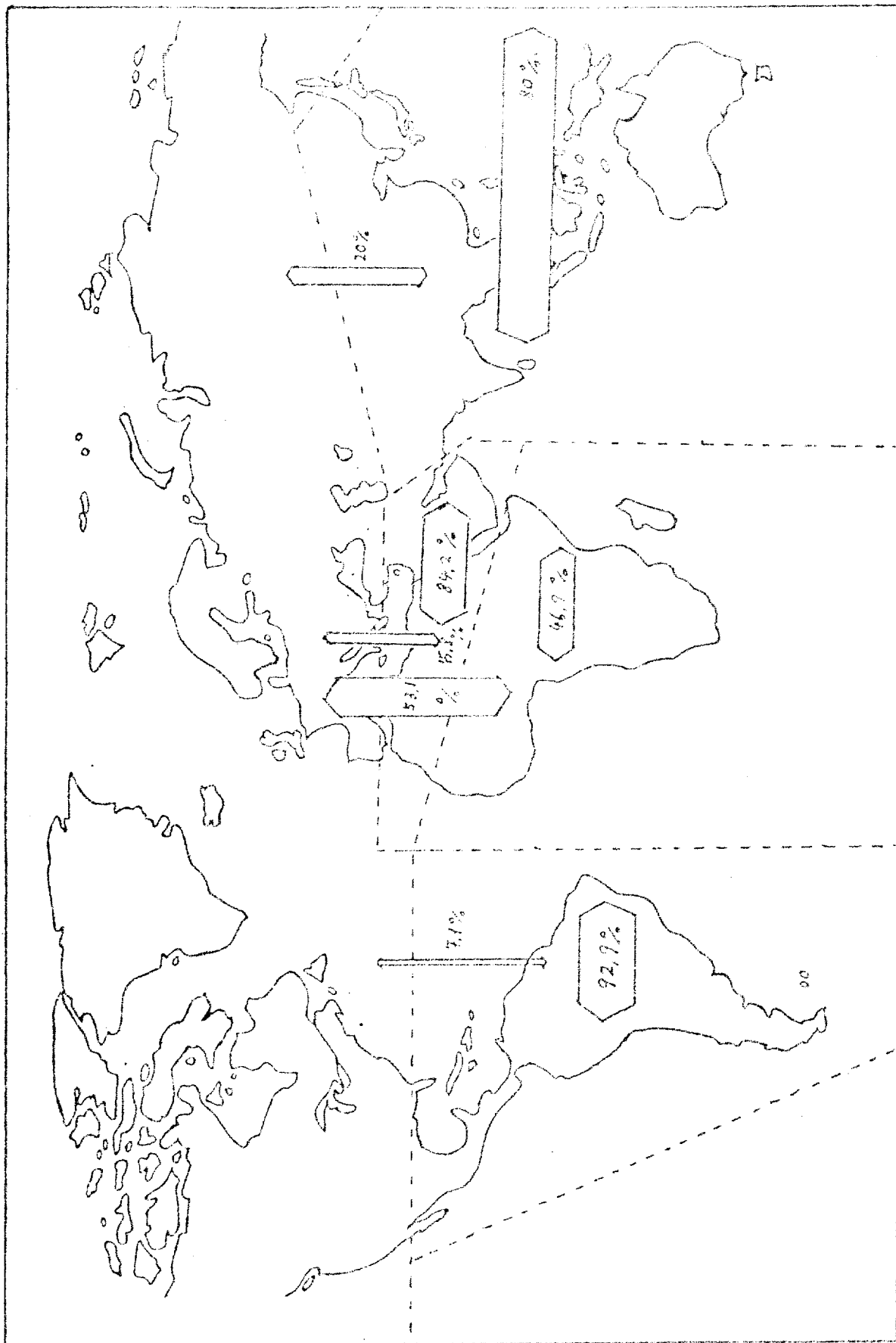
TRAFFIC CARRIED BETWEEN REGIONS

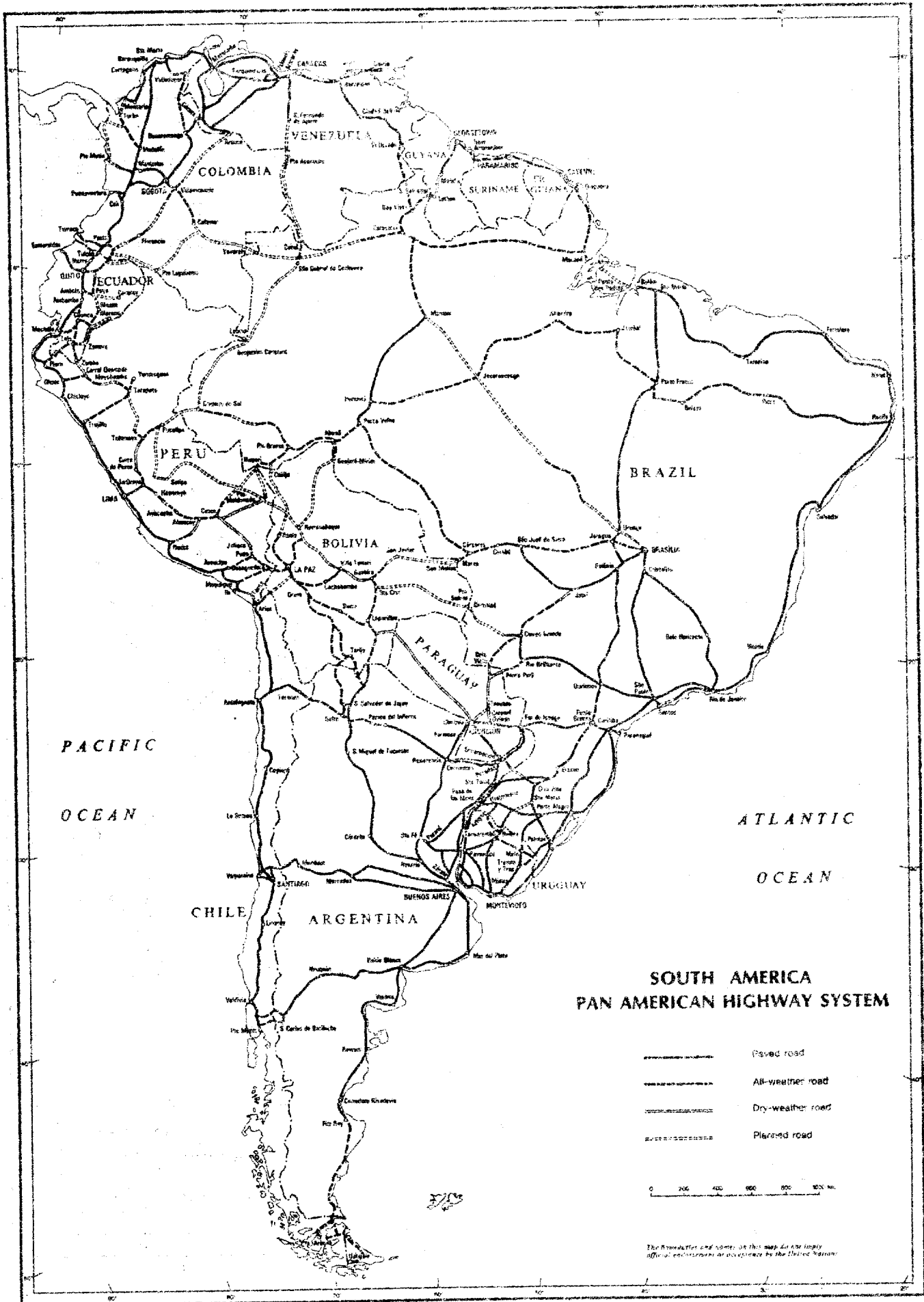
Fig. 14

Telephone developments in the world 1922-1978



SOUTH-SOUTH AND SOUTH-NORTH-SOUTH ROUTING USED FOR THE EXCHANGE OF AIR MAIL BETWEEN DEVELOPING COUNTRIES OF THE SAME REGION AND NEIGHBOURING REGIONS - PERCENTAGES REPRESENT NUMBER OF COUNTRIES (YEARS 1970s)





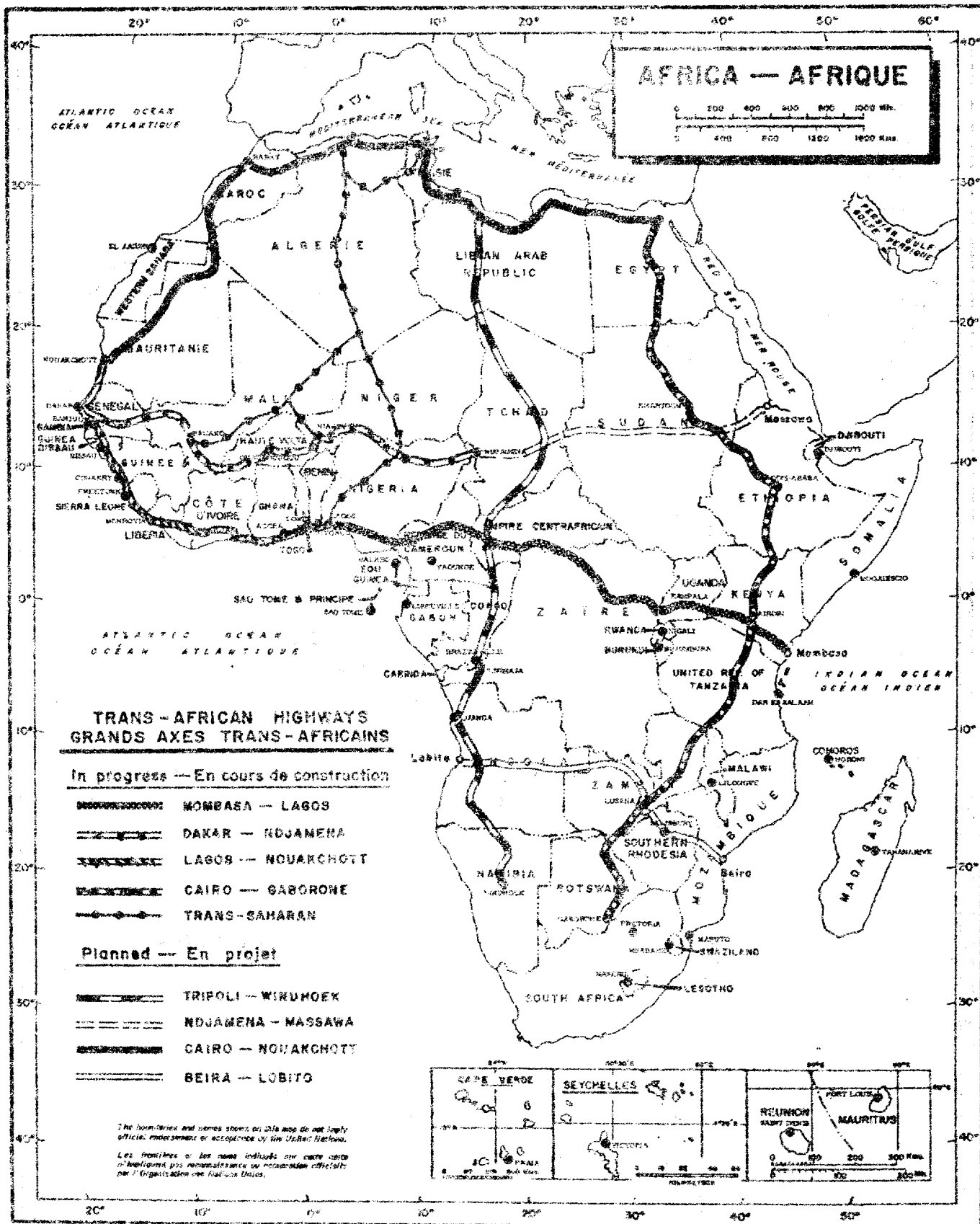
**SOUTH AMERICA
PAN AMERICAN HIGHWAY SYSTEM**

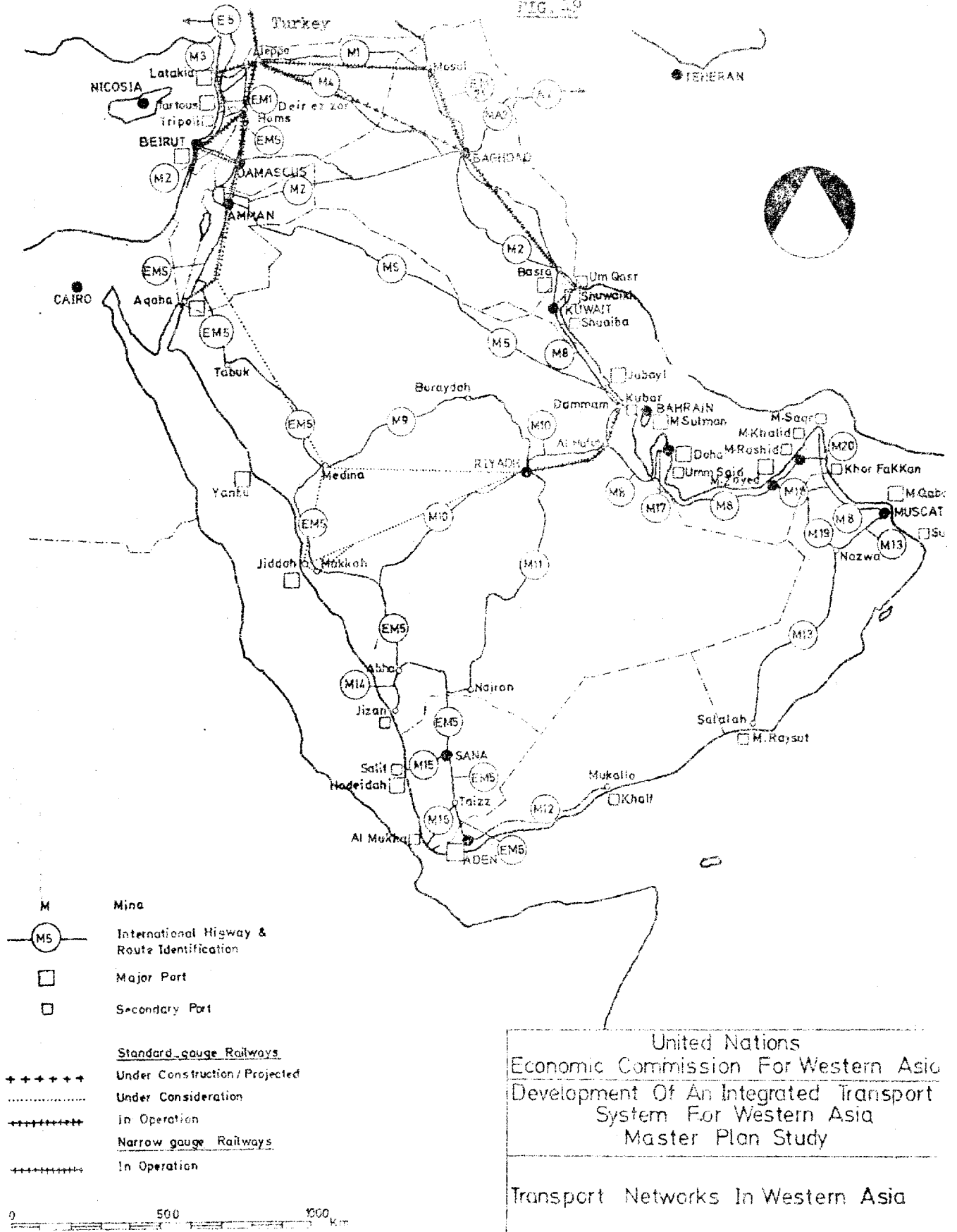
- Paved road
- - - - - All-weather road
- Dry-weather road
- · - · - Planned road

0 200 400 600 800 MILES

The boundaries and names on this map do not imply official endorsement or acceptance by the United Nations.

-16-
Fig. 18





- M Mina
- ⊖ EMS International Highway & Route Identification
- Major Port
- ◻ Secondary Port

- Standard gauge Railways
- ++++ Under Construction / Projected
- Under Consideration
- In Operation
- ++++ Narrow gauge Railways
- In Operation

0 500 1000 km

United Nations
 Economic Commission For Western Asia
 Development Of An Integrated Transport
 System For Western Asia
 Master Plan Study

Transport Networks In Western Asia

April 1970

Trans-Asian Railway Network

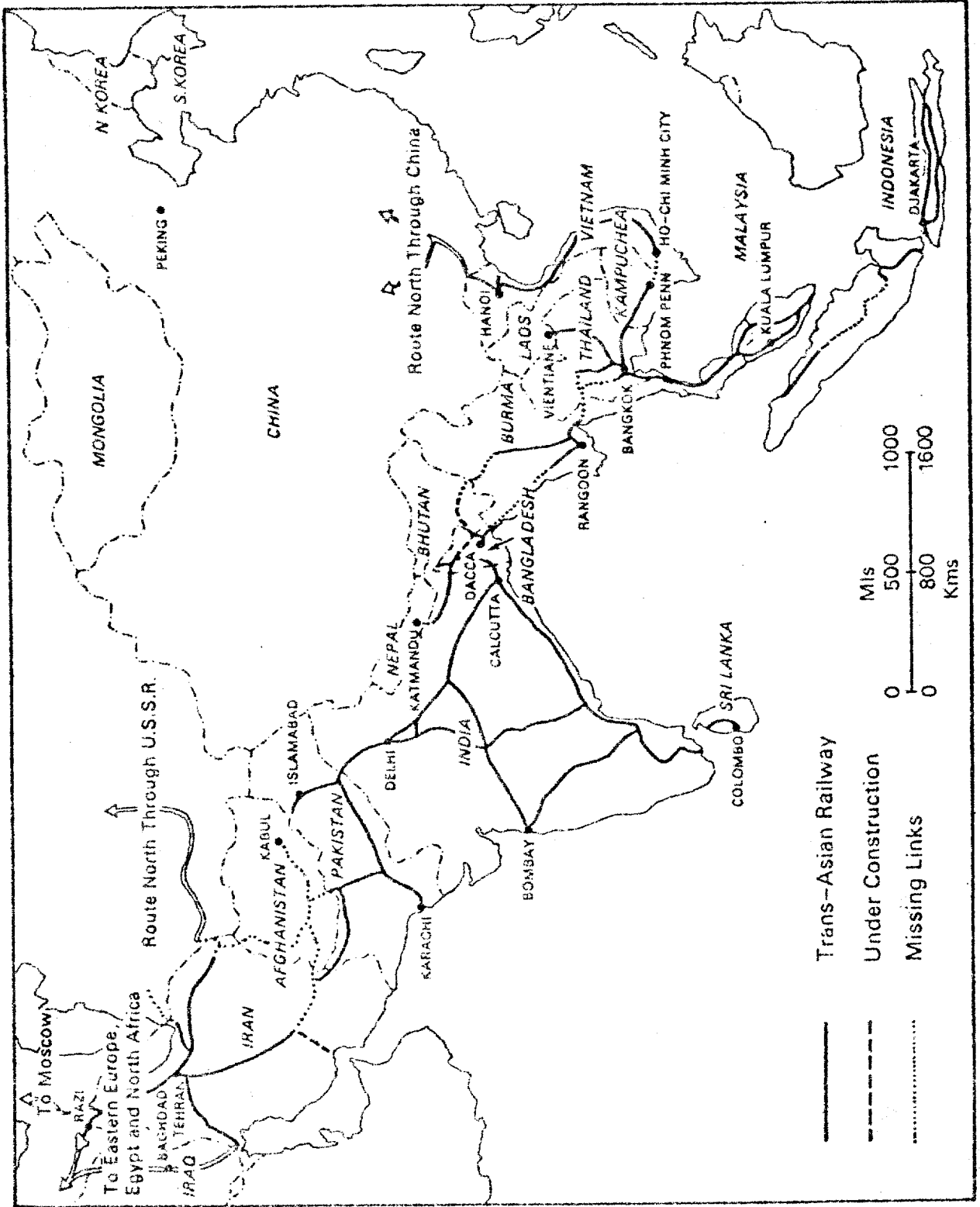
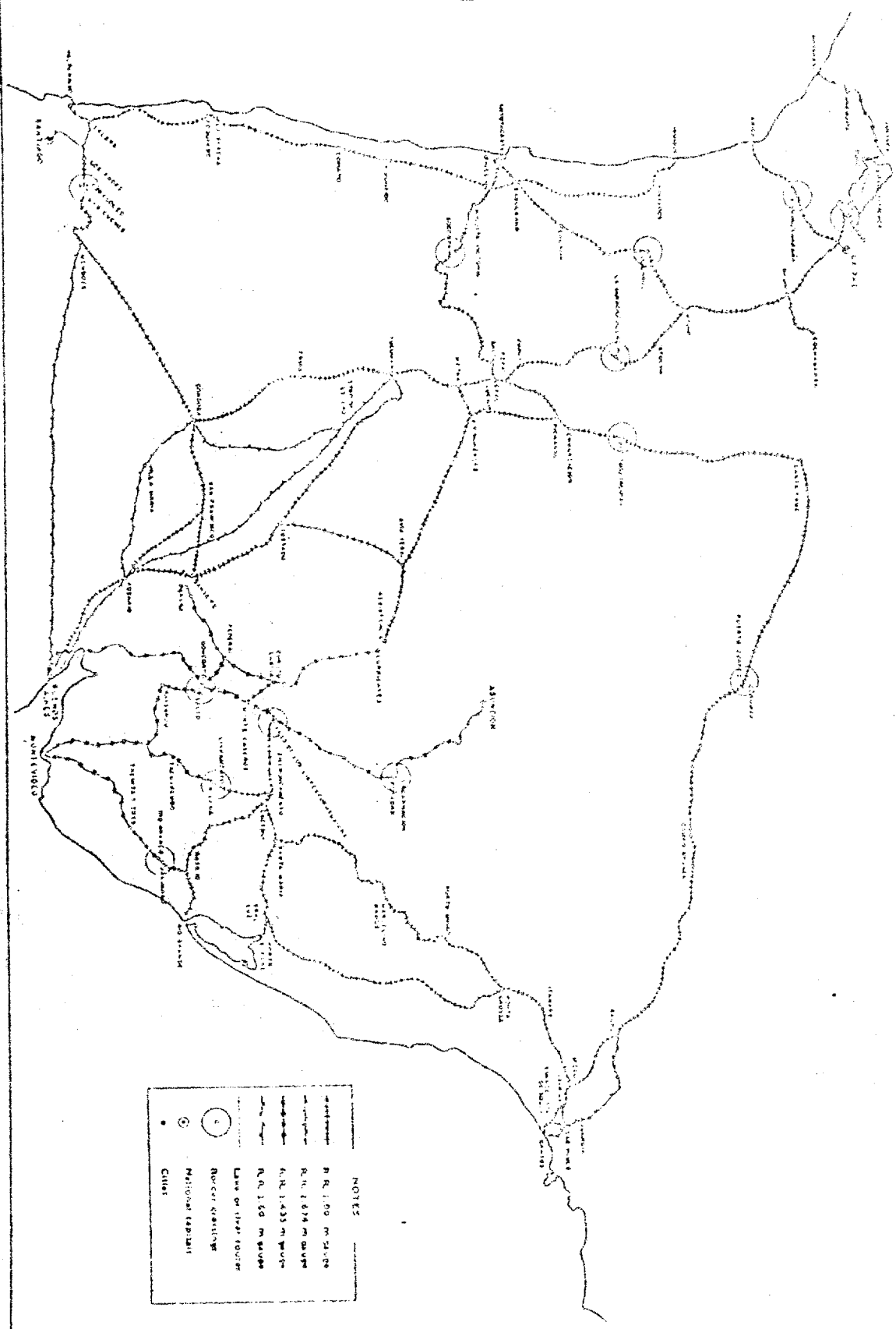


FIG. 20

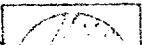
-10-
FIG. 21

INTERNATIONAL RAILWAYS OF SOUTH AMERICA



NOTES

	R.R. 1.50 m gauge
	R.R. 1.675 m gauge
	R.R. 1.435 m gauge
	R.R. 1.50 m gauge
	Lines on other gauges
	Porter stations
	National capitals
	Cities



Figure

- 1 Ancient trade routes in western Asia: Arabia Felix was the land of aloes, myrrh and incense. The incense or spice road originates in Oman and the Hadramaut. The camel caravans laden with these exotic products travelled along the Red Sea to Egypt and the Syrian ports on the Mediterranean; another road went across the desert to Gerrha, the port on the Persian Gulf, from where the precious cargoes were taken by Indian, Persian and Elamite traders across the sea to India and beyond. The incense road also proceeded from Gerrha overland to Seleucia and beyond to China by the silk road.

Source: Merchants, Pilgrims and Highwaymen: A History of Roads through the Ages. Hermann Schreiber
ECWA map of ancient trade routes

- 2 Ancient trade routes in Asia: The fabulous silk roads of Asia, the longest in the world, starting at the Yumen Gate in the Great Wall of China, traversed north and south of the Tarim Basin in Central Asia, merged at Kashgar, passed through Ferghana and Samarhand to Oum in Persia and Baghdad and on to the Syrian ports. The camel caravans carried bright Chinese fabrics to Syrian ports and brought back gold, pearls and jade to the Imperial Court of China. This route was followed by many travellers, including Marco Polo. The sea and land routes between the Mediterranean and the China Seas were followed by a range of Arab, Indian, Chinese and South-East Asian traders.

Source: Based on Times Atlas of World History and Hermann Schreiber, Merchants, Pilgrims and Highwaymen and ESCAP map of Ancient Trade Routes

- 3 South-East Asian pre-colonial trade routes: Complex patterns of "Pre-colonial" trade were conducted by South-East Asian shipping - some of these continue to the present day in the "informal sector" of shipping.

Source: Based on Times Atlas of World History

- 4 Pre-colonial trade routes in Africa: Trade was well established over long-distances in Africa. There were three main groups of routes across the Sahara: westerly routes from Ashanti, Songhai to Morocco; easterly routes linking Hausaland, Kanem and Songhai to Libya and Egypt and central routes linking the great markets of the Middle Niger to markets of the Maghreb. Kilwa was a great entrepot on the east coast for cargoes that arrived by sea and the gold, ivory and copper from the interior.

Source: Based on Times Atlas of World History

Figure

5 The Inca roads: The Inca roads were systematically planned; two roughly parallel roads ran from north to south of the long, narrow empire: one along the coast from near the border of Peru and Ecuador to Talca 120 miles south of Santiago de Chile. It is about 2,250 miles long. The other road starting near Quito in Ecuador crosses the Andes to the capital Cuzco, and proceeds around Lake Titicaca into what is today Bolivia before passing through the Argentine cordilleras to Santiago. This was about 1,600 miles long.

Source: Merchants, Pilgrims and Highwaymen: A History of Roads through the Ages. Hermann Schreiber

6 The colonial economies 1760-1780: By the period 1760-1780 a world colonial economy had redirected trade routes towards the North as the seabased European empires became supreme.

7 World-Principal roads: The openness of the road networks in the South compared with the density of roads in the North is clear. It should be borne in mind that many roads in the South are unpaved.

8 World-Principal railways: The colonial empires established railways and ports as channels and gateways for the flow of produce to their ships. Rail became virtually confined to colonial hinterlands and few regional networks became established, as compared with Europe and the United States.

9 Destinations of developing country exports by value: This shows very clearly the low level of intraregional trade in developing country areas, the low level of interregional trade between developing country continents, and the dominance of developing country export ties with the developed world. The situation in Africa should be noted in particular.

Source: Based on United Nations statistics

10 Trade by value between developed and developed countries and developing and developing countries: The trade between developed countries is high and rising, the trade from developed to developing countries is also important and rising, whereas the trade between developing countries is low and has been relatively static since 1974.

Source: IBRD

11 World fleet flag distribution: This shows the growth of shipping by flag tonnage. The developed countries also beneficially own the flag of convenience.

Source: UNCTAD statistics

12 Trends in the growth of the percentage share of world tonnage of merchant ships by groups of countries of registration 1965-1977: The trends in growth of shipping by percentage share indicate a decline in developed market

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ure

economy shares and an increase in the percentage under flags of convenience. This results from a transfer of developed country registry to flag of convenience registry.

Source: UNCTAD

- 3 International traffic carried within and between regions on scheduled air services, 1977: The low level of air traffic between developing regions should be noted in comparison with traffic North-South and North-North.

Source: ICAO

- 4 Telephone developments in the world 1922-1978: The contrast between the North and South in the supply of telephones is striking.

Source: ITU

- 5 South-South and South-North-South routing used for the exchange of air mail between developing countries of the same region and neighbouring regions (years 1970s): This map shows that more than one-half of the mail between African countries flows South-North-South.

Source: UPU

- 6 Asian Highway - International priority routes: This is one of the most important projects in Asia. It links 15 Asian countries and connects with the Middle East, European and African road systems. The closing of the gaps shown in the map is essential.

Source: ESCAP

- 7 South American Pan-American highway system: This shows the Pan-American highway system approved by the Thirteenth Highway Congress of the OAS in December 1979. The highway system when complete will link all regions of South America.

Source: OAS

- 8 Trans-African highways: The road building programme for Africa is vital in order to achieve intraregional trade, flows of food and more rational use of resources. The new roads will be connected to complete the arterial highway system on the continent.

Source: ECA

- 9 Transport networks in western Asian: Road building has increased rapidly in western Asia with the growth of road traffic on the routes to and from western Europe, and between the oil producing countries. The intraregional rail links under consideration will connect Jordan and Saudi Arabia to the European railways via Syrian railways.

Source: ECWA

/...

Figure

- 20 Trans-Asian railway network: The Asian railways, when the gaps are closed, will greatly reduce transit time for the haulage of heavy loads in the region, as well as passengers. With rising fuel costs, there is increased potential for the use of rail as alternative to sea transport. It will provide connexions with Europe, USSR, Middle East and Africa.
Source: ESCAP
- 21 International railways of South America: Breaks of gauge characterize these networks and there has also been some neglect in terms of investment. The use of the rail system in South America could be greatly improved.
Source: ECLA
- 22 Railway map (Africa): The projected rail links in Africa are vitally important. They offer the basis of a unified system and outlets for the landlocked countries. The objective of the Union of African Railways is to connect the networks among themselves and with other modes of transport linking Africa with the rest of the world.
Source: ECA
- 23 Pan African telecommunications network: The PANAFTEL aims to establish a telecommunications network on the African continent which would enable African countries to contact each other without having to communicate through Europe.
Source: ITU
- 24 Asian telecommunications network: The Asian telecommunication network is to link all the countries from Iran in the west to Indonesia and the Philippines in the east.
Source: ITU

Table 1

World Seaborne Trade by Percentage
Share of Groups of Countries (1977)

<u>Countries</u>	<u>Goods loaded</u>				<u>Goods unloaded</u>			
	<u>Crude oil</u>	<u>Oil products</u>	<u>Dry cargo</u>	<u>Total</u>	<u>Crude oil</u>	<u>Oil products</u>	<u>Dry cargo</u>	<u>Total</u>
Developed	3.9	31.8	63.2	33.5	80.9	78.2	75.2	78.2
Socialist	3.6	12.9	7.2	6.1	2.2	2.1	6.5	4.1
Developing	92.5	55.3	29.6	60.4	16.9	19.7	18.3	17.7

Source: TD/B/C/4/182; UNCTAD 1978.

Table 2

Estimated unit fuel prices and
airport charges by region, 1977

<u>Item</u>	<u>World</u>	<u>Africa</u>	<u>Europe</u>	<u>Far East Austral- asia</u>	<u>Middle East</u>	<u>North America</u>	<u>Central America</u>	<u>South America</u>
Aircraft fuel and oil (US cents/litre)	11.1	14.5	10.7	12.2	12.4	9.1	13.0	13.8
Handling and other charges \$US tonne	3.8	4.5	5.3	5.3	2.9	1.4	2.3	2.0

Source: South-South Air Links, International Civil Aviation Organization, Montreal 1979.

Table 2

World merchant fleets by group and ship types

Country grouping	Year	All ships of 100 grt and over		Tankers	Ore and bulk carriers including combined carriers	General cargo ships	Container ships	Barge carrying vessels	Other ships
		Million grt	Per cent of world total						
World total	1978	400.7	100.0	43.6	25.8	19.5	2.2	0.2	8.7
Developed market-economy countries	1978	215.3	53.7	54.2	57.6	44.9	87.4	89.8	51.8
Open-registry countries	1978	111.0	27.7	34.0	29.8	20.4	7.9	10.0	11.4
Socialist countries of eastern Europe and Asia	1978	35.5	8.9	4.1	4.9	17.2	1.8	-	26.8
Of which: in Asia	1978	5.4	1.4	0.6	1.1	3.8	-	-	0.7
Developing countries	1978	37.3	9.3	7.5	7.1	16.8	2.7	0.2	9.7

Source: UNCTAD, Review of Maritime Transport 1978, TD/B/C.4/182, May 1979.

Table 4

Beneficial ownership ^{1/} of open-registry fleets, 1979
(number of vessels and thousand of dwt)

Countries of registration beneficial owners	Liberia		Panama		Singapore		Cyprus		Bermuda		Hong Kong		Bahamas		Total	
	Nb	Dwt	Nb	Dwt	Nb	Dwt	Nb	Dwt	Nb	Dwt	Nb	Dwt	Nb	Dwt	Nb	Dwt
United States of America	576	55 647	213	6 212	2	6	2	8	11	425	-	-	11	77	615	62 375
Greece	571	35 482	141	1 516	17	405	475	3 047	4	216	-	-	-	-	1 208	40 666
Hong Kong	550	27 261	283	5 650	28	179	2	2	-	-	13	212	-	-	876	33 704
Japan	168	7 394	421	5 361	75	5 349	-	-	-	-	-	-	-	-	664	18 104
Germany, Fed. Rep. of	72	2 911	54	582	145	1 739	52	201	3	28	-	-	-	-	326	5 461
Unspecified	56	1 553	190	1 949	3	20	-	-	-	-	-	-	-	-	239	3 522
Italy	37	2 642	417	417	-	-	6	55	1	81	-	-	-	-	96	3 195
Switzerland	94	2 477	53	516	3	77	1	19	-	-	-	-	-	-	141	3 063
Singapore	5	141	53	193	3	77	-	-	-	-	-	72	-	-	357	2 740
Canada	14	402	4	21	-	-	-	-	47	2 199	-	57	2	20	68	2 698
Israel	37	1 969	7	350	-	204	-	-	-	-	-	-	-	-	53	2 523
United Kingdom	53	1 796	15	98	31	47	8	44	5	86	9	213	-	-	121	2 284
Norway	38	1 737	9	90	12	87	7	13	4	49	1	35	-	-	78	1 801
Netherlands	30	935	46	248	-	-	2	18	-	-	-	-	-	-	27	1 053
Monaco	23	855	2	12	-	-	-	-	2	126	-	-	-	-	95	1 049
Republic of Korea	14	283	80	709	1	57	-	-	-	-	-	-	-	-	-	-
Countries and entities each beneficially owning less than 1 million dwt	155	4 536	291	2 837	26	284	15	61	4	44	7	134	14	96	502	7 930
Unidentified	60	2 435	269	824	-	-	140	323	-	-	-	-	-	-	462	3 560
Total	2 543	150 436	2 163	27 645	649	10 788	710	3 791	81	3 253	33	723	27	157	6 206	126 929
Share in total open registry fleets	41.0	76.4	34.9	14.0	10.5	5.5	11.4	1.2	1.3	1.7	0.5	0.4	0.4	0.1	100.0	100.0

Source: Based on a report prepared for the UNCTAD secretariat by A. and P. Appledore (London) Ltd.

^{1/} The beneficial owner is the person, company or organization which gains the pecuniary benefits from the shipping operations.

Table 5

World tonnage on order as at 30 September 1978
(Thousand dwt)

Country grouping	All ships	Tankers 150 000 dwt and over	Tankers under 150 000 dwt	Ore/oil and OBO carriers	Other bulk carriers	Full container ships	Part container ships	Ro/ro cargo ships	Other ships
1. World total	41 040	7 936	5 602	1 930	10 215	1 802	263	1 416	11 836
2. Developed market-economy countries	22 003	5 497	3 116	551	4 631	764	227	946	6 271
3. Open-registry countries	6 076	1 307	1 361	80	1 196	433	-	74	1 425
4. Total 2 plus 3	28 079	6 804	4 677	631	5 827	1 197	227	1 020	7 696
5. Socialist countries total	2 758	-	312	348	1 017	41	-	215	825
Of which: in eastern Europe	2 650	-	312	348	1 017	41	-	215	717
in Asia	108	-	-	-	-	-	-	-	108
6. Developing countries total a/	9 028	1 132	515	820	3 195	308	16	136	2 906
Of which: in Africa	1 005	-	13	-	54	-	-	79	829
in America	5 484	1 132	402	820	2 204	21	16	55	834
in Asia	2 538	-	100	-	937	287	-	2	1 212
in Oceania	1	-	-	-	-	-	-	-	1
7. Other unallocated	1 175	-	98	131	176	256	-	45	469

Source: Shipping Information Services of Lloyd's Register of Shipping and Lloyd's of London Press Limited.

a/ Developing countries in Europe had no tonnage on order.

Table 6

Motor vehicles in use 1976 (thousand units)

	<u>Passenger cars</u>	<u>Commercial vehicles</u>
Africa	5 230	2 430
North America	122 400	29 940
South America	10 430	3 270
Asia	24 360	14 110
Europe	96 910	12 630
Oceania	6 670	1 600
WORLD	271 590	69 290

Source: United Nations Statistical Yearbook 1978.

Table 7

Railway traffic: World and regions
Freight net ton-kilometres 1976

(Thous. million ton-kilo.)

	<u>1976</u>
World	6 101
Africa	118.6
North America	1 387
South America	79.3
Asia	579
Europe	608
Oceania	34.5
USSR	3 295

Source: United Nations Statistical
Yearbook 1978.

Table 8

World distribution of radio broadcasting
transmitters - 1977

Continents, major areas and groups of countries	Total number of radio broadcasting transmitters
World total	25 510
Europe	5 980
Oceania	330
USSR	3 030
Africa (excluding Arab States)	550
North America	8 470
Latin America	4 270
Asia (excluding Arab States)	2 630
Arab States	250
Developed countries	18 840
Developing countries	6 670

Source: ITU and Technical Co-operation among Developing Countries.

Table 9

World distribution of radio receivers

Continents, major areas and groups of countries	Number of radio receivers		Radio receivers per 1 000 inhabitants	
	Total in millions			
	1965	1976	1965	1976
World total	524	953	207	305
Europe	110	157	249	331
Oceania	3	14	189	632
USSR	74	127	319	492
Africa (excluding Arab States)	6	18	24	57
North America	251	428	1 173	1 798
Latin America	34	84	138	251
Asia (excluding Arab States)	40	107	39	80
Arab States	6	18	59	125
Developed countries	460	788	449	696
Developing countries	64	165	42	83

Source: ITU and Technical Co-operation among Developing Countries.