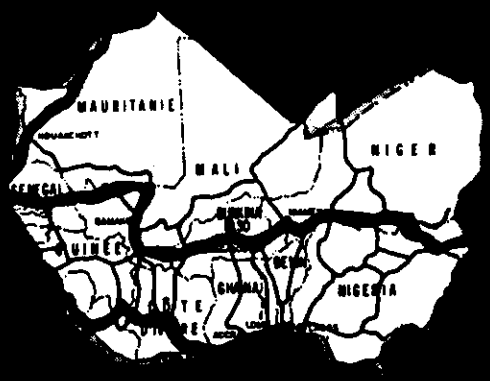
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ECONOMIC COMMISSION FOR AFRICA

STUDY ON THE HARMONIZATION AND CO-ORDINATION OF THE VARIOUS TRANSPORT MODES IN THE WEST AFRICAN SUBREGION

CONSOLIDATED REPORT

CONTENTS

Background

1. The ECA Conference of African Ministers of Transport, Communications and Planning through its resolution ECA/UNTACDA/Res.83/23 of 11/3/83 adopted in Cairo, Egypt inter alia requested the Economic Commission for Africa to carry out a study on the harmonization and co-ordination of the various transport modes in the entire African region.

2. In compliance with the resolution, draft terms of reference were prepared, covering all the transport modes that play a significant role in intra-regional transport, as well as transport economics. The studies were to be carried out at subregional basis and then consolidated to constitute the regional coverage. The four subregions selected for the study were based on the ECA definition i.e. West, North, Central and Eastern/Southern.

3. The immediate objective of these study is to provide a basis for the development of the various transport modes in Africa on a harmonized, co-ordinated and integrated basis, while the long-term objective is to establish a rational integrated transport system in Africa, which adequately responds to existing and future transport demand, promotes development and expansion of intra-African trade and contributes to the physical, social and economic integration of the region.

4. This is a consolidated report which covers all the transport modes and provides a general subregional perspective of the transport system in the West African subregion.

5. The report is partly based on basic information contained in the various modal reports (roads and road transport, railways, air transport, maritime/ports, inland water transport, transport economics) prepared by various experts for the subregion.

6. The detailed information contained in some of the modal reports includes conditions and capacities of existing infrastructure, equipment and facilities; traffic volumes, direction and composition of traffic flows; forecast future capacities and traffic in the various transport modes; and some modal transport costs and charges.

7. Because some of the information is grossly deficient or completely lacking in some modal reports, this report is partly based on data/information researched at the ECOWAS 1/ secretariat in Lagos. As a result, a detailed economic analysis of the traffic, costs/charges, capacity and operational elements, on a subregional basis has not been possible in this report. Thus, the analysis in this report while only rudimentary, does show the magnitude of transport problems in the subregion and also indicate the possible approaches to their eventual solutions.

8. However, a broad review of the immediate past and present general economic condition and performance in the subregion has enabled some rough traffic projections up to the year 2000. Similarly, broad assumptions largely based on incomplete information on existing capacities and planned projects in the various modes have enabled capacity forecast to the year 2000 and forecast traffic volumes have been compared with forecast future capacities to determine the balanced/inbalanced supply of and demand for transport in the subregion.

A. General Socio-Economic Scenario

9. The West African subregion is made up of 16 countries (see Table 1) with a combined total population of about 163.5 million (1983 estimate). The largest of the countries is Nigeria,

1/ Economic Community of West African States

with 93.6 million inhabitants while the smallest is Cape Verde with 0.3 million. The total area is about 6,140,195 km^2 and the individual national territories vary from 3,929 km^2 for Cape Verde to about 1.3 million km^2 for Niger. Similarly the population densities vary from 2 persons per km^2 for Mauritania to a high of 76 for Cape Verde.

10. A comparison with other African subregions would tend to indicate that the subregion is not over-populated, but such conclusion belie the facts that: (i) urban population growth is fairly high and large population concentration is fairly common in the capital cities; (ii) a substantial part of the area is made up of desert (Mali, Burkina Faso, Niger), tropical swamp, jungle and forest, which are not condusive for habitation and (iii) the provision of adequate, reliable and cheap transport services over such a large area with varied and difficult topography is not only extremely expensive but difficult.

11. The combined GDP of the subregion for 1983 (see Tables 2 and 3) was about US$87,705 million and the distribution ranged from US$132 million for Guinea Bissau to US$64,570 million for Nigeria. During the period 1973 to 1983, average annual GDP growth rates in none of the 16 member countries exceeded 5.2 per cent, achieved only by Niger. Four countries achieved growth rates of about 4 per cent, 3 countries of about 3 per cent, another 3 about 2 per cent and one country (Ghana) registered a negative growth rate of - 1.3 per cent.

12. Within the major economic sectors, there was no appreciable pattern of growth, although five coutnries (Benin, Gambia, Guinea, Niger and Senegal) achieved average annual growth rates ranging from 6.1 to 10.9 per cent in the industrial sector. Three countries (Benin, Guinea Bissau and Niger) had growth rates ranging from 5.9 to 8.4 per cent in the services sector. Conspicously lagging was the agricultural sector, in which only Mali managed a 5 per cent average annual growth rate during the period.

13. The 1983 GNP per capita shown in Table 1, indicates that Mali has the lowest per capita (US$169), Nigeria and Ivory Coast the highest (US$700), while seven other member countries range from US$300 to US$480. The average annual growth rate of GNP per capita during the period 1965 to 1983 has been dismal over-all, with absolute decline for three countries, only Nigeria was able to register 3.2 per cent growth, mainly as a result of oil exports.

14. Coupled with the above, has been ther very high rate of average annual inflation during the period 1973-1983. The lowest (4 per cent) and highest (51.6 per cent) rates of inflation were recorded by Guinea and Ghana, respectively, and ten out of the 16 countries had doubled digit inflation during the period.

15. The economies of all countries in the subregion largely depend on agriculture, a small industrial sector and a moderate to average services sector. A comparative analysis of GDP distribution (see Table 3) shows that there has been a general decline in the agricultural sector, a moderate increase in the industrial sector and a reasonable increase in the services sector. It should however be pointed out that the minor and moderate increases in the industrial and services sectors over a period of eighteen years are due to the fact that the base on which the comparison is based was almost neglegible. On average, the services sector now represents about 45 per cent of GDP, with omnious economic implications that since the productive sectors (agriculture and industry) have shown no significant growth, the economies have largely remained in recycling activities, since there has been no marked increase in production and export.

16. While a modeate to average (20 to 30 per cent) services sector is desirable for an economy, it should be based on higher components of the productive sectors (agriculture and industry) or on specialized services, which is not the case in most African countries.

17. Table 4 shows that public sector consumption increased only marginally in four (Ghana, Niger, Senegal and Togo) out of the 16 countries between 1973 and 1983, while there was a decline in the rest of the countries. Private sector consumption did no better, with marginal increases in Benin, Burkina Faso, Mauritania, Niger and Senegal during the same period. Only three countries (Benin, Mali and Sierra Leone) registered positive gross domestic investment during the period under review.

18. Data on the Balance of Trade is given in Table 5. These are no better than the other economic indicators. Basically, only six countries (Ghana, Guinea, Ivory Coast, Liberia, Mauritania and Sierra Leone) had a positive balance of merchandise trade in 1983. It should be pointed out that this does not include services and does not necessarily correlate to the overall balance of trade. Between 1973 and 1983, all the countries except Burkina Faso, Mali, Mauritania, Niger and Togo, registered substantial decreases in exports, while on the import side Ghana, Liberia, Mauritania, Senegal and Sierra Leone recorded declines. In essence, due to low export earnings, most of the countries simply imposed import restrictions. It should be noted that with the exception of Nigeria and Togo (due to oil and phosphate exports), all the countries of the subregion experienced adverse terms of trade.

19. With regards to balance of payments, debt service and international reserves, the overall situation has also been desquieting (see Table 6). The total current account deficits have increased from US$501m in 1970 to US$6259 million by 1983, while interest payments on external public debt has gone from US$59 million to US$1511 million during the same period. Similarly, the debt service ratio as a percentage of either GNP or export of goods and services have both increased substantially.

20. It should be mentioned that while public borrowing has generally increased between 1970 and 1983, the average interest rates have increased and the average maturity and grace periods have declined.

21. Detailed information on population, growth rates and projected population by the years 1990 and 2000 is given in Table 7. In general, the population growth rates which were fairly high between 1973 and 1983, since they invariably exceeded economic growth rates in all the countries, are projected to further increase during the period 1980 to 2000. As a result, the total population of the subregion is projected to increase from 162 million in 1983 to 205 million and 276 million by 1990 and 2000, respectively. This is so, in spite of the fact that the most optimistic forecast shows that even after economic recovery and sustained growth, the population growth rate is still likely to exceed the economic growth rate, unless the latter increases substantially and fairly rapidly.

22. The above review clearly indicates that the economic performance of the entire subregion has been generally dismal over the past one and a half decades, and while the recent prevailing world economic recession, coupled with drought and other natural calamities have definitely contributed to the poor economic performance, the basic cause lie in the economic structure and policies - which are basically export oriented and internally unco-ordinated. While the objective of this study is not to propose solutions to the economic problems of the subregion, it should be pointed out that the poor performance of the subregional economy has a direct effect on the capability of the subregion to provide adequate transport infrastructure, equipment/facilities and effectively maintain and utilize them.

23. While the above is generally true, it does not necessarily follow that the economic decline of the subregion has or must be followed by decreased demand for transport services, as evidenced by the massive influx of international food aid and other emergency supplies into Africa and the subregion, which invariably required increased transport services for their distribution.

24. There is ample evidence that the poor performance of the subregion's economy can be partly attributed to inadequate transport infrastructure, inefficient and unreliable services and the relatively high cost of the services. In essence, adequate, reliable, efficient and reasonably priced transport services do contribute to improved economic performance.

Current and future economic growth prospects

25. The 16 countries of the West African subregion are all members of the Economic Community of West African States (ECOWAS), which was established in May 1975. The treaty establishing the Community states that "..... the aim of the Community (is) to promote co-operation and development in all fields of economic activities particularly in the fields of industry, transport, telecommunications, energy, agriculture, natural resources, commerce, monetary and financial questions and in social and cultural matters for the purpose of raising the standard of living of its peoples, increasing and maintaining economic stability, fostering closer relations among its members and contributing to the progress and development of the African continent".

26. The treaty is quite comprehensive and provides policy objectives for harmonization/co-operation in Customs and Trade matters; freedom of movement and residence; industrial development and harmonization; co-operation in agriculture and natural resources; co-operation in monetary and financial matters; development of Transport and Communications infrastructural links; and establishment of a fund for co-operation, compensation and development, just to mention a few.

27. With regards to the specific articles on a common transport and communications policy, the Treaty requires member States to gradually evolve common transport and communications policies through the expansion of existing and establishment of new facilities as a means of enhancing physical cohesion and promoting greater movement of goods, persons and services within the Community. Other Articles deal specifically with the development of all-weather inter-state roads; inter-connection of railways; harmonization and rationalization of policies on shipping and international waterways; and on merger of national airlines and joint training facilities.

28. A detailed analysis of the economic growth prospects is contained in section C of this report along with traffic forecast which is based on it.

B. Transport Infrastructure and Services

29. Some detailed information and data on the state of the present transport infrastructure in the various modes is contained in the individual modal reports and the analysis in this report is partly based on them, supplemented by information and data from the ECOWAS secretariat. It should however be pointed out that in most cases, the information is neither complete nor up-to-date.

30. In general, the West African subregion is served by air, rail, roads, maritime including coastal shipping and to a lesser degree by inland water transport. Below is a brief analysis of the existing infrastructure and equipment in each of the modes.

Air Transport

31. Each of the 16 ECOWAS member States has one international airport, but these vary widely in terms of runway length (1,200m to 3,900m), provision of ILS, VOR, approach lighting and the largest aircraft they can handle (Table 8). In addition to the international airports, there are several domestic airports of lesser standards. All the international airports have terminals for both passengers and freight traffic.

32. Notwithstanding some runways' limitations on wide-body aircraft, most of the airports are designed to handle at least a dozen flights a day, but due to poor terminal layout and cumbersome departure/arrival procedures, some of the terminals cannot process a few thousand passengers a day. It is apparent that given the current lack of facilitation, a situation of seemingly inadequate capacity is likely to prevail, given increased traffic and daily frequencies, whereas in fact that might not be the case.

33. The absence of ILS and approach lighting, limit operations on some of the airports to VFR and day time operations only, thus, effectively reducing their capacity.

34. Ten of the 16 countries in the subregion own and/or operate 19 carriers (13 scheduled and 6 non-scheduled). Out of these carriers, only three; Air Afrique, Nigeria Airways and Ghanair play any significant role in international/intra-regional air traffic (with about 2,100, 1317 and 260 million passenger killometres in 1982, respectively).

35. In 1983, the fleet of the subregion consisted of about 112 aircraft, 16 (14%) of which were wide-body, 77(55%), narrow-body and 35(31%) turbo-prop and piston (Tables 9 and 10). An important characteristic of the African region's fleet including the ECOWAS subregion is the high proportion of freight or combi aircraft. In view of the fact that traffic volume (passengers and freight) is generally low in Africa and frequencies are few, the operation of combi aircraft could be more cost-effective than individual passenger and freight aircrafts, which would obviously result in under-utilization.

36. In 1982, air carriers of the subregion performed 3,387 million and 1,207 million passenger-kilometres in the international and domestic operations, respectively. These represented average annual growth rates of 13.1 per cent and 20.1 per cent, respectively between 1972 and 1982. Freight tonne-killometres in 1982 were 181.3 and 1.5 million for international and domestic traffic, respectively and the growth rates between 1972 and 1982 were 10.4 and 5.2 per cent, respectively 1/.

37. Three airlines (Air Afrique, Nigerian Airways and Ghanair) carried a substantial share of international freight in the subregion, which in 1982 was: Air Afrique 210, Nigeria Airways 25.5 and Ghanair 4.6 million ton-killometres, respectively. During the same year, Abidjan airport handled about 34,250 and Lagos 26,010 tons of freight, while the airports of Lagos, Abidjan and Dakar handled about 1.1 million, 700,000 and 596,000 passengers, respectively the same year.

38. Some of the problems, condition and activities of the air transport mode in the subregion are brifely described below.

1/ ICAO Special Report - Air Transport - Africa, December 1984

Legal and political framework

39. In the West African subregion, there are two major legal and political bodies namely:

(a) a group belonging to the Yaounde Treaty (Cote d'Ivoire, Benin, Burkina Faso, Mauritania, Niger, Senegal, Togo); and

(b) a group which complements the first, that is to say, countries which are not party to the Yaounde Treaty (Cape Verde, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Nigeria, Sierra Leone) and which have created their own national airlines to operate domestic and international flights.

40. The regional air navigation is therefore influenced by the policies of these two bodies. For instance, all the States members of the Yaounde Treaty belong to one legal space while the others operate in their own space. This situation is much more beneficial to Air Afrique, jointly owned by the member countries of the Treaty; for, it has room for manoeuvre during negotiations with third party countries.

41. Another advantage of the grouping is that, with the exception of flights to neighbouring countries, member countries of the Treaty do not have to conclude air navigation agreements among themselves. In the subregion, 136 air navigation agreements have been concluded, including 62 between member States of the Yaounde Treaty and other African States.

42. An examination of the implementation of these agreements reveals that:

(a) nearly 70% of the agreements concluded by the States belonging to the first group referred to above are implemented;

(b) 44% of the agreements concluded by the States of the second group mentioned above have not been implemented.

43. Owing to the existence of several airlines and a limited market, the countries of the subregion, despite the fact that they belong to the same Economic Community, have applied protectionist measures among themselves and vis-a-vis other African States. One of the paradoxes is that, for political reasons, some countries of the subregion have deemed it expedient to allow non-African carriers to operate certain routes claimed by airlines of member countries of the Economic Community. This protectionism or refusal to grant traffic rights is applied by States in order to ensure economic balance and realize certain profits, and not to promote the development of air services.

44. The subregion's air networks is governed by applied air navigation policies; for protectionism, the refusal to grant traffic rights and lack of the necessary traffic have resulted in some of the links being non-existent and flights characterized by many stop overs or interruptions. Another feature of air transport in the subregion is that although there is no co-ordinated air navigation policy for non-scheduled flights, charter (air operators) are systematically denied traffic rights. However, these charter companies have their role to play in promoting economic development and tourism.

Quality of air services in the subregion

45. The quality of services is difficult to determine. However, the following areas should be considered:

(1) programmed schedules

(2) number of stop overs

(3) type of aircraft used

(4) frequency of flights

(5) in-flight service

(6) facilitation

(7) reservation

(8) loss of luggage

(i) Schedules

Generally, there is no coordination in the preparation of flight schedules. With the exception of Air Afrique and the national airlines of member States, numerous companies in the subregion draw up their separate schedules. It is therefore not unusual to see in the same country a high concentration of flights on a rather limited number of week days. This does not give passengers much choice.

(ii) Number of stopovers

Most of the connections between the capitals are through flights with many stopovers. As a result of the limited number of flights to neighbouring countries, some intra-subregional flights are interrupted, resulting in long journey times and unpleasant flights.

(iii) Type of aircraft used

Most of the aircraft used are for intra-subregional traffic and long hauls. Their major short-comings are the lack of comfort, their age, high accoustic levels; and the fact that they may not meet the accoustic standards which will come into effect in January 1988 in European countries.

(iv) Frequency of flights

The greatest nightmare of passengers in the subregion is that they can never be certain that their flights will arrive on schedule or that they will arrive at their destination on time; for, more often than not, the flights are either cancelled or delayed without notice.

(v) In-flight service and facilitation

These are not up to the required standards.

(vi) Reservation

The booking system used by the airlines of the subregion is rudimentary and out-moded. Those which have introduced a computerized system have not mastered it to be able to apply it to all stopover stations. It is therefore not unusual to have an "OK" on one's ticket but only to realize at the airport that one's name does not even appear on the manifest although one might have reconfirmed within the prescribed time limit.

(vii) Loss of luggage

Owing to the nature of the traffic and the aircraft used, it often happens that once a flight is over-booked, the ground staff give priority to passengers rather than to luggage. The result is that passengers lose their luggage or stay for many days without them. In conclusion, the quality of air services in the subregion needs to be improved.

Airline companies in the subregion

46. There are 13 airline companies in the subregion. They are of different sizes and practically all of them are state-owned. Most of these companies find it difficult to develop in a co-ordinated manner because they tend to concentrate either on domestic flights for obvious economic and social development reasons or on long hauls to Europe, often in co-operation with European airlines, since this enables them to maximise their foreign exchange earnings.

47. Regional services have been created but they are more adapted to the needs of each of the carriers than to those of the region as a whole, resulting in poor coordination of schedules. In fact, a series of decisions taken by each carrier have led to an irrational and ineffective regional flight structure. Thus, despite the fact that thirteen carriers provide regional services, passengers often find it difficult to travel from one point to another.

48. The financial difficulties facing the air carriers have led to the liquidation of Air Mali and the restructuring of Air Afrique. The national airline of Guinea (Air Guinee) is currently being severely criticized by donors who are interested in the country's economic recovery. This financial situation is compounded by difficulties in transferring the income generated in some countries whose currencies are not convertible. Should this situation persist, air transport in the subregion might desintegrate completely in the years to come.

Current levels of trade co-operation

49. As shown on the route maps, relatively large number of carriers try to ply a limited number of relatively high density traffic routes, with only occasional flights on most of the other routes. The flights have never been rationalized on account of the small number of carriers which have tried to conclude trade agreements on a regional basis. Out of 120 city-pairs only five are utilized under commercial agreements, which only concerns minor routes. The five routes are:

Route	Partner	Type of agreement
DKR-NKC	RK MR DS	pool
DKR-PRAI	DS VR	pool
DKR-BKO	DS MY	pool
ABJ-BKO	MY VU RK	pool
OUA-BKO	MY VH	Joint operation

50. On the other hand, the major African carriers have negotiated a considerable number of commercial agreements with European carriers with a view to rationalizing long hauls. These are contained in the following partnership list with pool agreement, joint operation agreement or income sharing agreement.

African Airline	European partner
Ghana Airways	KL SR
Nigeria Airways	AL LZ IB KL LH SN SK SR UT
Air Afrique	AZ LH SR SN AF UT
Air Mauritania	IB

General characteristics of West African air transport

51. A general analysis reveals the following problems affecting West African air transport:

(a) Traffic and flights in the subregion revolve around five airports, namely, Dakar, Abidjan, Lome, Accra and Lagos.

(b) In view of their weak financial situation, the national airlines have not been able to constitute an adequately equipped and diversified fleet to enable air transport play a major role in the economic and social development of the subregion.

(c) Co-operation among the airlines has been disappointing, since most Airlines have been more interested in commercial co-operation in international than regional flights, as more income accrues from the former than from regional and subregional operations.

(d) The large number of small States and the notion of sovereignty have made the granting of traffic rights on certain routes difficult.

(e) Air tariffs are comparatively very high compared to the general standard of living in the subregion.

(f) The absence of subregional consultations in the formulation of air navigation policies and the protectionist measures practised by national airlines have hampered the development of non-scheduled flights.

(g) The shortage of qualified African staff to replace expatriate personnel contributes to the deteriorating financial situation of the airlines and most of the subregion's aircraft fleet needs to be replaced before 1988.

(h) The quality of passenger services leaves much to be desired, especially with regard to intra-subregional flights.

(i) Facilitation at many airports is below the required standards.

(j) The granting of suitable traffic rights remains a major problem.

(k) Most cities in the subregion are linked by flights with multiple stop overs.

Role of air transport in the subregion

52. There are three land-locked and one island countries in the subregion that depend on the transit services of other countries for all their imports and exports. A slight misunderstanding or wrong application of administrative procedures can result in serious delays in the transport of goods.

53. In view of the poor surface transport and communications links with these countries, there are serious problems in the physical integration and economic development in these countries and air transport can therefore play an important economic role in providing rapid transportation without loss of and damage to perishable and expensive goods as well as a political role in the physical integration of these remote countries. The subregion has a tourist potential which has not yet been tapped and only a well organized air transport system can help develop intra-ECOWAS tourism.

54. Consequently, air services should be organized and co-ordinated, and promotional tariffs introduced to encourage travel by air.

Infrastructures and their capacity

55. Each of the 16 ECOWAS countries has an international airport. Most of these airports were built more than 16 years ago and need be renovated or expanded in order to cope with the growing traffic. Some of the runways should be extended to accommodate wide body aircraft with maximum load. There are several provincial airports for national and inter-state flights or flights to neighbouring countries, but the air navigation equipment used at these airports is obsolete and therefore affect air safety. The management of these infrastructures and equipment always poses problems. Some of the countries in the subregion have created ASECNA 1/ to which they have entrusted the management of air navigation and most of the infrastructures.

1/ ASECNA: Agence pour la Securite de la Navigation Aerienne en Afrique et à Madagascar.

56. Due to the little financial resources of most African States and the multiplicity of the air space, it has been difficult to implement the ICAO AFI6 Plan. As a matter of fact, this plan was conceived to guarantee only minimum air navigation safety in Africa.

Infrastructure projects

57. As a precondition for developing effective air transport services in the subregion, most 1/ of the member States have projects, some of which have either been completed or are at various stages of implementation within the auspieces of the United Nations Transport and Communications Decade in AFrica.

58. The projects include a very wide range of activities including but not limited to the following: maintenance and rehabilitation of infrastructure and equipment; construction of new and expansion of existing runways, passenger and cargo terminals and maintenance hangers; and acquisition of new terminal and air navigation equipment, as well as the improvement of air navigation safety.

Traffic and the network

59. The intra-regional passenger traffic of about 700,000 passengers a year, within the West African States has limited potential. This traffic is unevenly distributed among the cities of the subregion and is concentrated on a few important routes. As a result, some state capitals such as Ouagadougou, Niamey, Praia, Nouakchott and Guinea Bissau are infrequently served by air. These network characteristics indicate a poor level of services in general and especially to the land-locked and island countries of the subregion, which happen to be the ones that need efficient air services most.

60. This low traffic level is due to the weak financial situation of the airlines of the subregion and the concentration of services on the lucrative North/South route. Thus, despite the existance of some 13 national airlines, the network of the subregion lacks coherence and integration, as some cities are still very poorly serviced.

61. The traffic of the subregion is concentrated on the airports of Dakar, Abidjan, Lome, Lagos and Accra. Outside these five airports, air links become difficult. Although the traffic is concentrated on the airports mentioned above, there is a reasonable distribution of traffic among the various routes. In 1983, the 4 main city-pairs accounted for 38% of the traffic as indicated below:

City-pairs	Traffic (000)	% of the total
Lagos-Accra	119	17
Abidjan-Lome	53	7
Abidjan-Dakar	51	7
Abidjan-Lagos	50	7
		38

62. Out of the possible 120 city-pairs links among the 16 capitals, only two had an annual traffic of 20,000 passengers in 1983. The structure of the network was as follows in 1984:

1/ Senegal, Guinea Bissau, Cape Verde, Guinea, Sierra Leone, Mali, Benin, Nigeria, Ghana, Togo, Niger and Burkina Faso.

Flight Frequency without stop over	Number of City-pairs	% of the total
One or more daily	7	6
4-6 per week	8	7
1-3 per week	28	23
None	77	64
	120	100

63. Only 43 out of the possible 120 city-pairs provided a direct flight (without a stop over) at least once a week and only seven (6%) on a daily basis. It was observed that 77 city-pairs had no flight connections at all. This lack of connection affected the movement of goods and passengers. The causes are many and can be attributed to the low traffic potential and the lack of co-operation among African Airlines operating in the subregion.

64. It should be pointed out that in addition to the 13 national carriers of States in the subregion, thirteen other carriers operate in the subregion. However, the size of the traffic of these carriers is proportionately very small.

Solutions for the coordination of air transport within the West African subregion

65. The development of air services of the subregion is possible only if there is co-ordination.

66. In the preceding chapters, the problems impeding this co-ordination have been identified. These problems can be resolved in the following manner:

Classification of flights of the Airlines

67. The aim is to classify the different air services according to the present major airports which may be called "economic poles". Any airport with over 50,000 passengers a year and several weekly links with at least three capitals of the subregion will be referred to as an economic pole. Airports which currently meet these criteria are those of Accra, Lome, Lagos, Abidjan and Dakar.

68. The traffic will be classified as follows:

Category A: services between the economic poles identified above and other countries (Africa excluding West Africa, Europe, America);

Category B: services between the capitals of the subregion and the economic poles.

Category C: services within the countries of the subregion.

As can be noted, the clientele differs for the different categories of traffic. Therefore totally different facilities are required for their operation.

Reorganization of the Airlines' strategy

69. The activities of the airlines should be coordinated in order to utilise the services of the categories defined above. The following may be suggested:

- For category A, the services should be operated jointly by the airlines of the subregion, since they require modern facilities which are too costly for a single country;

- For category B, with proper co-ordination of their time-tables, the existing airlines could provide better connections within West Africa; and

- For category C, these services fall under national airlines and their operation is often more political than economic.

Reorganisation of the operating zone of airline services

70. The aim is to study the gateways of the subregion for non-African airlines. In fact, as was noted in the scrutiny of air agreements, several non-African countries have concluded separate agreements with countries in the subregion, which led to a very deep and perhaps dangerous penetration of the subregion by foreign air carriers. It will therefore be advantageous and even economical to designate dispatching gateways for international passengers to enable airlines of the subregion to operate intra-subregional services. In this way, any non-African airline which will be authorized to operate beyond these gateways will be required to grant reciprocal rights to an airline of the subregion.

Recommendations

71. To sustain this policy of re-organizing subregional air services and improve the situation of the airlines of the subregion, the following measures are recommended:

Short term

1. Reduce the number of airlines of the subregion by grouping them together. Category C services will be reserved for the national airline of each country. In this context, the "ECOWAS Air CEDEAO system proposed in the "ECOWAS study on the strategies of airlines in West Africa" should be reviewed for possible implementation;

2. Prepare a plan for gradual replacement of the expatriate staff. This plan should be conceived in such a way as to enable the replacement of these senior expatriate technical staff by experienced and competent African staff;

3. Ratify the convention establishing the African Air Tariff Conference (AFRATC) and use the forum to coordinate tariff policies for the development of intra-African tourism;

4. Utilise the appropriate recommendations of ICAO to improve facilitation at airports in the various "economic poles";

5. Hold subregional consultations for the purchase of air navigation equipment;

6. Establish subregional centres for the maintenance of air navigation equipment;

7. Implement the ICAO African Indian Ocean 6 plan (AFI 6);

8. Utilise the African subregional civil aviation training centres;

9. Establish a structure for subregional consultations among civil aviation, African airlines, immigration and customs services;

10. Adopt a flexible policy for non-scheduled flights;

11. Establish a subregional freight transport company;

12. Utilise the West African Cleering House for exchange of air tickets;

13. Establish a joint reservation system;

14. Establish a joint fuel purchasing system and another for joint purchase and pooling spare parts;

15. Grant, on liberal basis, the necessary traffic rights to carriers of subregional member States and avoid imposition of frequency limitations.

72. With respect to the long-term, a change in the policy from bilateral agreements on air navigation to an approach based on bilateral agreements and the establishment of subreginal airline(s), could have a positive effect on the future development of air transport in the subregion.

Maritime transport

73. Of the 16 ECOWAS member States, 13 are seaboard countries with direct access to the sea. Consequently, shipping is not only the dominant mode of transport for international trade, but is a major economic activity to these countries. The three land-locked coutnries (Mali, Burkina Faso and Niger) of the subregion are similarly served by maritime transport through transit ports in the coastal States.

74. It should be pointed out that: (i) maritime transport usually includes deep sea, coastal shipping and ports and (ii) in the context of this report, the West African shipping range extends from Mauritania to Angola. As a result, the traffic analysis invariably includes shipping and coastal shipping, since the traffic is homogeneous in most cases, and capacity of maritime transport may include coastal vessels, some of which belong to countries in the Central African subregion, due to the operating area and schedules in the West African range.

75. Within the expanded surbegion, there are sixteen coutnries with about 61 shipping enterprises, wholly public, jointly or entirely owned by nationals of the member States. These enterprises own a total of about 185 vessels (excluding ships of less than 100 grt.), totalling over one million deadweight tons (DWT) (see Table below):

Country	Companies	Vessels	DWT
Nigeria	14	55	479,887
Ghana	4	27	195,420
Ivory Coast	4	20	170,136
Zaire	2	9	77,950
Gabon	6	4	75,183
Angola	7	23	62,222
Cameroon	2	6	52,974
Liberia	3	11	44,480
Togo	2	3	25,003
Senegal	7	10	12,580
Cape Verde	3	12	8,980
Eq. Guinea	1	2	6,412
Benin	1	1	2,999
Gambia	1	2	2,238
Sierra Leone	2	-	--
Guinea	2	-	--
TOTAL	61	185	1,216,465

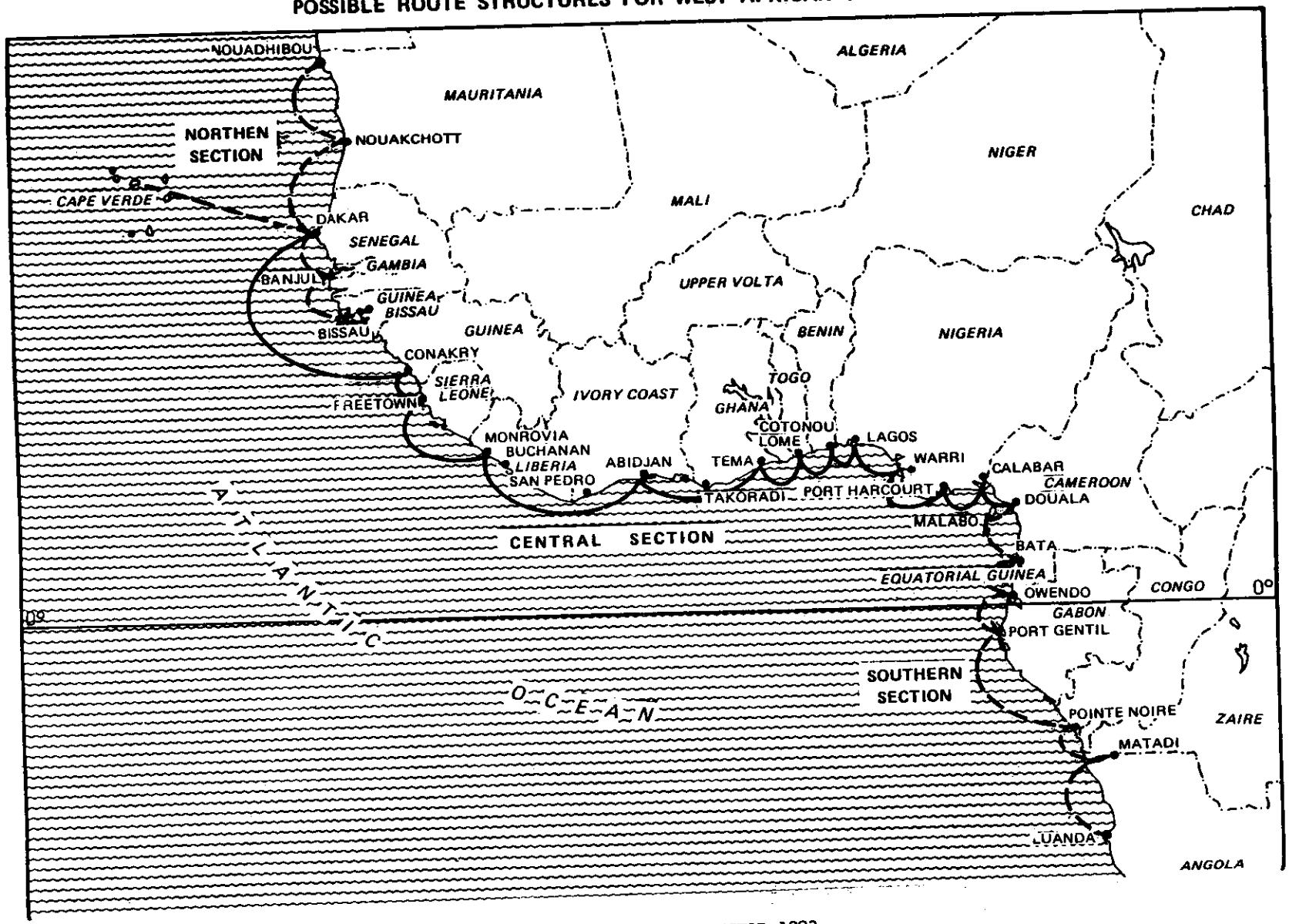
Source: Progress Report Vol.II, Shipping Situation UNTACDA RAF/8/011

76. As can be seen from the above Table, Nigeria alone with 55 vessels, owns about 40 per cent of the subregion's shipping capacity. But together with Ghana and Ivory Coast, the three countries own about 68 per cent of the shipping capacity of the subregion. It would be noted that the domination of the three countries is almost total, were the four Central African States left out. Yet the total number of vessels and capacity owned by the African countries of the subregion constitute a very small per cent of the shipping capacity serving the subregion - and most of the capacity is owned by foreign companies.

77. There are about 65 ports in the 17 maritime States of the expanded subregion, however with only a few exceptions, each country has only one major port (see Map). The detailed description of the port infrastructure, (particularly, the major international ports) is contained in the modal report and specific reference is made to them only in direct connection with the global subregional and economic analysis and their implications. Some of these ports (i.e. Dakar, Abidjan, Lagos and Douala) serve as major transit points for the land-locked countries in the subregion.

78. On the basis of casual observations, the subregion has adequate, if not excessive port infrastructure, considering that there are some 65 ports within a distance of about 2810 nautical miles (i.e. about 4,500 km) from Nouakchott to Matadi. Yet the availability of so many ports within such a short distance may not necessarily be good for shipping, due mainly to the following: (i) the short port-to-port distances, (ii) the numerous calls a vessel has to make; (iii) the small volume of traffic discharged/loaded at each port; and (iv) the inappropriate nature of some of the infrastructure and/or equipment - all of which have the effect of increasing vessels' operating costs. Another problem is that grographically close ports tend to compete and substitute each other and any inefficiency in one may result in a shift of traffic to the more efficient one.

POSSIBLE ROUTE STRUCTURES FOR WEST AFRICAN COASTAL SERVICE



Source: West African Coastal Shipping, Phase II RAF/77/032 by UNCTAD 1983

79. Some of the major problems of the West African ports are: unsuitability of the port location and design; poor and inadequate service infrastructures (as opposed to quays and berths); poor inland transport connections (interface); lack of trained and experienced personnel; poor port management and operations; shortage or lack of modern equipment; and comparatively high ports costs. Some of the above mentioned problems are briefly discussed elsewhere in this report in the context to which they influence and affect shipping in the subregion.

80. In addition to the above problems, some ports have experienced congestion to various degrees such as: (a) Persisting heavy congestion - Apaapa/Lagos, Port Harcourt, Banjul, Cotonou, and Takoradi, (b) Intermitent congestion - Tema, Calaba and Monrovia, (c) Occasional congestion - Abidjan, and San Pedro.

81. Many factors affect port performance in the subregion, some of which are due to actions/decisions of port authorities or policy-makers, respectively, while others are inherent in the nature of transport technology used, types of cargo handled, vessel types and sizes and etc. Some of these include, but are not limited to the following:

- whether cargo is containerized or not, lift-on lift off, Ro/Ro, palletizied, pre-slung or bulk;
- use of, and efficiency of quay or ship's cranes;
- working direct to transport or through sheds;
- working alongside quay/jetty or to/from overside lighters;
- whether vessels are fully loaded/discharged at one part;
- number of working hatches/gangs, time periods and duration of working day, night work, shifts, etc.;
- type of vessel and suitability for cargo;
- payment method - piecework or incentive scheme; and
- environmental, weather and working conditions.

82. As a consequence of the above variables, the throughput (loading/discharging) rates of ports in the surbegion differ markedly (see Table 11). With Abidjan as the base index (450 t/day, 100 per cent), the rates of discharge various from 120 t/day (27 per cent) for Nouakchott to 460 t/day (102 per cent) for Douala in the subregion. The Table also indicates various discharging and loading rates for various types of vessels at the selected subregional ports. It further reveals that in general, some ports are more efficient than others in handling special types of vessels.

83. In spite of the above, it should be emphasized that the average throughout in the subregional ports is far below that achieved in developing countries and in other parts of the world (8 to 12 ton/gang/hour for developing countries vs 15 to 25 tons developed countries for general cargo). Studies by UNTACDA show that the throughout in most, if not all African ports can be subtantially increased.

Freight rates and costs

84. Ideally, shipping freight rates are determined by the cost (operating costs) of providing the services. Usually, vessel operating costs include the following cost elements: crew cost including overtime and travel; ship's provisions; repair and maintenance; ship's stores and spares; insurance; ship management; miscellaneous and depreciation. In view of the various sizes, capacities and technical characteristics of various vessels, such operating costs differ from one class of vessel to another. Thus in general, the actual operating costs of various vessels plying from the same origin to the same destination differ widely. But despite this cost variations, established ocean freight rates (i.e. charges) are usually the same from one origin to one destination for equivalent cargo units.

85. From an economic perspective, two conclusions can be derived, viz: either (i) only the more efficient type of vessels (specific to the cargoes) are in operation; or (ii) the freight rates are set at the break-even or profitability point of the most inefficient vessels. Available evidence in the fact that all sort of vessels both modern and old, large and small are still operating in the subregion and the fact that freight rates are comparatively high, would tend to support the second derived conclusion. It is also supported by the fact that freight rates are largely determined by the Liner Conferences with little or no influence by countries of the West African surbegion. The Ministerial Conference of West and Central African States on Maritime Transport is beginning to play an important role in the negotiation of freight rates in the subregion.

86. Figure 1 below gives proposed freight rates prepared by UNTACDA in 1983 for the West African subregion. In 1985, actual freight rates in the subregion were studied again by UNTACDA (Tables 12 and 13). It would be noted that although the two sets of figures are tow years apart and expressed in US$ and CFA francs, respectively, they are quite similar. In Table 12, the freight rate per ton from Dakar (Senegal) to Port Harcourt (Nigeria) was US$50 in 1983, while in 1985 the rate was CFAf 20,900 - which is equivalent to US$52.25 at the then exchange rate of US$1 = CFAf400. It should be noted that the 1985 freight rates are only slightly higher (4.5 per cent), due to the substantial appreciation of the United States dollar over the CFA franc, otherwise the increase in the freight rate between 1983 and 1985 would be about 46.6 per cent (i.e. US$1 = CFAf 285).

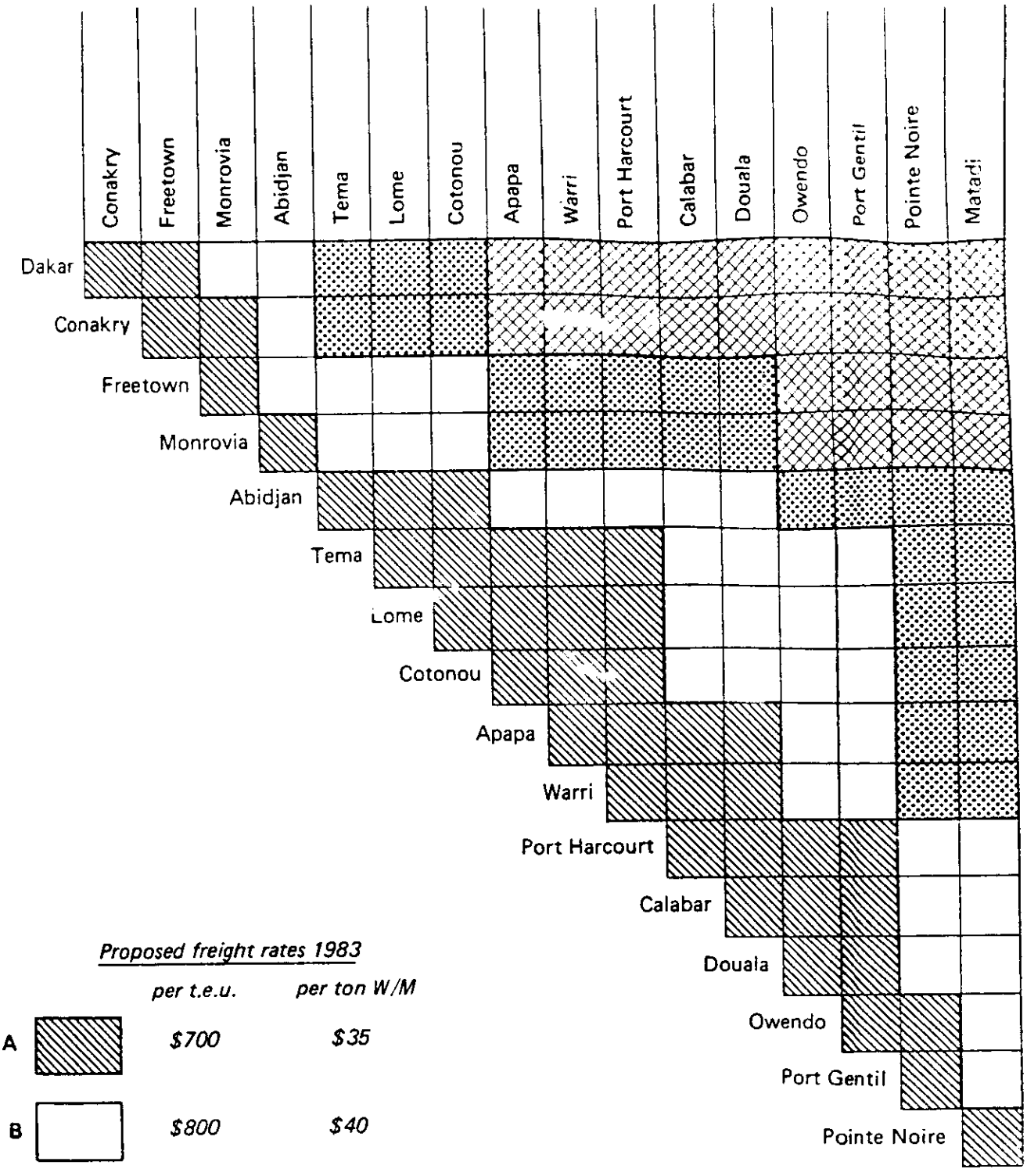
87. With respect to vessels operating costs, these differ not only with the size and type of vessel but also between various shipping companies because variable costs can be substantially reduced by efficiently managed companies and while the total operating costs may seem high, they become fairly low when divided per unit load (ton) of a large capacity vessel.

88. In 1981, UNCTAD carrieds out a study of vessels operating costs in the West African subregion 1/ using eight shipping enterprises and some 34 vessels in the survey.

1/ Progress Report: Shipping Situation. RAF/8/011

LINER SERVICE ON THE WEST-AFRICAN COAST
SAMPLE SCHEDULE OF FREIGHT RATES

Figure I



Proposed freight rates 1983

	per t.e.u.	*per ton W/M*
A	*$700*	*$35*
B	*$800*	*$40*
C	*$ 900*	*$45*
D	*$1000*	*$50*

Table 14 shows the results of the survey. Where information was incomplete, an estimate was made. Basically the Table shows that for 11,000 to 17,000 DWT tweendeck/multipurpose vessels (except H8) the average daily operating costs range from US$4,380 to US$11,645. The figures include both high and low estimated costs based on the local currency exchange rate vis-a-vis the United States dollar.

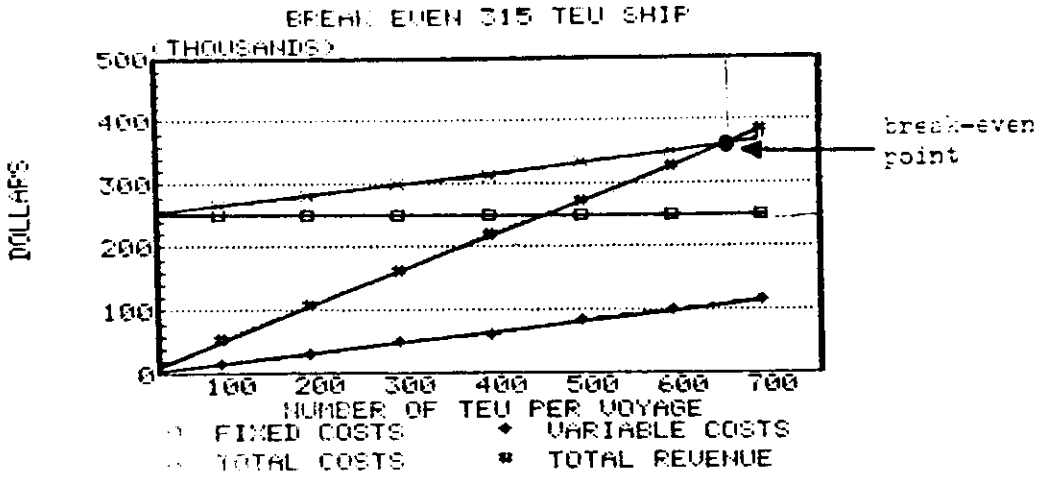
89. It should be noted that while the studies mentioned above give freight rates per ton from one origin to destination and vessel operating costs per day, they however do not give the operating cost per ton from one origin to destination. This particular cost element constitutes the critical variable in determining the relationship between unit freight rates and unit cost of services. In principle, the unit operating cost per ton indicates the average or actual costs the shipping company incurs in moving a ton of goods from one place to another - and is extremely important in determining whether the freight rates are based on the cost of providing the services.

90. The difficulty in determining the unit cost per ton is perhaps due to the following: (i) while the capacity of a vessel is given, most vessels frequently sail with less than full loads, thus the unit cost per ton would vary from that of a fully laden vessel; (ii) a large number of port calls on a voyage (as is common in the subregion) implies higher operating costs, which would adversely affect the per ton unit cost; (iii) the low port throughput at most West African ports increases the round-trip voyage time, thus increasing the operating costs and the unit cost per ton; (iv) inefficient shipping companies with substantially heavy fixed costs have higher operating costs for the same voyage and similar vessels than more efficient companies, which would imply higher unit costs per ton. Under the above circumstance, the freight rates for the same O-D and same type/size of vessels could differ between any two shipping lines/companies. Finally, if freight rates were strictly cost-based, the rates would vary from one voyage to another by the same vessel and same company, due to total load, duration of voyage, fixed/variable costs, and etc.

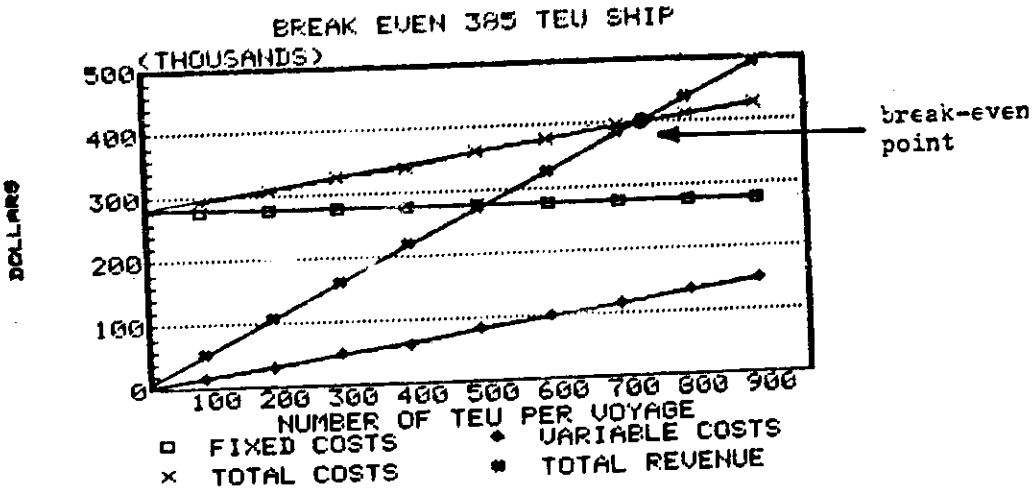
91. As a result of the above difficulties with the unit cost method in shipping, the operating performance of shipping is generally determined on the basis of a "break-even point" - the point at which total operating costs and total revenues are equal. In practice however, it is apparent that freight rates in the subregion are generally higher than the break-even point.

92. Below is a typical graph (Figure 2) showing the various costs (fixed, variable, total) and break-even points of two container vessels under various assumptions. It will be noted from the graphs that the break-even points (where total operating costs and total revenues are equal) are roughly US$360 and US$400 for a 315 TEU and 385 TEU vessel per voyage. Given detailed cost data for any vessel), it would be possible to graph the break-even point and therefore determine the minimum tonnage such a vessel should carry per voyage in the West African shipping range.

93. A brief analysis was made above (para. 81 to 85) of the infrastructure, facilities and problems of ports in the West African subregion, without mention of the relationship between ports and shipping or the costs and charges of port services and how these influence the transportation costs and charges in shipping. Ports serve as the intermediaries between ships and domestic transport and as such, take on some of the technological and economic complexion of their customers. The size of ships


BREAK EVEN 315 TEU SHIP
(THOUSANDS)
500
400
300
200
100
0
DOLLARS
break-even
point
100 200 300 400 500 600 700
NUMBER OF TEU PER VOYAGE
FIXED COSTS
VARIABLE COSTS
TOTAL COSTS
TOTAL REVENUE

Graph 6


BREAK EVEN 385 TEU SHIP
(THOUSANDS)
500
400
300
200
100
0
DOLLARS
break-even
point
100 200 300 400 500 600 700 800 900
NUMBER OF TEU PER VOYAGE
FIXED COSTS
VARIABLE COSTS
TOTAL COSTS
TOTAL REVENUE

and the time spent in the port are important factors in determining the cost per ton of shipping and the depth of the approach channel, complexity and size of the port and the speed of loading/discharging cargo are usually dominant elements in the cost of ports.

94. Studies carried out by the World Bank 1/ have concluded that (i) the optimum size of vessel increases with the (square root of the) distance of the voyage; (ii) assuming that the port and shipowner fix charges on the basis of the cost of providing services, the port authority can have a dominant influence in securing least-cost shipping and the greatest national benefit, by an appropriate tariff and investment policy; and (iii) it is more efficient to have a large-capacity ship idle and queueing than a small ship - implying that an investment which reduces queueing time will tend relatively to benefit small vessels than large ones. Ideaiy, port tariffs should reflect the relative cost of services provided, so that the appropriate ship technology is chosen.

95. While the rational economic basis of port tariffs should be the short-run marginal cost, which measures the resources used up by supplying a unit of port service, in practice this is possible only under a perfectly competitive free market economy or an efficient centrally planned economy. The ports in the West African subregion are faced with organized and foreign-owned shipping cartels and it is obvious that port tariffs are not based on marginal cost principles.

96. The general evidence is that port tariffs and charges in the subregion are anything but abitrary and differ from port to port. It would be noted that the variable port expenses for loading a ton of cargo (source A) is only about US$7 at Dakar, Monrovia and Lome, but rises to US$11 (157%) at San Pedro, (Ivory Coast) and as high as US$14 (200%) at Apapa, Nigeria. Similarly, the cost of discharging a ton of cargo ranges from a low of US$5 at Calaba (Nigeria) to a high of about US$20 at Freetown (Sierra Leone). See Table 15 for details.

97. The cost of stevedoring services for loading/discharging (Source B) ranges from a low of US$3.47 for Freetown (Sierra Leone) to a high of US$12.59 per ton for Takoradi/Tema (Ghana). Source C gives a combination of port costs and cargo costs per ton and these too indicate a very wide range, e.g. port costs are as low as US$1.63 per ton at Cotonou (Benin) and Apapa (Nigeria), but are as high as US$5.60 and US$7.97 at Warri (Nigeria) and Banjul (Gambia), respectively. On the other hand, cargo costs range from as low as US$5.99 and US$6.80 at the ports of Lome and Freetown, respectively to as high as US$11.59 and US$12.42 per ton at Warri and Port Harrcourt, respectively. As a result, total port and cargo costs range from US$8.26 and US$8.95 per ton at the ports of Lome and Freetown, respectively, to as high as US$17.27 and US$19.00 at Warri (Nigeria) and Takoradi/Tema (Ghana).

98. It is important to note that in addition to the shipping freight charges and port handling costs, there are other costs, e.g. customs clearance (not customs duties) and inland transportation from port to warehouse or inland destination, which ultimately add to or increase substantially the overall cost of transportation in the subregion. It is estimated that the transportation cost component alone constitutes at least 50 per cent and as high as 80 per cent (for land-locked countries) of the total delivery cost of most goods in the subregion.

1/ Port pricing and investment policy in developing countries, by E. Bennathan and A.A. Walters. Published for the World Bank. Oxford University Press.

99. Below are some additional information and proposals for improving maritime transport services in the subregion culled from the modal report.

100. In West Africa (ECOWAS) maritime transport in the widest sense of the term (including sea ports) may be summed up as follows: a merchant fleet which is inadequate quantitatively and qualitatively; sea-ports, a majority of which have sufficient equipment and facilities, but whose performance could be substantially improved through maintenance and training programmes; a few major sea ports that provide transit services to the three land-locked countries in the subregion; and lastly relatively simplified customs regulations and formalities designed to facilitate the movement of container traffic at inter-face points between member States.

101. Protection of shippers' interests in this subregion is another source of concern and a solution is gradually being found to this problem.

102. Another objective to be attained in the subregion is the setting up of a subregional ship brokerage or sea freight consolidation centre.

103. It should be pointed out that while some efforts have already been made in the subregion, they need to be supplemented, in terms of maritime training and modernisation as well as harmonisation of maritime legislation.

Merchant fleet in general

104. The merchant fleet of the ECOWAS States is relatively old despite efforts in recent years by some countries of the subregion to modernise it. The average age of the vessels belonging to the forty companies of the subregion or to those in which its interests are sufficiently represented, is 16 years, the maximum 24 and the minimum 8 years. The merchant fleet capacity was estimated in 1983 at 1,283,162 Dwt., including cargo, passenger and freighter vessels (888,548 Dwt.), tankers (294,612 Dwt.) and other categories (100,000 Dwt.), except full container vessels. It should be mentioned that among these liners, the conventional African units, semi-containers ships and hybrid ships predominate. Such a situation clearly shows the low competitive capacity of the shipping industry in the subregion in relation to their counterparts in the developed countries, whose liner fleet is mainly full container and RO-RO Vessels, which generally provide better performance.

105. The maritime traffic corresponding to the total merchant fleet capacity of the subregion was estimated in 1983 at 170 million tons including 23 million tons of cargo for liners (including 3,210,000 tons of containerised goods) and 63.6 million tons of bulk cargo.

106. Since it is not economical to utilise the total available capacity due to various extra costs involved (exhorbitant costs of handling goods beyond the load limit of the vessel), it will be assumed that only 70% of this capacity is commercially profitable. This brings to 898,213 Dwt and 621,984 Dwt respectively, for the total merchant fleet of the ECOWAS

States, composed of multipurpose and conventional vessels. Calculated on the basis of 30 days and 60 days of completed voyage between West Africa and Europe and between West Africa and the Far East or America respectively, the full yearly turn-rounds (making allowance for a 2-month lay-off for the maintenance of the fleet) will be between 10 and 5 respectively or an annual average of 7.5 voyages along these sea routes on which the greater portion of the West African maritime trade is transported.

107. The objectives of the current United Nations Development Decade with respect to maritime transport for developing countries, including those in the West African subregion, is to:

- ensure 20% participation by each developing country in its global maritime trade, representing for ECOWAS States, a traffic targets of 34 million and 41.9 million tons, respectively for 1983 and 1990;

- ensure that another 40% of the goods are transported by liners belonging to the developing countries, giving the ECOWAS States estimated traffic of 9.2 million tons (1983) and 11.7 million tons (1990).

108. Given the actual trade capacity of the ECOWAS global merchant fleet and the capacity of the cargo and passenger ships and liners, it is possible to estimate the capacity deficit/excess of ECOWAS for the years 1983 and 1990 as follows:

(a) For 1983

(i) $\frac{Tx\ 34,000,000 - (898,213 \times 7.5 \times 2)}{7.5 \times 0.7} = 3.91$ million Dwt

(ii) Deficit for ECOWAS in liner merchant fleet was estimated at

$$\frac{Tx\ 9,200,000 - (7.5 \times 621,984 \times 2)}{7.5 \times 0.7} = 24,716$$

This means an excess capacity of 24,716 Dwt, in other words, the liner fleet in (ii) is adequate for this trade. The reservation measures should therefore be strengthened to reach that target.

(b) For 1990

(i) All the ECOWAS merchant fleet put together show the following deficit forecast in 1983:

$$\frac{Dwt \times 41,900,000 - (898,213 \times 7.5 \times 2)}{7.5 \times 0.7} = 5.4 \text{ million Dwt}$$

(ii) Liner fleet deficit

$$\frac{\text{Dwt} \times 11{,}700{,}000 - (621{,}984 \times 7.5 \times 2)}{7.5 \times 0.7} = 451{,}474 \text{ Dwt}$$

(c) Available resources for the attainment of the objectives set:

Schedule liner fleet

109. Orderly development of the liner fleet for the subregion depends on:

(i) measures adopted at the national level to ensure the judicious application of the Code of Conduct for Liner Conferences, particularly the provisions requiring that 40% of the maritime trade of the coutnry concerned should be reserved for its national shipping company;

(ii) availability of sufficiently competitive conditions for the financing of merchant fleet;

(iii) availability of competent African sea-going and on-shore staff for the shipping companies concerned and;

(iv) establishment of joint merchant fleet by the coastal and land-locked States of the subregion.

Bulk carrier and tramping fleet

110. To be able to absorb their capacity deficits in this area of shipping, the countries of the subregion, in the absence of appropriate international legislation which will enable them to automatically reserve for themselves a portion of their national maritime trade, should take such national and subregional measures as:

(i) Establishment of national, subregional and regional ship brokerage offices (with international branches). For these to be very effective, they should be backed by a well defined legal framework; furthermore, an appropriate training programme should be implemented;

(ii) Creation of conditions that promote competitive financing for the purchase of such vessels as may be required;

(iii) Establishment of consortia among the countries of the subregion or between them and interested foreign investors who should have a minority share in the capital stock of the shipping companies.

Coastal merchant fleet

111. For a long time, most of the countries of the subregion have wanted to organise the coastal shipping in the region, either on national or subregional basis, with a view to nationalising this category of navigation which is inadequately covered by foreign companies and at rather very hight freight rates and offer irregular services. Orderly and effective development of intra-subregional trade and co-operation could significantly depend on the control of coastal shipping.

112. In view of the unfortunate past experiences in the establishment of national coastal shipping lines, the ECOWAS Secretariat thought that the time had come, considering the prevailing disastrous competition, to organise subregional co-operation in coastal shipping. As a result, a "feasibility study on a West African Coastal Shipping Line" was conducted by UNCTAD in 1982 and revised in May 1985, and covered the geographical areas of the ECOWAS States as well as Cameroon, Gabon and Angolan. This geographical coverage is based on the homogeneity of the region as far as maritime transport activities are concerned. The main findings of the study were that:

(a) In 1981, the monthly trade within the geographical area (Dakar/Douala range) was 1900 TEU, 1300 TEU of which represented transhipment and 1600 TEU were direct trade. In 1984, these data became 1525 TEU, 750 TEU and 775 TEU, respectively. A comparison of the 1981 and 1984 figures shows:

- a 19.7% drop in the global monthly traffic;
- a 42.3% drop in trans-shipment; and
- a 29.2% increase in the domestic traffic.

(b) Several categories of shipping lines offer coastal services in this geographical area.

113. Foreign Lines (European mainly) provide regular coastal services exclusively by operating five container ships, two of which belong to SNCDV and SOCOPAO. Each of the two vessels belonging to SNCDV plies the Dakar-Conakry, Freetown, Monrovia and Buchannan route on the one hand, and the route from Pointe-Noire to the Zairian and Angolan ports on the other. Finally, two other units of the Maersk Shipping Line offer feeder services from the port of Algeciras (Spain) to the West African Coast, for trans-shipments from or to the United States of America and the Far East.

114. About twenty to twenty-five small conventional vessels (500 to 1,500 Dwt) occasionaly serve the West African Coast. Due to the decrease in traffic and ocean liner services in the region since 1982, some of shipping lines (Woermann Line and Nedlloyd Lines for instance) have replaced their 1300-1400 TEU units with 500 TEU units on this route.

115. Vessels of the subregional shipping range, instead of specialising in coastal shipping, prefer to offer coastal services only to supplement the profit earning capacity of their ocean liner services. This approach was adopted because of the disappointing experiences in coastal shipping within the subregion and the possibility now offered the Shipping Lines to operate pool services, in particular, as it allows a shipping line of the subregion to operate both at

national and at subregion levels. In rationalising global maritime service of the subregion, the countries concerned seem to prefer co-operation in joint management of subregional traffic rights for liner shipping and even bulk cargo shipping to specialised maritime services.

116. The study concludes that the project which was profitable in the earlier report, would show a deficit of between US$50,000 and $60,000 for each completed voyage, or US$2 million for a fleet of three 175 TEU vessels per annum.

117. It should be pointed out that specialised services in this submode are strongly undermined by the high competition from ocean liners belonging to both the subregion and foreign companies. For these liners, this sector of shipping is an indispensable contribution to the financial success of their long distance voyages.

Sea ports within ECOWAS countries

118. The West African subregion has about twenty-two main sea ports. The ports of Abidjan, Dakar, Lome and Cotonou, even Apapa, play a subregional role by offering transit services, respectively to:

- Burkina Faso, Mali and, to a lesser degree, Niger;
- Mali;
- Burkina Faso and Niger;
- Niger, even southern Burkina Faso and Eastern Mali;
- Niger and Chad.

119. The cargo traffic handled in 1983 at all these ports was estimated at 146,546,000 tons, including about 1,000,000 tons of transit cargo.

120. The total length of the quays is about 29,740 m. and there are about one hundred and fifty-six berths including five specialising in container handling and two for for RO-RO services. The maximum draught varies between 5.7m and 13.5m. The maximum capacity of vessels likely to dock at these ports is between 3,500 Dwt and 120,000 Dwt.

121. None of the ports has specialised gantry cranes; however, there is an adequate number of portal cranes to supplement the ships' gear for onshore cargo handling. It will however be noted that appropriate facilities such as straddlers, fork lift, gantry cranes, cranes, chasis systems, trailers and tractors and etc. are provided for cargo handling on shore and transfer of cargo within the ports.

122. The break-down of storage arears estimated at 1,600,000m^2, comparising transit storage areas and warehouses for land-locked countries (Mali, Niger, Burkina Faso) is as follows:

- Warehouses : 542,000 m^2
- stacking areas: 1,057,000 m^2;

123. The above two areas include duty-free areas reserved for the above land-locked countries. In Dakar, the jetties and warehouse No.3 reserved for Mali's trade, are connected to the railway, thus enabling three sets of wagons of 1,500 tons each to park simultaneously. The port of Abidjan has a transit warehouse connected to the railway for transport of goods from and to Burkina Faso, Mali and Niger.

124. The free port of Lome comprises two transit warehouses of 6,000 m^2 each, reserved for the maritime trade of Burkina Faso, Mali and Niger. Similarly, the port of Cotonou has reserved 10,000 m^2 duty free transit area for Niger, Burkina Faso and Mali, which is connected to the railway network.

125. The subregion has five main ship repair yards: Dakar, Abidjan and Tema, with the following hoisting equipment:

- two synchrolift elevators of 250 and 1200 tons;
- sixteen slipways of 50 and 610 tons;
- three dry docks of 100,000 tons maximum; and
- five flotting docks of 250 to 60,000 tons.

All the shipyards have the necessary workshops (mechanical, electrical, painting, etc.) which enable them to maintain merchant vessels, fishing boats as well as port utility vessels operating in the subregion. It should however be noted that they often face foreign competition especially with regard to ocean liners, since these have the choice of being repaired at either end of their respective sea routes.

Links with the hinterland and transport co-ordination

126. Generally, each of the ports of the subregion is relatively well linked to its hinterland through an adapted transport network: road, rail, inland water-ways, air and so on. Depending on each case, one or several combined modes are used for through transport between the port and the hinterland terminals.

127. With the development of a containerised traffic (about 3,210,000 tons in 1983 for the subregion) and the simplification of customs formalities and regulations within the interfaces, as well as an increasingly effective and efficient co-ordination of transshipment operations from port terminals to surface transport networks, the flow of through traffic in the subregion has gradually improved.

Programmes for improving port facilities in the ECOWAS subregion

128. In order to increase the levels of port performance and to cope with the constantly growing maritime trade at the West African ports (estimated at about 209.5 million tons for 1990), a series of actions have been or will be taken in the next five years. The priority areas are:

- construction of new berths at some ports of relatively average importance;
- augmenting of the berthing capacity of larger vessels by increasing the draught;

- construction of new terminals, especially for containers and RO/RO, as well as other specialised berths: clinker, mineral, ec.;

- expansion of port storage areas: warehouses, shelters, cold stores, etc.;

- procurement of port handling and transfer equipment: gantry cranes, cranes, fork lifts, etc.;

- construction or strengthening of ship repair yards; and

- training of port staff at all levels so as to acquaint them with matters relating to cargo security, port security, transport network, and general port operations.

Protection of shippers' interests

129. In order to end the isolation of the shippers (importer, exporter, etc.) who are currently powerless in the face of abusive practices by shipping companies (organised into monopolistic liner conferences that systematically increase freight rates and provide poor services), African countries in general and those of West Africa in particular, have felt the need to counter such influence by forming national and surbegional shippers' organisations. Hence West Africa now has ten national shippers' councils (Benin, Burkina Faso, Cote d'Ivoire, Ghana, Guinea, Mali, Niger, Nigeria, Senegal and Togo) and a subregional association of national shippers' councils for West and Central Africa. It is hoped that this association would be enlarged to cover all the countries of the subregion.

Maritime regulations

130. Modernisation and harmonisation of maritime legislation constitute a priority project for West Africa. Certain measures have already been taken in this direction within the framework of the CEAO which at present has updated and harmonised draft maritime code applicable to its member States and, within the framework of the Ministerial Conference of West and Central African States on maritime transport. The work done by this latter institution concerns:

- Adoption of the Code of Conduct of Liner Conferences and national measures for its effective application. The harmonisation of national systems for liner traffic reservation constitutes one area of concern for the Ministerial Conference;

- Up-dating and harmonisation of maritime labour legislation in the subregion. ILO/ECA Seminar organised on this subject in Brazzaville in 1985 enabled member States to compare their national experiences and consider the methods of modernising and harmonising their texts, taking into account the relevant international standards;

- The on-going UNCTAD - assisted processing of data relating to the up-dating and harmonisation of trade aspects of the Ivorian maritime legislation, when completed, could serve as a model and source of inspiration for similar initiatives in the surbegion.

Conclusions and recommendations

131. In the preceding paragraphs, maritime transport activities in the subregion have been briefly described, including the present and future situation of shipping both long distance

and coastal shipping, sea ports (port infrastructure and equipment) and the role they play in the co-ordination of through transport of goods, efforts to protect shippers' interests and the up-dating and harmonisation of maritime regulation.

132. Analysis of the above mentioned points have enabled the identification of existing bottlenecks and have led to the following recommendations:

- The merchant fleet of the subregion should be further modernised if it is to be more competitive, particularly in the full container services;

- Co-operation among the West African shipping lines should be intensified and diversified to ensure better control of their share of the subregional market both with regard to liner and bulk cargo traffic;

- National and surbegional ship broking centres (with branches in the major developed countries trading with the subregion) should be established by the States of the subregion for better control of their share of the freight market and of the orderly development of the subregional merchant fleet;

- Current efforts should be pursued and intensified so as to make port facilities more dynamic and effective: extension of facilities wherever necessary, renewal of the equipment and, if necessary, continued maintenance of port facilities, training of port personnel, construction of duty-free transit warehouses in the countries which serve land-locked countries, establishment of appropriate co-operation arrangements between these two categories of countries, adoption of texts to simplify customs formalities and regulations in trans-shipment operations between terminals etc.;

- Efforts for the establishment of national shippers organisations should be pursued so as to better protect their interests;

- Efforts to up-date and harmonise maritime legislation should be pursued.

Roads and road transport

133. In the modal report on roads and road transport for the subregion, detailed information is presented on infrastructure/equipment capacity and utilization, design standards; inter-state missing/substandard links; composition and direction of traffic flows; and the current and optimal road capacity, as well as traffic forecast in terms of the number of vehicles. The report also gives some information on road maintenance and construction costs and to a limited extent information on road users charges - i.e. the revenues collected by the government from road users in one form or another. There is however no information on vehicle operating costs and charges and this is largely due to be absence of organized inter-state freight and passenger services in the subregion.

134. What follows below is an economic analysis and general evaluation of the information contained in the report and other relevant aspects which have important implications to transport development in the subregion.

135. In spite of the low state of roads and road transport development in the subregion, it is apparent that this mode constitutes the critical element in the economic and physical integration of the subregion as proclaimed in the ECOWAS Charter. This is evidenced by the fact that of all transport mdoes, this is the only mode with well articulated and advanced policy instruments and institutions, such as:

(i) Harmonization of Highway Legislation

(ii) Inter-State Road Transport/Transit Convention

(iii) ECOWAS Liability Insurance Scheme (motor vehicle)

(iv) The development and completion of the Trans-West African Highway Network as an integral activity of the ECOWAS secretariat and the ECOWAS Fund (as contrasted with the ineffectual activities of the other Trans-African Highway secretariat and lack of funding sources) and

(v) Ongoing studies on the establishment of a subregional Road Maintenance Training Centre

all of which will tend to enhance and speed up the development of road transport in the subregion in the short and medium term.

Road network

136. The current road network in the subregion is indicated in Table 16 which shows the total road kilometres of 336,016 in an area of about 6.137 million km^2 for an average road density of about 0.555 km/km^2. The primary network is about 67,889 km, secondary network 69,709 km and tertiary/unclassified about 201,418 km, which represent about 20, 20 and 60 per cent, respectively.

137. The individual national road densities in the subregion vary from a low of 0.01 km/km^2 for Mauritania to a high of 0.22 km/km^2 for Gambia. It should be noted that the density varies inversely to area and does not necessarily indicate the state of road development in the individual nation. Other characteristics of the road network in the subregion are that land-locked (Niger, Burkina Faso, Mali), sahelian (the former three plus Mauritania) and large land areas (the former three), tend to have the lowest road densities.

138. From the subregional general transport and economics perspectively, what is important and critical is the condition of the designated inter-state network (which consist of some 12,000 km, see pages 13-14 of modal report, and not the percentage of primary roads in the network or the national and average subregional road densities) - since the latter can vary widely on the basis of population concentration, land capability and dispersal/concentration of natural resources, without any adverse effects on national/subregional development potentials.

Vehicular traffic

139. Table 17 presents the total and composition of road vehicles in the subregion. There are a little over 1 million vehicles in the subregion made up roughly as follows: 514,000 light; 150,000 medium; 95,000 heavy; 26,000 trucks/trailers; and 202,000 other vehicles. Heavy vehicles and trucks/trailers constitute only about 12 per cent of the total subregional fleet and attests to both the low level of national and subregional trucking in general.

140. Vehicle density per 1000 population in the subregion is not only comparatively low, but varies widely among the countries, with a low of 2.8 vehicles for Nigeria (due to its large population) to a high of about 30 vehicles for Ivory Coast. The average subregional density is about 6 vehicles per 1000 population.

141. The vehicular traffic forecast up to 1992 for freight and passenger vehicles for countries of the surbegion is shown in Table 18. Some of the basic assumptions behind the forecast are based on:

(i) the size and growth of the population of the countries;

(ii) the historical trends and growth rates of the vehicular population in relations to economic growth;

(iii) the fact that recovery from the current economic slump will be slow, with little or no major wholesale economic upsurges in the subregion and that upsurges in some member States are likely to be offset by the poor performance of some States;

(iv) given the current/short-term and medium-term potentially adverse terms of trade, the continued importation of vehicles, major national and subregional efforts directed at economic recovery and continued foreign exchange/balance of payment problems, the import of vehicles will continue to be controlled or moderately regulated, as the case may be, thus, limiting growth to only a moderate average during the next five years and perhaps then substantially, afterwards.

142. It should be pointed out that the nationa freight and passenger vehicles forecasts have not been aggregated into a subregional comprehensive forecast due to the fact that only a very insignificant percentage of these vehicles are operated in inter-state passenger services. Such an aggregation might give the wrong impression of a very high level of inter-state road transport activities in the subregion. In addition, data is not available for Benin, Cape Verde, Guinea Bissau, Mauritania, Sierra Leone and Togo, which makes such subregional aggregation substantially less useful and inaccurate. Perhaps a most compelling reason for the non-aggregation of the national vehicle traffic forecasts into a subregional one emerges from the analysis of the national Annual Average Daily Traffic (AADT) 1/ and the Average Hourly Traffic (AHT) 2/.

143. Data on the AADT and AHT, for the West African countries are presented in Table 19, except for the six countries mentioned above for which data on vehicle population are not available. The forecast of AADT and AHT have been made up to the year 1992 for all the countries and up to 1993 for some countries, based on the overall traffic forecastr in Table 18.

144. It will be noted that as of 1986, the AADT within the subregion ranged from a low of 17 for the Gambia to a high of 312 for Ivory Coast, with only four countries exceeding 100

1/ AADT = the total number of vehicles passing on a section of road during a one year period, divided by 365.

2/ The total number of vehicles passing on a section of road during a one day period, divided by 24 or the number of hours per day during which vehicle operations are permitted by national regulations.

(i.e. Burkina Faso 109, Ghana 119, Senegal 323 and Nigeria 435) - and the rest of the countries under 100. By 1992, the situation would have barely changed with Gambia and Ivory Coast maintaining the lowest and highest AADTs (20 and 918, respectively) and only five countries with AADTs above 100 (i.e. Burkina Faso 116, Ghana 220, Niger 108, Senegal 378 and Nigeria 490).

145. With respect to the Average Hourly Traffic, the current situation is that only Ivory Coast has an average of 127 vehicles per hour on its roads, based on the definition of AHT. By the year 1992 the AHT in Ivory Coast would be about 147, while those of all the other countries in the subregion would rnage from a low of 3 for the Gambia to a high of 75 for Nigeria.

146. The implication of the low AADTs and AHTs on the subregion's highways are fully analysed in Section F of this report, where traffic supply and demand are comparatively evaluated with special emphasis on highway capacities and other variables.

Road transport costs and charges

147. The modal report on roads and road transport contains very little information and data on vehicle operating costs and charges in the surbegion. This can be partly attributed to the insignificant volume and the undeveloped nature of inter-state road transport in the surbegion and partly to the difficult process and analysis in determining vehicle operating financial and economic costs, which apparently most of the countries have not been able to carry out on a nation-wide basis, let alone for the major inter-state operations.

148. The other underlying factors are that: (i) thirteen of the member States in the subregion are coastal countries that depend mostly on shipping for their international trade and given the fairly homogeneity of their economies, there is little inter-state road transport services; (ii) two of the three land-locked countries (Mali and Burkina Faso) are served directly by rail from coastal countries; and (iii) the generally poor conditions of the inter-state roads, which result in extremely high operating costs and rapid wear-and-tear - thus, discouraging inter-state trucking.

149. In essence, information and data on inter-state road transport operating costs and charges were only available for Niger. This can be explained by the fact that most of Niger's inter-state/international freight and passenger traffic depends on road transport to and from rail terminals in transit countries (Parakou-Benin and Ouagadougou-Burkina Faso, especially). The data indicates that the vehicle operating costs (VOC) of a 25 ton truck/trailer was 337.69 CFAF/km and 88.68 CFAF/km for a 17-seater passenger vehicle (November 1984). It should be pointed out that these figures were provided by the government and their accuracy or the cost elements considered in their computation cannot be determined. The figures most probably relate to financial costs, which can either overstate or understate the actual costs due to duties, taxes and other revenue transfers on the one hand or subsidies on the other hand.

150. The above costs apply only on paved roads and are said to vary by 33 per cent or more on gravel and earth roads, respectively.

151. With regards to fares and charges, these vary substantially depending on commodities, type of road surface, maximum vehicle capacity and whether the vehicle is fully or half loaded both ways or one way. For example, most food items are charged at the rate of

25.76 CFAF/ton/km. Building materials and intermediate products are 32.01 CFAF/ton/km and general cargo/durable goods are 28.14 CFAF/ton/km, when the vehicle is fully loaded one way, and half loaded on the return journey, on a surfaced road. When the vehicle is fully loaded both ways, the rates drop to about 16-18 CFAF/ton/km on paved roads and 21-23 CFAF/ton/km on earth roads.

152. Passenger fares per km on the 17-seater were as follows: paved roads 6.25 CFAF; earth roads 8.32 CFAF; and tracks 11.07 CFAF.

153. An analysis of the above fares and charges against the vehicles' operating costs given in para. 80 above indicate that:

(i) for a one way fully loaded and half loaded return truck, the charges are equivalent to $\frac{24.76 \times 3/2\ (25)^*}{2(337.67)}$ per ton km for most food items and $\frac{28.14 \times 3/2\ (25)^*}{2(337.67)}$ for most industrial and intermediate goods, on bitumen or paved roads. This implies that charges range from 37% to 56% above vehicle operating costs (VOC).

(ii) for fully loaded round trip trucks, the charges range from 18 to 70% above vehicle operating costs on earth roads; and

(iii) for the 17-seater passenger vehicles, the charges are 20% and 77% above VOC on paved and earth roads, respectively.

154. On average, the charges and fares on paved roads appear reasonable, while thsoe on earth roads are relatively higher when compared with the VOC. This can be partly explained either by excess demand over supply on the dirt/earth roads and the reluctance of operators to ply the earth roads, due to their poor conditions.

155. In Mali, the charges which range from 20 CFAF to 30 CFAF per/ton/km are reported to be about 20 per cent below VOC and as a result, most operators immobilize their vheicles rather than accepted the officially established fares and charges - thus creating artificial scarcity of transport supply.

156. No VOC data and fares/charges are available for most countries of the subregion and the general issue of transport operating costs vis-a-vis transport charges and fares is dealt with in another section of the report.

Railways and Rail transport

157. The inherent advantage of railways over other surface modes lies in that they can carry large quantities of heavy and bulky cargoes over long surface distances at comparatively lower costs than other surface modes. With specific reference to the West African subregion, the overall performance of most of the national networks has been rather disappointings, so that the inherent advantage might have been partially lost and the railways have not fully played the major economic role expected of them. Most of them are operating at a deficit and partly depend on government subsidies (with the exception of Mali, Senegal,

* See page 45 of roads and road transport modal report.

Ivory Coast and Benin).

158. Most railways in the subregion suffer from a series of problems ranging from inadequate track and equipment maintenance, over-aged infrastructure and equipment which is over-due replacement, to management, operational and manpower problems. A brief summary of some of the national network is given below[1] /

Mali railway

159. This is a relatively small network of about 642 km over fairly level terrain, with about 50 per cent welded track. The railway's major operating problems are due to the relatively large number (8 out of 28) temporary stations and some 84 unprotected level crossings. These cause serious delays and extreme reduction of operating speed, so much so that scheduled are hardly kept.

160. The tractive stock comprises 30 fairly new locomotives, 66 per cent of which are only about 10 years old, with an overall availability coefficient of 35 per cent - due to the long period during which some engines have been out of service.

161. The rolling stock consists of 360 wagons, 66 passenger coaches and other equipment and about 80 per cent of the wagons are less than 20 years old. The availability coefficient of the wagons is about 90 per cent and that of coaches is between 75 and 90 per cent.

162. The railway offers both first and second class passenger services and the first class traffic of about 600,000 (1983) represents only about 5 per cent of the passenger traffic, while some 10 per cent of the total passenger traffic is international. Income from passenger operations is relatively low (representing about 33 per cent of all revenue), largely due to the short journey distance (25 km) of domestic passengers. Goods traffic averages about 320,000 tons a year, with domestic and international traffic accounting for 20 and 80 per cent, respectively.

163. There is a gross imbalance in the inbound and outbound international traffic of about 80:20 per cent. Domestic traffic consists mainly of groundnuts, cereals and cement while international traffic consists of sugar, flour, cement, cereals, cement, salt and fertilizers.

164. In general, average productivity is extremely low, quality of service unsatisfactory (only 10 per cent of schedules attained) and accidents are frequent. Consequently, revenues represent only 72 per cent of operating costs and the cost coefficient is about 1.39.

Senegal railway

165. The railway mainline is 993 km, 70 km of which is double track and 923 km single track, over relatively level terrain. Main operating problems are due to a large number of unstaffed stops (104 out of 168) and the limited number of stations for handling international passengers and goods traffic, 10 and 11, respectively.

166. The tractive stock consists of 20 locomotives, 6 railcars, 23 light motor tractors and the availability coefficients are relatively low - 64 per cent for locos and 44 per cent for

1/ See "Railways and Rail Transport" Modal Report.

railcars/light motor tractors, mainly as a result of delays in equipment maintenance. The locos were acquired between 1929 and 1941 and are very slow.

167. The rolling stock consists of 833 wagons and 83 coaches and some of them are very old.

168. Annual passenger traffic exceeds 500,000 and the distribution is 93 per cent domestic, 7 per cent international and 97 per cent 2nd class and 3 per cent 1st class. The average domestic passenger trip is about 513 km. Annual goods traffic of about 2 million tons is dominated by phosphate (71 per cent) and domestic and international traffic represents 16 and 13 per cent, respectively. Phosphate alone accounts for about 43 per cent of ton-km, while international traffic accounts for 44 per cent.

169. The railway employs some 2,700 workers and average productivity is estimated at about 300 unit/km per man/day, largely as a result of the phosphate traffic.

170. The quality of service is poor and operations unsafe, as there were some 135 detrailments over a twelve-month period between 1982 and 1983.

Guinea railway

171. This railway has seriously deteriorated over the years and the track is in an extremely poor condition. Due to lack of replacement and poor maintenance, the tractive stock and rolling stock have been reduced to a few units, with overall performance far below average.

172. The railway employs about 1,200 people and the annual traffic analysis is as follows: 80,000 mainline passengers (80 per cent 2nd class); 200,000 suburban line passenger (considered excellent in view of rolling stock shortage); and about 100,000 tons of goods traffic (90 per cent clinker).

173. Several studies have been carried out on the rehabilitation of the railway and all indicate reasonable rates of return on the investment.

Joint Benin-Niger Railway Organizations (OCBN)

174. The OCBN network is 655 km, out of which 579 km is the main track from Cotonou to Parakou. The Save-Parakou section of the line is not ballasted and results in speed and capacity reductions.

175. The tractive stock consists of 21 locos, 8 railcars and 9 light motor tractors. The stock is fairly new - with 50 per cent less than 10 years old, and the availability coefficient ranges for 70 to 80 per cent.

176. The rolling stock consists of 347 relatively new wagons and coaches of various types.

177. The average annual number of passengers of about 1.5 million has been declining slightly in recent years and the average annual goods traffic of 375,000 tons, is mainly food aid to the country and has been declining too. There is a 2 to 1 imbalance in the outward and inbound traffic, which is largely caused by the 97 to 3 imbalance of the traffic to and from Niger via Benin.

178. In conclusion, OCBN exemplifies excellent co-operation between a land-locked and a transit country.

Togo Railway (CFT)

179. The network is 486 km long and the mainline is fairly satisfactory from points PK-O to PK-200. The new branch line to Tobligbo is no longer in service due to the suspension of mining and port activities by CIMAO. Due to old age and inadequate maintenance, safety standards on some branch lines are very low.

180. The tractive stock consists of 14 locomotives (including 3 new cc for the CIMAO project, which have been immobilized) and the availability coefficient of 30 to 60 per cent is relatively low.

181. The total rolling stock of 387 units, including 175 freight wagons have a limited axle loading of only 10 tons, but inspite of this and other problems, traffic increased constantly, averaging 2.5 million passengers and 200,000 tons per year.

Abidjan/Niger Railway (RAN)

182. The network of 1,243 km includes 61 km of double track and 119 km of welded track in excellent condition.

183. The tractive stock consists of 45 locomotives, 39 light motor tractors and 27 railcars, with a low overall availability coefficient of about 50 per cent.

184. The rolling stock consists of 164 coaches and 1600 wagons with average availability coefficient of 88 and 93 per cent, respectively.

185. The average annual traffic is about 3 million passengers and 600,000 tons and the distribution is: passengers - 53 per cent domestic Ivory Coast, 17 per cent domestic Burkina Faso and 30 per cent interchange; goods - 24 per cent domestic Ivory Coast, 1 per cent domestic Burkina Faso and 75 per cent interchange (including 58 per cent imports for Burkina Faso).

186. RAN maintains detailed and accurate statistics on its operations, which can be very useful for project and other evaluation.

Nigerian Railways Corporation (NRC)

187. The NRC network consits of 3523 km of line with 4846 km of tracks. the locomotive and rolling stock consists of: 337 locomotives, including 219 diesels and 118 steams; 83 light motor tractors (39 diesel, 44 steam); 805 passenger coaches (46 ordinary, 286 restaurant); and 7238 freight wagons (3606 covered, 45 platform, 372 open high-sided, 2625 various and 590 private).

188. Average annual traffic is about 2.2 million passengers and 1.7 million tons (the latter declined to only 550,000 tons in 1982). Given NRC's equipment, the overall performance is extremely poor.

Other aspects

189. The modal report on railways contains specific information and recommendations on railway management, technical operations, maintenance of equipment and infrastructure, marketing, investment and co-ordination, just to mention a few. Conspicously lacking in the report are information on railway costs and charges, which are of special importance in the economic analysis. Yet it is apparent from the operating performance of most subregional railway networks that annual total costs exceed total revenues, but this alone can not enable determination of whether services are under-charged or major inefficiencies exist in operations, management, etc.

190. Similarly, no traffic forecast (supply and demand) is contained in the report.

C. Traffic demand forecast

191. A forecast of economic growth rates for the subregion for the period 1980 to 1990 was carried out by consultants, Lambert Brothers Shipping Limited and Maxwell Stamps Associates Limited and is reproduced in Table 20. Two basic growth assumptions, a high and a low were used in the forecast. Contrasted with the forecast, is the actual performance of the economies of member States of ECOWAS for the period 1973 to 1983 (Table 21). While the periods are not entirely compartable, a close examination of the two tables, would tend to show that the actual economic growth of the countries was much less than even the low growth assumption. This is because the period 1973 to 1983 was marked by substantial growth in the earlier years, while the period 1982 to 1985 has been noted for some of the worst economic conditions in Africa and characterized by negative growth in most countries.

192. Under the low growth assumption for 1985, the lowest growth economies of the subregion were forecast at 2 per cent per annum (Cape Verde, Gambia, Ghana, Liberia, Sao Tome and Principe, and Sierra Leone), while the high growth ones (Nigeria, Ivory Coast, Togo and Guinea Bissau) were estimated at between 4 and 7 per cent p.a., and the rest of the countries were in between. The averaged 1973-1983 figures show negative growth for Ghana and very low growth rates for Liberia, Mauritania, Nigeria, Sierra Leone and Togo, when compared with the forecast.

193. With the exception of seaborne and roads, traffic forecasts for most of the modes is not available and it is not possible to produce a consolidated traffic forecast for the West African subregion. It should however be noted that over 80 per cent of international trade traffic in the subregion is seaborne. Thus, most overseas and intra-subregional traffic, irrespective of origin/destination and mode of transport, is invariably involved in seaborne carriage. In this respect, seaborne traffic can and does more appropriately reflect the state of global traffic in the subregion.

194. Tables 22 and 23 show summaries of global seaborne traffic (import and export) forecast for the period 1985 to 1990, with actual figures for 1980, while Tables 24 and 25 are disaggregations of the former tables, showing the share of traffic for each subregion including West and Central Africa[1/].

1/ Progress Report Vol. I, Economic and Traffic forecasts UNCTAD/RAF/8/011, W & C Africa Shipping Study.

195. As analysis of the latter tables indicate that in 1980, the total import traffic of the enlarged surbegion was 4.935 million tons (made up as follows: 3.336 million tons tanker, 896,000 tons bulk and 703,000 tons liner); while the total export traffic was 4.578 million tons (made up of 3.260 million tons tanker, 917,000 tons bulk, 53,000 tons bulk/liner, 90,000 tons refer and 258,000 tons liner).

196. Tables 26 through 29 show the actual export and import trade of the subregion for 1982 and 1983. They indicate that in 1982, total exports were about 7.4 million tons while total imports were about 5.3 million tons. In 1983 total imports increased by 2.4 per cent to 5.4 million tons, while exports decreased by 15.2 per cent to 6.3 million tons. A review of the two years' subregional traffic figures therefore indicates that exports decreased by about 1,130,706 tons, while imports increased only by 129,086 tons, thus resulting in an overall decrease of 1,001,620 tons.

197. Although figures for 1984 and 1985 are not available, it is generally thought that the general economic condition in Africa, including the West African surbegion has continued to worsen rather than improve. It can be safely concluded that the total traffic during the past two years was most likely to decrease than increase. In light of this, the traffic forecast discussed below should be regarded with extreme caution.

198. The traffic forecasts for the period 1985 to 1990 for the various categories of traffic assumes both a low and high growth scenario. Under the low growth scenario, the total export traffic would increase from 4.578 million tons in 1980 to 5.543 million tons in 1985 i.e. at 4 per cent growth p.a., and to 7.416 million tons by 1990 i.e. at about 6 per cent p.a. Under the high growth scenario, the same 1980 traffic base of 4.578 million tons would increase to 8.929 million tons in 1985, i.e. about 15 per cent growth annually, rising to 12.611 million tons in 1990, which is equivalent to an average annual growth rate of about 7 per cent per year for the period 1985 to 1990.

199. With respect to imports, the total 1980 volume was 4.935 million tons and under the low growth assumption would increase to 5.779 million tons in 1985 (i.e. at about 3.2 per cent p.a.) and to 7.638 million tons in 1990, which is equivalent to about 6 per cent growth p.a. Under the high growth assumption, the 1980 base year traffic would increase to 9.038 million tons in 1985 and to 13.777 million tons in 1990, which represents a growth rate of about 9 per cent annually between 1985 and 1990.

200. It would be noted that import and export traffic forecasts tonnage under both the low and high growth assumption are almost balanced, although the containerized portion of the traffic is likely to be unbalanced due to the nature of the import and export traffic.

201. As indicated elsewhere above, most if not all the seaborne traffic has its origin and destination at places other than the ports and by implication, must be carried by the other modes of transport i.e. railway, road, inland water and air transport. The traffic split among the various modes is not known, but it is known that most of the international trade traffic from and to the land-locked countries in the surbegion (Mali, Burkina Faso and Niger) is largely transported by rail and road, with the rail moving a substantial pecentage of the traffic.

202. Table 30 and 31 give details on the major export and import commodities of the member States of the West African surbegion. It should be pointed out that the number of export

commodities for most of the countries is very small, the quantities volume minimal and for most countries, only one or two commodities constitute a major part of the export traffic as well as the major foreign exchange earner.

203. Some commodities which are produced in fairly large quantities in countries of the surbegion (e.g. yams, plantains, palm oil, etc.) are almost entirely consumed locally and are therefore not included in the exports of these countries. In some instance, there is a fairly active and large volume of unrecorded cross-border trade in these commodities.

204. In conclusion, it should be pointed out that given the 1983 traffic figures (Tables 28 and 29) and the qualitative economic situation in the subregion since then, the forecast had overstated the situation. In all probability, it is likely to take up to 1990 before the economy of the subregion attains its highest previous level and depending on several factors, including the general world economic situation, only moderate growth can be expected. It is therefore unlikely that there will be excess demand over supply of transport in the surbegion during the short and medium-term periods (see Section D for further details).

D. Transport Supply

205. The supply of transport or the availability of transport services is determined by a combiantion of factors, of which the following are most important: (i) infrastructure - condition, standard, quantity i.e. adequate or inadequate; (ii) equipment - vessels, tankers, trains, wagons, carriages, trucks, vehicles, river/lake crafts, barges, lighters, pontoons, ferries, aircraft and their seating/load capacities, etc., (iii) facilities - deep-sea/river ports, berths, warehouses, storage spaces, vehicle parks, marshalling yards, stations, airports, handling facilities for freight and passengers, bunkering and fuel supply facilities; (iv) associated equipment - cranes, winches, forklifts, tractors, loading/discharging platforms, etc; (v) organization/operation of services - types of transport organizations, their structures, management, operations and efficiency of services; and (vi) policy-(national) policies governing the development of the various transport modes and their operations and management - (whether public, private or a mixture).

206. It is therefore the combined functions of the presence of transport infrastructure, equipment, facilities and associated handling equipment, coupled with the rational organization and efficient operations of services - all backed by appropriate national transport development policies, which determine the total supply of transport in any nation or surbegion. In essence, it is not the mere availability of transport equipment, infrastructure, facilities, enterprises and policies, but the efficient operations of services and full/effective utilization of the facilities which determines the effective transport supply.

207. The transport infrastructure, equipment, facilities in various modes have been described and summarized in the various modal reports in the subregion, with the only shortcoming that their effective designed capacities and current effective utilization of their capacities have not been analysed or compared and it is therefore difficult to prepare a consolidated surbegional transport supply. Information has not been provided in some respective mdoal reports on ongoing and planned projects, designed to augment or expand the modes, but it is apparent from the ongoing UNTACDA programme that future infrastructure, equipment and facilities are going to increase substantially in some mdoes.

208. Coupled with the ongoing and planned infrastructural projects, are maintenance/rehabilitation, training, facilitation and management improvement projects,

all designed to improve/increase service efficiency and would also have the effect of increasing supply.

209. Several highway maintenance/rehabilitation, construction of key missing links on the Trans-West African Highway network, as well as on the designated ECOWAS inter-state road network are either ongoing or planned and when completed, shall greatly increase the road capacity and inter-state links. the modal report on roads and road transport indicates that even in their current poor conditions and despite the absence of several inter-state links, traffic on most of the inter-state roads is very low and maximum designed capacity shall not be reached or exceeded in the next 15 to 20 years. Thus, taking into account the ongoing and planned road projects, future capacity constraints are not foreseen. (See Tables 18 and 19).

210. The above conclusion is true only for road infrastructure, even though equipment (truck and vehicles) and facilitation (controls and regulations) constraints may persist in the future, if the road transport protocol is not effectively implemented and observed by all member States of ECOWAS.

211. With respect to the railways, the current capacity is limited by the age and design of the infrastructure, most of which have not undergons any major changes during the last forty years. Most of the rails have aged considerably and are overdue complete changing and most of the alignment need improvement.

212. Given the current existing infrastructure, the Senegal-Mali railway capacity can be increased by about 50 per cent by a reduction of the turn-around time of wagons, while the capacity of the Guinea railway can increase about 15 times, given adequate locos and wagons.

213. The situation of the other railways in the subregion is as follows: (i) the Abidjan-Niger railway (RAN) is operating at near full capacity and only the double-tracking project which has been postponed to 1989 could increase the capacity; (ii) even with ongoing and or planned projects only minimal capacity increases can be expected on the Togolese and Benin railways; and (iii) only little capacity increase can be expected from the Nigerian railway system, mainly through improved management and operations.

214. In all, some twenty-five railway projects are contained in the Decade programme and a large number of them deal with maintenance and rehabilitation rather than new constructions. The net effect is that even when implemented, they would induce only a moderate increase in capacity. The planned extension of the Benin railway to Niamey (Niger) and further west to connect with RAN at Ouagadougou would not necessarily increase railway capacity, but would merely relief the railway of the road transport services it currently operates from Parakou to Niamey.

215. The general conclusion is that for the medium and long-term, railway capacity could be increased only mdoerately through improved management, operations and proper track maintenance. The prospects of increased capacity from double tracking and new rail construction are remote and uneconomical due to the high cost of construction and the uncertainty of future sustained traffic supply. The other planned new rail construction in the surbegion are directly related to mineral extraction rather than to general traffic.

216. With respect to the maritime mode the following partial information on the subregional supply in available.

Country	No. of vessels	Total dead-weight (DWT)
Cameroon	6	92,000 t (15.33%)
Ivory Coast	10	192,000 t (26.80%)
Ghana	7	96,845 t
Nigeria	20	278,996 t
Togo	6	56,288 t
Zaire	6	90,000 t
Sub-total	55	812,129 t
Liberia 1/	2111	70,705,000 t

Source: 1985 Official Yearbook of MINCONMAR

217. As indicated above, the data and information on the supply of maritime capacity in the subregion is only partial, due to several factors including lack of infromation on some member States and most critically on the problems associated with determing the supply of shipping capacity anywhere in the world. These problems are dealt with below.

218. It would be noted that the West and Central African subregion has only a total of about 55 vessels with total DWT of 812,129 tons. In addition to this and not particularly of major significance to subregional shipping, is the fact that some 2,112 vessels with estimated total DWT of 70.7 million tons, are registered by Liberia under "the flag of convenience or free registry policy", although this does not imply that the capacity is available or intended for the subregion, specifically.

219. A large proportion of the shipping capacity in the surbegion is provided by the major Maritime Conference, such as AWAFC, CEWAL, COWAC/SUD. COWAC/NORD; FEWAC, MEWAC, UKWAL - just to mention a few. Cabotage and other unscheduled coastal vessels operate in the subregion. Therefore only a very complex analysis involving the static capacities of (i) the subregional shipping lines, (ii) the various conferences lines; (iii) the cabotage; (iv) the regular and irregular coastal shipping services; and most important (v) the frequency or number of sailings made by each vessel per year, is needed to determine the appropriate supply.

1/ Flag of convenience: free registry.

220. It is not possible to do such an analysis for the subregion, however it is still possible, using information from other sources to indicate in very general terms whether or not the supply of shipping services in the subregion are adequate or not. The general situation appears to indicate that current supply far exceeds demand as many vessels call at ports of the subregion with very little traffic to deliver or pick up. For example, in 1982, 1512 and 1069 vessels called at Angolan and Benin ports, respectively, while in 1984 some 4079 vessels called at the ports of Ivory Coast alone. For the subregion as a whole, it is evident that a very large number of vessels call annually at the many ports, that the supply exceeds demand and that inspite of this situation, the Conference Lines still dictate and maintain rather high charges which the subregional shipping companies have been obliged to follow.

221. The paradox of the maritime situation in the subregion is that, while there is apparent excess supply by foreign carriers, there is also a genuine and legitimate desire on the part of member States of the subregion to increase their respective national fleet capacities, so as to implement the UNCTAD Code of Conduct for Liner Conference. Current information indicates that Ivory Coast and Cameroon, effectively control about 26.80 and 15.33 per cent of their ocean trade transport. No information is available for the other countries of the subregion which have national shipping lines, but in general their control of national shipping trade is minimal.

222. In summary, it should be pointed out that over 90 per cent of the subregion's international trade is seaborne and at the present or foreseable future, there will be adequate if not over-supply of shipping capacity - in spite of the fact that most of the capacity shall be provided by foreign shipping lines and conferences. There is need for the harmonization and co-ordination of shipping services in the subregion as well as the augmentation of subregional capacity.

E. Transport Costs and Charges

223. The prevailing transport costs and charges in the subregion and for the various transport modes where available, have been discussed and analyzed above under each of the modes. The main observation is that except for maritime, air transport and railways, they are generally not available at the national level, let alone at the subregional level or on a comparative basis. Even with the absence of any substantial national and subregional data on national and subregional transport costs and charges, evidence tend to show that most transport charges in the subregion are not based on the operating costs of the modes and are usually much higher than charges which are based on operating costs plus a margin of return on capital under a competitive market situation.

224. In the maritime sector, the charges are an aggregate of freight and port charges. The former is determined by the Conference Lines with only minimal influence by member States of the subregion. There is evidence that freight rates in the West and Central African shipping range are comparatively high compared to equivalent distances outside Africa.

225. With respect to port charges, these have been discussed in detail above (see para. 95 to 97) and the general evidence is that they are established independently by each government or port authority, vary markedly from port to port, are not based on marginal cost principles and in general are arbitrary.

226. International air tariffs to and from the surbegion are established by ICAO but tariffs within the subregion are established under the auspices of the African Airlines Association. The latter are comparatively higher than international tariffs for similar air distances. In spite of the high tariffs on intra-African routes, including the West African subregion, a study by ICAO concluded that most intra-African air transport operations are at a defecit due to unfavourable traffic patterns and operating conditions.

227. In effect, if airlines in the subregion were to operate on a marginal cost principle, they may have to increase the already high tariffs. As of 1982, the revenue/cost ratio was 0.90, which implies that tariffs could be increased by about 11 per cent to achieve break-even operations. Such an increase could result in traffic decline or lose of traffic to foreign airlines, whose operating costs are generally lower than those of the subregional carriers. Alternative solutions such as establishment of a subregional airline, pooling of equipment and other services with a view to reducing operating costs are more likely to be effective than increasing tariffs.

228. Railway tariffs in the subregion are generally established by the national governments or railway authorities. In the case of multinational railways such as RAN (Ivory Coast and Burkina Faso) and RCFM/RCFS (Mali and Senegal), tariffs are jointly established by the two governments or their railway authorities.

229. In spite of its great potential, inter-state road transport in the subregion is still largely undeveloped with the result that data on costs and charges for inter-state operations and even at national level are not available.

230. Unlike other modes of transport (e.g. air, rail, shipping) which have a limited range of equipment and makes it much easier to calculate the operating costs, the road transport industry has a rather wide range of specifications. In addition, the industry is characterized by a wide range of operations ranging from a one-man owner/operator, operators with few vehicles to very large companies with hundreds/thousands of vehicles. The road conditions and road surface types are added dimensions, which, when combined with the above mentioned factors, make the calculation or determination of vehicle operating costs very difficult.

231. At the subregional level, where wages and other operating cost components differ substantially (e.g. customs duties and taxes, and cost of fuel, etc.) the determination of operating costs can be very complex. It should be pointed out that the emphasis on vehicle operating costs is because they provide the only basis of establishing rational fares and charges, both at national and subregional levels.

232. Given the above and the fact that there is very little subregional inter-state transport activities, it is not suprising that data on road costs and charges is not available. It can only be hoped that given ECOWAS's activities to encourage and expand road transport operations in the subregion, the secretariat will undertake a comprehensive study of inter-state road transport operating costs, as the basis for recommending rational fares and charges for inter-state operations to its policy bodies.

F. Comparative Analysis of Potential Supply and Demand

233. Some of the individual modal reports among other things contain information on the present conditions of infrastructure, equipment, facilities as well as the ongoing and planned projects in the mode. The roads/road transport and railway mdoes also provide information on missing inter-state links.

234. With specific reference to supply and demand, an analysis of the information indicates that:

(a) Most inter-state road links in the subregion require rehabilitation, upgrading and the missing links are either under execution or planned for execution in the immediate and medium-term. Inter-state road transport of goods and persons (traffic demand), is minimal at present and growth is sluggish - due partly to existing trade patterns and partly to the non-implementation by ECOWAS of its Treaty clause 2 (26) on the free movement of persons and goods. Given the current efforts to complete and upgrade sections of the Trans-West African Highway in Ghana and Ivory Coast, and Togo and Benin, respectively, there is likely to be a substantial increase in inter-state passenger traffic between Benin, Togo, Ghana, Nigeria and Ivory Coast, while road freight traffic mostly between the sea-board states and the land-locked countries will largely remain moderate due to the fact that most of the traffic is moved by rail.

235. Taking into consideration the network of inter-state roads established under the ECOWAS Inter-State Road Transport Convention, the road design standards and highway (traffic/vehicular) capacities, it can be concluded that even in less-than-perfect conditions of the road infrastructure and even if road transport demand were to increase susbtantially, there will be adequate, if not excess supply (capacity) over demand (traffic), during the medium and long-term period - unless there are substantial changes in the structure and pattern of trade in the subregion.

236. With respect to maritime/ports, it has already been pointed out elsewhere in this report that there is excess supply, due to the activities of several Conference Lines, national shipping companies, cabotage and coastal shipping lines/vessels operating in the subregion. Port congestion in the subregion has been fairly eliminated and where delays are still experienced, it is largely because of low throughput rates resulting from inefficient operations rather than from the absolute lack of port facilities.

237. There are a sufficient number of modern airports and several subregional carriers, with old but servicable aircrafts. In summary, there is adequate supply and plans for the augmentation of supply in terms of new aircraft and improvement of infrastructure would improve and increase the supply. In the other hand, demand is relatively low and in other to achieve reasonable passenger/cargo load factors, there are few frequencies. Thus, it is not contradictory to conclude that there is adequate supply for the immediate and foreseable future and the problems of few frequencies are due to operational considerations and the solutions lie in the harmonization and co-ordination of services and schedules, respectively and in toher joint operating arrangement of a surbegional nature.

238. With respect to railways, only the Senegal/Mali, Benin and Ivory Coast/Burkina Faso railways can be considered as the international railways in the surbegion, since they each serve more than one country. Ongoing and planned maintenance/rehabilitation projects could increase the capacity of the Senegal/Mali line by about 50 per cent while only major investments in double tracking of line sections, which have been temporarily postponed can enable a moderate increase on the Ivory Coast/Burkina Faso line. At the moment and in the near future, there is likely to be excess demand over supply, but given the ongoing and planned improvements to facilities and in operations, the capacities of both railways can be marginally improved. However, if excess demand persists in the future, it is apparent that the ongoing/planned construction of the inter-state road missing links and the

encouragement of road freight transport envisaged under the ECOWAS Inter-State Road Transport Convention, can effectively relieve the railways of any excess demand.

239. The surbegion is not endowed with inland water transport facilities (i.e. lakes and major international navigable rivers), consequently the mode plays an insignificant role in inter-state transport in the subregion. Existing river-basin arrangements among some member States of the subregion are more geared to agricultural potential than to transport and the likelihood of any excess inter-state transport supply or demand in this mode is very slim.

240. In conclusion, while some transport problems in the subregion manifest themselves as excess demand, their proper sources lie in poor maintenance, lack of rehabilitation of infrastructure and other operating problems - rather than to any sustained and growing excess demand of inter-state traffic. A balance between supply and demand can be attained and maintained in the subregion through the ongoing and planned transport projects, encouragement and rationalization of inter-state transport operation by ECOWAS.

G. Conclusions and Recommendations

241. From the abvoe, it is evident that the transport situation in the West African surbegion has several major unresolved problems which are both basic and critical to the operations of a harmonized, co-ordinated and efficient surbegional transport system. The major technical and operational problems in each mode have been dealt with in detail in the modal reports and briefly mentioned above.

242. There are gaps or missing links in the inter-state road network and certain roads and sections of the netwcrk require upgrading or strengthening. Road transport in the surbegion is largely unorganized and undeveloped even though its potential is quite susbtantial - given the needs of three land-locked countries and a large number of adjacent communities at national frontiers. The volume of traffic moved and the number of vehicles engaged in inter-state road transport is small, in view of the unharmonized and unco-ordinated nature of road transport in the subregion.

243. While the subregional shipping fleet is relatively small, compared to traffic to and from the subregion, there is no excess demand due to the activities of foreign conference lines and cabotage in the subregion. In spite of this situation, calls at the numerous small ports in the surbegion are infrequent as a result of the short distances between ports, the small quantities of freight discharged/loaded and the inevitable high cost of services in such operations. Thus, while in theory, a situation of excess supply and lower freight rates ought to prevail, the contrary are the realities.

244. With respect to air transport, the situation is similar to that of shipping, in that it is not absolute lack of equipment and facilities, but lack of harmonization and co-ordiantion, coupled with low traffic that account for few connections, and frequencies and high fares in the surbegion.

245. The subregion has only two railway lines that cross state boundaries, viz: the Senegal/Mali and Ivory Coast/Burkina Faso. Due to inadequate maintenance/rehabilitation and poor alignment of some sections, their current capacities can only be increased through a remedy of these problems in the case of the former and double tracking in case of the

latter. Plans to extend the Benin railway from Parakou to Niamey (Niger) and also to Ouagadougou are still at a preliminary stage and when realized, the ability of this mode to directly serve the three land-locked countries in the subregion would be substantially increased.

246. The recommendations which follow are based on the facts that:

(i) The ECOWAS Summit has recently decided to fully implement clause 2(26) of its Charter dealing with the free movement of persons and goods and to put into effect as soon as possible a single customs frontier for the entire surbegion.

(ii) The ECOWAS has concluded and the Heads of State and Government have approved a harmonized Highway Legislation, the implementation and enforcement of which has not yet been effected by member States.

(iii) An ECOWAS Inter-State Road Transport Convention was adopted in 1982.

(iv) An ECOWAS Motor Vehicle Liability Card was adopted in 1982.

(v) Studies on the Trans-West African Highway network have been completed and sections of the network are under construction and the ECOWAS secretariat and ECOWAS Fund have estimated the engineering costs of the remaining unfunded sections.

(vi) Studies for the establishment of a subregional multinational coastal shipping company have been completed.

(vii) Studies for the establishment of a multinational airline in the subregion have also been completed; and

(viii) Studies for the establishment of a regional training centre for road maintenance have been completed.

247. Given the fact that ECOWAS has already done much and has ongoing activities and plans to consolidate and improve transport in the surbegion it is recommended that:

(a) The ECOWAS secretariat and other organs should ensure the immediate implementation of the free movement of persons and goods decision of the Heads of State and Government, so as to realise the supressed and generated traffic for the subregion's transport services;

(b) The ECOWAS secretariat and policy bodies should urge member States to put into effect and enforce the approved harmonized Highway Legislation;

(c) The ECOWAS secretariat should urgently carry out a detailed study on inter-state road transport costs and other relevant aspects pertaining to the effective operation of the Inter-State Road Transport Convention; and

(d) The ECOWAS authorities should be urged to make firm decisions on the establishment of the multinational coastal shipping company and the surbegional airlines company, assuming that the studies did indicate their feasibility.

248. In conclusion, it should be emphasized that the Economic Community of West African States has established the basic structures for the effective harmonization and co-ordination of some transport modes in the subregion and is in the process of establishing others for other modes. The only problems lie in the actual implementation of the accords, agreement and/or conventions by the member States. The ECOWAS secretariat and member States should be given every encouragement and assistance to implement the decisions.

le 1 - Basic indicators

Country	Area	Population (Millions Mid.	Density	GNP per capita Dollars	Average Annual Growth Rate	Average annual rate of inflation (per cent)		Life Expectancy at Birth (Years)
	km^2	1983	P/km^2	1983	1965-83	1965-73	1973-83	1983
in	112,600	3.8	38	290	1.0	3.6	10.8	48
kina Faso	274,200	6.5	24	180	1.4	2.6	10.8	44
e Verde	3,929	0.3	76	320	-	-	11.9	64
bia	11,295	0.7	62	290	1.4	3.0	10.4	52
na	238,537	12.8	54	310	-2.1	8.1	51.6	36
nea	245,856	5.8	24	300	1.1	3.0	4.0	59
nea Bissau	36,125	0.9	25	180	-	-	6.9	37
e d'Ivoire	322,463	9.5	30	710	1.0	4.1	11.9	52
eria	111,369	2.1	19	480	0.8	1.5	7.2	38
i	1,240,142	7.2	6	160	1.2	7.6	10.3	49
ritania	1,030,700	1.6	2	480	0.3	3.9	7.8	45
er	1,267,000	6.1	5	240	-1.2	4.0	11.8	46
eria	913,073	3.6	4	770	3.2	10.3	13.3	45
egal	203,793	6.2	30	440	-0.5	3.0	8.9	49
rra Leone	72,328	3.6	50	330	1.1	1.9	14.7	46
o	56,785	2.8	49	280	1.1	3.1	8.3	38
Total	6,140,195	163.5						

Source: World Bank - World Development Report, 1985.

2 - Growth of Production

Country	Average Annual Growth Rate of (In per cent) 1973 - 1983			
	G.D.P.	Agriculture	Industry	Services
	4.8	2.7	6.9	6
	3.5	1.2	5.1	4.5
na Faso	-	-	-	-
Verde	4.4	3.2	7.4	4.6
ia +	-1.3	-	-7	-0.3
a	3.1	2.4	6.7	1.9
ea	3.1	0.5	2.4	8.4
ea Bissau +	4.7	4	7.4	4.1
d'Ivoire	0.2	2	-1.5	0.5
ria	4.1	5	0.6	4.5
	2.5	2.6	-	3.9
itania	5.2	1.6	10.9	5.9
r	1.2	-1.9	0.3	4.1
eria	2.6	0.3	6.1	2.2
egal	1.9	2.2	-2.9	4.1
rra Leone	2.3	1.1	2.6	3
o				

Source: Report on Economic Recovery Programme for West Africa - ECOWAS - 1985

e 3 - Structure of Production

try	GDP (millions of Dollars)		Distribution of Gross Domestic Product (per cent)					
			Agriculture		Industry		Services	
	1965	1983	1965	1983	1965	1983	1965	1983
n	210	930	53	40	9	14	38	47
ina Faso	250	900	52	41	15	19	32	40
Verde								
ia	27	213	39	26	11	-	-	-
a	1330	3720	41	53	19	7	41	40
ea	520	1910	-	38	-	23	50	39
ea Bissau	-	132	-	-	-	-	-	-
d'Ivoire	960	7090	36	27	17	24	47	50
ria	270	980	27	36	40	26	34	38
	370	980	49	46	13	11	38	43
tania	160	700	32	34	36	21	32	45
	370	1340	63	33	9	31	28	37
ria	4190	64570	53	26	19	34	29	40
al	810	2570	25	21	18	26	56	54
a Leone	320	950	34	32	28	20	38	48
	190	720	45	22	21	28	34	50
	9977	87705						

Source: Report on Economic Recovery Programme for West Africa - ECOWAS - 1985

4 - Growth of Consumption and Investment

ry	Average Annual Growth Rate (per cent)					
	Public Consumption		Private Consumption		Gross Domestic Investment	
	1965-73	1973-83	1965-73	1973-83	1965-73	1973-83
	3.6	3.7	1.1	3.1	3.9	10.3
na Faso	10.7	3.6	0.4	4.9	13.7	-3.7
-Verde	n.a	n.a	n.a	n.a	n.a	n.a
d'Ivoire	15.2	9.6	5.1	3.7	10.2	6.0
La	n.a	n.a	n.a	n.a	n.a	n.a
a	1.1	4.8	2.3	-1.3	-3.5	-8.1
ea	-	6.4	-	2.0	-	-0.7
ea Bissau	n.a.	n.a	n.a	n.a	n.a	n.a
ria	4.5	4.1	0.3	-0.1	5.6	1.5
	(.)	7.5	3.9	2.8	1.0	4.2
itania	6.1	1.4	2.7	3.0	12.5	7.0
r	2.1	2.3	-3.3	6.6	4.6	3.5
ria	16.1	3.3	4.9	2.5	15.2	3.5
gal	-1.2	6.6	0.1	3.3	8.1	-0.7
ra Leone	5.3	2.1	3.8	3.2	-1.4	1.1
	7.9	8.4	6.0	3.3	3.3	-0.2

Note: n.a. = not available

Source: Report on Economic Recovery Programme for West Africa - ECOWAS - 1985

5 - Balance of Trade

	Merchandise Trade (Million of Dollars) in 1983		Average Annual Growth Rate (%)				Average Growth of Terms of Trade
	Export	Import	Exports		Imports		
			1965-73	1973-83	1965-73	1973-83	1970-1982
	85	523	12.4	-1.4	13.2	4.5	-6.3
Faso	99	288	-1	1.7	7.2	4.2	-2.5
erde	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	895	719	3.5	-6.4	-3.3	-8.0	0.2
	390	279	-	-	-	-	-
Bissau	12	50	-	-	-	-	-
Ivoire	2068	1814	7.1	-1.4	7.8	0.1	0.6
	841	415	8.9	-2.3	3.6	-4.3	-6.0
	106	344	13.1	5.1	8.5	3.9	-1.5
nia	246	227	9.7	0.5	15.4	-0.8	-5.4
	301	443	6.1	19	4.4	11.5	-5.1
	17509	17600	8.9	-6.2	8.9	13.6	15.7
	585	984	-1.3	-0.9	5.4	-1.2	-0.3
Leone	202	171	2.2	-5.3	0.9	-5.0	-3.3
	242	284	4.4	3.5	6.6	7.4	3.7
	23581	24141					

ource: Report on Economic Recovery Programme for West Africa - ECOWAS - 1985.

- Balance of payment, debt service and international reserves

ry	Current Account Balance (Millions of Dollars) 1970	1983	Interest payment External public debit (millions of Dollars) 1970	1983	Debt Service as Percentage of Gross National Product 1970	1983	Exports of Goods and Services 1970	1983	Gross International Reserves Millions of Dollars Coverage 1970	1983	In months of import Coverage 1983
											-
	-1	-	-	13	0.7	2.5	2.3	4.8+	16	8	-
Faso	9	-	-	7	0.6	1.3	6.3	1.7+	36	89	-
rde	-	-	-	-	-	-	-	-	-	-	-
	1	-47	-	4	-	3.4	0.6	6.5	8	8	4.3
	-68	-218	12	30	1.2	2.9	5.0	14.2	58	291	-
	-	-	4	22	2.2	4	-	-	-	-	-
Bissau	-	-	-	-	-	-	-	-	-	-	0.2
l'Ivoire	-38	-743	11	413	2.7	12.9	6.8	31	119	37	0.4
a	-	-135	6	21	5.5	3.2	-	6.6	-	20	0.6
	-2	-103	-	0.2	1.3	1.3	1.3	6.1	1	23	2.1
ania	-5	-196	-	23	1.7	5.0	3.2	10	3	110	-
	-	-	1	36	0.6	5.6	3.8	-	19	57	1
a	-308	-4752	20	974	0.6	3.1	4.2	18.6	223	1252	-
l	-16	-	2	31	0.8	1.9	2.8	-	22	23	1
Leone	-16	-33	2	3	2.9	0.9	9.9	7.2	39	16	7.1
	3	-32	1	28	0.9	6.3	2.9	16.8	35	178	
	-501	-6259	59	1511							

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7 - Population Growth and projections

ntry	Average Annual Growth of Population (Per cent)		Population (millions)			Population Momentum
	1973-83	1980-2000	1983	1990	2000	1985
	2.8	3.1	4	5	6	2.0
na Faso	1.9	2.0	6	7	9	1.8
d'Ivoire	4.6	3.6	9	13	17	2.0
	3.1	3.5	13	17	23	2.0
	2.0	2.1	6	7	8	1.8
ia	3.3	3.1	2	3	3	1.9
	2.5	2.5	7	9	11	1.9
tanie	2.2	2.6	2	2	3	1.8
	3.0	3.2	6	8	11	2.0
ia	2.7	3.3	94	118	163	2.0
1	2.8	2.9	6	8	10	1.9
Leone	2.1	2.3	4	4	5	1.8
	2.6	3.2	3	4	5	2.0

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- Airport facilities ECOWAS National Capitals

City	Runway Length (m)	ILS	VOR	Approach Lighting	Largest Aircraft (1)
	2,700	Yes	Yes	Yes	B-747
n	2,987	Yes	Yes	No	DC-10
	3,200	Yes	Yes	Yes	DC-10
	2,600	No	Yes	Yes	A300
	2,400	No	Yes	No	B-707
	3,300	No	Yes	Yes	DC-10
y	2,400	Yes	Yes	No	B-747
u	3,490	Yes	Yes	Yes	B-747
	3,200	No	Yes	Yes	A310
wn	3,900	Yes	Yes	Yes	B-747
	3,000	Yes	Yes	Yes	B-747
	3,350	Yes	Yes	Yes	B-747
via (Roberts)	3,000	Yes	Yes	Yes	B-747
	3,000	Yes	Yes	Yes	DC-10
chott	2,500	Yes	Yes	Yes	DC-10
dougou	1,200	No	No	No	HS-748

current scheduled use

e: ICAO
ITA

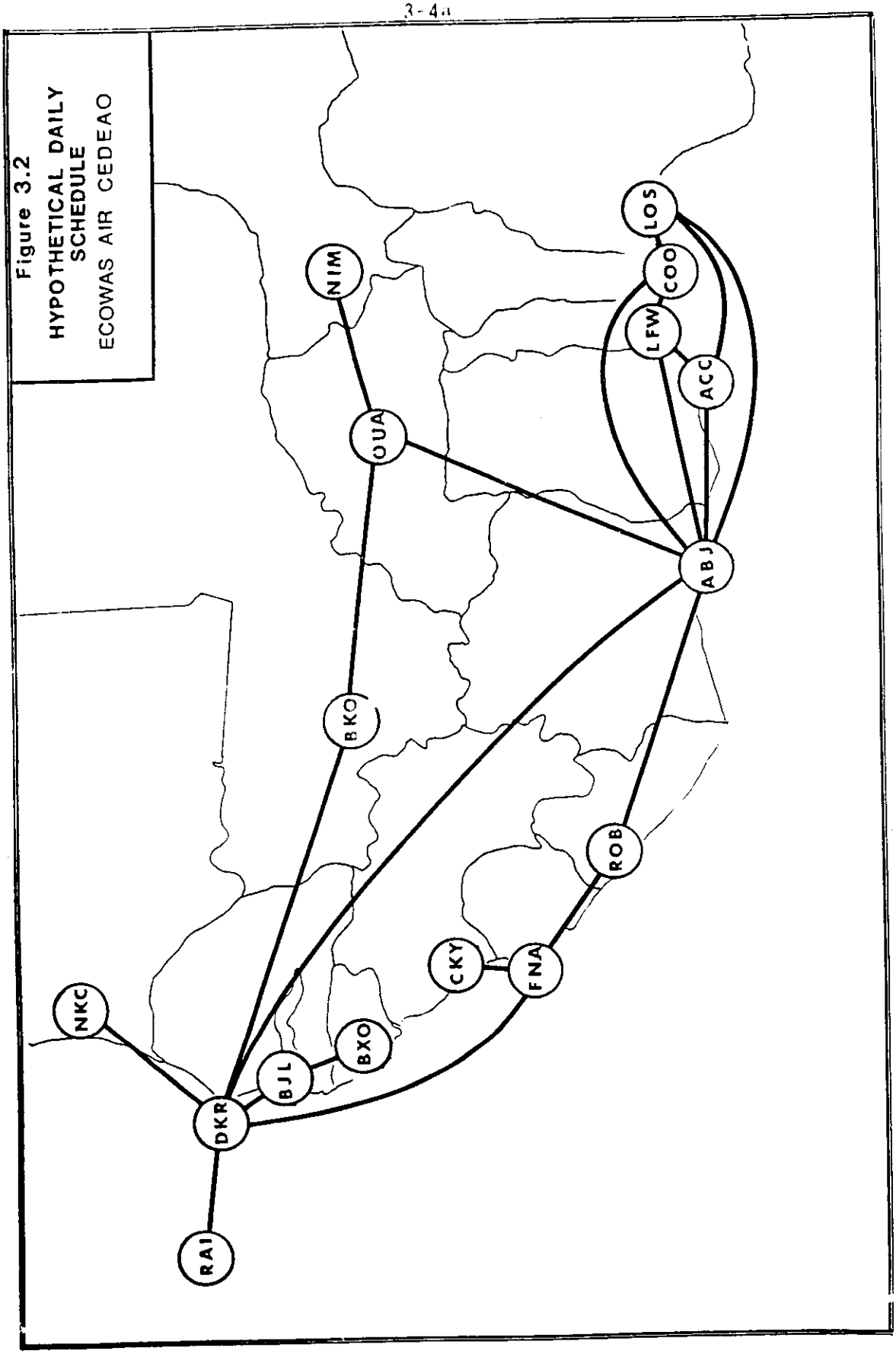
Figure 3.2
HYPOTHETICAL DAILY SCHEDULE
ECOWAS AIR CEDEAO
LOS
COO
LFW
ACC
NIM
OUA
ABJ
BKO
ROB
CKY
FNA
NKC
BXO
BJL
DKR
RAI

Table 8a - 1983 Regional Traffic between ECOWAS Capitals

HUB	Traffic (000 Passengers	Share (per cent)
Abidjan	320	45
Lagos	218	31
Dakar	182	26
Accra	181	25
Lome	94	13
Monrovia	66	9
Bamako	63	9
Cotonou	56	8
Ouagadougou	47	7
Conakry	45	6
Niamey	44	6
Freetown	40	6
Nouakchott	25	4
Banjul	24	3
Bissau	10	1
Praia	9	1
Total(1)	1,424	200

(1) Total is double-counted. Actual total is 712,000
Source: Draft Final Report West African Airlines Strategy Study by Aviation Planning Services, 1985.

9 - Comparison of commercial aircraft operated by the international air carriers of the African Region, 1978 and 1983

craft Category	Northern Africa		Western Africa		Central Africa		Eastern Africa		Southern Africa		Total Africa	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
de-body												
rbus A-300	4	11	-	3	-	-	-	-	-	7	4	21
A-310	-	-	-	4	-	-	-	-	-	-	-	4
eing B-747	-	2	-	3	1	2	-	1	11	15	12	23
Donnell Douglas DC-10	-	-	4	6	2	2	-	1	-	-	6	9
tal wide-body	4	13	4	16	3	4	-	2	11	22	22	57
rrow-body:												
engine												
eing B-707	14	27	2	12	4	13	10	19	5	1	35	72
eing B-720	2	-	-	-	-	-	6	8	3	-	11	8
C VC-10	-	-	1	-	-	-	1	-	-	-	2	-
Donnell Douglas DC-8	1	3	9	7	4	6	1	5	-	-	15	21
ysushin IL-76	-	11	-	-	-	-	-	-	-	-	-	11
tal 4-engine	17	41	12	19	8	19	18	32	8	1	63	112
engine												
oeing B-727	31	40	4	6	-	2	-	4	9	-	44	52
upolev TU-154	-	-	-	-	-	-	-	-	-	-	-	-
akovlev Yak-40	-	-	-	1	-	3	-	-	-	-	-	4
tal 3-engine	31	40	4	7	-	5	-	4	9	-	44	56
-engine												
AC-111	-	-	-	-	-	-	1	2	-	-	1	2
oeing B-737	24	33	2	12	8	13	7	10	6	18	47	86
cDonnell Douglas DC-9	-	-	2	4	2	-	1	1	-	-	5	5

le 9 - Comparison of commercial aircraft operated by international air carriers of the African Region, 1978 and 1983 (cont'd)

raft Category	Northern Africa		Western Africa		Central Africa		Eastern Africa		Southern Afroca		Total Africa	
	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983	1978	1983
er F-28	-	-	8	14	3	5	-	1	-	-	11	20
spatiale SE-210	3	-	3	5	2	3	-	-	-	-	8	8
otal 2-engine	27	33	15	35	15	21	9	14	6	18	72	121
tal narrow-body	75	114	31	61	23	45	27	50	23	19	179	289
TOTAL JET	79	127	35	77	26	49	27	52	34	41	201	346
O-PROP												
-engine	-	5	6	7	3	12	6	11	7	12	22	47
-engine	18	34	16	18	17	21	19	23	3	3	73	99
OTAL TURBO-PROP	18	39	22	25	20	33	25	34	10	15	95	146
ON												
-engine	-	-	7	3	5	11	4	1	-	-	16	15
-engine	7	-	11	7	18	3	15	8	-	-	51	18
OTAL PISTON-ENGINE	7	-	18	10	23	14	19	9	-	-	67	33
OTAL OF ALL TYPES	104	166	75	112	69	96	71	95	44	56	363	525

Source : ICAO Special Report. Aic Transport - Africa, Dec. 1984.

Table 10 - Freighter/combi aircraft operated by international air of the African Region

Aircraft Category	Northern Africa	Western Africa	Central Africa	Eastern Africa	Southern Africa	Total Africa
JET						
Wide-body:						
· Boeing B-747	-	2	1	1	2	6
Total wide-body	-	2	1	1	2	6
Narrow-body:						
4 engine						
Boeing B-707	10	5	9	4	-	28
Ilysushin IL-76	11	-	-	-	-	11
McDonnell Douglas DC-8	2	1	3	2	-	8
Total 4 engine	23	6	12	6	-	47
3-engine						
Boeing B-727	-	2	2	1	-	5
Total 3-engine	-	2	2	1	-	5
2-engine						
Boeing B-737	1	-	-	1	-	2
Aerospatiale SE-210	-	-	2	-	-	2
Total 2-engine	1	-	2	1	-	4
Total narrow-body	24	8	16	8	-	56
Total jet	24	10	17	9	2	62
TURBO-PROP						
4-engine	4	3	12	3	12	34
2-engine	-	-	7	3	-	10
Total TURBO-PROP	4	3	19	6	12	44
PISTON						
4-engine	-	1	11	-	-	12
2-engine	-	-	3	-	-	3
Total Piston-engine	-	1	14	-	-	15
Total of all types	28	14	50	15	14	121

Source: ICAO Special Report - Air Transport - Africa Dec. 1984.

Table 11 - Loading and Discharging Rates in African Ports

Port	Line 1		Line 2		Line 2		Line 3		Line 4	
	Discharging Rate t/day	Index Abidjan = 100	Loading Rate t/day	Index Abidjan = 100	Discharging Rate t/day	Index Abidjan 100	Overall Loading and Discharging Rate t/day	Index Abidjan 100	Loading Rate t/day	Index Abidjan = 100
Nouakchott	120	27	-	-	-	-	-	-	-	-
Dakar	400	89	-	-	530	76	341	43	-	-
Banjul	-	-	-	-	-	-	249	32	-	-
Freetown	410	91	-	-	380	54	386	49	-	-
Monrovia	410	91	250	36	250	54	262	33	-	-
Gr. Buchanan	260	58	-	-	-	-	-	-	-	-
San Pedro	-	-	450	64	425	61	-	-	909	120
Abidjan	450	100	700	100	700	100	785	100	756	100
Takoradi	100	22	-	-	-	-	452	58	-	-
Tema	200	44	-	-	250	36	866	110	-	-
Lome	350	78	-	-	240	34	-	-	-	-
Cotonou	340	76	-	-	200	29	-	-	-	-
Lagos/Apapa	450	100	-	-	300	43	763	97	-	-
Warri	270	60	-	-	-	-	604	77	-	-
Port Harcourt	450	100	-	-	300	43	581	74	-	-
Calabar	-	-	-	-	220	31	360	46	-	-
Douala	460	102	-	-	350	50	312	40	-	-
Cameroun (overside roads)	-	-	-	-	-	-	-	-	849	112
Libreville	300	67	-	-	-	-	-	-	535	71
Port Gentil	420	93	-	-	-	-	-	-	-	-
Pointe Noire	300	67	-	-	550	79	-	-	1,056	140
Matadi/Boma	350	78	500	71	500	71	177	23	635	84
									-	-

Notes: Line 1 - break bulk service
Line 3 - Combi vessels, except at Banul, Monrovia, Calabar, Douala, Matadi, where conventional vessels were used largely or wholly.
Line 4 - Conventional only, except Pointe Noire and Douala

Source: Progress Report Vol. II, Shipping Situation UNCTAD RAF/8/011.

e 11a - Table of Distances (in nautical miles)

	Conakry	Freetown	Monrovia	Abidjan	Tema	Lome	Cotonou	Apapa	Wari	Port Harcourt	Calabar	Douala	Owendo	Port Gentil	Pointe Noire	Matadi
ar	450	500	700	1160	1410	1480	1550	1610	1730	1830	1960	2000	2000	1990	2220	2360
Conakry		110	300	760	1010	1090	1160	1220	1340	1440	1520	1580	1580	1570	1820	1960
Freetown			240	690	940	1010	1080	1140	1260	1360	1440	1500	1500	1490	1740	1880
Monrovia				470	720	800	870	930	1050	1150	1230	1290	1290	1280	1530	1670
Abidjan					260	340	410	470	590	690	790	850	850	850	1130	1280
Tema						80	150	210	370	450	550	610	670	680	980	1090
Lome							70	130	300	380	480	540	600	610	910	1020
Cotonou								60	230	310	420	480	550	570	880	1040
Apapa									170	300	390	450	520	540	850	1010
Wari										220	310	370	440	460	780	930
Port Harcourt											150	200	380	400	720	870
Calabar												120	330	390	710	860
Douala													240	300	620	780
Owendo														80	400	570
Port Gentil															340	510
Pointe Noire																170

urce: West African Coastal Shipping, Phase II
RAF/77/032 by UNCTAD, Jan. 1983.

le 11b - Intra - ECOWAS Martiime Traffic 1980

rigin \ Destination	Cape Verde	Benin	Gambia	Ghana	Guinea	Cote d'ivoire	Liberia	Mauritania	Nigeria	Senegal	Sierra Leone	Togo	Guinea Bissau	Total
e Verde	-	2010	0	0	0	0	0	0	4538	0	0	0	0	6548
in	0	-	0	0	0	0	0	0	0	1183	0	19	10	1212
ia	0	0	-	0	0	0	0	0	0	225	0	0	0	225
a	0	0	0	-	0	0	0	0	6	2	0	0	0	8
nea	0	0	0	0	-	0	0	0	0	13	0	0	0	13
e d'ivoire	0	177	0	0	0	-	1	1	113848	55116	0	125	26	169295
eria	0	0	257	0	0	0	-	0	59	352	0	0	3	671
itania	0	0	0	0	0	0	0	-	0	6	0	0	0	6
ia	0	0	0	913000	5	334647	82	0	-	252165	296000	0	2	1795901
gal	0	5391	1993	153	501	93864	554	95269	23188	-	0	6984	8631	240816
ra Leone	0	0	0	1	0	0	0	0	0	20	-	0	0	21
	0	0	0	0	0	60	0	0	0	103	0	-	1	164
ea Bissau	0	0	0	0	0	0	0	0	0	0	0	0	-	
total	0	7578	2255	913154	506	428571	637	95271	141639	309215	302984	4427	8673	2214910
roon	0	61	0	0	1063	10020	203	1	5819	79	0	171	120	17536
n	0	0	0	0	0	0	0	0	26	1888	0	0	0	1914
o	0	0	0	0	0	0	0	0	17 6	0	0	0	0	1706
e	0	0	0	0	0	160	0	0	4157	4	0	2	1	41742
la	0	0	0	0	0	0	0	0	0	6	0	0	0	6
total	0	61	0	0	1063	10180	203	1	49126	1976	0	173	121	62904
d Total	0	7639	2255	913154	1569	438751	840	95272	190765	311191	302984	4600	8794	2480907

time traffic of selected ECOWAS countries, 1980 (in metric tons)

ce: Coastal Bulk Service Pre-feasibility Study (ECOWAS) RAF/77/032, Jan. 1983

ddition, traffic originating from selected ECOWAS member States to the five Central African States (Cameroon, Gabon, Congo, e, Angola) amounted to 62,981 tons in 1980, and this compares favourably with exports of 62,904 tons to ECOWAS by these tries the same year - balanced traffic.

ble 12 - Basic Freight Rates for Coastal Traffic — as from 1 October 1982

Loading ports	Ports of Destination														
	Nouadhibou	Nouakchott	Dakar	Banjul	Conakry Freetown	Monrovia Lower Bucha.	Abidj. San Pedro	Tema Takoradi	Lome Cotonou Lagos Apapa	Burutu Warri Sapele	Port Harcourt Calabar	Douala Lunbe Kribi	Libreville Port Gentil P.Noire	Boma Matadi	Luanda Lobito Mossa Medes
Nouadhibou	-	14900	14900	14900	14900	14900	14900	18250	18250	18250	18250	18250	19800	19800	24650
Nouakchott	14900	-	14900	14900	14900	14900	14900	18250	18250	18250	18250	18250	19800	19800	24650
Dakar	14900	14900	-	11550	11550	11550	11550	14900	14900	18250	18250	18250	19800	19800	24650
Banjul	14900	14900	11550	-	11550	11550	11550	14900	14900	14900	18250	18250	19800	19800	24650
Conakry	14900	14900	11550	11550	-	11550	11550	11550	14900	14900	18250	18250	19800	19800	24650
Freetown	14900	14900	11550	11550	-	11550	11550	11550	14900	14900	18250	18250	19800	19800	24650
Monrovia Lower Buchanan	14900	14900	11550	11550	11550	-	11550	11550	14900	14900	18250	18250	19800	19800	24650
Abidjan-San Pedro	14900	14900	11550	11550	11550	11550	-	11550	11550	11550	11550	11550	14900	14900	19800
Takoradi-Tema	14900	14900	11550	11550	11550	11550	11550	-	11550	11550	11550	11550	14900	14900	19800
Lome-Cotonou	18250	18250	14900	14900	14900	14900	11550	11550	-	11550	11550	11550	14900	14900	19800
Lagos-Apapa	18250	18250	14900	14900	14900	14900	11550	11550	-	11550	11550	11550	14900	14900	19800
Burutu-Warri Sapele	18250	18250	14900	14900	14900	14900	11550	11550	11550	-	11550	11550	14900	14900	19800
Pt.Harcourt Calabar	18250	18250	14900	14900	14900	14900	11550	11550	11550	11550	-	11550	14900	14900	19800
Douala-Lunbe-Kribi	18250	18250	18250	18250	18250	18250	11550	11550	11550	11550	11550	-	11550	14900	19800
Libreville-Pt. Gentil-Pointe Noire	19800	19800	19800	19800	19800	19800	14900	14900	14900	14900	14900	11550	-	11550	14900
Boma-Matadi	19800	19800	19800	19800	19800	19800	14900	14900	14900	14900	14900	11550			
Luanda-Lobito-Mossamedes	24650	24650	24650	24650	24650	24650	19800	19800	19800	19800	19800	14900			

Minimum freight per Bill of Lading:* CFA francs 5850
Cargo to or from Nouakchott: 15 per cent surcharge

In CFA francs, quay-to-quay
Bunker surcharge: 20.1

Source: West AN Costal Shipping, Phase II, RAF/77/032 by UNCTAD, January 1983.

ble 13 - Basic freight Rates for Coastal Traffic - as from 1/10/1984

ding Ports	Ports of Destination														
	Nouadhibou	Nouakchott	Dakar	Banjul	Conakry Freetown	Monrovia L. Buchanan	Abidjan San P.	Tema Takoradi	Lome Cotonou Lagos/ Apapa	Burutu Warri Sapele	Port Harcourt Cala.	Douala Limbe Kribi	Libreville Port Gentil P.Noire	Boma Matadi	Luanda Lobito Mossamedes
uadhibou	-	17100	17100	17100	17100	17100	17100	20900	20900	20900	20900	20900	22680	22680	28240
uakchott	17100	-	17100	17100	17100	17100	17100	20900	10900	20900	20900	20900	22680	22680	28240
kar	17100	17100	-	13230	10230	13230	13230	17100	17100	20900	20900	20900	22680	22680	28240
njul	17100	17100	13230	-	13230	13230	13230	17100	17100	20900	20900	20900	22680	22680	28240
nakry	17100	17100	13230	13230	-	13230	13230	13230	17100	17100	20900	20900	22680	22680	28240
eetown	17100	17100	13230	13230	-	13230	13230	13230	17100	17100	20900	20900	22680	22680	28240
rovia Lower chanan	17100	17100	13230	13230	13230	-	13230	13230	17100	17100	20900	20900	22680	22680	28240
Bjo--San dro	17100	17100	13230	13230	13230	13230	-	13230	13230	13230	13230	13230	17100	17100	22680
koradi-Tema	17100	17100	13230	13230	13230	13230	13230	-	13230	13230	13230	13230	17100	17100	22680
me-Cotonou	20900	20900	17100	17100	17100	17100	13230	13230	-	13230	13230	13230	17100	17100	22680
gos-Apapa	20900	20900	17100	17100	17100	17100	13230	13230	-	13230	13230	13230	17100	17100	22680
rutu-Warri pele	20900	20900	17100	17100	17100	17100	13230	13230	13230	-	13230	13230	17100	17100	22680
.Harcourt	20900	20900	17100	17100	17100	17100	13230	13230	13230	13230	-	13230	17100	17100	22680
labar	20900	20900	17100	17100	17100	17100	13230	13230	13230	13230	13230	-	13230	17100	22680
uala-Limbe-ibi	20900	20900	20900	20900	20900	20900	13230	13230	13230	13230	13230	13230	-	13230	17100	22680
bre Ville-Pt. ntil Pointe ire	22680	22680	22680	22680	22680	22680	17100	17100	17100	17100	17100	13230	13230	-	13230	17100
ma-Matadi	22680	22680	22680	22680	22680	22680	17100	17100	17100	17100	17100	17100	13230		
anda-Lohito-ssamedes	28240	28240	28240	28240	28240	28240	22680	22680	22680	22680	22680	22680	17100		

Francs CFA, quay to quay, per freight ton.
nimum freight per B/L: Fcfa 6.700
urce: West African Coastal Shipping, UNCTAD 1985

Bunker surcharge: 20.8%

Table 14 : Ship operating costs of a corss-section of West African shipping enterprises 11,000 to 17,000 dwt tweendeck/multipurpose liner tonnage (US$per day,1981)

	A (1) Low	A (1) High	B (2) High	C (3) Low	C (3) High
Crew costs including overtime & travel	1310	2133	1390e	3517	3971
Provisions	279	414	232e		
Repairs & maintenance	1280	1413		1077	1216
Stores & spares	341	357			
Miscellaneous	80	126		578	653
Insurance	352	352		501	566
Ship management	249	327	284e	504	569
Total T/C equivalent	3891	5123	3484e	6177	6975
Depreciation	910e	910e	4000	4136	4670
Grand Total	4801e	6033e	7484	10313	11645

	D (4) Low	D (4) High	E (5)	F (6) High
Crew costs including overtime & travel	1970e		1390e	2849
Provisions				219
Repairs & maintenance				627
Stores & spares				616
Miscellaneous				
Insurance				301
Ship management	405	476	220	340
T/C equivalent	4935	5836	3220-3720	4952
Depreciation	3790e	3790e	1160e	2700e
Grand Total	8725e	9626e	4380-4880	7652e

Table 14 Ship operating costs of a cross section of West African shipping enterprises 11,000 to 17,000 dwt tweendeck/multipurpose liner tonnage (US$ per day, 1981) (Cont'd)

	G a (7)	G b (7)	G c (7)	H (8)
Crew costs including overtime & travel	1691	1272	1330	698
Provisions	779	255	287	370
Repairs & maintenance	3085	1665	1521	
Stores & spares	312	186	186	449
Miscellaneous				
Insurance	616	513	390	118
Ship management	507	304	290	215
Total T/C equivalent	6989	4195	4002	1850
Depreciation	1550e	1340e	632e	533e
Grand Total	8539e	5535e	4634e	2383e

e = estimated n.a. = not available.

15 - Average Port and Cargo Costs (US Dollars)

	Source A		Source B	Source C		
	Total variable port expenses (+) Loading per ton dwt of cargo early 4.81	Discharging per ton dwt of cargo early 4.81	Stevedoring only Loading/discharging per ton dwt (Northbound) per ton w/m (Southbound) average 1980	Loading/discharging per ton w/m Ports costs 1980	Cargo costs 1980	Total Port/ Cargo costs
r	7.65	17.08	6.09	2.66	8.28	10.93
ul	n.a.	n.a	n.a	7.97	7.94	15.91
town	7.01	20.40	3.47	2.15	6.80	8.95
ovia	4.47	14.53	4.98	5.15	8.69	13.84
anan	8.93	16.57	5.64	n.a	n.a	n.a
Pedro	11.48	n.a	n.a	n.a	n.a	n.a
djan	8.93	11.72	4.77	2.81	8.20	11.01
oradi/Tema	n.a	n.a	12.59	3.00	16.00	19.00
e	/.65	10.20	4.34	2.26	5.99	8.26
onou	n.a	11.48	3.47	1.68	9.03	10.71
pa	14.53	14.53	8.67	1.68	9.03	10.71
ri	n.a	n.a	8.67	5.60	11.59	17.27
t Harcourt	6.37	14.53	8.67	2.58	12.42	15.00
abar	n.a	5.09	8.67	4.05	10.56	14.61
ala	10.20	14.01	6.52	3.30	6.88	10.18
ibi	n.a	n.a	8.67	n.a	n.a	n.a
breville	n.a	n.a	11.08	n.a	n.a	n.a
rt Gentil	n.a	21.66	11.08	n.a	n.a	n.a
inte Noire	10.81	11.99	11.29	10.44	21.28	31.72
ma	10.20	15.29	n.a	n.a	n.a	n.a
tadi			7.39	7.20	11.08	18.28

includes port dues, stevedoring, tugs, pilots
i.e. stevedoring

Note: Apart from differences in tariffs, stevedoring (cargo) costs will differ in relation to differences:
- in commodities
- in types of packaging (if any), extent of unitisation etc.
Such differences no doubt account e.g. for the very high Freetown discharging cost of Source A (which may have been an unusual cargo Freetown is not an important port of call for this company, so a large, unusual consignment can throw out the port average).
Rates of exchange used in the calculations: as at mid-December, 1981.

Source: Shipping situation: Progress Report Vol. II, UNCTAD RAF/8/011

Table 15a - Sea Ports of the subregion

Country	No. of ports	Name of ports
Angola	6	Cabinda, Lobito, Luanda, Porto Amboin, Mocamedes, Soyo
Benin	1	Cotonou
Cameroon	4	Douala, Kribi, Victoria, Kole Oil Terminal
Cape Verde	2	Saint Vincent (Porto Grande), Praia
Congo	2	Djeno Terminal, Pointe Noire
Eq. Guinea	1	Bata
Gabon	7	Mayumba, Owendo, Port Gentil, Cape Lopez, Gambia, Libreville, Lucina Oil Terminal
Gambia	1	Banjul
Ghana	2	Takoradi, Tema
Guinea	2	Conakry, Kamsar
Guinea Bissau	1	Bissau
Cote d'Ivoire	2	Abidjan, San Pedro
Liberia	4	Monrovia, Buchanan, Cape Palmas, Sinoe (Greenville)
Mauritania	3	Nouakchott, Nouadhibou, Point Central
Nigeria	13	Apapa/Lagos, Bonny, Brass, Calabar, Port Harcourt, Sapele, Kiva Ibo, Warri, Focados, Escravos River, Koko, Okrika, Pennington
Soa Tome & OPrin.	2	Sao Tome, Principe
Senegal	4	Dakar, Kaolack, Lyndiane, Zinguinchor
Sierra Leone	3	Freetown, Pepel, Shebro
Togo	2	Lome, Kpeme
Zaire	3	Banana, Boma, Matadi
Total	65	

ble 16 - Road Infrastructure in ECOWAS Countries (1981-1982)

Country	Area ($000 km^2$)	Roads in km				Density of roads per km^2
		Primary	Secondary	Tertiary or unclassified	Total	
enin	113	800	2,700	5,000	8,500	0.08
urkina Faso	274	3,000	7,000	8,000	18,000	0.07
ape Verde	4	-	-	-	400+	0.10+
ambia	10	800	100	1,300	2,200	0.22
hana	239	5,500	7,700	14,000	27,200	0.11
uinea	246	4,000	7,700	16,000	27,700	0.11
uinea Bissau	31	500	1,000	2,500	4,000	0.13
ote d'Ivoire	322	3,000	4,400	40,000	47,000	0.15
iberia	111	2,500	3,000	3,000	8,500	0.08
ali	1,240	5,696	7,308	4,996	18,000	0.02
auritania	1,031	500	1,500	5,900	7,900	0.01
iger	1,267	7,000	7,500	22,000	36,500	0.03
igeria	924	25,000	5,000	70,000	100,000	0.11
enegal	196	4,000	6,000	5,000	15,000	0.06
ierra Leone	72	3,093	3,601	422	7,116	0.10
ogo	57	2,500	5,200	300	8,000	0.14
	(,137				336,016	0.055

Source: Roads and Road Transport modal Report.

+ : Estimate

Table 17: Composition of Traffic by Categories in ECOWAS countries

COUNTRY	Population+ in millions 1983	ROAD VEHICLES Light	Medium	Heavy	Truck Trailer	Others 1/	Total	Density Per 1000 population	Remarks
Benin	3.70	-	-	-	-	-	20,000	5.4	
Burkina Faso	6.50	30,550	5,201	1,279	665	20,090	60,994 ['82]	9.9	
Cape Verde	0.34	-	-	-	-	-	5,700	18.6	
Gambia	0.64	4,670	120	800	56	356	8,200 ['83]	9.7	
Ghana	12.80	47,340	14,893	5,402	940	5,233	74,107	5.8	
Guinea	6.2	32,038	1,172	9,437	463	6,275	60,253	9.7	
Guinea Bissau	0.9	1,054	732	760	NA	954	4,300 ['81]	4.5	
Cote d'Ivoire	9.2	176,830	55,334	36,851	6,734	21,327	275,706 2/ ['83]	30.0	
Liberia	2.1	8,369	1,401	5,224	3,000	-	17,074	5.6	
Mali	7.5	40,091	784	1,409	674	1,092	45,000++	6.0	
Mauritania	1.9	-	-	-	-	-	10,700 ['84]	5.0	
Niger	5.9	27,844	1,881	6,214	1,378	3,941	30,436 ['80]	6.8	
Nigeria	89.0	81,078	58,857	8,006	2,990	120,000	247,534 ['79]	2.9	
Senegal	6.2	40,990	6,309	16,856	9,000	6,835	79,000 ['79]	12.7	
Sierra Leone	3.5	28,000	3,500	2,300	80	2,140	36,000 ['76]	10.3	
Togo	2.9	14,850	70	3,000	180	3,900	22,100 ['83]	7.9	
		517,351	149,509	95,490	26,469	202,019	1,002,229		

Source* + UN Population Estimate (mid-year 1983)
++ National Transport Office, Mali (ONT), December 1984
1/ Motor Cycles
2/ Excluding Motor Cycles

Table 18: Forecast traffic growth commercial and passenger vehicles

		1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
2. BENIN:													
	Freight												
	Passenger												
	Total												
3. BURKINA-FASO													
	Freight	7,345	7,492	7,642	7,795	7,951	8,110	8,192	8,274	8,357	8,441	8,525	-
	Passenger	30,559	30,865	31,174	31,486	31,801	32,119	32,440	32,764	33,092	33,423	44,757	-
	Total	37,904	38,357	38,816	39,281	39,752	40,229	40,632	41,038	41,449	41,864	42,282	-
3. CAPE VERDE*													
	Freight												
	Passenger												
	Total												
4. GAMBIA													
	Freight	674	900	927	955	984	1,014	1,034	1,055	1,076	1,098	1,120	-
	Passenger	4,970	5,069	5,170	5,273	5,378	5,486	5,596	5,708	5,822	5,938	6,057	-
	Total	5,844	5,969	6,097	6,228	6,362	6,500	6,630	6,763	6,898	7,036	7,177	-
5. GHANA													
	Freight	-	21,285	21,498	21,713	21,930	22,144	22,365	22,589	22,815	23,043	23,273	23,506
	Passenger	-	47,649	48,607	48,574	50,565	51,576	52,608	53,660	54,733	55,828	56,945	58,084
	Total	-	68,934	70,100	71,287	72,495	73,720	74,973	76,249	77,548	78,871	80,218	81,590
6. GUINEA													
	Freight	4,238	4,365	4,496	4,631	4,770	4,913	5,011	5,111	5,213	5,317	5,423	-
	Passenger	11,809	12,045	12,286	12,532	12,783	13,039	13,300	13,566	13,837	14,114	14,396	-
	Total	16,047	16,410	16,782	17,163	17,553	17,952	18,311	18,677	19,050	19,431	19,819	-
7. GUINEA BISSAU *													
	Freight												
	Passenger												
	Total												

* Information on vehicles not available

Table 18: Forecast traffic growth commercial and passenger vehicles (cont'd)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
8. COTE D'IVOIRE												
Freight	-	98969	103820	108926	114274	119885	125771	129544	133430	137433	141556	145803
Passenger	-	178800	178568	180354	182158	183980	185820	187678	189555	191450	193365	195299
Total	-	277769	282396	289280	296432	303865	311591	317222	322985	328863	334921	341102
9. LIBERIA												
Freight	5324	5328	5435	5544	5655	5768	5826	5884	5943	6002	6062	-
Passenger	12850	12979	13109	13240	13372	13506	13641	13777	13915	14054	14195	-
Total	18074	18307	18544	18784	19027	19274	19467	19661	19858	20056	20257	-
10. MALI												
Freight	-	10625	11050	11492	11952	12430	12927	13315	13714	14125	14549	14985
Passenger	-	17322	17668	18021	18381	18749	19124	19506	19896	20294	20670	21084
Total	-	27947	28718	29513	30333	31179	32051	32821	33610	34419	35219	36069
11. MAURITANIA:												
Freight												
Passenger												
Total												
12. NIGER												
Freight	-	5774	5947	6125	6309	6498	6693	6793	6895	6998	7103	7210
Passenger	-	26905	27443	27992	28552	29705	29705	30299	30905	31523	32153	32796
Total	-	32679	33390	34117	34861	35621	36398	37092	37800	38521	39256	40006

* Information on vehicles not available.

Table 18: Forecast traffic growth commercial and passenger vehicles (cont'd)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
13. SENEGAL												
Freight	-	22748	23203	23667	24140	24623	25115	25366	25620	25876	26135	26396
Passenger	-	85740	88312	90961	93690	96501	99396	102378	105449	108612	111870	115226
Total	-	108488	111515	114628	117830	121124	124511	127744	131069	134488	138005	141622
14. SIERRA LEONE*:												
Freight												
Passenger												
Total												
15. TOGO*:												
Freight												
Passenger												
Total												
16. NIGERIA												
Freight	77433	80918	84552	88250	87975	89735	91530	93361	95228	97133	99076	101058
Passenger	65454	66763	68098	69460	70849	72266	73711	75185	76689	78223	79787	81383
Total	142887	147681	152657	155710	158824	162001	165241	168546	171917	175356	178863	182441

x Information on vehicle not available

Source*: Aggregated from the Roads and Road Transport modal report on Transport Harmonization and Co-ordination study

Table 18 A

Composition of Traffic by Categories
(Passenger car + Commercial)

COUNTRY	Population in millions 1983	Passenge Cars	Comm-ercial vehicles	Registration new motor vehicles	% of Comm-
Benin	3.7	12,000	8,000		40
Burkina Faso	6.0	9,900	11,300		53
Cape Verde	0.34	3,000	2,700		47.4
Gambia	0.64	4,000	2,700		40.3
Ghana	12.6	56,000	44,000		44.0
Guinea	5.2	-	-		-
Guinea Bissau	0.9	2,700	2,000		42.6
Cote d'Ivoire	9.2	92,000	50,000		35.2
Liberia	2.1	12,100	8,500		44.0
Mali	7.5	10,000	4,000		28.6
Mauritania	1.8	7,000	3,000		30.0
Niger	5.8	11,000	12,000		52.2
Nigeria	89.0	361,000	273,000		43.1
Senegal	6.2	50,000	29,000		36.7
Sierra Leone	3.5	23,000	13,000		36.1
Togo	2.8	16,800	5,300		24.1
		679,500	469,500		
		59%	41%		

Source: Obtained during field mission, October-December 1984
: ECA Statistics Division;
: ECA Survey of Economic and Social Conditions in Africa (1980-1981)

ble 19: Forecast - Average AADT and ADT

		1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
BENIN	AADT[1/]												
	Average Hourly Traffic (AHT)												
. BURKINA FASO:	AADT	104	105	106	108	109	110	111	112	114	115	116	
	AHT[2/]	16	16	17	17	17	17	17	17	18	18	18	
. CAPE VERDE: *	AADT												
	AHT												
. GAMBIA:	AADT	16	16	17	17	17	18	18	19	19	19	20	
	AHT	2	2	3	3	3	3	3	3	3	3	3	
. GHANA	AADT	-	189	192	195	199	202	205	209	212	216	220	224
	AHT	-	29	30	30	31	32	32	33	33	34	34	35
6. GUINEA:	AADT	44	45	46	47	48	49	50	51	53	53	54	-
	AHT	7	7	7	7	7	8	8	8	8	8	8	-
7. GUINEA BISSAU: *	AADT												
	AHT												
d. COTE D'IVOIRE	AADT	-	756	774	793	812	833	854	869	885	901	918	935
	AHT	-	118	121	124	127	130	133	136	138	141	143	146
9. LIBERIA	AADT	50	50	51	51	52	53	53	54	54	55	55	-
	AHT	8	8	8	8	8	8	8	8	8	9	9	

* No information on vehicles

Table 19: Forecast-Average AADT and ADT (cont'd)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
10. MALI:												
AADT		77	79	81	83	85	88	90	92	94	96	99
AHT		12	12	13	13	13	14	14	15	15	15	15
11. MAURITANIA: *												
AADT												
AHR												
12. NIGER												
AADT	-	90	91	93	96	98	100	102	104	106	108	110
AHT	-	14	14	15	15	15	16	16	16	17	17	17
13. SENEGAL												
AADT	-	297	306	314	323	332	341	350	359	368	378	388
AHT	-	46	48	49	50	52	53	55	56	57	59	61
14. SIERRA LEONE *												
AADT												
AHT												
15. TOGO *												
AADT												
AHT												
16. NIGERIA												
AADT	391	405	418	427	435	444	453	462	471	481	490	500
AHT	61	63	65	67	68	69	71	72	73	74	75	76

Source: Aggregated from the Roads and Road Transport report on the Transport Harmonization and Co-ordination study.

* Information on vehicles not available

Table 20

Economic Growth Rates, *1980 to 1985 and 1985 to 1990
(% per annum)

	1980 to 1985 low	1980 to 1985 high	1985 to 1990 low	1985 to 1990 high	1980 to 1990 low	1980 to 1990 high
Angola	2.0	3.0	5.0	8.0	3.5	5.5
Benin	-3.0	4.0	3.0	4.0	3.0	4.0
Cameroon	5.0	6.0	3.0	5.0	4.0	5.5
Cape Verde	nil	5.0	2.0	5.0	1.0	5.0
Central African Republic	0.5	1.5	2.5	3.5	1.5	2.5
Chad	1.0	2.0	3.0	4.0	2.0	3.0
Congo	9.0	12.0	3.5	4.5	6.2	8.2
Equatorial Guinea	2.0	3.0	5.0	7.0	3.5	5.0
Gabon	4.0	8.0	5.0	10.0	4.5	9.0
Gambia	nil	5.0	2.0	5.0	1.0	5.0
Ghana	nil	3.0	2.0	4.0	1.0	3.5
Guinea	2.0	5.0	3.0	6.0	2.5	5.5
Guinea Bissau	1.5	2.5	4.0	5.0	2.7	3.7
Cote d'Ivoire	-5.0	7.0	6.0	8.0	5.5	7.5
Liberia	nil	5.0	2.0	5.0	1.0	5.0
Mali	-3.0	4.0	3.0	4.0	3.0	4.0
Mauritania	-3.0	4.0	2.5	3.0	2.7	3.5
Niger	2.5	3.5	2.5	3.5	2.5	3.5
Nigeria	-5.0	10.0	7.0	10.0	6.0	10.0
Sao Tome & Principe	nil	5.0	2.0	5.0	1.0	5.0
Senegal	2.0	3.5	2.5	4.0	2.2	2.7
Sierra Leone	1.5	4.5	2.0	5.0	1.7	4.7
Togo	-3.5	4.5	4.5	5.5	4.0	5.0
Burkina Faso	3.0	4.0	3.0	4.0	3.0	4.0
Zaire	2.0	2.5	4.0	5.0	3.0	3.7

* GDP or GNP at constant prices

Source: Progress Report Vol. I: Economic and Traffic Forecast UNCTAD RAF/8/011

Table 21

Growth of Production

COUNTRY	AVERAGE ANNUAL GROWTH RATE OF [IN PERCENT]-1973-1983			
	G.D.P.	AGRICULTURE	INDUSTRY	SERVICES
Benin	4.8	2.7	6.9	6.0
Burkina Faso	3.5	1.2	5.1	4.5
Cape Verde	-	-	-	-
Gambia	4.4	3.2	7.4	4.6
Ghana	-1.3	-	-7	-0.3
Guinea	3.1	2.4	6.7	1.9
Guinea Bissau	3.1	0.5	2.4	8.4
Cote d'Ivoire	4.7	4.0	7.4	4.1
Liberia	0.2	2.0	-1.5	0.5
Mali	4.1	5.0	0.6	4.5
Mauritania	2.5	2.6	-	3.9
Niger	5.2	1.6	10.9	5.9
Nigeria	1.2	-1.9	0.3	4.1
Senegal	2.6	0.3	6.1	2.2
Sierra Leone	1.9	2.2	-2.9	4.1
Togo	2.3	1.1	2.6	3.0

Source: Report in Economic Recovery Programme for West Africa ECOWAS, 1985

Table 22:

Region - Seaborne Export Forecasts 1985 and 1990 ('000 tonnes)

	1990	1985		1990	
		Low	High	Low	High
Tanker cargoes	120,500	110,602	137,895	120,725	160,165
Bulk cargoes	48,960	57,969	72,960	72,973	99,938
Bulk/liner cargoes	6,326	5,248	6,852	5,790	7,467
Reefer cargoes	603	818	1,041	1,009	1,275
Liner cargoes	3,668	4,188	5,235	5,257	7,008
GRAND TOTAL	180,067	179,025	223,983	205,754	275,853
of which					
non-tanker cargoes	59,567	68,223	86,088	85,029	115,688

Source: National Statistics and MSA estimates
(See Table 20)

Table 23

Seaborne Import Forecasts 1985 and 1990 ('000 tonnes)

		1985		1990	
	1990	Low	High	Low	High
Tanker cargoes	13,206	8,011	9,809	8,535	12,102
Bulk cargoes	7,353	15,622	24,854	18,592	35,775
Liner cargoes	18,255	22,140	24,868	28,088	33,953
GRAND TOTAL	38,814	45,773	59,531	55,215	81,830
of which					
non-tanker cargoes	25,608	37,762	49,722	46,680	69,728

Source: National Statistics and MSA estimates
(See Table 20)

Table 24

Seaborne Export Forecasts by Region ('000)

		North Europe	Med. Europe	North America	Latin America	Far East	West Central Africa	Others	Total
TANKER									
1980		45,273	1,645	48,556	4,500	-	3,260	17,266	120,500
1985	L	42,482	2,117	40,515	6,910	500	2,208	16,070	110,802
	H	53,503	2,617	48,024	8,090	750	3,271	19,960	137,895
1990	L	45,168	2,242	45,524	7,910	1,260	2,421	16,210	120,725
	H	63,673	2,992	57,330	10,390	2,500	2,797	20,275	160,165
BULK									
1980		22,701	12,959	10,052	208	1,993	917	68	48,968
1985	L	24,730	14,474	13,005	200	2,496	2,824	240	57,969
	H	30,705	17,144	16,750	250	3,016	4,020	275	72,960
1990	L	30,378	17,307	17,525	250	2,913	4,240	360	72,973
	H	34,598	20,317	24,700	350	10,898	8,657	418	99,930
BULK/LINER									
1980		3,482	2,149	40	37	210	53	357	6,328
1985	L	2,975	1,454	30	43	272	132	334	5,248
	H	3,681	1,812	51	48	354	283	423	6,852
1990	L	3,369	1,335	44	50	383	220	389	5,790
	H	4,310	1,697	57	56	500	353	478	7,467
REEFER									
1980		382	101	-	-	28	90	2	603
1985	L	498	112	-	-	80	126	2	818
	H	609	135	-	-	90	205	2	1,041
1990	L	503	132	-	-	107	185	2	1,009
	H	726	156	-	-	120	268	3	1,275
LINER									
1980		2,312	389	477	19	167	258	46	3,668
1985	L	2,632	426	591	19	208	253	59	4,188
	H	3,262	548	704	23	279	350	69	5,235
1990	L	3,225	546	754	27	294	350	61	5,257
	H	4,351	744	872	36	394	536	75	7,008
TOTAL									
1980		74,230	17,243	59,125	4,764	2,388	4,578	17,739	180,067
1985	L	73,317	18,583	54,149	7,172	3,556	5,543	16,705	179,025
	H	92,040	22,256	66,329	9,211	4,469	8,929	20,729	223,983
1990	L	82,723	21,562	63,847	8,237	4,947	7,416	17,022	205,754
	H	107,866	25,908	82,967	10,832	14,420	121,611	21,249	275,853

Source: National Statistics and MSA estimates
(See Table 20)

Table 25

Seaborne Import Forecasts by Region ('000 Tonnes)

		North Europe	Med. Europe	North America	Latin America	Far East	West & Central Africa	Others	Total
TANKER									
1980		1,735	1,556	309	2,440	-	3,336	3,830	13,206
1985	L	2,395	268	89	789	-	2,207	2,263	8,011
	H	2,492	307	116	926	-	3,295	2,673	9,809
1990	L	2,429	248	116	917	-	2,423	2,502	8,535
	H	2,573	347	144	1,300	-	3,775	3,963	12,102
BULK									
1980		2,775	1,663	947	196	534	896	342	7,353
1985	L	4,029	3,352	2,813	1,252	930	2,841	405	15,622
	H	5,318	4,625	5,186	2,561	1,807	4,844	513	24,854
1990	L	4,273	4,400	2,909	1,339	1,036	4,233	402	18,592
	H	6,638	6,787	5,845	4,861	2,345	8,773	528	35,775
LINER									
1980		11,468	1,619	1,298	444	2,173	703	550	18,255
1985	L	13,192	1,925	2,556	562	2,469	731	705	22,140
	H	14,665	2,162	2,822	626	2,892	899	802	24,868
1990	L	16,657	2,368	3,085	807	3,311	982	878	28,088
	H	20,119	2,819	3,608	973	4,218	1,229	987	33,953
TOTAL									
1980		15,978	4,838	2,554	3,080	2,707	4,935	4,722	38,814
1985	L	19,616	5,545	5,458	2,603	3,399	5,779	3,373	45,773
	H	22,475	7,094	8,124	4,113	4,699	9,038	3,988	59,531
1990	L	23,359	7,016	6,110	2,963	4,347	7,638	3,782	55,215
	H	29,330	9,953	9,597	7,134	6,563	13,777	5,476	81,830

Source: National Statistics and MSA estimates
(See Table 20)

Table 26 -Export: Europe West African Coast (WAC) SB

Year 1982

	Europe	West Germany	France	Italy	Holland	U.B.L.	U.K.	IRELAND	Denmark
Mauritania	131,951	15,470	79,576	18,548	6,493	10,122	1,204	331	207
Mali	89,377	7,351	57,184	2,872	1,843	11,112	2,583	-	432
Burkina Faso	101,333	8,872	68,648	2,669	10,656	6,070	3,629	22	557
Niger	85,457	6,830	63,609	4,879	4,330	1,630	3,656	42	281
Chad	37,252	3,032	18,406	2,314	2,880	605	1,904	88	29
Senegal	322,643	14,054	214,999	16,663	37,007	27,027	7,607	2,568	2,718
Gambia	50,462	14,440	12,888	4,000	1,879	9,612	7,113	144	387
Guinea Bissau	19,480	597	7,123	1,241	2,917	1,356	130	-	116
Guinea	209,959	7,408	166,622	2,514	5,446	18,220	2,610	22	117
Sierre Leone	79,875	19,218	23,989	4,126	14,734	4,666	10,989	703	1,430
Liberia	81,879	16,494	13,465	6,437	24,840	8,641	6,353	248	5,601
Cote d'Ivoire	818,726	31,585	390,086	59,975	78,391	33,661	17,931	6,487	810
Ghana	97,670	23,607	10,148	6,149	21,321	5,327	27,174	1,150	794
Togo	146,424	17,597	77,607	17,807	14,723	9,017	6,576	237	2,860
Benin	116,250	6,961	53,982	21,096	16,622	10,401	6,200	383	605
Nigeria	3,333,148	798,995	945,802	258,203	507,047	432,320	745,085	100,785	44,909
Cameroon	523,899	43,320	345,524	35,184	39,399	34,966	15,222	8,967	1,417
Central African Republic	21,900	986	19,108	765	1,034	1,486	507	-	12
Equatorial Guinea	4,537	49	851	978	873	242	1,539	-	-
Sao Tome	6,620	676	861	355	1,019	3,611	106	-	-
Gabon	209,480	18,603	148,509	11,291	12,918	9,738	4,962	427	32
Congo	209,260	13,451	184,211	10,648	16,569	11,235	2,895	17	214
Zaire	250,630	34,561	57,035	16,056	11,774	122,016	8,525	226	437
Angola	191,105	21,269	87,474	26,009	21,545	11,480	8,226	10	5,092
TOTAL	7,452,419	1,125,428	3,046,707	532,779	856,090	784,581	993,126	122,857	68,851
Percentage	100	15.15	41.02	7.17	11.52	10.56	12.01	1.65	0.92

Quantities in tonnes
Source: Statistiques Eurostat (Maritime modal report by H. Bouscasse)

Table 27: Import NB West African Coast Europe Year 1982

	Europe	West Germany	France	Italy	Holland	U.B.L.	U.K.	Ireland	Denmark
Mauritania	33,0[illegible]1	18	509	28,302	1,730	62	2,376	3	1
Mali	34,692	6,063	9,473	1,300	1,540	65	6,012	150	8,861
Burkina Faso	42,362	9,756	9,980	1,045	33	3	9,977	250	20,328
Niger	5,896	8	5,255	652	-	1	78	-	1
Chad	11,59[illegible]	4,159	3,201	1,006	259	1,409	-	-	1,480
Senegal	195,147	76,853	40,570	23,484	12,225	2,553	5,736	23,313	7,513
Gambia	32,086	5,937	2,647	13,138	710	500	11,004	-	-
Guinea Bissau	4,018	-	423	66	765	-	3,707	-	-
Guinea	127,906	68,140	49,304	8,867	[illegible]	[illegible]	2,5[illegible]	[illegible]	300
Sierra Leone	18,645	941	412	79	2,251	123	13,750	4	[illegible]
Liberia	248,995	34,793	24,622	34,335	12,139	6,247	10,454	277	3,50[illegible]
Cote d'Ivoire	1,686,937	211,015	672,518	626,652	107,443	60,504	128,724	53,077	42,17[illegible]
Ghana	352,875	103,575	18,703	10,730	33,200	12,531	150,960	12,070	1,225
Togo	42,870	5,861	10,434	3,09[illegible]	13,817	1,474	5,711	3,103	3,870
Benin	13,982	7,257	2,375	455	1,550	1,075	[illegible]	4,1[illegible]	3,[illegible]
Nigeria	320,697	59,876	8,406	11,880	55,617	46,175	118,350	9,301	3,[illegible]
Cameroon	585,852	138,775	216,402	82,720	174,856	58,447	10,627	355	6,05[illegible]
Central African Republic	29,637	7,247	17,046	1,0[illegible]	259	1,1[illegible]	909	-	159
Equatorial Guinea	24,700	9,311	8,327	4,028	2,032	[illegible]	15	5	-
Sao Tome	3,608	1,696	229	189	1,6[illegible]	-	36	-	-
Gabon	449,102	39,100	938,877	38,445	23,079	7,592	3,411	-	[illegible]
Congo	170,308	51,922	44,057	46,104	9,042	11,845	3,249	57	5,097
Zaire	539,093	68,553	59,644	45,707	50,754	300,119	15,512	17,057	4,725
Angola	2,963	390	1,580	280	519	82	171	-	5
TOTAL	5,296,152	958,902	1,589,957	984,335	489,859	517,525		106,400	130,0[illegible]
Percentage	100	18.10	30.02	18.56	9.25	9.78	9.80	2.01	2.46

Source: Statistiques Eurostat (Maritime modal report by Mr. H. Bouscasse)

Table 20: Import - NB West African Coast (WAC) Europe Year 1983

	Europe	West Germany	France	Italy	Holland	U.B.L.	U.K.	Ireland	Denmark
Mauritania	11,182	39	306	10,062	284	280	197	2	12
Mali	32,434	6,264	9,325	2,464	2,204	464	2,640	80	8,993
Burkina Faso	54,626	582	5,187	1,687	1	0	21,507	-	25,664
Niger	10,492	260	5,302	488	-	-	4,442	-	-
Chad	20,993	9,267	3,535	2,027	313	500	-	23	5,328
Senegal	277,525	74,232	65,919	13,019	27,259	18,403	31,195	36,758	10,740
Gambia	30,382	3,453	2,021	21,807	41	5,126	7,234	-	-
Guinea Bisseu	197	7	144	-	39	6	1	-	-
Guinea	214,738	23,549	61,367	120,407	301	32	67	1	1,014
Sierra Leone	27,304	6,956	1,994	40	5,973	174	12,751	6	10
Liberia	322,913	196,357	54,457	28,668	9,085	2,985	28,854	484	1,823
Cote d'Ivoire	1,876,970	219,771	708,523	585,187	92,119	54,424	133,756	32,121	50,169
Ghana	240,714	78,797	8,745	2,443	16,027	2,849	107,343	23,844	666
Togo	38,491	3,262	7,994	1,807	9,589	1,664	5,274	1,457	5,444
Benin	28,710	5,591	6,821	255	6,890	867	5,854	-	2,432
Nigeria	397,062	60,173	12,702	10,074	48,936	50,917	117,587	12,774	23,899
Cameroon	655,393	134,776	191,422	78,220	175,454	45,244	18,447	1,829	8,001
Central African Republic	32,715	7,954	20,485	3,143	889	129	109	-	6
Equatorial Guinea	34,948	15,396	5,554	10,044	3,783	162	9	-	-
Sao Tome	2,643	1,073	216	223	1,010	5	116	-	-
Gabon	519,830	45,834	389,598	38,815	32,828	7,450	3,495	-	810
Congo	219,048	46,789	32,611	28,692	5,051	91,107	14,798	-	-
Zaire	451,163	94,912	41,200	52,056	20,211	190,847	16,548	15,409	-
Angola	743	76	90	187	224	94	64	-	8
Total	5,425,230	1,035,370	1,635,518	1,020,015	459,511	473,729	532,288	124,788	145,019
Percentage	100	19.08	30.14	18.80	8.45	8.73	9.81	2.30	2.67

Source: Statistiques Eurostat (Maritime modal report by Mr. H. Bouscasse)

Table 29: Export - Europe West African Coast (WAC) SB Year 1983

	Europe	West Germany	France	Italy	Holland	U.B.L.	U.K.	Ireland	Denmark
Mauritania	126,221	18,927	66,960	8,459	9,621	20,070	1,020	101	863
Mali	80,244	9,103	52,573	4,708	12,964	4,913	1,604	1	378
Burkina Faso.	62,214	3,291	43,645	2,693	7,034	4,372	497	-	682
Niger	78,375	11,638	53,784	3,979	2,795	4,396	1,718	70	295
Chad	35,956	3,187	18,986	1,806	6,235	3,399	2,326	-	17
Senegal	338,629	14,805	227,599	20,961	46,369	20,712	2,895	117	2,162
Gambia	75,322	27,616	22,151	3,495	3,591	3,411	11,600	118	340
Guinea Bissau	4,460	315	1,821	547	909	639	120	-	109
Guinea	180,152	16,498	137,698	4,197	7,259	9,984	2,255	19	242
Sierra Leone	48,672	12,614	8,567	3,343	11,723	5,419	6,595	353	258
Liberia	89,926	19,361	17,131	4,189	24,764	8,044	5,790	192	7,455
Cote d'Ivoire	479,538	36,380	289,321	24,306	66,026	41,421	18,197	3,157	430
Ghana	108,302	29,503	15,209	7,777	13,018	7,102	35,186	148	959
Togo	141,783	10,211	100,266	9,373	8,809	6,335	3,726	386	677
Benin	86,574	4,238	44,279	14,317	9,466	8,626	5,114	1	334
Nigeria	2,811,057	443,913	831,207	245,230	436,379	332,527	424,979	62,044	37,776
Cameroon	516,570	30,426	366,287	39,894	21,281	38,836	13,301	1,899	2,446
Central African Republic	29,542	1,937	25,153	581	969	394	435	-	73
Equatorial Guinee	6,457	161	530	3,160	1,923	681	2	-	-
Sao Tome	6,601	845	2,536	48	2,173	710	256	-	33
Gabon	198,597	13,970	136,942	11,056	13,596	13,104	8,862	748	259
Congo	225,531	8,916	180,451	4,938	9,796	10,600	10,599	23	208
Zaire	304,771	51,554	63,749	14,918	39,547	125,411	7,120	1,046	1,426
Angola	265,280	23,963	146,256	10,680	50,439	12,686	14,761	266	6,215
Total	6,301,713	795,672	2,855,102	444,655	806,886	685,992	579,078	70,689	63,639
Percentage	100	12.62	45.30	7.05	12.80	10.88	9.18	1.12	1.00

Source: Statistiques Eurostat (Maritime modal report by Mr. H. Bouscasse)

Table 30

Country	Major export commodities
Benin	Crude oil, vegetable oil, cement uranate of sodium, coffee, cocoa, oil seeds, oil cake, cotton and cotton seeds.
Cape Verde	Salt, bananas, fresh fish, general export
Gambia	Groundnut oil, vegetable oils, fish
Ghana	Residual fuel oil, bauxite, manganese, forestry products, fish, cocoa, aluminium
Guinea	Bauxite, fish ,banana, coffee, palm kernels
Guinea Bissau	Forestry products, fisn, groundnuts, cashen nuts, cotton
Cote d'Ivoire	Palm oil, refined products, sugar timber, bananas, pineapples cocoa, coffee, sugar, fresh fruits
Liberia	Latx, palm kernel oil, iron ore, forest products, fish, rubber, cocoa, coffee
Mali	Groundnuts, cotton seed, oil seed products, meat
Mauritania	Iron ore, fish
Niger	
Nigeria	Crude oil, coal, groundnut products, cotton, coffee, leather, cocoa products, palm products, rubber products
Senegal	Refined products, fertiliser, salt, cement, groundnuts, fish, cotton ,vegetables, flour
Sierra Leone	Palm kernel oil, iron ore, rutile, bauxite, cocoa, coffee,
Togo	Phosphates, clinker, cement, bentenite, cocoa, coffee, oil seed products, cotton, shea nuts
Burkina Faso	Ginned cotton, cotton seeds

Source: Economic and traffic forecasts: RAF/8/011

Table 31

Country	Major import commodities
Benin	Grain, salt, sulphur, general goods, and transit traffic to Niger, Mali, Togo and Nigeria
Cape Verde	Petroleum products, maize, cement, food items, and general merchandise, capital goods
Gambia	Petroleum products, cement, building materials, rise food, capital goods
Ghana	Crude oil, alumina cereals, clinker/cement, general merchandise, capital goods
Guinea	Petroleum products, cement, food, chemical and pharmaceuticals, general merchandise, capital goods
Guinea Bissau	Petroleum products, cement, food, general merchandise
Cote d'Ivoire	Crude oil, clinker, grains, fertiliser, capital goods, food
Liberia	Crude oil, clinker, bentonite, fertiliser, capital goods
Mali	Petroleum products, cement, urea, potash, food, capital goods
Mauritania	Petroleum products, cement, rice, general merchandise, capital goods
Niger	Petroleum products, salt, sulphur, general merchandise
Nigeria	Refined products, iron ore, sugar, fish, iron ore and steel, coal, dolomite, manganese, grains, cement, salt, fertiliser
Senegal	Crude oil, cereals and grains, construction materials, general merchandise, sugar
Sierra Leone	Crude oil, rice, cement, food, machinery/equipment
Togo	Crude oil, refined products, cereals, gypsum/pozzolana
Burkina Faso	Petroleum products, cereals, cement/clinker, fertiliser, capital equipment

Source: Economic and traffic forecasts: RAF/0/011

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