

**GINEA
FEASIBILITY STUDY REPORT
ON
FLEET EXPANSION PROJECT**

Mar, 1981

JAPAN INTERNATIONAL COOPERATION AGENCY

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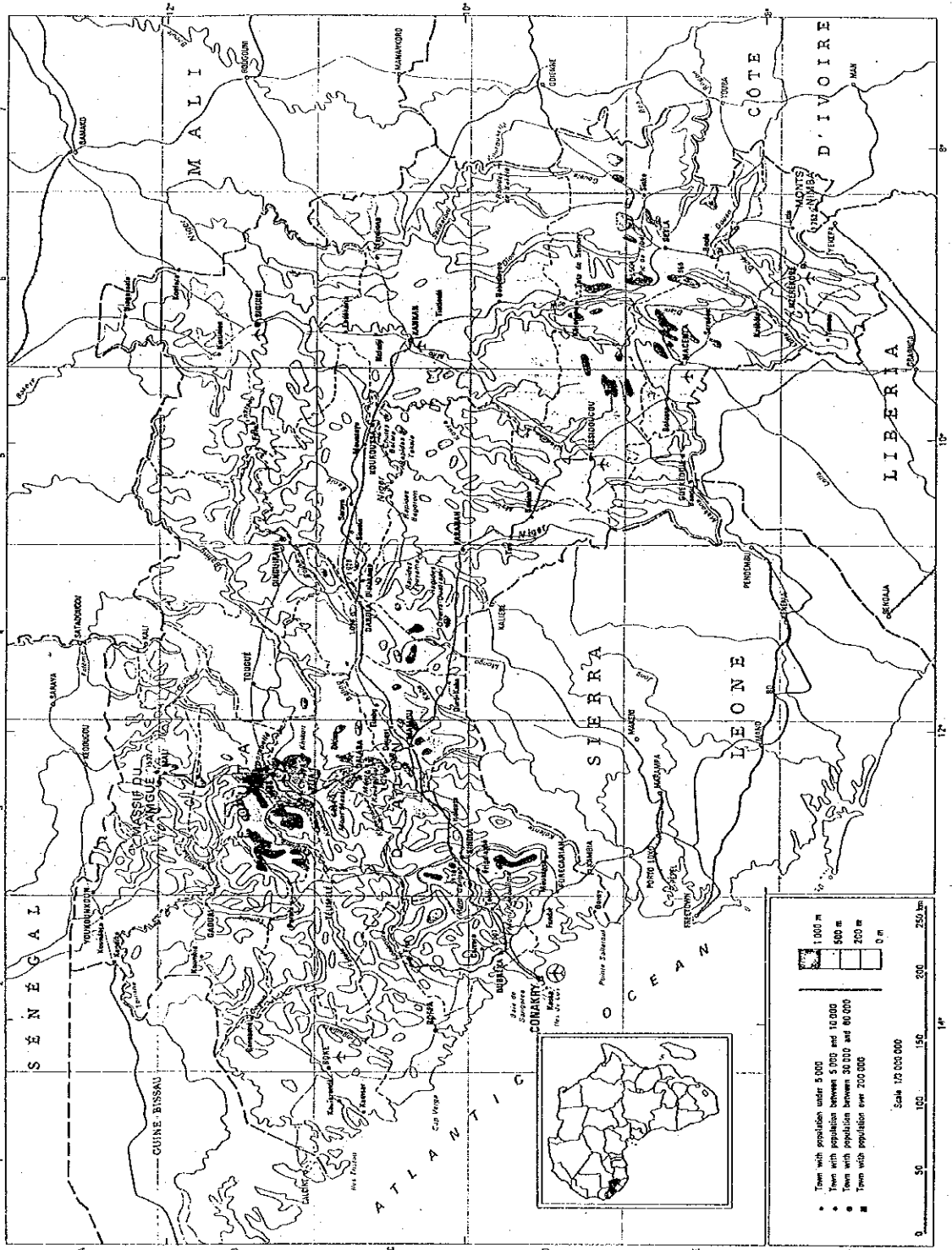


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PREFACE

It is with great pleasure that I present this report entitled "Feasibility Study on the Shipbuilding Project in Guinea" to the Government of Guinea.

This report embodies the result of a survey which was carried out from November 26 to December 10, 1980 by a Japanese survey team commissioned by the Japan International Cooperation Agency following the request of the Government of Guinea to the Government of Japan.

The survey team, headed by Mr. Hideo Usami, had a series of discussions with the officials concerned of the Government of Guinea and conducted an extensive field survey and data analyses.

I sincerely hope that this report will be useful as basic reference for development of the project.

I wish to express my deep appreciation to the officials concerned of the Government of Guinea for their close cooperation extended to the survey team.

March 1981

A handwritten signature in black ink, reading "Keisuke Arita". The signature is written in a cursive, flowing style.

Keisuke Arita,
President,

Japan International Cooperation Agency

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Report on Feasibility Study of
Fleet Expansion Program of
the People's Revolutionary Republic of Guinea

- I. Summary and Recommendation
 1. Outline of Guinea's Plan To Build Bauxite Carriers
 - 1.1 With the aims of improving her balance of payments, expanding her merchant fleet, training seamen, and securing the transportation of her bauxite, the Government of Guinea drew up a plan to build two 60,000 dw/t bauxite carriers and requested the Japanese Government for yen credit to finance their construction.
 - 1.2 As a result of the supplementary study made in Guinea by the survey team, it was found that Guinea had already signed a contract with aluminum manufacturers in the bauxite consuming countries to transport more than 4,000,000 tons of bauxite annually after 1983, the year when the planned new carriers are expected to go into operation. It also became clear from the sales contract, the transportation contract and the conditions of the unloading ports that there is a need also for carriers of sizes of 30,000 dw/t or 45,000 dw/t, and that it is not necessary to stick to 60,000 dw/t as the size of vessel.
 2. Outlines of Société Navale Guinéene (SNG) and Guinomar
 - 2.1 SNG is Guinea's national line which is expected to become the owner of the projected bauxite carriers. SNG is a state-owned shipping company whose capital is wholly owned by the Government of Guinea. SNG is, at the same time, one section of Guinea's Ministère des Transports which exercises control over the country's maritime transportation.
 - 2.2 Guinomar, which is expected to charter and operate the bauxite carriers under this program, is a joint venture company established with the Government of Guinea and the Liberia-registered West African Bulk Shipping (WABS) holding equal 50% shares. WABS is a company set up by the Norwegian shipping company Torvald Klaveness Co. and Navios Corp., a subsidiary of U.S. Steel, with shares divided equally between the two companies. Guinomar, at present, has a contract to transport half of the 9,000,000 tons of Boké bauxite shipped to the principal aluminum companies in the United States and Europe. This bauxite, extracted from the Boké mine, is shipped out from the port of Kamsar.

Although Guinomar is a joint venture, it is, like SNG, one section in Guinea's Ministere des Transports, and its president is concurrently the Minister of Transport. Consequently, in the operation of the projected new vessels, the Guinean side holds the power to make policy decisions, and WABS will undertake the routine work within the authorized bounds.

- 2.3 If and when the new carriers are built, they will be owned by SNG and bare-chartered to Guinomar which will operate them.

As stated above, SNG and Guinomar are members of the same family under the Ministere des Transports. Consequently, considerable flexible arrangement will be possible in fixing the charter rate.

3. Ocean Cargo Movement and Economic Evaluation

- 3.1 Bauxite and alumina account for 95% of Guinea's exports in terms of value.

Exports are on FOB basis. The entire annual export volume of 2,500,000 tons of bauxite destined for the Soviet Union and 700,000 tons of alumina is carried by foreign ships. However, as explained above, Guinea has a contract to transport half of the 9,000,000 tons of bauxite from Boke Mine shipped to Europe and North America.

Judging from the port situation in the unloading areas, it is believed that carriers suitable for these trades are of three sizes: 60,000 dw/t, 45,000 dw/t and 30,000 dw/t.

- 3.2 The following result is obtained when the IRR is calculated for the above three sizes of carriers with respect to the assumed unloading ports.

Ship Size (dw/t)	IRR (%)	Unloading Port	Ship Price (US \$1,000)
60,000	7.26	Fos	30,714
45,000	6.48	St. Croix	26,619
30,000	6.06	Port Marghera	22,524

Regarding the profitability per ship of each size, an adequate figure is obtained. Thus, it could be said that each ship size is feasible.

4. Survey Team's Opinion and Recommendation

- 4.1 Conclusion

Guinea needs to build its own carriers to transport bauxite. Regarding the

size of the carriers, the needs differ by the trade routes. In view of this fact and in view of the various circumstances explained later, one approach to the implementation of the fleet expansion program is to start by building a comparatively small size ship.

In line with this thinking, the survey team recommends that at least a start should be made with one vessel of 30,000 dw/t.

4.2 Reasons

- (1) Guinea possesses 9 billion tons of bauxite deposits which are equivalent to one-thirds of the total world reserves. The country is also blessed with other rich mineral resources including high quality iron ore. Thus, the country has great potential for economic progress when these resources are developed in the future.

Particularly with respect to bauxite, development is quite advanced and the infrastructure exists for shipping out more than 10 million tons a year on carriers of maximum 60,000 dw/t. Consequently, the Guinean Government has, for the time being, given the top priority in the country's economic development to the expansion of the development, production and export of its bauxite resources.

- (2) On the other hand, until now Guinea has depended wholly on foreign ships for the seaborne transportation of bauxite. In order to promote the stable transportation of bauxite, the Guinean Government established Guinomar. Guinomar has concluded long and short-term transportation contracts with the main aluminum manufacturers of Europe and North America and is accumulating experience in ship operation and shipping management, and has started training seamen. Thus, Guinomar is making the necessary preparations for managing a shipping business on its own.
- (3) At present, Guinomar operates several vessels, which are all chartered from other countries, in her bauxite trades. From the viewpoint of shipping management, it is desirable for the company to own some of the ships in its fleet. This will also contribute to securing a stable means of transport for the country's export cargo and, in the short term, to improving the country's current balance of payments difficulties. It will also contribute to Guinea's economic progress.

- (4) With respect to the transportation of bauxite, however, the ship size needs of each route are different. Thus, there is room for further examination of the problem of which route of what size of ship to tackle first.

In its plan, Guinea allows \$25 million for the construction of one 60,000 dw/t carrier. However, ship price trends show that it is not possible to built at this price a ship of such size with the performance sought by Guinea.

Guinea is politically stable and in the long term it is expected to achieve economic progress as its development programs are pushed ahead. In the short term, however, it is believed that the country has many fields, such as mine development and agricultural development for which enormous development funds are needed. At the same time, aside from the long-term prospects of its payments balance, the size of its foreign debts is large and in the short run the country is having difficulty keeping up its repayments, and its current balance continues in the red. Consequently, it is believed that the expansion of Guinea's shipping needs to be balanced in scale from the viewpoint of both national finances and balance of international payments.

- (5) From the point of view of stable corporate management and the appropriate scale of the initial investment, one method of approach would be to start by building a carrier of a size appropriate for a route with relatively small scale of trade. Such a choice would meet, for the moment, Guinea's minimum wishes.

Whatever the vessel size, Guinea has a very strong wish to have a ship of its own as quickly as possible, to train Guinean seamen, and to acquire the know-how for running its own shipping business.

A ship of 30,000 dw/t or of 45,000 dw/t is fully feasible. Either is adequate also as the starting point and foundation for building up Guinea's merchant fleet in the future. This choice, moreover, will reduce the financial burden on Guinea.

II. History and Outline of Survey

1. Circumstances Leading to Survey and Its Purport

- 1.1 The Government of Guinea, in June 1979, asked Japan to furnish yen credit for building bulk carriers to transport bauxite. Guinea has the world's largest bauxite deposits (confirmed deposits totalling 9 billion tons) and ranks third in the world in bauxite production (about 12 million tons annually). However, Guinea currently depends on developed shipping nations to transport most of its bauxite. Guinea strongly wishes to transport a certain portion (50%, for example) of its bauxite on its own ships. As an initial step towards realizing this desire, Guinea wishes to build and possess two bauxite carriers (60,000 tons each). For this, the Government of Guinea asked Japan to furnish the necessary yen credit.
- 1.2 Later, in the spring of 1980, the Government of Guinea informed Japan, through diplomatic channels, of its wish to own an oil tanker (30,000 tons) in connection with a project to refine oil domestically (with the help of Iraq.) The Government of Guinea said it would leave to Japan the choice of which project for which yen credit would be provided. An investigation revealed, however, that the plan for the oil refinery to be linked to the oil tanker had not yet materialized. Therefore, the tanker project was excluded from this report.
- 1.3 At one time Guinea was under the suzerainty of France. After its independence, Guinea strengthened its relations with countries like the Soviet Union and China. Moreover, because the United Nations has little data helpful in our survey and because Guinea is located a great distance away, Japan has only limited knowledge about Guinea, particularly about its maritime transport activities. These circumstances made it necessary for Japan to send a survey team to Guinea to conduct supplementary investigation for a feasibility study on a yen credit to build bulk carriers to transport Guinea's bauxite.
- 1.4 The investigation conducted by the Japanese survey team was wide and extensive in scope. It covered not only the government matters (shipping policy in particular), economy and trade of Guinea that form the background factors in Guinea's request for yen credit to Japan, but also management of shipping business, demand for shipping, finance, port and harbor conditions, ship design, etc.

1.5 Economically, Guinea is currently in the development stage, and statistics on the country are incomplete. There are many corporate secrets involved, and the government has no efficient system capable of furnishing the necessary references and materials. Moreover, the period of investigation was extremely brief. For these reasons, the survey team met with various difficulties everywhere. A great part of this report, therefore, was compiled on the basis of various kinds of supplementary information gathered by us from other sources.

Our Guinean counterparts, despite such difficulties, were very enthusiastic and cooperative. Thanks to their cooperation, we were able to conduct the investigation necessary for compiling this report. We are very thankful to the various Guinean government organs and people for their cooperation.

1.6 Prior to our survey, we sent to the Government of Guinea a questionnaire (see Appendix 1). The answers are carried in Appendix 2.

Data concerning general information on shipping, answers to JICA's Questionnaire concerning the Acquisition of 2 "PANAMAX" Bulk Carriers and Summary Statistics -- Organization of Islamic Conference (Bureau d' Etudes Banque Centrale) are produced in their original form in Appendices 2 (2)-(4).

2. Composition of the Survey Team

Leader	Hideo USAMI Japan Maritime Research Institute (JMRI)
Member Shipping Policy	Shojiro MIYANAGA Overseas Division, Shipping Bureau, Ministry of Transport
Member Shipbuilding	Masamichi YOSHIKAWA Shipbuilding Division, Ship Bureau, Ministry of Transport
Member Ship Design	Masayasu TAKEBAYASHI JMRI
Member Shipping Management	Masakazu SAITO JMRI
Member Financial Analysis	Kunio KAWAMOTO JMRI
Member Project Evaluation	Fuminori ODAWARA JMRI

Member Coordination

Yoshio UEDA

Social Development Cooperation Dept.,

Japan International Cooperation Agency

3. Itinerary of the Survey

<u>Date</u>	<u>Day of week</u>	<u>Business</u>
Nov. 24	Mon.	Departure from Tokyo
26	Wed.	Arrival in Conakry
27	Thu.	Courtesy call and Preliminary meeting at Japanese Embassy. Courtesy call on counterparts and meeting
28	Fri.	Meeting at GUINOMAR Courtesy call on Ministre des Transports Courtesy call on Secretaire d'Etat chargé de la Coopération Internationale
29	Sat.	Meeting at GUINOMAR Courtesy call and meeting at Banque Centrale Meeting at GUINOMAR
Dec. 1	Mon.	Meeting at GUINOMAR Observation of the port of Kamsar (Member Yoshikawa)
2	Tue.	Observation of the port of Conakry
3	Wed.	Meeting at GUINOMAR
4	Thu.	Meeting at GUINOMAR
5	Fri.	Meeting at GUINOMAR Visit to Japanese Embassy
6	Sat.	Visit to Secretaire d'Etat chargé de la Coopération Internationale Departure from Conakry
7	Sun.	Arrival in London
8	Mon.	Collection of related data and information
9	Tue.	Departure from London Arrival in Paris
10	Wed.	Courtesy call at Guinean Embassy, Paris Collection of related data and information
11	Thu.	Departure From Paris
12	Fri.	Arrival in Tokyo

Persons interviewed

Ministre des Transports : Mouctar Diallo
Secrétaire d'Etat chargé de la Coopération Internationale: Marcel Gros
Ministère des Transports : Faya Koundouno
Souleymane Nagassouba, Marine Marchande
Secrétariat d'Etat à la Coopération : Mamadou Thiam
Ministère du Commerce Extérieur : Echad Mamadou Laliou Lglla
SNG : Mdou Lamarana Diallo, Directeur Général
Mohamed Kebe, Directeur Technique
Abou Camara, Ingénieur
Karifa Conde, Inspecteur
GUINOMAR : Yaya Keita, Directeur
C.E. Pettersen, Treasurer
Banque Centrale : Dramane Diawara, Directeur
Sorifing Camara, Directeur
Mme Bah, Directeur
Port Kamsar : Kabine Kabe, Commandant
Mamadou Toure, Directeur
CBG : R.D.Robb, Extra Master
Guinean Embassy, Paris : Mamadou Cherif Diallo, Attache Financier

III. Economic and Social Conditions

1. General Situation

1.1 Geography and Social Situation in General

1.1.1 Guinea is located at the western tip of West Africa. It has a population of approximately 4,900,000 in an area of 246,000 square kilometers (roughly two-thirds of Japan's area).

Facing the Atlantic to the west, the country is bounded inland by Guinea Bissau, Senegal, Mali, Ivory Coast, Liberia and Sierra Leone. Conakry, the capital city on the Atlantic, has a good port which accommodates ships of up to 25,000~30,000 dw/t and can be developed up to 250,000 dw/t.

The land, consisting of plains and highlands, is generally flat.

Geographically, the country is divided into the coastal area called Lower Guinea, Fouta Djallon highlands, Upper Guinea, and the southeastern woodland. Its climate, somewhat different between the coastal and inland areas, is characterized by high temperature and high humidity, and has the dry season (November-April) and wet season (May-October). At Conakry, the average yearly rainfall is about 430 cm and mean annual temperature is 29 degrees Centigrade high and 23 degrees Centigrade low.

1.1.2 Traditionally, Guinea was an agricultural country. However, its agriculture has been sluggish since the country's independence. It has been a net importer of food for many years. In recent years, the Guinean Government has been going all-out to promote agriculture in hopes of turning the country self-sufficient in food as it used to be before independence. Guinea is known to have one of the richest mineral resources in West Africa. Bauxite reserves abound in the central and northern areas, and very large deposits of iron ore have been confirmed in the southern areas bordering Liberia. The three major rivers, Niger, Senegal and Gambia, originating in the Fouta Djallon areas, have abundant water and great potentiality for hydroelectric power generation. Besides, the country has gold and diamond mines, and prospecting is underway for uranium and oil. Vast forestry and fishery resources remain almost untapped.

Despite these rich resources, the country's gross national product is low at US\$1,070 million or \$210 per capita, according to the 1978 World Bank statistics.

1.1.3 The Guinean people are made up of about 18 tribes, the biggest among them being the Foulahs (numbering roughly 1,000,000), the Malinkes (about 700,000) and the Soussous (about 400,000). These three groups speak their own languages. French is the official language. Education begins at primary school and goes up to university. The Guineans are predominantly Muslims (75% of the population). The rest are mostly followers of the traditional religions, with no more than 1% of the population being Christians.

1.1.4 Under provisions of its Constitution, Guinea is a republic with authority centralized in the president, who is elected by universal suffrage for a seven-year term. Cabinet ministers are appointed by the president.

President Ahmed Sekou Toure has been elected to his third consecutive term since the country's independence. In this sense, the country might be said to be politically stable. Under him are the prime minister and 31 cabinet ministers. Economic cooperation problems are under the jurisdiction of Secretariat d'Etat a la Cooperation Internationale, headed by Mr. Marcel Cros. Maritime transportation is administered by Ministere des Transports, and Mr. Mouctar Diallo is Transport Minister.

The National Assembly has 150 members elected for a five-year term. The country is divided into 33 administrative districts.

1.1.5 Since its independence, Guinea has pursued a non-alignment policy and maintained close relations with the Soviet Union and China. Initially it closed the doors to Western countries. But since late 1960's, Guinea has restored relations with U.K., France and West Germany, and maintained close ties with the United States. At present, Guinea adopts an omnidirectional foreign policy and is believed prepared to cooperate with all countries.

1.2 Economic Situation in General

1.2.1 Since its independence, Guinea has put restraints on business activities by private capital but positively accepted capital investment by non-governmental foreign concerns particularly in the development of bauxite and iron ore. Tapping of the country's bauxite reserves began with the development of the Fria Mine by France's Pechiney in the latter part of the 1960's, followed by the development of the Kindia Mine by the Soviet Union and the exploration of the Boké Mine by the Consortium Halco. Today bauxite is Guinea's most important and biggest single source of foreign

currency revenue. The Guinean Government puts great expectations on the development of the Nimba iron ore mine which has just begun.

Agriculture has been in a slump as Guinea has been unable so far to make full use of its arable land, ample labor force, tropical climate of high temperature and humidity fit for the cultivation of farm crops.

- 1.2.2 The Guinean Government is reportedly working on a new five-year economic plan covering 1981-85, aimed at accelerating the country's economic development. The plan envisages total costs of 38 billion silyis and is said to be aimed at an average annual growth rate of around 5%. Total investment during the five-year period will amount to 32 billion silyis, with just over 20% to be put into agriculture and forestry, and water utilization. The 38 billion silyis is equivalent to US\$2,000 million, at the conversion rate of 19 sily to the dollar. The amount is over 50% more than the US\$1,300 million spent under the first five-year plan which ended in 1978. Major development projects, such as the construction of a dam and a power plant on the Konkoure River, the construction of an alumina plant to be operated with the electricity from the power station, the development of bauxite deposits at Ayekoye, iron ore deposits at Mifergui-Nimba, and diamond and uranium deposits, have not been included in the new five-year plan on grounds that feasibility studies have not completed. Some of these projects are to be incorporated into the plan when foreign loans are made available to finance them.
- 1.2.3 The latter part of the 1970's was a period in which Guinea made an earnest search of avenues toward economic development. During this period, economic cooperation figured largely in the country's diplomatic relations. Thus Guinea pursued an omnidirectional diplomacy, seeking aid from both the Western and non-aligned countries. It sought to cooperate with any nation of the world whenever it proved helpful to the development of its economy. Our survey has put the volume of foreign aid to Guinea at about US\$55 million, of which some 70% is multilateral aid supplied through the UNDP and the African Development Bank. The study has also proved that aid on a bilateral basis includes technical assistance including military aid from China, the Soviet Union, Yugoslavia, Hungary and East Germany. Aid from the Western camp includes US\$100 million worth of farm produce supplied by the United States (up to 1971 since Guinea's independence). Bilateral aid has been provided also by U.K., France, West Germany and Japan. In recent years, aid is coming in from Iraq, Libya, Saudi Arabia

and other oil-producing countries.

2. Outline of Major Industries

2.1 Mining

Guinea is rich in minerals. Reserves of 9 billion tons of bauxite are known to be in Guinea. This is one-third of the world's proven bauxite reserves. The country is said to account for two-thirds of the world's total reserves of high-grade bauxite. Guinea also has 16 billion tons of iron ore deposits. The Nimba Mine, for which a feasibility study is underway, has 2 billion tons of deposits with an iron content of 65-70%. In addition, diamond and gold deposits have been confirmed and prospecting for oil is in progress.

2.1.1 Bauxite

(1) Existing Mines

The following three mines have been developed and yield bauxite and alumina.

1) Fria

This mine has bauxite reserves of 500 million tons with an alumina content of 40-48%. The development of the mine began in 1957 with technology provided by France's Pechiney. Production started in 1960 after an initial investment of US\$200 million. An alumina plant has been built and the alumina produced there is transported by railway over a distance of 150 km to Conakry, where it is shipped from a specially built wharf capable of accommodating ships of up to 25,000 dw/t. Alumina output from the mine was initially 480,000 tons a year. As a result of an additional investment in the plant, the volume of shipment increased in the last five years.

1975	557,645 tons
1976	476,156 tons
1977	559,830 tons
1978	610,023 tons
1979	652,780 tons

The Guinean Government in 1973 took over a 49% equity share in the mine and the name of the company was changed from Societe Fria to Societe Mixte Friguia. The remaining 51% share is held by the Consortium Frialco, whose members with respective shares are as

follows:

Noranda (Canada)	38.5%
Pechiney (France)	36.5%
British Alumi (U.K.)	10.0%
Alusuisse (Switzerland)	10.0%
V.A.W. (West Germany)	5.0%

2) Kindia

Development of this mine began in 1969 with a US\$90 million loan and technology provided by the Soviet Union. Production commenced in 1974. The mine has deposits of about 200 million tons, with an alumina content of 48-52%. The development is undertaken by the Guinean Government's Office des Bauxites de Kindia (OBK). Bauxite from the mine is transferred 110 km by railway to Conakry, where it is shipped from OBK's wharf, which can accommodate ships of up to 30,000 dw/t. To avoid contamination of alumina, this wharf is situated about 1 km away from Friguia's wharf. Export volumes in the last five years were:

1975	1,720,655 tons
1976	2,362,990 tons
1977	2,638,800 tons
1978	2,635,829 tons
1979	2,306,123 tons

Almost all the shipments were bound for the Soviet Union. Under the development agreement, 90% of the total output is set aside for the Soviet Union, with 10% put at the disposal of the Guinean Government. Out of the 90% for the Soviet Union, 56% is for repayment of the loan and the remaining 44% is for export to the Soviet Union. Accordingly, the Guinean Government can count on 49.6% of the total output for its export earnings: $(90\% \times 44\%) + 10\% = 49.6\%$. In 1980, the bauxite exported to the Soviet Union fetched US\$16.80 per ton FOB. This compared with US\$31.70 per ton FOB earned by CBG (mentioned below) for its bauxite. This disparity was explained as coming from the difference in alumina contents between the two varieties of bauxite.

3) Boké

In 1963, the Guinean Government established Compagnie des Bauxite des

Guinee (CBG) in a joint venture with Harvey Aluminium Co. of the United States to undertake the development of the Boké Mine. Production began in 1971 and the bauxite began to be exported in 1973. In the meantime, the project was joined by other partners, who formed Consortium Halco. The Guinean Government holds a 49% stake in the mine, Halco holding the rest. Shares between the members of the consortium are as follows:

Alcan (Canada)	27%
Alcoa (U.S.)	27%
M. Marietta (U.S.)	20%
Pechiney (France)	10%
V.A.W. (West Germany)	10%
M. Edison (Italy)	6%

Bauxite produced at the mine is taken by the members of the consortium roughly in proportion to their investment. The annual volume earmarked at present for export to the consortium members are:

Alcan	2,000,000 tons
Alcoa	2,380,000 tons
M. Marietta	1,720,000 tons
Pechiney	1,400,000 tons
V.A.W.	950,000 tons
M. Edison	530,000 tons

Bauxite shipments from the mine in the recent five years have been constantly increasing as shown below. The 1980 shipments were believed to have exceeded 9,000,000 tons.

1975	5,543,656 tons
1976	6,634,766 tons
1977	7,365,783 tons
1978	8,214,461 tons
1979	8,424,256 tons

The mine's deposits are estimated at 2 billion tons. Its alumina content, at 58-65%, is the highest of all bauxite mines currently in operation in Guinea. The bauxite from Boké is transported 140 km by railway to Kamsar, the port built for it, and is loaded at a special wharf accommodating ships of up to 66,000 dw/t. The contracted loading capacity at the wharf is 24,000 tons a day. Provided the

wharf is operated at 99% of its capacity throughout the year, the annual loading would come to about 8,670,000 tons. This means that the wharf needs to be expanded sooner or later.

(2) New Bauxite Mines under Study

The Guinean Government is planning to develop bauxite reserves at the new mines listed below. However, each of these projects is still in the feasibility study stage. Financing remains to be worked out. There are no definite schedules for any of the projects. The development of the new mines depends largely on how to get necessary infrastructure ready. It will be long before any of these projects can be started.

1) Ayekoye

The mine's deposits are estimated at 1.3 billion tons. Investment costs were put at US\$1 billion. Alusuisse is now conducting a feasibility study into provisional plans which target annual output at 1,000,000 tons of alumina and 1,500,000 tons of bauxite. The Guinean Government expects to get loans from Saudi Arabia, Iraq, Libya, Kuwait, Egypt and the United Arab Emirates to finance this project, which may develop into the construction of an aluminum plant with an annual production capacity of 150,000 tons. The project is linked to the planned construction on the Konkoure River of a dam and a power station, which can supply electricity to the aluminum plant. The Guinean Government is most eager to get this and the Mifergui-Nimba project started.

2) Dabola

The mine has reserves of 1 billion tons, with an alumina content of 48-52%. In 1971, Societe des Bauxite de Dabola was set up for the purpose of developing the mine. The company, 51% owned by the Guinean Government, was joined by Yugoslavia's Enegro Projekt, United States' Reynolds Metal, Algeria and Canada. A feasibility study is now being conducted by Alusuisse. Targeted annual output is 2,500,000 tons of bauxite and 1,000,000 tons of alumina.

3) Tougué

The mine's reserves are put at 4 billion tons, with an alumina content of 47-82%. The project aims at an annual output of 5,000,000 tons of bauxite and 1,500,000 tons of alumina. The biggest problem is

that it requires the construction of a long railway.

4) Others

Prominent among other projects is the Alugui (Aluminum de Guinee) Plan, which aims to produce 155,000 tons of alumina from the bauxite supplied by the Boke Miné. The Guinean Government is eying Alusuisse as its possible partner in this project.

2.1.2 Iron Ore

Guinea's iron ore deposits are put at 16 billion tons, or one of the biggest untapped reserves in the world. Reports say that an outcrop of a mine has been discovered near Mt. Simandou and it is believed to be part of huge high-grade ore deposit estimated at 4 billion tons and containing 400-500 million tons of iron. Major iron ore mines, with estimated reserves, are:

Nimba	2 billion tons, iron content 65-70%
Simandou	4 billion tons, iron content 65-70%

(1) Nimba

This mine is favorably situated. Ores can be moved to the shipment port of Buchanan in Liberia, if a 27-km railway is built to link with Liberian Railway. Ores produced at the mine are of a good quality. Another favorable point is that the loading facilities at Buchanan Port, built to handle the Lamco ore from Liberia, can be used. The feasibility study on the mine was completed by Sweden's Lkab consultant firm in August 1975. Kaiser Engineering undertook the second feasibility study in September 1978. The Guinean Government plans to start exporting the Nimba ore in 1983. But it must depend on the 250 km Liberian Railway to transport the ore from the mine to Buchanan Port, and talks are underway on freight rates to be paid to Liberia. Societe Miferugui-Nimba, which was set up to develop the mine, is capitalized at US\$2,000,000, 50% of which was put up by the Guinean Government. Shares of other partners are as follows:

Nigeria	27%
Libya	20%
Algeria	14%
Spain	9.5%
Romania	5%
Japan	4.2%

France	8%
Liberia	0.5%
(Open)	11.8%

U.S. Steel has agreed to take part in the project as operator of the mine, but is unlikely to take ore from the mine. The shipment port of Buchanan can accommodate ships of up to 80,000 dw/t. The Guinean Government wants to start exporting 15,000,000 tons of ore annually in three years. The maximum loading capacity of both the port and the railway is 20,000,000 tons annually. Therefore, the facilities need to be expanded to enable the export of Guinean and Liberian iron ore.

(2) Simandou

Ores from this mine are located too far to be carried to a port of shipment via Liberia. They must await the completion of a trans-Guinean railway linking the mine to Conakry, about 900 km away. There is no definite plan for the railway, but a route map has been drawn with the help of Japan. It is considered possible to build a wharf capable of accommodating ships of the 250,000 dw/t class at Conakry. Ore from Simandou is of a high quality with a low sulphur content.

2.1.3 Other Minerals

As mentioned earlier in this report, diamond and gold reserves have been confirmed in Guinea. Japan is taking part in prospecting for uranium deposits. Prospecting for offshore oil is also underway.

2.2 Agriculture, Livestock, Fishery

2.2.1 Outline

In Guinea, 85% of the total population is engaged in agriculture, the country's most important industry. Agriculture accounts for roughly one-third of the country's GDP and for 5% of total export revenue. But Guinea's agriculture is not fully advanced yet and needs further development efforts.

The number of cattle is put at about 1,000,000, or fairly large in proportion to the country's human population. Guinea has a long coastline which promises rich fishery resources. The fishery industry is still not fully developed, with the 1978 haul totaling only 20 million tons.

Improvement can be expected in the years ahead.

2.2.2 Major Farm Crops

Because Guinea is lagging in statistical compilation, up-to-date data was not available. The most recent figures obtained were for the 1973/74-76/77 period shown below (in 1,000 tons).

	73-74	74/75	75/76	76/77
Rice	360	391	425	320
Manioc	950	1,030	1,100	71
Millet	81	79	83	36
Yam	52	56	61	58
Banana	90	95	100	97
Pineapple	130	142	153	145
Coffee	13	14	15	14
Peanut	72	79	85	25

The figures above show that the crops were generally good in 1975/76 but bleak in 1976/77 when the manioc crop was almost a catastrophe.

When Guinea became independent in 1958, agriculture accounted for two-thirds of the country's GDP and earned 60% of total export revenue. The country was self-sufficient in rice, the staple food. Banana, pineapple, coffee, peanut and palm oil were the important contributions to the country's exports. In particular, Guinea was one of the biggest banana exporters in West Africa, operating its own fruit carriers shuttling between the country and European ports. Twenty years after independence, Guinea has become a net importer of grain. Agricultural production has dropped drastically despite the slight change in the size of the farming population. Today, Guinea annually imports 100,000 tons of grain, including 30,000 tons of rice, spending no small proportion of its precious foreign currency. (Some statistical data put Guinea's agricultural output at a bleak 0.7 ton per hectare, compared with several tons in neighboring West African countries).

2.2.3 Promotion of Agriculture

Development of agriculture has been given top priority in the Guinean Government's new five-year economic plan, which started in 1981. The plan sets aside 8,000 million sylis to be invested in agriculture and irrigation. The Government has set up 250 agricultural communes (FAPA=Fermes Agro-Pastorales d'Arrondissement) across the country and provided them with

materials and technicians to promote agriculture and stock raising. At village levels, FAC(Fermes) Agricoles Communales) have been set up as subordinate production units.

The World Bank has reportedly decided to extend aid to Guinea to assist in the promotion of rice production and stock raising. Coupled with the Government's new five-year plan, such aid will prompt the country's agricultural development. But there are problems yet to be solved, such as the establishment of a better price policy, streamlining of the distribution mechanism and improvement of the infrastructure.

2.3 Other Industries

Industries other than mining and agriculture offer jobs to 7,000 persons and account for 3% of the country's GDP. This shows how much the Guinean economy depends on mining and agriculture.

European countries and the European Community's Development Fund have provided loans and technical aid to help Guinea build plastic plants and breweries. A textile mill is under construction at Sanoya at a cost of US\$40,000,000. A shoe factory, a tire reclamation plant, a lubricant oil mill and a cement packing plant (to use imported clinker) are also being constructed. These factories, when completed, will not only create new job opportunities but indirectly improve the country's road and electricity network.

3. Foreign Trade and Balance of Payments

3.1 Foreign Trade

Guinea's foreign trade pattern is very simple. Its exports are mostly bauxite and alumina plus a handful of farm products. Strict controls are imposed on imports due to the shortage of foreign currency. Officially approved imports are food, textiles, machinery and gasoline.

3.1.1 Exports

Guinea annually exports some 12,000,000 tons of bauxite and about 700,000 tons of alumina. Other items, with estimated export volumes in the last four years, are as follows: (in kiloton)

	Coffee	Fruit	Palm Oil	Others
1976	-	-	-	31,494
1977	3,348	2,234	7,157	48,398
1978	4,853	2,064	7,672	2,315
1979	1,588	2,861	11,818	1,741
1980	1,608	448	4,263	1,721

Particularly notable are the drastic falls in the export volumes of "other items" after 1978. This is believed due to the fact that Guinea can no longer export manioc because of drastically reduced output.

3.1.2 Imports

Major import volumes in the four years to 1979, with estimates for 1980, are as follows: (in kiloton)

	Grain	Various	Oil
1976	34,559	60,880	144,482
1977	32,200	216,984	225,890
1978	56,801	232,193	303,088
1979	74,915	373,528	285,992
1980	26,716	147,785	192,548

The bulk of the grain imports (almost 95%) is rice, Guinea imports all of its oil requirements because it has no oil refineries. The oil does not come from oil producing countries in Africa but from Iraq and Saudi Arabia. Oil accounts for more than half the country's total annual import volume. Crude oil price increases affect the Guinean economy tremendously.

3.2 Balance of Payments

3.2.1 Outline

Figures for December 1978 were the latest available data on Guinea's balance of payments. There was no knowing about the situation thereafter. But the statistics obtained indicate the measure of efforts Guinea makes to keep its balance of payments in order.

Guinea's external debts outstanding at the end of 1978 were estimated at about US\$1.2 billion. The enormity of this figure is seen when it is put against the country's GDP for the year, estimated at US\$1,209 million.

Guinea actually paid US\$64 million of its US\$116 million debt payment due

in 1978. About the same amount of debt presumably fell due in each of the subsequent years. There was the possibility that something like US\$60 million was left unpaid annually, adding to the country's accumulated debts.

3.2.2 Current Account

Guinea had a trade surplus of US\$50-60 million each in 1977 and 1978. This was due to the tightened import controls on oil following the steep oil price increases and the steady improvement in the country's bauxite exports. In view of interest and other payments in the invisible trade sector, annually totaling US\$90-100 million, Guinea suffered an estimated current account deficit of around US\$30 million each in 1977 and 1978.

3.2.3 Capital Account

No details were available. Annual official borrowings were estimated at US\$100 million, with debts repayment put at an estimated US\$50 million. Annual capital account shortfalls were estimated at around US\$30 million.

3.2.4 Future Prospect

Guinea's balance of payments can be improved in the long run, considering its great export potentialities such as bauxite, alumina and iron ore. But for the time being, the country will have to seek a re-scheduling of external debts and other relief measures, since it will have to depend on loans to finance the development of its mineral resources. For years Guinea will have to go along with its present policies -- strict controls on imports, sustained efforts to reduce grain imports through the promotion of agriculture, and continued development of its bauxite and iron ore reserves.

IV. Shipping

1. Shipping Administration

1.1 Organization of Shipping Administration

1.1.1 Shipping administration is under the jurisdiction of the Ministère des Transports. As shown in Fig. IV-1-1, its organization is divided into six divisions, which are supposed to cover shipping, shipbuilding, ports and seafarers administration.

As for shipbuilding, there is only a small repair workshop in Conakry. Guinea depends on foreign countries (Abidjan and Alexandria) for the training of seafarers, particularly officers for oceangoing ships.

1.1.2 What is particularly noteworthy about Guinea's shipping administration is that it embraces Société Navale Guinéenne (SNG), the Guinean Government's wholly-owned state shipping company directly engaged in shipping business, and Guinomar, a joint venture with 50% interest held by Guinea and 50% by WABS (25% by Klaveness and 25% by Navios). Transport Minister El-Hadj Mouctar Diallo is concurrently serving as president of Guinomar.

1.1.3 SNG and Guinomar will be treated in detail later in a different chapter. Here, emphases are made that ships under the project in question will be owned by the state shipping company SNG. Guinomar will contract to charter the ships to carry bauxite produced in Guinea. The country, thus, can enjoy both the profits of a shipowner (from charterage) and the profits of a ship operator (part of which goes to foreign capital).

1.2 Shipping Policy

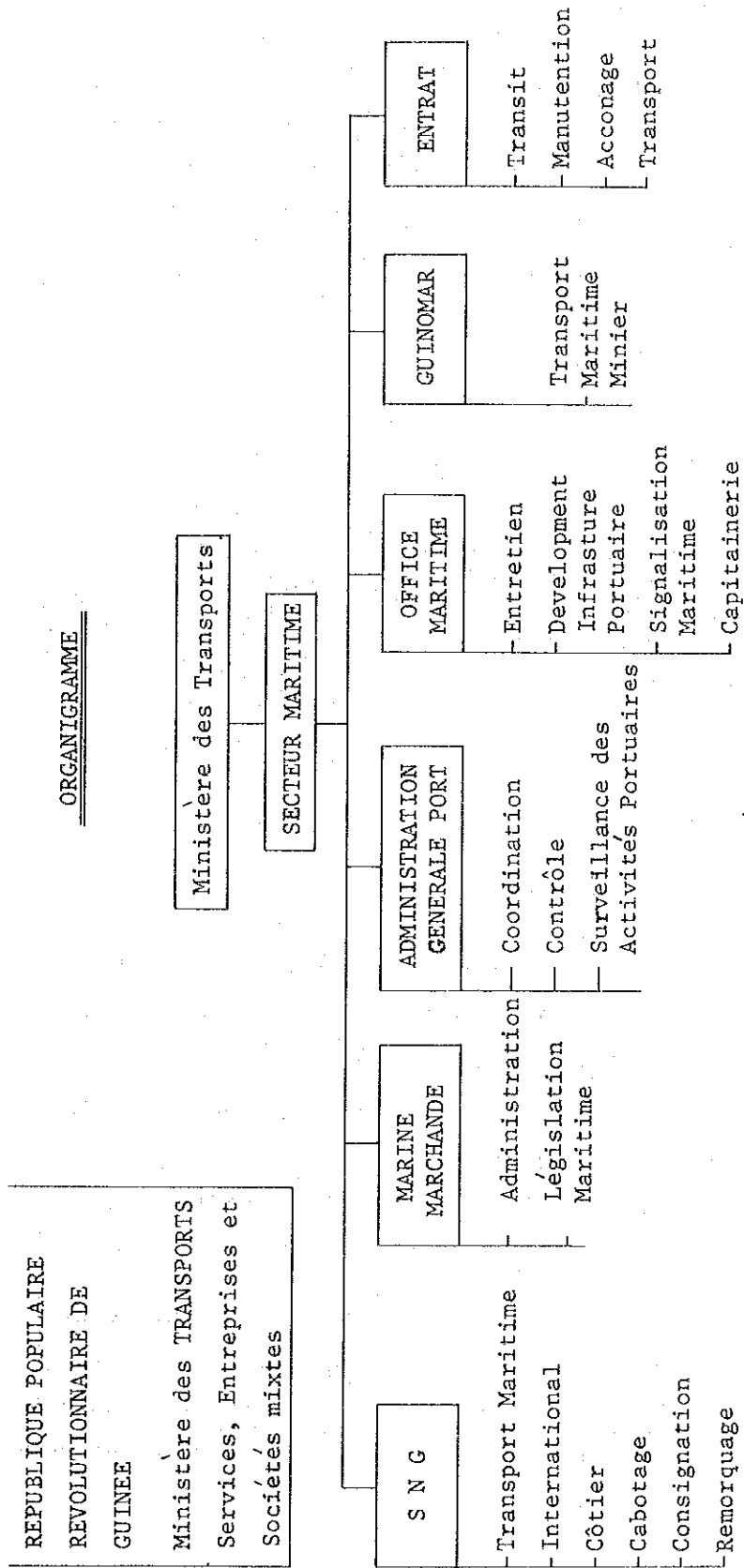
1.2.1 Guinea has already ratified the UNCTAD Liner Code Convention, the Convention on African Shippers' Councils, the Convention on West African Port Union and the Charter of Abidjan.

With regard to a shippers' council, there is the Guinea's Shippers Committee (CGC). Guinea has also participated, at a regional level, in the Union of National Shippers Committees formed within the framework of the Ministerial Conference of West and Central African States for Maritime Transports, thereby making efforts to advance the interests of shippers.

1.2.2 Three measures can be cited with respect to shipping legislation in Guinea.

- (1) Enactment of a law related to the UNCTAD Liner Code Convention (Under preparation).

Fig. IV-1-1 Organization of Shipping Administration



- (2) Regulation to encourage the shipping of 50% of bauxite, alumina and iron ore in Guinean ships.
- (3) Decree relating to shippers' council.

1.2.3 Concerning export and import procedures, Guinea is selling on FOB and buying on CIF under normal commercial conditions. However, transportation of minerals, the country's major export products, has hitherto been completely controlled by foreign carriers. Against this, the Government wants to reserve rights to transport 50% of certain cargoes, in particular, minerals. The Government aims to place 40% of liner cargo traffic under its control.

1.2.4 Based on these policies, the Government of Guinea which currently has almost no tonnage, plans to acquire three Panamax bulkers under its medium-range program (1981-1984) to use them in transportation of Boké bauxite to Europe and America. The country plans to become able to carry 30% of the Boké bauxite shipments on its ships in the coming 5 years. (Note: If 50% of the shipments of Boké bauxite, the current production of which amounts to 9,000,000 tons a year, should be carried in Guinean flag ships, it is considered necessary to have 10 bulkers in the 30,000- to 60,000-ton classes.

2. Ports

2.1 The Port of Kamsar

2.1.1 Kamsar port is situated at the mouth of the Rio Nunez River about 300 Kilometers northwest of Conakry. Kamsar is a loading port for bauxite produced at CBG's mine Boké which is about 140 kilometers inland from the port.

This port is under the jurisdiction of the Office d'Aménagement de Boké (OFAB), an organization related to the Ministère Mines et Géologue. But, bauxite cargo-handling operations at the port are independently conducted by CBG.

2.1.2 Kamsar port is on the east bank of the Rio Nunez River, near the river's mouth. It has a dredged access channel having a width of 120 meters and extending over 17 kilometers toward the ocean. At low tide, the channel is about 8 meters deep near the port and about 11 meters deep at the ocean end. At high tide, the channel becomes about 5 meters deeper. The channel is surveyed every year for depth and dredged at a rate of about

once every five years.

The wharf used at Kamsar exclusively for loading bauxite on ships faces the access channel at a point about 1,800 meters away from the shore. It is a tablelike structure with a length of 260 meters and a width of 18 meters. It is built on pipes driven into the river bed. It is dredged to keep a water depth of 13 to 14 meters around the wharf even at low tide.

The wharf and the shore are linked by an approaching jetty. Bauxite and fuel are loaded into ships from their storage facilities on land by using conveyer belts and pipelines. The cargo-handling capacity is about 4,000 tons per hour for bauxite and about 450 tons for fuel. The on-shore fuel storage facilities can store 30,000 tons of "C"-grade heavy oil and 6,000 tons of diesel oil.

The largest vessel that can enter through the access channel and berth and load at the wharf is considered to be one about 225 meters in length with a 13-meter draft. This ship size is equal to that of a 60,000-dw/t class bauxite carrier. The largest ship so far actually accommodated at the wharf was a ship of about 66,000 dw/t. In recent years, about 200 bauxite carriers have been entering the port every year. It is said, however, that congestion has rarely occurred.

2.1.3 Besides, there are two berths for general cargoships at a different jetty. One of the berths is equipped with a crane and can accommodate a ship of up to about 100 meters in overall length and 6 meters in draft. Among general port facilities are two tugboats and two barges which are engaged in piloting and berthing services. There also are a hospital and an accommodation facility.

The authorities are thinking of lengthening the wharf by 40 to 50 meters and to deepen the access channel. At the present moment, however, the plan has not yet taken concrete shape, including the question of how to procure the necessary funds.

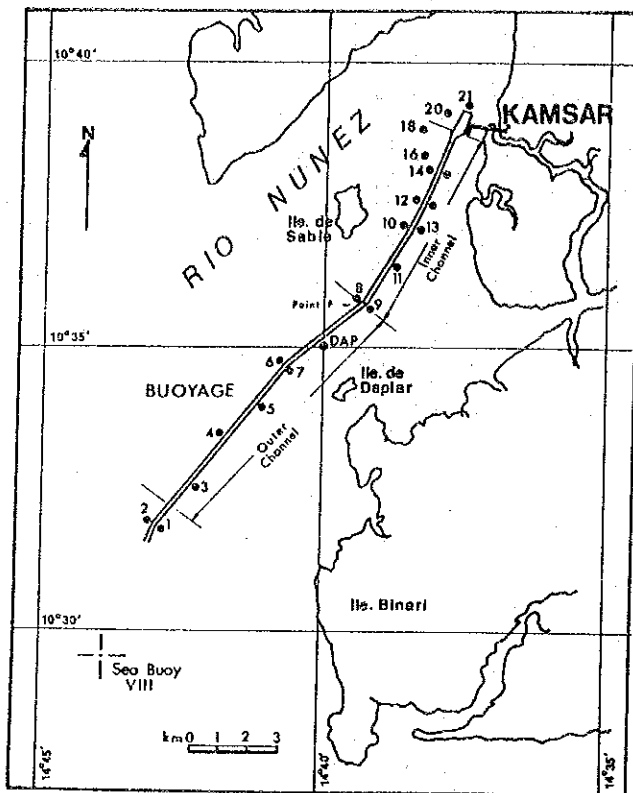


Fig. IV-2-1 Access Channel to the Port of Kamsar

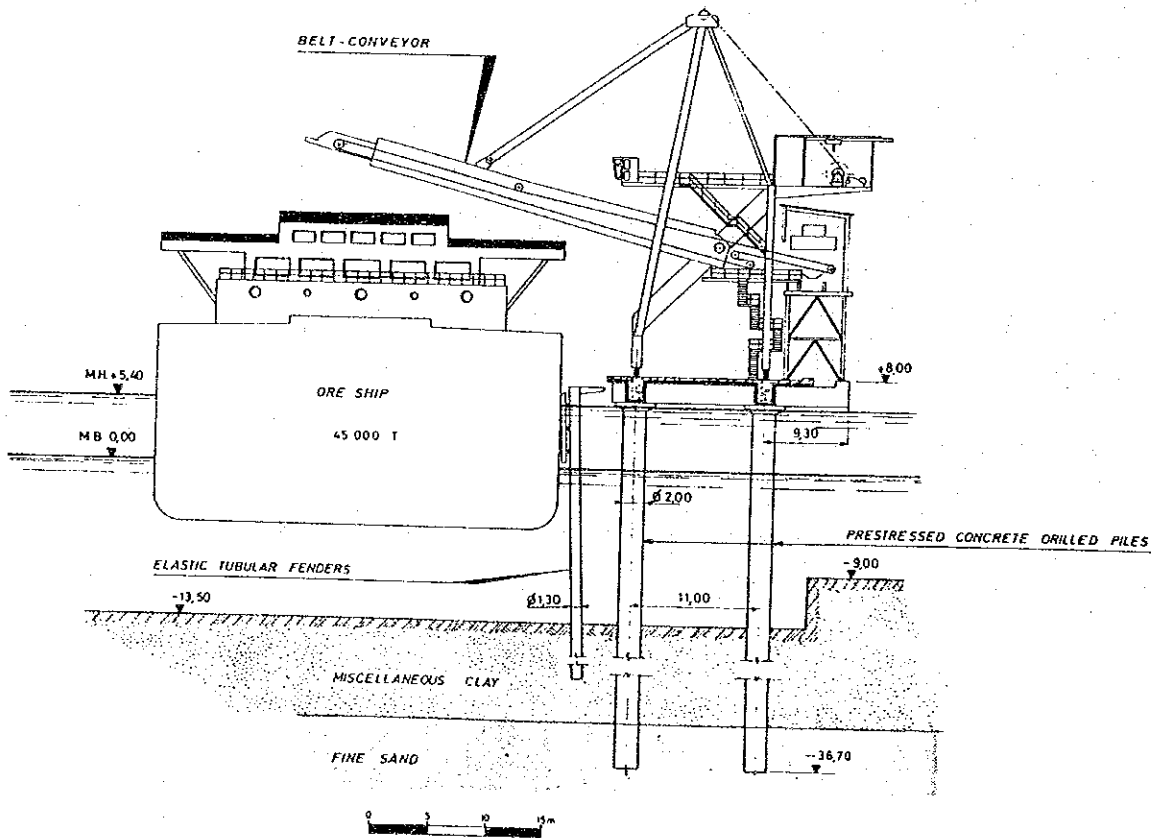
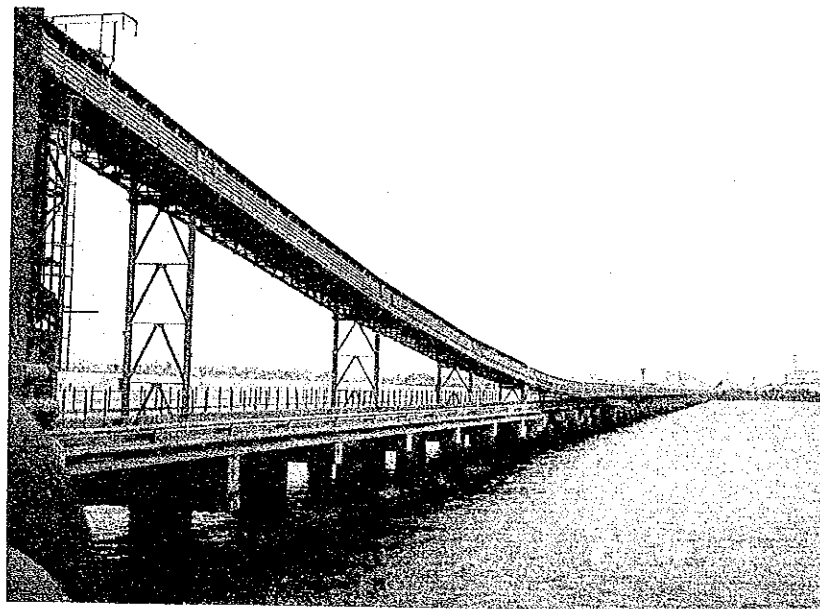
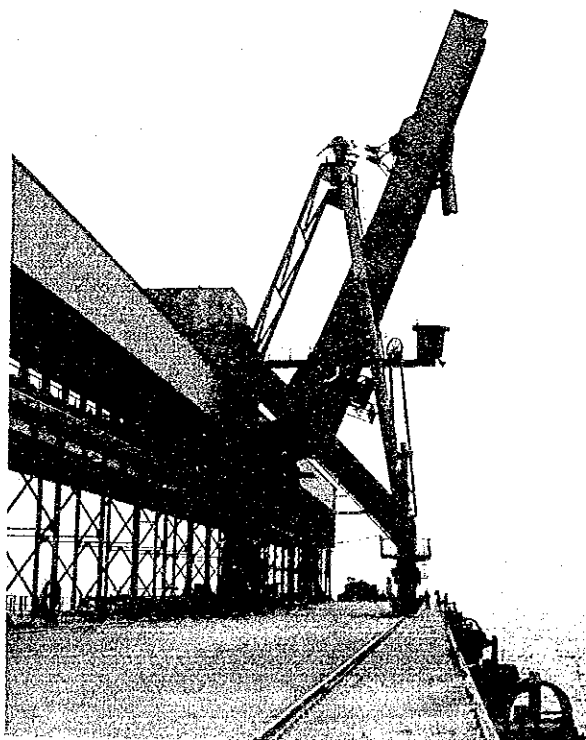


Fig. IV-2-2 Bauxite Loading Wharf of the Port of Kamsar

Approaching Jetty



Shiploader on the Bauxite Loading Wharf



2.2 The Port of Conakry and Other Ports

2.2.1 Conakry port is adjacent to the city of Conakry. The port is Guinea's gateway for imports including foodstuffs, sundries, construction machinery, etc. It is functioning also as an export port for alumina produced by Friguia and for bauxite produced for export to the Soviet Union by the Kindia mine which is located about 100 kilometers inland and managed by OBK.

2.2.2 The following is a general description of Conakry port's berths and other port facilities, which are under the jurisdiction of the Ministere des Transports.

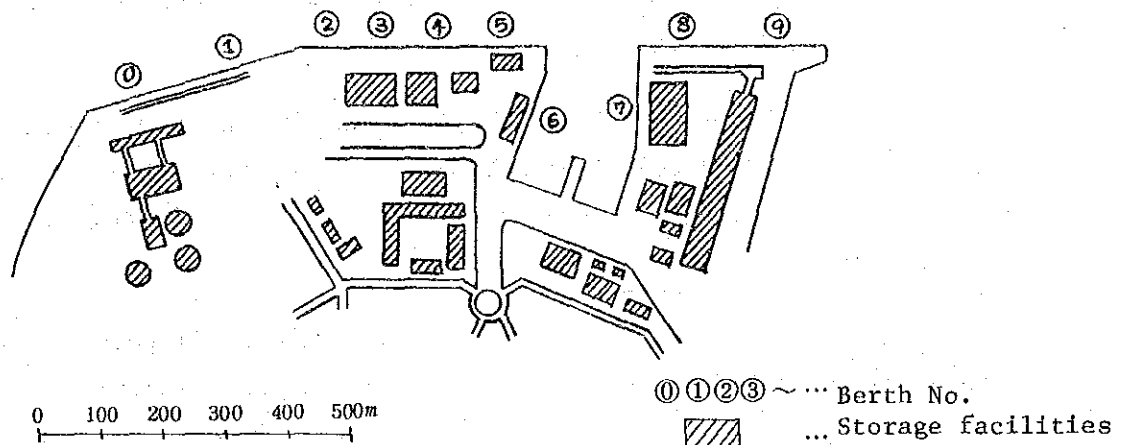


Fig. IV-2-3 Sketch of the Port of Conakry

(1) Berth No.	Cargo Handled	Approx. Length (m)	Approx. Depth (m)	Facilities
0	Alumina	170	11.0	Loading equipment No. of Units: 2 Capacity: 350 tons per hour per unit
1	Alumina	170	11.0	
2	General Cargo	120	8.5	No loading equipment incl. cranes. A survey is under way for construction of such equipment.
3	General Cargo	120	8.5	
4	General Cargo	120	8.5	
5	—	120	8.5	
6	—	155	8.5	
7	General Cargo	160	8.0	
8	Bauxite	149	11.0	Loading equipment. No. of Units: 1 Capacity: 1,000 tons per hour
9	Bauxite	149	11.0	

(2) Storage Space

Open air : 44,560 square meters

Covered : 26,500 square meters

Total : 71,060 square meters

(3) Access Channel

Depth : 8.5 meters at low tide

10.6 meters at high tide

(4) Tugboats

2 boats x 1,200 hp

Bauxite carriers of the 20,000-30,000 dw/t class are considered as the largest that can enter the port.

As a project in the near future, the port plans to install container-handling equipment for containerization of the country's trade. The country, together with the World Bank, is currently conducting a survey with regard to dredging the channel.

2.2.3 Aside from Kamsar and Conakry, there are also some small ports. But, none of them are suitable for service by oceangoing ships. The plan is to ship iron ore produced in the southern part of Guinea by way of Buchanan port in Liberia.

3. Shipbuilding and Repair Industry

There are small repair workshops for small boats in Guinea. But, there are no facilities for newbuilding or maintenance and repair work on such oceangoing ships as those planned under this project. At present, when maintenance work including repairs become necessary, they are usually done at cargo discharging ports or at any available facilities near them.

For the time being, not only new building work but also repair work of ship or ships to be constructed under this project will be done in other countries. In that case, however, the shipowner must have some technical knowledge and management capabilities with respect to the building of such vessel(s).

The shipowner, SNG, has eight technicians and a total number of 27 officers for deck, engine and radio altogether. If the new building of projected ship(s) are materialized, it will be possible for the Guinean Government to secure necessary engineers through Guinomar for shipbuilding supervision.

It will also be possible to ask any Classification society to take charge of such job on behalf of the Owner. Meanwhile, two Guinean officials are presently receiving training on shipbuilding and repair in Oslo.

Under the consideration of the above, there will be no problems for them to deal with related technical matters during the actual construction and repair at any foreign yard(s).

4. Société Navale Guinéenne

4.1 History

Business enterprises in Guinea can be divided into the following three types.

- "State owned company" capitalized entirely by the government
- "Mixed company" capitalized jointly by the government and a foreign corporation
- "Company financed by private capital". This type has only recently begun to be authorized with certain limitations

SNG is of the first type -- a company capitalized and controlled 100 percent by the government. It was established in 1968 as one of the sections of the shipping department of Guinea's Ministère des Transports for the purpose of promoting the country's marine transportation and owning, managing and operating Guinean ships.

4.2 Employees

All SNG employees, including executives, are Guineans and public functionaries of the state. The executives are listed below.

Managing Director	: M. L. Diallo
Deputy Managing Director	: I.S. Bangoura
Commercial Manager	: A. Kourouma
Chief Accountant	: M.S. Diallo
Technical Manager	: M. Kebe
Agency Manager	: N. Sylla
General Inspector	: K. Conde
Personal Manager and Trade Union Leader	: S. Y. Toure

The company has 339 employees; 50 are shore staffs and 289 are seamen. Further details are shown below.

Shore staffs	: Business Section	27 (employees)
	Accounting Section	15
	Technical Section	8
Seamen : Officers (Navigation, Engine, Radio)		7
	Officers (Coastal)	2
	Crew	280

4.3 Owned Vessels and Business Activity

SNG's owned tonnage is listed in Table IV-4-1.

Table IV-4-1 Tonnage owned by SNG

Self propelled barge	"Kamsar"	200 GRT
Self propelled barge	"Konkoure"	200 GRT
Self propelled barge	"Nunez"	70 GRT
Tug boat Port Tug RP-3		1200 HP
Tug boat Port Tug RP-4		1200 HP
Coastal passenger/cargo carrier	"Kakande"	210 d/w
Ocean-going bulk carrier	"Simandou"	15,290 d/w

Self propelled barges are used to transport coastal cargoes. Tug boats two ships entering or leaving Conakry Port. The coastal passenger/cargo carrier is presently laid up. The ocean-going bulk carrier is under bare boat charter to the Beirut-based company Trade & Itaco Union, and seems be engaged at present in the transportation of bulk cargo mainly in the Mediterranean Sea. SNG's fruits carrier named "Drame Oumar" was sold off in 1973 after its value diminished as a result of the decrease in Guinea's export of bananas.

4.4 Finance

After 12 years since its establishment. SNG still does not publish financial data about itself such as an annual report. Its financial situation is believed to be as follows: (unit: syli)

	1977	1978	1979
Capital	157,302,705	156,337,811	155,052,555
Turnover	30,868,345	37,573,349	33,482,932
Expenses	22,421,907	23,797,318	23,988,264
Net profit	6,415,049	8,974,428	3,314,272

It appears that "capital" does not mean what it is usually but the company's total assets. This has been decreasing very gradually in the

past three years. The turnover increased greatly in 1978 but fell in 1979. Expenses appear to be levelling off rather than increasing slowly. SNG's net profit against turnover is at a considerably high rate.

5. Guinomar

5.1 History

Guinomar was established in November 1978 by the Guinean Government and T. Klaveness & Company, Norwegian shipowner, with 50-50 equal investment. It was established as part of the national policy to build up Guinea's own fleet and to transport exports and imports on her own ships. The most important purpose of the company was to transport 50% of the bauxite which is being shipped out from Kamsar port.

Subsequently, in April 1980, Navios Company, a shipping subsidiary of U.S. Steel became a new partner. The reason for this partnership is believed to be that it became necessary to have U.S. Steel become the operator of the iron ore mines which the Guinean Government is developing at Mt. Nimba and Mt. Simandou. As part of this connection Navios was agreed to join Guinomar together with T. Klaveness. Klaveness and Navios established a separate company under Liberian registry, named West African Bulk Shipping (WABS) with 50-50 equity. Thereupon, the new Guinomar Company was established in April 1980 by the Guinean Government and WABS with 50-50 investment.

5.2 Organization

5.2.1 Position within the Government

Guinomar is in the form of a joint venture between the Guinean Government and a foreign corporation on an equal basis but, at the same time, it is under the shipping department of Guinea's Ministère des Transports. Within the shipping department, it is on an equal status with the Marine Marchande section and SNG. The Minister of Transport is concurrently the president of Guinomar.

5.2.2 Board of Directors

The members of the board of directors consist of eight people. The president of the company is the Minister of Transport and the vice-president is the president of Navios Company. The other board members are three Guineans and three non-Guineans. The names and titles of the directors are as follows:

President: : El-Hadj Mouctar Diallo, Minister of Transport,
Guinea

Vice-President : J.P. Elverdin, President of Navios and WABS

Directors : Abraham Kabassan Keita, Minister of Public Works
Mohamed Lamine Toure, Vice-Governor of Banque
Central
Lansana Fofana, Director of Merchant Marine
Tom Erik Klaveness, Vice-President of WABS
Kaare E. Borch, Vice-President of T. Klaveness
D.J. Szostak, Director of WABS

(Note) None of the non-Guinean directors are permanently stationed in Guinea, whereas all Guinean directors reside in the country.

5.2.3 Ordinary Employees and Seamen

Among the employees are the following executives.

Managing Director : Tom Prestitulen (WABS)
Deputy Managing Director: Yaya Keita (Guinea)
Treasurer : Mory Keita (Guinea)
Corporate Secretary : Raymond Faber (Guinea)

(Note) Treasurer C.E. Pettersen is the only non-Guinean residing in Guinea and Deputy Treasurer Mory Keita is the only Guinean residing abroad (New York).

Of the 20 ordinary employees, five are receiving training at Navios (New York) or Klaveness (Oslo). As for seamen, 15 are undergoing practical training in WABS ships and several others attend a training school in Alexandria or Abidjan. The company plans to train 15 land-based staff and 45 ship officers between 1981 and 1985.

5.3 Agreements between the Guinean Government and WABS

5.3.1 Basic Agreement

On February 26, 1980, the Guinean Government and WABS reached an agreement, whose gist is as follows.

Establishment of Guinomar

Purpose	: The purpose of the company is to transport 50% of all mineral resources produced in Boké and other mines in Guinea, and to own and operate ships and transport cargoes.
Term	: 20 years. Revisions possible every five years.
Main office	: Conakry, Guinea. Business offices in Oslo and New York.
Capital	: US\$2 million (1,000 shares) Guinea 50% (500 shares) WABS 50% (500 shares)
Sharing of profit and loss	: Guinea 50% WABS 50%
Tax	: Exoneration of 30% of Income Tax

5.3.2 Management Agreement

On February 26, 1980, the Guinean Government and WABS drew up an agreement concerning management, whose gist is as follows.

(1) Object

- . General management
- . Technology, consultant
- . Market research and evaluation (cargo freight, building cost)
- . Planning ship schedule
- . Maintenance and management of ships
- . Assistance in financial analysis and research
- . Calculation and estimation of voyage result
- . Training Guinean specialists
- . Gathering information concerning bunker price

(2) Term : Five years

(3) Other matters

- . Management shall follow the instructions of Guinomar.
- . Management shall obtain the approval of Guinomar when making a proposal.
- . Management shall regularly submit a report to Guinomar.
- . Conclusion of contract of afreightment and charter partly shall be a matter for discussion and signature by Guinomar's board of directors. Management's responsibility is limited to giving advice and making suggestions.

5.4 Outline of Business

5.4.1 Volume Transported

Since its reorganization, the new Guinomar's transport record has been as follows:

April '80	about 300,000 tons
May	375,000 "
June	75,000 "
July	300,000 "
August	450,000 "
September	400,000 "
October	600,000 "
Total	about 2,500,000 "

The breakdown of the above by item is: bauxite (89%), grain (5%), coal (2%), ore (2%) and others (2%).

5.4.2 Bauxite Afreightment Contracts

Guinomar has the following contracts for transportation of bauxite. The total volume contracted is roughly half of the C.B.G. contracted export volume of Boke bauxite.

Table IV-5-1 Contracts for Transportation of Bauxite

Client	Term	Annual volume to be transported	Volume per vessel	Destination
Pechiney	81/93	450,000 K/T	55,000 K/T	FOS
VAW	81/93	440,000 "	55,000 "	Emden/Stade
M. Edison	Renewed every every year	175,000 "	23,000 "	P. Marghera
Alcan	81/91	1,200,000 "	4/60,000 "	P. Alfred
Alcoa	Jun. 80/ Dec. 82	1,000,000 "	40,000 "	Mobile
Marietta	Jan. 80/ Dec. 80	800,000 "	40,000 "	St. Croix
Kaiser	Jan. 81/ Jun. 84	260,000 "	50,000 "	Baton Rouge
Total		4,325,000 K/T		

The buyer's consent is necessary for determining the freight rate of the above transportation contracts because sales contracts are made on FOB basis. The freight rate is designed to reflect bunker prices and to keep

up with general price increases by means of an appropriate escalation clause.

Among the items shipped out of Guinea are bauxite for the Soviet Union and alumina for Western Europe, both loaded at Conakry, and bauxite loaded at Kamsar, as mentioned earlier. Guinomar is conducting negotiations in an effort to obtain a 50% share in the transportation of these goods. No agreement has been reached yet.

5.4.3 Shipping Operation

A recent ship schedule obtained from Guinomar shows the following.

Table IV-5-2 Vessels Operated by GUINOMAR

Name of Ship	D/W	Year of construction	Assignment
Trade Greece	28,901	1959	Kamsar/St. Croix
Trade Master	32,920	1965	Constanza/Kamsar/U.S. Gulf
Barry*	33,463	1979	Kamsar/FOS/Kamsar/Emden
Grecian Legend	41,700	1969	Kamsar/FOS/Kamsar/San Ciprian
Rio Nunez	43,540	1968	Kamsar/P. Comfor/U.S. Gulf
North King	46,532	1966	Greece/Kamsar/P. Comfort
Massimilianof	53,700	1973	Kamsar/San Ciprian
Molista	53,820	1974	Kamsar/Port Alfred/Quebec/ Rostock-ARA
Amber Pacific	58,190	1969	Mobile/Antlierp
Morelia	59,960	1976	Nola/Rostock/Kamsar/St. Croix
Favorita	63,972	1975	Nola/Rostock/Skou

* Shipowner is T. KLAVENESS

It is clear from the previous section (5.4.2) that the volume of bauxite annually transported to North America including St. Croix under Guinomar's contracts is 3,260,000 tons, or 75% of the total (4,325,000 tons). It naturally follows that many ships sail across the Atlantic Ocean from Kamsar Port. On return, they are loaded with coal at Hampton Roads, or coal and grain at U.S. Gulf, in order to improve their voyage balance. The transportation of bauxite is based on long-term contracts but the transportation of return cargoes may depend on the prevailing shipping freight market.

5.5 Capital

As mentioned earlier, the company's authorized capital is US\$2 million, of which 60% has already been paid in and the remaining 40% is expected to be paid in during 1981. Guinomar plans to increase its capital to US\$4 million in the near future, but it is expected that the 50-50 equity balance between the Guinean Government and WABS will be maintained.

5.6 Financial Position and Appropriation of Profit-and-Loss

The profit-and-loss account of the new Guinomar in its first six months (starting in April 1980) is shown below. The after-tax profit comes to US\$335,040.

Sales	29,193,160
Hire	9,516,719
MM Fee	498,403
Fuel	2,519,511
Port	627,414
C.O.A.	14,707,135
Other	257,215
Cost of sales	28,126,397
Gross profit	1,066,763
Conakry office	232,464
Education	50,000
NY/Oslo expense	131,200
Income before incentive	653,099
Tax	285,404
New Profit	335,040

As it is agreed that profit-and-loss is to be divided equally between the Guinean Government and WABS, the share of the net profit would be US\$167,520 for each. The tax and incentive will presumably go to the Guinean Government.

5.7 Business

Guinomar has three offices: at Conakry, Oslo and New York. The head office at Conakry serves as the nucleus of the company and, as one section of the Ministere des Transports of the Guinean Government, has the function of conveying the views of that government to the management. Important decisions are made at Conakry. Actual work appears to be done in Oslo and New York as necessity arises. Accounting is done exclusively

in New York for a reason related to remittance from Guinea. The collecting of ocean freight, and paying of hire, fuel expenses and port charges are all done through the Guinomar account in New York.

To do this work, Deputy Treasurer Mory Keita, a fulltime auditor appointed by the Guinean Government, and several trainees, are assigned to New York, and several Guinean trainees are assigned to Oslo.

5.8 Relationship between Guinomar and SNG

In the event Guinea gets ships for use in the transportation of her bauxite, SNG will become the shipowner and Guinomar will take the ships on bare boat charter, man and operate them.

SNG is none other than the Guinean Government (Ministere des Transports) itself. Although Guinomar is a joint venture with foreign capital, it, too, is incorporated in the scheme of the Ministere des Transports. Accordingly, it is believed that the bare boat charter rate will be arranged flexibly between these two companies.

Similarly, details on manning and management will be arranged between them. Both companies are trying to obtain know-how of the shipping business and to train seamen and, thus, are preparing themselves for the prospect of owning and operating large-size ships and of expanding their business.

6. Marine Transportation of Guinean Bauxite and Related Tramp Market

6.1 Marine Transportation of Guinean Bauxite

6.1.1 Present Situation

The present situation on the marine transportation of bauxite and alumina from each Guinean mine is as follows.

(1) Fria

The Fria produces 700,000 tons of alumina annually. Alumina produced here is exported to Spain, Italy and other European countries. It is shipped from Conakry on 20/25,000 dw/t type vessels and transported by Pechiney, one of the European investors.

(2) Kindia

All bauxite mined here, which amounts to 2,500,000 tons annually, is shipped from Conakry for export to the Soviet Union entirely on Soviet ships. The Guinean Government plans to transport part of this on Guinean ships in the future.

(3) Boké

The Boké mine produces 9,000,000 tons of bauxite annually, which is exported mainly to European and American smelters of the consortium.

Sales contracts between CBG and each of the smelters are made on the FOB basis. Under this contract, the smelters are under no obligation to use Guinean ships. For this reason, they used to charter vessels necessary for transportation on their own responsibility. From 1979, the Guinean shipping company Guinomar began to take part in the transportation.

Guinomar concluded a short-term contract with each of the smelters for transportation of Boké bauxite and, in the eight months from March to October in 1980, transported a total of about 2,500,000 tons of bauxite on chartered vessels.

Guinomar succeeded in concluding short-term and long-term contracts for transporting a total of about 4,000,000 tons annually beginning in 1981. Thus, Guinea's goal of 50% share of transportation of Boké bauxite has come within sight and the prerequisite for owning and operating its own vessels has been fully met.

6.1.2 Conditions of Loading and Discharging Ports

The size restrictions of vessels serviceable in the loading and discharging ports stipulated in Guinomar's transportation contract with each smelter, are given in Table IV-6-1.

Table IV-6-1 Conditions of the Ports Loading/Discharging Bauxite

Port	Max. LOA	Max. Beam	Max. Draft	Max. DWT
(Loading Port)				
Port Kamsar	738 Ft	106 Ft	42 Ft	65,000 DWT
(Discharging Ports)				
Port Alfred	738 Ft	106 Ft	42 Ft	65,000 DWT
Mobile Point Comfort	725 Ft	103 Ft	36 Ft	50,000 DWT
Port Marghera	None	None	30.4 Ft	30,000 DWT
FOS	738 Ft	106 Ft	42 Ft	65,000 DWT
Emden Stade	738 Ft	106 Ft	42 Ft	65,000 DWT
St. Croix	738 Ft	106 Ft	33 Ft	50,000 DWT
Baton Rouge	738 Ft	106 Ft	39 Ft	60,000 DWT

6.2 Relation to Tramp Market

6.2.1 The global seaborne movement of bauxite and alumina in 1978 is estimated at 45,500,000 tons. The data in 1978 show that the world's major exporting regions include Oceania with 12,300,000 tons, Caribbean countries with 11,300,000 tons, and West African countries with 10,700,000 tons. Major importing regions include North America (United States and Canada) with 21,600,000 tons, European countries with 16,000,000 tons, and Japan with 5,500,000 tons.

6.2.2 Since the bauxite refineries of major importing countries such as the United States and Canada, not to mention European countries, are mostly located along the coast of the Atlantic Ocean, Guinea obviously has geographical advantage over the major exporting countries of Oceania. The export price (FOB price) of bauxite is determined by the mechanism of the international market and, therefore, is not likely to vary widely with each bauxite producing country. Such being the case, it is quite clear that ocean freight is a major factor for importers in determining the source of supply.

The ocean freight between Oceania and Europe by a 60,000 dw/t type vessel is US\$17.00-20.00. The ocean freight between Guinea and Europe by the same type of vessel is US\$9.00-10.00. Guinea's advantageous position in ocean transportation is unmistakable.

V. Study for the Construction Plan of Bauxite Carrier

1. Outline of the Plan

1.1 Outline of Guinean Plan

Following is the outline of the Guinean plan to construct bauxite carriers, submitted to the Japanese Government in June 1979:

- | | | |
|-------------------------------|--------|----------|
| (1) Type and size to be built | Number | Delivery |
| 60,000 dw/t bulk carrier | 1 or 2 | 1979 |
| 60,000 dw/t bulk carrier | 1 or 2 | 1980-81 |
- (2) Shipowner : Societe Navale Guineenne (state-owned shipping company)
- (3) Intended trade

The new ships will be mainly used to carry bauxite across the Atlantic from Kamsar Port to the United States, Canada and Europe, but there is possibility that after unloading bauxite for the U.S. and Canada, they will be used as combined carriers for transport of other dry cargo, such as grain and coal.

(4) Operational plan

To transport bauxite in a Guinean-flag ship, the Government of Guinea established Guinomar, a ship operator of Guinean registration, in November 1978. Guinomar will operate the new ships to be constructed under this project. Guinomar is a joint venture where the Government of Guinea holds 50% of the equity and Torvald Klaveness and Co. holds the remaining 50%. The tie-up with Klaveness is aimed at acquiring shipping know-how in general.

Guinea, which has neither an ocean-going fleet nor know-how or experience in international shipping, cannot but tie-up with a shipping company of an advanced maritime country.

1.2 Supplementary Information Obtained from the Survey

In this survey, we confirmed the outline of the above shipbuilding plan from the Guinean shipowner SNG and Guinomar and additionally confirmed the following points by asking supplementary questions:

- (1) Guinea's bauxite production and exports (see III.2.1.1), the transport contract for bauxite with Guinomar and how ships are being allocated under the contract.

- (2) Guinea's bauxite output and exports have been increasing annually. Transport of bauxite by Guinomar started in the latter half of 1979, and the company's trade results at present appear to be favorable.
- (3) Regarding the period from 1983, when the new bulk carriers are expected to be assigned to service, Guinomar has already secured enough transport contracts (see IV.5.4.2). A shortage of cargo for the new carriers is inconceivable.
- (4) Guinea submitted a plan to construct 60,000 dw/t ships only but it does not mean that this project is limited to 60,000 dw/t ships. In view of the sales contracts for bauxite, transport contracts and the port conditions at the countries of destination, there is a need also for smaller ships, such as 30,000 dw/t, 45,000 dw/t and 50,000 dw/t. But 60,000 dw/t is the optimum size judging from the financial point of view based on the conditions at the port of loading and the port of unloading and the terms and conditions of the transport contracts.

Regarding the plan to construct a crude oil carrier, for which a request was made separately, it has been confirmed that there are no prospects for the construction of a refinery in Guinea in the next few years and that there is no possibility of tanker construction.

- (5) Guinomar was reorganized in March 1980 to become a joint venture between Guinea and West African Bulk Shipping (WABS), a Liberian-registered shipowner. The ratio of investment is fifty-fifty. It is said that Klaveness holds 50% of WABS and the U.S. shipowner Navios, the remaining 50%.

2. Specifications and Ship Price

2.1 Ship Specifications in Guinea's Plan

2.1.1 According to the plan shown in June 1979, the specifications of the ships which Guinea plans to construct are as follows:

(1) Dimensions

Length overall	224.50 M (abt. 736.55')
Length between perpendiculars	215.00 M (" 705.38')
Breadth moulded	32.20 M (" 105.64')
Depth moulded	17.80 M (" 58.40')
Designed load draft, moulded	12.40 M (" 40.68')

(2) Classification & Flag

Classification Det Norske Veritas 1A1 "Bulk Carrier"

"Strengthened for the Carriage of Ore Cargoes-Holds
No. 2, 4, & 6 May be Empty" MV and EO

Flag Guinea

(3) Deadweight & Capacity

Deadweight at the designed draft	12.40 m	60,200 Long tons
Cargo hold capacity in grain		74,700 m ³
Water ballast tanks (incl. No.4 cargo hold or W.B.T.)		31,965 m ³

(4) Main Engine and Service Sea Speed

Main Engine	B & W 7L67GFCA Type x 1 set
	MCO 15,200 BHP x 123 rpm
	NCO 13,800 BHP x 119 rpm
Service speed	Minimum 15.1 knots at normal output of Main Engine with 15% sea margin

(5) Hatchway and Hatch Cover

Hatch/Hold arrangement as per attached drawing.

Hatch cover to be single pull type steel hatch cover.

(6) Complement

Complement total ...

2.1.2 The above clarifies the items necessary for the basic design of ship, namely, the kind of ship, the type of ship, the deadweight, data about passengers, data on main engine, and service speed, and in addition to it some other items are shown. Furthermore, a rough sketch is shown as Fig. V-2-1.

Aboves are summerized as follows:

(1) The purpose of ship: bulk carrier.

(2) The ship type: a well decker with F'cle deck only.

(3) The deadweight capacity is 60,200 long tons or over.

(4) No description on passenger

Considering the International Convention for the Safety of life at sea,
we interpret that the ships are a non passenger ships.

- (5) The main engine is one set of diesel engine with one propeller.
- (6) The service speed is 15.1 knots or over.

The other items are the principal dimensions of the ship, the hold capacity, the ballast tank capacity, the Classification, with notation, the flag, etc. The attached Fig. V-2-1 shows that the ship is a standard single-deck bulk carrier with side tanks at top and bottom.

2.1.3 As a result of studying the above on the basis of the Handbook for Ship's Basic Design, following descriptions were made:

- (1) The ship's length, breadth, depth and draft are all within reasonable ranges. (See Fig. V-2-2)
- (2) At ship's given dimensions and the 15,200 BHP engine output, the reading of the service speed is about 14.4 knots. Despite some leeway in the deadweight capacity, it appears difficult to ensure a service speed of 15.1 knots. (See Fig. V-2-3)
- (3) In order to ensure a service speed of 15.1 knots with the ship's given dimensions, the reading of the engine output is about 17,000PS. In that case, the ship's building cost rises. (See Fig. V-2-3)
- (4) The ship type and hull structure are considered reasonable.

Fig. V-2-1 Profile Sketch (60,200 DWT Bauxite Carrier)

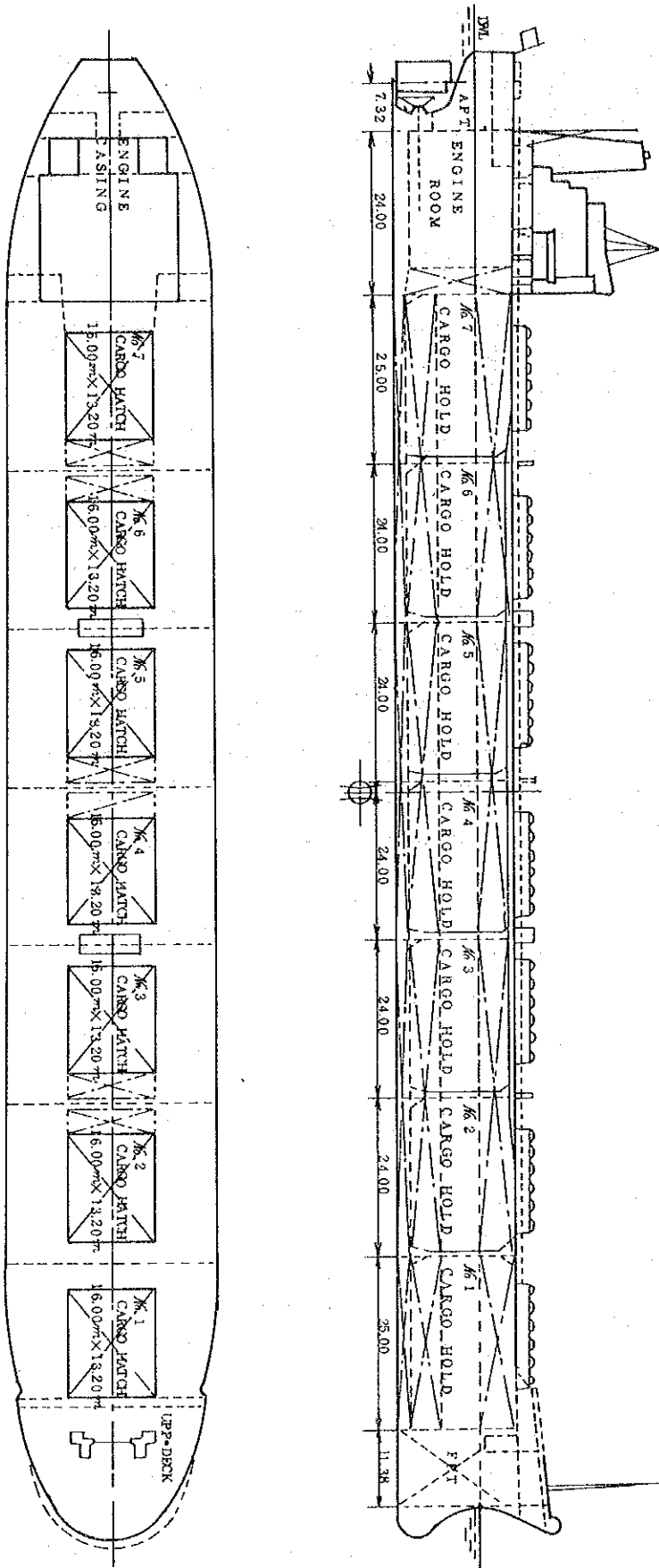
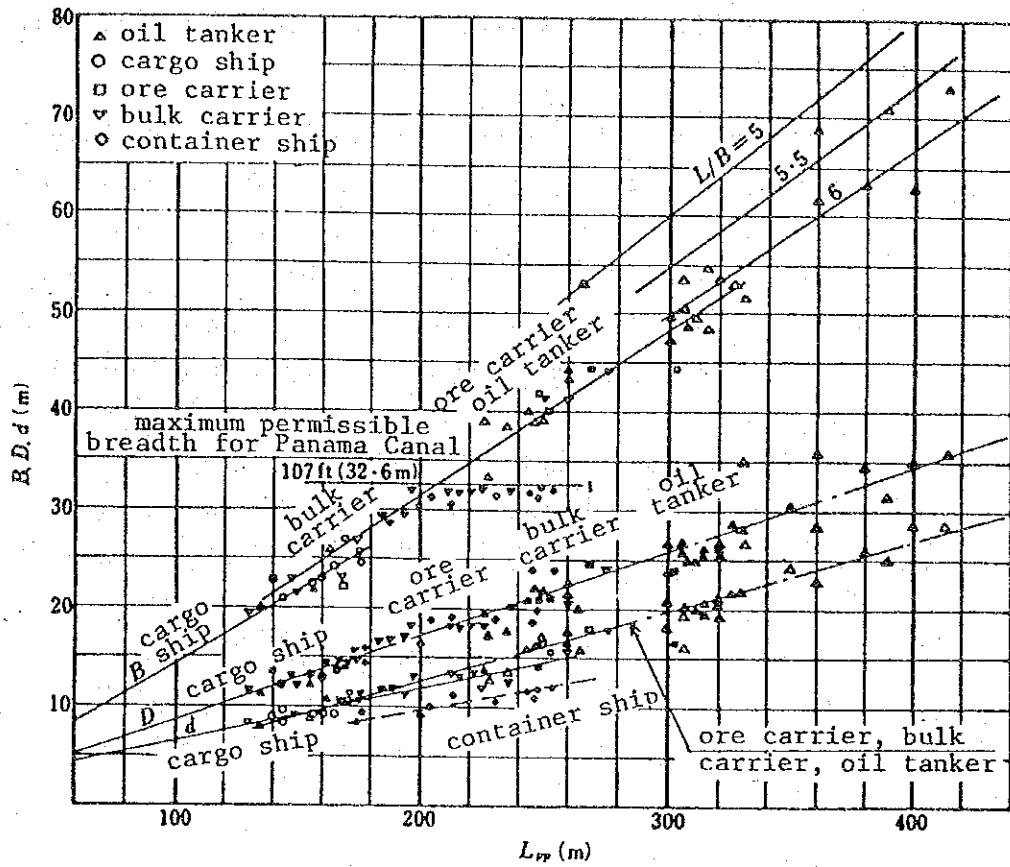
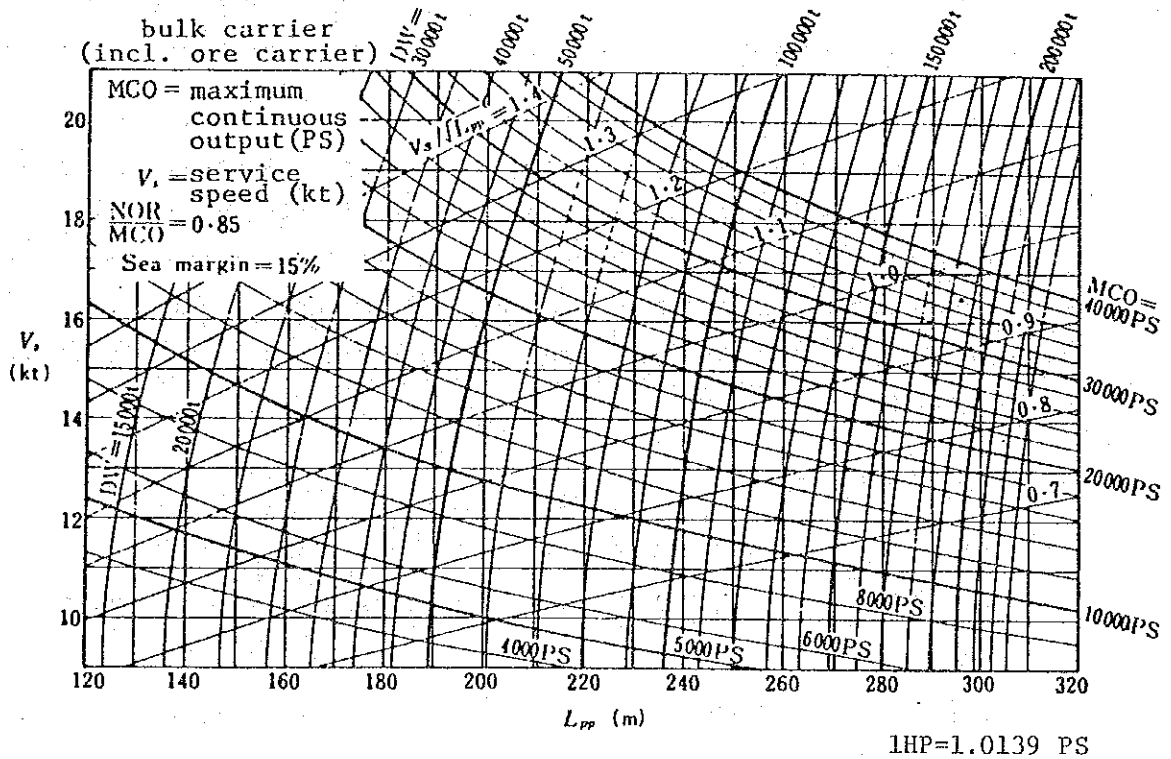


Fig. V-2-2 Data for Determination of Principal Dimensions



The range of length, width, depth, draft of vessel.

Fig. V-2-3 Approximate estimation curve of L_{pp} -Vs-DW-MCO



2.2 Specifications of Prospective Types of Ship that are also considered feasible

As stated in 1.2 (4) above, 30,000 dw/t type and 45,000-50,000 dw/t type are also worthy to study like 60,000 dw/t type proposed in the Guinean plan. Regarding 45,000-50,000 dw/t type, the former type is considered more reasonable under the consideration of draft limit at St. Croix, one of the ports of unloading. Accordingly, this type is selected among the said category of ships in our study. (See following table)

Ports with their limitations to ships

Name of Port	Limitations of ship's size dimensions etc.			
	DWT	Length over all	Breadth o.a.	Draft
Port Kamsar	Up to 65,000	225.1 M	32.3 M	12.8 M
Port Alfred				
Fo Fos				
Emden				
Stade				
Baton Rouge	Up to 60,000			11.9 M
Mobile Point Comfort	Up to 50,000	221.1 M	31.4 M	11.0 M
St. Croix		225.1 M	32.3 M	10.1 M
Port Marghera	Up to 30,000	No limitation	No limitation	9.3 M

The standard specifications under the consideration of various limitations of unloading ports, are stated below. These specifications are shown as a typical standard ones for the purpose of estimating ship's price. Accordingly, in the future execution of the project, there can be some modifications or changes within the price limit due to alterations requested by the shipowner, changes in the world energy supply situation and innovation of shipbuilding technology.

2.2.1 The 30,000 dw/t type

- (1) The ship is a bulk carrier.
- (2) The ship type is a well decker with F'cle deck and side tanks at top and bottom.
- (3) The deadweight is at least 30,000 tons at design draft.

- (4) The complement (including passengers if any) is a suitable number.
(See (7)-6)
- (5) The main engine shall be one set of diesel engine with one propeller.
- (6) The service speed is about 14.5 knots.
- (7) The above specifications are summarized as in the following 1) to 6) and in Fig. V-2-4.

1) Dimensions

Length between perpendiculars	165.00 M
Breadth moulded	26.00 M
Depth moulded	14.50 M
Draft moulded	10.40 M

2) Classification & Flag

Internationally accepted highest class with suitable notations both hull and machinery

Flag Guinea

3) Deadweight 30,000 ton at full loaded condition

4) Main Engine and Service Speed

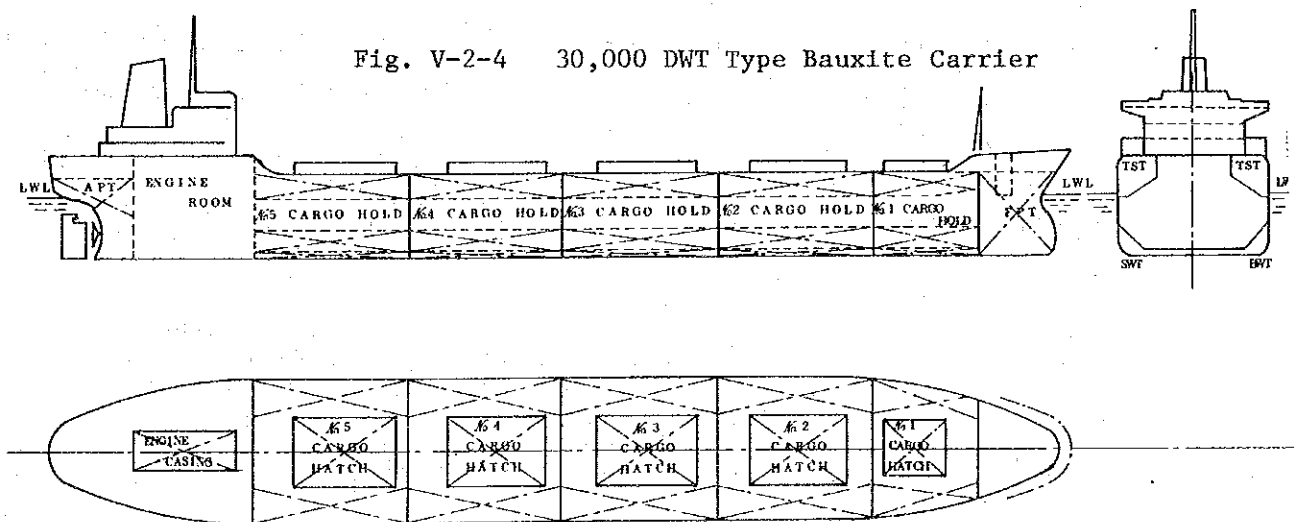
One (1) set of diesel engine of suitable type MCO around 11,000 PS
Service Speed around 14.5 kt

5) Hatchway and Hatch cover

Cargo hold with steel hatch cover to be suitably arranged.

6) Complement

To be suitably determined under the consideration of relevant rules and regulations.



Number of cargo hatches, tank arrangement etc., to be carefully determined.

2.2.2 The 45,000 dw/t type

- (1) The kind of ship is bulk carrier.
- (2) The type of ship is well decker with F'cle and side tanks at top bottom.
- (3) The deadweight is at least 45,000 tons design draft.
- (4) The complement (including passengers if any) is a suitable number.
(See (7)--6)
- (5) The main engine is one set of diesel engine with one propeller.
- (6) The service speed is about 14.5 knots.
- (7) The above specifications are summarized as in the following 1) to 6) and in Fig. V-2-5.

1) Dimensions

Length between perpendiculars	183.00 M
Breadth moulded	29.50 M
Depth moulded	17.30 M
Draft moulded	12.00 M

2) Classification & Flat

Internationally accepted highest class with suitable notations both hull and machinery

Flag Guinea

3) Deadweight 45,000 ton at full loaded condition

4) Main Engine and Service Speed

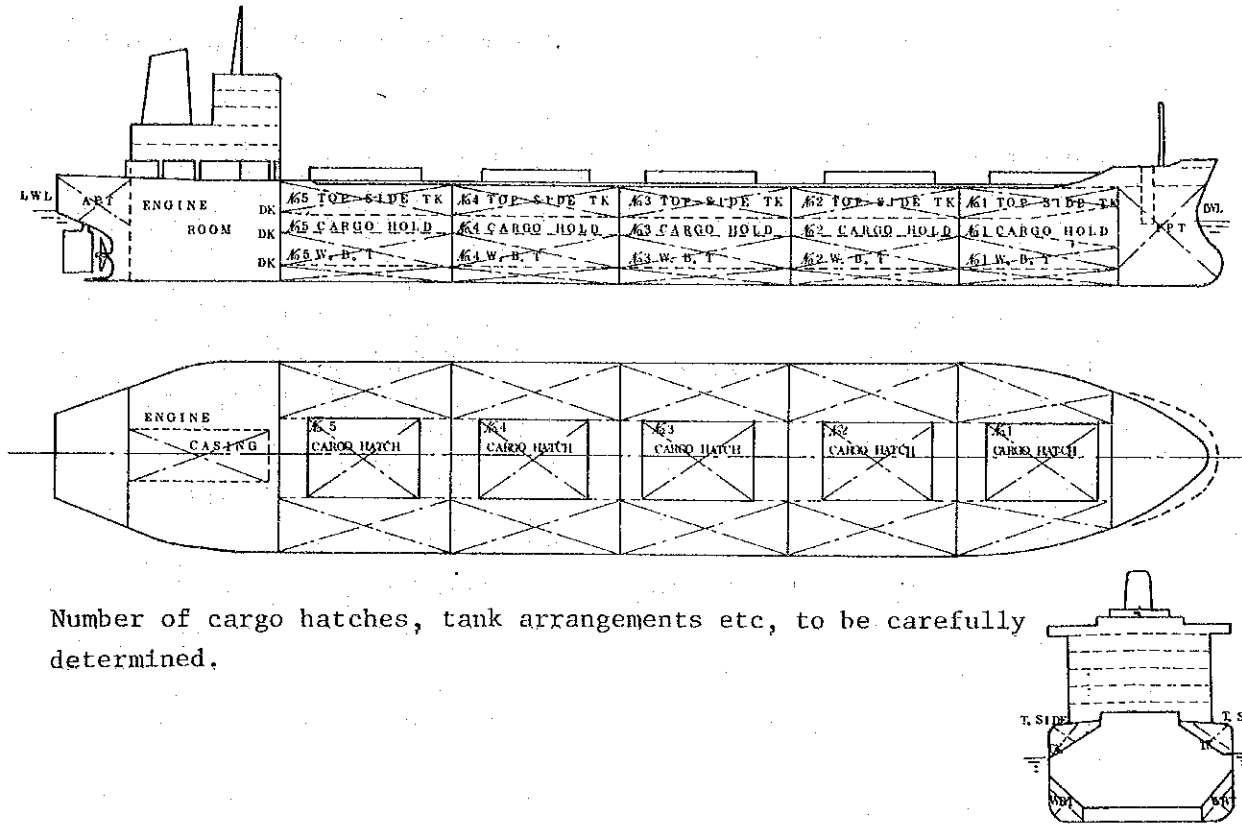
One (1) set of diesel engine of suitable type MCO around 13,000 PS

5) Hatchway and Hatch Cover

Cargo hold with steel hatch cover to be suitably arranged.

6) To be suitably determined under the consideration of relevant rules and regulations.

Fig. V-2-5 45,000 DWT Type Bauxite Carrier



Number of cargo hatches, tank arrangements etc, to be carefully determined.

2.3 Price Estimation of Each Type of Ships

We have estimated the price of each type of ships on the assumption that the ship will be delivered in March 1983.

Ship type	60,000 dw/t (in ¥1,000)	45,000 dw/t (in ¥1,000)	30,000 dw/t (in ¥1,000)
Construction cost (inc. cost of spare parts)	6,000,000	5,200,000	4,400,000
Consultant fee (about 5%)	300,000	260,000	200,000
Reserve cost (about 2.5%)	150,000	130,000	110,000

Total
(at U.S.\$1=¥210) 6,450,000 5,590,000 4,730,000
(U.S.\$30,714,000) (U.S.\$26,619,000) (U.S.\$22,524,000)

3. Estimated Trade Results

There is a strong probability that shuttle services will be conducted on the following three routes under bauxite transport contracts concluded between Guinomar and each smelter. We have estimated the trade result per

ship on the three routes given below. In our calculation, we used data furnished by Guinomar and made rough estimates where necessary data were not available.

(1) 60,000 dw/t; Kamsar/Fos

Freight	US\$7,510,000
Port expenses	620,000
Commission and others	125,000
Fuel cost (FO @180, DO @300)	2,195,000
<hr/>	
Total	2,940,000
Net proceed	4,570,000 (yield: 61%)
Crew wages	669,000
Ship's store, lub oil, provisions	260,000
Repair and maintenance	150,000
Insurance	235,000
Dry-docking, education fee, etc.	274,000
Administration	60,000
<hr/>	
Total	1,648,000
Profit	<u>2,922,000</u> (before depreciation write-off and interest payments)

(Note) Number of voyages : 15.5 voyages a year

Freight	484,515	Port exp.	40,000
		Comm. & others	8,065
		Fuel cost	141,570
		<hr/>	
			189,635
		Net proceed	<u>294,880</u>

(2) 45,000 dw/t; Kamsar/St. Croix (annual basis)

Freight	US\$6,610,000	
Port expenses	558,000	
Commission and others	107,000	
Fuel cost (FO @\$180, DO@\$300)	2,042,000	
<hr/>		
Total	2,707,000	
Net proceed	3,903,000	(yield: 59%)
Crew wages	650,000	
Ship's store, lub oil, provisions	220,000	
Repair and maintenance	130,000	
Insurance	215,000	
Dry-docking, education fee, etc.	250,000	
Administration	60,000	
<hr/>		
Total	1,525,000	
Profit	<u>2,378,000</u>	(before depreciation write-off and interest payments)

(Note) Number of voyages: 15.5 voyages a year

Freight	426,405	Port exp.	36,000
		Comm & others	6,917
		Fuel cost	131,760
<hr/>			
			174,677
		Net proceed	<u>251,728</u>

(3) 30,000 dw/t; Kamsar/Port Marghera (annual basis)

Freight	US\$5,490,000	
Port expenses	369,000	
Commission and others	108,000	
Fuel cost (FO @\$180, DO @\$300)	1,690,000	
<hr/>		
Total	2,167,000	
Net proceed	3,323,000	(yield: 6%)
Crew wages	640,000	
Ship's store, lub oil, provisions	180,000	
Repair and maintenance	105,000	
Insurance	175,000	
Dry-docking, education fee, etc.	220,000	
Administration	60,000	
<hr/>		
Total	1,380,000	
Profit	<u>1,943,000</u>	(before depreciation write-off and interest payments)

(Note) Number of voyages: 12.3 voyages a year

Freight 446,545	Port exp	30,000
	Comm. & others	8,748
	Fuel cost	137,130
<hr/>		
		175,878
	Net proceed	<u>270,667</u>

4. Financial Evaluation and Social and Economic Effects

4.1 Financial Evaluation

On the basis of the trade results per ship discussed in 3 above and the ship price for each type of ship discussed in 2 above, we calculated the internal rate of return (IRR) and obtained the following results:

60,000 dw/t (Kamsar/Fos)	7.26%
45,000 dw/t (Kamsar/St. Croix)	6.48%
30,000 dw/t (Kamsar/Port Marghera)	6.06%

For all types, the operation is economically feasible.

Table V-4-1 IRR by Ship Size

(1) 60,000 DWT (Kamsar/Fos)

Ship Price US\$30,714,000 (¥6,450 million)

IRR = 7.2616732%

Year	Cashflow	N.P.Value	(Unit: US\$1000)
1	2922	2724.2	
2	2922	2539.8	
3	29	2367.8	
4	2922	2207.5	
5	2922	2058.1	
6	2922	1918.7	
7	2922	1788.8	
8	2922	1667.7	
9	2922	1554.8	
10	2922	1449.6	
11	2922	1351.4	
12	2922	1259.9	
13	2922	1174.6	
14	2922	1095.1	
15	2922	1021	
16	2922	951.8	
17	2922	887.4	
18	2922	827.3	
19	2922	7771.3	
20	2922	719.1	
Total	58440	30336	
Residual Value	1536	378.0	
Total	59976	30714	

(2) 45,000 DWT (Kamsar/St. Croix)

Ship Price US\$26,619,000 (¥5,590 million)

IRR = 6.481781%

Year	Cashflow	N.P.Value	(Unit: US\$1000)
1	2378	2233.2	
2	2378	2097.3	
3	2378	1969.6	
4	2378	1849.7	
5	2378	1737.1	
6	2378	1631.4	
7	2378	1532.1	
8	2378	1438.8	
9	2378	1351.2	
10	2378	1269	
11	2378	1191.7	
12	2378	1119.2	
13	2378	1051.1	
14	2378	987.1	

Year	Cashflow	N.P.Value	(Unit: US\$1000)
15	2378	927	
16	2378	870.6	
17	2378	817.6	
18	2378	767.8	
19	2378	721.1	
20	2378	677.2	
Total	47560	26240	
Residual Value	1331	379.0	
Total	48891	26619	

(3) 30,000 DWT (Kamsar/Port Marghera)

Ship Price US\$22,524,000 (¥4,730 million)

IRR = 6.0605645%

Year	Cashflow	N.P.Value	(Unit: US\$1000)
1	1943	1832	
2	1943	1727.3	
3	1943	1628.6	
4	1943	1535.5	
5	1943	1447.8	
6	1943	1365.1	
7	1943	1287	
8	1943	1213.5	
9	1943	1144.2	
10	1943	1078.8	
11	1943	1017.1	
12	1943	959	
13	1943	904.2	
14	1943	852.5	
15	1943	803.8	
16	1943	757.9	
17	1943	714.6	
18	1943	673.8	
19	1943	635.3	
20	1943	599	
Total	38860	22176.9	
Residual Value	1126	347.1	
Total	39986	22524	

We assumed the following in calculating the IRR:

- (1) The ship's life is 20 years.
- (2) The trade results will be constant for 20 years. In other words, rises in the cost during the 20 years will be offset by upward revisions in the freight rate.
- (3) The residual value after 20 years will be 5%.
- (4) The exchange rate is: US\$1 = ¥210
US\$1 = 19 sylis

4.2 Social and Economic Effects

The implementation of this project will not only enable Guinea to ensure and increase foreign currency income but also contribute to stable transport of bauxite, the country's long-range economic program centers on development, extraction and export of mineral resources, the implementation of the project will make immense contributions to the development of Guinea's economy.

Moreover, the project will furnish opportunities to educate and train ocean-going seafarers and related shore staff through owning, operation and management of oceangoing vessels, an area which is entirely new for Guinea, and thereby contribute to the elevation of technical skill of Guinean workers and create new jobs.

Through the accumulation of experience in the operation of ocean-going vessels, the project will contribute in no small way to the transport in Guinean-flag vessels of iron ore, which will become Guinea's second most important export product. (Export of Mifergui-Nimba iron ore will start around 1983.)

Many of the above effects will significantly enhance Guinea's socioeconomic progress.

5. Opinion of Survey Team

The survey team examined the economic and social situation of Guinea, the environment surrounding the bauxite industry, and the shipping industry as considered from the financial point of view. On the basis of our investigation and study, we formed the following opinion on Guinea's fleet expansion plan.

5.1 The Need to Construct Bauxite Carriers

- (1) Agriculture and mining form the economic basis of Guinea. Despite a large agricultural population, agriculture is not doing well, as evidenced by the fact that Guinea has recently become a food importer. The outlook for the mining industry is brighter. One-third of the world's bauxite resources, or nine billion tons, are in Guinea. Also, Guinea's mineral resources including high-quality iron ore raise hopes of development.

In particular, bauxite production has increased dramatically in the past five years and is expected to continue increasing in the future. For some time to come, Guinea's economic development will necessarily depend on expanding the development, production and export of bauxite.

- (2) Factors enabling Guinea to increase its bauxite export include the country's enormous bauxite deposits, proximity to bauxite-consuming countries (North American and European countries), and an infrastructure with potential to ship over 10 million tons of ore annually by ships of up to 65,000 dw/t. In comparison with other bauxite-exporting countries, Guinea has a competitive edge over Australia in geographical conditions and over other West African countries and Caribbean countries in infrastructure.
- (3) Guinea used to depend entirely on foreign ships for transportation of bauxite by sea. In order to transport bauxite on its own, the Guinean Government established a shipping company of Guinean nationality, Guinomar, which has participated in bauxite transportation since 1979. Concluding transportation contracts with major American and European aluminum makers, Guinomar has tried to accumulate experience and now has started efforts to obtain the know-how of shipping management and to train seamen, marine technicians and other personnel. It is expected that ships to be constructed under the present project will be completed around 1983 and that, by that time, preparations for owning and operating ships will be completed.
- (4) To transport bauxite, Guinomar at present uses foreign chartered ships only. The company's financial situation since it started bauxite transportation in November 1979 has been stable, and profits appear to have been constant. However, from the viewpoint of shipping management, there is a risk involved in the use of chartered ships alone to execute all transportation contracts, whether the terms of such

contracts may be good or bad. Since the charter rate in the tramp market is constantly fluctuating and, besides, the range of fluctuation is large, it is possible that, depending on the timing and method of charter, the company may suffer an enormous trade loss at one time or another. To reduce such financial risks, it is necessary for Guinomar to construct ships of its own or operate Guinean-flag ships at a stable cost.

- (5) In the long run, Guinea's balance of payments is expected to improve as the country's development progresses. At present, although Guinea's trade balance shows a surplus thanks to the growing bauxite export, its invisible trade balance shows a large deficit owing to interest payments on its enormous external debts. As a result Guinea suffers from current account deficit. It is evident that Guinea's balance of payments would improve greatly if the country builds ships of its own on financially advantageous terms and operates them. The use of Guinean ships is indispensable for stable transportation of Guinean cargo.

5.2 Fleet Size

- (1) We gather from the Boké mine bauxite trade and the situation at discharging ports that there is a need for ships of 45,000 dw/t and 30,000 dw/t as well as of 60,000 dw/t. Because of the conditions at Conakry Port, 30,000 dw/t is the maximum limit of carriers to be used in shipping bauxite to the Soviet Union, too.
- (2) Guinea's shipping industry owns practically no ships of its own. Opinions may differ as to the size of ships to be built first to promote the shipping industry. From the standpoint of sound management and the size of initial investment, one way would be to start by owning small size ships.

Guinea figures that the cost of a 60,000 dw/t ship to be \$25 million. However, when we consider the rising ship prices around the world, it is impossible to construct, at this cost, a ship with the performance desired by Guinea. The cost of a ship such as desired by Guinea for delivery in 1983 would come to around \$30 million.

As we have seen, the short-term outlook of Guinea's balance of payments is not good. Also, Guinea needs a vast amount of money to invest in many other development projects. It is important, therefore, to

ensure that the shipbuilding project would not put a restraint on other projects.

- (3) In consideration of the above, one approach would be to start with low-priced, relatively small ships, for example, the 30,000 or 45,000 dw/t type. If the present project is taken as the starting point and also as the basis for future development of Guinea's mercantile fleet, we can appreciate the importance of opting for small size ships which are less of a financial burden and whose operation and maintenance are easier than large size ships. Guinea's urgent need is not a matter of the vessel size but to own ships and launch the shipping business on a sound basis.
- (4) Because of Guinea's short-term economic difficulty, there is a strong desire to carry out the fleet expansion project by effective use of funds. The long-term prospects, however, are bright because Guinea is rich in mineral resources and has potential for development in agriculture and other fields. From this standpoint, it is an urgent necessity for Guinea to develop its shipping industry even on a small scale. The industry so developed would contribute to the country's economic development.

5.3 Conclusion

Guinea needs to build its own carriers to transport bauxite. Regarding the size of the carriers, the needs differ by the trade routes. In view of the carriers, the needs differ by the trade routes. In view of this fact and in view of the various circumstances explained above, one approach to the implementation of the fleet expansion program is to start by building a comparatively small sized ship.

In line with this thinking, the survey team recommends that at least a start should be made with one vessel of 30,000 dw/t.

QUESTIONNAIRE OF JAPANESE SURVEY TEAM FOR
THE CONSTRUCTION PLAN OF TWO 60,000 LT DW
BULK CARRIERS

You are kindly requested to write the answers in English

Please furnish us with informations on the following items and also fill in the blanks wherever requested.

1) General Information on Shipping Industry:

a) Statistical figures of export trade, on yearly basis during recent five (5) years.

By destination/commodity/volume (K/T).

Year	Commodities	To:
		France W. Germany Britain Yugoslavia Eastern Block countries Other European countries U.S.A. Canada Latin America African countries Others
1979	Bauxite Alumina Iron Ore Pineapple Banana Others	
1978		
1977		
1976		
1975		

b) Statistical figures of import trade, on yearly basis during recent five (5) years.

By Origin/Commodity/Volume (K/T).

Year	From:	
	Commodities	France W.Germany Britain Yugoslavia Eastern Block countries Other European countries U.S.A. Canada Latin America African countries Middle East Others
1979	General Cargoes Oil/Oil Products Dry Bulk Cargoes	
1978		
1977		
1976		
1975		

- c) Flow-chart of export & import procedures showing respective function of shipper/consignee, carrier and custom.
- d) Shippers' body or council in Guinea and West Africa
 - i) Names, rules and regulations
 - ii) Members or components
 - iii) Outline of activity.
- e) Administrative structure of shipping
 - i) Chart of administrative structure, including personal arrangements of governmental bodies
 - ii) Function of each section.
 - iii) **Special** committee organization, if any.
- f) Present situation of owning/chartering/operating vessels for the trade coastal and international.
- g) Future plan of new building/buying/vessels. Also if planned/planning, investment grants/favorable loans/taxation policies and etc.
- h) Promotional measures for merchant marine, national and/or joint venture
 - i) Operation subsidies
 - ii) Favorable treatment on loans or investments
 - iii) Taxation allowance
 - iv) Others, if any.
- i) Administrative structure of port and harbor
 - i) Chart of administrative structure
 - ii) Function of each section
 - iii) Special committee organization, if any.
- j) Present situation of ports and future development program of port and harbor.
- k) Information of seafarers
 - i) Classwise number of seafarers at the end of 1979.
 - ii) Present system and future plan of training and certification for seafarers.
- l) Present situation and future plans of Liner Service. Plan for containerization, if any.

2) General Information on Mine and Industry

- a) Confirmed reserve of Bauxite per mine.
- b) Statistical figures of the production of Bauxite per mine for the last five years.
- c) Statistical figures of the production of Alumina per mill for the last five years.
- d) Transportation facility and capacity of Bauxite and Alumina from the mines/mills to the port by monthly basis and storage capacity at the port area.
- e) Loading capacity/productivity by port per hour/day. Usual working hour/day and overtime/holidays.
- f) Statistical figures of export of Bauxite and Alumina by discharging port for the last five years, by K/T.
- g) Percentage of Bauxite/Alumina sales, by CIF/C&F and FOB for the last five years.

3) SOCIETE NAVALE GUINEENNE

- a) Name list of the Board of Directors with title and, if possible, with other job or title in the Government or private company.
- b) Number of employees by shore staff/seamen (breaking down by rank officers and rating crew).
- c) Administrative structure with function, with names of General Managers of each section.
- d) Amount of capital (with paid amount), numbers of each shares owned by five major shareholders.
- e) Financial papers and annual reports for the last three years.
- f) Deadweight and Number of vessels currently owned and/or chartered by size/type and also new building plan. If any already ordered, type/size of the vessel with name of yard.

4) GUINOMAR

- a) Name list of the Board of Directors with title and, if possible, with other job or title in the Government or private company.
- b) Number of employees, by shore staff/seamen (breaking down by rank officers and rating crew).
- c) Administrative structure with function, with names of general managers of each section.

- d) Amount of capital (with paid amount), numbers of each shares owned by five major shareholders.
- e) Financial papers and annual reports for the last year.
- f) Details of current business activities.
 - i) Number of vessels under control (Breaking down by method of control... by self owning/chartering/operation agreement, and by the size/type of vessel)
 - ii) Main trade routes both for outbound/homebound or triangle trade round the world, with sailing frequency.
 - iii) If belongs to any shipping conference typing between Guinea and other area.
- g) Future plan for development of business activities.

5) Relation between GUINOMAR/KLAVENESS

- a) Details of basic contract (bilateral agreement).
- b) Other agreements concerning management, operation, ship maintenance, manning and training of seamen.
- c) Sharing method/percentage of profit/loss between two parties.

6) Construction Plan of Two 60,000 TDW Bulk Carriers

- a) Estimation of revenue and voyage costs
 - i) Freight earning per voyage with calculation data indicating cargo quantity, freight rate and loading and discharging terms.
 - ii) Agents costs including booking (chartering) commission
 - iii) Port charges in each calling port per voyage
 - iv) Cost of fuel consumption per voyage
 - v) Other voyage expenses, if any.
 - vi) Cargo transportation contract, if any, to be performed by these vessels, advise details of contract, such as volume of cargo per year, contractual period, freight rates each year, loading and discharging terms.
- b) Estimation of ships costs
 - i) Crew wages including fringe benefits on each job per month
 - ii) Ship's maintenance costs per year
 - iii) Ships stores, costs per year
 - iv) Lubricant cost per year
 - v) Ship's insurance including hull and machinery, P & I and disbursement

per year

- vi) Drydocking costs
 - vii) Administration costs
 - viii) Taxes on ship-owning and profit
 - ix) Other miscellaneous costs per year
 - x) Depreciation method (period, fixed rate or fixed amount)
 - xi) Escalation rate to be accounted in the ship's costs.
- c) Ship building and maintenance
- i) Technical staffs/engineers for new-buildings
 - ii) Technical staffs/engineers for supervision during construction
 - iii) Technical staffs/engineers for vessel's maintenance
 - iv) Present situation on repair facilities of ships
 - v) Plan for expanding of the repair facilities.
- d) Trade management and operation
- i) Trade to be assigned and schedule indicating name of calling ports, etc.
 - ii) Cargo booking (chartering) staffs and offices including foreign agency network.
 - iii) Vessel operating staffs and offices including foreign offices.
 - iv) In case the vessels are operated by GUINOMAR, advise details of bare-boat charter or time-charter contract between S.N.G. and GUINOMAR.

Actual Performance of Voyage

Each Main Trade

(1982)

		Bauxite Trade	Other Trade	Annual Total
V O Y A G E A/C	Vessel			
	Load Port			
	Disch. Port			
	Cargo Quantity			
	Freight Rate			
	Revenue (A)			
	Port Charges			
	Commissions			
	Other Expenses			
	Fuel Costs			
Total (B)				
	Voyage Surplus (A - B) = C			
S H I P S A/C	Crew Wages			
	Ships Stores			
	Lub Oil			
	Provision			
	Repair/Maintenance			
	Insurance			
	Administration			
	Others			
	Interest			
	Depreciation			
	Total (D)			
	Balance (C - D)			

7) Publications Issued by the Government and Other Official Sources

Please provide us with such publications or informations as follows:-

a) Annual reports or official informations issued by:

- i) National/Central Bank
- ii) Ministries of Agriculture, Industry, External Trade, Economy and Transportation (Shipping).

b) Laws and Regulations concerning:-

- i) Foreign Trade
- ii) Foreign Exchange
- iii) Shipping (domestic and international)
- iv) Shipbuilding and Repair
- v) Seafarers
- vi) Port and Harbor

Appendix 2 Documents obtained

(1) List of Main Documents obtained

1. General Information on Shipping
2. Answer to JICA's Questionnaire concerning the Acquisition of 2 "PANAMAX" Bulkcarriers
3. Summary Statistics - Organization of Islamic Conferance (Bureau d'Etudes Banque Centrale)
4. Organigramme (Ministere des Transports)
5. Structure GUINOMAR
6. Cargo Lifted by WABS/GUINOMAR
March - September
7. Tonnage requirement for GUINOMAR
8. Training Programme for Crew & Officers
9. Kamsar Port Information
10. Statistique des Importation - Exportations
11. Statistique - Export, - Importations
12. Liste des Entreprises Nationales
13. Guinee Inventaire des Sites Hydro - Energetiques
14. Bulletin d'Information de l'Ambassade de la Republique Populaire Revolutionnaire de Guinee

(2) GENERAL INFORMATION ON SHIPPING

With reference to its tremendous natural resources, most particularly minerals, Guinea has well justified reasons to establish a viable merchant marine.

To illustrate this, Guinea's reserves are estimated at

- two thirds (2/3) of world bauxite reserves
- large iron ore reserves in the South.

At the moment, important mining companies are in operation:

Office des Bauxites de Kindia (OBK)

OBK exports about 2.500.000 mt of bauxite annually generally destined to the USSR. OBK has about 48.000.000 mt out of the 200.000.000 mt reserves of the region. OBK is wholly stateowned.

Compagnie des Bauxites de Guinée (CBG)

CBG is a joint-venture between Guinea (49%) and Halco mining Inc (51%). Halco has been established by ALCAN, ALCOA and MARTIN MARIETTA from North America, and PECHINEY, VAW and MONTEDISON from Europe. Annual exports can be rounded at 9 million mt and the Sangaredi reserves are estimated at 200 million mt over a total of about 2.000 million mt for that region.

Société Mixte FRIGUIA (FRIGUIA)

With Guinea and FRIALCO as partners and pechiney as managing agents, FRIGUIA exports about 650.000 mt of Alumina p.a. The reserves are estimated at 650 million mt of bauxite.

Other Bauxite /Aluminum Projects:

- ALUMINIUM DE GUINEE: Target = 155.000 mt aluminum p.a.
- AYE-KOYE: Production and exportation of bauxite and alumina.
- Societe des Bauxites de Dabola (SBD): Guinea and Alusuisse.

In the field of Iron Ore, Guinea has recently signed a transit-agreement with Liberia enabling annual exports of Iron Ore of about 15 million mt as from 1983 via the port of Buchanan, Liberia.

Modern infrastructures (railways, ports, etc) already exist for mining companies actually operating through Conakry and Kamser and

infrastructures of high standard will be built for the coming projects.

Therefore, taking into account its important bulk cargoes from one side, and

- the impact of maritime transports on its Balance of payments and its foreign trade,
 - the monopoly of shipping services by foreign shipowners,
- from the other side, Guinea has decided to establish a merchant marine to participate in its seaborne trade.

To achieve such objectives, it has been decided that

- 50 % of mineral exports must be carried by Guinean controlled vessels,
- the Code of Conduct for liner conferences will be implemented for liner cargoes,
- the Merchant Marine Office will be reorganized with a view to control all Guinean cargoes,
- a shippers committee, already formed, will function efficiently,
- Guinea will play a more active role in the activities of the Ministerial Conference of West and Central African States on Maritime Transports (Guinea is actually leading the Committee on Bulk Transports),
- in addition to the wholly state-owned SOCIETE NAVALE GUINEENNE, which was formed in 1968, a joint-venture Shipping Company "GUINOMAR" has been established between Guinea (50%) and West African Bulk Shipping Inc (50%). Torvald Klaveness & Co A/S of Oslo and Navios Corporation Inc of the Bahamas are 50/50 partners in West African Bulk Shipping Inc (WABS).

The main objectives assigned to the shipping sector consist of:

- substantial participation to maritime transports with particular emphasis on Guinean minerals, at regular, competitive and reputable services.
- gradual acquisition of ships for the coverage of the transport needs.
- gradual acquisition of capabilities to own and manage ships (education and training) both sea and shore personnel.

To achieve these objectives, the Ministry of Transports is cooperating with specialized agencies in order to obtain the necessary finances

to acquire vessels and train young Guinean in the shipping field.

In the medium term, say 1981-1984, it is envisaged to acquire 3 Panamax bulkers which will be operated in the Boko Bauxite trade to Europe and North America, where the actual Guinean traffic rights of about 4.5 million mt can employ approximately 10 ships.

Guinea wishes therefore, to cover by owned vessels and by the end of the 5 coming years, about 30% of its Boko Bauxite tonnage.

All technical services of the Transports sector are invited to contribute to the realization of the national maritime objectives.

Bureau des Etudes
Ministère des Transports
Septembre 1980

(3) ANSWER TO JICA'S QUESTIONNAIRE CONCERNING THE
ACQUISITION OF 2 "PANAMAX" BULKCARRIERS

1. GENERAL INFORMATION ON THE SHIPPING INDUSTRY

For a most complete answer to this question, please refer to the attached paper, made out by the Ministry of Transport.

a) Last five year exports

See annex

b) Last five years imports

See annex

c) Export/Import procedures

Guinea does not fully master its maritime transportation market. For this reason, Guinea sells FOB and buys CIF, with usual terms and commercial conditions.

However, Government transportation rights are reserved for some cargoes, particularly minerals.

According to this principle, 50% of all cargoes of bauxite and Iron Ore (plus other bulks) and 40% of all liner cargoes must be under Government control, transportationwise.

d) Guinean Level

Guinea's Shippers Committee (CGC)

Though existing under the tutelage of the Ministry of Transport CGC's mission is to define, promote and protect national shippers and receivers interests.

CGC's efforts will be directed towards a limitation of freight rate increases, regular and efficient shipping services.

To achieve these objectives, CGC will negotiate with shipowners, study all practical and legal questions related to freight rates with a view to arrive to adequate solutions.

CGC's chairman is the Managing Director of Importex - sole official import-export firm dealing with foreign buyers or/and suppliers - the additional members being the managing directors of maritime, foreign trade, banking and Insurance, mining, industrial and other offices related to the shipping sector.

CGC is a newly born organization, therefore the dynamisation cycle has not yet been reached, pending the appointment of the Secretary General (Establishment Decree attached).

West and Central Africas Level

1. Within the Ministerial Conference of West and Central African States for Maritime Transports, the union of national shippers committees has been formed. The association's goals are similar to those of the national councils but with wider area and power.
 2. The Union of National Shippers Councils consists of:
 - a) a councils comprising of national shippers committees representatives),
 - b) a negotiations Committee (whose members are appointed by the council),
 - c) a permanent secretariat (whose Permanent Secretary is to be appointed by the Council).
- e) Administrative Structure of the Shipping Sector

The shipping sector comprises the following:

- Direction de la Marine Marchande (Maritime legislation)
- Administration Générale du Port (Coordination, control, harmonization and promotion of maritime activities)
- Société Navale Guinéenne (Ocean transportation, cabotage, towage, shipping agency)
- Entreprise Nationale ENTRAT (Stevedoring, forwarding, shore logistics, handling)
- Office Maritime (Management of public maritime property, port infrastructures, dry dock)
- Office d'Amenagement de Boko - OFAB - (Infrastructures of the port of Kamsar)
- GUINOMAR (Mixed Economy Company, whose mission is to implement Guinea's traffic rights in maritime transportation in particular, and to engage into international maritime transports in general).

Structural organization attached.

- f) Present situation of Shipowning, Chartering and Cabotage
(see points 3 & 4).

g) Future plans for Vessel Acquisition

(see attached "5 year equipment plan" for Société Navale and Guinomar).

h) Among other measures taken by Guinea with the objective of developing its Merchant Marine, the following may be mentioned:

1. Creation of a national shippers committee,
2. Ratification of the UNCTAD liner Code,
3. Ratification of Convention on African Shippers Councils,
4. Ratification of the Convention on West African Ports Union
5. Ratification of the Charter of Abidjan, etc.....

i) Port of Conakry

Total Area =	71.060 sq m
Open storage =	44.560 sq m
Covered sheds =	26.500 sq m
Nr of berths =	10
Depth of chanal =	11 m to 12 m under 0

4 berths for general cargoes (nr. 2, 3 & 4) & nr. 7:

Total length =	450 m,	Depth =	8.50 m under 0 (for 2, 3 & 4)
	150 m,		8.00 m (for nr. 7)

The port does not have fixed cranes alongside but a study is actually being carried out by LACKNER (consultants) in order to improve present performance and facilities.

Bauxite and Alumina Berths

Bauxite (OBK)

2 berths totalling 300 m length and of 11 m depth under 0 are used by bauxite carriers (berths nr. 8 & 9).

Alumina (FRIGUIA)

Berths nr. 0 & 1 totalling 450 m length and of 11 m under 0 are used for the alumina trade.

Equipments

Bauxite: 1 shiploader of 1000 mt/hr capacity max (average is 600 mt/hr), plus 1 pipe of 800 t/hr for petrols.

Alumina: 2 shiploaders of 350 mt/hr each.

Port of Kamsar

General cargo: 2 berths of 100 m length, 6 m draft (3.5 m during low tides), 120 tons fixed crane, 50 and 12.5 tons mobile cranes. 750 hp and 3.500 hp tugs available.

Bauxite berth: LOA=225 m, 39 feet draft, 24.000 mt/day shins, 1 pipe of 400 t/hr for petrols.

j) Port of Kamsar

Organization structure

The port of Kamsar belongs to the Office d'Amenagement de Boké a 100% state owned firm in charge of the railway, the housing estate and the port through which about 9 million mt of bauxite are exported yearly.

The port is managed by OFAB, Direction du Port with
Lt M. TOURE as Director

Following departments are operating under the direction du Port:

1. Port Captain (Capt. KABA)
in charge of the dredging, buoys, radiocommunications, pilotage, etc.....
2. Shipping Agency (C. BARRY)
in charge of normal shiphusbanding work
3. Stevedoring (El-Hadj K. DIALLO)
in charge of handling and stevedoring gencargoes.
4. Forwarding/Clearing
in charge of normal clearance of cargoes through customs, etc.

Regarding bauxite loading, Compagnie des Bauxites de Guinée (CBG) performs the shiploading operations independantly.

2. GENERAL INFORMATION ON MINING AND INDUSTRY

a) Confirmed Reserves of Bauxite:

- Office des Bauxites de Kindia (OBK)

Reserves: 200 million mt of which the DEBELE field of 48 million mt is presently in operation.

- Compagnie des Bauxites de Guinée (CBG)

Reserves: 2,000 million mt of which the SANGAREDI field of 200 million mt is presently in operation.

- Société Mixte FRIGUIA (FRIGUIA)

Reserves: 650 million mt to be calcined on the spot before shipment in bulk-alumina via the port of Conakry.

Other projects under study:

ALUGUI (Aluminium de Guinée)

Target: Production of 155,000 mt aluminum p.a.

AYE-KOYE (Guinea + Arab Interests)

Target: 1 million mt of Aluminum plus 1, 5 million mt bauxite p.a.

SBD (Société des Bauxites de Debola)

Target: 1 million mt Alumina plus 2,5 million mt bauxite p.a.

MIFERGUI-NIMBA

Target: 15 million mt of Iron Ore p.a.

b) Bauxite Production during last 5 years:

	CBC	FRIGUIA	OBK
1974	4 540 000	-	427 000
1975	5 333 000	1 845 510	1 811 000
1976	6 830 000	1 680 117	2 541 000
1977	7 615 000	1 655 649	2 578 000
1978	8 197 984	1 821 069	-
1979	8 123 837	1 952 240	2 123 336

c) Alumina Production last 5 years:

1975	617 000
1976	561 000
1977	551 000
1978	607 023
1979	661 932

d) Transportation Facilities and Capacities:

	Facility	Capacity	Storage
Friguia	150 km rail	57 000 mt/mth	68 000 mt
CBG	140 km rail	750 000 mt/mth	200 000 mt
OBK	110 km rail	208 000 mt/mth	150 000 mt

e) Capacities/Rates of Loading:

	Productivity/ Loadrates	Worktime Normal hours	Overtime hours
Friguia	700 mt/hr	8	16
CBG	4 250 mt/hr	8	16
OBK	750 mt/hr	8	16

f) Pattern of Bauxite/Alumina Exports for last 5 years:

(BASE 1978)	Bauxite	Alumina
USA (US Gulf, St. Croix)	3 432 957	-
Canada (Port Alfred)	1 117 140	-
USSR (Black Sea Ports)	2 336 569	23 672
France (Fos)	1 109 693	15 960
Germany (Emden/Stade)	976 557	-
Italy (Venice)	457 202	121 563
Holland (R'DAM)	169 757	-
Spain (La Corunia/Avil)		276 763
Poland (Gdynia)		82 706
Camercon (Douala)		75 650
Yugoslavia		29 000

g) Ratios and FOB Prices as of end March 1980:

	Ratios		Prices
1975	11.41	OBK	16.80 (US\$)
1976	15.095	CBG	31.70
1977	16.85	Friguia	210.00
1978	16.52		

3. SOCIETE NAVALE GUINEENNEE (SNG)

a) Board Members

In compliance with existing official regulations concerning state-owned companies, SNG does not have a board of directors as such. However, all necessary transactions are accomplished by a Managing Director, appointed by Decree, who will work under the tutelage of the Minister of Transport.

b) Employees:

SNG has 2 categories of personnel:

- Seamen (crews/officers)
- Shore staff (to perform sedentary activities such accounting, secretarial work, shipping agency, etc.)

The professional breaking down is:

- Officers (Engine + Deck + Radio)	7
- Cabotage Officers	2
- Administrative staff	27
- Accountants	15
- Seamen (Sailors + Oilers)	280
- Technical staff	8

c) Administrative and Political Physiognomy:

Following are the executive officers of SNG:

Managing Director	M.L. DIALLO
Deputy Managing Director	I.S. BANGOURA
Commercial Manager	A. KOUROUMA
Chief Accountant	M.S. DIALLO
Technical Manager	M. KEBE
Agency Manager	N. SYLLA
General Inspector	K. CONDE
Personnel Manager and Trade Union Leader	S.Y. TOURE

d) Finances:

Concerning capitalization, accounting and finances, SNG operates autonomously under the supervision of the Minister of Transport and the Minister of State Control.

National financial regulations is used with due consideration of the

shipping specifications.

e) Last three years Financial Papers:

The following figures may indicate SNG's financial results for the past three years:

	1977	1978	1979
Capital	157 302 705	156 337 811	155 052 555
Turnover	30 868 345	37 573 349	33 482 932
Expenses	22 421 907	23 797 318	23 988 264
Net Profits	6 415 049	8 974 428	3 314 272

f) Naval Equipment

The Naval Equipment of SNG is mainly constituted of barges, tugs and coasters:

National Cabotage:

SNG operates 3 lighters for the carriage of national cabotage cargoes:

- "KAMSAR" of 200 grt self-propelling
- "KONKOURE" of 200 grt self-propelling
- "NUNEZ" of 70 grt self-propelling

West African Cabotage:

SNG had the "KAKANDE", a combined passenger-cargo coaster of 150 tons and 30 passengers, which is used to operate from Abidjan to Dakar.

"KAKANDE" has been in service for more than 10 years and she is presently laid-up.

International Maritime Transportation:

Long distance maritime transportation activities used to be performed by

- "DRAME OUMAR" a refrigerated vessel to carry fruits to Europe, and
- "SIMANDOU", a bulkcarrier of 15 290 dwt, built in 1963.

These 2 vessels enabled young nationals to acquire valuable experience within the fields of shipping.

Towage:

At the moment, port tugs are of Soviet origine with following characteristics:

- Port Tug RP 3 1.200 hp and FE-13t
- Port Tug RP 4 1.200 hp and FE-13t

In consideration of extensive agricultural projects, mining plants, etc... and taking into account Guinea's declared will to participate in shipping, SNG is presently contemplating to acquire efficient naval equipment to serve its purposes.

SNG has been favoured by the Government with an important financial backing in order to acquire during the coming five year plan, new tugboats, lighters, cargo liners and bulkers.

4. GUINOMAR

a) Board of Directors:

President: El-Hadj Mouctar DIALLO
Minister of Transport, Guinea
Vice President: J.P. ELVERDIN
President of Navios and of Wabs

Directors:

- Abraham Kabassan KEITA, Minister of Public Works
- Mohamed Lemine Toure, Vice Governor BCRG
- Lansana FOFANA, Director of Merchant Marine
- Tom-Erik KLAVANESS, Vice President of Wabs
- Kaare E. BORCH, Vice President of T. Klaveness & Co.
- D.J. SZOSTAK, Director of Wabs

b) Number of Employees:

Present permanent number of employees are 15. In addition 21 are under training in various Navios/Klaveness vessels, while 5 others are undergoing professional shipping education in Oslo and New York.

For the period from 1981-1985 Guinomar has planned to educate 45 officers and 15 for administrative functions.

c) Executive Officers:

Managing Director : Tom PRESTSTULEN, Wabs
Deputy Managing Director: Yaya KEITA, Guinea
Treasurer : C.E. PETERSEN, Wabs
Deputy Treasurer : Mory KEITA, Guinea
Corporate Secretary : Raymonde FABER

d) Capital:

Authorized capital = US\$ 2 million
Guinea = 50% Shares; West African Bulk Shipping Inc = 50%
Wabs = 50% Torvald Klaveness & Co. A/S and 50% Navios Corp.

e) Financial Papers:

No final financial reports issued yet as GUINOMAR was only formed/restructured 8 months ago.

Profit/Loss Sharing: 65% Guinea and 35% Wabs (simplified)

f) Current Business Activities:

i) Operation Agreement: Newbuildings acquired under Japanese Yen credit have been agreed to be operated by Guinomar,

Chartered Vessels: To fulfill its direct and indirect commitments, GUINOMAR is presently operating under charter arrangements, about 15 vessels.

GUINOMAR's vessels are of sizes varying from 25,000 to 65,000 tons.

ii) Main trade Routes: Kamsar/FOS: Kamsar/Stade; Kamsar Venice
Kamsar/USG: Kamsar/St. Craix;
Kamsar/Port Alfred (for the bauxite).

Frequency: About 10 liftings/month for the bauxite.

Triangulation possible with grain, coal, ore, phosrock...

iii) GUINOMAR does not belong to any conference at the moment.

g) Future Plans for Business Development:

GUINGMAR intends to expand and extend its present commercial activities (4.5 million mt bauxite p.a.) to Guinea's traffic rights in FRICUIA, OBK, AYE-KOYE, SBD and MIFERGUI.

5. RELATION BETWEEN GUINOMAR AND WABS

In November 1978, GUINOMAR was formed between Guinea and Torvald Klaveness & Co A/S on a 50/50 partnership basis.

In February 1980, GUINOMAR was restructured to include Navios, Guinea still holding 50%, Torvald Klaveness & Co. 25% and Navios 25% of the shares.

a) Agreements:

To some extent, both old and new GUINOMAR have the agreement terms (see paragraph 4 a) to c)) whereunder the foreign partners have agreed to assist GUINOMAR in educating seagoing and administrative personell.

b) Management Agreement:

It is the expressed intention of the Guinean Government to have a self-managed shipping company after having educated managers, officers and crew.

The above process is estimated to take 5-10 years.

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VOYAGE A/C	BAUXITE <u>TRADE</u>	
VESSEL		
LOAD PORT	KAMSAR	
DISCHARGE PORT	FOS	
CARGO QUANTITY	55.500 M/T	
FREIGHT RATE	\$9.82	
REVENUE (a)	\$544.741	
PORT CHARGES		
- KAMSAR	\$ 17.000	
- FOS	\$ 23.000	
COMMISSIONS (1 1/4%)	\$ 6.810	
OTHER EXPENSES	\$ 3.000	
FUEL COST	\$ 157.000	
TOTAL (b)	\$ 207.010	
VOYAGE SURPLUS (a - b) = c	\$ 337.731	= \$ 5.373.000
SHIPS ACCOUNT		
CREW WAGES	\$ 669.450	
SHIP'S STORES		
LUB. OIL	\$ 260.000	
PROVISION		
REPAIR/MAINTENANCE	\$ 150.000	
INSURANCE	\$ 235.000	
ADMINISTRATION	\$ 60.000	
OTHERS (EDUCATION, SPARES ETC.)	\$ 274.000	
INTEREST	\$ 875.000	
DEPRECIATION	\$1.666.670	
TOTAL (d)		<u>\$ 4.190.120</u>
BALANCE (c-d)		<u>\$ 1.182.880</u>

(4)

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Source : Summary Statistics - Organisation
Of Islamic Conference

I Population (1979)

4910 000

- taux de progression (growth rate) 1970/77 2.80%

- Denaite (Densité) 1977 au Km² 19

- Population active (Population of Working) 1977 54%

- Population active (Population of Working)

Labour Force 1978

2,152,000	(45%)		
1977 <u>AGRICULTURE</u>	<u>Industrie (Industry)</u>	<u>Services</u>	
83%	10%	7%	

II Balance Commerciale (1970)

Imports : 100 millions de \$

Exports : 100 millions de \$

III Food Production, Indices par Caput (1969 - 71 = 100)

<u>1977</u>	<u>1979</u>	<u>1968</u>	<u>1972</u>
81	85	103	90

IV Agricultural Production indices par Caput

<u>1968</u>	<u>1972</u>	<u>1977</u>	<u>1979</u>
103	89	81	84

V Net Trade of rice (Importation moyennes de riz) annual/average

<u>1961-63</u>	<u>1969-71</u>	<u>1975-77</u>
29000 M.T.	25000 M.T.	28000 M.T.

VI Rice Production

1970		1976	
Production	% in World Production	Production	% in World Production
350 000	0, 11	375 000	0, 11
Metric tons		Metric tons	

JICA

