

4.3.5 General specifications and general arrangement

I. GENERAL AND HULL PART

1. General

The ship will undergo design and construction as an ordinary cargo ship to provide cargo transportation between islands in the Republic of Cape Verde.

In principle, Japanese-make materials and equipment will be used in the construction of the ship.

2. Type of ship

The engine room and bridge will be located aft so that a well decker with a poop and forecastle can be built. There will be one continuous deck. The ship will be driven by a single-screw controllable pitch propeller powered by a diesel engine.

3. Classification and applicable regulations

Classification: Nippon Kaiji Kyokai (NK) NS*, NMS*

Applicable regulations:

- Rules and Regulations for the Construction and Classification of ships (Small Ships) (Nippon Kaiji Kyokai)
- International Convention on Load Lines, 1966
- International Convention of Tonnage Measurement of Ship, 1969
- International Convention for Prevention of Pollution from Ships, MARPOL 1973/78
- International Convention for Preventing Collisions at Sea, 1972

4. Principal dimensions

Length overall	:	about 48.50 m
Length between perpendiculars	:	44.00 m
Breadth	:	9.00 m
Depth	:	4.00 m
Draft	:	3.20 m

5. Deadweight capacity : about 500 tons

6. Gross tonnage : about 480 tons

7. Cargo hold capacity : about 700 m³ (volume within linings, including hatch)

8. Tank volume

Fuel oil tank : about 40 m³
Fresh water tank : about 22 m³
Ballast water tank : about 185 m³

9. Speed : about 10.5 knots (full load condition 85% MCR, 15% sea margin)

10. Cruising range : about 2,200 miles

11. Complement : crew: 5 officers
5 crew members
1 apprentice officer
TOTAL 11 persons
passengers: 8 (seats)

12. Hull construction : All welded construction
Transverse framing system

13. Ventilation and air conditioning system

Living room, dining room : Cooling by air conditioning
(wheel-house by spot cooling)
Engine room : Mechanical ventilation
Galley : Mechanical exhaust ventilation
Hold : Mechanical supply ventilation
Sanitary spaces, battery room : Natural ventilation
and store

14. Lifesaving appliances

Life rafts : 2 20-person rafts
Life jackets : 25
Lifebuoys : 4

15. Cargo gears : 3.5 tons 2 sets

16. Deck machinery

Windlass : electro-hydraulic 3.2 tons x 12 m/min 1 set
Capstan : electric 1.5 tons x 10.8 m/min 1 set
Steering gear : electro-hydraulic 3 ton-m 1 set
Cargo winch : electro-hydraulic 3 tons x 30 m/min 2 units
Topping winch : electro-hydraulic 3 tons x 30 m/min 2 units
Guy winch : electro-hydraulic 3 tons x 30 m/min 2 units
Hydraulic pump unit: electrically-driven 65 kW 2 units
Each unit is capable of driving two
winches at the rated output.

17. Hatch cover

Type : Steel single-pull type; closed and opened by hydraulic motor.
Clamped by hand. Provided with container metal fittings.
Hatch size : 17.6 m x 6.4 m

18. Hold : With bottom ceiling and side sparring

19. Anchors, anchor chains, etc.

Anchor : 660 kg 3 pieces
Anchor chain : 24 mm in dia. 302.5 m
Hawsers : polypropyrene 50 mm in dia. 120 m x 4
Tow line : steel wire rope 20 mm in dia. 180 m x 1

20. Provisions refrigerator;

250-liter refrigerator with 150-liter freezer (a total of 400 liters)
2 units

21. Scuttles and square windows

Living quarters : scuttles
Bridge : square windows with aluminum frames

22. Painting

Bottom : chlorinated rubber-based anti-corrosive paint,
2 coats; anti-fouling paint, 2 coats
Boot top : chlorinated rubber-based anti-corrosive paint,
2 coats; boot topping paint, 2 coats
Ship side : chlorinated rubber-based anti-corrosive paint,
2 coats; ship side paint, 2 coats
Exposed deck : oily anti-corrosive paint, 2 coats; deck paint, 1 coat
Exposed walls of deck houses
oily anti-corrosive paint, 2 coats; finishing paint, 2
coats
Ballast water tank : tar epoxy paint, 1 coat
Fresh water tank : pure epoxy paint, 2 coats

23. Nautical equipment

A set of navigation lights, a magnetic compass, rudder angle indicator, clock, clear view screen, barometer, thermometer, chronometer, clinometer, signal flag, signal codes, binoculars, etc.

24. Fire-fighting equipment

Portable type : foam fire extinguishers 9 liters 8 units
carbon dioxide gas 6.8 kg 2 units
Fire hose, nozzle : 40 mm in dia. 15 m 5 sets each

II. MACHINERY PART

1. Main engine

Vertical type, single-acting 4-cycle marine diesel engine with reduction gear.

Rated output : about 1,000 PS
(at about 800 revolutions/minute)
Number of cylinders: 6
Cooling method : sea water and fresh water
Fuel used : diesel oil
Starting method : compressed air
Operation method : The number of revolutions and blade angle are controlled remotely from the bridge.
Starting and stopping of the main engine are controlled from the engine side.

2. Shafting

Intermediate, tail shafts : forged steel
Stern tube : cast iron
Plummer block : cast iron
Propeller : controllable pitch propeller
of manganese bronze

3. Generator

Main generator : about 120 kVA AC380V, 3-phase, 50 Hz
Drip proof Self-excitation type 2 sets
Prime mover of the above: diesel engine, about 160 ps x 1,500 rpm
Port use generator : about 30 kVA, AC380V, 3-phase, 50 Hz
1 set
Prime mover of the above: diesel engine about 46 ps x 1,500 rpm

4. Air compressor

Main air compressor : about 17 cubic meters/hr x 30 kg/cm²
2 units
Emergency air compressor: about 350 cm³/stroke 1 unit

5. Pumps

General service and fire pump	:	1
Bilge ballast pump	:	1
Air conditioner cooling pump	:	1
Fresh water hydrophore pump	:	1
Sea water hydrophore pump	:	1
Fuel oil transfer pump	:	1
Fuel oil service pump	:	1
Sludge pump	:	1
Standby lubricating oil pump	:	1
Sea water cooling pump	:	1
Standby lubricating oil pump	:	1
Standby fresh water cooling pump	:	1
Hydraulic oil pump for CPP	:	1
Standby hydraulic oil pump for CPP	:	1

6. Purifiers

Fuel oil purifier	:	1
Lubricating oil purifier	:	1

7. Oily-water separator

: 1

8. Ventilator

Engine room	:	2
Cargo hold	:	2
Galley	:	1

9. Tanks

Air tank for starting main engine	:	2
Fuel oil service tanks	:	1
Lubricating oil storage tank	:	1
Sludge tank	:	2
Fresh water expansion tank for main engine	:	1
Fresh water hydrophore tank	:	1
Sanitary hydrophore tank	:	1

10. Devices and tools

Devices and tools necessary for on board repairs

III. ELECTRICAL PART

1. Power distribution

Main generator	:	AC380 V, 3-phase, 50 Hz, 3-wire type
Power circuit	:	AC380 V, 3-phase, 50 Hz, 3-wire type
Lighting circuit	:	AC220 V, 3-phase, 50 Hz, 2-wire type
Onboard communication	:	AC220 V, 3-phase, 50 Hz, 2-wire type
Nautical instruments	:	DC 24 V, 2-wire type
Wireless apparatus	:	AC220 V and DC 24 V
Emergency lighting circuit	:	DC 24 V

2. Power sources

Main generator	:	AC380 V, 120 kVA, 2 units Driven by diesel engine
Port-use generator	:	AC380 V, 30 kVA, 1 unit Driven by diesel engine
Storage battery	:	DC 24 V, 5 units
Transformer	:	Dry-type, AC380 V/220 V, 15 kVA, 1 unit

3. Main switchboard : dead front, self-standing type

4. Nautical instruments and wireless apparatus

VHF wireless telephone	:	1
Radar	:	2
Gyrocompass	:	1
Echo sounder	:	1
Air horn	:	1
GPS navigation device	:	1
Wireless direction finder	:	1

5. Onboard communication

Sound power telephone	:	1 set
Public address	:	1 set
Engine telegraph	:	1
Main engine revolution indicator	:	1

6. Ship light : 1 set

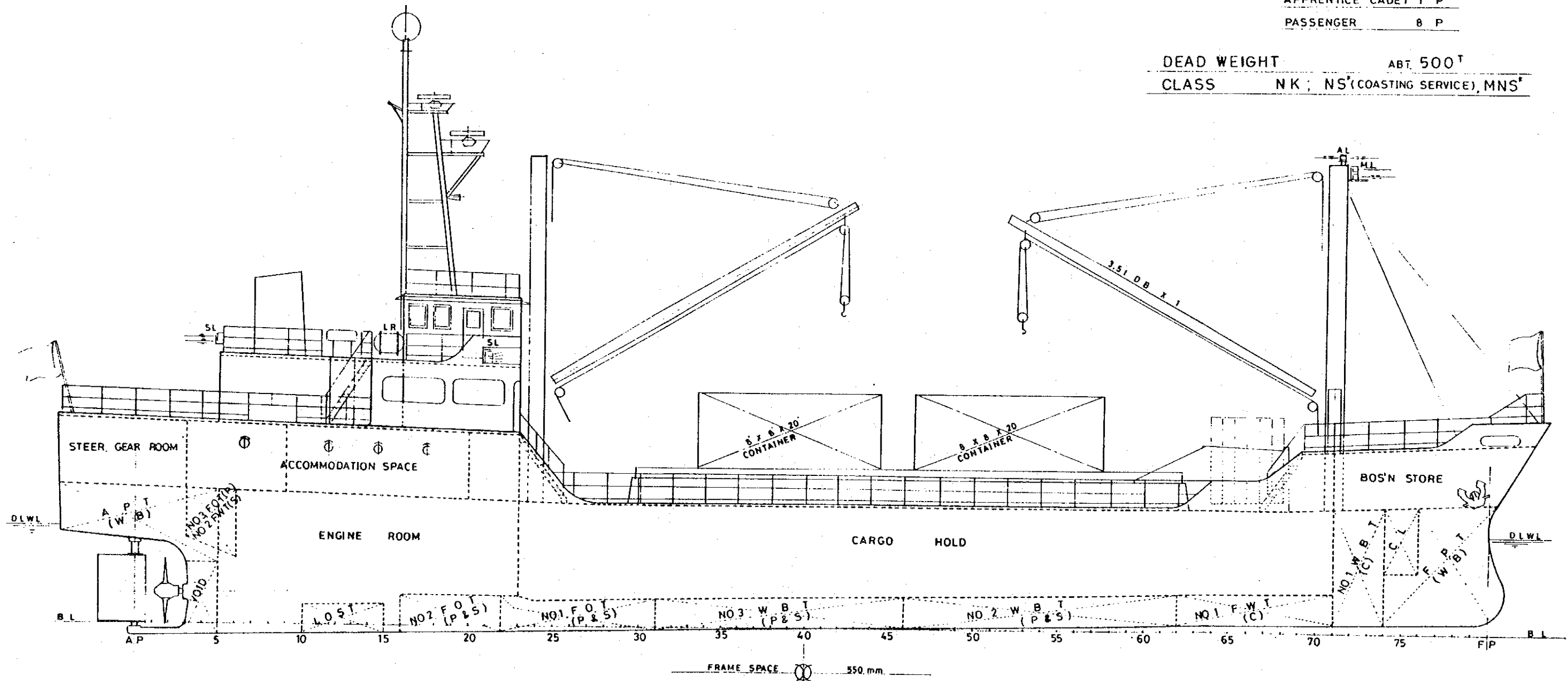
7. Shore connection : AC380 V, 80 A, 1 unit

GENERAL ARRANGEMENT

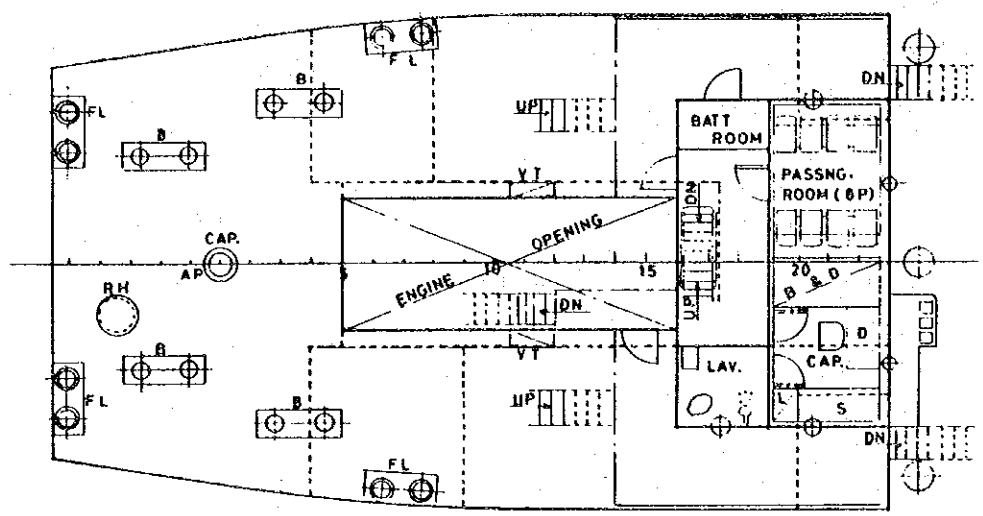
PRINCIPAL PARTICULARS

LENGTH (O.A)	ABT. 48 ^M .50
LENGTH (P.P)	44 ^M .00
BREADTH (MLD)	9 ^M .00
DEPTH (MLD)	4 ^M .00
DRAFT (DES. MLD)	3 ^M .20
MAIN ENGINE	1000 ^{PS} x 1
SERVICE SPEED (85% MCR)	ABT. 10.5 ^{KT}
COMPLEMENT	19 P
OFFICER	5 P
CREW	5 P
APPRENTICE CADET	1 P
PASSENGER	8 P

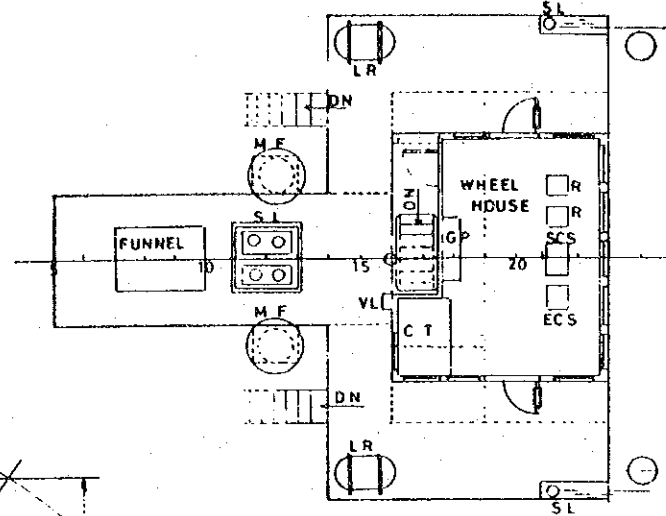
DEAD WEIGHT	ABT. 500 ^T
CLASS	NK ; NS ^T (COASTING SERVICE), MNS ^T



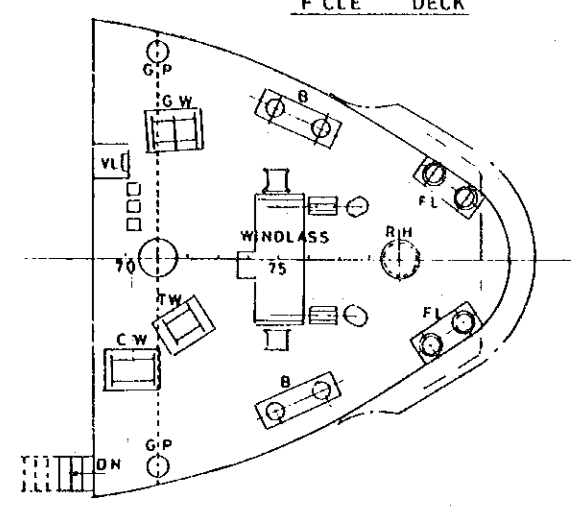
POOP DECK



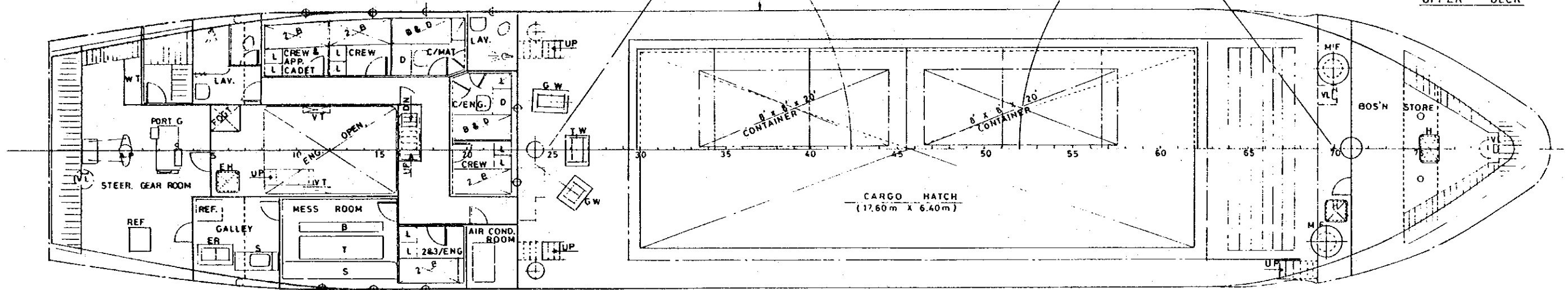
NAV. BRI. DECK



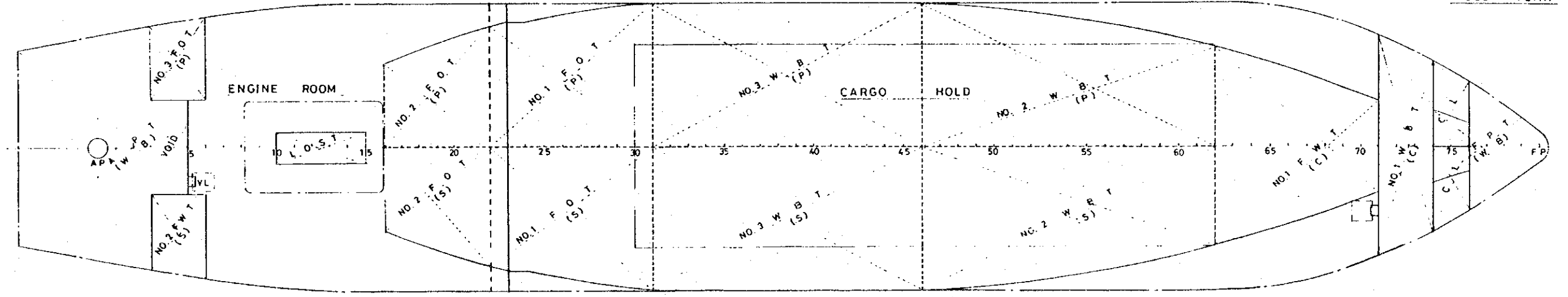
F'CLE DECK



UPPER DECK



HOLD PLAN



4.4 CONSTRUCTION PLAN

4.4.1 Construction Policy

After the agreement is officially executed in writing, a consultant will be designated. The designated consultant, in close contact and consultation with the Cape Verdean government, will work out a detailed design based on the basic design policy for the ship in preparation for tendering by shipbuilders and starting shipbuilding work. The ship should be built in a shipyard in Japan and the shipbuilder will be decided by tender.

The shipbuilder so decided by tender will sign a building contract and undergo inspection and supervision by a Ship Classification Society and the consultant during the period of construction. The shipbuilder will complete the building of a ship that can satisfy the required level of performance within the intended time and then deliver it to the Cape Verdean government.

The formal delivery of the ship to the Government of the Republic of Cape Verde will take place at the shipyard in Japan where the ship is built. Then the ship will be transferred to Cape Verde under the responsibility of the building shipyard and will be delivered to the Cape Verdean side after trial.

4.4.2 Construction Management Plan

Based on the Grant Aid cooperation policy of the Japanese government and in accordance with the basic design concept, the consultant will be required to ensure that the shipbuilding work will proceed smoothly until completion by organizing a project team that will work on detailed design and construction management. In the construction management phase, the consultant will encourage the smooth progress of construction by properly dispatching specialty technicians to check and approve drawings for construction, conduct various inspections during the construction process, examine ship equipment at factories, and witness the conditions of the sea trial.

4.4.3 Other Matters

During the construction process, careful attention must be paid to the following matters:

- (1) Special materials that are not easily procured in Cape Verde should not be used, in consideration of maintenance and repair after delivery of the ship.
- (2) The chief engineer, first engineer and chief radio operator will be required to undergo training for a certain period during the construction phase so that principal equipment such as the main engine and propulsion shafting, cargo gears, nautical equipment, etc., will be fully mastered. They will be sent to the manufacturers of such equipment as necessary so that they can also learn disassembly and maintenance techniques.

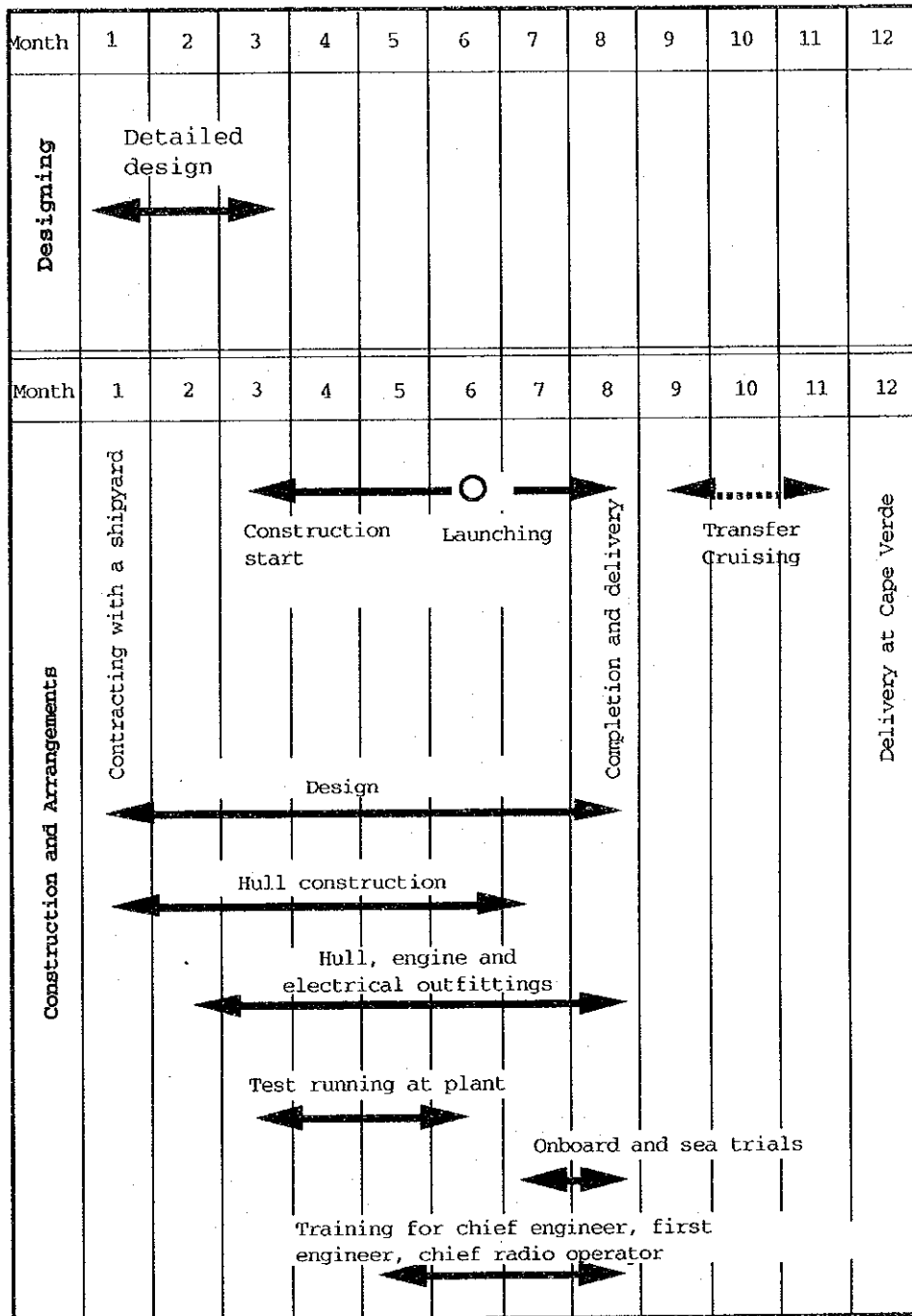
- (3) Detailed and thorough instruction books will be supplied so that the ship can function as a complete entity comprising systems such as the main engine, propulsion shafting, cargo gears, and other devices.
- (4) As it will be difficult to locally procure parts for equipment, such items expected to be consumed rapidly or very special parts will be supplied as extra spare parts in addition to regular spare parts.

4.4.4 Construction Process Plan

The shipbuilding under this project is to be entirely conducted by a shipbuilder in Japan, so there will be no duty fees to be borne by the Republic of Cape Verde.

Therefore, the expenses to be borne by Japan will cover the construction work, including detailed design and the transfer voyage to Cape Verde. The period and process required for the project are shown in Fig. 4-4-1.

Fig 4-4-1 Timetable of Constuction Process



CHAPTER 5
PROJECT EVALUATION AND CONCLUSION

CHAPTER 5 PROJECT EVALUATION AND CONCLUSION

5.1 PROJECT EVALUATION

Table 5-1-1 shows the effects and improvements of this project.

Table 5-1-1 Effects and improvements of this project

Current Problems	Countermeasures by the project	Effects and improvements
<p>1. A domestic trade ship, the Santa Luzia became superannuated and inoperable. It will be sold or decommissioned during the year of 1992, reducing the transportation capacity of Arca Verde National Navigation Company.</p>	<ul style="list-style-type: none"> • The new cargo ship will have a highly reliable hull structure with an international ship's classification. The equipment will be rigid, easily operated, and free of trouble. 	<ul style="list-style-type: none"> • The new cargo ship will reinforce Arca Verde's transportation capacity in place of the Santa Luzia. It increases the Arca Verde domestic trade fleet total deadweight tonnage by about 40 percent.
<p>2. The domestic-trade cargo ships belonging to Arca Verde Co. consist of only the Ilheu Raso (70 DWT) in addition to the above-mentioned Santa Luzia. The cargo transportation capacity is low.</p>	<ul style="list-style-type: none"> • The new cargo ship will be a considerably large 500 DWT domestic trade ship in Cape Verde. 	<ul style="list-style-type: none"> • Arca Verde will become able to meet the demand of increased domestic trade transportation.
<p>3. Most vessels owned by Arca Verde Co. are old and generate increased maintenance costs including repair costs.</p>	<ul style="list-style-type: none"> • The new cargo ship will be equipped with highly reliable devices, with consideration given to corrosion resistance, and reduced maintenance and repair costs. 	<ul style="list-style-type: none"> • The new cargo ship will greatly reduce Arca Verde's maintenance and repair costs.
<p>4. Arca Verde Co. sometimes gives up on the purchase of devices and spare parts for financial reasons.</p>	<ul style="list-style-type: none"> • The cargo ship will be supplied with more spare parts than normal. 	<ul style="list-style-type: none"> • The new cargo ship will not become inoperable due to a lack of spare parts.

5.2 CONCLUSION

This project will have the effects discussed in 5.1 and contribute to the development of the economy of each island and the human interchange between islands, improving the life of the Cape Verdean people and the national economy. Thus, it is considered valuable for the Japanese government to fund this project.

In the implementation and management of the project, there are no negative conditions in Cape Verde that may hinder the practical use of the ship in terms of the demand for transportation, staffing of crew, maintenance of the ship, harbor facilities, and so on. Therefore, there will be no problems with the operation and management of the ship itself.

However, the execution organization should note the following items in order to maximize the effect of this project.

- (1) Equipment must be well checked and maintained to avoid inoperability of the ship because of trouble or poor maintenance.
- (2) Parts and spare parts must be well stocked and controlled to avoid trouble resulting from a shortage of parts and to ensure a high operating ratio for the ship.

APPENDIX

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1. Basic Design Study Team

(1) Members

Masahiro SANUKI	Leader Ship Inspector, Maritime Technology and Safety Bureau, Ministry of Transport
Toshihide KAWASAKI	Grant Aid Policy Planner, First Africa Div. Middle Eastern and African Affairs Bureau, Ministry of Foreign Affairs
Shin TATEBE	Project Coordinator External Services Division, Emigration Department, JICA
Yasushi JOGO	Naval Designer (Hull Designer) Overseas Shipbuilding Cooperation Center OSCC
Noboru UJIIE	Operation Planner OSCC
Hiroshi MIZUNO	Mechanical Designer OSCC
Isao KOBAYASHI	Naval Designer (Outfitting Designer) OSCC
Akio KIMURA	Naval Designer (cost estimation) OSCC
Ryoko TAKEDA	Interpreter International Cooperation Service Center

(2) Survey schedule

order of days	date	day	survey activities
1	11/30	Sat	Lv. Tokyo. Ar. Paris
2	12/01	Sun	Lv. Paris. Ar. Dakar
3	12/02	Mon	Visit the Japanese Embassy in Senegal and JICA's Senegal Office
4	12/03	Tues	Lv. Dakar. Ar. Praia Courtesy calls on Arca Verde E.P. and Direccao Geral de Cooperacao Internacional. Discussion with Arca Verde E.P. Tour of Port Praia.
5	12/04	Wed	Discussion with Arca Verde E.P. Courtesy calls on Ministerio da Economia e dos Transportes e Comunicacoes and Secretaria de Estado dos Transporte e Comunicacoes.
6	12/05	Thurs	Lv. Praia. Ar. Mindelo. Tour of Porto Grande. Discussion with the Sao Vincente Branch Office of Arca Verde E.P. (hereinafter called "Arca Verde Branch").
7	12/06	Fri	Discussion with Arca Verde. Prepare a draft of minutes. Tour of CABNAVE Shipyard. Tour of Arca Verde Manufactory.
8	12/07	Sat	Tour of Centro Formacao Nautica, CFN. Explanation by the president on conditions in the school.
9	12/08	Sun	Lv. Mindelo. Ar. Praia (Sanoki, Kawasaki, Tatebe), Check material.
10	12/09	Mon	Signing of the minutes at Praia (Sanoki, Kawasaki, Tatebe). Explanation of harbor conditions, Empresa Nacional de Administracao dos Portos, E.P. Explanation of regulations on maritime affairs by Capitania dos Portos de Barlavento. Discussion with Arca Verde. Examine Arca Verde's ship (the Barlavento) at Port Grande Port. (Johgo, Ujiie, Mizuno, Kobayashi, Takeda)
11	12/10	Tues	Lv. Praia. Ar. Dakar. Courtesy calls on the Embassy in Senegal and JICA's Senegal Office prior to leaving for home (Sanoki, Kawasaki, Tatebe). Discussion with Arca Verde Branch. Tour of CABNAVE Shipyard and SURVEY of conditions there. Visit Garantia, Companhia de Seguros SAREL for explanation of hull insurance, etc.

order of days	date	day	survey activities
12	12/11	Wed	Lv. Dakar. Ar. Paris (Sanoki, Kawasaki, Tatebe). Visit Oficinas Navais do Cabo Verde, 9ONAVE). Discussion with Arca Verde Branch on vessel specifications.
13	12/12	Thurs	Ar. Paris (Sanoki, Kawasaki, Tatebe). Discussion with Arca Verde Branch on vessel specifications. Explanation by EMPA on goods transportation (Ujiie, Takeda).
14	12/13	Fri	Ar. Tokyo (Sanoki, Kawasaki, Tatebe). Lv. Mindelo. Ar. Sal. Visit Servico Meteorologico Nacional). Tour of Porto Palmeira.
15	12/14	Sat	Lv. Sal. Ar. Praia. Team meeting.
16	12/15	Sun	Reorganize data.
17	12/16	Mon	Visit Arca Verde head office for meeting, data and explanation given. Visit Garanita, Companhia de Seguros (Ujiie, Takeda). Courtesy call on Mr. Maia and Mr. Vera-Cruz.
18	12/17	Tues	Lv. Praia. Ar. Dakar. Courtesy calls on the embassy in Senegal and JICA's Senegal Office prior to leaving for home.
19	12/18	Wed	Lv. Dakar. Ar. Paris.
20	12/19	Tur	Lv. Paris.
21	12/20	Fri	Ar. Tokyo.

Oficinas Navais do Cabo Verde, ONAVE

Mr. Joao Pina

Director

Servico Meteorologico Nacional

Mr. Jose Manuel Gomes Pimenta Lima

Chief, Climatological Division

Japanese Embassy in Senegal

Ambassador Kohei Murata

Third Secretary Shinichi Hirose

Senegal Office, Japan International Cooperation Agency

Mr. Noriki Asahi

Resident Representative

Mr. Kazunori Miura

Staff

IDPEPE

Mr. Tatsuji Abe

Expert assigned by JICA

(4) Minutes

MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY ON THE PROJECT
FOR CONSTRUCTION OF
INTER-ISLAND GENERAL CARGO VESSEL IN
THE REPUBLIC OF CAPE VERDE

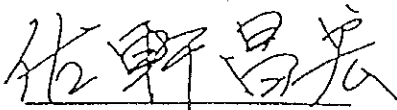
Based on the results of the Preliminary Study, the Japan International Cooperation Agency (JICA) decided to conduct a Basic Design Study on the Project for Construction of Inter-island General Cargo Vessel (hereinafter referred to as "Project").

JICA sent to the Republic of Cape Verde a study team, which is headed by Mr. Masahiro Sanuki, Ship Inspector, Maritime Technology and Safety Bureau, Ministry of Transport, and is scheduled to stay in the country from December 3 to December 17, 1991.

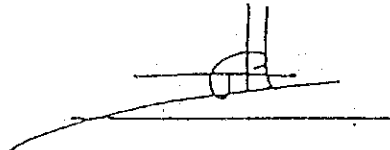
The team held discussions with the officials concerned of the Government of Cape Verde and conducted a field survey at the study area.

In the course of discussions and field survey, both parties have confirmed the main items described on the attached sheets. The team will proceed with further work and prepare the Basic Design Study report.

Praia, December 9, 1991



Mr. Masahiro Sanuki
Leader
Basic Design Study Team
JICA



Mr. José Luis Rocha
Director General of
International Cooperation

Attachment

1. Objective

The objective of the survey is to construct an in-tre-island general cargo vessel for stable and efficient maritime transportation.

2. Port of registry

The port of registry of the vessel will be São Vicente.

3. Responsible organisation, executing organisation

(1) Responsible organisation: Ministerio da Economia e dos Transportes e Comunicações

(2) Executing organisation : Companhia Nacional de Navegação Arca Verde E.P.

4. Vessel's specifications requested by the Government of Cape Verde

After discussions with the Basic Design Study team, the vessel's principal specifications finally requested by the Cape Verdean side are as shown in Annex I.

However, the final specifications of the vessel will be decided after further studies.

5. Japan's Grant Aid system

(1) The Republic of Cape Verde has understood the system of Japanese Grant Aid explained by the team.

(2) The Government of Cape Verde will take necessary measures, described in Annex II for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

6. Schedule of the Study

(1) The consultants will proceed with further studies in Cape Verde until December 17, 1991.

(2) JICA will prepare the draft final report in English and

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dispatch a mission in order to explain its contents around March, 1992.

- (3) In case that the content of the report is accepted in principle by the Cape Verdean side, JICA will complete the final report and send it to the Government of the Cape Verde by the end of May, 1992.

Annex I

Vessel's Principal Specifications Requested

1. Number of vessels : 1
2. Principal particulars
- Deadweight : approx. 500 metric tons
 - Hold capacity in bale : approx. 700-750 cub.meters
(including hatchway)
 - Length overall : approx. 45 meters
 - Service speed : 10-12 knots
(fully loaded, 85%MCR, 15%SM)
 - Cargo gear : 3-5t 2 gangs
 - No. of holds : 1
 - No. of hatches : 1 (single pull)
 - Complement : crew 10 persons
single cabins 3
double cabins 4
passengers 6-8 persons
 - Fuel oil tank capacity : approx. 30 tons

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Annex II

Necessary measures to be taken by the Government of Cape Verde in case of Japan's Grant Aid is executed.

1. To provide data and information necessary for the design during implementation of the Project.
2. To ensure tax exemption and custom clearance of the vessel at the port of the Republic of Cape Verde.
3. To accord Japanese nationals whose services may be required in connection with the supply of materials and services under the verified contract such facilities as may be necessary for their entry into Cape Verde and stay therein for the performance of their work.
4. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Cape Verde with respect to the supply of materials and services under the verified contract.
5. To maintain and use properly and effectively the vessel built under the Grant Aid.
6. To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the implementation of the Project.
7. To bear the commissions to the Japanese foreign exchange bank for the banking services based on the Banking Arrangement.

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2. Draft Report Explanation Team

(1) Members

Sadao AKAHOSHI	Leader Shipbuilding Division, Maritime Technology and Safety Bureau, Ministry of Transport
Kazunori MIURA	Senegal Office, JICA
Yasushi JOGO	Overseas Shipbuilding Cooperation Centre
Isao KOBAYASHI	Overseas Shipbuilding Cooperation Centre
Akio KIMURA	Overseas Shipbuilding Cooperation Centre
Ryoko TAKEDA	International Cooperation Service Center

(2) Survey schedule

order of days	date	day	survey activities
1	1992 3/21	Sat	Lv. Tokyo. Ar. Paris.
2	3/22	Sun	Lv. Paris. Ar. Dakar.
3	3/23	Mon	Visit the Japanese Embassy in Senegal and JICA's Senegal Office.
4	3/24	Tues	Lv. Dakar. Ar. Praia. Courtesy calls on Direccao Geral do Cooperacao Internacional and Arca Verde E.P. Discussion with Arca Verde E.P. on draft final report. Tour to Praia port.
5	3/25	Wed	Courtesy call on ENAPOR. Discussion of draft report at Arca Verde E.P.
6	3/26	Thurs	Lv. Praia. Ar. Mindelo. Tour to Porto Grande port and CABNAVE Shipyard. Discussion of draft report at Sao Vicente Branch, Arca Verde E.P.
7	3/27	Fri	Discussion of draft report at Sao Vicente Branch, Arca Verde E.P. Lv. Mindelo. Ar. Praia.
8	3/28	Sat	Working on documents.
9	3/29	Sun	Discussion among team members. Drafting work on minutes.
10	3/30	Mon	Signature on minutes.

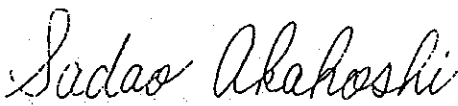
MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY ON THE PROJECT
FOR CONSTRUCTION OF
INTER-ISLAND GENERAL CARGO VESSEL IN
THE REPUBLIC OF CAPE VERDE
(CONSULTATION ON DRAFT REPORT)

In December 1991, the Japan International Cooperation Agency (JICA) dispatched a Basic Design Study team on the Project for Construction of Inter-island General Cargo Vessel (hereinafter referred to as "the Project") to the Republic of Cape Verde, and through discussions, field survey, and technical examination of the results in Japan, has prepared the draft report of the study.

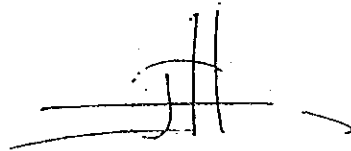
In order to explain and to consult the Cape Verdean side on the components of the draft report, JICA sent to Cape Verde a study team, which is headed by Mr. Sadao Akahoshi, Special Assistant to the Director of the Division, Shipbuilding Division, Maritime Technology & Safety Bureau, Ministry of Transport, and is scheduled to stay in the country from March 24 to 31, 1992.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

Praia, March 30, 1992



Mr. Sadao Akahoshi
Leader
Draft Report Explanation Team
JICA



Mr. Jose Luis Rocha
Director General of
International Cooperation

Attachment

1. Components of Draft Report

The Government of Cape Verde has agreed and accepted in principle the components of the Draft Report proposed by the team.

2. Japan's Grant Aid System

(1) The Government of Cape Verde has understood the system of Japanese Grant Aid explained by the team.

(2) The Government of Cape Verde will take the necessary measures, described in Annex I, for smooth implementation of the Project on condition that the Grant Aid assistance by the Government of Japan is extended to the Project.

3. Further Schedule

The team will make the Final Report in accordance with the confirmed items, and send it to the Government of Cape Verde by the end of May 1992.

S. Akashi

SH

Annex I

Necessary measures to be taken by the Government of Cape Verde in case Japan's Grant Aid is executed.

1. To provide data and information necessary for the design during implementation of the Project.
2. To ensure tax exemption and custom clearance of the vessel at the port of the Republic of Cape Verde.
3. To accord Japanese nationals whose services may be required in connection with the supply of materials and services under the verified contract such facilities as may be necessary for their entry into Cape Verde and stay therein for the performance of their work.
4. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Cape Verde with respect to the supply of materials and services under the verified contract.
5. To maintain and use properly and effectively the vessel built under the Grant Aid.
6. To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the implementation of the Project.
7. To bear the commissions to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangement.

S. Akahoshi



M E M O R A N D U M

BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF INTER-ISLAND
GENERAL CARGO VESSEL IN THE REPUBLIC OF CAPE VERDE

Both parties, the Government of Cape Verde represented by the Arca Verde and Japanese Draft Report Explanation Team have agreed the following modifications of the Basic Design.

1. FUEL OIL TANK CAPACITY

The fuel oil tank capacity shall be increased as much as possible keeping the required ballast water tank capacity.

2. OUTREACH OF CARGO GEAR

The outreach shall be extended to 3.5 meters at safety working load of 3.5 tons, on the condition that the double bottom water ballast tanks be completely filled at half cargo or less.

3. ANCHOR CHAIN

The anchor chain diameter shall be increased to 24 mm ϕ .

4. TYPE OF PROPELLER

The type of propeller shall be controllable pitch propeller (C.P.P.). The hold volume and hatch length may be reduced 55 cms, due to extended engine room.

5. FRESH WATER HYDROPHORE TANK

The tank capacity shall exceed 200 litres as space allows.

6. DEVICES AND TOOLS FOR REPAIRS ON BOARD

Necessary devices and tools shall be provided for repairs on board. The devices and tools list will be finalized by mutual consent.


Praia 30th March, 1992



/ RUI VERA-CRUZ /

Manager

- C.N.N. "Arca Verde" -



/ SADAO AKAHOSHI /

Leader

- Draft Report Explanation Team, J.I.C.A. -

3. List of Data Collected

Title	Received from
1. List of Arca Verde seamen for ships	Arca Verde
2. Data on ships owned by Arca Verde	Arca Verde
3. Island-to-island distances (Distancias em milhas entre os portos)	Arca Verde
4. Income and expenditure summary for each Arca Verde ship (87-89), including a general summary	Arca Verde
5. Table of data on M/N "Brava"	Arca Verde
6. Table of F.O., L.O. characteristics	Arca Verde
7. Programa Manutencao M/N "Brava" 1991/2/3	Arca Verde
8. Listing of surveys, recommendations and memoranda M/N "San Tiago" Det Morske Veritas	Arca Verde
9. Ditto M/N "Brava"	Arca Verde
10. Equipamentos de Oficina "Arce Verde" (Facilities at Arca Verde Manufactory)	Arca Verde
11. Report of inspection M/N "Brava"	Arca Verde
12. Forms for the above	Arca Verde
13. Maguinas-Consumos (oil consumption calculation sheet)	Arca Verde
14. Lotacao para Tripulacao M/N "Brava"	Arca Verde
15. Relacao das embarcacoes registradas na Capitania dos portos de Barlavento no servico de comercio maritimo de longo curso, cabotagem e costeila	Capitanias
16. Anexo A Relacao das Principais Convencoes (List of major conventions)	Capitanias
17. Associacao Caboverdeana dos Armadores da Marinha Merchant, Relacao dos Navios da Marinha de Comercio que operam na Cabotagem (List of domestic trade vessels)	Capitanias
18. Ditto que operam no Longo Curso (List of ocean-going vessels)	Capitanias

Title	Received from
19. Projecto de Regulamento sobre a Seguranca de Navegacao Marinha e da Vida Humana no Mar (A collection of domestic regulations for SOLAS)	Capitanias
20. Projecto de Decreto-Lei (Draft domestic regulations on the number of seamen, etc.)	Capitanias
21. Fax of 5/12/91 about SOLAS & MARPOL Convention	Arca Verde
22. Centro Formacao Nautica Copies of performance sheets	CFN
23. Copies of STCW qualification certificates	CFN
24. Certificado de Competencia (C/O & 3/O) Copies	CFN
25. Certificado de Competencia (issued by Soviet Union) Copies	CFN
26. Diploma (issued by Soviet Union) copy	CFN
27. CFN Certificado de Treinamento Copy	CFN
28. CFN organigrama (organization charts-present and future)	CFN
29. CFN annex A14 qualified personnel 1988-1991 (Number of graduates of Centro Formacao Nautica)	CFN
30. CFN Qualification Record (example of curricula)	CFN
31. CABNAVE pamphlets - 2 kinds (facilities, layout, etc.)	CABNAVE
32. Boletim Oficial Aug. 8, 91 Official Gazette-National Plan	Arca Verde
33. Buletin Oficial Apr. 6, 91 Official Gazette-Freight Tariff Table	Arca Verde
34. EMPA pamphlet	EMPA
35. Porto do Tarrafal, S. Nicolau	ENAPOR
36. Relatorio I semestre 1991, Statistics for first period of 1991	ENAPOR
37. Relatorio III trimestre 1991 Statistics for 3rd quarter 1991	ENAPOR
38. Relatorio Statistics for 1989/90	ENAPOR
39. Relacao das Empresas Publicas (List of public corporations)	Arca Verde

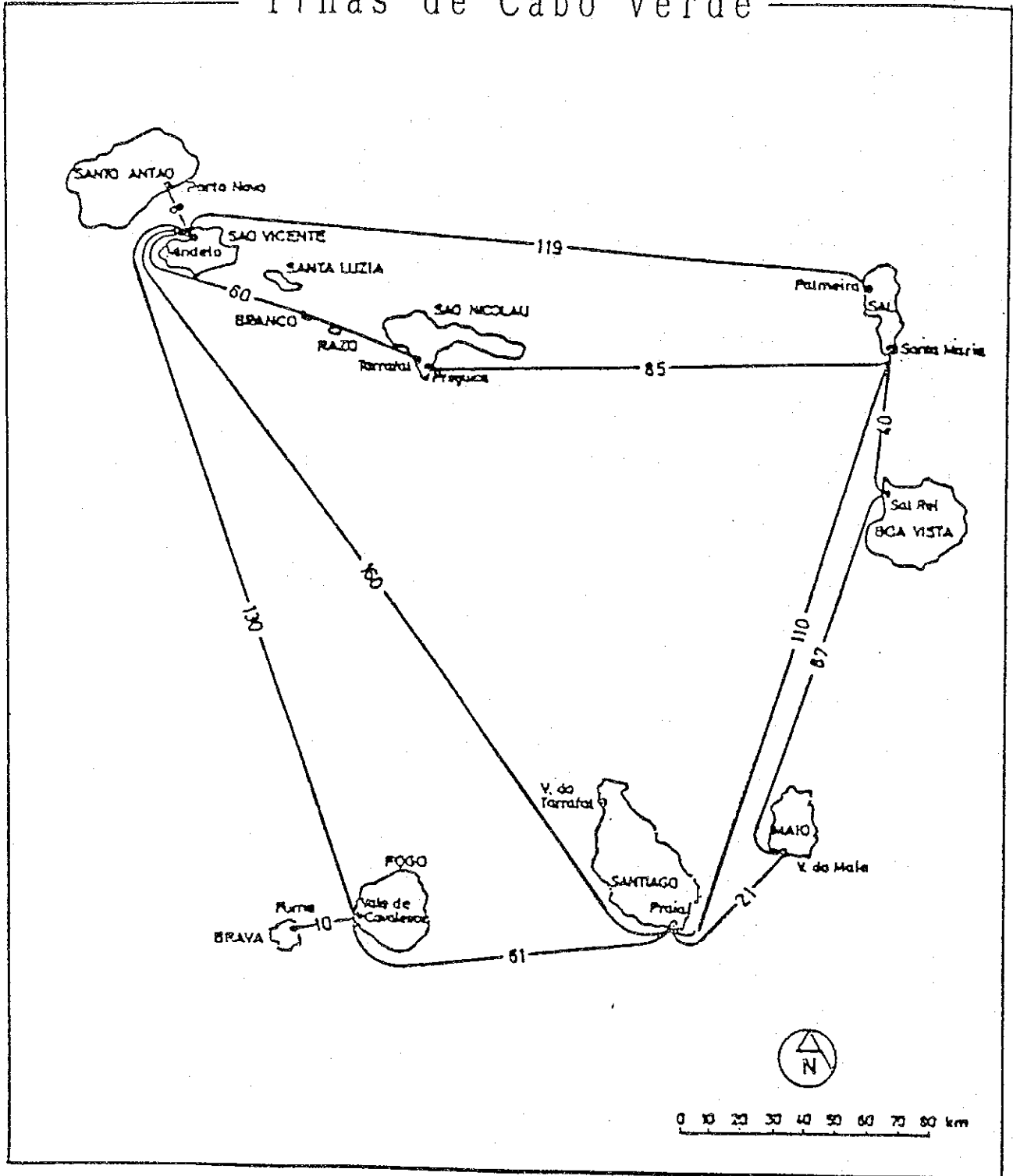
Title	Received from
40. Principal Data (List of main details new cargo ships)	Arca Verde
41. Obras acostaveis no porto de S. Vincente	Garantia, Companhia
42. Clausulas "Livre de avaria particular"	Garantia, Companhia
43. Institute Time Clauses Hull	Garantia, Companhia
44. Horario Voos domesticos-TACV (Airline timetable)	TACV
45. List of major harbor facilities and layout	ENAPOR
46. CABO VERDE EM NUMERO NOVEMBRO 1990	Arca Verde
47. BOLETIM OFICIAL 3/APR/91 (Official Gazette, List of cabinet members)	Arca Verde
48. PROGRAMA DE GOVERNO 1986-1990	Purchased
49. Magazine NOVAFRICA 3 Setembro 1991	Purchased
50. Magazine NOVAFRICA 4 Outubro/Nov. 1991	Purchased
51. BOLETIM DE CONTAS NACIONAIS 1991	Purchased
52. Cabo Verde 91 The Atlantic Paradise	Purchased
53. Alguns resultados provisorios do Recenseamento Geral da Populacao e Habitacao 1990	Purchased
54. Movimento Global de Mercadorias na ENAPOR	ENAPOR
55. Ports in Arquipelago de Cabo Verde	ENAPOR
56. Ilha de S. Vicente Port Grande	ENAPOR
57. Ilha de S. Nicolau Port Tarrafal	ENAPOR
58. Ilha de S. Nicolau Porto de Preguica	ENAPOR
59. Ilha de Sol Porto de Palmeira	ENAPOR
60. Ilha de Sol Porto de Pedra de Lume	ENAPOR
61. Ilha de Sol Porto de Santa Maria	ENAPOR
62. Ilha de S. Antao Porto Novo	ENAPOR
63. Ilha de S Antao Porto do Sol	ENAPOR
64. Ilha de do Fogo Vale de Cavaleiros	ENAPOR
65. Ilha de Fogo Porto do Mosteiros	ENAPOR

Title	Received from
66. Ilha do Maio Porto do Maio	ENAPOR
67. Ilha da Boavista Porto de Sal-Rei	ENAPOR
68. Plans in the Arquipelago de Cabo Verde	ENAPOR
69. Cabo Verde whole map	ENAPOR
70. EMPA Boletim Estatistica Trimestre	EMPA
71. Relatorio de Sinistro do M/N Barlavento ocorrido a 16 de fevereiro de 1990	Arca Verde
72. CFN Grade Curricular do Curso	CFN
73. Arca Verde List of Salary	Arca Verde
74. Boletim Anual de Estatistica 1989	Purchased
75. Boletime Trimestre do Comercio Externo	Purchased
76. Volume of Cargoes Carried by Arca Verde Domestic Trade Vessels	Arca Verde
77. Number of Passengers Carried by Arca Verde Domestic Trade Vessels	Arca Verde
78. Distancias em Milhas entre os Principais Portos do Arquipelago	Arca Verde
79. Movimento Portuario Nacional-Resume	ENAPOR
80. Arca Verde Mapa de Exploracao em dezembro de 1987~1990	Arca Verde

4. Distances Between Ports

Distâncias em milhas entre os portos

Ilhas de Cabo Verde



5. Out-Of-Service Status of Ships Owned by Arca Verde

Ship's name	1989												1990							
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
SANTA LUZIA (Freighter)	1																			
BRAVA (Freighter)																				
SANTIAGO (Freighter)								23		10							6		15	
ILHEU RASO (Freighter)																				
BARALAVENTO (Freighter and passenger ship)								1		10										20
SOTAVENTO (Freighter and passenger ship)																				
PORTO NOVO (Freighter and passenger ship)																				
FURNA (Freighter and passenger ship)								2		5									18	13

Note: [Hatched Box] Suspension from shipyard repairs
 [White Box] Suspension from general repairs or maintenance

Source: Arca Verde reference materials

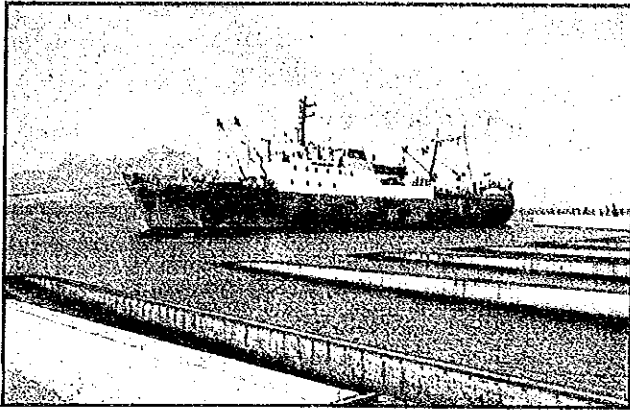
		1991												Number of suspension days (over a 3-year period)	Suspension days /All days (%)	Suspension days (yearly average)	
1990	1991	1	2	3	4	5	6	7	8	9	10	11	12				
9	10	22													10	10/1095=0.9%	3.3
			8												79	179/1095=7.2	26.3
					3	30									116	116/1095=10.6	38.7
															0		
															160	160/1095=14.6	53.3
			5	15											11	1/1095=11.0	3.7
								30	30	2					77	77/1095=7.0	25.7
												3	17		250	250/1095=22.8	83.3
		8 ships												703	(69.7)	234.3	
		TOTAL												(87.9)	(8.0)	(29.3)	
		Average without ILHEU RASO												(100.4)	(9.2)	(33.5)	

INTRODUCTION

— CABNAVE is a modern Shiprepair Yard located in the Island of S. Vicent (Cape-Verde Islands) in the thoroughfare of shipping between North and South Atlantic

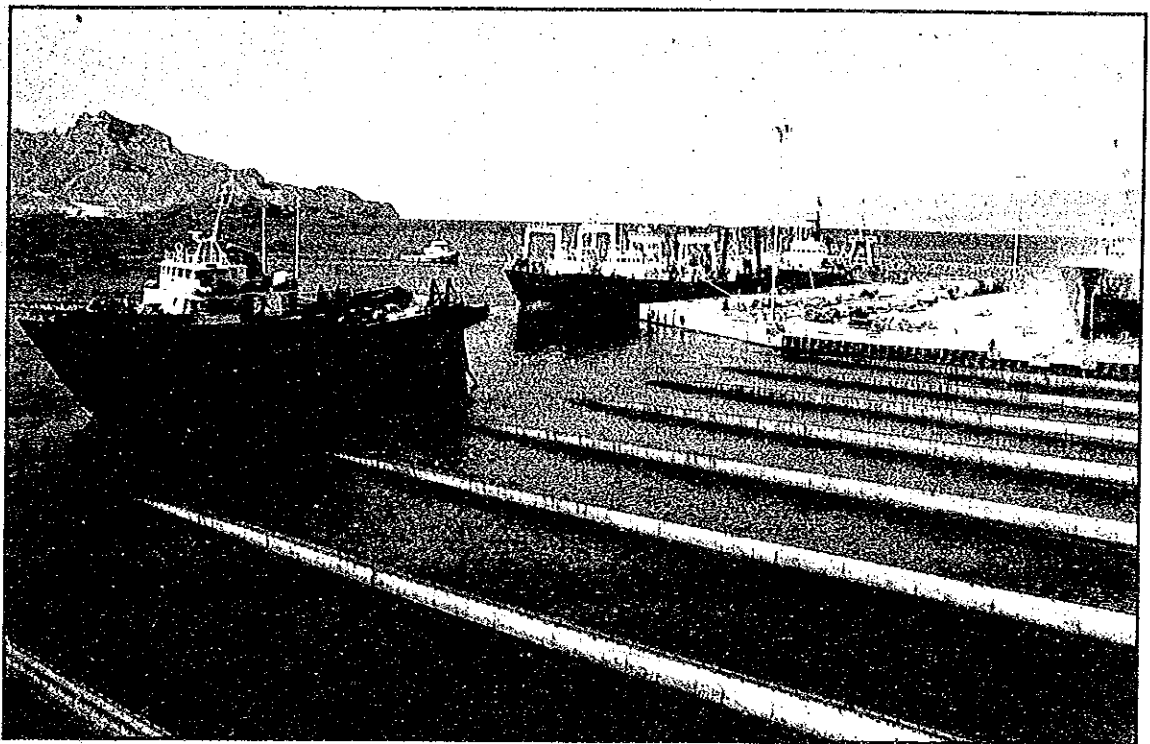
— Lat. 16° 55'N; Long. 25° 01'W —

— CABNAVE started its activities in 1983 and since then it became one of the first choices for shipowners wanting to make repairs along the West African Coast.



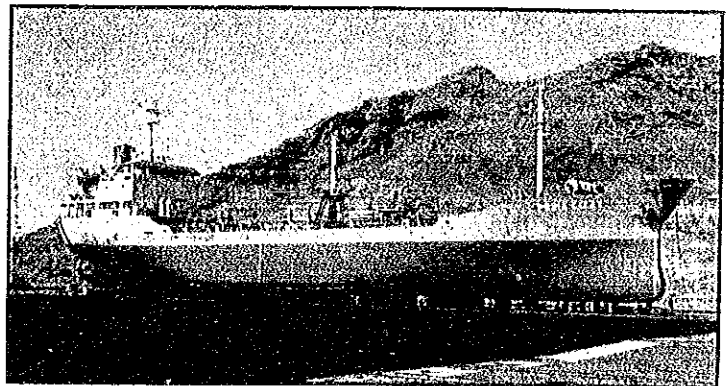
The Yard is supported by good facilities, e.g. six (6) repair parks for any type of vessels up to 110 X 18mts and 2.800Tons of Displacement, well equipped Mechanical, Plate, Electrical, Pipe and Carpentry shops, which allow the execution of quick and high quality works.

The excellent weather conditions allow us to carry out all type of works the year round.



DOCKING

Equipped with a Slipway system, CABNAVE Shipyard can guarantee four dockings in a day. In the average, no more than two hours are needed to dock and park a vessel.



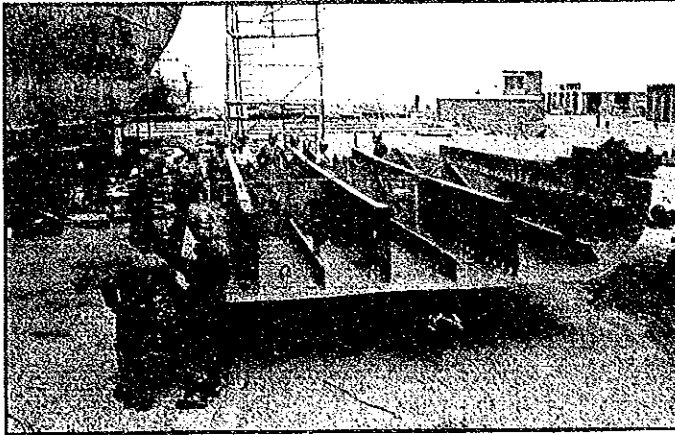
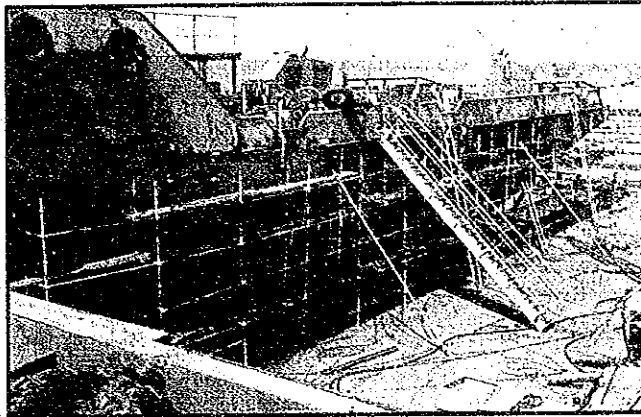


PLATE WORKSHOP

The plate workshop is equipped with modern machinery as listed:

- Assembling and welding plan;
- Welding benches;
- Hydraulic portal press 350 tons;
- Jib cranes;
- Tig welding machines
- Medium rolling machines;
- Guillotine shear;
- Flame automatic cutting machine;
- Grinding machines;
- Column drilling machines;
- Universal cutting machine;
- Universal scissors;
- Hydraulic horizontal press;
- Profile cutting trestle;
- Saw machines;
- Overhead flagging machines;
- Spot welding machines.



MECHANICAL WORKSHOP

The mechanical workshop is equipped with all the machines essential to the execution of reliable repairs.

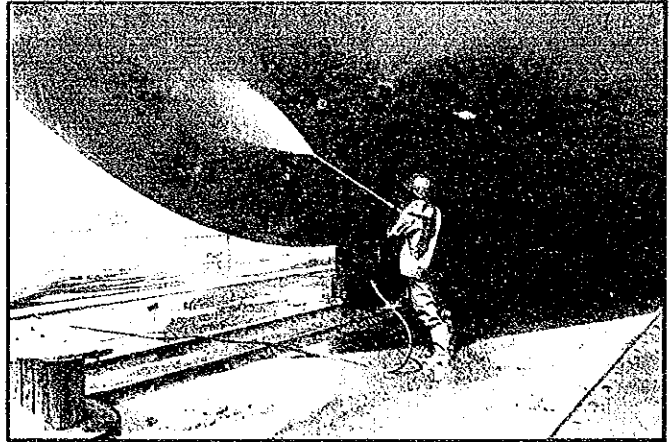


Listing of the main equipment:

- Hydraulic test bench for valves.
- Hydraulic portal press 80 tons.
- Grinding machine
- Vertical Band saw
- Radial drilling machine 50mm
- Slotting machine 360mm
- Universal milling machine (2un)
- Tracing plan and support
- White metal melting container
- High pressure hot water
- washing machine
- Balance machine
- Alternative saw
- Large parallel lathe 8mts
- Small boring machine 80
- Small vertical lathe 2mts
- Medium parallel lathe (3uns)
- Overhead crane 12 tons.
- Acid tanks
- Washing platforms
- Jib crane (2uns)
- Column drilling machine
- Universal cutter and tool grinding machine
- Tool sharpening machine
- Twist drilling grinding bench

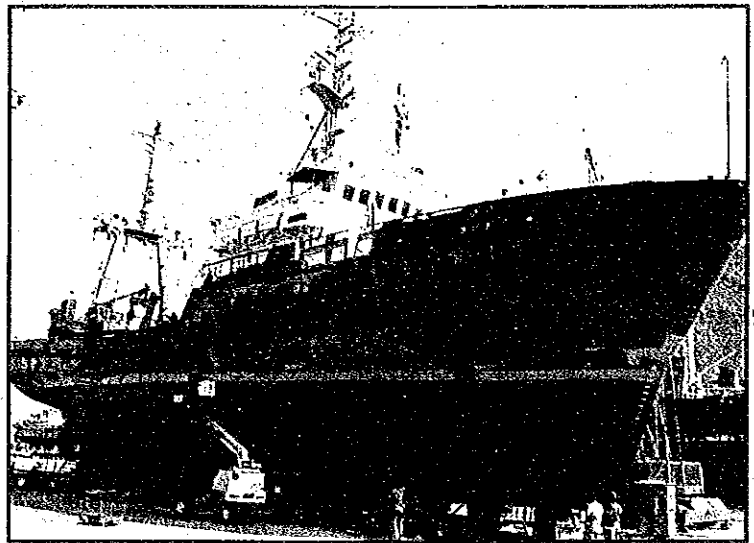
HULL TREATMENT DIVISION

Our excellent weather throughout the year, allows good surface treatment for painting.



List of works performed:

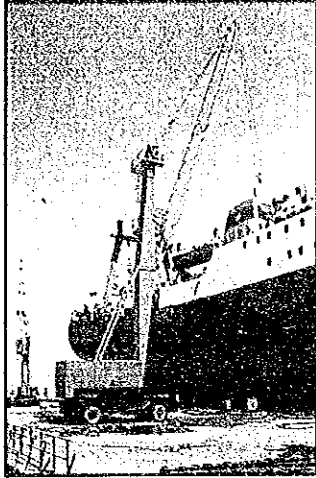
- H. P. wash 220 Kg/cm²
- Sandblasting up to SA 2.5
- Stain removal
- Airless painting



ELECTRICAL WORKSHOP

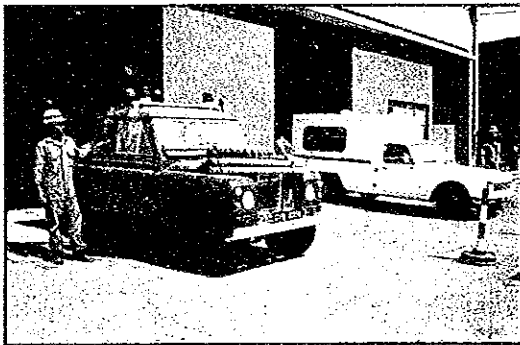
Well equipped and staffed with trained personnel to perform works such as:

- General overhauling (Motor, Alternator, Switch Boards, Etc.)
- Quality rewindings
- All types of electrical installation and repair.
- Electronics



SUPPORT FACILITIES

- Docking and berth arrangements
- Riggers
- Safety and fire prevention center
- Heavy lifting and transport equipment



SAFETY

The Yard considers that no work should be performed without taking the necessary measures. For this reason big investments have been made in this field to fully guarantee safety.

STOREHOUSE

CABNAVE has put special efforts in supplying materials to the clients on time and at low cost. To this effect, custom free materials and paints are kept in stock in order to provide good service.



JICA