

REPORT ON BASIC DESIGN OF
THE FISHERIES TRAINING VESSEL
FOR
THE KINGDOM OF MOROCCO

OCTOBER, 1979

Japan International Cooperation Agency

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FOR
THE KINGDOM OF MOROCCO**

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Preface

In compliance with the request of the Government of the Kingdom of Morocco, the Government of Japan has decided to make a survey for the basic designing of a fishery Training Vessel to the Kingdom of Morocco. The Japan International Cooperation Agency (JICA) conducted the survey by dispatching a team to Morocco in August 1979.

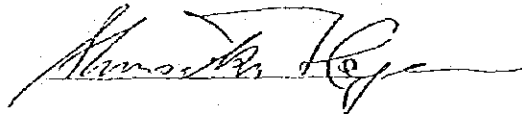
In carrying out the field survey, the team had close cooperation of the Authorities concerned of the Government of the Kingdom of Morocco.

The results of the field survey and the discussions with Moroccan officials were carefully examined and have been compiled into the report presented herewith.

It is my sincere hope that the Report would prove to be useful for the construction of the fishery Training Vessel, and contribute to the enhancement of friendly relations existing between the Kingdom of Morocco and Japan.

I wish to express my deep appreciation to the Authorities concerned of the Government of the Kingdom of Morocco for their cooperation and hospitality extended to the team during the field survey.

October, 1979



SHINSAKU HOGEN
PRESIDENT
JAPAN INTERNATIONAL COOPERATION AGENCY

REPORT ON BASIC DESIGN OF THE FISHERY TRAINING VESSEL FOR THE KINGDOM OF MOROCCO

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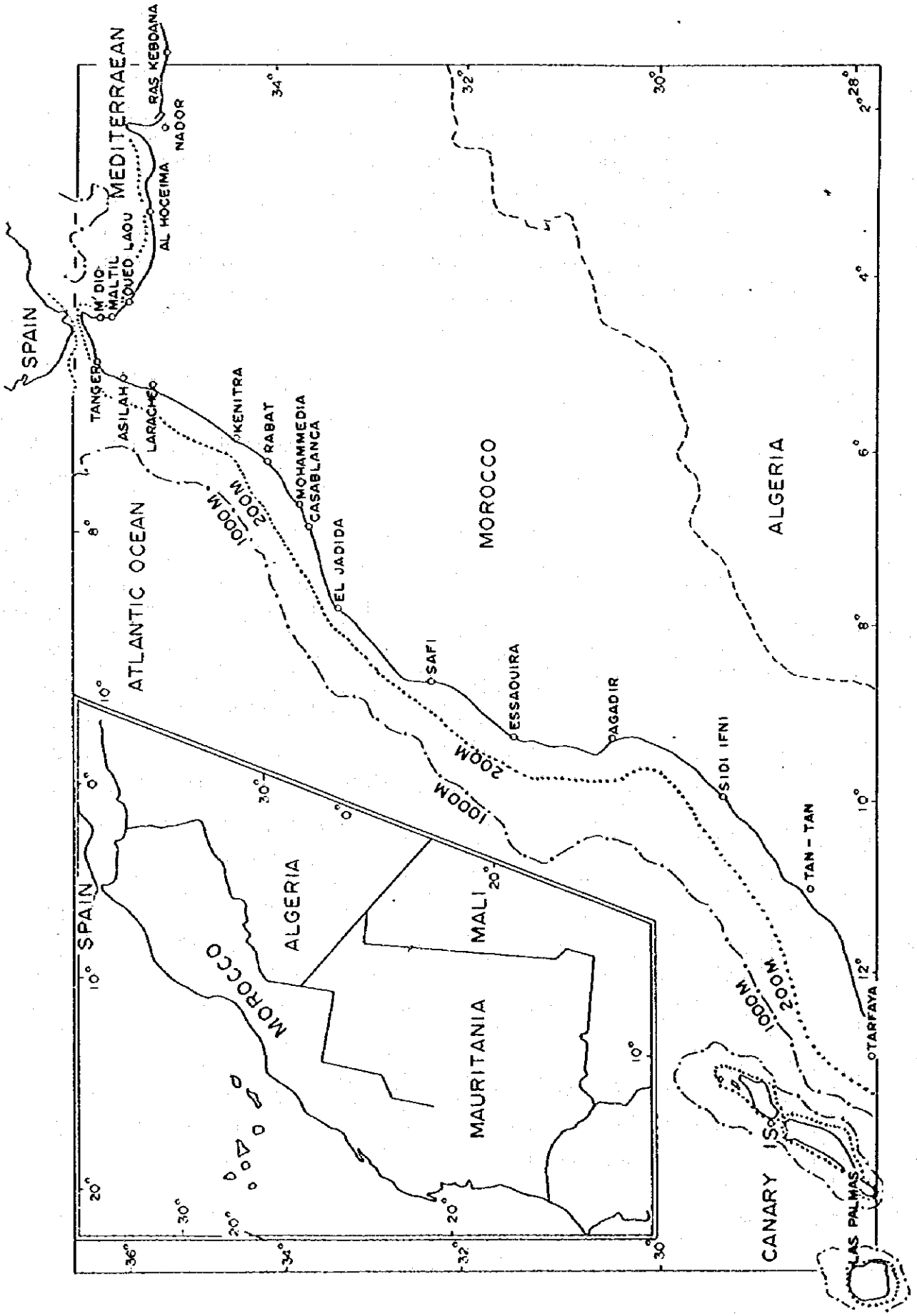
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MOROCCAN FISHING PORTS AND CONTINENTAL SHELF



PURPOSE OF SURVEY AND FORMATION OF SURVEY TEAM

The purpose of the survey was to study fisheries and fisheries training in relation to the the fisheries training vessel to be granted to the Kingdom of Morocco to promote fisheries, to assess the justifiability of the grant and its effects in the round, and to formulate an optimum grant plan and basic specifications.

- Chief : Mr. Aritune FURUKAWA
Deputy Director, International Affairs
Division, Oceanic Fisheries Department,
Fishery Agency
Ministry of Agriculture, Forestry and
Fishery
- Member : Mr. Fumiaki KUWAKINO
Social Development Cooperation Department,
Japan International Cooperation Agency
(JICA)
- Member : Mr. Hirofumi IGARASHI
Engineer (Marine Engine)
- Member : Mr. Shigeyuki ARAKI
Engineer (Vessel Design)
- Member : Mr. Heiichiro MASUYA
Engineer (Fisheries Equipment)

SUMMARY

To prepare a master plan for the fisheries training vessel for the Kingdom of Morocco, the survey team conducted a field survey from 7 to 22 August 1979 in response to a request by the Government of the Kingdom of MOROCCO to the Japanese Government.

The JICA, realizing the significance of its assigned mission, organized a survey team headed by Mr. Aritsune Furukawa and dispatched it to Morocco to conduct a field survey from 7 to 22 August 1979.

In Morocco, coastal fishing, centered on sardines, has been growing steadily. Deep-sea fishing is conducted by 50-odd trawlers of 250-500 gross tons. Most crew members of the larger fishing boats are non-Moroccan; however, the Moroccan Government deems it necessary that the pelagic fisheries industry be organized, structured, and promoted by Moroccans. Therefore, it is imperative to train seamen and professional fishermen.

The government agency responsible for the education and training of seamen and professional fishermen is the Marine Marchande et Pêches Maritimes, which presently administers the Superior Institute for Maritime Training (Institut Supérieur d'Études Maritimes) in Casablanca and seamen training schools (Ecoles Professionnelles Maritimes) in Agadir and Safi. The agency will open additional seamen training schools in Casablanca and Al Hoceima in 1980.

Students attending these schools are required to take an aboard-ship training course for a certain period before they are qualified to sit for the licensing examinations. The Marine Marchande et Pêches Maritimes has only one training ship (220 GT), which is shared between the institute and the seamen training schools; a situation which does not provide satisfactory practical training opportunities for the students.

The survey team visited the institute in Casablanca and the training schools in Agadir and Safi, and found that their teaching materials and equipment were inadequate, although they have already graduated a number of professionals.

Under such circumstances, the fisheries training vessel that the Moroccan Government asked the Japanese Government to grant will be highly beneficial to the Kingdom of Morocco in two respects: it will provide a means of practical at-sea training for the enthusiastic students and it will also provide various educational equipment.

This vessel will be used exclusively by the seamen training schools with her home port in Agadir.

The survey team studied the ways-and-means requirements for ensuring the smooth operation and management of the training vessel for the purposes for which it is to be granted, and found no particular problems with respect to repair dock, supply of spare parts and lubricants, and so forth.

The survey team hopes that smooth operation and management of the training vessel will prove beneficial in promoting the fisheries industry along the lines of the Moroccan national policy.

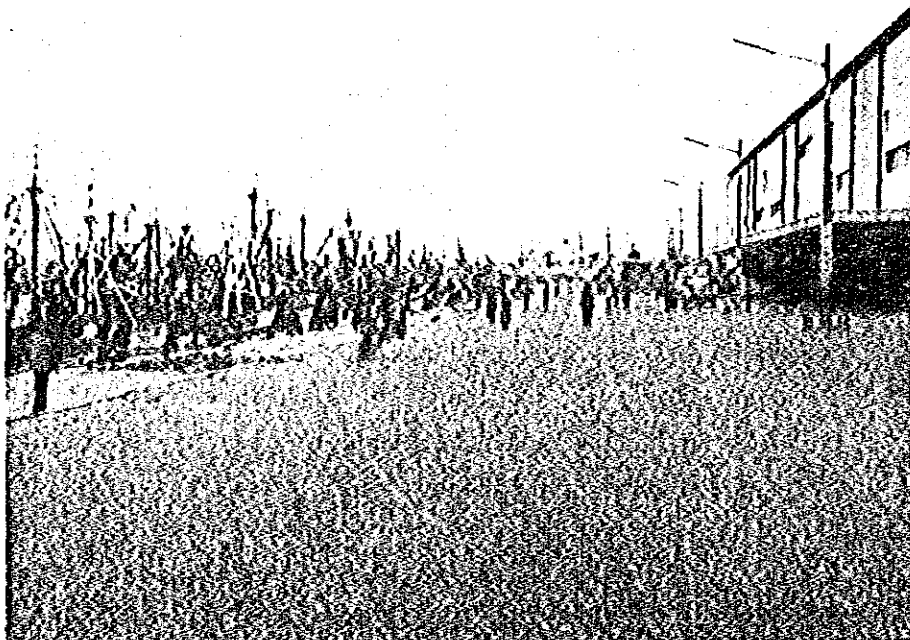
1. FISHERIES IN THE KINGDOM OF MOROCCO

1.1 GENERAL

The fisheries industry in Morocco is represented by round-haul sardine netting with an annual catch of 200,000-300,000 tons.

In Morocco, the types of fishing in practice today include deep-sea trawling, seining, coastal trawling, angling, and long-lining. The number of fishing boats is about 1,600, including 50-odd 200-500-ton pelagic trawlers.

Sardine accounts for about 80% of the catches, with horse mackerel, mackerel, anchovy, and others accounting for the balance. Of the 14 fishing ports in Morocco, Agadir, Essaouira, Safi, and Casablanca are most important, landing the majority of the catches.



Agadir fishing port and wholesale market.

These key fishing ports are on the Atlantic coast, mostly in Southern Morocco.

Agadir accounts for more than 50% of the total catches in Morocco. Domestic consumption of fresh fish in Morocco has averaged about 5 kg/person/year for the last few years, but is steadily increasing in keeping with urban population growth, now accounting for about one-third of the total Moroccan population, and increased consumer spending.

While Casablanca, Saffi, and Agadir operate colossal fish markets, the capacities of their ice plants are grossly deficient.

The survey team observed sardine seiners returning home without cold storage and sprinkling the fish with salt to keep freshness. Despite such pathetic, though sincere, efforts, the fish cannot be labeled "fresh" and are used to produce low-priced fish meal.

Although parts of the catches are exported in the forms of fresh fish, frozen fish, canned foods, fish meal, and so forth to obtain foreign exchange, for want of processing and distribution facilities, most of catches are destined to become low-priced animal food and fertilizer. Thus, about half the sardine catch cannot be used as high-priced fresh fish or material for canned foods.

In 1978, exports from Morocco amounted to DH 6.261 billion of which 39% was rock phosphate; 13% was citrus fruits; 8.5% was vegetables; and 6% was fish, with an export value of DH 373.5 million. Thus, marine products play an important role in earning foreign exchange for Morocco.

Of the marine products exported in 1977, canned foods accounted for 69% of which about 81% was sardine, fresh and frozen fish for 13%, and fish meal and oil for 9%.

France is first in importing marine products from Morocco, followed by other European and African countries; Japan stands sixth or seventh.

1.2 STATUS QUO OF DEEP-SEA FISHING

Most of the 50-odd deep-sea trawlers flying the Moroccan flag are operating with Las Palmas, under Spanish rule, as a base.

Las Palmas is one of the top-ranking fishing bases in the world. The Moroccan deep-sea trawlers usually call at Moroccan ports only for annual inspection.

These ships sell frozen fish to foreign countries, but pay foreign currencies for provisions, fuel, repair services, and so forth; thus, they are not earners of foreign exchange. Lamenting on this situation, the Moroccan Government is considering the construction of proper fishing bases of its own.

In many cases, the greater part of the deep-sea trawler crews are non-Moroccan and the Moroccans are usually lower ratings.

Against this background, the forward-looking Moroccan Government has played up deep-sea fishing to promote the fisheries industry for Morocco's future well-being.

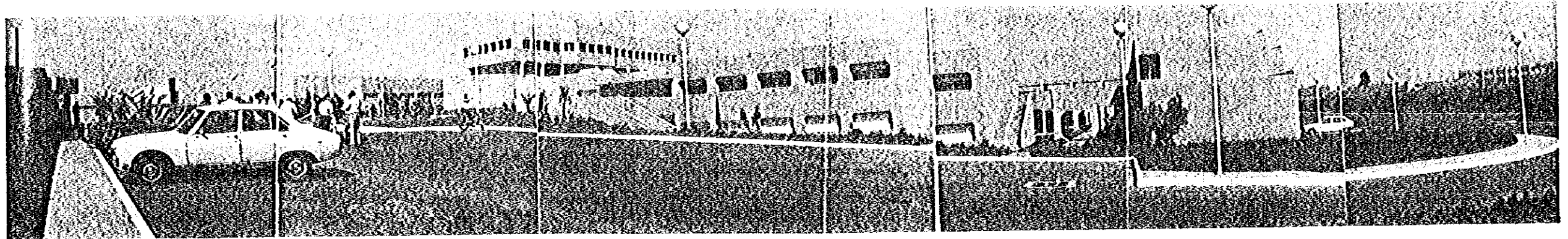
The most important step in this respect will be the training of Moroccan seamen and professional fishermen.

2. FISHERIES EDUCATION IN THE KINGDOM OF MOROCCO

2.1 EDUCATIONAL INSTITUTIONS

There are fisheries educational and training institutions in Morocco. In Casablanca, there is a senior high school for seaman training called Institut Supérieur d'Etudes Maritimes, and in Safi and Agadir, there are junior high schools for seaman training called Ecoles Professionnelles Maritimes. Additional Ecoles Professionnelles Maritimes are under construction in Al Hoceima.

In addition, the Ecole Nationale des Officiers de la Marine Marchande and one-time Ecoles Professionnelles Maritimes are being converted into Ecoles Professionnelles Maritimes.



Institut Supérieur d'Études Maritimes

Those having a baccalaureate, seventh grade graduates of the secondary school, and those expected to complete the sixth grade of the secondary school are eligible to sit for the entrance examination to the first grade of the Institut Supérieur d'Etudes Maritimes. After admission to the Institut, the students attend classes for 1 to 3 years, then go aboard a training ship.

The Institut is comparable to a Japanese University or Technical College.

Admission to the first grade of the Ecole Professionnelles Maritimes is permitted to those qualified by examination who have a scholastic ability tantamount to that of the fourth grade of the secondary high school, or who have a certificate of completion of primary school and have a scholastic ability of the first or second grade of junior high school. Upon admission, they attend classes for 1 or 2 years, then some of them are trained at sea to obtain a certificate. The Ecole Professionnelles Maritimes is comparable to a Japanese junior or senior high school for seaman training.

2.2 IMPROVEMENT AND EXPANSION OF EDUCATIONAL INSTITUTIONS

In recent years, the Moroccan Government has stepped up its educational efforts through its Five-year Plan 1973/1977, Three-year Plan 1978/1980, and others. At the same time, the Moroccan Government has endeavored to improve and expand the educational and training facilities.

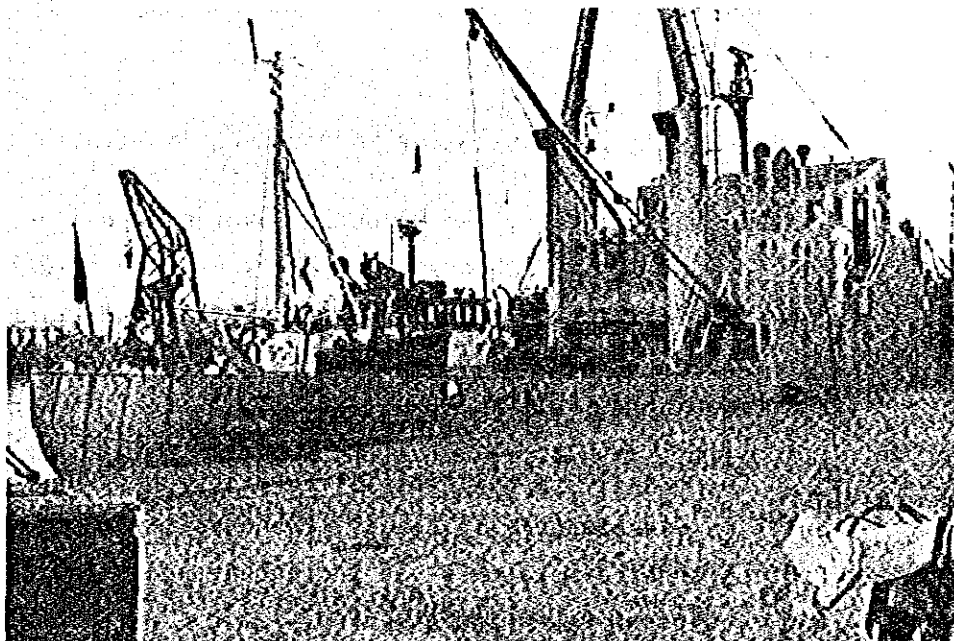
For example, a new Institut Supérieur d'Etudes Maritimes was built in Casablanca. In Agadir, the capacity of the Ecoles Professionnelles Maritimes was increased, and teaching materials and equipment are being prepared.

In Al Hoceima, on the Mediterranean, construction of an Ecole Professionnelles Maritimes is under way. It is planned to convert the Ecole Nationale des Officiers de la Marine Marchande in Casablanca to an Ecole Professionnelles Maritimes.

A 10-year-old French-built ship is the only vessel available for training the students at sea. To date, it has been shared between the Institut and two Ecoles Professionnelles Maritimes; however, two additional Ecoles Professionnelles Maritimes are scheduled to open in the near future, so five schools will have to share one training vessel by reducing the already short training hours each is entitled to.

Under the present conditions, the students are forced to rely on private merchant ships for their training at sea, and the importance of finding viable solutions to this training problem may well become critical.

Fully aware of the stark realities, the Transport Minister and the Officers of the Marine Marchande et Maritimes have expressed strong desires for having an additional training ship from Japan.



Fisheries training vessel now in use by the Marine Marchande et Pêches Maritimes

2.3 INSTRUCTORS, EXPERTS, AND STAFF

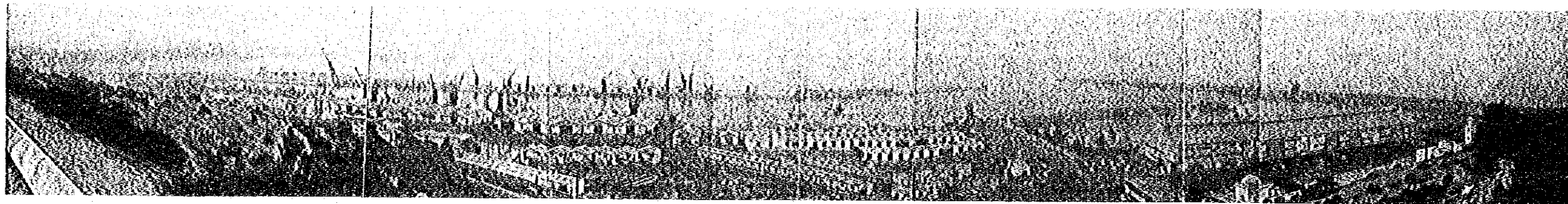
The instructors and experts in Morocco have been educated in France. Short of educated and experienced teaching and training personnel, the Moroccan Government has sent students abroad for study. At present, there are three experts from FAO in the Ecoles Professionnelles Maritimes.

Two additional experts from FAO will go to Morocco next year. These FAO experts are very busy with teaching and the Moroccan Government asked the survey team to make arrangements for dispatching a Japanese expert to assist with the fisheries training vessel to be granted.

The Five-year Plan 1973/1977 was implemented to produce 3,000 technicians and 2,000 highly qualified staff; however, up to 1979, only 1,148 have been produced, seriously affecting development of the fisheries industry in Morocco.

3. **INFRASTRUCTURAL FACILITIES**

 The survey team visited Agadir, the largest fishing base in Morocco, to study fishing bases in Morocco and to study the availability of services for the training vessel. The findings and opinions of the survey team follow:



Agadir Port

3.1 PORT OUTLINE

Agadir is a fishing port accounting for more than 50% of the total catches in Morocco. The port is remote from the central business district and residential quarters, and the fish meal factories are several kilometers from the port. The city is well designed and Agadir is a popular winter resort.

There is a spacious yard behind the fishing boat wharves. There are large wholesale markets, spacious yards for fishing repair, repair shops, and wooden shipbuilding docks.

The wharf for landing fish for fish meal has several fish pumps.

3.2 REPAIR FACILITIES

3.2.1 Repair Shop in Agadir

The repair shop is small, but is equipped with several lathes, one of which is 3 meters long. The largest face lathe has a 1-meter diameter face plate.

If the fisheries training vessel uses Agadir as its home port, simple repair services such as repairs of otter board, pad welding of rollers, cleaning of pistons, pipe replacement, welding of spare parts, and simple machining are available.

3.2.2 Docks in Casablanca

For bottom cleaning and scaling on a slipway or large-scale overhaul, the fisheries training vessel will have to go to Casablanca.

Casablanca has a 150-meter dry dock and a 200-ton slipway. There is a 15-ton crane alongside the dry dock, and one shop has a 10-ton crane. The largest lathe available is 8-meters long. The largest face lathe has a 2.6-meter diameter face plate.

The shipbuilding facilities in Casablanca are modern and 220-ton steel trawlers are built there. It is therefore possible for the fisheries training vessel to receive thorough maintenance and inspections services (regular inspection).

3.3 LOGISTIC SERVICES

3.3.1 Fuel Oil

There is no bunkering pipeline for loading fuel into a ship. Fuel is loaded into a ship direct from a tanker truck or through the intermediary of a barge. The bunkering capacity is about 20 kiloliters/hour.

For deep-sea fishing boats, there should be a bunkering facility with a capacity of 60-100 kiloliters/hour.

The survey team was told that diesel oil could not be obtained.

3.3.2 Lubricants

Although the survey team could not ascertain all the facts, it is unlikely that any brand of lubricant is readily available.

If lubricants are scarce in Morocco and if import restrictions are not so tight, it will be feasible to find near-by, sources in Europe or in Las Palmas.

In any event, it will be necessary to allow ample lead time to stock lubricants at the base port.

3.4 FISHING GEAR AND SPARE PARTS

3.4.1 Fishing Gear and Spare Parts Availability

The survey team visited fishing gear dealers, and found short supplies of fishing gear, rigging, and spare parts. The operation of the fisheries training vessel may be curtailed unless a considerable quantity of spare parts are stocked.

For example, a foreign joint venture that operates fishing boats, with Las Palmas as a base, purchases hard-to-find spare parts, rigging, and fishing gear from Japan in advance; however, Las Palmas, a free port, can supply plenty of other goods.

3.4.2 Differences in Applied Standards and Types

Some items such as light bulbs and cathodic protection zinc differ in standard and type from those in Japan. Thus, it is necessary to provide a way for procuring such items.

3.5 COASTAL STATION

There is a coastal radio station, Centre Radio Maritime d'Agadir, operating under the jurisdiction of the Ministers des PTT. This station uses medium frequency radio waves only: short wave is not used.

4. FISHERIES TRAINING VESSEL

4.1 JUSTIFIABILITY OF GRANT

As previously stated, the Kingdom of Morocco places its hopes on the fisheries industry, especially the training of leaders and staff engineers, to promote pelagic fisheries in Morocco.

The survey team talked with the Transport Minister and the Officers of Marine Marchande et Pêche Maritimes, the de facto agency responsible for operation and management of the fisheries training vessel, and clearly perceived how great their hopes were for the fisheries training vessel and how enthusiastic they are to tackle the problems of fisheries industry promotion. It is believed that the fisheries training vessel would receive some care, however, the survey team felt uneasy about its future because the equipment with which the Moroccans are familiar is French. Granting a training vessel, engine, and other equipment will not be enough. For this reason, the survey team recommends that the Japanese Government extend technical cooperation for the purpose of follow-up.

4.2 BENEFITS EXPECTED FROM THE GRANT

The ultimate goal of the fisheries promotion programs now being pushed by the Moroccan Government is to build up pelagic fisheries by Moroccan seamen and professional fishermen.

To this end, the following steps will be needed:

1. Training of seamen and professional fishermen.
2. Encouragement of Moroccan seamen and professional fishermen to go aboard the deep-sea fishing boats, which now are mostly crewed by non-Moroccan seamen.
3. Promotion of pelagic fisheries by the Moroccans themselves.
4. Development of fishing bases in Morocco.

These goals cannot be attained in a short time, and there will be many obstacles in achieving them.

5. FISHERIES TRAINING VESSEL SPECIFICATIONS

5.1 BASIC PRINCIPLES

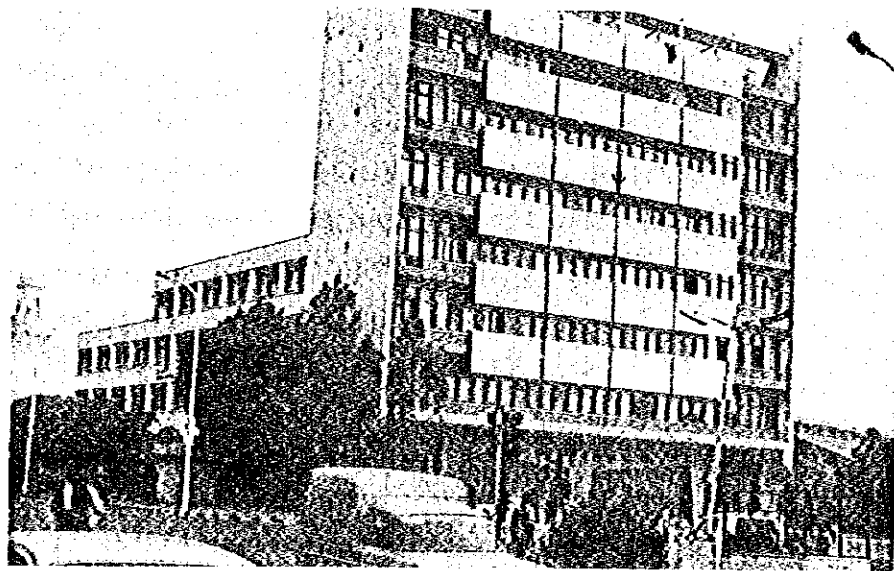
The survey team prepared data and information before the field survey for the purpose of meeting the Moroccan needs as much as possible, and formulated the following opinions:

1. Pelagic fisheries in Morocco is centered on trawl fishing, and the training vessel should be a seaworthy pelagic trawler.
2. The multipurpose fisheries training vessel should be deleted from the project because past experience shows that the fishing gear capacities and systems are severely governed by limiting constraints of space and cost, and because the training ships built in the past have not made a good showing.
3. The training vessel should be of a type that allows the crew to process fish even in a rough sea, that is, it should be a twin deck vessel.
4. In addition to the training functions, the training vessel should be equipped with fishing, processing, and storage facilities, close in both scale and performance to those of an actual ship, so that the students can acquire practical working knowledge and skill.
5. The complement, including two instructors, should be as large as possible, that is, at least 35 or 36 persons if 15 or 16 students are to be aboard the vessel for training.
6. The training vessel should be designed and constructed to stand as much time under way as possible.

The survey team explained these factors to the Officers of the Marine Marchande et Pêches Maritimes and the owner-to-be of the fisheries training vessel offered and obtained a nearly unanimous consent to them, except the following requests made to the survey team:

The Marine Marchande et Pêches Maritimes (hereinafter referred to as MMPM) desires--

1. a training vessel with an overall length of about 35 meters and a gross tonnage of 230-250 tons;
2. to equip it with a 1000 hp main engine;
3. to incorporate 600-1000 meter bathypelagic trawling and ordinary trawling into the training course;
4. a fish hold of about 100 m³ capable of a controlled temperature from 0.0 to -0.5°C to preserve fish;
5. to equip the training vessel with an icemaker;
6. to provide the training vessel with a refrigerated fish hold of at least 20 m³ and a 1 ton/day quick freezing equipment;
7. to equip the training ship with two radar, one fish finder and one sonar system for the purpose of student training.



Marine Marchande et Pêches Maritimes, Casablanca,
where most meetings were held

5.2 DISCUSSIONS

The MNPM made counter offers to the survey team's proposals, and they were discussed as summarized below:

Summary of discussions

1. Moroccan law requires the installation of a 2182 kHz automatic alarm receiver.

Remarks

- a. The exciter for the main transmitter must be a spot type, not a free synthesizer type.
 - b. A1 and A2 will not be used for the present (their use requires a qualified radio officer), but should be installed for future use.
 - c. The particulars of the Moroccan coast stations, including types, frequencies, and outputs will be reported later.
2. It is desired to plan the fish hold and quick freezing area in a manner that permits student training in both processing and quick freezing of fresh fish. The desired terms are as follows:
 - a. Fish hold capacity of about 100 m³, controllable to 0.0 to -0.5°C.
 - b. A refrigerated fish hold of at least 20 m³, controllable to -25°C, which may be installed on the upper deck if necessary.
 - c. For a and b above, two quick freezing areas with a combined capacity of 2 tons/day should be installed. One quick freezing area with a 1 ton/day capacity will suffice if space is not available.
(Flat tank surface temperature: -30°C)
 - d. A semiairblast-type quick freezing area may be necessary for freezing large fish, but a contact freezer is

acceptable as small fish will also be frozen.

Large fish are frozen with the flat tank suspended, and there must be a space of 200 mm or more between adjacent flat tanks.

e. Standard size Japanese freezing pans will suffice.

3. Ice is in short supply, and the MMPM desires that the training vessel have an icemaker with a 1 ton/day or greater capacity. Sea water will be used for making flake ice.
4. Air conditioning of the accommodation area is not necessary, but heating is required because the training vessel will sail the Mediterranean Sea. It is preferable that each room have an electric heater.

The maximum and minimum temperatures of air and water expected in summer and winter, which should be taken into account for the basic design of the vessel, are as follows.

	<u>Max. (summer)</u>	<u>Min. (winter)</u>
Air	35°C	7°C
Sea water	26°C	13°C

5. The complement and accommodation requirements are planned as follows:

Master Fisherman	1	(single room)
Captain	1	(single room)
Chief Engineer	1	(single room)
Assistant Master Fisherman	2	(twin room)
Chief Officer	1	
2nd Engineer	1	(twin room)
Cook	1	}
Oiler	1	
Boatswain	1	
Seamen	3	(compartment)
Students	16	(compartment)
Total:	29	

Five or six spare beds should be considered for a complement of 34 or 35.

6. The following oceanographic survey equipment should be provided.

a. Motor-driven winch for oceanographic survey x 1 unit
2.2 kW, 85 kg x 1.9 m/s.

b. Nansen-type reversing water sampler (approx 1300 cc)
x 1 unit w/frame to accommodate 2 thermometers.

c. Reversing thermometers:

Unprotected type: -2 to +30°C x 2 units

Protected type: -2 to +30°C x 2 units

d. Plankton net (mesh-type; large, medium, small) x 1 each

7. In addition to ordinary trawling, the training vessel will perform bathypelagic trawling (600-1000 m deep) for the purpose of training, and the following should be provided:

a. Trawl winches capable of winding 1800 m long 18 mm diameter rope.

b. One set of deep-sea lobster fishing gear.

8. For the purpose of training the students, the longitudinal length of the bridge should be increased from the 3.4 m specified in the discussion drawing to 5.5 m.

The trawl winch control stand aft of the bridge should be brought in to the bridge, enlarged as above.

9. The vegetable chamber should not be an open natural-draft-type, but a cold storage type. The cold storage temperature should be +2 to +5°C.

10. The bridge should be equipped with the following instruments available for training the students:

a. Radar x 2 units

b. Fish finder + 1 sonar unit

c. In relation to the radar, sonar and fish finder, a tentative choice list was submitted by the Moroccan side, and the survey team agreed to examine it.

11. Spare parts for the Japanese equipment should be provided in as large a quantity as possible as they are not readily available in Morocco.
12. For economy, the main engine should permit the use of heavy oil as well as the fuel widely used in Morocco at present, and its related equipment should meet this fuel requirement.

The characteristics of the fuels will be reported as soon as data is available.

- Notes: 1. At a meeting, the MMPM requested that, for future purposes, the training vessel meet the international rules expected to come into effect according to the International Convention for the Safety of Fishing Vessels, 1977.

This request was removed from the agenda, partly because the training vessel does not come under the fishing vessel category and partly because the applicability of such rules to the training vessel is considered moot.

The Moroccan side insisted that the survey team make efforts to fulfill the expected rules, however.

2. At a meeting, the survey team inquired about the supply situation of Freon-22 used as a refrigerant in the training vessel, and the answer was that there was nothing to hamper the supply.
3. In answering the survey team's question about the use of the English language in preparing the drawings, documents, nameplates, and as forth the MMPM stated that the French language would be better, but that English will do.

4. The survey team was asked to submit to the shipowner, by way of reference, a copy of each shop drawing approved by the Consultants and NK for the training vessel.

5.3 AGREEMENT

The Moroccan wishes and requests concerning modification of the specifications for the training vessel were cogent, and the survey team was committed to making every effort to meet them insofar as the basic engineering and budgetary conditions permit, because some of the Moroccan requirements make the training vessel too costly.

The matters discussed in 5.2 "Discussions" were summarized in a memorandum.

The specifications of the training vessel agreed upon between the survey team and the MMPM are as follows.

1. Aft trawl fisheries training vessel (twin deck type)
2. Ship classification Nippon Kaiji Kyokai (NK)
3. Principal particulars

Overall length	38.5 (approx)
Length between perpendiculars	33.0 m (approx)
Molded breadth	7.8 m (approx)
Molded depth	3.3 m (approx)
Loaded draft (design)	2.9 m (approx)
Gross tonnage	240 tons (approx)
Fish hold (bale)	100 m ³ (approx)
Fuel oil tank	125 m ³ (approx)
Freshwater tank	35 m ³ (approx)
Main engine (w/variable pitch propulsion)	4-cycle, 1000 hp, diesel engine, 1 unit
Cruising speed	10.5 knots (approx)

4. Unit of fishing trips

Between port and fishing ground and return	7 days
Operations at fishing grounds (drill)	20 days
Total:	27 days

5. Complement

Officers and crew	18 persons
Students	16 persons
Total:	34 persons

6. Fishing gear

Including one 8-ton 70 m/min trawl winch unit.

7. Oceanographic survey equipment

Including one 2.2 kW winch unit for oceanographic survey.

8. Power supply unit

Power service	380 VAC, 50 Hz, 3-phase
Lighting service	220 VAC, 50 Hz, 1-phase

9. Instruments for navigation, fishing, and communication

Radar	1 unit
Fish finder	1 unit
Gyro compass	1 unit
Net recorder	1 unit
Transceiver	1 unit
International VHF radio telephone	1 unit
Direction finder	1 unit
NNSS	1 unit

Note: A comprehensive list of particulars is attached for reference.

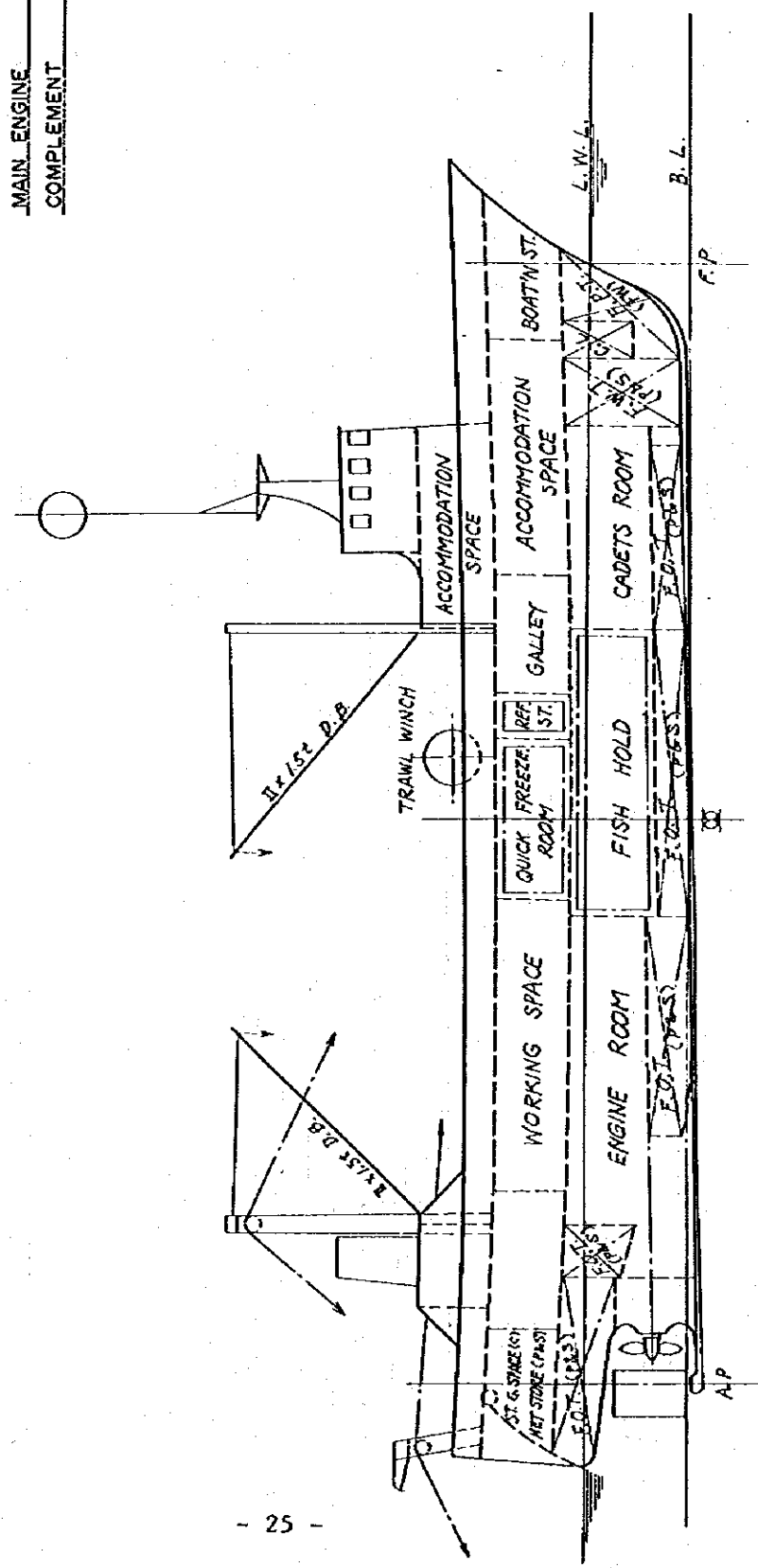
38.5 M TYPE FISHERIES TRAINING VESSEL

PRINCIPAL PARTICULARS

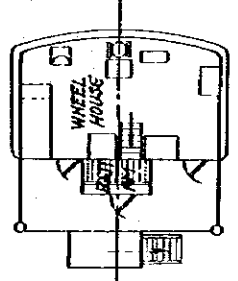
ROUGH GENERAL ARRANGEMENT

SCALE 1/200

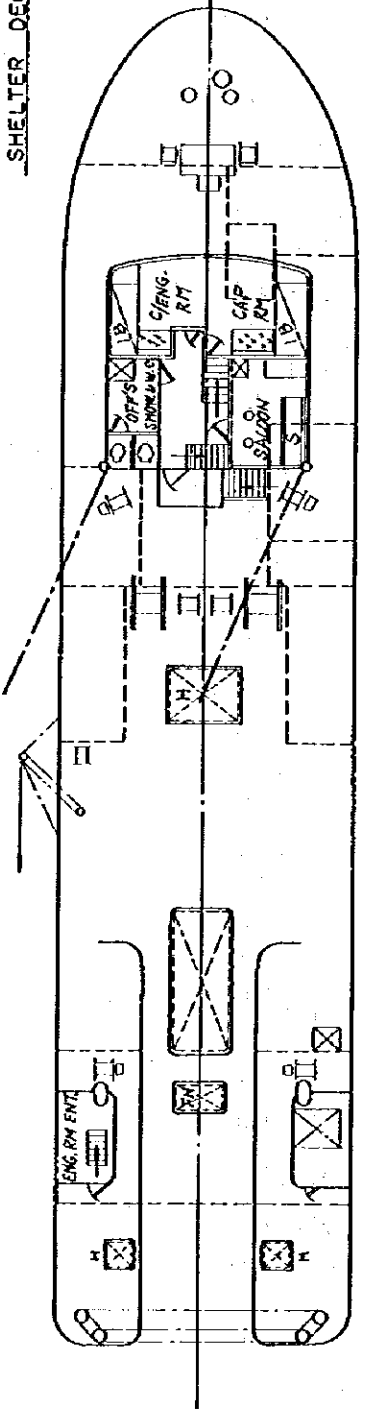
LENGTH OVERALL	38.50 m
LENGTH B.P.	33.00 m
BREADTH MLD.	7.80 m
DEPTH MLD.	3.30 m
DRAFT MLD. (DESIGNED)	2.90 m
GROSS TONNAGE (ABOUT)	240 T
MAIN ENGINE	1,000 PS
COMPLEMENT	35 P



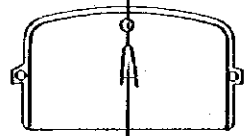
BRIDGE DECK



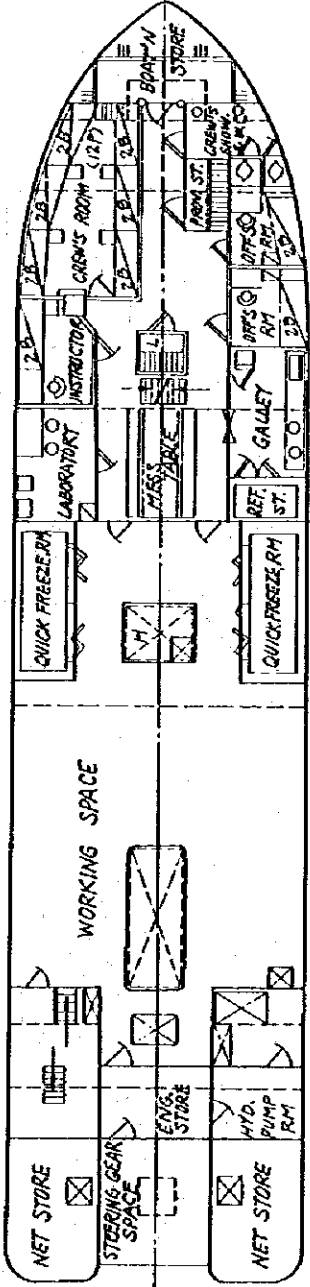
SHELTER DECK



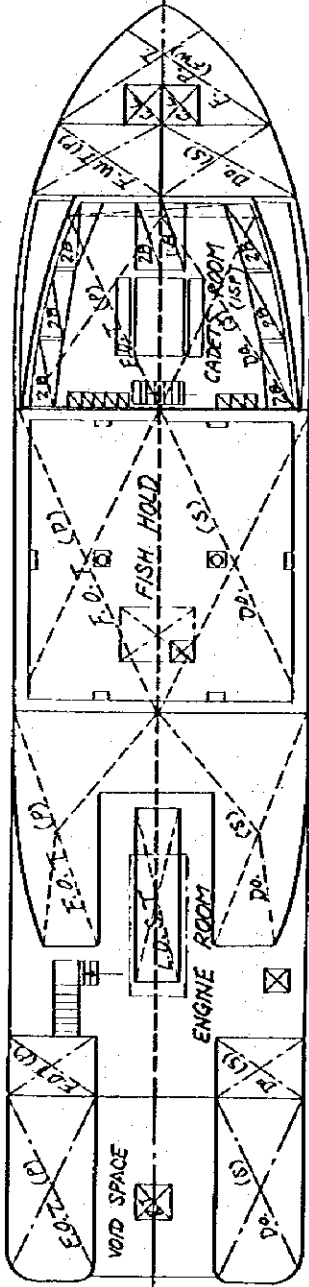
COMP. DECK



UPPER DECK



HOLD



38.5 M TYPE FISHERIES TRAINING VESSEL

ROUGH, GENERAL ARRANGEMENT

SCALE 1/200

6. RECOMMENDATIONS FOR OPERATION

Discussed below are the items that should be borne in mind for smooth operation of the training vessel to be granted to Morocco, and the requests submitted by the Moroccan side.

6.1 BUDGET

It is expensive to operate a ship. The expenses include those for fuel, lubricants, port services, cargo handling, consumables, personnel services, provisions, repairs, parts, insurance, taxes and duties, to name but a few.

All these are indispensable, and if any one is omitted, it will be enough to curtail the ships operation. The main concern of the survey team lay in this area.

The Moroccan spokesmen stated, however, that there would be no problem because a budget would be realized if applied for six months in advance.

The survey team urges the Moroccan side to manage the budgetary problems with the greatest possible care to ensure smooth operation of the training vessel.

6.2 STAFFING

The fisheries training is predicated upon the availability of experts, particularly the fishing master, captain, and chief engineer.

Whether the students aboard the training vessel will be able to fill the bill as the support and driving force of trawl fishing in Morocco depends upon whether they will be offered enough training to acquire the knowledge and skill necessary to enter the international area.

It is therefore strongly hoped that a curriculum of basic drills will be observed under the control of an experienced fishing master (equivalent to captain in Japan).

Training for the operation and maintenance of the refrigerator and other equipment should be undertaken by of experienced Chief Engineer.

In this connection, the survey team was frequently requested to despatch 2 or 3 Japanese experts (captain, chief engineer, etc.) for about a 1-year stay in Morocco to extend technical guidance concerning the training vessel. It was learned from the Moroccan side that three experts (fishing master, engineer, and trainer) were despatched from FAO and were in active service in Morocco, and that two additional experts (captain and instrumentation expert) would be despatched from FAO in October 1980.

While FAO's assistance is much appreciated, these experts are always busy, covering a wide range of services, and it is much better to assign Japanese experts for training assistance. This matter should therefore be discussed to find ways to cope with the Moroccan request.

6.3 DESPATCH OF TRAINEES TO JAPAN

The training ship now in possession of the Moroccan Government was built in France 10 years ago.

The training vessel to be granted to Morocco includes various types of equipment, all manufactured in Japan, and therefore unfamiliar to the Moroccans.

The performance integrity of all the equipment can only be ensured by correct handling, which is also necessary to prevent troubles. It is therefore imperative that all the crew be able to handle the equipment properly.

The Moroccan side stated that crew members picked from all over the country would be aboard the training vessel.

While it can be readily understood that they are experienced people, it is hoped that 2 or 3 trainees will come to Japan when the training vessel construction is in process, and stay 2 or 3 months from launching to completion to become acquainted with the operation and maintenance of the equipment.

The survey team called the attention of the Moroccan side to this matter and suggested that Japan would be ready to accept such trainees.

It should be added that only trainees proficient in English are eligible, and that the Moroccan Government may find difficulty in choosing the right persons as English is not so prevalent in Morocco.

6.4 PROCUREMENT OF PARTS AND COMPONENTS

In selecting the equipment with which to rig the training vessel to be granted, it is important to take into account the availability of parts and components in Morocco. Generally, spare parts for equipment of Japanese make are not easy to acquire in Morocco.

It is therefore hoped that the Moroccan Government will make early budgetary arrangements taking into account the lead time necessary for the manufacture and transportation needed to stock ample spare parts and components.

It is very important to train seamen and professional fishermen, without whom the promotion of pelagic fisheries by the Moroccans will be nothing but a dream.

The fisheries training vessel for which the Moroccan Government asked the Japanese Government to grant is equipped to meet the education and training curriculum according to the Moroccan educational system, and will greatly aid the promotion and development of the fisheries industry in Morocco.

7. BUILDING SCHEDULE OF FISHERY TRAINING VESSEL

1979:August 20	:	Signing of minutes
September		
October		
November		
Second third	:	Signing of exchange notes
Last third	:	Conclusion of consultants agreement
		* The schedule is predicated on the signing of E/N in the middle of November this year. If the signing of E/N is not made, the schedule will be delayed as much.
December	:	Invitation to tenders Conclusion of shipbuilding contract
1980:January		
February	:	Designing by shipbuilder
March		
April		
First third	:	Keel laying
May		
June		
July		
Second third	:	Launching
August	:	Outfitting
September		
Last third	:	Delivery
October	:	Shipping to Morocco
November		
Last third	:	Arrival at Casablanca

8. CONCLUSIONS AND RECOMMENDATIONS TO MOROCCAN GOVERNMENT

The Kingdom of Morocco is one of the major fishing countries in Africa. It has 50-odd deep-sea fishing boats, and the fisheries co-operative-led programs to reinforce the fishing fleet with an additional 63 fishing boats, including 50 trawlers, are in progress.

Non-Moroccan seamen and professional fishermen operate these vessels, however.

As the Moroccan Government has envisioned a scheme for promoting pelagic fisheries by Moroccans it is urgent to train Moroccan seamen and professional fishermen capable of filling this need. Only one training vessel is now available for training seamen and professional fishermen and the fisheries training vessel requested by the Moroccan Government is a vital necessity.

The survey team hopes the Moroccan Government will make every effort to ensure smooth operation and management of the fisheries training vessel after delivery.

For convenience of maintenance service on the Moroccan side, special design considerations are given in formulating the specifications of the fisheries training vessel. It is also important for the Moroccan counterpart to become fully acquainted with shipbuilding, and it is strongly hoped that 2 or 3 Moroccan trainees will come to Japan for 2 or 3 months while the training vessel is under construction and see and master the knowledge and skills necessary for operation and maintenance of various equipment and instruments.

The Moroccan Government is asked to provide proper financial backing for smooth operation and management of the fisheries training vessel. Spare parts for equipment of Japanese make are hard to obtain in Morocco, and the Moroccan Government should place orders for them with ample leeway so that any part can be obtained when necessity arises.

The Moroccan Government's efforts to fill all these requirements will prove useful in eliciting the maximum from the fisheries training vessel and in developing the fisheries industry in Morocco.

APPENDIX

APPENDIX A

ITINERARY

- August 6 (Mon) : Departure from Tokyo.
- 8 (Wed) : Courtesy call on the Japanese Ambassador, deputy head and officials of the Economic Cooperation Bureau of the Ministry of Foreign Affairs, Transport Minister and Assistant Secretary.
- 9 (Thu) : Travel from Rabat to Casablanca; meeting with the officials of the Marchande Marine et Pêche Maritimes; field survey.
- 10 (Fri) : Survey of fish markets; meeting with the officials of the Marchande Marine et Pêche Maritimes; the survey team requested the Marchande Marine et Pêche Maritimes to collect necessary data and information.
- 11 (Sat) : Survey of the Institut Supérieur d'Études Maritimes.
- 12 (Sun) : Survey of ports and harbors in Casablanca.
- 13 (Mon) : Travel from Casablanca to Safi; survey of the Ecoles Professionnelles Maritimes; meeting; and survey of fishing ports, fish markets, shipbuilding dock, and canning factory; travel from Safi to Agadir.
- 14 (Tue) : Survey of the Ecole Professionnelles Maritimes in Agadir, fish market and port and harbor facilities.
- 15 (Wed) : Preparation of minutes; courtesy call at the Agadir office of the Marchande Marine et Pêche Maritimes.

August 16 (Thu) : Travel from Agadir to Casablanca via Marrakech.
 17 (Fri) : Submission of minutes; survey of shipyards and repairing shops.
 18 (Sat) : Courtesy call at ONP.
 19 (Sun) : Marshalling of survey data.
 20 (Mon) : Signing of minutes; travel from Casablanca to Rabat.
 21 (Tue) : Reporting the survey results to the ambassador.
 22 (Wed) : Final discussions at the embassy; marshalling of survey results.
 23 (Thu) : Departure from Rabat.
 24 (Fri) : Arrival in Paris.
 25 (Sat) : Arrival in Japan.

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APPENDIX B

PRESENT AT THE MEETINGS

1. Japanese
 - Mr. Aritsune Furukawa Head, Fishery Agency
 - Mr. Fumiaki Kuwakino Member, JICA
 - Mr. Hirofumi Igarashi Member, Consultant, Taiyo Group
 - Mr. Shigeyuki Araki Member, Consultant, Taiyo Group
 - Mr. Heiichiro Masuya Member, Consultant, Taiyo Group

2. Moroccan
 - Mr. Lfal Mohamed Director, Marchande Marine et Maritimes
 - Mr. Tijani Rhanmi Assistant Director, Marchande Marine et Maritimes
 - Mr. Iraqi Abdelaziz Official, Marchande Marine et Maritimes
 - Mr. Yassine Touria Official, Marchande Marine et Maritimes
 - Prof. Dourand-Gaillard FAO expert

APPENDIX C

AGENCIES AND INSTITUTIONS VISITED

- (1) Japanese Embassy in Morocco
- (2) Economic Cooperation Bureau, Ministry of Foreign Affairs
- (3) Ministry of Transport
- (4) Marchande Marine et Maritimes in Casablanca
- (5) Institut Supérieur d'Etudes Maritimes
- (6) Ecole Professionnelles Maritimes in Safi
- (7) Ecole Professionnelles Maritimes in Agadir
- (8) Agadir Office of Marchande Marine et Maritimes
- (9) ONP (Fisheries Public Corporation)

APPENDIX D

PRINCIPAL PARTICULARS OF FISHERIES TRAINING VESSEL

1. OWNER : The Government of the Kingdom of Morocco

2. TONNAGE, CLASS, AND APPLICATION

Gross tonnage : 240 GT (approx)

Class : NK. (NS*, MNS*)

Application : Fisheries training (trawling training, oceanographic survey)

3. PRINCIPAL DIMENSIONS

Overall length : 38.5 m (approx)

Moulded width : 7.8 m (approx)

Moulded depth
(up to upper deck) : 3.8 m (approx)

Moulded draft
(design) : 2.9 m (approx)

Fish hold : 120 m³ (approx)

Fuel tank : 125 m³ (approx)

Fresh water tank : 35 m³ (approx)

4. TYPE

Type : Twin deck

Bow : Stem cutup curved

Stern : Cruiser type with slipway

5. SPEED AND CRUISING RANGE

Maximum continuous
rating (official
sea trial) : 11.5 knots (approx)

Full loaded speed
(at normal output,
15% sea margin) : 10.5 knots (approx)

Cruising range

Voyage 7 days

Fishing 20 days

Total: 27 days

6. QUICK FREEZING AREA FISH HOLD, ETC.
fish hold, etc.

Fish hold (x 1 below
upper deck) : approx. 100 m³ (storage temperature,
0 to -0.5 deg. C)

(x 1 each
on both side above
upper deck) : Freezing capacity,
1 ton/day (approx) at -30°C
(contact freezer)

Cold storage for provisions

Meat storage
(x 1) : -15°C

Vegetable storage
(x 1) : 2 -5°C

7. COMPLEMENT

Master Fisherman	1
Assistant Master Fisherman	2
Captain	1
Chief Officer (1st Mate)	1
Chief Engineer	1
1st Engineer	1
Other officers and ratings (incl reserves)	11
Trainees	16
Total:	34

8. MAIN ENGINE

Type : 4-cycle single-acting trunk piston
type diesel engine (seawater-cooled)
Number of units : 1
NCR : 1000 hp

9. Propeller

3-blade variable pitch
propeller

10. GENERATOR AND ITS PRIME MOVER

Generator : 385 VAC, 60 Hz, 3-phase, 140 kVA x 2
units
Prime mover : 170 hp x 1500 rpm x 2 units

11. AUXILIARIES

Main air compressor x 1 : Automatic start-stop type

Auxiliary air compressor: w/diesel engine
x 1

Fire and general service
pump x 1 : 60 m³/h x 28 m

Sanitary pump x 1 : 10 m³/h x 25 m

Bilge pump
(emergency) x 1 : 30 m³/h x 20 m

x 1 (for

Bilge pump for
separator x 1 : 0.5 m³/h x 25 m

pump x 1 : Home pump, 0.2 kW

Fuel oil transfer pump
x 1 : 8 m³/h x 2.0 kg/cm²

Fuel oil service pump
x 1 : 2 m³/h x 2.0 kg/cm²

Standby C.P.P. pump x 1

Standby main engine
lube pump x 1

Main engine oil cooler x 1

Oil cooler for auxiliaries x 2

Main air reservoir x 2

Auxiliary air reservoir x 1

Fresh water generator and auxiliaries x 1 set (2 tons/day)

Bilge separator x 1 (0.5 ton/day)

Drill press x 1

Grinder x 1

Electric welder x 1 (200 A)

12. REFRIGERATOR, ETC.

Refrigerator, 2-stage compression, 22 kW x 1

1-stage compression, 15 kW x 1

Condenser x 1

Receiver x 1

Quick freezing room contact freezer up and down device x 1
(1.5 kW)

Condenser cooling water pump x 2

Icemaker x 1 (1 ton/day)

Refrigerant, Freon R-22

Cooling system, direct expansion system by automatic
expansion valve

Electricals

13. POWER SUPPLIES

Power use, 380 VAC, 50 Hz, 3-phase

Lighting use, 220 VAC, 50 Hz, 1-phase

Emergency use, 24 VDC

Generator, 385 VAC 50 Hz, 3-phase, 140 kVA x 1500 rpm x 2

Transformer, 380/220 V, 20 kVA x 3

Battery: For communication use, 200 AH x 1

For emergency lighting, 200 AH x 1

Main switchboard (dead front-type) x 1

Terminal box for receiving shore power supply x 1

14. MOTOR-DRIVEN VENTILATOR

Accommodation space, 1.1 kW x 1

0.75 kW x 1

Galley, 0.4 kW x 1

Engine room, 3.7 kW x 2

15. INSTRUMENTS FOR NAVIGATION, FISHING, AND COMMUNICATION

Common battery telephone (mutual type) x 6 stations 1 set

Public addressor system x 1 set

Output, 50 W, w/cassette tape player

Speaker, 30 W x 1, 10 W x 3, 2 W x 10

Microphone x 3 pcs.

Radar x 1 set

Output, 10 kW, 64 nautical miles, cathode-ray tube 10"
w/gyro repeater

Fish finder x 1 set

0-1000 m, 2 frequencies, 5 kW

Gyrocompass and autopilot x 1 set

Built on wheelstand, w/4 repeaters

Magnetic compass x 1 set

Electromagnetic log (that face sensor type) x 1 set

Net recorder (towing type) x 1 set

Radio equipment x 1 set

IF 1.6 to 4.0 MHz, A1, A3J, 200 W, A3H 50 W

HF 4.0 to 25.0 MHz, A1, A3J 400 W, A3H 100 W

Simplex and duplex operation type, synthesized system

Receiver, all-wave synthesized system

International VHF radio telephone 1 set

150 MHz band, F3 20 W, 57 CH

Antenna selector x 1 set

Battery charger x 1 set

Radio direction finder x 1 set

200 kHz to 9 MHz, w/gyro repeater

NNSS x 1 set

w/gyro repeater

16. DECK MACHINERY

Windlass, 3 tons x 15 m/min (hydraulic) x 1 unit

Fishing and cargo winch, 2.5 tons x 30 m/min (hydraulic) x 4 units

Trawl winch, 8 tons x 70 m/min (driven by hydraulic pump in front of main engine) x 1 unit

Winding capacity, 18 mm dia x 1800 m

(Center drum, 12 tons x 40 m/min, 28 mm dia x 35 m, x 2 units)

Steeving gear (2.5 ton.m) x 1 unit

17. OCEANOGRAPHIC SURVEY EQUIPMENT

Nansen reversing type water sampler x 1

Reversing thermometer, unprotected type x 1

protected type x 1

Plankton net (large, medium and small meshes) x 1 each

Winch for oceanographic survey equipment x 1 (2.2 kW)

18. SURVIVAL EQUIPMENT

Life raft (expansion type, Class B) for 20 persons x 2 units

Life jacket x 35

APPENDIX E

A COMPREHENSIVE LIST OF FISHES

NAMES OF COMMON FISHES AND OTHER MARINE SPECIES OF MOROCCO

1.	PAGRUS AFRICANUS	RED SEA BREAM
2.	DENTEX ANTEX ANGOLENSIS	DO
3.	DIPLODUS BELLOTTII	GREY BREAM
4.	MERLUCCIIUS MERLUCCIIUS	HAKE
5.	DIPLODUS VULGARIS	SAR (FRENCH)
6.	SARDINELLA AURITA	SARDINA DE LAY (CANARY)
7.	LOPHIUS PISCANTORIUS	BAUDROITE (FRENCH)
8.	ZEUS	DOREE (FRENCH)
9.	MONOCHIRUS HIPPIDUS	SOLDADO (FRENCH)
10.	PALINULIRUS REGIUS	SPINY LOBSTER
11.	SEPIA OFFICINALIS	CUTTLEFISH
12.	ELEDONE MASCHATA	OCTOPUS
13.	LOLIGO FORBESTI	SQUID
14.	ILLEX COINDETI	POTA (CANARY)
15.	PAGELLUS ACARNE	ALIGOTE (CANARY)
16.	JOHNIUS UMBRA	CROAKER
17.	SCOMBER SCOMBER	ESTORININO (CANARY)
18.	ALOSA ALSA	LACHA (CANARY)

APPENDIX F

TABLE OF LOCAL PRICES, CHARGES, AND FARES

<u>Item</u>	<u>DH/day</u>	<u>DH/month</u>	<u>Remarks</u>
Roadman	20	500-600	
Stevedore	30		8 hours
Janitor		1,500	Marchande Marine et Maritimes
		700	Embassy
Housekeeper (female)		400-500	8 h/day (approx)
Driver		1,600-1,800	Embassy
Driver (hire)	70-80		(350 DH/8 h/day incl rental, gasoline, and driver's allowance)
Typist		1,000 to 1,500	7 hrs.
Guide	25-35		English-speaking (15 DH for half a day)
Gasoline (ordinary)	2.6/ℓ		
Gasoline (extra)	2.8/ℓ		
Gas oil	1.2/ℓ		
Greasing	200-300/service		
Tire	180-200/unit		Tubeless
Truck (rental)	300-400		7 tons
Small truck (400 cc)	30		Within city
Passenger car (1200 cc)	100 to 150		Excl gasoline, overcharge for mileage, overtime allowance, etc.
Taxi	0.6-0.7/100 m		

<u>Item</u>	<u>DH/day</u>	<u>DH/month</u>	<u>Remarks</u>
Telex (to Japan)	30/min.		
Telephone (basic rate)	80		
Telephone (local)	0.4/call		
Flight charge (Rabat to Paris)	1,990/one way		Economy class
Bus fare (Rabat to Casablanca)	6/passenger		
Omnibus taxi	10/passenger		
Rent (Embassy)		14,000	
Apartment		3,000-6,000	Saloon x 1; bedroom x 2; kitchen x 1; w/o furniture (lighting wiring alone)
Dining w/wine (dinner)	60-80/person		
Dining (lunch)	40/person		
Hotel charges	60-150/person		
Copying	1/sheet		
Rice	4/kg		
Beef	38/kg		
Chicken	17/head		
Tomato	4/kg		
Cabbage	4.6/kg		
Potato	3/kg		
Sugar	3/kg		
Whisky (Johnnie Walker, Black Label)	70-80/bottle		
Beer	2-3/bottle		small bottle
Wine (brewed in Morocco)	15/bottle		

