

BASIC DESIGN STUDY REPORT
ON
THE EXPANSION AND MODERNIZATION PROJECT
OF
THE NATIONAL MARITIME POLYTECHNIC, TACLOBAN
IN
THE REPUBLIC OF THE PHILIPPINES

MARCH 1984

JAPAN INTERNATIONAL COOPERATION AGENCY

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PREFACE

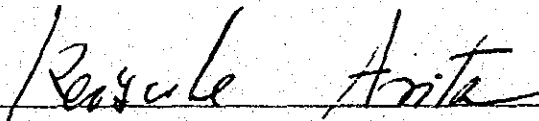
In response to the request of the Government of the Republic of the Philippines, the Government of Japan decided to conduct a basic design study on the Expansion and Modernization Project of the National Maritime Polytechnic, Tacloban, and entrusted the study to the Japan International Cooperation Agency (JICA). The JICA sent to the Philippines a study team headed by Capt. Shozo Kato, Chairman of Navigation Department, Institute for Sea Training, Ministry of Transport from October 12 to November 1, 1983.

The team had discussions with the officials concerned of the Government of the Philippines and conducted a field survey. After the team returned to Japan, further studies were made and the present report has been prepared.

I hope that this report will serve for the development of the Project and contribute to the promotion of friendly relations between our two countries.

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

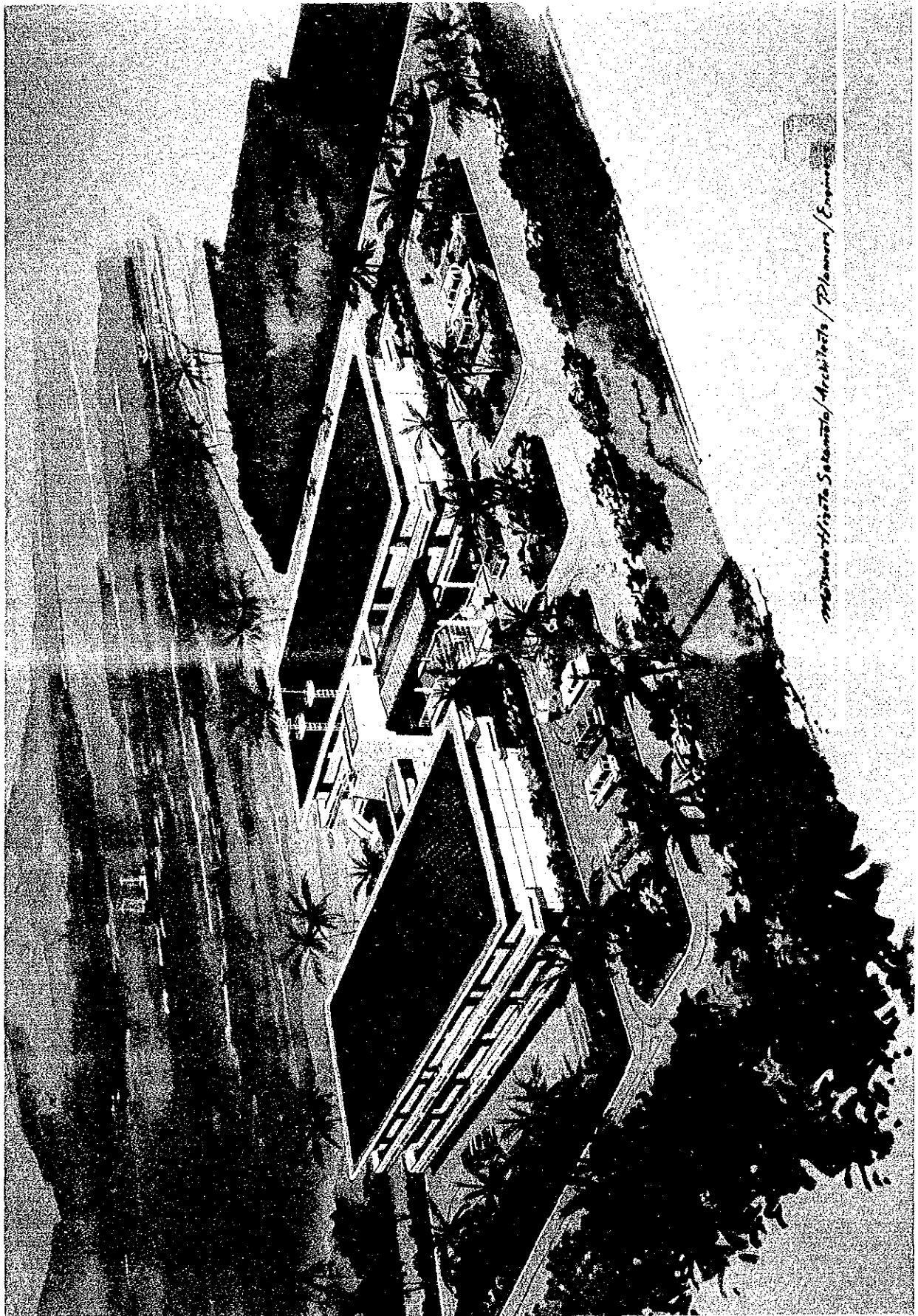
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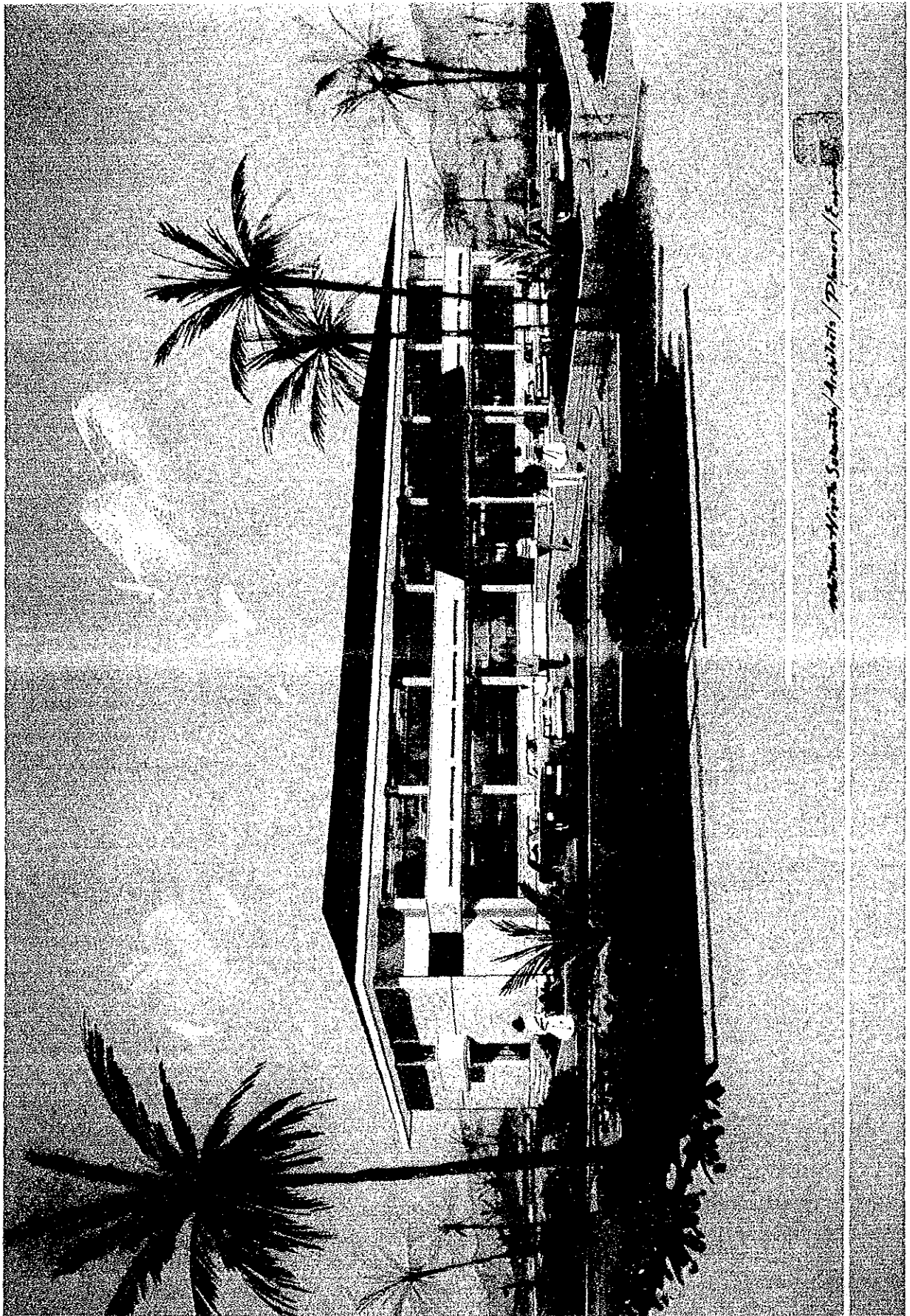
Keisuke Arita

President

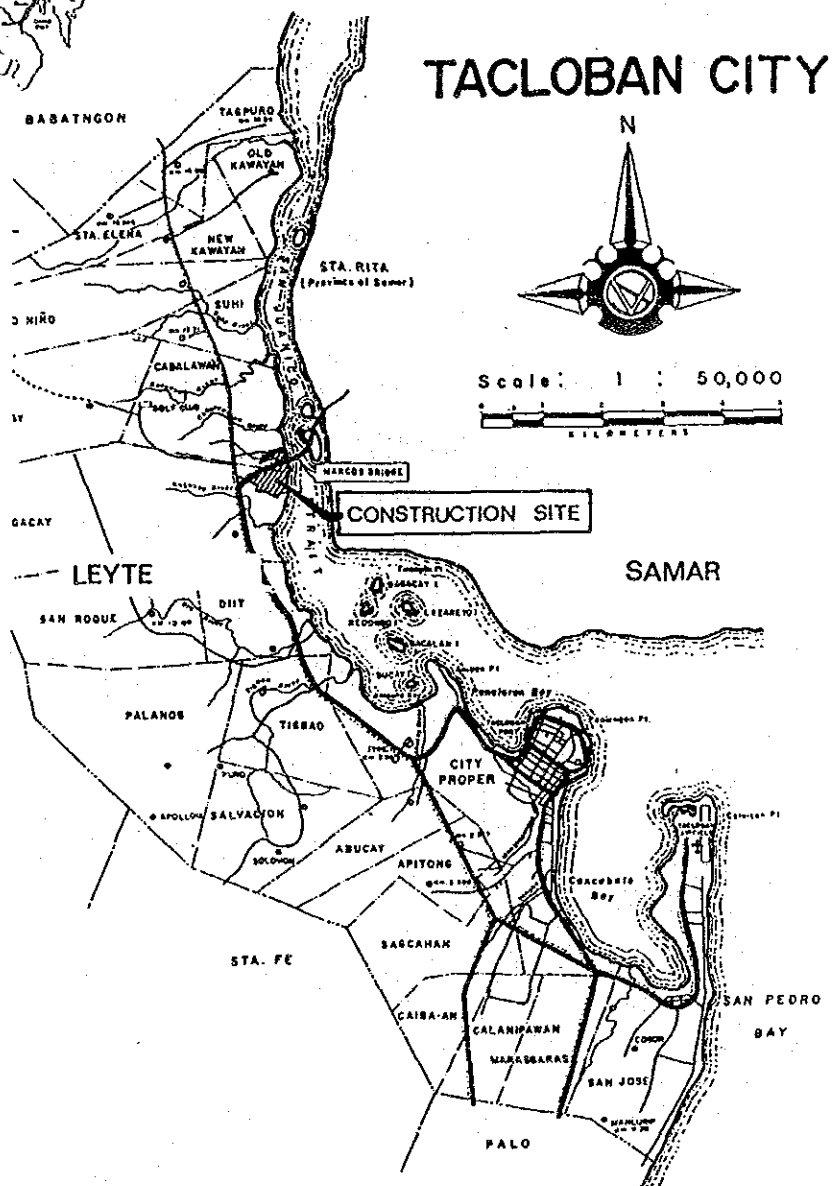
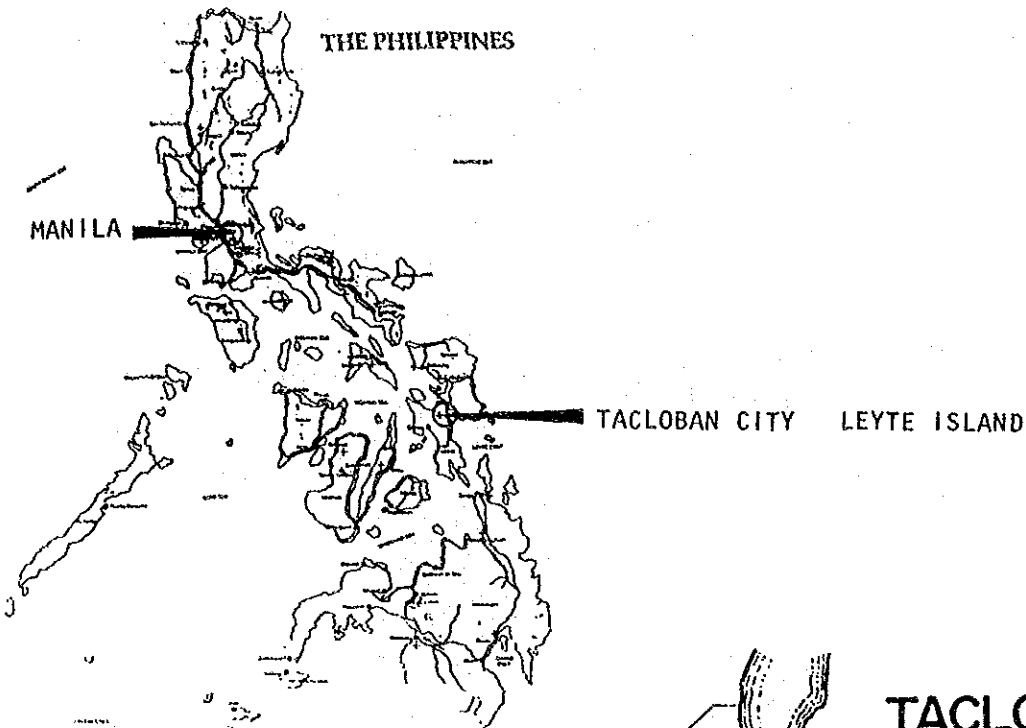
Japan International Cooperation Agency



Mitsuru Higo Architects / Planners / Engineers



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LOCATION MAPS

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SUMMARY

To cope with the recent progress and evolution of ship navigation technologies and the demand to increase standards for ships, the International Maritime Organization (IMO) has adopted resolutions from a number of international conventions, such as the International Convention for the Safety of Life at Sea (SOLAS) in 1974, the International Convention for the Prevention of Pollution from Ships (MARPOL) in 1973 and the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) in 1978. Resolutions of these conventions are being ratified by an increasing number of countries.

With the wide international implementation of these international conventions, it is becoming necessary for seafarers to acquire knowledge and skills required to satisfy the navigational and safety standards for ships. Merchant ships without seamen possessing the qualifications stipulated in the STCW Convention will not be allowed in the near future to enter ports of countries which have ratified the Convention.

In view of these circumstances, the Republic of the Philippines has recognized the necessity to upgrade its seamen, and by implementation of Presidential Decree No. 1369 on May 1, 1978, has established the National Maritime Polytechnic (NMP) for this end. NMP as the only upgrading facility for seafarers in the Philippines, has been engaged in providing specialized upgrading education and training for its merchant seamen.

However, due to the substantial lack of training facilities and equipment, it is not possible to provide the necessary training and education. NMP is therefore being compelled to expand and modernize its training equipment and building facilities, and has requested the Japanese Government to extend grant aid and technical cooperation to implement a substantial portion of its expansion and modernization plans.

The NMP site is in Tacloban City situated on the northeast side of the island of Leyte. The site, facing the narrow San Juanico Strait which separates Leyte from the island of Samar, is most favorable for a training facility of this nature. Marcos Bridge of the Philippine-Japan Friendship Road spans the channel, and the site adjoins the road and the bridge.

In response to the request of the Government of the Philippines, the NMP expansion and modernization plans have been studied by teams of the Japan International Cooperation Agency of the Japanese Government, and it is being recommended to extend assistance in grant form to provide training equipment and buildings for the institute.

Training equipment is proposed to be provided for upgrading training in the fields of navigation and marine engineering and for special courses prescribed mainly by the STCW Convention. Simulation equipment, actual equipment and models, totaling 49 kinds are included in this recommendation.

Building facilities proposed to be provided are a part of the overall expansion plans of the total lot area of 15 hectares. Classroom buildings, a library, dormitories and welfare facilities are scheduled to be constructed by NMP in the near future in accordance with an established master plan. Buildings proposed to be provided are as follows:

Training Building

2-story, reinforced concrete structure
total floor area: 4,848.00 square meters

Administration Building

2-story, reinforced concrete structure
total floor area: 1,328.64 square meters

Generator Building

1-story, reinforced concrete structure
total floor area 49.00 square meters

Total floor area 6,225.64 square meters

In case this project is to be implemented, the total time required for the detailed design engineering, manufacture, shipment and installation of the training equipment is estimated about 22 months after an exchange of notes between the two Governments. The buildings can be constructed within this period.

The implementing agency of the Philippine Government will be the National Maritime Polytechnic (NMP). Personnel and expenditures required for operation and maintenance of the facilities are to be provided by the NMP budget.

The expanded and modernized facilities of NMP will serve to upgrade the proficiency of Filipino seamen, resulting in an increase of employment and generation of more foreign currencies, thus contributing to the enhancement of the Philippine economy.

Technical guidance under the technical cooperation program of Japan will make this undertaking all the more beneficial to the recipients. Positive and continued endeavors on part of NMP and relevant agencies of the Philippine Government will be most important towards the success of this undertaking, such as the maintaining of competent instructors, the provision of an adequate budget for the operation and maintenance of the facilities, and creation of favorable conditions for those completing re-education at NMP.

INTRODUCTION

CHAPTER ONE INTRODUCTION

A. PREAMBLE

The Government of the Republic of the Philippines has, in order to cope with maritime international conventions, such as the STCW Convention, which have been implemented recently one after another to maintain safe navigation of vessels and protect the ocean environment, established the National Maritime Polytechnic (NMP) by Presidential Decree No. 1369 on May 1, 1978.

In spite of being the sole postgraduate upgrading institute for the seamen of the Philippines, its present equipment and facilities are not adequate for its objectives and the important national responsibilities which it must fulfill.

The Government of the Republic of the Philippines has requested the Government of Japan for assistance in implementing its expansion and modernization program.

B. STUDIES

In response to the request of the Government of the Philippines, the Government of Japan dispatched a basic design study team to the Philippines on October 12, 1983, through the Japan International Cooperation Agency of the Japanese Government, to study the project.

The study team conducted a thorough survey on the background, conditions, feasibility and outlook of the undertaking, and has prepared this Basic Design Study Report for submission to both Governments.

A list of the members participating in the study and schedule in the Philippines of the team is attached as Appendixes to this Report.

* The firm of Matsuda, Hirata & Sakamoto, Architects, Planners and Engineers, Inc. participated in the teams, and prepared the basic designs.

BACKGROUND OF THE PROJECT

CHAPTER TWO BACKGROUND OF THE PROJECT

A. GENERAL CONDITIONS

1. SOCIO-ECONOMY

a. Population

The Republic of the Philippines is situated on the West Pacific off the southeast coast of the Asian Continent. It consists of islands of over 7,000 in number surrounded by the South China Sea in the northeast, the Pacific Ocean in the east and the Celebes Sea in the south with a total area of approximately 300,000 km². The population is 48 million according to the census of 1980.

Approximately 68% of the population live in agricultural villages, but there has been a remarkable tendency of concentration to the cities, especially to its capital Manila.

Leyte Island, where the proposed site is situated, is the eighth largest island, and neighbors the islands of Samar and Cebu. It has a total area of 7,200 km², and its population is approximately 1.5 million.

b. Climate

The climate of the Philippines is not uniform because of the diversity of location of islands and their topography, but is generally tropical and monsoon-laden. Roughly speaking, the rainy season is between July to October, the dry season is between November and May of the year, while the weather between June and November is subject to change. In Manila, distinction between the rainy season and the dry season is clear. But at the proposed site of Tacloban City on Leyte Island such distinction is not clear, with considerable rainfalls during the period between November and February. The prevailing wind directions in Manila are generally north or northeast between October and January, and east or southeast between February and April, while the prevailing winds in

other months are from the southwest. In Tacloban City, however, the prevailing wind direction is northeast between July and April and southwest between May and June respectively.

Typhoons generated in the Pacific Ocean normally sweep over the Philippines Islands and frequently change their courses to the northwest or north, 85% of which pass north of Samar Island, without affecting Leyte Island.

Because the islands are in the tropical region, the temperature stays high with a range of 21 degrees to 32 degrees Centigrade and an yearly average of 27 degrees. On the other hand, the temperature tends to be higher between May and August with a yearly average of 28 degrees in Tacloban City.

c. Economy

The industrial structure of the Philippines is such that about 50% of the working population is engaged in agriculture and fishery, the remaining population being engaged in manufacturing and service industries. As there is only a small opportunity of favorable employment domestically, there are many who tend to look for employment overseas. Many are working as seamen, nurses, construction laborers, port and harbor workers, etc. in addition to those of other intellectual occupations.

It is required by the law that Filipino who work overseas must remit 70%* or more of their earnings to the Philippines. As a result, the money which is remitted to the Philippines by seamen working overseas has been increasing year by year, and amounts to 25% to 30% of the total remittance, thereby constituting an important role in the earning of foreign currency.

GNP in 1982 was 334,635 million Pesos (6,957 Pesos per Capita) and GDP in the same year was 338,512 million pesos (7,037 pesos per capita).

* An Executive Order mandated 80% remittances.

2. THE PHILIPPINE SHIPPING INDUSTRY

Coastal and international shipping form an indispensable industry for the Philippines, an archipelagian nation, for maintaining national life and for sustaining its industrial and economic activities and development.

From the state of devastation at the end of World War II, the Philippine shipping industry was been gradually reconstructed. Though it has been affected by the stagnant world economy in recent years and the recession in shipping, it now has a total of 4,056 vessels with a total gross tonnage of 3,550,000 tons (as of 1980), as shown in the following Table.

Number and Gross Tonnage of Registered Philippine Vessels (1980)

Type of Service	Number	G/T x 1,000
Cargo	2,638	2,733.8
Passenger/Ferry	797	170.7
Cargo/Passenger	506	313.2
Tanker	124	337.6
Total	4,065	3,555.3

Of these, oceangoing vessels account for 203, or 2,250,000 tons (as of 1982), as shown in the following Table.

Number and Gross Tonnage of Registered Philippine Oceangoing Vessels (1982)

Type of Service	Number	G/T x 1000
General Cargo	68	388.1
Bulk Carrier	59	925.4
Tanker	9	484.3
Multipurpose	10	124.8
Reefer	10	72.6
Car Carrier	6	86.5
Others	41	174.2
Total	203	2,255.9

As regards freight income, Philippine vessels account for only 10% of the total income in export against 90% for foreign vessels. In imports, Philippine vessels account for 18% against 82% for foreign vessels. These figures clearly show a high degree of dependency on foreign vessels for Philippine industries, as shown below:

Share of Philippine Flag Vessels in Total Foreign Trade
(freight in US\$)

	1980		1981 (Jan.-Oct.)	
	Freight x \$1,000	%	Freight x \$1,000	%
Export	756,306		662,247	
Filipino	79,069	10.4	65,824	9.8
Foreign	677,239	89.6	596,423	91.2
Import	497,267		390,200	
Filipino	91,746	18.3	74,365	19.0
Foreign	405,521	81.7	315,835	81.0
Total Trade	1,253,573		1,052,448	
Filipino	170,817	13.6	140,189	13.3

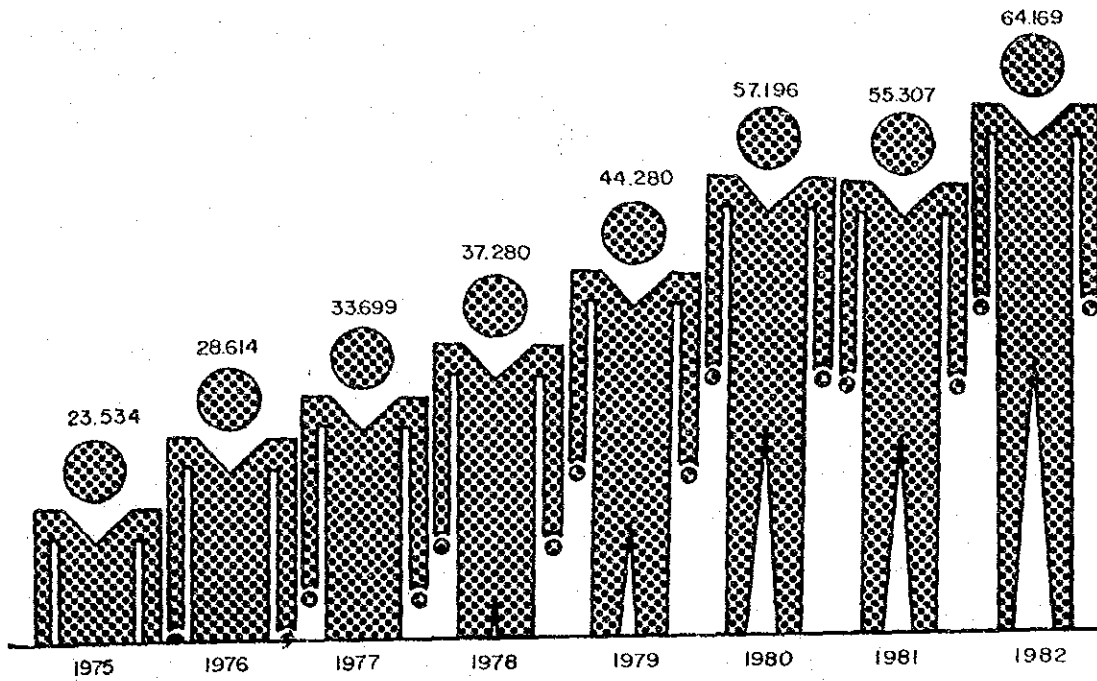
Since the country consists of numerous islands, costal shipping accounts for 85% of the total domestic cargo transportation. The number of vessels engaged totals about 10,000, including fishing boats. Of these, about 2,000 are engaged in regular runs between main ports.

Relating to seafarers as shown in the following illustrations, the number of Filipino seamen signed on board foreign-going ships and foreign exchange remittance from them are both increasing year by year. The remittance from total 23,543 seamen in 1975 was \$31.9 million, and in 1982 the remittance was \$177.2 million from 64,169 seamen. This is a 3-time increase of Filipino seamen on foreign-going ships, and a 5-time increase of remittance from them.

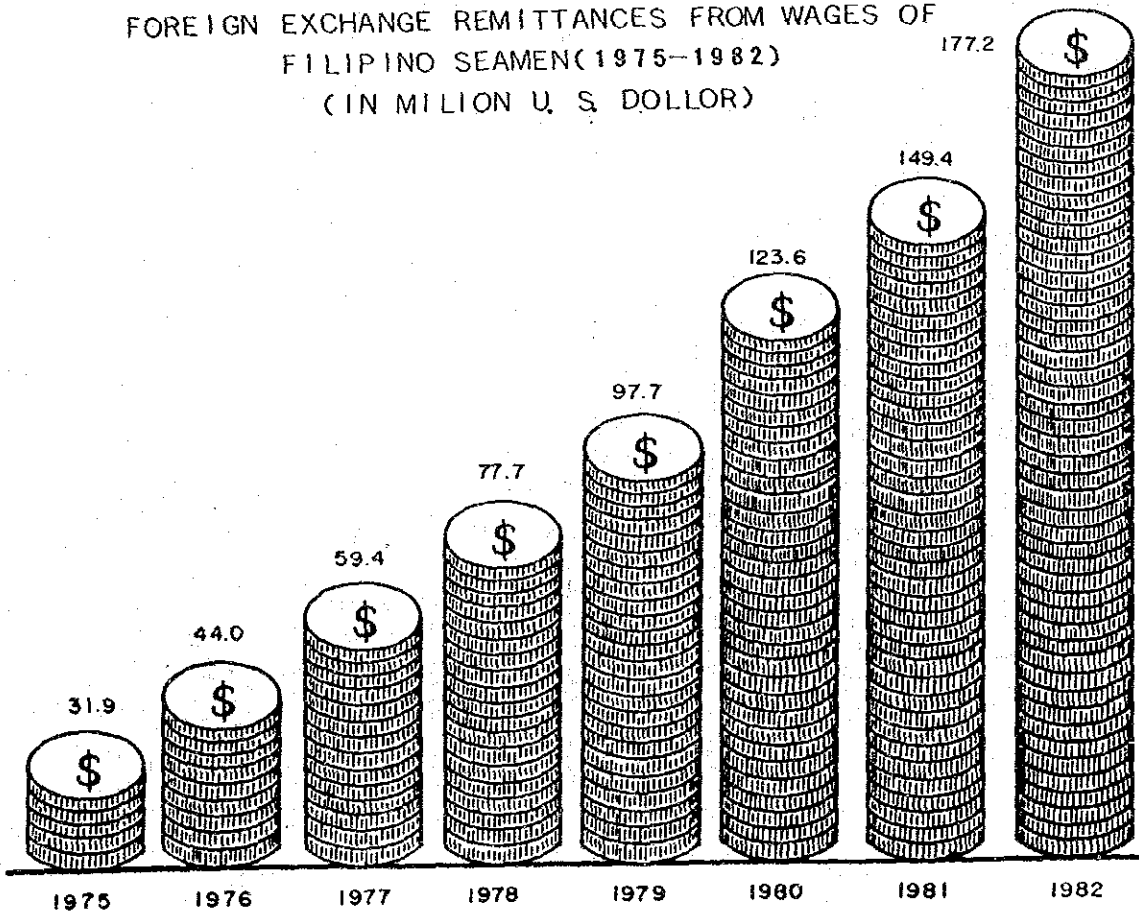
In the Philippines, the foreign currency reserve situation is not favourable. As a measure to improve the situation, the strong reliance on foreign ships for international shipping should be remedied by the development of its own merchant fleet manned by Filipino seamen.

Also, the level of knowledge and skills of seafarers are being regulated internationally, and it has become an urgent matter to meet these requests in order to secure employment on foreign-going ships.

FILIPINO SEAMEN SIGNED ON ABOARD FOREIGN-GOING SHIPS



FOREIGN EXCHANGE REMITTANCES FROM WAGES OF
FILIPINO SEAMEN (1975-1982)
(IN MILION U. S. DOLLOR)



3. IMO-RELATED CONVENTIONS, STCW CONVENTION, ILO-RELATED CONVENTIONS

International conventions such as the IMO-related conventions, such as those discussed and adopted by the IMO and ILO are aimed at ensuring safety of life and property and conserving marine environment. In particular, the quality of seamen who actually operate and control vessels is an important factor in achieving these objectives.

Accordingly, the STCW Convention was adopted, stipulating specific standards for the knowledge, skills and competency of seamen. It is scheduled to come into effect on April 28, 1984. Those who do not meet the standards stipulated under the Convention will not be able to work abroad.

This background was taken into consideration in formulating NMP's retraining program intended for the acquisition of knowledge, skills and competency required under these conventions.

Below is an outline of these conventions. Refer to Supplement to this Report for details.

a. IMO-related Conventions

Of the conventions discussed and adopted by the International Maritime Organization (IMO), only those closely related to the establishment of NMP are outlined below.

1) International Convention for the Safety of Life at Sea 1974 (1974 SOLAS) and Protocol of 1978

This convention supercedes the previous convention of 1960 for the safety of life at sea to meet the world-wide need to cope with recent technological renovation concerning ships and higher safety standards. It stipulates standards for the structure, equipment and safety of ships and inspection.

2) International Convention for the Prevention of Pollution from Ships 1973 (1973 MARPOL) and Protocol of 1978

Mankind immeasurably benefits from the sea. When an increasingly diversified use for the sea is anticipated in the future, prevention of pollution and conservation of the marine environment are becoming an important task for mankind.

This convention aims at exercising comprehensive control for the prevention of marine pollution by extending coverage to include not only heavy oil but all kinds of oil and substances such as hazardous liquid substances and waste which pollute the sea.

b. International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 (1978 STCW)

With successive marine disasters in recent years involving seamen of low technical standards, the marine pollution by these disasters posed a social problem. This convention was adopted to prevent marine disasters due to low navigational techniques of seamen by setting up international standards for seamen.

The Convention stipulates mandatory minimum requirements for certification of masters and officers of ships.

1) Mandatory Minimum Requirements for Certification of Masters and Officers of Ships

The mandatory minimum requirements are provided in respect of minimum age, medical fitness, minimum period of education and training, minimum period of sea-going service and minimum knowledge required.

A list of the minimum knowledge required is shown on the following pages.

MINIMUM KNOWLEDGE REQUIRED FOR
CERTIFICATION OF MASTERS AND
CHIEF MATE

1. Navigation and position determination
2. Watchkeeping
3. Radar equipment
4. Compass-magnetic and gyro
5. Meteorology and oceanography
6. Ship maneuvering and handling
7. Ship stability, construction and damage control
8. Ship power plants
9. Cargo handling and stowage
10. Fire prevention and fire-fighting appliances
11. Emergency procedures
12. Medical care
13. Maritime law
14. Personnel management and training responsibilities
15. Communications
16. Life-saving
17. Search and Rescue

MINIMUM KNOWLEDGE REQUIRED FOR
CERTIFICATION OF OFFICERS

1. Celestial navigation
2. Terrestrial and coastal navigation
3. Radar navigation
4. Watchkeeping
5. Electronic systems of position fixing and navigation
6. Radio direction-finder and echo-sounders
7. Meteorology
8. Compass-magnetic and gyro
9. Automatic pilot
10. Radiotelephony and visual signalling
11. Fire prevention and fire-fighting appliances
12. Life-saving
13. Emergency procedures
14. Ship maneuvering and handling
15. Ship stability
16. English language
17. Ship construction
18. Cargo handling and stowage
19. Medical aid
20. Search and rescue
21. Prevention of pollution of the marine environment

MINIMUM KNOWLEDGE REQUIRED FOR
CERTIFICATION OF CHIEF ENGINEER
AND SECOND ENGINEER

MINIMUM KNOWLEDGE REQUIRED FOR
CERTIFICATION OF ENGINEERS

Possessing Theoretical
Knowledge

- | | |
|--|---|
| 1. Thermodynamics and heat transmission | 1. Watchkeeping routines |
| 2. Mechanics and hydromechanics | 2. Operation and maintenance of marine main engines and auxiliary machinery |
| 3. Operational principles of ship's power installations | 3. Operation and maintenance of pumping systems |
| 4. Physical and chemical properties of fuels and lubricants | 4. Generating plants |
| 5. Technology of materials | 5. Safety and emergency procedures |
| 6. Chemistry and physics of fire and extinguishing agents | 6. Anti-pollution procedures |
| 7. Marine electrotechnology, electronics and electrical equipment. | 7. First aid |
| 8. Fundamentals of automation, instrumentation and control systems | |
| 9. Naval architecture and ship construction including damage control | |

Possesing Practical Knowledge

1. Operation and maintenance of marine main engines
2. Operation and maintenance of auxiliary machinery
3. Operation, testing and maintenance of electrical and control equipment
4. Operation and maintenance of cargo handling equipment and deck machinery

5. Detection of machinery malfunction, location of faults and action to prevent damage
6. Organization of safe maintenance and repair procedures
7. Methods of, and aids for, fire prevention, detection and extinction
8. Methods and aids to prevent pollution of the environment by ships
9. Regulations to be observed to prevent pollution of the marine environment
10. Effects of marine pollution on the environment
11. First aid and use of first aid equipment
12. Functions and use of life-saving appliances
13. Methods of damage control
14. Safe working practice

- 2) Mandatory minimum requirements for the training and qualifications of masters, officers and ratings of oil tankers, chemical tankers and liquefied gas tankers.
- 3) Mandatory minimum requirements for the issue of certificates of proficiency in survival craft.
- 4) Resolutions, 23 in number, relating to operational guidance for officers in charge of navigational watch and required training for seafarers and others.

Further more, the concrete enforcement of previously listed educational and training items (curriculums, lecture periods, etc.) is left to the discretion of each country ratifying the conventions.

c. ILO-related Conventions

Of the ILO-related conventions, the ILO Convention No. 147 affected the STCW Convention the most. This Convention sets down minimum standards for merchant ships. It stipulates standards concerning the competency of crews, working hours and deployment, appropriate social security benefits, and necessary measures to be taken for those ships below specific standards in terms of employment and living conditions on board including detention in ports of parties to the Convention.

This Convention considerably affected the STCW Convention when the latter was adopted as can be seen by the fact that the IMO and the ILO held joint conferences at that time.

4. EDUCATION, TRAINING AND QUALIFICATION

a. Educational Administration Regarding Seamen

Educational administration regarding seamen in the Philippines is extremely complex. This is because decision-making with respect to government policies concerning the educational legislation for seamen, administration of budgets for educational institutions, and employment and welfare is shared by various government agencies concerned. Government agencies directly administering educational institutions for seamen are outlined below. Also refer to the chart hereinafter showing their relationships.

1) Ministry of Transport and Communications (MOTC)

Those matters concerning shipping and shipbuilding are, in essence, under the control of MARINA. In the shipping sector, there is the Manpower Development Office which is responsible for training manpower for shipping (including seamen) and shipbuilding and for improving relevant institutions. Under its jurisdiction is the sole state merchant marine college PMMA.

2) Ministry of Labor and Employment (MOLE)

This ministry is responsible for labour administration in general. Its organization includes POEA which is responsible for the registration of seamen, expansion of employment and improvement of the quality of seamen. This ministry has under its jurisdiction, NMP which is the sole state retraining institution for seamen, and the Basic Seamen's Course designed to train new ratings such as deck-hands, engine room hands, stewards, etc.

3) Ministry of Education, Culture and Sports (MECS)

Its Bureau of Higher Education is responsible for higher education and exercises jurisdiction over educational institutions for new recruits.

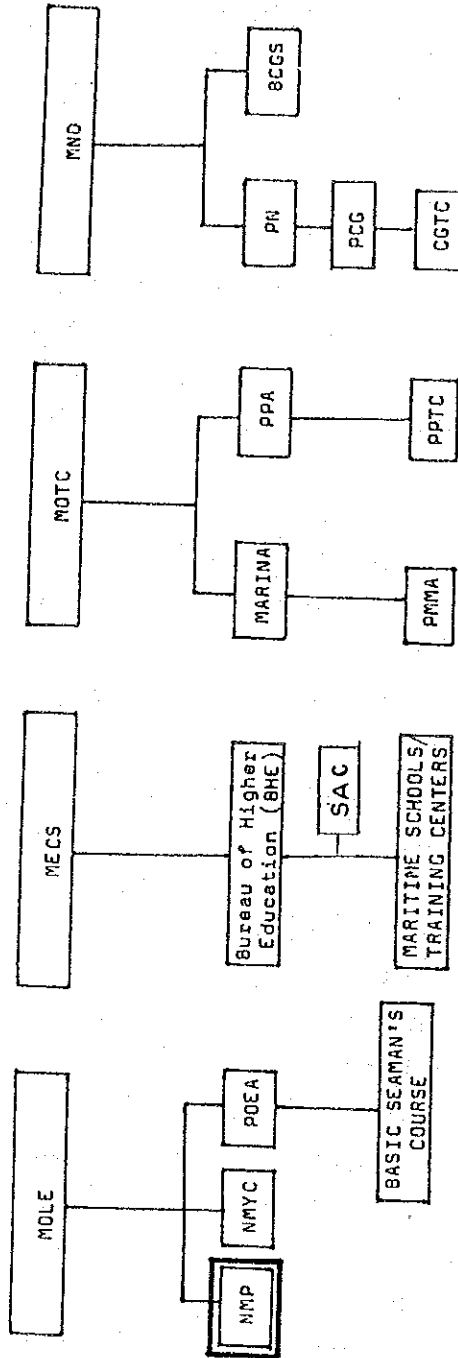
4) Ministry of National Defence (MND)

One of its organizations, the Philippine Navy, administers the PCG which is responsible for the enforcement of maritime laws, safety of life and property at sea and measures relating to international conventions. The CGTC comes under the jurisdiction of the PCG which also supervises the Don Bosco Youth Foundation Seamen's Training Center, run by a religious organization.

5) Other related Organizations

Apart from these organizations which directly administer educational institutions, the PRC is responsible for conducting competency examinations, the NTC for training marine radio operators and SAC for the advising of education provided by private merchant marine schools.

(chart mole and others and their relationships)



LEGEND:

- MOLE - Ministry of Labor & Employment
- MECS - Ministry of Education, Culture & Sports
- MOTC - Ministry of Transport & Communication
- MND - Ministry of National Defense
- NMP - National Maritime Polytechnic
- NMYC - National Manpower & Youth Council
- POEA - Philippine Overseas Employment Administration
- MARINA - Maritime Industry Authority
- PPA - Philippine Ports Authority
- PN - Philippine Navy
- BCGS - Bureau of Coast & Geodetic Survey
- SAC - Special Advisory Committee
- PCG - Philippine Coast Guard
- PMMA - Philippine Merchant Marine Academy
- PPTC - Philippine Ports Training Center
- CGTC - Coast Guard Training Center

b. Education System for Seafarers

The educational system for seafarers in the Philippines can be roughly divided into institutions for new recruits who intend to become seafarers and those for retaining seamen. Outlined hereafter are the educational systems for each category.

1) Education of New Recruits

The Philippine educational system consists of elementary education including four years of compulsory education and two years of intermediate education, four years of secondary education with first two years spent in general education and the next two years either in college preparatory courses or in vocational courses and higher education in college.

In the education for new recruits of seafarers, the above-mentioned institutions for higher education and for normal secondary education train officers. The former provide a four-year course (three years of class work and one year of practical training at sea). A Bachelor's Degree and a Primary Seaman's Competency Certificate are awarded to those who successfully complete this course and pass state examinations.

The latter provides a two-year course in class work and after obtaining practical experience at sea for two years following graduation, graduates from this course are qualified to take the state examination of Primary Seaman's Competency.

The Basic Seaman's Course is also provided for ratings, lasting for six months in class work, and is to train graduates of normal secondary education.

The characteristics of the educational system for new recruits in the Philippines are given below.

- a) There are numerous schools, and almost all of them are private institutions.

- b) While it is fairly easy to enter and to graduate from these institutions, it is rather difficult to obtain a Seaman's Competency Certificate due to the lack of practical training at sea.
- c) The teaching method places emphasis on theory with very little practical training.

2) Retraining

The objectives of retraining is for ship officers and ratings as follows:

- a) Retraining to give seafarers necessary qualifications
- b) Retraining for improving seafarers' navigational skills required due to advances in technology.
- c) Retraining necessary for carrying out the government policy for seafarers

Retraining for objective a) is to meet the qualifications required of seafarers under the STCW Convention and other related conventions. It is most important and urgent as the STCW Convention is scheduled to come into effect soon. Retraining for this aim is already being given, though partially, by NMP the sole national institution.

Retraining for objectives b) and c) is of more permanent nature. For instance, they are endorsed by the national policy of deploying Filipino seafarers on those vessels which require advanced navigational skills and of increasing their adaptability to the international market of marine labor.

Judging from the above point of view, retraining has more practical importance than the training of new recruits. However, retraining as a system began only in 1978, and NMP is the only institution which provides retraining. As regards other types of retraining, a small number of shipping companies provide

retraining for their employees to ensure safety in navigation. The Seamen's Union also provides retraining on a temporary basis. However, they are close to in-company training in nature.

In view of the fact that retraining is conducted institutionally in most countries of Asia such as Indonesia and Malaysia, the situation in the Philippines and Thailand is still underdeveloped in this respect.

c. Philippine System of Qualification for Seamen

After the completion of courses at the before-mentioned educational institutions, licenses for masters, mates, chief marine engineers and marine engineers can be obtained as follows:

1) Classes of Seamen's Competency Certificates

a) Deck Department

Master Mariner

Chief Mate

Second Mate

Third Mate

b) Engine Department

Chief Marine Engineer

Second Marine Engineer

Third Marine Engineer

Fourth Marine Engineer

2) Qualifications of Candidacy for Examination

In order to obtain a seamen's competency certificate, it is necessary to pass the state examination (written examination only) conducted twice a year by the PRC.

a) Qualifications Common to All Classes:

Male
 Philippine citizen
 Good mental and physical health. Normal color sight certified by an officially appointed physician.
 Person of good behavior.

b) Special Qualifications Required for Different Classes

Captain and Mates

	Master Marine	Chief Mate	Second Mate	Third Mate
Tolerance of age	over 25	over 21	over 21	over 21
Period of experience at sea	as C/M 2 years	as 2/M 1 year	as 3/M 1 year	as Apprentice 1 year
Class work				3 years

Chief Marine Engineer and Marine Engineer

	Chief Marine Engineer	Second Marine Engineer	Third Marine Engineer	Fourth Marine Engineer
Tolerance of age	over 25	over 21	over 21	over 21
Period of experience at sea	as 2/E 2 years	as 3/E 1 year	as 4/E 1 year	as Apprentice 1 yr 2 yr
Class Work				3 yr 2 yr

d. NMP and the System of Certification for Seafarers

The system of certification for seafarers can roughly be divided into the system of certification for seamen's competency and the system of certification for seafarers' proficiency.

To give an example of the former, if one wishes to obtain a job as master mariner or chief marine engineer, one is required to have an appropriate Seaman's Competency Certificate which can be obtained only by successfully taking the state examination conducted by the PRC.

In the case of the latter, since it concerns particular skills (proficiency cannot be determined by written examination only), one has to successfully complete a training course approved by the government to be qualified.

The curriculum given by NMP is designed for both systems of certification. Accordingly, when a seaman wishes to acquire a new qualification, he realizes the necessity to receive training at NMP as well as the important role played by the institution.

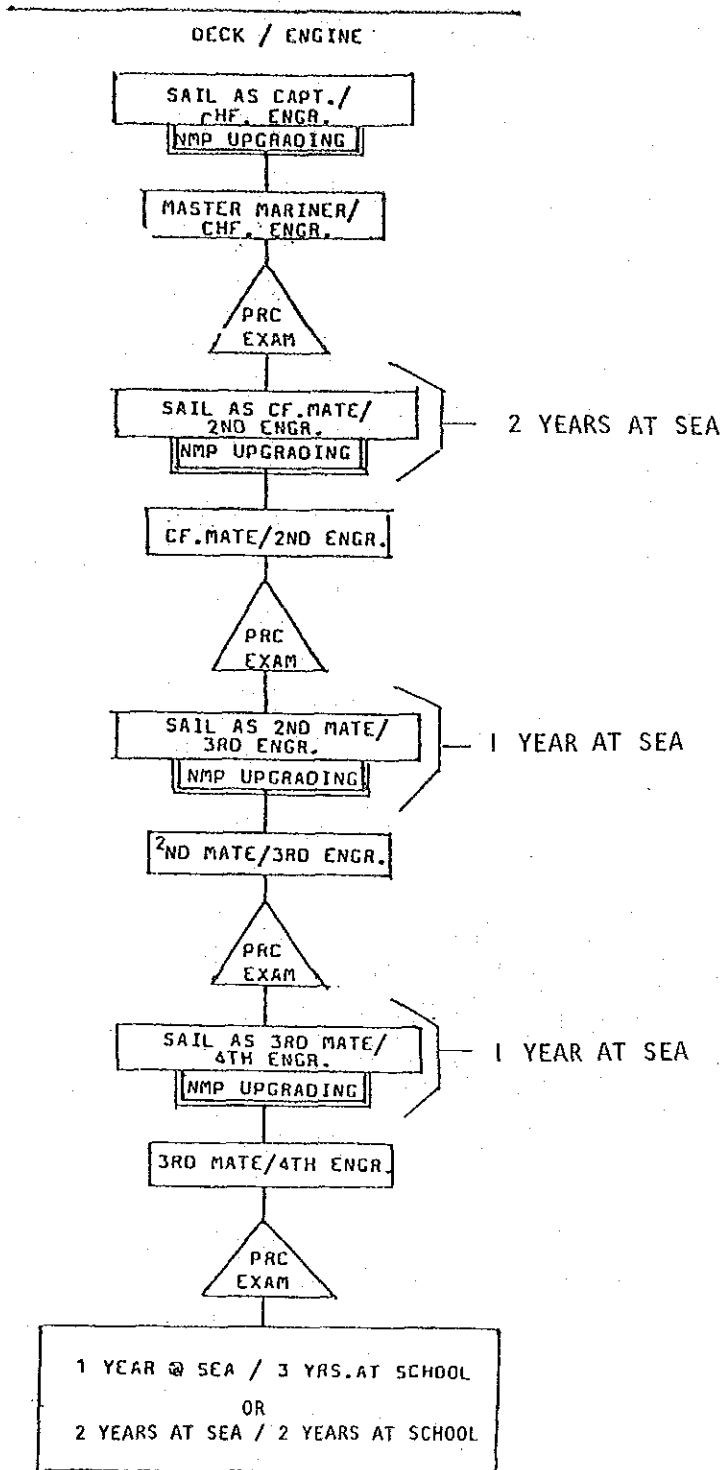
The certificates of proficiency which can be issued by NMP under the STCW Convention and ILO-related conventions include the following:

- 1) Certificate of completion of study of the mandatory minimum knowledge and skills required of officers and ratings.
- 2) Certificate of completion of training in the fields listed below:

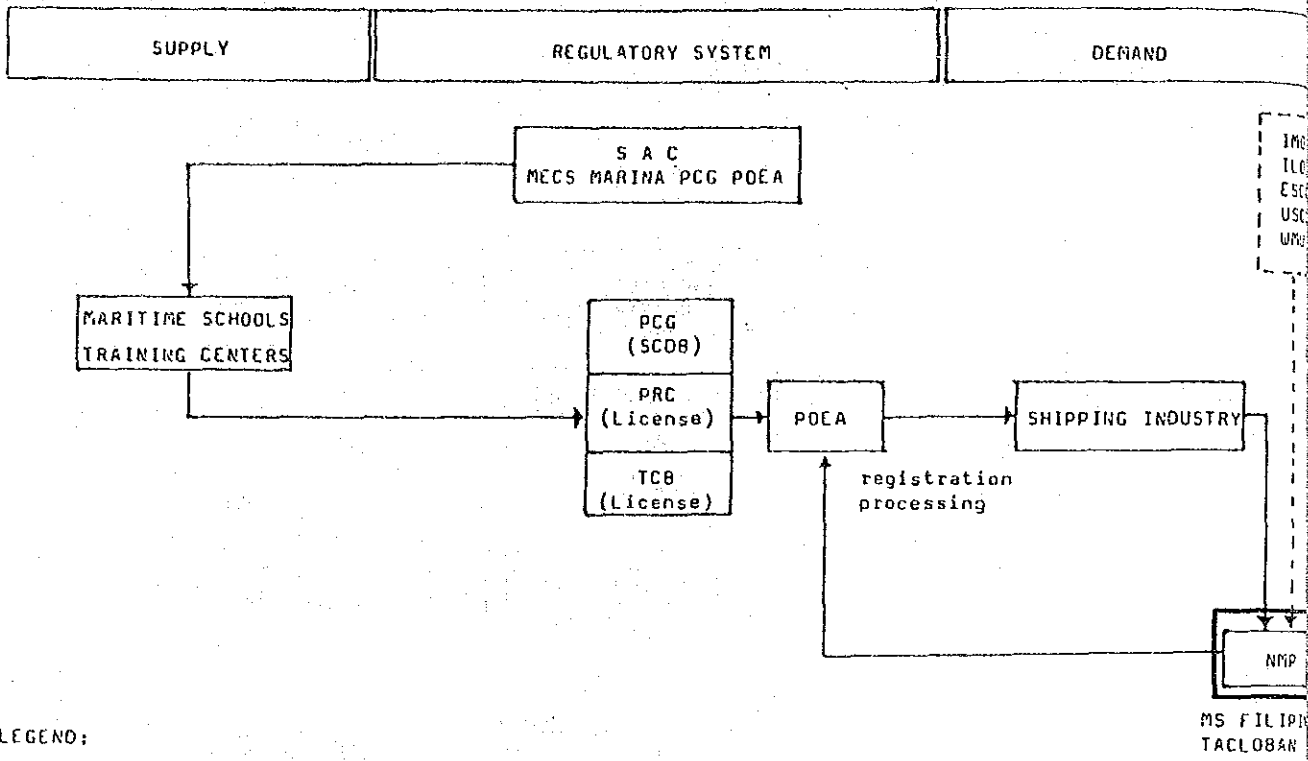
radar observer, radar simulator, collision avoidance aids, oil and chemical tankers, dangerous cargo, personal survival techniques, lifeboat and liferaft, fire fighting, medical treatment, radiotelephony

The following is a flow chart describing the procedures for obtaining a Seaman's Competency Certificate under the system of certification for seamen's qualifications.

MERCHANT MARINE OFFICERS
DEVELOPMENT SYSTEM



MARITIME MANPOWER DEVELOPMENT SYSTEM



LEGEND:

- SAC - Special Advisory Committee
- MECS - Ministry of Education, Culture & Sports
- MARINA - Maritime Industry Authority
- PCG - Philippine Coast Guard
- POEA - Philippine Overseas Employment Administration
- PRC - Philippine Regulation Commission
- TCB - Telecommunications Control Bureau
- NMP - National Maritime Polytechnic

B. NATIONAL MARITIME POLYTECHNIC (NMP)

1. OBJECTIVE OF ESTABLISHMENT

Due to advances in navigational techniques and the international demand for the prevention of marine pollution in recent years, stricter safety standards for shipping and improvement of seamen's knowledge and techniques have been called for, resulting in the adoption and implementation of the STCW Convention and other conventions relating to the IMO and ILO. Under the changing international environment for seamen and in view of the long-term economic development of the Philippines, the necessity of achieving the objectives outlined below for the Philippine shipping and seamen was recognized.

- a. Training of seamen who meet the qualifications stipulated under the STCW Convention
- b. Training of capable persons who can contribute to the shipping industry
- c. Training of seamen who can respond to the technological evolution for shipping

With the implementation of the STCW Convention scheduled for April 1984, improvement of education of seamen has become very urgent. Improvement of educational institutions for new recruits could be a means to solve this problem. However, in order to assist those who were already in employment and those who were about to find employment, and in view of the fact that almost all institutions are private, the Philippine Government established the National Maritime Polytechnic (NMP) on May 1, 1978 under Presidential Decree 1369, as a retraining institution

2. ORGANIZATION

The next chart shows the organization of NMP (including those sections being planned).

In accordance to Presidential Decree No. 1369, the Board of Trustees is consists of the following members:

Minister of Labor and Employment (MOLE)

Chairman, NMP Board of Trustees

President, National Maritime Polytechnic (NMP)

Member

Deputy Administrator, Philippine Overseas Employment
Administration (POEA)

Member

President, Filipino Shipowners' Association (FSA)

Member

Administrator, Maritime Industry Authority (MARINA)

Member

President, Philippine Association of Maritime
Institutions (PAMI)

Member

Director, Bureau of Higher Education, Ministry of Education,
Culture and Sports (MECS)

Member

Acting Regional Executive Director, National Economic
Development Authority (NEDA)

Member

President, Associated Marine Officers and Seamen's Union of the
Philippines (AMOSUP)

Member

Commandant, Philippine Coast Guard (PCG)

Member

As the list shows, the organization is such that it can obtain cooperation and assistance from administrative bodies and shipping organizations.

The chart shows the present membership of NMP personnel totalling 78 including the members of the Board of Trustees. Of these, 21 persons are engaged in conducting and administering the Package Course at Tacloban as training staff. In order to achieve the expansion of NMP, improvement of personnel deployment seems to be an urgent task.

3. EXISTING FACILITIES AND TRAINING EQUIPMENT

a. Contents of Present Facilities

The NMP headquarters at present is located in the city of Manila. There are no teaching facilities at the headquarters. Only registration is being handled for trainees.

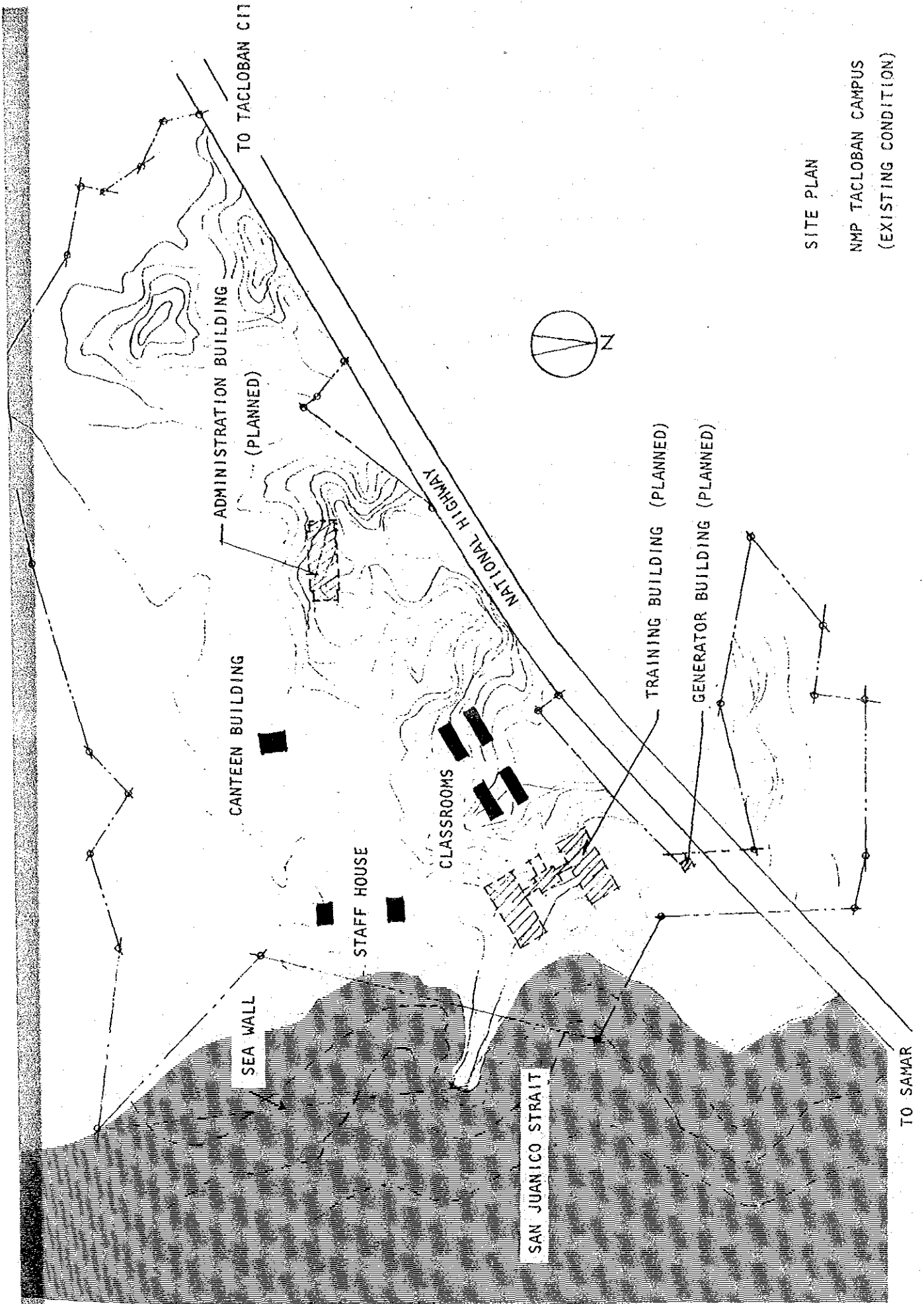
NMP's teaching facilities are located in the Cabalawan District of Leyte, occupying an area of 15 hectares.

School Buildings:	4 (2 for classrooms and 2 for office and dormitory)
Staff Housing:	2
Canteen:	1

Existing buildings are as shown on the layout plans included herewith. Only Package Courses are being conducted at present.

b. Present Range of Teaching Equipment and Materials

The following lists describe present teaching equipment and materials. Of these, the 16 mm films purchased from Britain are sufficient for educational effects. However, most of the equipment for practical training are obsolete. Many of them are not in use on vessels nor do they meet the specifications under international conventions adopted by the IMO. They are thus inadequate for obtaining the desired educational results.



SITE PLAN

NMP TACLOBAN CAMPUS
(EXISTING CONDITION)

LIST OF EQUIPMENT

A. Fire Fighting

1. Portable pumps - 3
2. Fire Hoses 1-1/2 inch - 4
3. 4-foot applicator with spray head - 1
4. Fire Hoses 2-1/2 inch - 4
5. Asbestos suit - 1
6. Smoke masks - 6
7. Suction hose with strainer 4 inches - 3
8. Gas mask - 1
9. Rescue breathing apparatus - 1
10. CO2 fire extinguishers - 15 lbs. - 6
11. CO2 fire extinguisher 50 lbs - 2
12. Chemical fire extinguisher - 10
13. CO2 fire extinguisher mounted - 2
14. Safety line - 2
15. Fire ax - 1
16. Spanner - 2
17. Helmets - 30
18. All purpose nozzle - 1
19. Spray nozzle - 3
20. Solid stream nozzle - 1
21. Training films on subject
22. Mechanical foam - 1

B. Proficiency in Survival Craft

1. lifeboat, 25 pr. capacity - 1
2. Cars - 12
3. Outboard motor - 1
4. Training films on subject
5. Radial davit - 2

C. Survival at Sea

1. Liferaft (inflatable) 25 pr. capacity - 2
2. Signal mirrors - 2
3. Life jacket - 30
4. Life jacket (inflatable) - 30
5. Life rings - 1
6. Megaphones - 3
7. Flares - 6
8. Dye markers - 5

D. Ships Medicine

1. Oral thermometer ----- 1 ea.
2. Rectal thermometer ----- 1 ea.
3. Stretcher ----- 1 ea.
4. Bandage scissors ----- 1 ea.
5. Forceps ----- 1 ea.
6. Wooden splints ----- 4 ea.
7. Wire mesh splint ----- 1 ea.
8. Tourniquet ----- 1 ea.
9. First aid kit ----- 4 ea.
10. Pharyngeal airway ----- 1 ea.
11. Elastic bandage ----- 1 ea.
12. Gauze bandage ----- 2 boxes

E. Inventory of Films

1. Keep It Clean
2. Flammable Liquids - Beware
3. Dangerous Goods at Sea - Part I
4. Watch That Space Confined Space Hazard
5. This is Your Lifeboat
6. In the Event of Fire
7. Putting Fire Out
8. Ship Handling
9. 1972 International Collision Regulation
10. Naval Health Part 2 - Your Life in Your Hands
11. Buoyage System A
12. LPG Safety
13. Use of Compressed Air Breathing Apparatus
14. Resuscitation
15. External Bleeding I - Pressure Methods
16. Action in an Emergency
17. External Bleeding II - Tourniquet
18. Command and Control
19. Ship Handling Part I
20. Fire Chemistry
21. Command and Control Part I
22. Meteorological Conditions at Sea
23. Introduction to Liquified Gas Carriers
24. Firefighting - Part I
25. Firefighting - Part II
26. Distress Signal
27. Introduction to Chemical Tanker
28. Crude Oil Washing
29. Deck Officer Watchkeeping in Port
30. Abandon Ship
31. Naval Health - Part I Your Own Worst Enemy
32. Naval Health - Part 3 (Your Life in Your Hands)
33. Crude Oil Washing Operations
34. Watch on the Channel
35. Inert Gas System
36. Key to Cleanliness
37. Margins of Safety
38. Operation and Maintenance of Inert Gas System
39. Survival at Sea
40. Fire a Hazard
41. Helicopter Assistance at Sea
42. Launching of Lifeboats

4. ACTIVITIES AND RECRUITMENT

a. Activities

NMP has offices in Manila and Tacloban which are responsible for administration and registration. Educational facilities are confined to Tacloban where only the Package Course is given due to the shortage of facilities and materials.

As the records given below show, NMP obtained significant results in the short period of the last two years. In the case of the Package Course, there are always more applicants than places available. Judging from these facts, it seems that a sufficient number of seamen can be recruited for retraining.

1) Radar Observer's Course

Training is entrusted with the institutions listed below. This course is intended for captains and mates of all classes. A total of 11,426 mariners have completed this course as of December 1983.

a) NMP-supervised Training Facilities:

- (1) Nautica Shipping Agency & Management
Company, Inc. (NAUTICA)
- (2) Philippine Merchant Marine Academy/FAME
Capt. I.P. Estaniel Foundation
- (3) Magsaysay Lines Training Center
- (4) Western Marine Inc.
- (5) Associated Marine Officers and Seamen's
Union of the Philippines (AMOSUP)
- (6) Oriental Maritime Inc.
- (7) MATS College of Technology (Davao)

2) Radar Simulator Course

Training is entrusted with the institutions listed below. This course is intended for captains and mates of all classes. A total of 3,721 mariners have completed this course as of December 1983.

a) NMP-supervised Training Facilities

(1) Philippine Merchant Marine Academy/FAME

Capt. I.P. Estaniel Foundation

(2) Magsaysay Lines Training Center

3) Ship Cooks and Stewards Course

This course is intended for ship cooks and stewards. A total of 90 mariners have completed this course as of July 1983.

4) Package Course

Enrollment capacity: 120 per course

Training period: 14 days

A cumulative total of 1,196 mariners completed this course as of December 1983.

Contents of the course:

- a) Firefighting
- b) Survival at sea
- c) Proficiency in survival craft
- d) Ship medicine
- e) Maritime leadership and behavior development

Administration, management and registration are conducted by Manila and Tacloban Offices.

b. Recruitment of Trainees, Tuition and Registration Fees

Trainees for the Package Course conducted by NMP at Tacloban are recruited through announcements on the radio and in newspapers and magazines. In reality, however, word-of-mouth communication plays the main role in recruitment, attracting more applicants than places available. This method seems to be adequate at present in view of the fact that seamen go to shipping companies and manning agencies (said to be in the region of 150) to seek employment.

With wider recognition of the importance of retraining expected after the completion of the expansion program, the number of applicants is also expected to increase in the future. Accordingly, there still is room for improvement, e.g., a more efficient recruitment method, better publicity regarding the scope of training.

The survey team conducted a survey on about 80 trainees enrolled in the Package Course as to their awareness of the NMP expansion program. The results showed that about 90% were willing to attend an Upgrading Course (with a tuition fee of P4,000 and a training period of at least four months) as well as a Special Course.

Tuition and registration fees in the case of the Package Course conducted by NMP are given below as an example.

Tuition and registration fees total: P920

Registration fee:	20
Tuition fee:	900
(P245 for meals and P655 for administrative expenses	

Though the total tuition fee includes dormitory expenses, it still is high compared with other educational institutions for seamen.

As for other necessary expenses, transportation to Tacloban is required by the trainees. Transportation fare from Manila to Tacloban can however be discounted from P150 to P90 in the case of trainees.

5. FUTURE PLANS OF THE NMP

The NMP Five-year General Program formulated in 1980 is to achieve the purpose given in Presidential Decree 1369. It concerns the completed form of NMP as a seamen's retraining institution and its administration. This general program provides the basis for the NMP expansion plan being carried out by the Philippine side at present. Accordingly, any future planning for NMP should be in accordance with the General Program. Needless to say, the present project for expanding NMP forms part of the General Program.

Accordingly, the future planning for NMP described here refers to the completed form of NMP with regard to the curriculum, enrollment, staff, training equipment and facilities.

a. Curriculum and Enrollment

<u>Officers' Course</u>	<u>Enrollment per year</u>
* Navigation	480
* Engineering	480
Marine Radio	90
Stewards	180
 <u>Ratings Course</u>	
Able Seamen	120
Life Boatman	240

Pump Man	240
Machinist/Welder	120
Electrician	120
Reeferman	120
Electronic Technician	120
Fireman/Boilerman	240
<u>Special Course</u>	
* Radar Observer	1,000
* Radar Simulator	640
* Tanker Safety	3,600
* Dangerous Cargo	3,600
* Ship Medicine	240
* Fire Fighting	3,600
Basic Seaman	240

* refer to courses considered for the Project

b. Teaching Staff

The number and deployment of teaching staff is as shown on the following table.

Teaching Staff

	Dean	Professor	Associate Professor	Assistant Professor	Senior Instructor
Upgrading Course					
Deck	1	2	2	3	-
Engine	1	2	2	2	1
Chief Steward & Chief Cook					4
Radio Officers					2
Able Seaman					2
Lifeboat					2
Pumpman					2
Mechanic/Welder					2
Electrician					2
Reeferman					2
Electronic Technician					2
Fire/Boilerman					2
Radar Observer				2	
Radar Simulator				2	
Tanker Safety & Dangerous					4
Ship Medicine			1		
Fire Fighting					2
Basic Seaman					Instructor 4
Total	2	4	5	9	33

c. Organization

Proposed organization is as shown of the NMP Organizational Chart on the following page.

d. Training Equipment and Buildings

List of training equipment planned by the Five-year Program is included in the Supplement.

Future development plans of the Tacloban Campus is shown on the Site Development Plan included hereinafter.

C. SIMILAR TRAINING FACILITIES IN JAPAN

The Maritime Technical College, as the re-education facility for seamen, is under the Ministry of Transport. In addition to the main school at Ashiya, it has branch schools at Kojima and Nanaya. Only those having experience on ships are entitled to be enrolled. The total number of students is 2,380 inclusive of the correspondence course.

The university specializing in re-education was established in 1945 by the Ordinance No. 167 and has a history of 38 years. It is divided into the navigation, engine and liberal arts courses, and classified into the main, special lecture, lecture and correspondence courses.

An outline of the Maritime Technical College is shown in the Supplement of this Report.

PLANS FOR EXPANDING AND MODERNIZING NMP

CHAPTER THREE PLANS FOR EXPANDING AND MODERNIZING NMP

A. FUNDAMENTAL POLICIES AND OBJECTIVES

The process of the establishment of NMP is as described in the previous article. However, as the initially planned purpose could not be achieved due to the substantial lack of training equipment and facilities, the grant aid and technical cooperation of Japan was requested, and this expansion and modernization project was initiated accordingly.

The fundamental policies of the expansion and modernization project aim to give academic knowledge and skills required for the operation of ships under international conventions such as the STCW. To this end, "The Tentative Understanding" was agreed upon in August 1983 between a preliminary study team from Japan and the Government of the Philippines. Consultations were made with NMP to realize this understanding with emphasis on plans for training equipment and facilities, and through this process, the following basic design has been formulated.

B. TRAINING CURRICULUM

The basis for the retraining curriculum for upgrading and for special courses was prepared by conferences between a Japanese preliminary survey team and NMP, and was confirmed by "The Tentative Understanding" exchanged between the preliminary survey team and NMP on August 29, 1983.

The curriculum was prepared in such a way that the Upgrading Course would be linked to certificates of competency, fully meeting the minimum requirements for certification as specified under the STCW Convention. Similarly, Special Courses would be linked to certificates of skills necessary for employment in shipping, fully meeting the requirements specified in the IMO-related and STCW Conventions.

The Basic Design Survey Team presented the above retraining curriculum to NMP, and after discussions between the two parties, the retraining curriculum was prepared as shown hereinafter.

As regards the particulars of implementation, respecting the spirit of the STCW Convention that enforcement should be based on the domestic laws of parties to the Convention, necessary skills of seamen and technical standards should reflect Philippine laws and government policies concerning their seamen of the future, and further study will be required at the beginning of the technical cooperation program.

1. UPGRADING COURSES

Navigation Department

	Master Mariner	Chief Mate	Second Mate	Third Mate
Subjects related to navigation	180 hours	200 hours	240 hours	240 hours
Subjects related to seamanship	180 hours	200 hours	240 hours	240 hours
Subjects related to maritime laws	140 hours	100 hours	80 hours	80 hours
Subjects related to maritime affairs	100 hours	80 hours	-	-
Liberal arts	80 hours	100 hours	120 hours	120 hours
Total	680 hours	680 hours	680 hours	680 hours

Notes:

- a. Subjects related to navigation comprise navigational aids, geonavigation, celestial navigation, electronics navigation, navigation planning and other subjects.

- b. Subjects related to seamanship comprise naval architecture, marine meteorology, ship handling, marine engines, cargo handling, emergency equipment and other subjects.
- c. Subjects related to maritime laws comprise the domestic laws governing Philippine shipping and seafarers, and international conventions stipulated in the IMO and the STCW Conventions.
- d. Subjects related to maritime affairs comprise marine transportation, marine transportation economics, marine insurance and other subjects.
- e. Subjects in liberal arts comprise physics, mathematics (included in the Philippine certificate of competency examination) and English (IMO maritime English).

Marine Engineering Department

	Chief Marine Engineer	Second Marine Engineer	Third Marine Engineer	Fourth Marine Engineer
Subjects related to main engine	200 hours	180 hours	180 hours	180 hours
Subjects related to auxiliary machinery and electricity	220 hours	200 hours	200 hours	200 hours
Subjects related to engine fundamentals	100 hours	100 hours	80 hours	80 hours
Subjects related to general management of engineering	80 hours	100 hours	100 hours	100 hours
Liberal arts	80 hours	100 hours	120 hours	120 hours
TOTAL	680 hours	680 hours	680 hours	680 hours

Notes:

- a. Subjects related to the main engine comprise internal combustion engines, steam and gas turbines, boilers, propellers and other subjects.
- b. Subjects related to auxiliary machinery and electricity comprises steering gear, refrigeration and air conditioning systems, instrumentation, automatic control system, pumping system, electrical equipment, deck machinery and other subjects relating to auxiliary machinery and electricity.
- c. Subjects related to engine fundamentals comprise thermodynamics, hydrodynamics, material strength, marine engineering and others relating to applied dynamics.
- d. Subjects related to general management comprise watchkeeping in engine rooms, security, general engine items, maritime laws and regulations (domestic laws and international conventions) and others relating to practical guidelines.
- e. Subjects in liberal arts comprise physics, chemistry and mathematics.

2. SPECIAL COURSE

- a. Radar Observer Course
- b. Radar Simulator Course
- c. Firefighting Course
- d. Proficiency in Survival Craft Course

Though the above four courses are already implemented, the first two need further study.

e. Tanker Safety Course

Lectures and practical training are to conform with the Annex to Resolution 10, Chapter V, Regulation V/1 of the STCW Convention. Lecture and training hours: 168 hours (maximum).

f. Dangerous Cargo Course

This course is to be conducted mainly in lectures in conformity with the contents of Resolution 11, Chapter V, Regulation V/2. and Annex to Resolution 12. Lecture hours: 42 hours (maximum)

g. Radio Telephony Course

This course is intended for captains or mates on watchkeeping, and is to be conducted in conformity with the contents of Annex to Resolution 6, Annexes I and II and Appendix to Resolution 15 of the STCW Convention. Lecture hours: 12 hours

h. Marine Medical Course

This course is to cover the following contents:

- 1) Infectious diseases and isolation methods.
- 2) Allergies and their treatment.
- 3) Medical advice by radio.
- 4) Symptoms of death
- 5) Storage of medicine.
- 6) Food and food preparation hygiene.

Lecture hours: 18 hours.

PROJECT ENVIRONMENT

CHAPTER FOUR PROJECT ENVIRONMENT

A. ENVIRONMENT

Tacloban City is located in the northeast portion of Leyte Island and is the capital of Leyte with a population of about 100,000 as the center of commerce, education and cultural activities. Tacloban Airport in the east of the city is provided with jet plane services of two flights to Manila daily in addition to flights to Cebu.

Tacloban Port located in the center of the city is a busy international port, with connections to Manila, Cebu and other neighboring islands as well as foreign countries.

Proposed site of this Project is located at a distance of about 7 km from the city center. Total land area is approximately 15 hectares.

The site faces on its north side an 11-meter wide national highway which leads from Tacloban City to Samar Island via Marcos Bridge. This national highway stretches northward in the Samar Island and finally connects Samar Island to Luzon Island by ferry boats as an important land transportation route from Manila. On the east, the site faces San Juanico Strait, while south and west sides are bordered by creeks, beyond which are wooded areas of mangrove and nipa palm trees.

Topography of the north portion of the site facing the road is almost at the same level as the road and flat, but the site as a whole slopes towards the sea and the creeks.

On the site are seven existing buildings which are four training buildings, one dining hall building and two dormitory buildings for teaching staff as shown in the attached drawing. They are located in accordance with the master plan for future development. All these buildings are single storied reinforced concrete with tiled roofs.

Two of these seven buildings are now being used temporarily for office and dormitories.

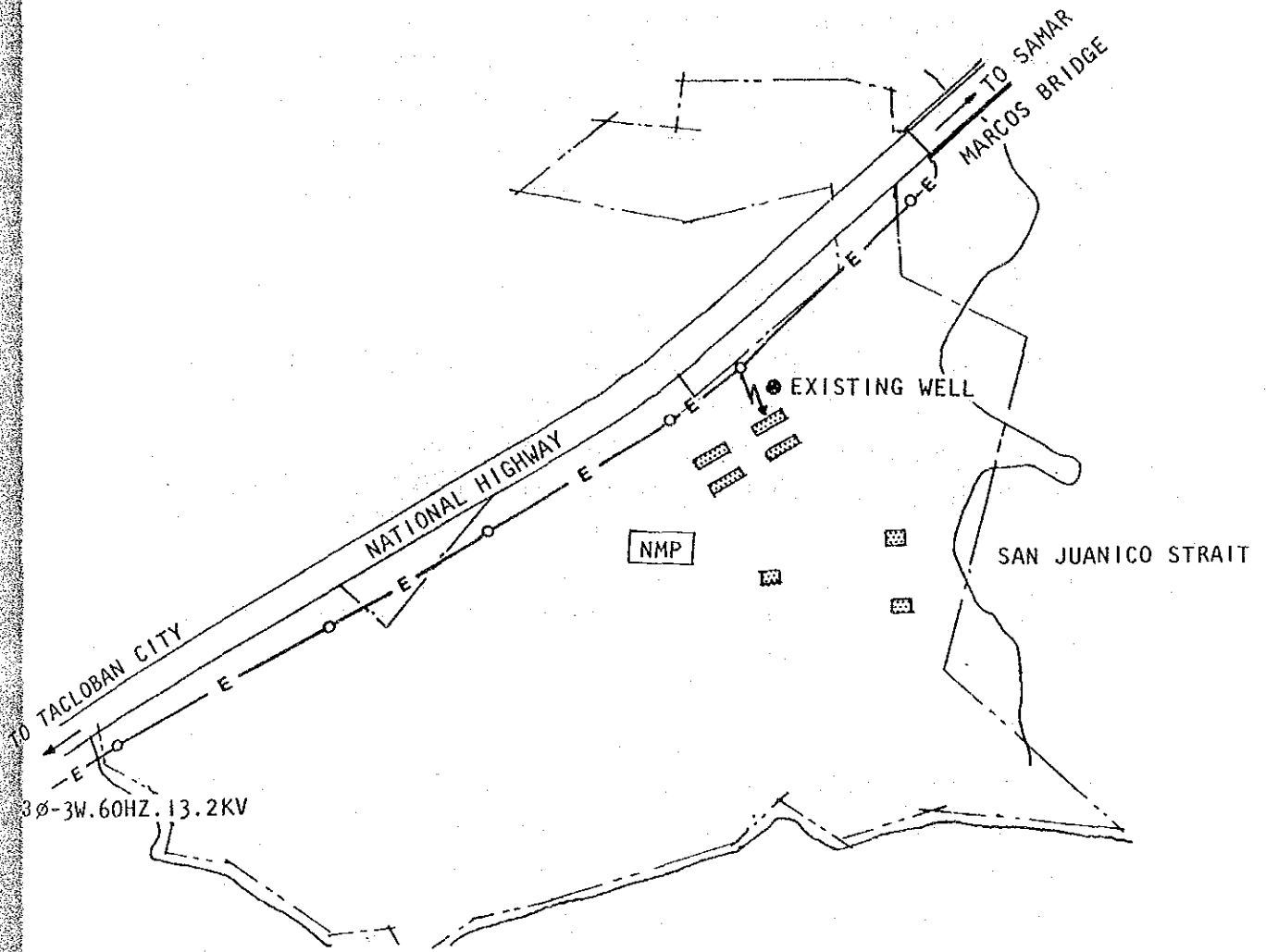
B. INFRASTRUCTURE

1. ELECTRICITY

Electricity is supplied by the Leyte Electric Corporation, Inc. Normal transmission voltages are 220V, 6.2 kV and 13.2 kV with 60 Hz frequency.

Along the highway in front of the site, is an aerial transmission line of 13.2 kV from which electricity is supplied through a pole transformer to existing training buildings with 3 phase, 3W, 220V rating.

This transmission line is the trunk line running to Samar from Leyte via the Marcos Bridge.



LEGEND

- E — AERIAL WIRING
3φ-3W. 60HZ. 13.2KV
- ELECTRIC POLE

EXISTING ELECTRIC AND WATER SUPPLY

2. TELEPHONE

Telephone services are provided by the Eastern Visayas Telephone Co.

Telephone switchboard at Tacloban Telephone Exchange has been replaced with a new Japanese model last year and telephone wirings upgraded. However, telephone wiring towards the site has been installed only up to a point 6 km from the proposed site. Telephone wiring to the vicinity of the site is expected to be available five years later.

3. WATER SUPPLY

Water supply to Tacloban City is provided by the National Waterworks and Sewerage Authority, but the nearest water main terminates about 3 km from the site. Even though there are plans to install a 12 inch water main to a regional hospital under construction about 500 meters from the site, no extension thereafter is being planned.

Existing buildings of NMP are being supplied from a well (6 meters deep) on the site. The quality of water being supplied is adequately potable.

The water supply to buildings planned for this Project is to be undertaken by the Government of the Philippines and it is necessary to be accomplished by either having the existing water main of NAWASA extended or by drilling more wells on the site.

In case of drilling additional wells, it will be necessary that the quality of water be tested and, if required, a water treatment plant will be installed, which will be included in the scope of work by the Government of the Philippines.

4. DRAINAGE

There is no drainage or sewer main near the site. Miscellaneous effluent and rain water are being discharged directly to the sea. Sanitary waste is being treated through a septic tank and its effluent discharged.

5. GAS SUPPLY

There is no city gas supply system in Tacloban City. Therefore gas is supplied individually by means of propane gas cylinders. 30 kg cylinders are most commonly used on rental basis, the price of propane gas refilling being controlled by the government.

6. TRANSPORTATION

Main roads in Tacloban City are generally well maintained, particularly, the road in front of the site is a national highway constructed through Philippines-Japan friendship, and is one of the trunk roads connecting the city with Manila via the island of Samar, and is consequently well maintained.

The main public transportation means within the city consists of buses, jeepneys, tricycles, etc., with a few taxis.

There is a bus stop in front of the gate of the institution for buses operating between Tacloban and Samar Island, and it is also a terminal turning point for the buses from Tacloban city.

