

## **SUPPLEMENTS**



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## SUPPLEMENT 1

### THE STCW CONVENTION, IMO AND ILO RELATED CONVENTIONS

#### A. INTERNATIONAL MARITIME ORGANIZATION (IMO)

##### 1. GENERAL

The Inter-Governmental Maritime Consultative Organization (IMCO), a specialized agency of the United Nations, was renamed in May 1982 to become the International Maritime Organization (IMO).

The IMCO became one of the specialized agencies of the United Nations in January 1959 on the basis of the IMCO Convention, which had been drawn up in March 1948 and come into effect in March 1958. This convention was also renamed IMO Convention.

##### 2. OBJECTIVES

- a. To promote international cooperation between the contracting governments with regard to rules and practices relating to all technical matters of shipping and to ensure that effective measures be taken for safety at sea and efficiency in navigation.
- b. To encourage the removing of indiscriminate measures and unnecessary restrictions imposed by governments to ensure free trade between the nations of the world.
- c. To deliberate unfair restrictions and practices between shipping businesses after the parties concerned have conducted negotiations.
- d. To deliberate matters relating to shipping entrusted by the United Nations and other specialized agencies.
- e. To promote exchange of information on matters under the jurisdiction of the IMO between the contracting governments.

### 3. CONVENTIONS

In order to achieve these objectives, the IMO draws up conventions and codes, recommends their enforcement and prepares manuals.

Though there are many conventions under the jurisdiction of the IMO, brief descriptions of the main conventions relating to the present project are given below.

#### a. International Convention for the Safety of Life at Sea (1974 SOLAS)

This convention is intended to promote safety of life at sea by establishing uniform principles and rules.

To respond to the recent renovation of navigational techniques and to meet the social need for higher safety standards for shipping, this convention simplified the procedure for revision.

Adopted on November 1, 1974, this convention came into effect on May 25, 1980.

The 1974 SOLAS stipulates on the following matters:

- 1) Governmental obligation of safety inspection of shipping, items of inspection, inspection methods.
- 2) Matters relating to certification of shipping.
- 3) Design requirements for maintaining sufficient buoyancy to prevent submersion in the case of leakage to a certain degree.
- 4) Design requirements for maintaining sufficient righting moment in the case of leakage to a certain degree.
- 5) Rules concerning engine, electrical system and steering equipment.
- 6) Rules concerning the standards for and performance of fireproof structure, fire alarm, fire detector and firefighting equipment.

- 7) Rules concerning the performance of and standards for lifeboats.
  - 8) Rules concerning installation standards for radiotelegraphy and radiotelephony, obligation of watching and the performance of radio equipment.
  - 9) Rules concerning the performance of and installation standards for lifeboats.
  - 10) Rules concerning the safety of navigation , obliging the master mariner to report on ice floes, tropical cyclones, etc., which may endanger navigation, obliging the government to conduct meteorological observation and to collect such data, obliging the installation of radar and direction finders and providing for search and rescue operations and distress signals.
  - 11) Rules concerning the grain loading method.
  - 12) Rules concerning the transportation of dangerous goods.
  - 13) Rules concerning the approval of the reactor for nuclear-powered vessels by the government agency concerned and safety from radioactivity.
- b. Protocol of 1978 relating to the International Convention for the Safety of Life at Sea, 1974

Following a series of accidents involving tankers, a protocol was adopted in 1974 to effect amendments to the 1974 SOLAS with the aim to prevent pollution from ships, to further improve the safety of tankers and to enforce stricter inspection of shipping. These amendments became effective on June 1, 1983.

Outline of amendments contained in the Protocol:

1) Inert Gas Systems (IGS)

Under the 1974 SOLAS, only those crude oil tankers of over 100,000 DWT and those oil/ore carriers of over 50,000 DWT were obliged to be equipped with inert gas systems. However, the 1974 Protocol stipulated that those tankers of over 20,000 DWT be equipped with such systems.

2) All vessels of over 10,000 GT were obliged to be equipped with two units of radar operating separately and plotting systems.

3) All tankers of over 10,000 GT were obliged to duplicate remote control systems from the bridge to the power control section of the steering system.

4) Request for higher standards of tanker crews.

5) Request for the establishment of a Technical Cooperation Corps for Safety at Sea.

6) Promotion of the study of the necessity of a revision of steering gear standards and the adoption of the improved steering gear standards.

7) Request for the development of performance standards for collision avoidance aids, preparation of conditions of installation and appropriate rules for operation.

8) Recommendation for the preparation of guidelines for enforcing statutory inspections of ships, including mandatory inspection and unscheduled inspection.

c. Amendments to the International Convention for the Safety of Life at Sea, 1974



After the adoption of the 1974 SOLCAS, many resolutions were adopted in response to technological renovation affecting ships and the social need for higher safety standards. In order to unify and integrate these resolutions, several amendments were made in accordance with the procedure provided under the Convention.

The International Load Line Convention is to be incorporated in amending Chapter 1 to effect a "maxi-SOLAS" convention.

1) First Amendments

Adopted in November 1981.

Period for acceptance: two and half years.

Implementation date: September 1, 1984.

2) Second Amendments

Adopted in June 1982.

Period for acceptance: one and half years.

Implementation date: July 1, 1986 (extended from the original date by two years).

3) Third Amendments

Expected to be adopted in 1985-86.

Expected implementation date: 1990.

B. INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS  
(1973 MARPOL)

1. OBJECTIVES

With the development of the petrochemical industry and motorization, quantity of oil transported by sea increased and as a result, the quantity of oil discharged at sea also increased, posing a serious problem of affecting the marine environment amidst the anticipated diverse use of the ocean. Sea pollution from harmful substances other than oil also began to pose an important problem. In order to prevent pollution from these and to step up the conservation of the marine environment, various measures were studied and the 1973 MARPOL was adopted in 1973.

2. TEXT AND ANNEXES

The Convention, consisting of the text and five annexes, is outlined below.

Appendix I came into effect on October 2, 1983. Appendix II is scheduled to become effective from October 2, 1986. However, effectuation dates for appendixes II, IV and V have not been set.

- a. The text of the Convention and Annex 1 stipulate the provisions concerning the prevention of pollution by oil.
  - 1) Provisions concerning the discharge of oil.
  - 2) Adoption of the segregated ballast tank method (SBT) with a transitional period provided.
  - 3) Provisions concerning the size of the cargo tank to restrict the oil discharge in the event of disaster.
  - 4) Obligation of tankers of over 150 GT to be equipped with Retention Oil on Board (ROB) and necessary equipment.

- b. Appendix II stipulates provisions concerning pollution from harmful liquid substances in bulk form. Harmful substances are classified into four classes according to the degree of harmfulness and discharge standards are provided in stages according to the classification. Provisions are also made for ship construction according to the degree of danger involved.
- c. Appendix III makes provisions for the prevention of pollution from harmful substances transported in packing, freight containers, portable containers, road and railway tankers. However, no provisions are made for actual standards for transportation and details are left to the domestic laws of contracting countries.
- d. Appendix IV makes provisions for the prevention of pollution from foul water discharged from ships.
- e. Appendix V makes provisions for the prevention of pollution from wastes discharged from ships.

C. PROTOCOL OF 1978 RELATING TO THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973 (1978 Protocol for 1973 MARPOL)

1. GENERAL

This protocol was studied at the same time as the 1978 Protocol for 1974 SOLAS which made provisions for tanker construction and equipment in view of the successive accidents involving tankers. It called for stricter rules for the prevention of pollution from tankers, extensively incorporating and partially amending 1973 MARPOL. It was adopted as 1978 Protocol for 1973 MARPOL in February 1978, becoming effective on October 2, 1983. (This 1978 Protocol for 1973 MARPOL is usually referred to as 73/78 MARPOL.)

2. GENERAL PROVISIONS

Outline of additional provisions made under 73/78 MARPOL.

- a. Under MARPOL 1973, those tankers of over 70,000 DWT were obliged to be capable of conducting normal navigation when unladen by maintaining certain draft without filling the cargo tank with dirty ballast.

The 1978 Protocol extended the scope of application to those crude oil tankers of over 20,000 DWT and those product tankers of over 30,000 DWT, making it obligatory, at the same time, to install a SBT in such a way as to protect the cargo tank in the event of collision or running aground. This is called Protective Installation of SBT.

Detailed rules concerning design and construction are left to contracting governments.

- b. Adoption of crude oil washing system (COW)

COW is designed to wash the tank by jetting a portion of the load into the tank while unloading crude oil. This serves to reduce the oil residue in the tank, thereby greatly contributing to the prevention of sea pollution with a reduced quantity of oil discharged into the sea.

- c. Recommendation for further improvement of international standards concerning inert gas systems.
- d. Request for the improvement of standards for tanker crews.
- e. Recommendation for the preparation of guidelines for enforcing statutory inspections including annual mandatory inspections and unscheduled inspections of ships.
- f. Request for the establishment of a technical cooperation corps for the safety at sea.

D. INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978 (1978 STCW Convention)

1. GENERAL

With the successive marine disasters in recent years, the low technical standards of seafarers became an international issue. The sea pollution caused by the "Tree Canyon" incident of March 1967 resulted in a move to set up international standards for navigational skills and knowledge of seafarers to prevent marine disasters due to their low navigational skills. The STCW Convention 1978 was thus adopted in July 1978, which is scheduled to be effective from April 28, 1984.

2. OUTLINE OF THE CONVENTION

a. Provisions were made for minimum qualifications and requirements for masters, mates, chief engineers, engineering, radio operators and ratings.

1) Navigational waters were classified into coastal waters and unspecified.

2) Masters and mates were classified by gross tons and navigational waters and chief engineers and engineers by main engine output and navigational waters.

b. Guidelines for watchkeeping

Twenty-three resolutions were adopted, prescribing training, etc., for seafarers of all ships including special ships such as tankers, chemical tankers and giant ships.

1) Operational guidance for officers keeping navigation, engine and deck watches.

2) Rules and operational guidance for officers keeping deck and engine watches in port.

- 3) Additional training for ratings forming part of a navigational watch.
  - 4) Training and qualifications of officers and ratings of oil tankers, chemical tankers, liquefied gas tankers and ships carrying dangerous and hazardous cargo other than in bulk.
  - 5) Radar simulator training.
  - 6) Training of seafarers in personal survival techniques.
  - 7) Training in the use of collision avoidance aids.
  - 8) Recommendations for maintaining favorable human relations on board.
  - 9) Recommendations for the promotion of technical cooperation.
- c. Provisions were made for mandatory minimum requirements for training and qualifications of masters, officers and ratings of oil tankers, chemical tankers and liquefied gas tankers.
- d. Provisions were made for mandatory minimum requirements for the issue of certificates of proficiency in survival craft.
- e. Parties to the Convention will promote support for those Parties which request technical assistance for the following.
- 1) Training of administrative and technical personnel.
  - 2) Establishment of institutions for the training of seafarers.
  - 3) Supply of equipment and facilities for training institutions.
  - 4) Development of adequate training programmes, including practical training on sea-going ships.
  - 5) Facilitation of other measures and arrangements to enhance the qualifications of seafarers.

f. Ships are subject, while in ports of a Party, to control by offices duly authorized by that party. In the event that they are not corrected and if this fact poses a danger to persons, property or the environment, the Party carrying out the control will take steps to ensure that the ship will not sail unless and until these requirements are met to the extent that the danger has been removed.



## E. ILO-RELATED CONVENTIONS

### 1. GENERAL

The aim of the International Labour Organization (ILO) is to promote social justice by improving working conditions thereby contributing to the realization of permanent peace. It is one of the specialized agencies of the United Nations and its functions include the promotion of higher living standards, full employment, establishment of collective bargaining, management-labor cooperation, social security and welfare legislation and equality in education and employment.

Below is an outline of the ILO Convention No. 147 which affected the STCW Convention concerning minimum standards of merchant ships.

### 2. ILO CONVENTION

The ILO Convention No. 147 was adopted on October 29, 1976, and became effective on November 28, 1981.

This convention concerns minimum standards of merchant ships. Under Article 4, those ships below certain standards are subject to "necessary measures", including detention, in ports of Parties to the Convention. This provision based on the principle of port state control, superseding the previous principle of flag sovereignty is clearly carried over under Article 10 Control of the STCW Convention.

**SUPPLEMENT 2**

LISTINGS OF MARITIME SCHOOLS

| School  | Year<br>Established | BSMT<br>(DECK) | BSME<br>(ENGINE) | Basic<br>Seaman<br>Course | BSNAME |
|---|---------------------|----------------|------------------|---------------------------|--------|
| 1. Phil. Merchant Marine Academy, METRO MANILA                                    | 1820                | *              | *                |                           |        |
| 2. Iloilo Maritime Academy ILOILO CITY  | 1947                | *              | *                |                           |        |
| 3. NAMEI Polytechnic Inst. METRO MANILA   | 1947                |                | *                |                           | *      |
| 4. PMI Colleges METRO MANILA  | 1955                | *              | *                | *                         |        |
| 5. Phil. Merchant Marine School METRO MANILA                                      | 1958                | *              | *                |                           |        |
| 6. Don Bosco Youth Center METRO MANILA  | 1971                |                |                  | *                         |        |
| 7. Phil. Coast Guard Training Center CAVITE CITY                                  | 1971                |                |                  | *                         |        |
| 8. Cebu Central Colleges CEBU CITY  | 1973                | *              | *                |                           | *      |
| 9. Visayan Maritime Academy BACOLOD CITY  | 1974                | *              | *                |                           |        |
| 10. Cagayan Capitol Colleges CAGAYAN DE ORO                                       | 1974                | *              | *                | *                         |        |
| 11. Western Institute of Technology ILOILO CITY                                   | 1975                |                | *                |                           |        |
| 12. University of the Visayas CEBU CITY   | 1975                | *              | *                |                           |        |
| 13. Associated Marine Officers and Seaman's Union of the Philippines METRO MANILA | 1975                |                |                  | *                         |        |

| School  | Year<br>Established | BSMT<br>(DECK) | BSME<br>(ENGINE) | Basic<br>Seaman<br>Course | BSNAME |
|---|---------------------|----------------|------------------|---------------------------|--------|
| 14. Misamis Institute of<br>Technology<br>MISAMIS CITY                        | 1975                | *              | *                | *                         | *      |
| 15. PMI Colleges<br>TAGBILARN CITY  | 1975                | *              | *                |                           |        |
| 16. Doña Josefa Edralin<br>Marcos Foundation<br>SAN CARLOS CITY<br>PANGASINAN | 1976                |                |                  | *                         |        |
| 17. Palompon Institute of<br>Technology<br>PALOMPON, LEYTE                    | 1976                | *              | *                | *                         |        |
| 18. St. Joseph Institutue of<br>Technology<br>BUTUAN CITY                     | 1976                |                |                  | *                         |        |
| 19. Southern Luzon Technical<br>School<br>DARAGA, ALBAY                       | 1977                |                |                  | *                         |        |
| 20. Cebu Polytechnic School<br>CEBU CITY                                      | 1977                | *              |                  |                           |        |
| 21. Cebu Technical Institute<br>CEBU CITY                                     | 1977                |                |                  | *                         |        |
| 22. Concord Technical Institute<br>CEBU CITY                                  | 1977                | *              |                  |                           |        |
| 23. Feati University<br>METRO MANILA  | 1977                | *              | *                |                           |        |
| 24. Golden Gate Colleges<br>BATANGAS CITY                                     | 1977                |                | *                |                           |        |
| 25. Iloilo Maritime Academy<br>BACOLOD CITY                                   | 1977                | *              | *                |                           |        |
| 26. Iligan Capitol Colleges<br>ILIGAN CITY                                    | 1977                | *              |                  |                           |        |

| School   | Year<br>Established | BSMT<br>(DECK) | BSME<br>(ENGINE) | Basic<br>Seaman<br>Course | BSNAME |
|--|---------------------|----------------|------------------|---------------------------|--------|
| 27. International Maritime and<br>Technical School<br>DAGUPAN CITY | 1977                |                |                  | *                         |        |
| 28. Lyceum of Batangas<br>BATANGAS CITY                            | 1977                | *              | *                | *                         |        |
| 29. Mariners Polytechnic Colleges<br>NAGA CITY                     | 1977                | *              | *                | *                         | *      |
| 30. Mindanao Aeronautical School<br>DAVAO CITY                     | 1977                | *              | *                | *                         | *      |
| 31. Zamboanga School of Arts and<br>Trade<br>ZAMBOANGA CITY        | 1977                |                | *                | *                         |        |
| 32. Agro-Industrial Foundation<br>DAVAO CITY                       | 1977                | *              | *                | *                         |        |
| 33. Mandaue Technical Institute<br>CEBU CITY                       | 1978                |                |                  |                           |        |
| 34. Davao Vocational School<br>DAVAO CITY                          | 1978                |                | *                |                           |        |
| 35. Pangasinan Maritime Academy<br>DAGUPAN CITY                    | 1978                | *              | *                |                           |        |
| 36. Technological Institute of<br>the Philippines<br>METRO MANILA  | 1978                |                | *                |                           |        |
| 37. University of Iloilo<br>ILOILO CITY                            | 1978                |                | *                |                           |        |
| 38. Dr. Yangas Francisco<br>Balagtas<br>BOCAUE, BULACAN            | 1978                |                |                  | *                         |        |
| 39. Danao Vocational School<br>DNAO CITY, CEBU                     | 1978                |                | *                |                           |        |
| 40. Mindanao School of Fisheries<br>ZAMBOANGA CITY                 | 1979                | *              |                  |                           |        |

| School   | Year<br>Established | BSMT<br>(DECK) | BSME<br>(ENGINE) | Basic<br>Seaman<br>Course | BSNAME |
|--|---------------------|----------------|------------------|---------------------------|--------|
| 41. Northern Phil. Maritime<br>and Technical Institute<br>SAN FERNANDO, LA UNION | 1979                |                |                  | *                         |        |
| 42. Technological University<br>of the Philippines<br>METRO MANILA               | 1979                |                | *                |                           |        |
| 43. Bataan Heroes College<br>BALANGA, BATTAN                                     | 1979                | *              | *                |                           |        |
| 44. Iloilo State College<br>of Fisheries<br>BAROTAK, ILOILO CITY                 | 1979                | *              |                  |                           |        |
| 45. FAMOUS Vocational School<br>MANDALUYONG, METRO MANILA                        | 1980                |                |                  | *                         |        |
| 46. Artistic Vocational School<br>OLONGAPO CITY                                  | 1980                |                | *                | *                         |        |
| 47. Mindanao Polytechnic<br>Institute<br>GEN. SANTOS, COTABATO                   | 1980                | *              | *                | *                         |        |
| 48. MATS College of Technology<br>PUERTO PRINCESA, PALAWAN                       | 1981                | *              | *                |                           | *      |
| 49. Ramon Magsaysay Memorial<br>College<br>GEN. SANTOS, COTABATO                 | 1981                |                | *                |                           |        |

**SUPPLEMENT 3**

NATIONAL-MARITIME POLYTECHNIC  
TEACHING-STAFF and TRAINING EQUIPMENT  
DECK OFFICERS UPGRADING COURSE

TRAINING EQUIPMENT

| <u>Description</u>   | <u>Quantity<br/>Required</u> |
|--|------------------------------|
| Navigation and Deck Seamanship   |                              |
| Gyro compass system with master compass, gyro-sphere power connector, box, bearing repeater on console, aximuth device and spare parts | 1 set                        |
| Automatic Pilot system to operate with gyro compass  | 1 set                        |
| Turntable device with auto pilot simulator   | 1 set                        |
| Radio-directional finder   | 1 set                        |
| Line Throwing Apparatus  | 1 set                        |
| Ship's navigation lights simulator   | 1 set                        |
| Models of ship's light and buoys for rules of road and byoyage system  | 1 set                        |

第 5 表

| <u>Year Started</u> | <u>Particulars</u>                        |
|---------------------|---|
| 1980                | Guard House                               |
| 1980                | One-Starey School Building                |
| 1980                | Site Development-Phase I                  |
| 1981                | Staff Houses (25 units)                   |
| 1981                | Domitory Building                         |
| 1981                | Marine Engineering Building               |
| 1981                | Navigation and Seamanship Building        |
| 1981                | Catering Building                         |
| 1981                | Laboratories and Schools                  |
| 1981                | Main Engine and Auxiliary Engine Building |
| 1981                | Site Development-Phase II                 |
| 1981                | Firefighting Building                     |
| 1981                | Museum and Library                        |
| 1981                | Powerhouse                                |
| 1981                | Guest Houses (4 units)                    |
| 1981                | Cottages                                  |
| 1982                | Administration Building                   |
| 1982                | Club House                                |
| 1982                | Motor Pool                                |
| 1982                | Chapel                                    |
| 1982                | Playground Development                    |
| 1982                | Tree Planting                             |
| 1983                | Auditrium                                 |
| 1983                | Wharf                                     |

NATIONAL MARITIME POLYTECHNIC  
TEACHING STAFF AND TRAINING EQUIPMENT  
FOR THE ENGINE OFFICERS UPGRADING COURSE

Training Equipment:

| Description   | Quantity<br>Required |
|---|----------------------|
| <b>Simulators</b>   |                      |
| Steam engine simulator  | 1 set )              |
| Diesel engine simulator   | 1 set )              |
| Auxiliary and main engine<br>remote and monitoring<br>control simulator | 1 set )              |
| Subtotal  |                      |
| <b>Used solely for officers course:</b>                                 |                      |
| Tail shaft and stern gland<br>model                                     | 1 set                |
| Diesel engine (cut model)   | 1 set                |
| Thrust bearings tunnel<br>block, stern tube and<br>gland (cut model)    | 1 set                |
| Automated diesel propelling<br>machinery                                | 1 set                |



NATIONAL MARITIME POLYTECHNIC  
TEACHING STAFF AND TRAINING EQUIPMENT  
FOR THE STEWARD AND RADIO DEPARTMENTS

Chief Steward and Chief Cook Courses

Training equipment:

Equipment consisting of freezers, gas ovens, gas ranges and kitchenware

Radio Officers Course

Training equipment:

| <u>Description</u>                          | <u>Quantity<br/>Required</u> |
|---|------------------------------|
| Multiband marine transmitter receiver       | 2 sets                       |
| Radio tape coder-programme machine          | 1 set                        |
| Facsimile transceiver                       | 1 set                        |
| Radio teletype transceiver                  | 1 set                        |
| Single side band transceiver                | 1 set                        |
| Double side band transceiver                | 1 set                        |
| Independent side band transceiver           | 1 set                        |
| Auto alarm                                  | 1 set                        |
| Radio cassette tape recorder and player     | 2 sets                       |
| Miscellaneous hand tools and test equipment |                              |

Able Seamen Course

Training equipment:

Deck equipment, life boat and cargo riggings

Lifeboat Man Course

Training equipment:

Life boat, in inflatable liferaft, life boat riggings, and life saving equipment

FOR THE SPECIAL COURSES

Radar Observer Course

Training equipment:

|   | <u>Quantity<br/>Required</u> |
|---|------------------------------|
| Radar set (operating)                               | 1 unit                       |
| Movie projector                                     | 1 unit                       |
| Slide projector                                     | 1 unit                       |
| Overhead projector                                  | 1 unit                       |
| Radar set (model)                                   | 1 unit                       |
| Miscellaneous training equipment<br>and instruments |                              |

Radar Simulator Course

Training Equipment:

|  | <u>Quantity<br/>Required</u> |
|--|------------------------------|
| Radar simulator                                    | 1 unit                       |
| Movie projector                                    | 1 unit                       |
| Slide projector                                    | 1 unit                       |
| Overhead projector                                 | 1 unit                       |
| Miscellaneous training<br>equipment and instrument |                              |

Tanker Safety Course and  
Dangerous Cargo Course

Training equipment:

| <u>Description</u>                                 | <u>Quantity<br/>Required</u> |
|--|------------------------------|
| Movie projector                                    | 1 unit                       |
| Slide projector                                    | 1 unit                       |
| Overhead projector                                 | 1 unit                       |
| Miscellaneous training<br>equipment and instrument |                              |

Ship Medicine Course

Training equipment:

| <u>Description</u>                                  |
|---|
| Minor surgery instruments                           |
| Human model   |
| Miscellaneous training<br>equipment and instruments |

Firefighting Course

Training equipment:

| <u>Description</u>         | <u>Quantity<br/>Required</u> |
|----------------------------|------------------------------|
| Oxygen breathing apparatus | 15 sets                      |
| Water pump                 | 2 sets                       |
| Movie projector            | 1 unit                       |
| Asbestos suit and gloves   | 2 sets                       |

## History

In April 1945, when the Kobe Mercantile Marine College was united with the Tokyo Mercantile Marine College, our college was founded on succeeding to the former facilities of education and established under the name of the Marine Technical College. The Marine Technical College, "Kaigi Senmon Gakuin", was opened by combining the Special High Marine Institute with the High Marine Institute and organized as the synthetic vocational institute of seafarers.

Immediately after the foundation, the whole school buildings were lost owing to the war damages. So in January 1946 we borrowed the educational facilities which belonged to the Patriotic Group of Japanese Marine, "Nippon Kaiun Hokoku Dan", in Ashiya. We removed the head office from Kobe to Ashiya.

In April, because of the shortage of the school rooms and dormitory, we took over the facilities of both the past Mercantile Marine College, Osaka Branch, and the past Kishiwada Marine Institute. On the other hand, we borrowed the steam ship "Baykal Maru", anchored her at the port of Amagasaki, and made her the branch school room.

In April 1948, we removed the head office to the location of Fukae in Kobe, where the seaside buildings were restored.

In February 1951, under the enactment of the provisions of the mariner's correspondence education, the Junior Correspondence Course was opened in April, and the Senior Correspondence Course in October.

In May 1952, the Kobe University of Mercantile Marine which was detached from the "Kaigi Senmon Gakuin" was established at the same location as we had used. We temporarily used both of the educational facilities in common.

In July 1955, the whole establishments of our college were transferred from the location of Fukae to that of Ashiya on the basis of the revision of the Establishing Law by the Ministry of Transport.

In April 1961, the name of our college was changed to the Marine Technical College, "Kaigi Daigakko".

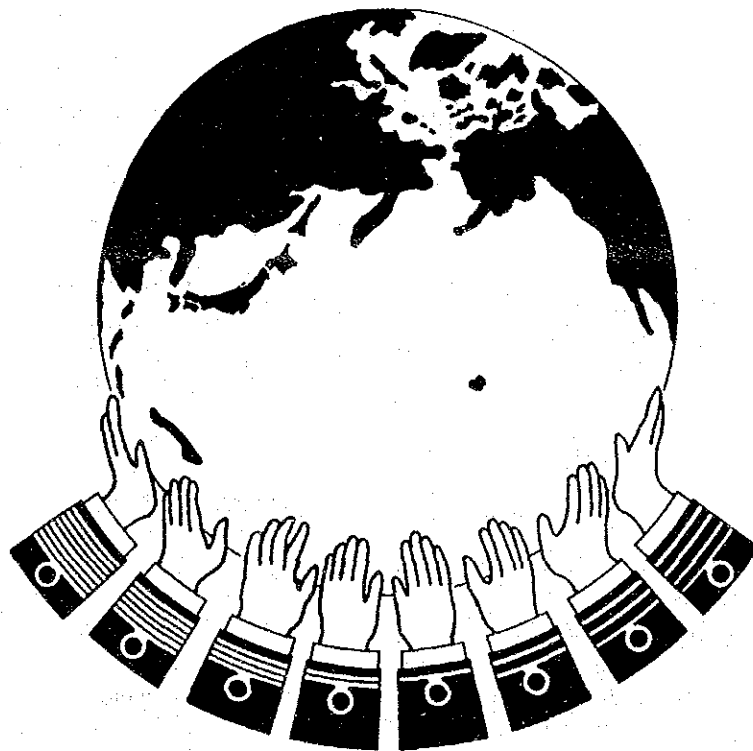
In March 1975, the graduates of Corresponding Junior A Course were qualified to take the entrance examinations of universities and colleges.

In April 1981, Kojima Branch in Kurashiki City and Nanao Branch in Nanao City were established.

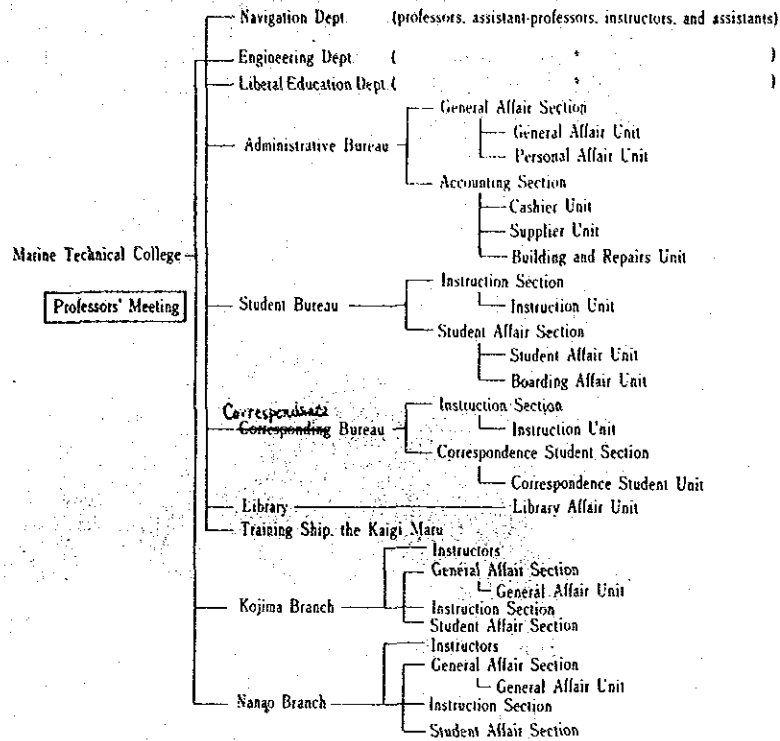
In April 1983, the class names of Upgrading Course were amended.

## Aim of Education

The Marine Technical College, "Kaigi Daigakko", is the only governmental mariner's vocational institute belonging to the Ministry of Transport. The purpose of education of our college is to instruct the students in the technical knowledge of marine and carry out the practical research for the technological development of marine.



## Faculty and Administration



## College Staffs

President.....1

### Main College

Professors ..... 18  
 Assistant-professors ..... 18  
 Instructors ..... 3  
 Assistants ..... 2  
 Clerical & Technical  
 Officials ..... 44

### Branches

Heads ..... 2  
 Instructors ..... 8  
 Clerical & Technical  
 Officials ..... 14

Total.....110

(Unofficial Lecturers.....approx. 120)

## Number of Students Admitted

| Course  |   | Number | Studying Period |
|---|---|--------|-----------------|
| <b>Advanced Course</b>                          |   |        |                 |
| Navigation Class                                |   | 10     | 2 years         |
| Engineering Class                               |   | 10     | "               |
| Total   |   | 20     |                 |
| <b>Upgrading Course</b>                         |   |        |                 |
| 1st Grade Maritime Officer Class (Navigation)   |   | 10     | 1 year          |
| " (Engineering)                                 |   | 10     | "               |
| 2nd Grade Maritime Officer Class (Navigation)   |   | 15     | "               |
| " (Engineering)                                 |   | 15     | "               |
| 3rd Grade Maritime Officer Class (Navigation)   |   | 180    | "               |
| " (Engineering)                                 |   | 200    | "               |
| ☆ 4th Grade Maritime Officer Class (Navigation) |   | 10     | Half a year     |
| ☆ " (Engineering)                               |   | 10     | "               |
| Total   |   | 450    |                 |
| <b>Short Training Course</b>                    |   |        |                 |
| SENIOR  | ☆ 2nd Grade Maritime Officer Class (Navigation) | 15     | Half a year     |
|   | ☆ " (Engineering)                               | 15     | "               |
|   | ☆ Navigational Watch Class                      | 40     | 4 months        |
|   | ☆ Engineering Watch Class                       | 40     | "               |
| JUNIOR  | ☆ Navigational Watch Class                      | 40     | Half a year     |
|   | ☆ Engineering Watch Class                       | 40     | "               |
|   | ☆ D.P.C Class (Deck)                            | 20     | 3 months        |
|   | ☆ " (Engineering)                               | 20     | "               |
|   | *□ " (Deck)                                     | 80     | "               |
|   | *□ " (Engineering)                              | 80     | "               |
|   | ☆□ Technical Skill Training Class (Deck)        | 80     | 1 month         |
|   | ☆□ " (Engineering)                              | 80     | "               |
| Total   |   | 550    |                 |
| <b>Correspondence Course</b>                    |   |        |                 |
| Senior A Class                                  |   | 100    | 1 year          |
| Senior B Class (Navigation & Engineering)       |   | 440    | "               |
| Junior A Class                                  |   | 600    | 1 year & a half |
| Junior B Class (Navigation & Engineering)       |   | 200    | "               |
| Total   |   | 1,340  |                 |
| Total in All                                    |   | 2,360  |                 |

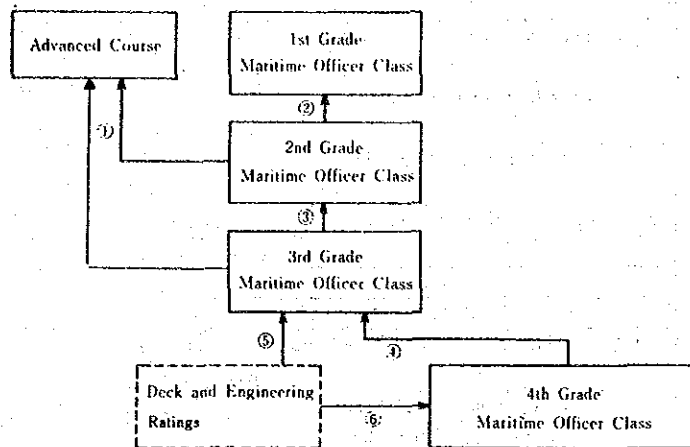
Notes:

- ☆ Shows twice a year.
- \* Shows 3 times a year.
- Shows it is given only at the Branches.

## Educational Course

We have Advanced Course, Upgrading Course, Short Training Course and Correspondence Course, according to the aim of education in our college. The contents of them are as follows:

### Relation between Advanced Course and Upgrading Course



#### Notes:

The qualifications for entering the College are as follows:

- ① Advanced Course  
Those who have had the marine service as officers for more than a year.
- ② 1st Grade Maritime Officer Class.  
Those who have had the marine service for a year or more as the captain or the chief mate or the chief engineer or the first engineer, while those who have served as the other officers for two years and seven months.
- ③ 2nd Grade Maritime Officer Class  
Those who have had the marine service for seven months or more as officers or engineers.
- ④ 3rd Grade Maritime Officer Class  
Those who have had the service for a year as the captain or the chief mate or the chief engineer or the first engineer, while those who have served as officers or engineers or as the other officers for a year and seven months or more.
- ⑤ Those who have served for three years and seven months or more for navigating or working of engines.
- ⑥ Those who have served for three years and ten months or more for navigating or working of engines.



## Educational Course

### Advanced Course

The aim of Advanced Course is to give the higher academic education as an officer or an engineer to those who served for a year or more as an officer of foreign traders. Besides, the Course is to teach them the fundamental art adaptable to the renovation of the vessel's art, and to educate them so that they may become excellent higher officers in future, including the education of the general liberal arts.

### Curriculum and Studying Hours

#### Navigation Class

(Subjects) Navigation, Seamanship, Engineering, Fundamentals of Engineering, Laws,

280(240) 380(100) 80 40(40) 240(40)

Economics and Shipping, Ethics, Foreign Languages, Mathematics, Physics and Chemistry.

40(140) 60(20) 400(200) 240(120) 220(100)

Academic Study

(120)

Hours required for graduation

Total—2800

#### Engineering Class

(Subjects) Seamanship, Engineering, Fundamentals of Engineering, Laws, Economics and Shipping,

(40) 580(160) 500(160) 80(40) (140)

Ethics, Foreign Languages, Mathematics, Physics and Chemistry, Academic Study

60(20) 320(280) 240(120) 260(100) (120)

Hours required for graduation

Total—2800

Notes: The figures in the parentheses above show the maximum hours of the elective subjects.



Sports Day

## Educational Course

### Upgrading Course

All sorts of classes of the Upgrading Course are respectively to give the necessary technical education to those who wish to obtain their own certificate established by the law of marine officers: besides to drill them to adapt themselves to a safe and efficient marine service extensively.

Especially as for the graduates of 3rd Maritime Officer Class, they are relieved from the national written examination on their class of mariners, as long as they have the maritime career of four years or more (more than three years and seven months at the entering time).

### Curriculum and Studying Hours

#### Navigation Department

| Subjects \ Kinds of Classes   | 1st Grade Maritime Officer Class | 2nd Grade Maritime Officer Class | 3rd Grade Maritime Officer Class | 4th Grade Maritime Officer Class |
|-------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Navigation                    | 340                              | 420                              | 490                              | 250                              |
| Seamanship                    | 340                              | 380                              | 430                              | 230                              |
| Engineering                   | —                                | —                                | 60                               | —                                |
| Fundamentals of Engineering   | 20                               | 20                               | —                                | —                                |
| Laws                          | 280                              | 200                              | 140                              | 80                               |
| Economics & Shipping          | 80                               | 40                               | —                                | —                                |
| Ethics                        | 40                               | 20                               | 20                               | —                                |
| Japanese & English            | 180                              | 180                              | 140                              | 60                               |
| Mathematics                   | 40                               | 60                               | 80                               | 40                               |
| Physics & Chemistry           | 80                               | 80                               | 80                               | 40                               |
| Hours Required for Graduation | 1,400                            | 1,400                            | 1,440                            | 700                              |

## Educational Course

### Engineering Department

| Subjects                           | Kinds of Classes | 1st Grade Maritime Officer Class | 2nd Grade Maritime Officer Class | 3rd Grade Maritime Officer Class | 4th Grade Maritime Officer Class |
|------------------------------------|------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Navigation                         |                  | —                                | —                                | 20                               | 20                               |
| Engineering                        |                  | 620                              | 620                              | 640                              | 400                              |
| Fundamentals of Engineering        |                  | 280                              | 280                              | 280                              | 60                               |
| General managements of Engineering |                  | 80                               | 120                              | 120                              | 40                               |
| Laws                               |                  | 100                              | 60                               | 60                               | 40                               |
| Ethics                             |                  | 40                               | 20                               | 20                               | —                                |
| Japanese & English                 |                  | 160                              | 160                              | 140                              | 60                               |
| Mathematics                        |                  | 40                               | 60                               | 80                               | 40                               |
| Physics & Chemistry                |                  | 80                               | 80                               | 80                               | 40                               |
| Hours Required for Graduation      |                  | 1,400                            | 1,400                            | 1,440                            | 700                              |



Life Saving Training at Sea

## Educational Course

### Short Training Course

This is aimed at polishing up technical abilities of officers and ratings in answer to the demand of the Government.

The course is divided into the following five.

#### 1. SENIOR 2nd Grade Maritime Officer Class (Navigation Engineering)

The trainees are those having certificates of competency (the former Captain or Chief Engineer of 2nd Grade) together with the prescribed sea-experience.

The Class is held for 6 months; twice a year.

##### (Navigation)

| Subjects                            | Studying Hours |
|-------------------------------------|----------------|
| Navigational Aids & Instruments     | 80             |
| Radio Engineerings                  |                |
| Control Engineerings                |                |
| Terrestrial Navigation              | 65             |
| Celestial Navigation                |                |
| Radio Navigation                    | 65             |
| Maritime Meteorology                | 40             |
| Naval Architecture                  | 20             |
| Mechanics for Deck Officers         | 40             |
| Ship Maintenance                    | 20             |
| Marine Cargo Operations             | 60             |
| Ship Handling                       | 20             |
| Maritime Casualties                 | 20             |
| Fundamentals of Marine Engineerings | 20             |
| Safety Management                   | 20             |
| Ship Communication                  | 10             |
| Marine Sanitation                   | 10             |
| Laws & Regulations of the Road      | 30             |
| Maritime Law                        | 40             |
| English                             | 175            |
| <b>Total</b>                        | <b>735</b>     |

##### (Engineering)

| Subjects  | Studying Hours |
|---|----------------|
| Auxiliary Boiler                                    | 25             |
| Steam & Gas Turbine                                 | 20             |
| Internal Combustion Engine (Propeller is included.) | 60             |
| Auxiliary Machinery                                 | 40             |
| Electric Engineerings                               | 80             |
| Electronic Engineerings                             | 40             |
| Control Engineerings                                | 45             |
| Marine Instrumentation                              | 40             |
| Fuel & Lubrication                                  | 40             |
| Materials of Machines                               | 40             |
| Applied Dynamics                                    | 40             |
| Engineering Drawing                                 | 40             |
| Naval Architecture                                  | 15             |
| Engine Management                                   | 25             |
| Maritime Rules & Regulations                        | 10             |
| English   | 175            |
| <b>Total</b>  | <b>735</b>     |

## Educational Course

### Short Training Course

#### 2. SENIOR Navigational & Engineering Watch Class

This is aimed at giving necessary knowledge and skill required to obtain the certificate of Watch Officer.

Trainees are required to hold prescribed qualification and sea-experience as ship's officers.

The class is held for 4 months; twice a year.

#### (Navigation)

| Subjects                        | Studying Hours |
|---------------------------------|----------------|
| Terrestrial Navigation          | 95             |
| Celestial Navigation            | 60             |
| Navigational Aids & Instruments | 75             |
| Experiments & Practice          | 15             |
| Naval Architecture              | 15             |
| Ship Maintenance                | 45             |
| Marine Cargo Operations         | 65             |
| Watchkeeping                    | 15             |
| Ship Handling                   | 30             |
| Maritime Casualties             | 15             |
| Maritime Meteorology            | 30             |
| Ship Communication              | 15             |
| Marine Sanitation               | 15             |
| Laws & Regulations of the Road  | 60             |
| Maritime Law                    | 10             |
| English                         | 35             |
| Radar Observation               | 21             |
| Radar Simulator                 | 14             |
| Total                           | 630            |

#### (Engineering)

| Subjects   | Studying Hours |
|--|----------------|
| Boiler   | 45             |
| Steam Turbine                                      | 45             |
| Internal Combustion Engine (Including Gas Turbine) | 95             |
| Ship Propulsion (Including Naval Architecture)     | 45             |
| Auxiliary Machinery                                | 60             |
| Electricity  | 50             |
| Electronics  | 30             |
| Automatic Controlling                              | 60             |
| Marine Instrumentation                             | 30             |
| Fuel & Lubrication                                 | 30             |
| General Management of Engineerings                 | 40             |
| Maritime Rules & Regulations                       | 30             |
| English  | 35             |
| Total  | 595            |

## Educational Course

### Short Training Course

#### 3. JUNIOR Navigational & Engineering Watch Class

The aim of this course is the same as SENIOR Class.

Trainees are required to hold prescribed sea-experience as ratings.

The class is held for 6 months; twice a year.

#### (Navigation)

| Subjects                        | Studying Hours |
|---------------------------------|----------------|
| Terrestrial Navigation          | 75             |
| Celestial Navigation            | 75             |
| Navigational Aids & Instruments | 75             |
| Experiments & Practice          | 20             |
| Naval Architecture              | 20             |
| Ship Maintenance                | 40             |
| Marine Cargo Operations         | 80             |
| Watchkeeping                    | 20             |
| Ship Handling                   | 40             |
| Maritime Casualties             | 20             |
| Maritime Meteorology            | 20             |
| Ship Communication              | 20             |
| Marine Sanitation               | 20             |
| Laws & Regulations of the Road  | 70             |
| Maritime Law                    | 35             |
| English                         | 105            |
| Radar Observation               | 21             |
| Radar Simulator                 | 14             |
| Life Saving                     | 14             |
| Fire Fighting                   | 7              |
| <b>Total</b>                    | <b>791</b>     |

#### (Engineering)

| Subjects   | Studying Hours |
|--|----------------|
| Boiler   | 55             |
| Steam Turbine                                      | 40             |
| Internal Combustion Engine (Including Gas Turbine) | 95             |
| Ship Propulsion                                    | 40             |
| Auxiliary Machinery                                | 40             |
| Electricity  | 55             |
| Electronics  | 40             |
| Automatic Controlling                              | 60             |
| Marine Instrumentation                             | 40             |
| Fuel & Lubrication                                 | 40             |
| Naval Architecture                                 | 20             |
| General Management of Engineering                  | 55             |
| Maritime Rules & Regulations                       | 50             |
| English  | 105            |
| Life Saving  | 14             |
| Fire Fighting                                      | 7              |
| <b>Total</b>                                       | <b>756</b>     |

## Educational Course

### Short Training Course

#### 4. JUNIOR D.P.C. Class (Deck & Engineering)

This is aimed at producing Dual Purpose Crew:

The class is held for 3 months; twice a year at Main College and 3 times a year at Branches.

#### (Deck)

| Subjects                    | Hours/Week |
|-----------------------------|------------|
| Seamanship                  | 5          |
| Nautical Instruments        | 3          |
| Radar Operation             | 2          |
| Watchkeeping                | 5          |
| Practice on Oil Tanker      | 2          |
| Practice on Special Vessel  | 1          |
| Safety & Labor Management   | 2          |
| Automatic Controlling       | 4          |
| Practical Electricity       | 3          |
| Hydraulic Equipment         | 2          |
| Basic Operations for Seamen | 3          |
| English                     | 2          |
| Health & Physical Education | 1          |
| Total                       | 35         |

#### (Engineering)

| Subjects                    | Hours/Week |
|-----------------------------|------------|
| Outline of Marine Engines   | 1          |
| Marine Propulsion Engines   | 6          |
| Marine Auxiliary Engines    | 4          |
| Practical Electricity (I)   | 3          |
| " (II)                      | 3          |
| Hydraulic Equipment         | 2          |
| Refrigerator                | 2          |
| Safety & Labor Management   | 2          |
| Automatic Controlling       | 5          |
| Workshop                    | 1          |
| Workshop Practice           | 3          |
| English                     | 2          |
| Health & Physical Education | 1          |
| Total                       | 35         |

## Educational Course

### Short Training Course

#### 5. JUNIOR Technical Skill Training Class (Deck & Engineering)

To meet technical innovations, necessary skill for machine handling, operations on board, etc. is trained.

The class is held for 1 month; twice a year.

##### (Deck A)

| Subjects                  | Studying Hours |
|---------------------------|----------------|
| Radio Telephone A         | 57             |
| Cargo Piling              | 13             |
| Driving of Forklift       | 37             |
| Operation of Mobile Crane | 16             |
| Slings                    | 17             |
| Total                     | 140            |

##### (Engineering A)

| Subjects                            | Studying Hours |
|-------------------------------------|----------------|
| Refrigeration & Safety Preservation | 40             |
| Driving of Forklift                 | 37             |
| Boiler Operator (2nd Grade)         | 63             |
| Total                               | 140            |

##### (Deck B)

| Subjects                  | Studying Hours |
|---------------------------|----------------|
| Radio Telephone A         | 57             |
| Radar                     | 39             |
| Cargo Piling              | 13             |
| Operation of Mobile Crane | 16             |
| Slings                    | 17             |
| Total                     | 142            |

##### (Engineering B)

| Subjects                           | Studying Hours |
|------------------------------------|----------------|
| Gas Welding                        | 35             |
| Arc Welding                        | 41             |
| Machining                          | 55             |
| Handler of Dangerous Materials (C) | 10             |
| Total                              | 141            |



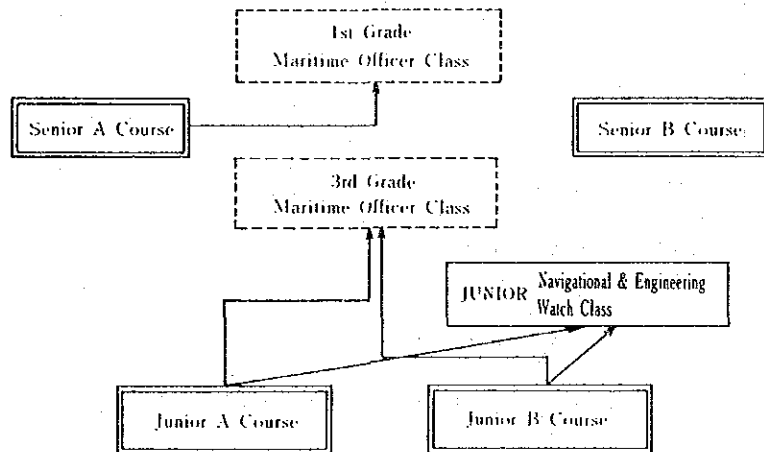
## Educational Course





### Correspondence Course

Our college under the equality of opportunity of education offers a correspondence course to the seamen who, even though they may try to study, cannot take lessons in college on account of going now on board. Recently as the ship has become modernized, the affairs of the ship are more and more complicated. This course is to give the students the technical knowledge necessary for carrying out the higher duties and the fundamental knowledge necessary for gaining the marine certificates in future, in connection with the education on Upgrading Course and Short Training Course.

The Correspondence Course is divided into Senior Course for officers and Junior Course for ratings. The graduates of Junior A Course (those who entered the Course after April 1st in 1975) are judged to be the graduates with the same scholarship or more as those of general senior highschools in entering universities.

Relation between Correspondence Course and Other Courses



- Notes:
-  shows Correspondence Course.
  -  shows Upgrading Course.
  -  shows Short Training Course.
  -  shows the graduates are relieved from the entrance examination.

SUPPLEMENT 5.

UTILITY EXPENSES

Electrical running cost for the facilities has been estimated and is shown below for reference:

1. Consumption

a. Training Building

Electric light  $50 \text{ kw} \times 7 \text{ hours/day} \times 25 \text{ days/month} \times 0.5$  (demand ratio) = 4,375 kwh/month

Equipment  $80 \text{ kw} \times 7 \text{ hours/day} \times 25 \text{ days/month} \times 0.4 = 5,600$  kwh/month

Cooler and others  $85 \text{ kw} \times 7 \text{ hours/day} \times 25 \text{ days/month} = 7,437$  kwh/month

b. Office Building

Electric light  $25 \text{ kw} \times 8 \text{ hours/day} \times 25 \text{ days/month} \times 0.4 = 2,000$  kwh/month

Cooler and others  $20 \text{ kw} \times 8 \text{ hours/day} \times 25 \text{ days/month} \times 0.2 = 800$  kwh/month

Total 20,212 kwh/month

2. Charges

The electricity charge method is as shown below.

|                       |            |
|-----------------------|------------|
| Minimum bill (10 kwh) | P12.20     |
| Excess                | P 1.22/kwh |

Therefore, the following equation is established.

$$P12.20 + (20,202 \text{ kwh} \times P1.22/\text{kwh}) = P24,658/\text{month}$$

Accordingly, the annual electricity charge is computed by the following equation.

$$P24,658/\text{month} \times 12 \text{ months} = P295,896$$

As for water supply, wells are considered. The water charge is excepted as electricity to be required for pumping up water is included in the electricity charge.







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