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WORLD MARITIME UNIVERSITY
MALMØ, SWEDEN

A PROPOSAL FOR THE ESTABLISHMENT OF A MARITIME TRAINING CENTRE (MTC)
FOR THE TRAINING OF RATINGS IN SIERRA LEONE

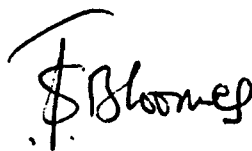
by
Hubert A. Bloomer
Sierra Leone

A paper submitted to the Faculty of the World Maritime University
in partial satisfaction of the requirements for the award of a

MASTER OF SCIENCE DEGREE
in
MARITIME EDUCATION AND TRAINING (NAUTICAL).

The contents of this paper reflect my personal views and are not
necessarily endorsed by the UNIVERSITY.

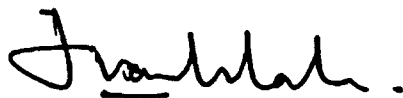
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ABSTRACT

This paper is specifically directed towards the establishment of a Maritime Training Centre in Sierra Leone for the training of ratings and port marine and engineering personnel in accordance with the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978. It is also anticipated that spare capacity and future expansion would facilitate training of oil terminal employees, operators of ferries, coastal and fishing vessels personnel in the offshore industry and other personnel in the marine related industry.

The proposed establishment of a Maritime Training Centre is not one of prestige, but of economic and training necessity. While regional maritime academies are laudable, they are basically meant for officers and not ratings. The training of engine and deck ratings should be given great attention. It is my view that it will be futile to concentrate solely on the training and upgrading of officers alone with little attention to the training of ratings. Ratings play an equally important role as the officers in the efficient and safe operation of ships. Furthermore the cost of training ratings abroad with the problem of scarce foreign exchange is not attractive even when the cost of training is met under United Nations Development Programme (U.N.D.P.) country programme funds. Governments of developing countries don't think the cost involved is justified when there are other areas of national development requiring urgent attention and scarce foreign exchange expenditure e.g food, medicine, healthcare, general education, education in medicine and dentistry etc.

This however does not exempt the governments from it's obligations as a coastal state and a member of the International Maritime Organisation (I.M.O.) from maritime education and training, nor to abandon the mass of Sierra Leonean seamen who by virtue of new regulations have found it impossible to maintain their jobs on foreign-going merchant ships. The entire maritime industry is going through a new technological era. This fact has to be taken seriously, so much so by developing countries. Appropriate training is the only key left if our seafarers are to compete and secure jobs and catch up on advancing technology.

CHAPTER 1

1.1 INTRODUCTION

This proposal should be read bearing in mind always, the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, and its implication for existing seafarers who were trained on the job, who form the majority, and whose employment opportunities have been drastically curtailed since the entering into force of the Convention.

It should be borne in mind also, that new entrants into the merchant marine are constrained by this convention. Furthermore personnel serving on board tugs, ferries and other marine crafts of ports and harbour authorities should themselves undergo formal training and be certified.

This proposal in addition takes into account the internationally accepted syllabi, basic initial equipment, minimum permanent staff and operational cost that will be required for the Centre to function.

This proposal is a preliminary study to decide on a basic size for a marine training centre. It should be capable of accommodating an initial residential population of 30 (thirty), with a potential to ultimately expand to 54160. The proposal identifies the types of buildings needed to house the trainees and equipment, and provides the necessary facilities to teach the syllabuses designed to comply with the S.T.C.W. 1978 convention for training of ratings and for conducting specialized short courses.

The plans and drawings are intended as guides to further detailed planning when new buildings are considered. Where existing buildings are to be adapted, these plans and drawings are to assist in the adaptation. It should be appreciated by all studying this proposal that the plans and drawings are not to be followed rigidly to the last detail. I have drawn on experience from the past, and recent visits to a number of similar institutions all over Europe and in the U.S.A. to indicate the optimum conditions for maritime education and training.

In this proposal I have tried to provide a possible way of solving the problem of training for lower and middle level marine industrial personnel in Sierra Leone. I must however emphasize that industrial training programmes can only be implemented successfully if the related socio-economic infrastructure is active and participating. It is therefore of paramount importance for the complete success of this training programme that this infrastructure which includes governmental and semi-governmental bodies, employers associations, trade unions, education systems at all levels etc, be made to cooperate for the full utilization of the training centre's capacity and graduates.

1.2 HISTORICAL BACKGROUND

The long tradition of seafaring in Sierra Leone and other countries along the West African coast dates back to the latter part of the mid 19th century. The vast majority of seamen who served on ships trading in West Africa were hired from ports along the coast, then trained on the job and encouraged to settle in Freetown for the convenience of the shipping companies.

Freetown for many years was the main bunkering port on the West African coast, thus making it both convenient and economical for the shipping companies trading in the region to engage and discharge their seamen.

Sierra Leone therefore has a substantial number of seamen who have gained initial experience mainly by serving as coastwise maintenance workers aboard foreign ships trading to West Africa.

Prior to the entering into force of the 1978 S.T.C.W. Convention, Sierrra Leonean seamen have been sailing in ships trading worldwide. In some cases they have been the major source of labour for the newly emerging maritime nations like Kuwait, Saudi Arabia, and other states.

Seafarers in Sierra Leone have over the years contributed substantially towards the social and economic life of the country, especially to its foreign exchange earnings.

With the coming into force in April 1984 of the S.T.C.W. Convention the seafaring community has experienced substantial unemployment. This is due basically to the fact that not only the flag states of the shipowners are party

to the Convention, but also states in the northern hemisphere between which the vessels trade are also parties to the Convention. Therefore in order to stay in business shipowners can now only employ those seafarers who satisfy the requirements of the Convention.

It is therefore of social and economic importance that steps be taken now to ensure the continuity of employment opportunities by providing a local training facility for the training and upgrading of marine personnel for employment in international shipping, port and harbour operations, the fishing industry, the future off-shore oil industry and other personnel in the maritime related industry.

1.3 OBJECTIVES

The objectives of this paper are explained in the following paragraphs:

In countries (like Sierra Leone) where the shipping activities are not sizeable, questions will be asked about the cost effectiveness of a Maritime Education and Training Centre. It falls within my lot to justify the need; and for the continued support necessary for the survival of a training centre. There is therefore an acute need to publicise the importance and necessity of such education and training with reasons for having it in a specialized institution.

The entering into force of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978, has rendered many useful technical personnel (Ratings) jobless. One of the major reasons for

this is their lack of any type of formal education and certification in the majority of cases. While shipowners are interested in employing only seafarers that satisfy the convention regulations they are not anymore interested in meeting the cost of their certification.

It should therefore be of great importance to the government of Sierra Leone as a member of the I.M.O. to take steps to eliminate this problem and so ease the socio-economic pressures of unemployment on the majority of Sierra Leonean seafarers and at the same time provide the international shipping industry and local port and marine related industry with well trained and competent seafarers.

Development Objectives

1. To help create an awareness in Sierra Leone of the implication of the S.T.C.W. 1978 Convention which is already in force.
2. To emphasize the need for a training facility for the promotion of a national training capability.
3. To ensure continuous training of personnel for sea-going employment with both national and foreign flag merchant fleets.
4. To ensure continuous training of port marine and engineering personnel, seamen for coastal and fishing fleets, and other personnel in the marine related industry.

5. To strengthen the overseas training programme by nominating suitable graduates from the centre, with officer potential to the Regional Maritime Academy in Accra, Ghana and the Arab Maritime Transport Academy in Egypt.

Immediate Objectives

1. To develop a marine training centre staffed by experienced maritime training personnel.

2. To equip the centre with relevant modern training equipment including working models suitable for the training of marine personnel.

3. To recruit and establish suitable individuals as training staff for the centre at all levels.

4. To ensure that those trained under the auspices of the maritime training programme shall endeavour to make meaningful contributions towards the advancement of the maritime sector in the nation's total development scheme.

5. To ensure that Sierra Leonean maritime trainees are given job related skills which are in demand not only locally but in the International maritime world.

1.4 JUSTIFICATION

1. Modern technological development in the shipping industry, ship design and modern economical ship operation systems have made it necessary to train a new generation of qualified seamen such as General Purpose Ratings to meet modern seagoing employment requirements.

2. It has also become necessary for existing seafarers in Sierra Leone to improve their technical knowledge in line

with modern international standards, in order to afford them better employment opportunities. This it is hoped will help to alleviate some of the unemployment problems in the country and possibly increase the foreign exchange earnings through remittances by the seafarers who sail on foreign flag ships.

3. Lately there has been a number of off-shore petroleum exploration in Sierra Leone. Most of the companies involved employ mostly expatriates, with only a token handful of local seamen. The possibility of a oil find (which has been positively confirmed by a very reliable and knowledgeable source) cannot be ruled out. If that happens, and world prices make it economic for production to begin, the number of marine crafts in use will increase, and more qualified seafarers will be needed for employment. However, unless the companies involved are assured of the availability of qualified, well trained local seamen to operate their supply and mooring vessel, tugs etc they may continue to employ expatriate personnel for such marine crafts, even in the lower ranks.

4. Most of the personnel employed in the handling of harbour tugs, ferries and other marine services of the Sierra Leone Port Authority are persons who have been recruited and trained on the job to suit particular needs. Such personnel have over the years successfully performed their duties; but modern technological developments in marine equipment design and the acquisition of modern expensive and sophisticated marine craft by shipping companies and port authorities make it necessary for personnel operating such equipment to have specialized training.

5. Part of the heavy financial losses being incurred by the S.L.P.A. may be attributed to the high cost of maintenance and repairs of sophisticated port equipment. Bad maintenance due to lack of properly trained mechanics and operators results in damaged equipment which requires large sums of money for repair or to replace, sometimes only after less than half their life expectancy. It is therefore essential that the government develop a new breed of properly trained port personnel to gradually replace the existing ones as they go into retirement.

6. After training most of the graduates may be able to find employment either at sea or ashore and thus improve their financial and social standing. This is the gains for graduates which may be looked at from the socio-economic point of view, in that most students enter the training centre as unemployed school leavers or seamen. Those who were employed on entering the training centre gain extra knowledge and expertise with an opportunity for promotion thus improving also their social and financial standing. Those who do not find employment immediately may at least have gained wider skills and improved their prospects of finding employment. Thus the possibility of such school leavers and unemployed seamen joining the social outcasts in our society may be eliminated. The continuous training of maritime personnel may therefore be regarded as essential even in a slump.

7. Finally it is felt that with careful planning, support and cooperation from the socio-economic infrastructure of the country, the proposed Marine Training Centre could develop into a fine, efficient and productive centre with the potential and capability to diversify into areas of maritime training other than General Purpose Ratings and

Up-graders only, and remain fully utilized for many years.

It is almost a cliché to say that the art of a set management in shipping has always been to buy in a slump and sell in a boom. Certainly, on that basis, now is the time to buy training.

1.5 SPECIAL CONSIDERATIONS

The primary function of this project is institution building, including the development of an identified site (old Fourah Bay College) and its existing building, to plan and oversee construction of new buildings.

Soliciting of technical assistance from the I.M.O. and bi-lateral assistance from friendly governments in the area of equipment and experts.

Adequate research and knowledge of the short, medium and long term needs of the maritime industry to facilitate proper planning. This should be done in conjunction with friendly governments.

A vigorous marketing policy, including discussions with the shipowners on their specific needs in technical personnel, and negotiations on the supply of disciplined well trained seafarers at very competitive prices.

THE EFFECT OF THE S.T.C.W. CONVENTION
ON THE EMPLOYMENT OF SIERRA LEONEAN SEAFARERS

6427 REGISTERED SEAMEN

<u>YEAR</u>	<u>NO. OF EMPLOYED SEAMEN</u>
1980	4104
1981	4008
1982	4016
1983	3978
1984	3102
1985	2180
1986	1115
1987	409

TABLE 1

CHAPTER 2
**THE ESTABLISHMENT OF A MARITIME
TRAINING CENTRE FOR RATINGS**

2.1 ESTABLISHMENT FUNDING

Maritime education and training necessarily involves practical "hands-on" training which often involves expensive equipment. The source or sources of funds is therefore of major consideration. It is important therefore that careful consideration be given to the framework within which the courses of instruction are to be developed--e.g. the extent to which they should be provided within the national educational system.

Tertiary education (i.e. post secondary school education) in Sierra Leone is provided across three sectors:-the university sector, the advanced education sector, and the "technical and further education" sector. The latter sector comprises technical institutions which provide technical education and training at trade, or craft and technician levels. All technical institutions are established and operated by the Government.

After consideration of the options available, it is my suggestion that funding for the proposed Maritime Training Centre like other technical institutions should preferably be from the "education" vote :--this is where taxpayers' education leones goes. Seafarers should get education provided in the same way as other industries and professions. Maritime education and training should be established within the education system of the country in an autonomous national institution which is well endowed with equipment for "hands-on" training.

A further difficulty, however, is access to funds at a level adequate for the costly hands-on training that increasingly is becoming necessary. Unless industry is partly funding the provisions, there can be a problem; because the Government's funding of education is via the education portfolio, rather than those with responsibilities for transport, fisheries etc. This "funding" problem creates difficulties, not only in respect of equipment, but also in attracting highly qualified staff who also have adequate industrial experience.

2.2 EXISTING FACILITIES

Presently there exists no facility in Sierra Leone for the formal training of seafarers. The location of the proposed site (old Fourah Bay College) close to the port of Freetown appears adequately suitable for training. It provides easy access for conducted tours of the port's facilities, and for some practical aspects of training that will be given in the centre like shiphandling, steering, lifeboat work, life raft proficiency etc.

The close proximity of the proposed site to an established maritime industry and shipping activities like shipping agencies, stevedoring, clearing and forwarding agencies, crew and labour office, shipping companies and the port will create the right atmosphere in which the training centre should thrive.

The need to provide basic services such as water, power, communications and sewage disposal will not present any problem. These services could easily be connected at no considerable cost. A clinic is also situated nearby and the site has room for expansion if this should become necessary in the future.

The major difficulty which will exist is the relocation of the present occupants of the proposed site. In order to avoid any further complications with the present occupants and also to avoid further deterioration of the building it is strongly recommended that all legal ramifications be concluded, and the site cleared and marked off as a matter of urgency.

2.3 ACHIEVEMENTS SO FAR

1. A site for the proposed training centre has been identified and will be made available by the government.
2. A maritime training specialist who is also a national will graduate from the W.M.U. in December 1988. He will form the nucleus of the training centre to develop the curriculum, and coordinate the practical aspects of the centre's establishment and development.
3. Three other nationals who graduated from the W.M.U. in technical specialities will be available to the training centre on an ad-hoc basis.

Sierra Leone is a developing country and as such her own finances for investment in new projects are limited. The complete success of this project therefore is dependent upon some form of external assistance, either to cover the major proportion of finance for capital development or the provision of equipment and an expertiate specialist.

2.4 TRAINING FACILITIES FOR RATINGS

Studies and discussions of training and education have more or less been related to officers. Internationally I find only a few outdated papers dealing with ratings. I must however emphasize here that the training for traditional roles has become outdated, and a new generation of seafarers has to be trained to meet the new ships that are designed and built with advanced technologies. To meet this challenge is critical if maritime training and education is to service the market.

I hereby submit a scheme for the development of a maritime training centre which includes:-

- Staffing requirements
- Buildings
- Classrooms
- Workshops
- Equipment

Special training syllabus has also been developed (attached as annexes) which includes the wider training capabilities in:-

- Fire fighting training
- Sea survival training
- Marine workshop (Ratings)
- Marine Seamanship (Deck)
- Marine Mechanics (Engineering)

The establishment of an adequately equipped training centre will provide unlimited potential for use in modern training techniques in the integrated maritime transport industry.

A system of cooperation between the Maritime Administration, the Port Authority, shipping companies, oil companies and terminal operators, marine employment agencies, fishing vessels operators should be initiated and aimed at making use of all available training resources, and provide full continuous utilization of the centre's training facilities and capabilities.

In this light the following additional training is envisaged:-

- Port personnel training
- Cargo handling
- Marine safety
- Pollution prevention
- Dangerous goods handling

and other training packages that will be required from time to time by the marine and related industry.

2.5 STAFFING REQUIREMENTS

Teaching Staff

The staff requirement of the Training Centre would be related to the training capacity and through out and would include not less than:

- Captain Superintendent (Commandant)
- Deputy Captain Superintendent (Expatriate staff)
- Nautical Training Expert
- Engineering Training Expert
- Seamanship Instructor
- Mechanic Instructor

The Captain Superintendent would be both the professional and administrative head of the Training Centre and would be expected to have class contact hours with the trainees.

The practice of visiting instructors has already received worldwide acceptance in training, and will be made use of in first aid training, communications, ship's articles and other specialist areas.

Qualification Of Teaching Staff

In order to be effective the Training Centre should have a well organized staff serving under satisfactory conditions. The educational and professional qualification of staff members should be adequate for teaching their assigned subjects and courses. Staff members should be involved in occupational activities related to their teaching area and should have recognized certificates and /or diplomas to complement the degree they have earned in their area of training. They should manifest up to date knowledge and skills in their particular line of expertise.

The proposed number of teaching staff is sufficient to insure effective instruction and constant guidance to trainees. The teaching load of staff members for the envisaged courses of instruction is adequate to provide them with sufficient preparation for classes, adequate evaluation of trainees achievement and professional growth of the teachers themselves.

Administrative And General Services Staff

The staff requirement for administrative and support services should be minimum to reduce overheads and laxity. This staff will initially include:-

- Registrar/account
- Technician/Driver
- Cooks (2)
- Steward
- Office boy/Cleaner

Staff Professional Performance

A competent staff is one of the indispensable elements of a good school. Such a staff should not be merely a collection of individually competent persons, but a cooperative group having common purposes and motivated by common ideals regardless of whether they serve in the teaching or administrative branch of the Training Centre. The head of the Centre should at all times be aware of this and take all necessary steps to enhance this motivation. Each member in turn should give evidence of awareness and understanding of problems that occur; and an ability and desire to work together cheerfully, harmoniously and efficiently for the good of that Centre and its students.

2.6 BUILDINGS

The old Fourah Bay College building which is to form the core of the Training Centre is a three (3) floor 100 year old stone building which is in a remarkably good structural condition. However the partitions and floors which are made of wood is presently in a very poor state. The inside of the building will therefore need to be ref-

loated and repartitioned. New facilities like toilets, water and electricity will also have to be installed.

On successful completion of renovation works, the building will be able to house the following:-

- Classrooms
- Library
- Administrative offices

In addition to the above the following facilities will have to be provided on the proposed site:

- Seamanship workshop
- Engineering workshop
- Student accomodation

This minimum facility if provided will enable the inaugural intake of trainees to embark on training. Trainees for the upgrading courses which are of a shorter duration will have to be non-residential.

Sketches and Diagrams

The proposal described by the artist's sketches show the type of low cost buildings envisaged. The arrangement of the buildings provides:-

A. The Workshops with:

- adequate working space for trainees
- proper ventilation, adequate natural and artificial lighting for comfortable working conditions, adequate electrical outlets.
- enough space provided within the workshop area where trainees can gather for instruction or discussion.
- Suitable entrances and exits including emergency

exits; enough storage room in order to prevent mixing of chemicals, flammable or toxic materials with other workshop tools, materials and supplies.

B. The Classrooms:

- The classroom environment is conducive to learning.
- The number of students is appropriate to the size of the room and its acoustics.

C. The Library:

- The library has enough space for readers, collection and staff.
- It is adequately lighted and properly ventilated.
- Precautions for fire has been taken into consideration.
- The location and size is adequate for quiet reading and convenient study.

D. Student Accomodation:

The student accomodation building is functionally designed and should be constructed of strong durable materials. The design is pleasing to the eye and in conformity with the surroundings and at the same time imbued with the proper atmosphere for living and learning. The building is planned so as to meet future expansion needs. There are well planned entrances and exits to ensure the safe and convenient circulation of the school's population.

Stairways and fire exits are to be made adequate in size and number, and conveniently located. The building is well illuminated and ventilated with no impediments in corridors to obstruct the free flow

of traffic.

E. Dinningroom and Galley:

The dinning room is functional and spacious enough to accomodate the whole student body at one sitting. The furniture is to be of a type that could be easily kept clean and the whole room kept to a high degree of cleanliness. The furniture in the dinningroom can be moved around and re-arranged so that the dinning room could be used as a general assembly and for social functions with invited guests from outside the Training Centre. The dinning room will also serve as a T.V. room.

The galley is located adjacent to the dinning room with a seperate entrance but with a connecting door to the dinning room for practical purposes. The galley should be provided with cupboards, lockers, and shelves made from fire resistant material to keep cooking utensils, so as to give an appearance of orderliness. The floor, table tops and walls should be covered with materials that could be washed frequently and kept clean and in saintary conditions at all times.

2.7 OTHER FACILITIES

(i) Recreation and Sports

Though the designated site does not have enough space for a football pitch, there is enough room for other sports activities like table tennis, badminton, volleyball, handball etc. A football pitch is, however, located about twenty minutes walk away.

(ii) Community Relations

The Training Centre should maintain a harmonious relationship with the wider community, and utilise community resources, and make available its own assets and resources when needed.

A social service orientation must permeate the entire Centre and create in the students an awareness of social issues, deep concern for the needs of others and a strong desire to commit themselves to community upliftment and positive social change.

CHAPTER 3
EDUCATION & TRAINING OF SEAFARERS

3.1 INTRODUCTION

Traditionally, unlike most other industries, practically all maritime education and training courses leading to examination and certification are prescribed and run to agreed syllabuses. MET has to meet content requirements and standards that are laid down by international conventions and reflected in national legislations.

There seems to be a trend towards tailoring the education and training requirements to what the operator is required to know and do. An example of this is the establishment in the United Kingdom of statutory training boards and the training industry. In this case the trainer provides the appropriate training after an analysis of the job and the environment have been made. This environment includes any legislations, safety and health factors.

This results in the preparation of a knowledge and skills specification which becomes an education and training specification and a course syllabus including not only terminal objectives, but an indication of entry requirements so that the education and training process can be geared to the people who are to be trained.

It is my opinion that such a system will be well suited for the proposed training envisaged for Sierra Leonean seafarers.

3.2 THE REQUIREMENT FOR A DEDICATED MARITIME TRAINING CENTRE

Except within the Sierra Leone Ports Authority, there has been only a limited awareness of the importance of training within Sierra Leone for the merchant service on the part of the Sierra Leone Government, and until 1985 when a significant number of seafarers could no longer maintain their jobs on board ships due to Convention regulations, there was little quantified evidence of the need for such training. Thus somekind of haphazard training was ventured by some marine officers of the S.L.P.A, but this quickly collapsed due to inadequate infrastructure, equipment, training background and a number of other logistical and legal problems.

A survey of training requirements in the Port and Shipping Industry in Sierra Leone was recently carried out (1988) by Portioi Management Services; Harbour Board. The survey was at the request of the I.L.O. and it identified the requirement to train the following numbers of certificated personnel to the year 1995.

<u>CATEGORIES</u>	<u>NUMBERS</u>
Deck Officer Class 1	6
Deck Officer Class 2	8
Master endorsement West African trade	8
Marine Engineer Class 1	6
Marine Engineer Class 2	8
Service Endorsement	14
Deck Ratings	80
Engine Ratings	80
Up-grading courses Deck/Engine Crew	200
Tanker safety courses	80
Refresher courses port personnel	60

The above calculations on personnel requirements are shown in the survey to have been developed taking into consideration the following factors:-

- a. the existing regulations concerning training and certification of seafarers;
- b. a present number of vessels and seafarers;
- c. the number required to man the fleet taking into account turnover and wastage;
- d. a modest number of seafarers employed on foreign flag vessels;
- e. the number of marine officers required for shore-based jobs.

I find no divergence from these numbers and accept them as good indication of the manpower training needs required for the Sierra Leone mercantile Marine until 1995. Furthermore these numbers take into account students already undergoing officer training.

The number of Deck Officers class 1 and 2 and Marine Engineer Officers class 1 and 2, and Master endorsement West African Trade shows 14 and 14 and 8 respectively. These personnel are to be trained at Regional Maritime Training Academy in Accra, Ghana.

3.3 ADMINISTRATIVE CONCERN FOR EFFECTIVE INSTRUCTION

The administration of the Training Centre should play an important, though indirect leadership role in the quality of instruction. This should be manifested in the programme of studies, instructional and classroom management, vocational programme of students and the administrative measures for effective instruction.

Supervision of instruction should include such practical measures as:

- Requirements of syllabi - the syllabus for each subject should be prepared well in advance, in accordance with the S.T.C.W. Convention and approved by the competent authority;
- Encouraging instructors to familiarize themselves with the latest technology, equipment, job development and subscription to maritime publications like Lloyds List etc.
- Encouraging instructors to join seminars and educational associations, and to experiment where possible, with new approaches to teaching.
- Regular maintenance of equipment teaching aids and tools, for accuracy and effective instruction.
- Scheduling conferences and meetings with departmental heads and faculty, and conducting dialogues with students.
- Periodic quizzes and examinations of trainees
- Continuous faculty development and evaluation of the relevancy of the training programme.

3.4 COURSES

The training courses to be undertaken by the Training Centre for Deck and Engine Ratings and General Purpose Ratings should be in accordance with the S.T.C.W. Conven-

tion, and as follows:

- Deck Department
 1. Deck Ratings training for new entrants: Ratings forming part of a navigational watch (Regulation II/6 of S.T.C.W.);
 2. Deck Ratings training for Ratings with sea service leading towards a certificate as Able Seaman (I.M.O./I.L.O. "Document for Guidance 1975")
- Engine Department
 1. Training leading to mandatory minimum requirements for ratings forming part of an Engine Room watch (Regulation III/6 of S.T.C.W.);
 2. Training leading to minimum requirements for a rating nominated as assistant to engineer officer in charge of a watch (Regulation III/6 , Resolution 9 of S.T.C.W.).

In addition to the above courses, specialised training courses which will be common to both the Deck and Engineering trainees will be given in:

- Fire-Fighting Techniques (Resolution A437 (xi))
- Certificates of proficiency in survival craft (Regulation iv/1 of S.T.C.W.)
- Basic sea survival (Resolution 19 of S.T.C.W.).

3.5 SYLLABUS

A comprehensive syllabus for the teaching of all the above mentioned categories of seafarers is outlined in annex 1 to this proposal.

Although courses for General Purpose Ratings and Up-graders have proved very successful with the majority of shipowners, it should be borne in mind also that a large number of general cargo, passenger and bulk ships are still being crewed in the conventional way (separate deck and engine ratings). The Training Centre will therefore incorporate flexibility to meet the changing needs of the shipowners and the possibility of introducing separate courses for deck and engine ratings as and when needed, with common courses in lifeboat, survival, first-aid, fire-fighting and fire prevention training for all courses.

Courses leading to Able Seaman and Motorman or Assistant to Engineer, may be offered to General Purpose Ratings who have completed sufficient sea time. The same courses may be offered with slight modification where necessary, to other marine personnel such as tugboat, ferry, motor launches and other marine craft operators operating within the coastal and inland waterways of Sierra Leone.

POTENTIAL TRAINING CAPABILITIES

The Training Centre may need to undertake a study into all aspects of maritime training which will benefit and meet the needs of Sierra Leone and other English speaking countries in the sub-region, and which can be provided at the Training Centre with minimum extra facilities, training personnel and expenses. A number of suggestions are made here in this proposals.

1. Crew of fishing vessels

Training courses to be introduced based on the recommendations developed by I.M.O./S.T.C.W. subcom-

mittee on "Training and Certification for Fishing Vessels".

2. Skilled Workers

Training of mechanics, welders and refridgeration technicians.

3. Training of Equipment Operators for the Port.

Training however, must be carefully planned to ensure that too many places are not offered, thereby draining the manpower actually employed. There is an optimum relationship between the number of men to be trained at each level, the length of the courses, the number of hours of training per week and the number of lecturers and instructors required to conduct the training.

TOTAL NUMBER OF HOURS REQUIRED FOR
DECK/ENGINE (GENERAL PURPOSE) RATINGS COURSE

COURSES	PRACTICAL HOURS	THEORETICAL HOURS	SPECIAL COURSES	TOTAL HOURS
1. Engineering	790	530	80	1400
2. Deck	630	690	80	1400

Total Hours

Per Year 1420 1220 160 2800

The S.T.C.W. 1978 Convention recommends 2925 hours, but the Convention has stressed that flexibility is important, and each Administration should be able to construct a training programme to meet its needs.

The above calculations including special courses yields 1400 hours per course per year. The total for both courses comes to 2800 hours. It is therefore suggested that a standard 7 hours per day, 5 days per week be used over a period of 40 weeks in a training year.

3.6 ENTRY REQUIREMENTS

1. NEW ENTRANTS DECK/ENGINE (G.P. RATINGS)

Every candidate must have completed secondary school and obtain passes in at least four subjects at general certificate of education ordinary level. The passes should include mathematics and one other science subject. Candidates who meet this basic requirement would then attempt the Maritime Training Centre's entrance test. Shortlisted candidates after a medical examination, would then submit to a viva-voce examination to assess their motivation, compatibility, honesty, self discipline and leadership potential.

2. (i) RATINGS FORMING PART OF A NAVIGATIONAL WATCH (RESOLUTION 8)

(ii) RATINGS ASSISTING THE ENGINEER OFFICER OF THE WATCH (RESOLUTION 9)

Every candidate must have at least three years of sea service on deep sea ships, and have in their possession a clean discharge book. Each candidate will be screened for correct indentivity and good character including previous criminal record.

Candidates will then submit to a basic test in reading, writing and arithmetic in addition to a viva-voce examination. Those who are suitable will be short listed and medically examined with special emphasis on good eye sight (including colour vision) and good hearing.

A selection board chaired by the head of the Training Centre, will finally select candidates for each course, and require them to sign a letter of appointment which states the rules of the Marine Training Centre.

3.7 INSTRUCTIONAL AND TRAINING PROCEDURES

The M.T.C shall make use of a variety of methods and strategies as far as possible under the given circumstances in Freetown, to guide the student's self realization and sense of responsibility through development of his practical, analytical and critical judgement. The M.T.C. shall make use of instructional materials that are suitable to M.E.T. and current occupational knowledge and practical teaching devices and supplemental instructional aids appropriate to the subject. Practical training, requiring participation of the trainees themselves, should be an important part of the training course. As far as possible, practical instruction in shiphandling, seamanship, safety, machinery operation and maintenance, cargo work and metal work should be provided.

Demonstration equipment such as engines, and auxiliaries, lifeboats, ship equipment, cargo gear, fire fighting equipment, tools and work implements should be used and selected with reference to the shipboard equipment in common use and as stated in the syllabus.

Study visits should be organised for trainees to ships in port, maritime and naval installations such as shipyards, workshops etc.

Films and other audio-visual aids should be used when no other demonstration material is available.

Theoretical training in lecture form should be directly related to the practical and theoretical knowledge required by seafarers and should wherever possible, be integrated with the practical training.

The rules and practices relating to classroom and workshop management, conducive to effective instrumentation and learning should be carefully observed.

Measures should be taken to ensure that punctual attendance of trainees in schedule classes, and a record of absences should be kept. Proper discipline should be maintained at all times.

3.8 PERFORMANCE EVALUATION OF TRAINEES

The marketability of the graduate trainees and the effectiveness of the M.T.C. will to a large extent depend on their performance on the job; which will in turn lead to the international stature of the Training Centre and the reliability of Sierra Leonean seafarers. It is therefore of paramount importance that steps must be taken to effectively evaluate trainee performance during the entire period of their training.

I must also emphasize here that, evaluation should not be limited only to job related performance capabilities, but

the very important aspect of self-discipline which should not end on graduation, but monitored right through the individual's service. Experience has shown that the indiscipline of a few seamen can damage the career prospects of a large number of others.

Trainee response to instruction should be evaluated according to procedures which ensure a just appraisal of performance. Individual differences (the exceptional, the slow but persevering trainee) should be considered.

Below is given some analytical evaluation procedures. They are not exhaustive and others could be incorporated.

ANALYTICAL EVALUATION OF STUDENT PERFORMANCE AND ACHIEVEMENTS

The following techniques have been found to be most effective in the analytical measurement of performance:-

1. Trainees, with the help of their instructors should be made to develop
 - Proper attitude values,
 - Wholesome relationships of students with peers, faculty and administration,
 - Punctuality and regularity of attendance,
 - Discipline.

2. It should be the intention of the instructor to develop cognitive capabilities in the trainee by administering at irregular intervals
 - quizzes and exams for practical and theoretical subjects,
 - by specifying periods and dates for the submission of workpieces, projects and essays.

Instructors should personally rate and assess assignments and other requirements submitted by trainees and promptly inform them of the results. The method of arriving at the final marks should be clearly defined by the instructor and understood by the trainees. Trainees with outstanding achievement should be recognised and commended if possible in the presence of the other trainees. Further encouragement could be made through:

- Priority in apprenticeship
- Further job placement
- Scholarship for officer training

On the other hand, slow but persevering students should be encouraged through by emphasizing practical and manual skills in their strongest areas. Academic and theoretic work load should not be overly emphasized. The instructor should concentrate more on individualized instruction and remedial classes.

3.9 ACHIEVING QUALITY GRADUATES

The ability to rationalize existing training programmes or develop new ones is directly tied to a country's capacity for institution building. The lack of financial resources and managerial know-how coupled with few local instructors and inadequate physical facilities often prevent countries from achieving the focus on quality needed to differentiate their seafarers from those that are more competitively priced.

For many countries, even those in the developed world, there remains the need to upgrade facilities, equipment and quality of teaching staff. The I.M.O./S.T.C.W. Convention calls for training in the use of modern ship's equipment; however it has been ten years since the standards incorporated in the Convention were set and today's shipboard technology is even further advanced. If the S.T.C.W. standards are considered outdated, the training facilities in many countries are even more so, and many institutions are incapable of improvement given current resources.

However, training institutions are not just facilities but also people. Adequately qualified staff to educate seafarers is another problem area for many developing countries. Recruitment of foreign educators is only an

interim measure; many countries are beginning to recognise that long term shortages can only be met with a plan of gradual "nationalization" of maritime education through the training of nationals as instructors.

Another major problem has been the inability of the seafaring industry to recruit candidates with a sound educational background. A common complaint has been that recruits represent the "bottom-of-the-barrel" among school drop-outs. The education system has therefore the additional task of being both a professional training institute as well as a general educational institution if a quality graduate is to be produced.

Finally, the working life at sea of an active seafarer is short, often less than 20 years. He finally leaves sea service to find a shore-based job. In the current shipping recession many Sierra Leonean seafarers, for example, have been unable to find a shore-based job, and this indicates the poverty of life-skills training in their education. The training envisaged at the Marine Training Centre must be broad-based in order to enable the seafarer to transfer skills to shore-based jobs when his seafaring days are over. One means of accomplishing this is the integration of maritime training with institutions of vocational (technical) learning. This requires commitment from the Ministry of Education and the government in order to be successful and, if not followed, seafarers will suffer and the maritime industry will also suffer from its inability to attract a better calibre of candidates.

If the challenge in maritime education is to be met, innovative teaching methods will need to be explored and

married to the employment requirements of the 1990s. Commercial practice will dictate the demand and creative efforts will be necessary if seafarers are to be competitive in meeting the requirements of shipowners, and when a seafarer is ready to return to a shore-based lifestyle, educators should be prepared to smooth the way.

3.10 ROUTES FOR MONITORING, EVALUATING AND ASSESSING THE PROJECT

It is suggested that the main means of monitoring the activities of the project on behalf of a donor (technical assistance) Government and the Government of Sierra Leone be through the Board of Governors on which they would both be represented. In addition to an annual report showing what courses have been run and results achieved during the academic year (exams, results, and new equipment etc.), and Monthly Financial Report of expenditure under the appropriate budget heading, any extraordinary circumstances in the affairs of the M.T.C. should also be channeled through the Board of Governors.

The head of the M.T.C. shall submit quarterly reports to the Government of Sierra Leone concerning the running of the Centre and the development of the Training project.

The head of the M.T.C. shall hold monthly meetings to review the period since the last meeting with regard to achievements and deviations from work plans agreed at earlier meetings, and be responsible for the administrative follow up. Minutes of the meetings will record any problem areas and agreed solutions together with an agreed division of responsibility to take action (what is to be

done).

In addition to the meetings between the staff and the head, there should be regular meetings of each of the sections (or departments) to discuss progress and problems of students. It is however felt that due to the small size of the staff involved these meetings should be kept relatively informal.

Evaluation

The project should be evaluated and undergo periodic review in accordance with established procedures utilised by the specific donor Government. The timing of the evaluation should normally be decided by consultation between the donor Government and the Government of Sierra Leone. Part of the criteria for evaluation usually is a combination of the numbers of students being trained by the M.T.C. and the cost per student per year of training them, the success rate of the graduates finding jobs, and the feedback from their employers on their performance.

PART II
**SOME PARAMETERS IN THE EDUCATION
AND TRAINING SYSTEM**

3.11 REQUIREMENTS IN M.E.T.

Introduction

While it is true that the human being is highly fallable, it is simplistic to blame him solely for accidents when the causes of failure are far more likely to be a complex interaction of factors involving at least the man, the machine and the environment.

On the face of it therefore, the human argument may give reasons to do away entirely with the human element. However it is recognised that the human being is a vital aspect in the operation of ships because he has the ability to think, exercise judgement to override machines and to take decisions of a kind which robots will probably never be able to achieve. For all his fallability, he is still the best and most flexible asset in the operation.

RELEVANT TRAINING

For maximum effect training should be relevant. The trainee should know that his training actually relates to his duties, that is, it is in context and that he can fit into the working environment on completion.

In many ways also, M.E.T. is still regarded as something to meet national/international regulations and should be put out of the way as quickly as possible. If this is so,

it will be a disappointment because it does not allow the trainee to demonstrate the contribution that effective education and training can make to the success of the enterprise. On the contrary a major objective of the training process is to communicate or pass on knowledge and skills to the seafarer in such a way that a proper transfer of their attributes can take place in the working environment effectively and with a minimum of error.

3.12 SOME FACTORS IN THE EDUCATION & TRAINING PROCESS

In examining the concept of the training process to satisfy certain objectives, there are various factors which may feature and should always be borne in mind since they may operate either singly or in different combinations as assets or constraints.

Among these factors are:

1. Owners Requirement

These requirements may be prescribed by the type of ship, the environment in which it operates physically and commercially and the style of the company owning and managing the ship. The owner or manager, therefore has the ship and equipment and presumably knows how he wants them operated. No two ships are exactly the same, and there are many trade and sea routes as well as many different types of equipment. From these guidelines the overall objectives of the owner can possibly be determined. It can be concluded, generally that the final objective of the owner or manager is a commercially profitable ship in addition to it being

safe and trouble free. These three factors may not always be compatible although it may be the ideal requirement.

2. Manning Philosophy

The crew size may be determined by manning policy and legislation. This is so since the ship itself is inadequate to provide a full job specification unless there is a completely new system being designed to encompass shipboard manning and operation.

Within manning legislation there is always room for manoeuvre and the final organization of the work force aboard ship is often determined by the operator. Here, specification as to the type and numbers of crew beyond the minimum, and the organization of the work force will be made and this may provide some indication as to job specifications and so contribute to the education and training process.

3. Man-machine Interface

The question of the interface between the operator and his equipment as the industry undergoes changes deserves very close attention in the development and implementation of education and training programmes. A ship requires many different types of skills to be exercised and many different categories of skilled personnel to man it. The approach to education and training should take a wide view of the responsibilities of individuals and the environment surrounding their jobs. From the education and training point of view the ship should be looked at as a whole system and

then the total operational and maintenance skills assessed and grouped together for compatibility instead of the traditional headings of deck and engine. As long as this system of demarcation is perpetuated then there will be real difficulties in manning and education and training as technology advances.

4. Management Style

This factor may not be considered a sound indicator of overall objectives of an education and training programme. Even if it is, it may not always be helpful in the education and training process, and so broad assumptions may have to be made, yet not discounting it as an important consideration. The management style of a company, for example, may indicate the need for a different number of different groups of ships within one operating management and if say a reasonable mobility of labour is required then it may not be a feasible proposition to train specifically for one ship type as far as this management style is concerned.

5. Legislative Requirements

Legislative requirements fall into two broad categories:- national and international. In the latter case guidelines and specifications may be laid down for the final adoption and implementation by national administrations through legal procedures. In the case of the S.T.C.W. (1978) Convention, guidelines to education and training requirements and the minimum standards of competency to be demonstrated by most of the ship's crew are gone into some detail.

It may sometimes be found that the education and training programme instead of being designed for the perceived needs of the operator and individual, and taking into account safety and other legislative requirements, the reverse is sometimes the case. It is not the operator but the administration which lays down quite carefully and in detail the education and training requirements. It may be found that even with the best of intentions these requirements can either go beyond or fall below what is needed to cover safety. The margin left for the trainer to take account of the operators needs can be relatively small.

The shipping industry can find itself in a rather curious situation whereby a large part of its education and training is dictated by a national administration which has no day to day experience of the operating constraints, practices and opportunities of merchant ships, whereas those who have this operational experience may have only marginal input into the final education and training requirements. This shortcoming can be overcome by adding various items to the administration's syllabus or unilaterally imposing additional requirements in the form of short courses and other types of training aboard ship or ashore for own personnel.

Notwithstanding the above observations, the very nature of shipping as an international activity needs to have regulations and guidelines for safety purposes and the national administration must ultimately be responsible. This should include the competence of seafarers through their own education and training and the design and equipping of the ship.

Education And Training At Sea And Ashore

The degree of emphasis on shore versus shipboard training is another consideration in the education and training process. Each sector has its advantage in the making of a properly trained and efficient seafarer. There is need for an intensive period of training at an establishment ashore and also there is need for adequate practical experience at sea to determine the professional competence of the seafarer. The mix of these two components needs regular review as education and training techniques strive to keep pace with changing maritime technology.

The factors listed above may not be all exhaustive, nevertheless they serve to demonstrate the various and different considerations; some not necessarily always compatible, which have to be taken into account in the process of establishing and maintaining a M.E.T. system.

CHAPTER 4

OUTLINE OF A MANPOWER DEVELOPMENT PLAN FOR SIERRA LEONE

4.1 COMPONENTS

I have undertaken a study into all aspects of maritime training which will benefit and meet the needs of Sierra Leone and which can be provided at the Training Centre with the suggested facilities, equipment, training personnel and expenses. The manpower development plan consists of the following components:

- The training of crews for foreign and national flag ships utilizing the facilities which will be provided at the Training Centre.

- The promotion of a national training capability for the training of a range of maritime personnel such as seafarers, port workers, fishing vessel crew, off-shore oil industry workers etc.

- The strengthening of the overseas training programme including the use of the Regional Academy in Accra, Ghana, and the Arab Maritime Transport Academy in Alexandria, Egypt for the training of deck and engineering officers.

- Improving ship and shore performance of maritime personnel.

ADVANTAGES

The advantages of establishing locally an M.E.T. facility for the training of ship's crew, port marine workers and other marine related workers as compared to other institutions abroad would be:

- National ownership
- Closer administrative control and monitoring of training by members of the Board of Governors, visiting examiners, and other interested parties.
- Training to satisfy internationally recognized standards.
- Adequate training and employment opportunities for Sierra Leoneans (both teachers and trainees).
- Lower training costs.
- Utilization of the Marine Training Centre as a prerequisite for overseas training.
- Increased aid from international and donor agencies-bilateral/multilateral.
- Foreign currency savings (Reserves).

DISADVANTAGES

- Initial cost of physical facilities to be borne by Sierra Leone alone.

- The Training Centre must earn credibility with foreign shipowners and Administration.
- The setting up of an Administrative framework that is effective.
- Well motivated and dedicated teachers especially during start-up phase.

4.2 A NUMBER OF REASONS FOR MANPOWER PLANNING

There are many reasons and explanations to justify and support the need for a systematic manpower planning as an integrated process in the establishment and operation of an enterprise. Some of them being:

1. Future personnel needs - Planning is essential to determine the personnel needs for the future.
2. Coping with change - Manpower planning enables the enterprise to cope with changes in technology, competitive forces, market projects, and government and international regulations. Such changes often generate changes in job content, skills demand, numbers and type of personnel.
3. Foundation for personnel functions - Manpower planning provides essential information for designing and implementing personnel functions such as recruitment, selection, transfer, promotion, lay offs, training and personnel development.
4. High talent personnel - The mix of personnel employed in many modern enterprises has shifted towards the

high talent occupation and there is often a scarcity in this group. The lead time required to hire and develop such personnel is long and the enterprise can be vulnerable if there is a shortage. Planning is therefore necessary to avert this element. In addition technological changes often upgrade some jobs and downgrade others. All these considerations have been noted in the manpower planning process.

4.3 THE DEMAND SIDE OF THE MANPOWER PLANNING PROCESS

In practice it is impossible to foresee needs very far ahead and any substantial and costly efforts to forecast long term needs are hardly likely to be regarded as justifiable. However in the attempts to produce appreciations of possible long term developments it may be very worthwhile. Generally however, and bearing in mind the numerous uncertainties, the best safeguard against long term shortages or surplus is the deliberate cultivation of flexible attitudes towards manpower planning studies.

Statistical techniques play a useful part in the forecasting of future manpower demand, but this may not be the whole picture. These techniques identify and measure trends and relationships which have been established in the past and projected into the future on the assumption that these same trends and relationships will continue. However due allowances have been made for changes which may break these established trends and relationships. These changes on the other hand may be influenced by technological changes, changes in the economic, social and political environment in which the organization operates, policy changes and objectives of the organization itself and so on.

There apparently can be no simple rule of thumb method of translating such changes into changes in number and kind of personnel needed. The only rule seems to be that forecasting should be tackled systematically and analytically by the best methods available at the time.

4.4 RATIONALE

THE FIRST COMPONENT

Crew Training Project

1. The proposed scheme of crew training (short term) is to be the implementation of a crew training project designed to train and provide employment opportunities for Sierra Leonean seamen on deep sea merchant ships. The duration of the short term plan is for 18-24 months.
2. The secondary objective of the short term plan is to assess the suitability of the facilities as a national training centre and improve the cost effectiveness of the training programme.

It should be borne in mind that an upgrading programme of 8-10 weeks duration for seafarers with sea experience who need to fulfill the S.T.C.W. 1978 Convention requirements is also being run simultaneously (in parallel) during the short term project. The rationale of this arrangement will be highlighted in the following chapter.

THE SECOND COMPONENT

The second component of the manpower development plan could then be expanded to include the training of port marine and other personnel.

In addition to the already stated training courses (p 29). The Training Centre could also provide advanced training courses for marine mechanics, general engineering and other skilled trades such as welding, fitting and refrigeration technicians to meet some of the manpower requirements for shipping, fishing and port industries and, in particular the new container and multi-purpose port terminals being developed.

Although a number of extra specialist instructors may be required to make such an undertaking possible, the benefits derived will easily outweigh the cost.

It is strongly recommended that future candidates for the expanded overseas training programme for the training of deck and engineering officers in the Regional Maritime Academy in Accra, Ghana, and the Arab Maritime Transport Academy in Alexandria, Egypt, should be selected from "potential officers" who graduated from the Training Centre.

The above components have been designed and presented so as to form integral parts of the overall manpower development plan. The components may be readjusted for implementation and financing as appropriate.

Since port training and shipping business is a continuous activity the Training Centre could also be used to orga-

nise seminars and refresher courses for technical personnel who are already employed not only within the port industry, but all related marine and shipping industry.

It is felt that the inclusion of training programmes for port personnel will be very beneficial, in that persons who are trained will readily return to their original employment places on graduation. The same is also true for other workers in the marine related industries.

Training of port personnel will help to improve port performance and port safety which will benefit Sierra Leone directly and bring its port more in line with modern international standards.

4.5 FOREIGN SHIPPING AND EMPLOYMENT OF SEAFARERS

Shipping companies and employers of seafarers outside Sierra Leone, and in particular those with no direct financial and trading ties with the country may only oblige to accept graduates from the Training Centre as "Trainees" for specific periods of time, rather than offer full employment; and the following reasons may be cited:

- Lack of necessary sea experience, especially for new entrants.
- That such companies may, for economic reasons be committed to particular sources of recruitment, or
- For economic and political reasons be committed to manning their ships with seamen of particular nationalities, and may therefore be reluctant to change their

source of recruitment.

It is therefore felt that such shipping companies and employers may only recruit Sierra Leonean seafarers if they are convinced that there would be sufficient numbers of well trained pre-sea graduates together with some qualified, experienced seamen of all grades to meet their needs.

In order to have sufficient numbers of well trained seamen to meet the needs of such shipping companies who may wish to recruit seamen from Sierra Leone it will be necessary, and of great importance to select and encourage some experienced seamen with reasonable educational background to undergo the proposed upgrading courses or General Purpose Ratings training at the Training Centre. There is also a need for upgrading courses by which other seamen may have the opportunity to proceed to higher grades and in line with international standards.

Up-graded and retrained seamen will be needed to supplement the new and inexperienced graduates of the Training Centre in order to provide full complement of crew to satisfy the needs of interested shipping companies. One can never stress enough that, acceptance for continuous employment of the trainees of all ranks coming out of the training centre largely depends on the discipline, capabilities and quality of the graduates themselves.

Capt. M.W.S. Drew a Maritime Training Consultant of international renown rightly stated in one of his many reports that: "The initial intake to a Maritime Training Centre may be regarded as a 'Pilot Project' and employers would naturally observe the early progress in the trai-

ning scheme; the backing given to the Institution by the Government and the response of students to their training before making any firm commitment regarding long term employment prospect."

4.6 SPECIALIZED TRAINING

With the advent of the 1978 S.T.C.W. Convention entering into force on the 28th of April 1984, a national training scheme for ratings and possibly other shipboard personnel is the only satisfactory way of achieving an effective strength of competent and qualified seafarers.

It will therefore be necessary for all Sierra Leonean seafarers who commenced their sea service before the S.T.C.W. 1978 Convention standards were introduced, to be trained in the essential elements needed to meet the convention requirements.

This involves the bulk of Sierra Leonean seafarers, and it will therefore be necessary for the Training Centre not only to provide courses for General Purpose Ratings and other Ratings and other Ratings for general cargo ships, ferries, tugs, and fishing vessels, but also for specialized ships such as petroleum and liquified gas carriers and other bulk chemical carriers.

There are large numbers of specialized ships in the world today, which have been developed to perform specialist trading functions. These ships are equipped with sophisticated operational systems that call for properly organized and controlled training programmes.

These ships are engaged in carrying a variety of hazar-

dous cargo in bulk, including liquid chemicals, liquified gases and petroleum products. An accident involving such ships can result in heavy loss of life and extreme damage to the environment. The danger of pollution on a large scale is always present when any of these ships call at ports for discharging and sometimes when loading/discharging their cargoes at terminals around the world including Freetown.

Efforts to find employment for Sierra Leonean seamen may result in companies operating some of these specialized ships deciding to employ our seafarers, as more specialized ships are constructed to carry liquids in bulk.

In view of the above, specialized training courses for seamen will have to be introduced at the Training Centre in order to meet the needs of the employers. However, it will first be necessary to quantify the numbers of seamen who will be needing this specialised training before concrete plans are made. Initially it will be prudent for an experienced specialist instructor to conduct these courses say, once or twice a year depending on request and number of candidates.

Training is an important factor in the efforts by the maritime nations to achieve greater safety at sea. A number of provisions concerning the carriage of hazardous liquids by ship is contained in the S.T.C.W. Convention.

The Convention contains resolutions which present mandatory minimum requirements for the training and qualifications of personnel serving on board vessels which carry chemicals, petroleum or liquified gases (resolution 10, 11, 12, 13); such that the M.T.C. may not be limited to

seafarers only, but also to shore based port workers at terminals where such hazardous liquids are handled or stored.

Annex lists recommendations on training for ratings in following specialized ship types:-

- i training and qualification of ratings of oil tankers having specific duties and responsibilities in connection with cargo and cargo equipment;
- ii chemical tankers;
- iii liquified gas tankers;
- iv dangerous and hazardous cargo other than in bulk.

Resolution 16 gives scope for technical assistance to be obtained from Governments who are in a position to do so, to train personnel in the above specialized courses.

It may be necessary also, for graduates of the Training Centre to return to the Centre periodically for refresher courses, and specialized courses in order to develop the necessary skills needed to gain and maintain their employment on specialized ships.

An official of the I.M.O. has indicated at least by person to person discussion that if the Organization is approached it is willing and ready to give all necessary assistance in the delivery of such specialized training courses when the proposed Training Centre is operational.

4.7 CERTIFICATION

Sierra Leone being a member of I.M.O. and committed to the aim of safer shipping and cleaner oceans must ensure that all training courses undertaken and given to her seafarers shall be in accordance with the S.T.C.W. 1978 Convention for seafarers.

In addition to the above the Government of Sierra Leone should take all necessary steps at the earliest convenience to ratify the S.T.C.W. 1978 Convention.

Ratification of the convention will give authenticity and credence to the certificates that will be issued by the Marine Training Centre.

The international stature of the Training Centre will be concretely enhanced by the quality of graduates coming out of it and in time will possibly become the centre in the sub-region for the training of Marine Ratings.

After successful completion of training the seafarers (graduates) will be provided with special documents of identification showing grades and qualifications. They would form the nucleus of a new National Register of Seafarers in Sierra Leone.

CERTIFICATES

1. For deck entrants into the Up-grading course they will receive an upgraded certificate on deck and a basic certificate for engine. They will then be qualified after 12 months sea service to serve as AB

Seamen on deck and/or directly as oiler wiper in the engine room.

2. For engine room entrants to the upgrading course they will receive an upgraded certificate in engine and a basic certificate on deck. They will then be qualified after 12 months sea service to serve as motor man grade II and/or directly as ordinary sailor on deck.
3. For new entrants into the industry on successful completion of the course, they will receive certificates as General Purpose Ratings. They will then be qualified to work on deck as J.O.S. and/or wiper in the engine room.

This system has been proved in the Federal Republic of Germany, Japan and the Netherlands to enhance the chances of jobs on board ship and provides the flexibility which the shipowner and the shipboard management of today requires.

4. Endorsement will be made on certificates on successful completion of relevant specialized courses e.g. C.O.W., I.G.S., Tankerman (S.T.C.W. chapter V).
5. For port marine workers they will receive a certificate of completion for their respective department. Depending on their qualification on entry and the duration of study they will be awarded the appropriate certificate with the relevant endorsement. For example a trainee who enters for an upgrading course and has had over 3 years service say in the engine room (on deck) on the harbour tugs or passenger/car

ferries will after successful completion of the upgrading course get a certificate as motorman grade II (Able Bodied Seaman) in which position he can serve after a further 6 months service, with limitations to coastal and inland vessels. Should he desire to go to sea on foreign going ships he can only be engaged as wiper/oiler (ordinary seaman)-the most junior grades.

CHAPTER 5

ORGANIZATION AND MANAGEMENT OF THE MARITIME TRAINING CENTRE

5.1 INTRODUCTION

It obviously goes without saying that the institutional framework serving the M.E.T. system should be such in its structure, operation and management that it can adequately and capably meet the immediate and development objectives of that system. In this way it will be able to produce personnel who will satisfactorily meet the standards of education, training and competency laid down by examination and certification requirements under the maritime administration or the general education system.

In Sierra Leone, at the outset, in order that the objectives of the training programme can be achieved, the institutional framework should have the capability of handling the requirements of the programme. The limitations and flexibility of the training programme are factors which should be put into perspective in the setting-up of guidelines and boundaries in the development and operation of the framework.

A pivotal Maritime Training Board is a primary requirement. However the contribution and involvement of other organizations and agencies which can be complementary and supportive should be examined with regard to their ability and role in participating in the training process for the fulfillment of the objectives.

With the appropriate organization, management and co-operation this arrangement can assist in the building-in of a great degree of flexibility in the education and training process, minimizing the duplication of personnel, facilities and equipment thereby promoting their fuller utilization, encourage a more efficient utilization of funds, assist in integrating M.E.T. in the general education system, raises the level of social and economic consciousness of the role and value of the maritime sector in national life, assist in promoting the role of maritime personnel in the society and other unforeseen spinoffs.

5.2 THE MARITIME TRAINING BOARD (M.T.B.)

The Maritime Training Board, herein after referred to as the Board, should have the prime responsibility of recommending to the government and implementing all the M.E.T. needs of the nation. The Board shall be the governing body of the Maritime Training Centre and determines and oversees the basic policy of the school. This is considered necessary if the suggested objectives are to have a good chance of being achieved. Furthermore the Board should possess and reflect some special characteristics in its composition, organization, management and operation. The recommended representation should be drawn from the following.

1. Representative of the Ministry of Transport
2. Representative of the Ministry of Development
3. Representative of the Ministry of Education
4. General Manager Sierra Leone Ports Authority
5. Shipping Interests
6. Representative of Aid Organization

STATUS OF THE M.T.B.

The Board by its nature and composition should be an inter-ministerial body with the aim of bringing the relevant Ministries together to work closely to achieve a common objective. However, for the purpose of making recommendations to Government or tabling bills or motions to parliament (or vice versa). (See annex 3 for terms of reference of the Board)

The parent Ministry of the Board should be the Ministry of Transport and Communications which is responsible for all transport matters including maritime transport, maritime safety, ports and I.M.O. matters. An additional strong supporting factor is the presence of an official in this ministry whose primary responsibility is maritime matters.

5.3 ORGANIZATIONAL STRUCTURE OF THE BOARD

- (a) External Management - The rather broad-based education and training responsibilities of the Board as indicated through the objectives of the M.E.T. programme suggests that in its organizational structure it should involve all those interests who have inputs and contributions to make in the process of achieving the objectives. Ideally, this is necessary to ensure that there is not only the presentation of the different views and opinions but also the provision of checks and balances which become necessary in dealing with the continuous dynamic changes which occur in the maritime industry. These factors are recognized notwithstanding the possibilities that too large a management group can be counter-produ-

ctive in that too wide a diversity of groups and interests can impose handicaps to decision making and efficient management.

The participants comprising the external management team would be referred to as the "Advisory Committee" and the recommended representations should be drawn from the following:

- Harbour Management (Harbour Master's office)/(Chief Marine Engineer's office)
- Ministry of Education (Vocational Training)
- Crew Employment Agency
- Shipping Interests
- Ministry of Agriculture (Fisheries Division)
- Head of the Training Centre
- Others-with expert knowledge on areas of interest (on ad hoc basis).

This Advisory Committee which would operate "externally" with reference to the day to day "internal" functioning of the Training Centre should be responsible to the Board for proper management and operation along set guidelines and objectives which would have issued from policies laid down by the Maritime Administration and the Board. The ultimate responsibility will rest with the Minister of Transport who has overall responsibility for national maritime matters. (See annex 3 for terms of reference of the Advisory Committee)

In all these considerations it is important to emphasize that the Training Centre and its Advisory Committee be accorded a reasonable measure of auto-

nomy in operation practices so that they can cope and adjust to factors such as staffing, rapid changes in the industry, reallocation of funds as and when it may become necessary in responding to the industry, reconsideration of education and training strategies, acquisition and updating of relevant training aids, and many other facets which can become very difficult and at times virtually impossible to resolve if routine decision making and management procedures are allowed to dominate. The terms of reference and operating scope should be such that a certain amount of generalities and flexibility are built in to give the organization room to manoeuvre and not subject to too tight a control. A precise and restrictive approach to control can seriously affect performance in a scenario such as the maritime industry.

- (b) Internal Management - The "internal" management of the Training Centre should reflect the operational responsibilities as guidelines laid down by the Advisory Committee which are to be implemented. The head of the Training Centre who also serves on the Advisory committee would be responsible for the internal structure and day to day management. This proposed structure should comprise the elements of nautical, engineering, and institutional administration, all of which have been identified earlier. The degree of interaction and inter-relationship between the different divisions and personnel would depend on the internal management style in place and should contain elements of the following:-

-The administrative staff under the direction of the

head of the Training Centre, should carry out the policies of the Board and Advisory Committee and keep the operations of the school moving efficiently and effectively.

-the faculty should be well organized and constitute the force that carry out the work necessary to effectively implement the objectives of the M.T.C.;

-the head of the school should foster a harmonious working relationship among all staff members and draw invaluable assistance from a well organized faculty in pursuing the training programme in order to promote excellence.

The importance of the smooth working and perfect co-ordination of the faculty and administration cannot be over-emphasized if success is to be achieved.

It is here suggested that intending faculty members of the M.T.C. be employed directly by the S.L.P.A. after their credentials have been approved, and they submit to an interview by the Advisory Committee. This is because of the nature of maritime activities in Sierra Leone where technical maritime professionals are concentrated in the port, and where rates of pay are more attractive than would otherwise be obtained elsewhere in teaching.

It goes without saying that the S.L.P.A. should be encouraged to cultivate a very special relationship with the M.T.C. as it has considerable experience and international contacts and influence with shipowners and shipping interests which would be of immense benefit to the overall progress and well being of the proposed M.T.C.

5.4 SUPPORTIVE INSTITUTIONS TO THE MARITIME TRAINING CENTRE

There are already existing institutions, some within the general education system which can be supportive to the courses of the M.T.C., and consequently to the overall maritime training programme. The broad rationale as to their value in giving some sort of support to the training programme is evident in the products of these institutions.

Most immediately obvious are those which can give support by releasing some of their instructors to assist in areas like engineering training, radio/communications training and first aid.

(i) Training in Engineering

In the area of engineering there is the Freetown Technical Institute which offers full time courses in engineering studies.

(ii) Training in Radio/Telecommunications

The Mano River Union Telecommunications Institute in Freetown is well equipped and offers full time courses of 2-3 years duration.

(iii) Training in First Aid

In the area of training in first aid and emergency medical procedures, The National Nurses Training School is a very competent institution to give support to the M.T.C.

The academic requirements for entry into the above named institutions are all basically the same (General Certifi-

cate of Education - O' level) as that proposed for entry into the M.T.C. This will mean that there will be little or no alterations necessary in the level of instruction in the subject areas of interest to the Training Centre.

It is known that these institutions possess the teaching personnel, facilities and equipment to provide some supportive functions if and when necessary in the areas mentioned.

The extent of participation of these institutions will to a large extent depend on the level of independence in terms of equipment and personnel that the M.T.C. achieves before training begins.

5.5 COST AND BUDGETARY ARRANGEMENTS FOR THE OPERATION AND MAINTENANCE OF THE M.T.C.

ESTIMATED RUNNING COSTS PER ANNUM

The estimates of running costs are based on an actual breakdown of costs for a Maritime Training Centre. The following percentage breakdown has been used:-

-salaries	55%
-premises charges	16%
-supplies + services	10%
-debt charges	15%
-miscellaneous costs	4%

1. Salaries of teaching staff Le (leones)+

Capt. Superintendent	30,000.00
Nautical Training Expert	24,000.00
Engineering Training Expert	24,000.00
Seamanship Instructor	18,000.00
Mechanic Instructor	18,000.00

+Salaries quoted are for 1986 and does not include inflation and increases to present date.

2. Salaries of non-teaching staff

Registrar/Accountant	18,000.00
Technician/Driver	14,000.00
Steward	8,000.00
Cooks (2)	10,000.00
Office boy/Cleaner	4,800.00
	<hr/>
	168,800.00

3. Premises charges:-

Light, power, water, maintenance, etc. 50,000.00

4. Supplies and services:-

Equipment, stationary, supplies, etc. 30,000.00

5. Debt charges 45,000.00

6. Miscellaneous costs 10,000.00

135,000.00

TOTAL 303,800.00

5.6 ESTIMATE OF CONSTRUCTION COST

It must be borne in mind that for the courses to be conducted other costs have to be incurred for the construction of at least two more buildings suitable for:

1. plant maintenance workshop, nautical workshop tool box, and store rooms;
2. dormitory-cum-dinning with galley and student common room.

In addition the renovation of the old Fourah Bay College to provide classrooms, library, administration and staff offices.

It is difficult at this stage to quote an exact figure for the cost of putting up the simple structures as outlined in the sketches of the proposed buildings and the renovation to the existing building, due to the fluctuating costs of building materials. However, if services such as civil engineering and construction supervision could be got from the S.L.P.A. civil engineering department, costs would be greatly reduced.

5.7. MARITIME TRAINING CENTRE EQUIPMENT REQUIREMENT
FOR RATINGS TRAINING

1. CLASSROOMS

It is anticipated that there will be about 3 (three) classrooms each with 20 (twenty) tables and chairs and 1 (one) large classroom to sit about 40 (forty). Each classroom will have one instructor desk and chair, 1 (one) equipment locker and blackboard.

2. TEACHING AIDS

<u>QUANTITY</u>	<u>DESCRIPTION</u>
1	VHS video cassette recorder
1	slide/film strip projector with accessories
1	overhead projector
2	portable audio cassette recorder
1	duplicator (machine) for stencil
1	photocopying machine
2	project screens
-	various instruction films, tape/slide programmes
-	various soft teaching aids such as batteries, magic markers, chalk, pencils, sharpeners, paper perforators, staplers, scissors, rulers, transparent materials, files, etc.
-	various school books according to later specifications
-	various reference books according to later specifications

3. FIRE FIGHTING FACILITIES

The location of the fire-fighting building needs to be adjacent to a classroom and a practical area, but at the same time in an area where there is no restriction on the emission of smoke. The lecture room would need to be equipped with the usual demonstration table, slide/overhead projector etc.

In order to reduce cost it is suggested that the fire-fighting building could be constructed from old steel sea containers which should be two-stories high and with the dimensions as shown in the attached illustration.

The building need to be fitted with the following:-

1. movable obstructions within the complex i.e., metal cooking ranges (simulated galley), metal winch (simulated engine room), metal beds (simulated accomodation), etc.
2. fire ribs (braziers),
2 large, approx. 0.5m x 0.5m
2 large, approx. 1.5m x 0.5 x 0.5m all fitted with heat deflectors and counter balanced (safety feature to prevent overbalance).
3. assorted dummies for search and rescue procedures. 6 adult dummies approx. 50kg and two child dummies.
4. large supply of carbonaceous fuels (timber cotton waste etc for insisde use);

large supply of used lubricating oils for outside fire-tray use;

large supply of smoke bombs/generators.

5. two three-sided brick fire bays fitted outside, complete with mild steel fire trays approx. 1m x 0.3m.

6. a fire hydrant outlet or open water supply, and a fire pump would be required to supply all water for fire fighting purposes.

THEORETICAL FIRE FIGHTING EQUIPMENT

Assorted hand fire extinguishers, cut away for demonstration and illustration, assorted fire hoses, an international ship-to-shore fire hose connection and respiration and resuscitation demonstration aids.

FILMS

A number of good marine educational films on video cassettes are now available dealing with a wide range of topics in fire fighting and indeed most other topics.

PRACTICAL FIRE FIGHTING EQUIPMENT

QUANTITY

DESCRIPTION

10 sets	Compressed air breathing apparatus (CABA) complete with spare cylinders, spare parts, and maintenance tools.
1	Air compressor unit
20	Distress signal units/pyrotechnics
6 each	Fire hoses 45mm diameter, 70mm diameter

6	Fire branches-2 standard, 2 diffuser, 2 jet/spray
2	Mechanical foam branches
1	High expansion foam generator
20 gall.	Foam compound
2 each	stand pipes, keys, and bars to operate hydrant supply
6	9 liter portable water extinguishers
6	9 liter foam extinguishers
6	5 kg. carbon-dioxide extinguishers
3	10 kg. dry powder extinguishers
1	Portable fire pump with suction pipes
4	36 meter safety lines with snap hooks
1	smoke helmet, complete with bellows and outfit
1	Niel Robertsons stretcher
2	First aid kits
2	Resuscitation sets
20 sets	Protective clothing including tunics, fire boots, gloves, overalls, helmets, etc.
4	Safety lamps
4	Fireman's hatchet
4	Safety belts

4. PRACTICAL AREA EQUIPMENT

<u>QUANTITY</u>	<u>DESCRIPTION</u>
6	Work benches each fitted with two vices for wire splicing, bench work, tools, and measuring equipment training. Each work bench is fitted with a locker underneath for equipment storage.
1	Derrick model illustrating derrick rigs, heavy lifts etc.
1	Crane model
1	Windlass model
1	Hatchcover model
-	Selection of lifebuoys and markers
-	Selection of boatswains chairs and stages
1	Pilot ladder
-	Supply of ropes of various sizes and descriptions.
20	Adult size life jackets
20	Sets of safety goggles
1	12-man liferaft inflated for dry demonstrations complete with all equipment
1	12-man liferaft in container
1 each	1/2 and 1 ton chain block
-	Various single and multi-sheave blocks for block and pulley arrangements
-	Several rolls of canvas
1	One portable lifeboat radio
1	One set of rule of the road ship's model buoyage models, ship's lights etc.

5. BOAT AND SURVIVAL FACILITIES EQUIPMENT

<u>QUANTITY</u>	<u>DESCRIPTION</u>
1	Set of davits to house lifeboat and allow for boat-drill instruction
1	Complete lifeboat with inboard diesel engine, oars mast and sails.
1	1 Fibre glass rowing gig, 24 ft. in length with a small out-board motor
1	Complete lifeboat equipment for instruction
1	Complete liferaft equipment for instruction
1	Single arm slewing davit
1	2-ton electric winch for boat maintenance area
-	Maintenance equipment and tools
1	Line throwing apparatus
4	Lifebuoys
1	Breeches buoy

6. PLANT MAINTENANCE WORKSHOP

<u>QUANTITY</u>	<u>DESCRIPTION</u>
2	Lathes with accessories
4	Welding cabins with accessories
2	Drilling machines
1	Planning machine
2	Reciprocating pumps (1 vertical, 1 horizontal)
1	Weir's pump
1	Vertical centrifugal pump
1	Screw displacement pump (large)
1	Gear pump (large)

- Assorted small pumps, valves and chests
- Diesel engines for overhauling and maintenance instruction - (two and four stroke cycle engines)
- 2 Refridgerator compressor
- Assorted fuel oil and lubricating oil filters (duplex)
- Assorted safety valves, boilers and water level guages
- 1 Centrifuge
- 1 Fuel valve test rig
- Assorted injectors, guages, (press and vaccum) and thermometers
- Starting air valves, assorted pipe connctions, press guage calibration equipment
- 1 Heavy duty electric drill (pistol grip)
- 1 Heavy duty bench grinder (electric)
- 2 Oxy-acetelyne welding set complete with regulators, flexible pipes, eye protection and apron

7. TOOLS FOR PLANT MAINTENANCE WORKSHOP

<u>QUANTITY</u>	<u>DESCRIPTION</u>
10	Pairs of welding gloves
4	Surface plates
6	Sealing hammers
8	Dividers
8	Outside and inside calipers
2	Micrometers
1 set	Snap ring pliers for internal and external snap rings
6	Vernier slide guages

2	Multipurpose pliers
20	Pliers for bending and cutting purposes
8	Soldering bolts (electric)
2	Whetstones
2 sets	Double end open wrenches (metric)
10 pairs	Safety goggles
6	Welding masks
-	Assorted hammers (copper, rubber, wooden) assorted files with handles (coarse, smooth, flat, half-round, square etc.)
-	Assorted electric welding rods
-	Assorted drill sets
2 sets	Double end off-set box spanners (metric)
2 sets	Open box end wrenches (metric)
2 sets	Screw drivers
2 sets	Phillip screw drivers
2 sets	Off-set screw drivers
10	Centre punches (various sizes)
-	Bolts and nuts in various sizes, cutter pins in various sizes
1 set	Hollow screw socket bits (metric)
1	Set square drive super socket wrenches
1 set	Hex key wrenches (metric)
1 set	Adjustible wrenches 6", 8", 10", 12"
1 set	Heavy duty pipe wrenches 6", 8", 10", 12"
1 set	Heavy duty pipe cutters
1 set	Ratchet pipe threaders
1 each	Hand hoist 1/2, 1, 1 1/2, tons
1 each	3-jaw pullers 0-6", 0-8", 0-10"
1 each	2-jaw pullers 0-4", 0-6", 0-10"
6	G - clamps

2 sets	Metric feeler gauges
2	Pocket tapes
2 sets	Packing tools
1 set	tap and dies screw plates to M-20
1 set	Hexagon rethreading tools (metric)
1 set	Taper pins or reamers
4	Combined drills and counter sinks
10	Tool bits in various sizes
1 set	pipe and stud extractor
2 sets	drive pin punches
20	Hack saw frames with blades
1	Anvil
2	Sledge hammers
2 sets	Machine made steel letters and figures
20	Marking tools
20	Steel rulers (30 cm.)
20	Try squares
6	scratch brushes
6 sets	Arc punches
2	Gasket and washer cutters
1	Steel rule (1 meter)
1	Spirit level
-	Various sizes of cold and choc chisels
-	Various kinds of sheet packing, penetrating oil
1	Insulation tester (hand crank type)
1	Volt-ohm-milimeter analyser
3	T-type wire strippers installing tools
2	Oxygen bottles (rented)
2	Acetylene bottles (rented)
-	Welding and cutting regulators, nozzles spares nos. 3, 5, 7; brazing flux, brazing filler wire, steel feeler wire, solder plumbers, soldering flux.

8. NAUTICAL EQUIPMENT FOR WORKSHOP

<u>QUANTITY</u>	<u>DESCRIPTION</u>
1	Liquid compass
1	Compass binnacle with compass, flinders bar, magnetic needles, corrector magnets etc.
1	Gyro compass
1	Echo sounder
6	Chart dividers
6	Parallel rulers
1	Earth globe
-	Various maps of the world
-	Various nautical charts and plans
1	Atlas of pilots' charts
1	Mechanical log (Chernisheff)
1	List of lights vol. D
1	Curve of equal magnetic
2	Variation sheet 1988, north and south atlantic
12	Sail gloves
6	Serving mallets, twine and sail needles of various sizes
12	Fid for rope splicing
6	Prickets
2	Magnifying glasses
1	Chronometer and aneroid barometer
4	Bosun's chairs
2	Stages

9. OFFICE EQUIPMENT

<u>QUANTITY</u>	<u>DESCRIPTION</u>
4	Executive office desks and chairs
4	Office desks (medium) and chairs
2	Conference tables (long)
20	Conference chairs
2	Swivel chairs
2 sets	Typing desk and chairs
8	Office chairs
6	Office filing cabinets
6	Bookshelves
3	Typewriters (2 electric, 1 manual)
4	Air conditioners
3	Small tables
2	Office type electronic calculators with paper print-out

10. RECREATION EQUIPMENT

<u>QUANTITY</u>	<u>DESCRIPTION</u>
2	Table tennis tables complete with legs and nets
6 sets	Table tennis bats, and 2 doz. balls
4	Soccer footballs with a pump
30 pairs	Football boots (different sizes)
15 sets	Footballer outfit
15 sets	Footballer outfit (different colour from above)
4 pairs	Goalkeeper's knee caps and gloves
1	Stop watch
1	Shot (senior size)
1	Measuring tape (50 metres long)

1 set	Badminton posts and nets and rackets
1 doz.	Badminton balls
1 kit	Weight lifting equipment (complete)
4	Volleyball balls and nets
4	Basketball balls and one set of nets
1	Colour T.V. set 22"-26"
1	Stereo set including radio, amplifier, cassette recorder, disc player and loud speakers.

While it may be desirable that all the listed equipment be purchased brand new, one has to face the reality of the financial cost involved; especially if outside assistance in this area proves to be troublesome. Second hand (used and reconditioned) tools and equipment in perfect working condition from ship breaking yards (at give away prices) should then be seriously considered as an alternative option.

There are three sources from which equipment and machinery may be obtained:-

1. by donation from shipping companies, marine societies and institutions;
2. by purchase of "second hand" equipment, which still functions properly and can serve a training purpose;
3. by purchase of new equipment which provides the most up-to-date equipment but at a much higher cost than 1 and 2 above.

The M.T.C. should try to combine the above methods of acquisition in order to achieve the most effective mix of

equipment at the least cost; although effectiveness must not be sacrificed at the expense of saving money.

CHAPTER 6

REGISTRATION OF SEAMEN (RATINGS) AND THE REGULATION OF THEIR EMPLOYMENT

6.1 CREW MATTERS

From the outset it should be understood by all concerned that the Maritime Training Centre will not specifically be engaged in the placement, registration or seeking of employment for its graduates, as this is the precise duty and responsibility of the crew and labour office of the Sierra Leone Shipping Agency whose duties include, inter alia, the engagement of seamen, their conditions of employment, payment of their wages, their welfare, and for the adjudication of disputes relating thereto.

The training centre will however, if so requested by the Agency and for reasons of goodwill assist and explore avenues for the employment of its graduates.

While the subject of M.E.T. is the main concern of the Training Centre I will however touch on other matters relating to the employment of seafarers.

The welfare of a rating from a developing country also hinges to a great extent on the "system of recruitment and employment" he is subject to. To ensure his prosperity it is necessary, inter alia, that he gets an "equitable opportunity of work", and also a right to enjoy his earnings in full". It is claimed that in many developing countries the existing methods of recruitment have been full of malpractices of various types.

The International Labour Organization has also evidently been very concerned for many years as regards such alleged malpractices in developing countries.

Taking due note of the situation mentioned, the Government of Sierra Leone with a large number of seamen available for employment and with insufficient numbers of ships available to provide employment for all of them should introduce national systems/schemes for the registration and regulation of the employment of seamen.

I will here describe briefly the essential aspects of such a system.

OBJECTIVES

1. Eradication of malpractices
2. Equitable distribution of the available volume of employment among the "effective" (national) seamen on principles of:
 - (a) Rotation according to the date of last discharge.
 - (b) Reasonable choice of shipowners in the selection of their crew, and
 - (c) Reasonable freedom of seamen to refuse a particular ship for stated reasons.

SALIENT FEATURES

1. Compilation of authentic record of all the "effective" (national) seamen available for employment-by registration,
2. Fixation of turn for employment of each seaman

according to the date of his last discharge by preparation of rosters. Company Rosters in respect of those desirous of being attached to (and so accepted by) a particular company; and a General Roster for the rest.

3. Supply of seamen in accordance with their seniority on the roster,
4. Adequate provision for appeals,
5. Consultation with the interests concerned - shipowners and seamen-on all important aspects of the system/scheme-by constitution of a Board/Committee,
6. No charge to be levied on the seamen or the Shipowners for the employment service. (This means that all the expenditure for the service shall be borne by the Sierra Leone Government).

6.2 THE CONTRACT OF EMPLOYMENT (ARTICLES OF AGREEMENT)

This needs to be subjected to supervision by the Maritime Administration through designated officials, since conditions of service expose seamen to particular hazards often encountered far away from their homeland and the legal protection of its Administration and Courts.

It has been recognised at an early date even in developed countries that Seamen's Contracts must contain safeguards for their well-being and that when entering into such contract the seamen must know the kind of voyage he can expect.

To ensure this, contracts must be in writing and in a form approved by Government. They have to be policed by the designated officials, who have to be virtually a com-

ination of a friendly policeman and a Magistrate. It is desirable also to ensure that such contracts are signed in the presence of the designated officials and that the contracts are also subsequently terminated (and wages paid) in their presence.

6.3 DISCIPLINE AND THE EMPLOYMENT OF SEAFARERS

The definition of discipline is bound up with the concept of order, the following of laid down rules and procedures, the provision of instruction and learning in addition to the more common ideas of punishment. However, when we say "He should be punished", we recognize that there is in fact, a connection between the two. Punishment is one method of achieving discipline and brings in the concepts of:

- Deterrent, to discourage a person from doing what 'the authority' does not want him to do.
- Retribution, the suffering of punishment because of the crime or misconduct committed.
- Expiration, or reparation for the loss or damage caused by some misconduct or crime.
- Reform, or the attempt to remove defects and return an offender to a more disciplined way of life.

Seafaring is a civilian occupation which places upon those who go to sea demands not found in industry ashore. Seafarers are called upon to spend not only their working hours but also their leisure hours in the confined environment of a ship with the same individuals for company.

It might be said that they are more susceptible to the

stresses and strains of everyday life than their fellows ashore. In this environment the need for disciplined behaviour assumes great importance.

Discipline is one of the most important quality that Shipowners and employers look for in a crew for the safe operation of ships.

One must also not forget that the master of a ship has three primary responsibilities:

- a. The Chief Law Officer in a temporarily isolated community subject to the possibility of criminal acts by its members against each other.
- b. The Chief Safety Officer in charge of a potentially dangerous piece of equipment operating in a potentially dangerous environment.
- c. The Manager of a Commercial Enterprise subject to the normal hazards of market and manpower forces. The fact of managing this enterprise in isolation gives its manager inherent disadvantages, compared with managers ashore.

In order to be able to discharge his responsibilities in the aforesaid three areas, the Master of a ship has to ensure discipline of his crew.

Therefore to enhance the marketability and appeal for Sierra Leonean crews the question of discipline will at all times be of great relevance in individual assessment. Deterrent, retribution expiration and reform should, and will indeed play a part in the training programmes.

For many years seafarers from certain developing coun-

tries including Sierra Leone have been employed on board foreign flag ships. Most shipowners found it economically convenient to do so because of low wages. The wages on these ships are usually relatively low, but the shipowner takes into account the extra number of ratings which may be employed in a particular ship and the level of wages and cost of living in the countries from which the seafarers came.

Following the decline of jobs aboard ships in recent years, many seamen's union in the industrialised maritime countries have through their affiliation to the International Transport Workers Federation (ITF) insisted that ITF formulate special wage rates, which are calculated as "European Average." These rates are contained in a special ITF agreement covering various seafarers conditions of employment, which the ITF endeavours to conclude with the owners of all the so-called "flag of convenience" ships.

To enforce the ITF wages policy, Seamen's Unions mostly in the industrialized Maritime countries, often in cooperation with Dockworkers Unions in various industrialized countries, regularly boycott foreign flag ships, which are not paying the so-called ITF recommended "European Average" wage, which is often much higher than the wages which the seamen employed onboard have nationally agreed in negotiations between the shipowner and the National Seamen's Unions in many developing countries. The latter related to national living standards which are often quite different from those in Western Europe.

The effect of this ITF policy is essentially to eliminate the advantage of national shipping lines in developed

countries to engage low-cost crews. This has, however, adversely affected job opportunities of seafarers from certain developing countries including Sierra Leone.

For instance, in 1984 Sierra Leonean seamen lost over 500 jobs from one employer alone, as a result of an action through the ITF by the crew aboard one ship. In most of such cases, just a handful of crews of the ship had approached the ITF without consulting their National Seamen's Union.

In view of the above, it is suggested that designated officials come together and evolve a policy on guidelines and procedures for Sierra Leonean Seamen which should be followed (as this is already not in place) when they are involved in vessel boycott in foreign ports as a result of ITF wages policy; or where a small minority of the crew of a ship invites the ITF for such action. The Marine Training Centre could be made to minimise this effect on the seamen especially with its own graduates.

It takes a small minority of individuals to damage the job prospects of a large number of seamen. It is here suggested that the Training Centre places more emphasis on the orientation given to seafarers on their responsibilities as professional seamen, and the penalties involved. A thorough screening of new applicants seeking entry into the Training Centre is of absolute necessity.

As a policy on procedures for a disciplinary committee of the employment and placement agency to ensure that offenders are firmly dealt with, including their permanent removal from the register when warranted.

6.4 SHIPPING AND MARITIME POLICY FOR SIERRA LEONE

LEGISLATION AND SEAFARERS RIGHTS

In many countries there is no requirement for seafarers to be registered, and so no roster of existing manpower exists for the industry. In some cases, estimates of the number of seafarers in the workforce can be made from the number of seafarers books issued, but it is difficult to identify and contact specific individuals. Even if seamen's books are required in order to work on national flag ships, they may not be mandatory for those employed on foreign flag ships; and so these seafarers have even less organizational protection. If this situation is coupled with non-compulsory union memberships, one can imagine the difficulties which might arise.

The labour laws of most countries do not protect the rights of seafarers and, therefore, the International Labour Organization (ILO) has taken upon itself a special responsibility to safeguard the welfare of seafarers. Over the past sixty years, the ILO has produced 34 Conventions and 28 recommendations concerning seafarers legal rights. The most important of these ILO Conventions, 147, sets standards for minimum age of employment, medical examinations, wages, hours of work, health and welfare, food and communications, repatriation and so on. But ILO 147 has not been adopted widely enough.

In Sierra Leone however, something like a register exist, but there exist no effective shipping policy with regard to the protection and conditions of employment of seamen in the international market.

It would seem imperative therefore, to appraise the whole situation in Sierra Leone regarding legislation governing the qualifications, working conditions and employment of all categories of seamen.

Sierra Leone should evolve a pragmatic maritime code, including a clear comprehensive policy on seafarers, regarding registration, service conditions, wages, insurance, social security, employment regulations, discipline, training, and qualification etc. This must, however, be devised in such a way to allow for modifications, and special needs and requirements.

It is also necessary to introduce a new maritime legislation with special reference to the registration, documentation, examination, and certification of all Sierra Leonean officers and seamen. Assistance for this purpose can be sought from the I.M.O. Sierra Leone should also seriously consider requesting the I.M.O. for technical assistance with a view to setting up the legislation necessary for the formation of a Seamen Registry, and examination and certification service.

In addition there is a need in Sierra Leone to develop a national Maritime Safety Administration which will include inter-alia, regulations for manning, certification, and classification of merchant marine officers and ratings, examination and issue of certificates of competency, etc.

6.5 NATIONAL SEAMENS EMPLOYMENT AGENCY

In my opinion the ability to find jobs for Sierra Leonean seamen and future graduates of the proposed M.T.C.

will partly depend on the following:-

1. that a policy on seafarers recruitment and placement should be clearly defined;
2. that a vigorous marketing policy be initiated as a matter of urgency, to secure jobs for Sierra Leonean seamen;
3. that there should be a clear indication as to who is responsible for negotiations with shipowners for jobs;
4. that the party responsible for negotiations with shipowners for jobs co-ordinate with local seamen's employment agencies and other potential employers such as the Sierra Leone Ports Authority, local fishing companies and the local oil companies which operate small tankers etc.

Establishment of an effective seafarers recruitment and placement policy should include the setting up of a permanent recruitment and placement office, to be headed by an officer with wide experience in shipping, ship-crewing and seamen's affairs, and charged with the responsibility of negotiating programmes for the placement of seafarers both locally and internationally.

Such an office may also co-ordinate between the Government and Board Members of the M.T.C. on the placement of graduates and recruitment of seamen in general. Such an office I am inclined to believe will have the full support and co-operation of both the shipowners (employers) and the seafarers themselves.

The proposed office may need to establish close relations, co-operation and collaboration with shipowners'

associations worldwide.

This recruitment office should operate under the guidance of the M.T.C. Advisory Committee.

This recruitment office for effective operation, should undertake the following:-

- review of the activities and operation of Seamen's Union in the country, their future relations with the proposed recruitment and placement office;
- persuade seamen's union to suspend the admittance of new applicants who wish to become seafarers, unless they are already trained and qualified as seamen, and that all new entrants to a career at sea should have had appropriate training at the M.T.C.;
- look into the possibility of re-registration or the opening of a new register of all trained and qualified seamen in the country;
- introduction of more effective regulations on the terms and conditions of employment of seamen;
- development and enforcement of a strict policy of discipline among all seamen with a view to permanently weeding out the unsuitable ones;
- consider or look into the possibility of the international publicity of the availability of well trained, disciplined and experienced seamen for employment on ships; and

-ensure that such publicity is co-ordinated from the proposed recruitment and placement office, and that the office keeps proper and complete statistics on the employment of seafarers of all grades.

6.6 FINANCING

The recruitment and placement office would be charged with the responsibility of collecting from each seafarer having seagoing employment a training fee. The amount of this fee would depend on the course, and duration of attendance at the M.T.C. The training fee collected by the placement office should be paid into the account of the M.T.C. By this means the training programme could be partly self-financing.

CHAPTER 7

CONCLUSIONS

I will now conclude this proposal by highlighting the following points; that:-

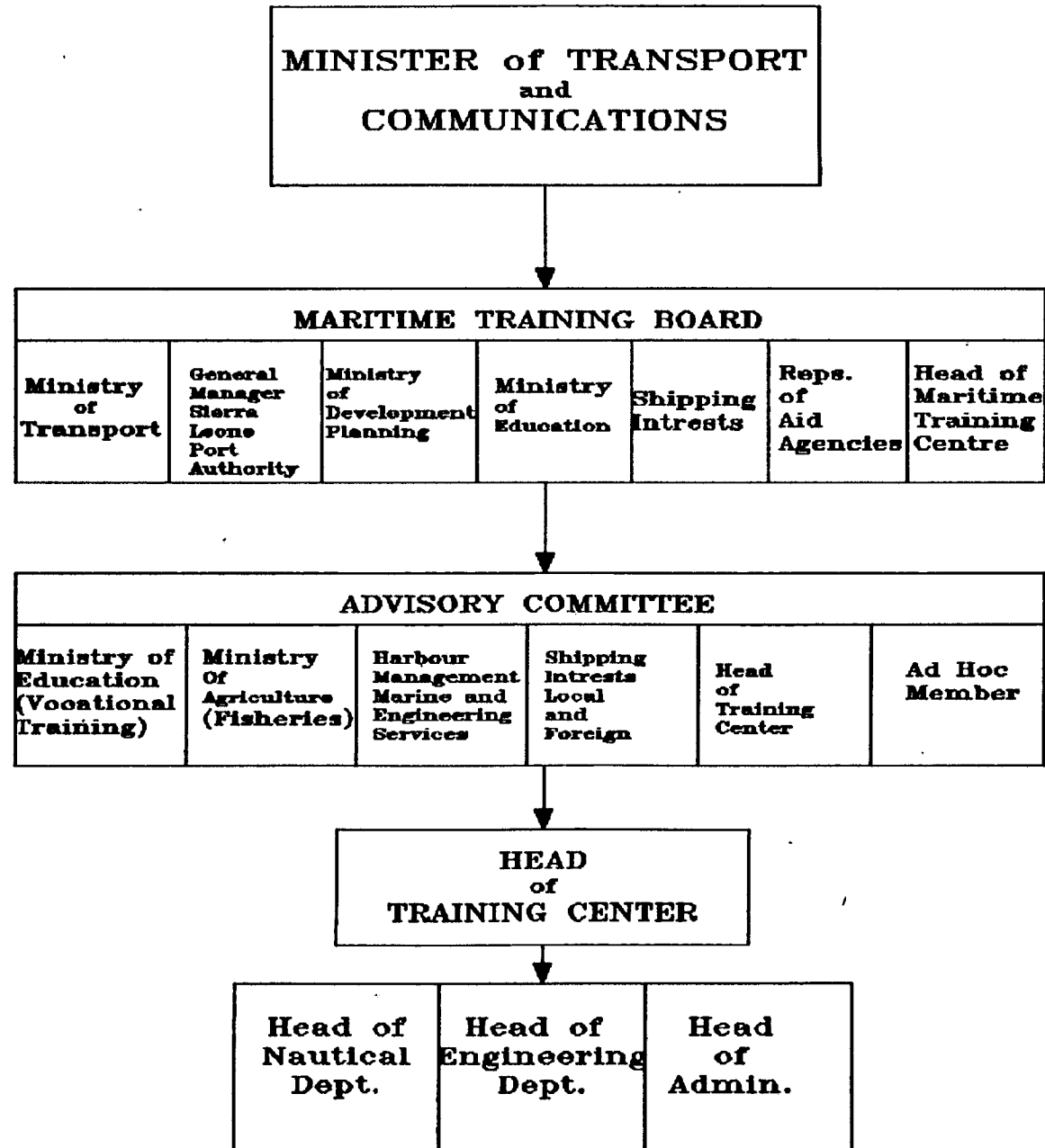
1. A Maritime Training Centre be established within Sierra Leone for the dedicated training of junior sea-going personnel and other shore-based personnel in the Port and marine related industry.
2. A Board of Governors of the Maritime Training Centre be legally created and persons appointed to the Board before the end of 1989; and the principal of the M.T.C., responsible to the Board for coordinating all activities relating to the establishment of the M.T.C. be appointed by the Board.
3. The principal should act as "Secretary" to the Board of Governors and should be invited to attend Board meetings but should have no vote on the Board.
4. The Board appoint suitable persons with the relevant technical expertise to the Advisory Committee.
5. The Government of Sierra Leone as a matter of priority approach a number of friendly developed nations with strong maritime traditions for technical and financial assistance in establishing the M.T.C. and also meet and establish contacts with the respective Shipowners Associations with the view to supplying them with well qualified and disciplined crews at competitive prices.

6. The aim of the Maritime Training Centre shall be to have 30 (thirty) full time trainees each year. In addition a minimum of two non-residential up-grading courses of 3 months duration shall be conducted for trainees with adequate sea experience together with any special endorsement courses as per demand.

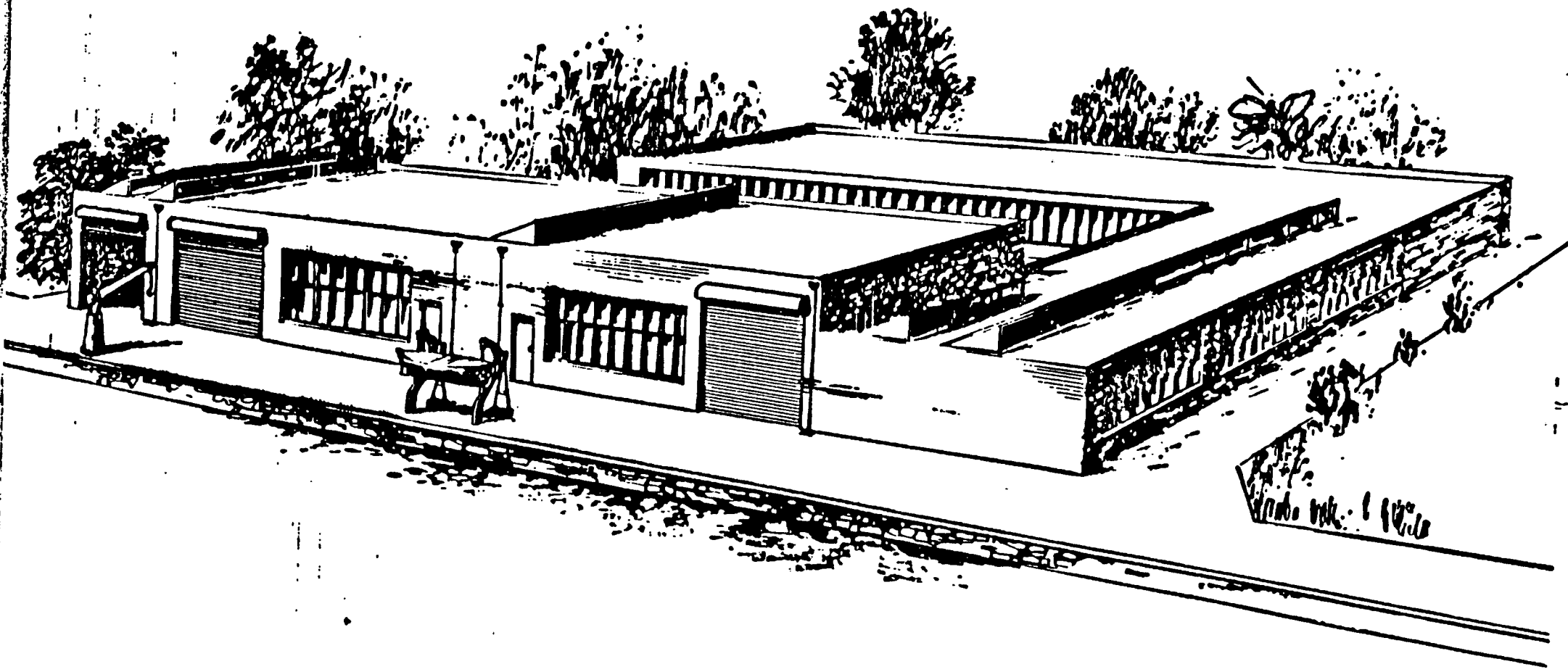
7. A shipping and maritime policy be developed for Sierra Leone that covers all aspects of the Maritime industry; overseas shipping, inland waterways and coastal shipping, exploitation of the exclusive economic zone (EEZ) both for fishing and natural resources and maritime training for these activities.

8. The shipping policy paper be developed in close cooperation with the "Central Ministries" of the Government, especially the Ministry of Economic Planning, the Ministry of Finance, the Ministry of Agriculture, Fisheries Division and the Ministry of Natural Resources.

ORGANIZATIONAL STRUCTURE OF THE MARINE TRAINING CENTER



MARITIME TRAINING CENTRE

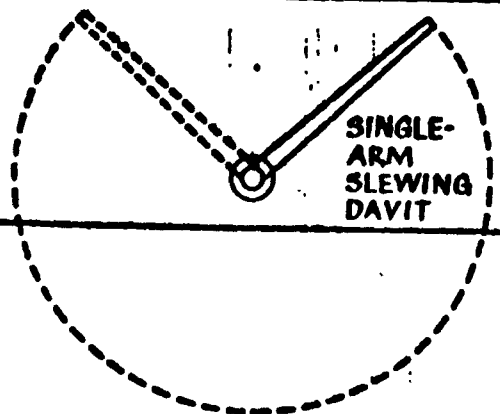
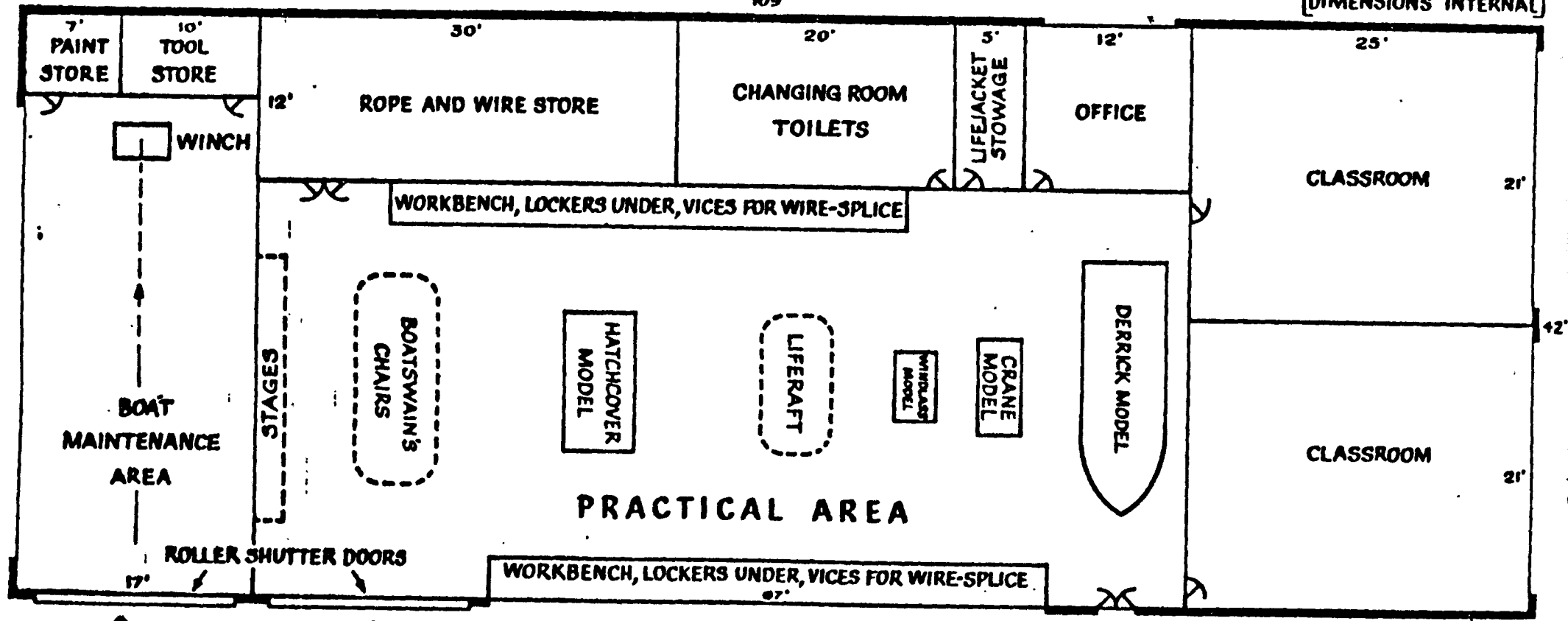


Architect: J. J. J.

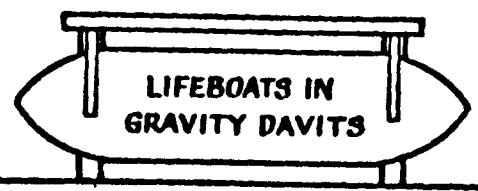
INCORPORATE 4 BEAMS OF STRENGTH TO GIVE POINT LOADINGS OF 1/2 TON FOR LIFTING WEIGHTS AND BOATSWAIN'S CHAIRS.

SEAMANSHIP CENTRE

[DIMENSIONS INTERNAL]



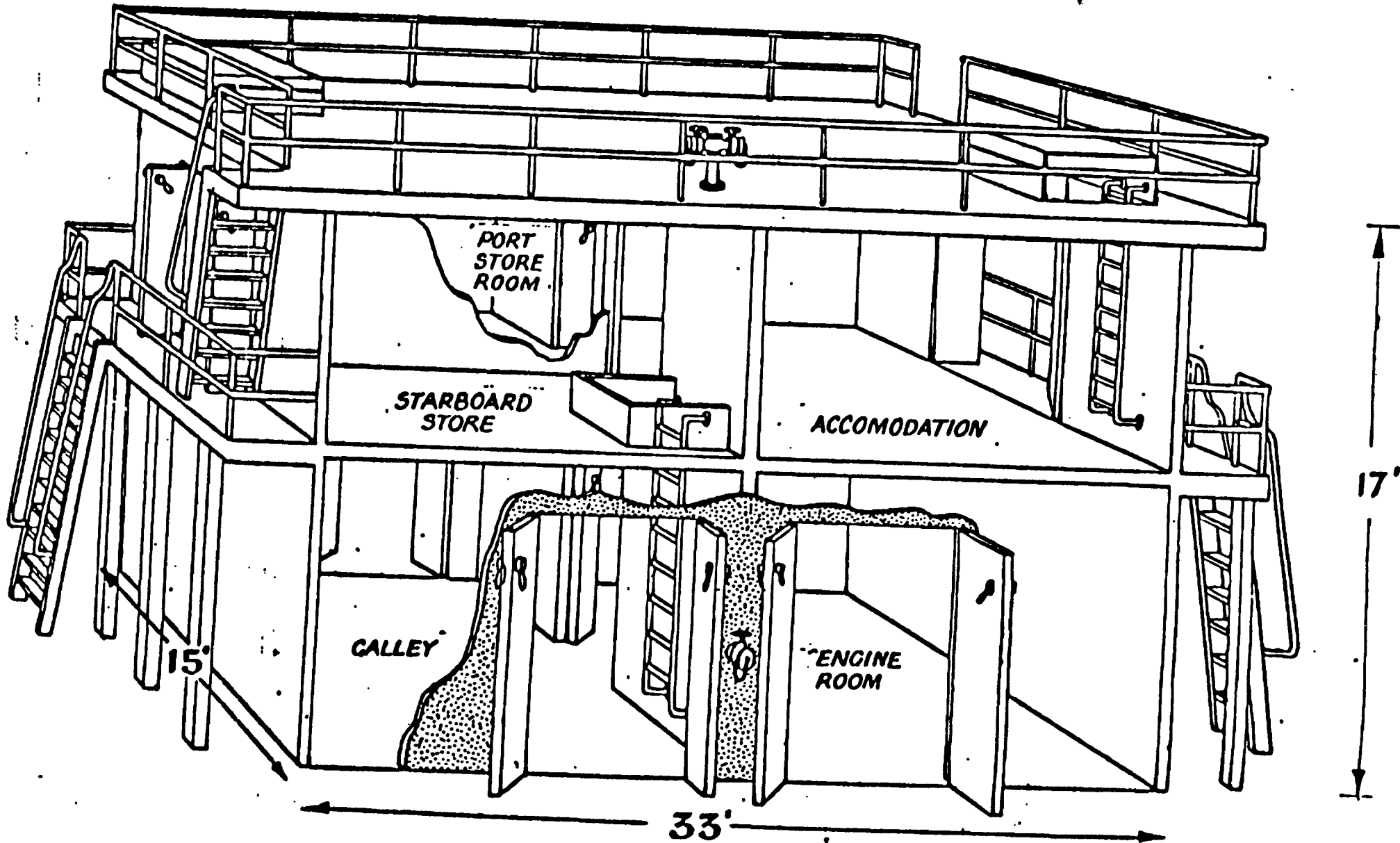
QUAY



RIVER OR HARBOUR

HEIGHTS -- PRACTICAL AREA 15ft
 -- OTHER ROOMS 10ft
 BUILDING AREA 5,500 sq ft.

FIRE FIGHTING FACILITY © 1988



MARITIME TRAINING CENTRE

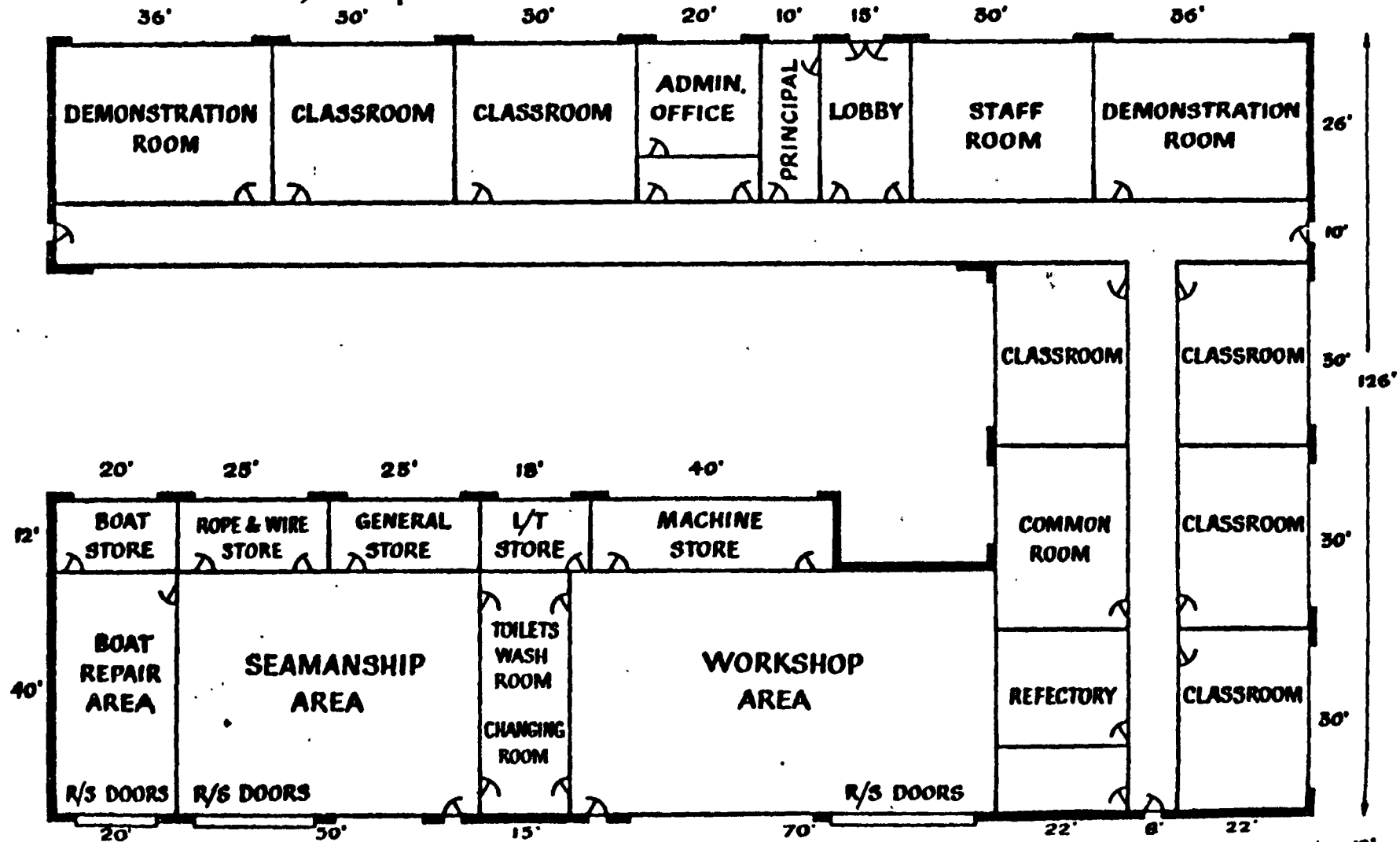
DIMENSIONS INTERNAL

BUILDING AREA 22,000 sq ft

HEIGHT-INTERNAL PRACTICAL AREA 15 ft

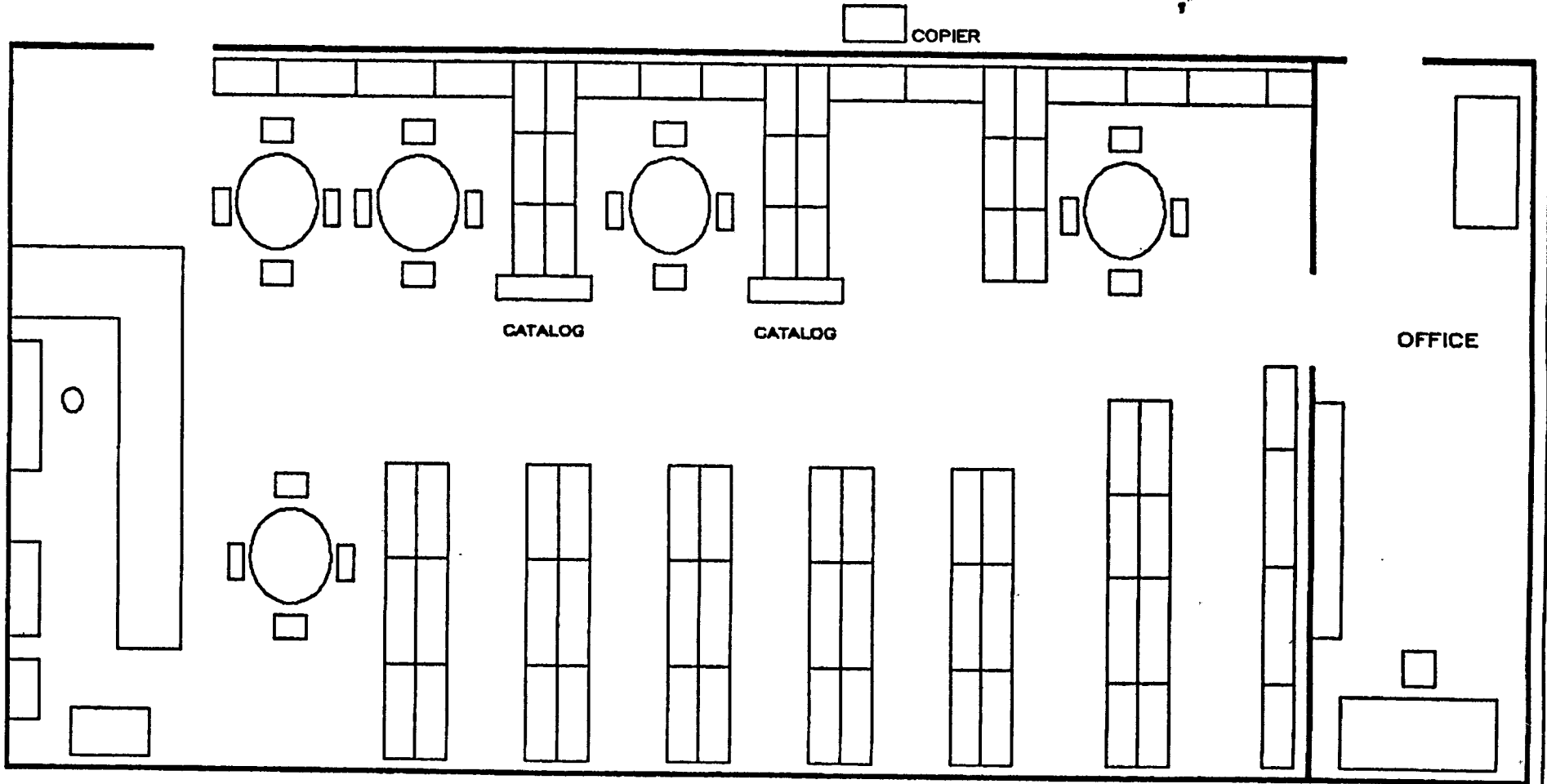
SITE AREA 35,000 sq ft

OTHER ROOMS 10 ft



2074
QUAY EQUIPMENT SINGLE ARM SLEWING DAVIT & LIFEBOAT IN G.D.

LIBRARY LAY OUT



ANNEX 2

Regulation II/6

Mandatory Minimum Requirements for Ratings Forming Part of a Navigational Watch

1. The minimum requirements for a rating forming part of a navigational watch on a sea-going ship of 200 gross register tons or more are set out in paragraph 2. These requirements are not those for certification of able seamen*, nor, except for ships of limited size, are they minimum requirements for a rating who is to be the sole rating of a navigational watch. Administrations may require additional training and qualifications for a rating who is to be the sole rating of a navigational watch.

* Reference is made to ILO Certification of Able Seamen Convention, 1946 or any successive

2. Every rating forming part of a navigational watch on a sea-going ship of 200 gross register tons or more shall:

- (a) be not less than 16 years of age;
- (b) satisfy the Administration as to medical fitness, particularly regarding eyesight and hearing;
- (c) satisfy the Administration that he has:
 - (i) completed approved sea-going service, including not less than six months' sea experience associated, in particular, with navigational watchkeeping duties; or
 - (ii) successfully undergone special training, either pre-sea or aboard ship, including an adequate period of sea-going service as required by the Administration which shall be not less than two months;
- (d) have experience or training which includes:
 - (i) basic principles of fire-fighting, first aid, personal survival techniques, health hazards and personal safety;
 - (ii) ability to understand orders and make himself understood by the officer of the watch in matters relevant to his duties;
 - (iii) ability to steer and comply with helm orders, together with sufficient knowledge of magnetic and gyro compasses for performance of these duties;
 - (iv) ability to keep a proper look-out by sight and hearing and report the approximate bearing of a sound signal, light or other object in degrees or points;
 - (v) familiarity with the change-over from automatic pilot to hand steering and vice-versa;
 - (vi) knowledge of the use of appropriate internal communication and alarm systems;
 - (vii) knowledge of pyrotechnic distress signals;
 - (viii) knowledge of his emergency duties;
 - (ix) knowledge of shipboard terms and definitions appropriate to his duties.

3. The experience, service or training required by paragraphs 2(c) and (d) may be acquired through performance of duties associated with navigational watchkeeping, but only if such duties are carried out under the direct supervision of the master, officer in charge of the navigational watch or a qualified rating.

4. Administrations shall ensure that an authorized document is issued to every seafarer who by experience or training is qualified in accordance with this Regulation to serve as a rating forming part of a navigational watch, or that his existing document is duly endorsed.

5. A seafarer may be considered by the Administration to have met the requirements of this Regulation if he has served in a relevant capacity in the deck department for a period of not less than one year within the last five years preceding the entry into force of the Convention for that Administration.

(c) knowledge of the function of automatic keying devices.

Resolution 8

**Additional Training for Ratings Forming Part of
a Navigational Watch**

THE CONFERENCE,

CONSIDERING the need to enhance the proficiency of ratings forming part of a navigational watch,

REALIZING that such enhancement should be brought about by training in subjects additional to those encompassed by Mandatory Minimum Requirements for Ratings Forming Part of a Navigational Watch of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978,

RESOLVES TO RECOMMEND that ratings forming part of a navigational watch be trained in:

- (a) use and operation of bridge equipment appropriate to their duties; and
- (b) the basic requirements for prevention of pollution of the marine environment,

URGES all Governments concerned to give effect to the contents of this Resolution as soon as possible.

Resolution 9

Minimum Requirements for a Rating Nominated as the Assistant to the Engineer Officer in Charge of the Watch

THE CONFERENCE,

RECOGNIZING the importance and urgency of establishing requirements for ratings having special responsibilities when forming part of an engine room watch,

RECOGNIZING that suitable arrangements for the training of ratings having special responsibility when forming part of an engine room watch are not widely available,

RESOLVES:

- (a) to adopt the Recommendation on Minimum Requirements for a Rating Nominated as the Assistant to the Engineer Officer in Charge of the Watch, annexed to this Resolution;
- (b) to urge all Governments concerned to give effect to the contents of this Recommendation as soon as practicable,

INVITES the Inter-Governmental Maritime Consultative Organization:

- (a) to keep this Recommendation under review and to bring any future amendments to the attention of all Governments concerned;
- (b) to communicate this Resolution to all Governments invited to the Conference.

ANNEX

Recommendation on Minimum Requirements for a Rating Nominated as the Assistant to the Engineer Officer in Charge of the Watch

1. Every rating who is nominated as the assistant to the engineer officer in charge of the watch on sea-going ships and having specific duties and

responsibilities relating to these duties in connexion with the safe operation and servicing of machinery, should meet the following minimum requirements to the satisfaction of the Administration:

- (a) be not less than 17 years of age;
- (b) medical fitness, including eyesight and hearing;
- (c) training regarding fire-fighting, basic first aid, personal survival, health hazards and personal safety;
- (d) sea-going service in an engine room capacity for at least 12 months, half of which may be replaced by approved training;
- (e) have met the requirements of Regulation III/6 - "Mandatory Minimum Requirements for Ratings Forming Part of an Engine Room Watch" of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978.

2. Every such rating should possess:

- (a) knowledge of the function, operation and servicing of main propulsion and auxiliary machinery;
- (b) knowledge of engine room watchkeeping procedures and the ability to carry out a watch routine;
- (c) knowledge of use of hand tools and portable power tools;
- (d) ability to read indicating instruments related to his watchkeeping duties and understand the significance of the readings;
- (e) knowledge of the function, operation and servicing of the various pumping systems;
- (f) knowledge of safe working practices related to engine room operations;
- (g) knowledge of technical terms used in the machinery spaces and names of all relevant machinery details and equipment.

3. Every such rating forming part of an engine room watch should be familiar with his watchkeeping duties in the machinery spaces. In particular, with respect to his duties on any ship the rating should have:

- (a) knowledge of the use of appropriate internal communication systems;
- (b) knowledge of escape routes from machinery spaces;
- (c) knowledge of engine room alarm systems and ability to distinguish between the various alarms, with special reference to fire extinguishing gas alarms;
- (d) familiarity with the location and use of fire-fighting equipment in the machinery spaces;
- (e) familiarity with environmental protection equipment;
- (f) ability to understand and make himself understood by the engineer officer in charge of the watch.

4. Administrations should ensure that authorized documents are issued to seafarers who are qualified in accordance with paragraphs 1 and 2 of this Recommendation or that their existing documents are duly endorsed.

5. A seafarer may be considered by the Administration to have met the requirements of this Recommendation, if he has served in a relevant capacity in the engine department for a period of not less than one year within the last five years preceding the implementation of this Recommendation by that Administration.

Resolution 10

Training and Qualifications of Officers and Ratings of Oil Tankers

THE CONFERENCE,

BEING AWARE of the possible dangers to human life and to the environment from accidents involving the handling of oil in bulk,

RECOGNIZING the importance and urgency of establishing requirements for officers and key ratings having special responsibilities for the handling of oil in bulk,

NOTING Resolution 8 of the International Conference on Tanker Safety and Pollution Prevention, 1978,

RECOGNIZING that suitable arrangements are not widely available for the training of officers and ratings having special responsibility for handling such cargoes,

RESOLVES:

- (a) to adopt the Recommendation on Training and Qualifications of Officers and Ratings of Oil Tankers, annexed to this Resolution;
- (b) to urge all Governments concerned to give effect to the contents of this Recommendation as soon as practicable,

INVITES the Inter-Governmental Maritime Consultative Organization:

- (a) to keep this Recommendation under review and to bring any future amendments to the attention of all Governments concerned;
- (b) to communicate this Resolution to all Governments invited to the Conference.

ANNEX

Recommendation on Training and Qualifications of Officers and Ratings of Oil Tankers

I. TRAINING OF OFFICERS AND RATINGS HAVING SPECIFIC DUTIES AND RESPONSIBILITIES IN CONNEXION WITH CARGO AND CARGO EQUIPMENT

Training should be divided into two parts, a general part concerning principles involved, and a part on the application of those principles to ship

operation. Any of this training may be given at sea or ashore. Such training should be supplemented by practical instruction at sea and, where appropriate, in a suitable shore-based installation. All training and instruction should be given by properly qualified personnel.

A – PRINCIPLES

1. Characteristics of oil cargoes

An outline treatment including practical demonstration of the physical properties of oil carried in bulk; vapour pressure/temperature relationship. Influence of pressure on boiling temperature. Explanation of saturated vapour pressure, diffusion, partial pressure, flammability limit, explosive limits, petroleum vapour, vapour travel, flashpoint and auto-ignition temperature. Practical significance of flashpoint and lower flammable limit. Simple explanation of types of electrostatic charge generation.

2. Toxicity

Simple principles and explanations of basic concepts; toxicity limits, both acute and chronic effects of toxicity, systemic poisons and irritants.

3. Hazards

(a) *Explosion and flammability hazards*

Flammability limits. Sources of ignition and explosion. Danger from vapour cloud drift.

(b) *Health hazards*

Dangers of skin contact, inhalation and ingestion.

(c) *Hazards to the environment*

Effect on human and marine life from release of oil at sea. Effect of specific gravity and solubility. Effect of vapour pressure and atmospheric conditions.

(d) *Corrosion hazards*

4. Hazard control

Inerting, monitoring techniques, anti-static measures, ventilation, segregation and the importance of compatibility of materials.

5. Safety equipment and protection of personnel

The function and calibration of gas measuring instruments and similar equipment. Specialized fire extinguishing appliances, breathing apparatus and tank evacuating equipment. Safe use of protective clothing and equipment.

B – SHIPBOARD APPLICATION

1. Regulations and codes of practice

Importance of developing ships' emergency plans. Familiarization with:

- (a) the appropriate provisions of relevant international conventions;
- (b) international and national codes;
- (c) IMCO Manual on Oil Pollution;
- (d) relevant tanker safety guides*

2. Ship design and equipment of oil tankers

Familiarization with:

- (a) piping, pumping, tank and deck arrangements;
- (b) types of cargo pumps and their application to various types of cargo;
- (c) tank cleaning, gas freeing and inerting systems;
- (d) cargo tank venting and accommodation ventilation;
- (e) gauging systems and alarms;
- (f) cargo heating systems;
- (g) safety factors of electrical systems.

3. Ship operations

Cargo calculations. Loading and discharging plans. Loading and discharge procedure including ship-to-ship transfers. Check lists. Use of monitoring equipment. Importance of proper supervision of personnel. Gas freeing operations and tank cleaning operations. Where appropriate, crude oil washing procedures and the operation and maintenance of inert gas systems. Control of entry into pumprooms and enclosed spaces. Use of gas detecting and safety equipment. Load-on-top and proper ballasting and de-ballasting procedures. Air and water pollution prevention.

4. Repair and maintenance

Precautions to be taken before and during repair and maintenance work including that affecting pumping, piping, electrical and control systems. Safety factors necessary in the performance of hot work. Control of hot work and proper hot work procedures.

5. Emergency operations

Emergency plan. Cargo operations emergency shutdown. Action in the event of failure of services essential to cargo. Fire-fighting on oil tankers. Action following collision, stranding or spillages. First aid procedures and the use of resuscitation equipment. Use of breathing apparatus. Rescue from enclosed spaces.

NOTE

It is recommended that as great a use as possible should be made of shipboard operations and equipment manuals, films and suitable visual aids, and that the opportunity should be taken to introduce discussion of the part to be played by safety organization on board ship, and the role of safety officers and safety committees.

* Reference is made to the joint ICS/OCIMF International Safety Guide for Oil Tankers and Terminals and the ICS Guide to Helicopter/Ship Operations.

II. TRAINING OF OTHER PERSONNEL

Such personnel should undergo training on board ship and, where appropriate, ashore, which should be given by qualified personnel experienced in the handling and characteristics of oil cargoes and safety procedures.

1. Regulations

Knowledge of the ship's rules and regulations governing the safety of personnel on board a tanker in port and at sea.

2. Health hazards and precautions to be taken

Dangers of skin contact. Inhalation and accidental swallowing of cargo. Oxygen deficiency with particular reference to inert gas systems. The harmful properties of cargoes carried. Personnel accidents and associated first aid. Lists of dos and don'ts.

3. Fire prevention and fire-fighting

Control of smoking and cooking restrictions. Sources of ignition. Fire and explosion prevention. Methods of fire-fighting. Outline of portable apparatus and fixed installations.

4. Pollution prevention

Procedures to be followed to prevent air and water pollution. Measures to be taken in the event of spillage.

5. Safety equipment and its use

The proper use of protective clothing and equipment, resuscitators, escape and rescue equipment.

6. Emergency procedures

Familiarization with emergency plan procedures.

7. Cargo equipment and operations

General description of cargo handling equipment. Safe loading and discharge procedures and precautions. Safe entry into enclosed spaces.

III. FIRE-FIGHTING TRAINING

All personnel should have attended an approved basic or advanced practical fire-fighting training course relevant to their duties and responsibilities.

Resolution 11

Training and Qualifications of Officers and Ratings of Chemical Tankers

THE CONFERENCE,

BEING AWARE of the possible dangers to human life and to the

environment from accidents involving the handling of chemicals in bulk,

RECOGNIZING the importance and urgency of establishing requirements for officers and key ratings having special responsibilities for the handling of hazardous or noxious chemicals in bulk,

HAVING CONSIDERED Resolution A.286(VIII) adopted by the Assembly of the Inter-Governmental Maritime Consultative Organization on this matter,

NOTING that the subject matter of Resolution A.286(VIII) is closely related to the aims of the Conference,

RESOLVES:

- (a) to adopt the Recommendation on Training and Qualifications of Officers and Ratings of Chemical Tankers, annexed to this Resolution;
- (b) to urge all Governments concerned to give effect to the contents of this Recommendation as soon as practicable,

INVITES the Inter-Governmental Maritime Consultative Organization:

- (a) to keep this Recommendation under review and to bring any future amendments including provisions concerning the handling of hazardous or noxious dry chemicals in bulk, to the attention of all Governments concerned;
- (b) to communicate this Resolution to all Governments invited to the Conference.

ANNEX

Recommendation on Training and Qualifications of Officers and Ratings of Chemical Tankers

I. TRAINING OF OFFICERS AND RATINGS RESPONSIBLE FOR CARGO HANDLING AND EQUIPMENT

Training should be divided into two parts, a general part on principles involved and a part on the application of the principles to ship operation. Any of this training may be given at sea or ashore. Such training should be supplemented by practical instruction at sea and, where appropriate, in a suitable shore-based installation. All training and instruction should be given by properly qualified personnel.

A - PRINCIPLES

1. Elementary physics

An outline treatment including practical demonstration of the physical properties of chemicals carried in bulk; vapour pressure/temperature relationship. Influence of pressure on boiling temperature. Explanation of saturated vapour pressure, diffusion, partial pressure, flammability limit,

flashpoint and auto-ignition temperature. Practical significance of flashpoint and lower flammable limit. Simple explanation of types of electrostatic charge generation.

2. Elementary chemistry

Chemical symbols and structures, elements of the chemistry of acids and bases, structure and properties of well known chemicals carried, chemical reaction of well known groupings, sufficient to enable proper utilization of codes.

3. Toxicity

Simple principles and explanation of basic concepts; toxicity limits, both acute and chronic effects of toxicity, systemic poisons and irritants.

4. Hazards

(a) *Explosion and flammability hazards*

Flammability limits. Sources of ignition and explosion.

(b) *Health hazards*

Dangers of skin contact, inhalation and ingestion.

(c) *Hazards to the environment*

Effect on human and marine life of release of chemicals at sea. Effect of specific gravity and solubility. Danger from vapour cloud drift. Effect of vapour pressure and atmospheric conditions.

(d) *Reactivity hazards*

Self-reaction; polymerization, effects of temperature, impurities as catalysts. Reaction with air, water and other chemicals.

(e) *Corrosion hazards*

Dangers to personnel, attacks on constructional materials. Effects of concentration. Evolution of hydrogen.

5. Hazard control

Inerting, water padding, drying agents, monitoring techniques. Anti-static measures. Ventilation. Segregation. Cargo inhibition. The importance of compatibility of materials.

6. Safety equipment and protection of personnel

The function and calibration of measuring instruments and similar equipment. Specialized fire extinguishing appliances, breathing and escape apparatus. Safe use of protective clothing and equipment.

B - SHIPBOARD APPLICATION

1. Regulations and codes of practice

Familiarization with IMCO, national and relevant international codes* and port regulations. The importance of developing ships' emergency plans.

* Reference is made to the ICS Tanker Safety Guide (Chemicals) and ICS Guide to Helicopter/Ship Operations.

2. Ship design and equipment of chemical tankers

A brief description of specialized piping, pumping and tank arrangements, overflow control. Types of cargo pumps and their application to various types of cargo. Tank cleaning and gas freeing systems. Cargo tank venting and accommodation ventilation, airlocks. Gauging systems. Tank temperature control systems. The safety factors of electrical systems.

3. Ship operations

Cargo calculation. Loading and discharging plans. Loading and discharge procedure. Check lists. Use of monitoring equipment. Gas freeing operations and tank cleaning operations (proper use of absorption and wetting agents and detergents). Use and maintenance of inert atmospheres. Control of entry into pumprooms and enclosed spaces. Use of detecting and safety equipment. Disposal of waste and washings.

4. Repair and maintenance

Precautions to be taken before the repair and maintenance of pumping, piping, electrical and control systems.

5. Emergency operations

Emergency plan. Cargo operations emergency shutdown. Action in the event of failure of services essential to cargo. Fire-fighting on chemical tankers. Action following collision, stranding or spillages. First aid procedure and the use of resuscitation and decontamination equipment. Use of breathing apparatus. Rescue from enclosed spaces.

NOTE

It is recommended that as much use as possible should be made of shipboard operations and equipment manuals, films and suitable visual aids, and that the opportunity should be taken to introduce discussion of the part to be played by safety organization on board ship, and the role of safety officers and safety committees.

II. TRAINING OF OTHER PERSONNEL

Such personnel should undergo training on board ship and where appropriate, ashore, which should be given by qualified personnel who have attained the required standard and are experienced in the carriage of this type of cargo and safety procedures.

1. Regulations

Knowledge of the ship's rules and regulations governing the safety of personnel on board a tanker in port and at sea.

2. Health hazard and precautions to be taken

Dangers of skin contact. Inhalation and swallowing cargo. Oxygen deficiency with particular reference to inert gas systems. The toxic properties of cargoes carried. Personnel accidents and associated first aid. Lists of dos and don'ts.

3. Fire prevention and fire-fighting

Control of smoking and cooking restrictions. Sources of ignition. Fire and explosion prevention. Methods of fire-fighting. Outline of portable apparatus and fixed installations.

4. Pollution prevention

Procedures to be followed to prevent air and water pollution. Measures to be taken in the event of spillage.

5. Safety equipment and its use

The proper use of protective clothing and equipment, resuscitators, escape and rescue equipment.

6. Emergency procedures

Familiarization with emergency plan procedure.

7. Cargo equipment and operations

General description of cargo handling equipment. Safe loading and discharge procedures and precautions. Safe entry into enclosed spaces.

III. FIRE-FIGHTING TRAINING

All personnel should have attended an approved basic or advanced practical fire-fighting training course relevant to their duties and responsibilities.

Resolution 12

Training and Qualifications of Masters, Officers and Ratings of Liquefied Gas Tankers

THE CONFERENCE,

BEING AWARE of the possible dangers to human life and to the environment from accidents involving the handling of liquefied gases in bulk.

RECOGNIZING that suitable arrangements for the mandatory training of masters, officers and of ratings having special responsibility for the handling of such cargoes are not widely available,

BEING OF THE OPINION that mandatory minimum requirements should be implemented as soon as practicable,

RESOLVES to adopt the Recommendation on Training and Qualifications of Masters, Officers and Ratings of Liquefied Gas Tankers, annexed to this Resolution.

RECOMMENDS:

- (a) that all Governments concerned take account of the guidance contained in the Annex to this Resolution;

- (b) that all masters, officers and ratings aboard such ships should be required to complete approved basic training in safety, emergency procedures and fire-fighting. Such training should be of adequate scope and duration to ensure appreciation of not only the hazards involved, but also the safety features included in the design and construction of the ship in order to preclude indecision or panic in the handling of emergencies and small casualties;
- (c) that all masters, deck and engineer officers and those ratings having specific duties and responsibilities in connexion with the cargo and cargo equipment should be required to complete approved special training courses and that such courses should be of adequate duration and supplemented by shipboard training and experience;
- (d) that all Governments concerned, in recognizing standards of proficiency, should either require separate assessment upon the conclusion of the prescribed training or accept successful completion of approved courses of training which are closely monitored and may include periodic assessment and an overall evaluation by the instructor of the performance and participation of the student;
- (e) that all Governments concerned should satisfy themselves as to the standard of competency of the officer primarily responsible for cargo and should ensure that appropriate documentation is issued to those so qualified by training and experience,

INVITES the Inter-Governmental Maritime Consultative Organization:

- (a) to keep this Recommendation under review and to bring any future amendments to the attention of all Governments concerned;
- (b) to communicate this Resolution to all Governments invited to the Conference.

ANNEX

Recommendation on Training and Qualifications of Masters, Officers and Ratings of Liquefied Gas Tankers

I. INTRODUCTION

1. Training should be divided into two parts:

- (a) supervised instruction, conducted in a shore-based facility or aboard a specially equipped ship having training facilities and special instructors for this purpose, dealing with the principles involved and the application of these principles to ship operation. In special situations Administrations may permit a junior officer or rating to be trained aboard liquefied gas tankers on which he is serving, provided that such service is for a limited period, as established by the Administration, and that such crew member does not have duties or responsibilities in connexion with cargo or cargo equipment and provided further that he is later trained in accordance with this Recommendation for any subsequent service;

- (b) supplementary shipboard training and experience wherein the principles learned are applied to a particular type of ship and cargo containment system.

2. In drawing up an Administration-approved syllabus of training, the IMCO Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk and relevant Tanker Safety Guides* should be taken into account.

The training should be at the following levels:

A. MASTERS, ALL OFFICERS AND ALL RATINGS

1. Basic safety training course for gas tankers

This training should preferably be conducted at an approved shore training establishment prior to an assignment to a ship. Alternatively, the safety training could be given in organized approved shipboard training programmes conducted by qualified personnel under the supervision and direction of the master. Such safety training should include the following:

(a) *General*

- (i) Types of gases carried.
- (ii) Hazards associated with those gases which are likely to be handled.
- (iii) General description of cargo carrying systems.
- (iv) Loading and unloading systems including cargo vent systems.
- (v) Design safety features and special requirements.

(b) *Fire prevention and fire-fighting*

Control of smoking and cooking restrictions. Sources of ignition. Fire and explosion prevention. Methods of fire-fighting. Outline of portable apparatus and fixed installations.

(c) *Health hazards and personnel protection*

- (i) Hazards of skin contact and inhalation of cargo vapours or inert gas. Types of antidotes and their effects.
- (ii) Proper use of protective clothing and breathing apparatus, resuscitators and rescue equipment and escape sets.
- (iii) Entry into enclosed spaces.

(d) *Pollution prevention*

Procedures to be followed to prevent air and water pollution. Measures to be taken in the event of spillage.

(e) *Emergency procedures*

Basic outline of emergency plan. Procedures in case of:

- (i) fire;
- (ii) collision and stranding;

* Reference is made to the ICS Tanker Safety Guide (Liquefied Gas) and the ICS Guide to Helicopter Ship Operations.

- (iii) liquefied gas spills or leaks;
 - (iv) personnel casualty.
2. **Fire-fighting course to include the specific characteristics of fires aboard gas tankers**
- (a) All personnel should have attended an approved basic or advanced practical fire-fighting training course relevant to their duties and responsibilities.
 - (b) This training should be given at a shore establishment or aboard a specially equipped ship having training facilities and special instructors for this purpose.
3. **As soon as new crew members have joined a ship, they should be made fully acquainted with all aspects of the emergency procedures listed.**

B. MASTERS, ALL DECK AND ENGINEER OFFICERS AND THOSE RATINGS HAVING SPECIFIC DUTIES AND RESPONSIBILITIES IN CONNEXION WITH CARGO AND CARGO EQUIPMENT

1. This part should apply in full to the master, chief mate, chief engineer officer, second engineer officer and officer primarily responsible for the cargo if he is not included in the preceding four designations.

2. The Administration may, however, permit variations in the depth of knowledge required in the following syllabus according to the duties and functions to be performed by other crew members.

3. Specific duties and responsibilities in connexion with cargo and cargo equipment are those concerned with cargo loading or discharging, cargo care, processing or supervisory duties for the on board use of cargo and operation or maintenance of equipment related thereto.

4. Such training should include but not necessarily be limited to:

(a) *Chemistry and physics*

An introduction to basic chemistry and physics as it relates to the safe carriage of liquefied gases in bulk in ships:

- (i) Properties and characteristics of liquefied gases and their vapours
 - (1) definition of gas;
 - (2) simple gas laws;
 - (3) gas equation;
 - (4) density of gases;
 - (5) diffusion and mixing in gases;
 - (6) compression of gases;
 - (7) liquefaction of gases;
 - (8) refrigeration of gases;

- (9) critical temperature;
 - (10) practical significance of flashpoint;
 - (11) upper and lower explosive limits;
 - (12) auto-ignition temperature;
 - (13) compatibility of gases;
 - (14) reactivity;
 - (15) polymerization.
- (ii) Properties of single liquids
- (1) densities of liquids;
 - (2) variation with temperature;
 - (3) vapour pressure and temperature;
 - (4) vaporization and boiling liquids.
- (iii) Nature and properties of solutions
- (1) solubility of gases in liquids;
 - (2) miscibility between liquids and effects of temperature change;
 - (3) densities of solutions and dependence on temperature and concentration;
 - (4) effects of dissolved substances on melting and boiling points;
 - (5) hydrates. formation and dispersion;
 - (6) hygroscopicity;
 - (7) drying of air and other gases.
- (b) *Health hazards*
- (i) Toxicity
 - (1) modes by which liquefied gases and their vapours may be toxic;
 - (2) toxic properties of inhibitors and of products of combustion of both materials of construction and the liquefied gases carried;
 - (3) acute and chronic effects of toxicity, systemic poisons and irritants;
 - (4) Threshold Limiting Value (TLV).
 - (ii) Hazards of skin contact, inhalation and ingestion.
 - (iii) First aid and administering of antidotes.
- (c) *Cargo containment*
- (i) Principles of containment systems.
 - (ii) Rules.

- (iii) Surveys.
 - (iv) Tank construction, materials, coatings, insulation.
 - (v) Compatibility.
- (d) *Operational procedures*
- (i) Regulations and codes of practice.
 - (ii) Familiarization with IMCO, national and relevant international codes*.
 - (iii) Port regulations.
 - (iv) Importance of ship's emergency plan and allocation of responsibilities.
- (e) *Pollution*
- (i) Hazards to human life and to the marine environment.
 - (ii) Effect of specific gravity and solubility.
 - (iii) Danger from vapour cloud drift.
 - (iv) Jettisoning of cryogenic liquids.
 - (v) National, international and local regulations.
- (f) *Cargo handling system*
- (i) Description of main types of pumps and pumping arrangements and vapour return systems, piping systems and valves.
 - (ii) Explanation of pressure, vacuum, suction, flow, head.
 - (iii) Filters and strainers.
 - (iv) Expansion devices.
 - (v) Flame screens.
 - (vi) Commonly used inert gases.
 - (vii) Storage, generation, distribution systems.
 - (viii) Outline of different types of systems and their safe and efficient operation and service.
 - (ix) Temperature and pressure monitoring systems.
 - (x) Cargo vent systems.
 - (xi) Liquid re-circulation and re-liquefaction systems.
 - (xii) Cargo gauging and instrumentation systems.
 - (xiii) Gas detection and monitoring systems.
 - (xiv) CO₂ monitoring systems.
 - (xv) Cargo boil-off systems.

* Reference is made to the ICS Tanker Safety Guide (Liquefied Gas) and the ICS Guide to Helicopter/Ship Operations.

- (xvi) Auxiliary systems.
- (g) *Ship operating procedures*
 - (i) Loading and discharging preparations and procedures.
 - (ii) Check lists.
 - (iii) Cargo condition maintenance on passage and in harbour.
 - (iv) Segregation of cargoes and procedures for cargo transfer.
 - (v) Changing cargoes, tank cleaning procedures.
 - (vi) Cargo sampling.
 - (vii) Ballasting and de-ballasting.
 - (viii) Warm up and cool down systems.
 - (ix) Warm up and gas freeing procedures.
 - (x) Procedures for cool down of gas free system from ambient temperature and safety precautions involved.
- (h) *Safety practices and equipment*
 - (i) Function, calibration and use of portable measuring instruments.
 - (ii) Fire-fighting equipment and procedures.
 - (iii) Breathing apparatus.
 - (iv) Resuscitators.
 - (v) Escape sets.
 - (vi) Rescue equipment.
 - (vii) Protective clothing and equipment.
 - (viii) Entry into enclosed spaces.
 - (ix) Precautions to be observed before and during repair and maintenance of cargo and control systems.
 - (x) Supervision of personnel during potentially hazardous operations.
 - (xi) Types and principles of certified safe electrical equipment.
 - (xii) Sources of ignition.
- (i) *Emergency procedures*
 - (i) Emergency plan.
 - (ii) Emergency shutdown of cargo operations.
 - (iii) Emergency cargo valve closing systems.
 - (iv) Action in the event of failure of systems or services essential to cargo.
 - (v) Action in event of collisions or strandings, spillages, envelopment of ship in toxic or flammable vapour.

5. Supplementary shipboard training and experience based on the ship's operation manual should include the following systems as applicable:
- (a) *Cargo handling system*
 - (i) Piping systems, pumps, valves, expansion devices and vapour system.
 - (ii) Service requirements and operating characteristics of the cargo handling system.
 - (iii) Liquid re-circulation.
 - (b) *Instrumentation systems*
 - (i) Cargo level indicators.
 - (ii) Gas detection systems.
 - (iii) Hull and cargo temperature monitoring systems.
 - (iv) Various methods of transmitting a signal from a sensor to the monitoring station.
 - (v) Automatic shutdown systems.
 - (c) *Boil-off disposal*
 - (i) Use as fuel
 - (1) compressors;
 - (2) heat exchanger;
 - (3) gas piping and ventilation in machinery and manned spaces.
 - (ii) Principles of dual-fuel
 - (4) boilers;
 - (5) gas turbines;
 - (6) diesel engines.
 - (iii) Emergency venting.
 - (iv) Re-liquefaction.
 - (d) *Auxiliary systems*
 - (i) Ventilation, inerting.
 - (ii) Valves
 - (1) quick closing;
 - (2) remote control;
 - (3) pneumatic;
 - (4) excess flow;
 - (5) safety relief;
 - (6) pressure/vacuum.
 - (iii) Steam systems for voids, ballast tanks, condenser.

- (e) *General principles of operating the cargo handling plant*
 - (i) Inerting cargo tanks and void spaces.
 - (ii) Tank cool down, loading.
 - (iii) Operations during loaded and ballasted voyages.
 - (iv) Discharging and tank stripping.
 - (v) Emergency procedures, including pre-planned action in the event of leaks, fires, collision, stranding, emergency cargo discharge, personnel casualty.

NOTE

It is recommended that as much use as possible should be made of shipboard operations and equipment manuals, films, visual and other suitable aids and that there should be discussion on the part that is to be played by safety organization on board ship, and the role of safety officers and safety committees. Encouragement should be given to the provision of such suitable aids to carry out a continuing and effective onboard training and safety programme.

- 6. The officer primarily responsible for cargo should:
 - (a) be directly responsible to the master;
 - (b) have successfully completed all the required training;
 - (c) have served aboard a ship carrying liquefied gases in bulk for at least two months, such service to have:
 - (i) been performed under the direction, supervision and training of an officer primarily responsible for cargo;
 - (ii) included cargo transfers, both loading and discharging;
 - (d) satisfy the master as to his overall qualifications and ability.

II. GENERAL

- 1. Administrations should ensure that an authorized document is issued to every person who is by training and experience qualified in accordance with this Annex to serve as an officer primarily responsible for the cargo.
- 2. Under appropriate approved standards, the master of each ship should ensure that the officer primarily responsible for the cargo possesses such document and has had recent adequate practical experience aboard the appropriate type of ship to permit him to perform his duties safely.
- 3. The Administration should, in consultation with all those concerned, formulate or promote the formulation of an appropriate structure of refresher and updating courses.

Resolution 13

**Training and Qualifications of Officers and Ratings
of Ships Carrying Dangerous and Hazardous Cargo
other than in Bulk**

Resolution 19

Training of Seafarers in Personal Survival Techniques

THE CONFERENCE,

CONSIDERING the need to train all seafarers in personal survival techniques,

RECOGNIZING that such training would enhance their chance of survival at sea during emergency situations,

RESOLVES:

- (a) to adopt the Recommendation on Training of Seafarers in Personal Survival Techniques, annexed to this Resolution;
- (b) to urge all Governments concerned to give effect to the contents of the Recommendation as soon as practicable,

INVITES the Inter-Governmental Maritime Consultative Organization:

- (a) to keep this Recommendation under review, in consultation or association with other international organizations, as appropriate, particularly with the International Labour Organisation, and to bring any future amendments to the attention of all Governments concerned;
- (b) to communicate this Resolution to all Governments invited to the Conference.

ANNEX

Recommendation on Training of Seafarers in Personal Survival Techniques

Every prospective seafarer should, before being employed in a sea-going ship, receive approved training in personal survival techniques. In respect of such training, the following recommendations are made.

1. Every prospective seafarer should be instructed in the following:
 - (a) types of emergencies which may occur, such as collisions, fire and foundering;
 - (b) types of life-saving appliances normally carried on ships;
 - (c) need to adhere to the principles of survival;
 - (d) value of training and drills;
 - (e) need to be ready for any emergency and to be constantly aware of:
 - (i) the information in the muster-list, in particular:
 - (1) his specific duties in any emergency;
 - (2) his own survival craft station;
 - (3) the signals calling all crew to their survival craft or fire stations;
 - (ii) location of his own and spare life-jackets;
 - (iii) location of fire alarm controls;
 - (iv) means of escape;
 - (v) consequences of panic;
 - (f) actions to be taken when called to survival craft stations, including:
 - (i) putting on suitable clothing;
 - (ii) donning a life-jacket;
 - (iii) collecting additional protection such as blankets, time permitting;
 - (g) actions to be taken when required to abandon ship, such as:
 - (i) how to board survival craft from ship and water;
 - (ii) how to jump into the sea from a height and reduce the risk of injury when entering the water;
 - (h) actions to be taken when in the water, such as:
 - (i) how to survive in circumstances of:
 - (1) fire or oil on the water;
 - (2) cold conditions;
 - (3) shark-infested waters;
 - (ii) how to right a capsized survival craft;

- (i) actions to be taken when aboard a survival craft, such as:
 - (i) getting the survival craft quickly clear of the ship;
 - (ii) protection against cold or extreme heat;
 - (iii) using a drogue or sea anchor;
 - (iv) keeping a look-out;
 - (v) recovering and caring for survivors;
 - (vi) facilitating detection by others;
 - (vii) checking equipment available for use in the survival craft and using it correctly;
 - (viii) remaining, so far as possible, in the vicinity;

- (j) main dangers to survivors and the general principles of survival, including:
 - (i) precautions to be taken in cold climates;
 - (ii) precautions to be taken in tropical climates;
 - (iii) exposure to sun, wind, rain and sea;
 - (iv) importance of wearing suitable clothing;
 - (v) protective measures in survival craft;
 - (vi) effects of immersion in water and of hypothermia;
 - (vii) importance of preserving body fluids;
 - (viii) protection against seasickness;
 - (ix) proper use of fresh water and food;
 - (x) effects of drinking sea-water;
 - (xi) means available for facilitating detection by others;
 - (xii) importance of maintaining morale.

2. Every prospective seafarer should be given practical instruction in at least the following:

- (a) wearing a life-jacket correctly;
- (b) entering the water from a height wearing a life-jacket;
- (c) swimming while wearing a life-jacket;
- (d) keeping afloat without a life-jacket;
- (e) boarding liferafts from ship and water while wearing a life-jacket;
- (f) assisting others to board survival craft;
- (g) operation of survival craft equipment including basic operation of portable radio equipment;
- (h) streaming a drogue or sea anchor.

ANNEX 3

THE BOARD OF GOVERNORS

The Board shall:

- (a) adopt the statutes of the M.T.C.;
- (b) formulate the principles and policies which shall govern the activities and operation of the M.T.C.;
- (c) consider and approve the work programme and adopt the budget of the M.T.C.;
- (d) decide upon the establishment or incorporation of training and education programmes of the M.T.C., and adopt the necessary standards for the operation and further development of such programmes;
- (e) consider annually the reports provided on the work of such programmes;
- (f) issue such directives and approve such measures within the framework of the Charter of the M.T.C. as may be necessary for the operation of the M.T.C. and its administration by the Principal;
- (g) submit to the Minister of Transport and Communications such recommendations as it may deem necessary or desirable for the effective functioning of the M.T.C.;
- (h) report annually through the Chairman to the Minister of Transport and Communications on the work of the

M.T.C.;

- (i) elect a Vice-Chairman who shall preside in the absence of the Chairman;
- (j) adopt rules of procedure, including procedures for convening special sessions as necessary;
- (k) establish such subsidiary bodies as it deems necessary.

The Board shall meet in regular session once a year and shall be convened by the Principal at the direction of the Chairman. The Board shall consider the methods of financing the M.T.C. with a view of ensuring the effectiveness and continuity of its operations and the autonomous character of the M.T.C. It shall also consider the arrangements under which institutions and individuals may be associated with the work of the M.T.C. and the criteria to be met by such institutions and individuals in order to ensure the maintenance of the highest professional standards.

THE ADVISORY COMMITTEE

The Advisory Committee shall:

- (a) monitor the implementation of the decisions of the Board and give directions and guidelines as necessary;
- (b) consider the draft plans of work and the budget estimates of the M.T.C. prepared by the Principal and establish and submit to the Board the work pro-

gramme and budget of the M.T.C., having regard to the general interest and priorities of the M.T.C.;

- (c) make a report to the Board at each regular session on the activities of the M.T.C. since the previous regular session of the Board;
- (d) co-ordinate the activities of the M.T.C., in particular between sessions of the Board, and make such adjustments in the work programme and make such other decisions as are strictly necessary to ensure the efficient functioning of the M.T.C. Any decisions so taken shall be reported to the next session of the Board.

The Advisory Committee shall meet at least twice a year.

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The W.M.U. library was also a good source of information. Other material was collected during the field trips organised by the W.M.U. to different maritime institutions worldwide. Other information came from personal experiences acquired during the period 1981-1986 as Nautical Instructor at the Mano River Union Marine Training Institute in Marshall, Liberia.

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