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## Sea training programme for deck officers at Alexandria Maritime Academy - a proposal for further development

Ossamah Y. Shalabey  
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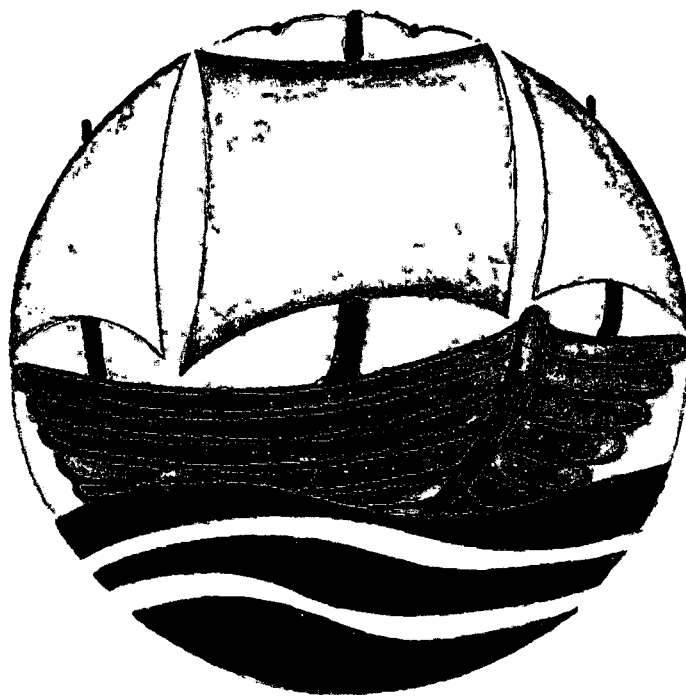
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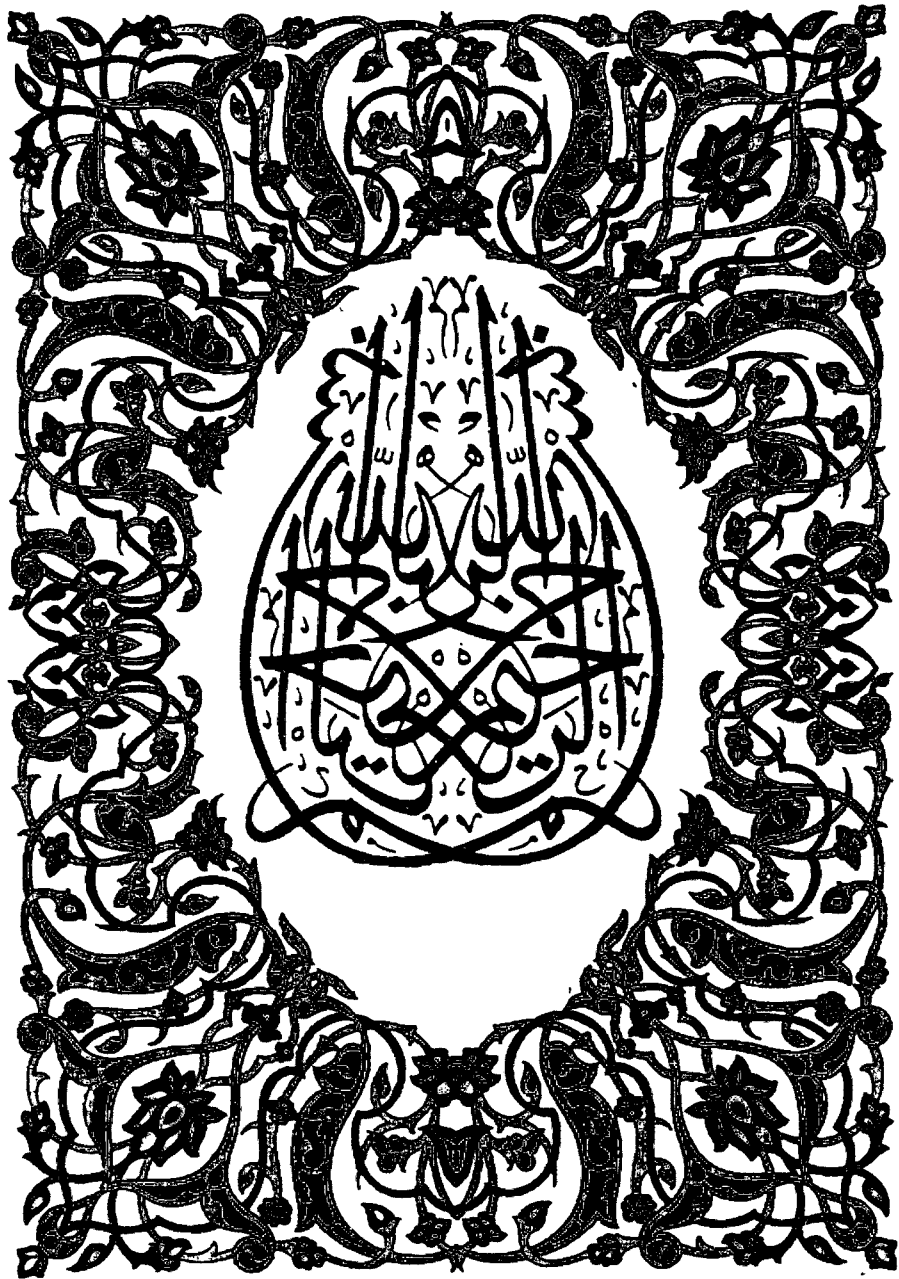


**THE SEA TRAINING PROGRAMME  
FOR DECK OFFICERS  
AT  
ALEXANDRIA MARITIME TRANSPORT ACADEMY  
A PROPOSAL FOR FURTHER DEVELOPMENT**



**OSSAMAH YEHYA SHALABEY  
MALMO - SWEDEN**

**1988**



IN THE NAME OF GOD  
MOST GRACIOUS      MOST MERCIFUL

WORLD MARITIME UNIVERSITY  
MALMØ, SWEDEN

THE SEA TRAINING PROGRAMME FOR DECK OFFICERS  
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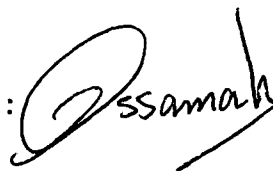
by  
Ossamah Y. Shalabey  
Egypt

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

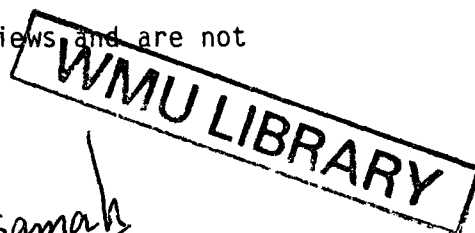
MASTER OF SCIENCE DEGREE  
in  
MARITIME EDUCATION AND TRAINING (NAUTICAL).

The contents of this paper reflect my personal views and are not  
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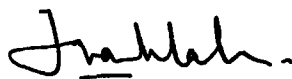


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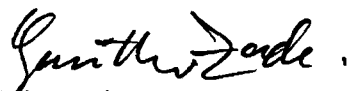
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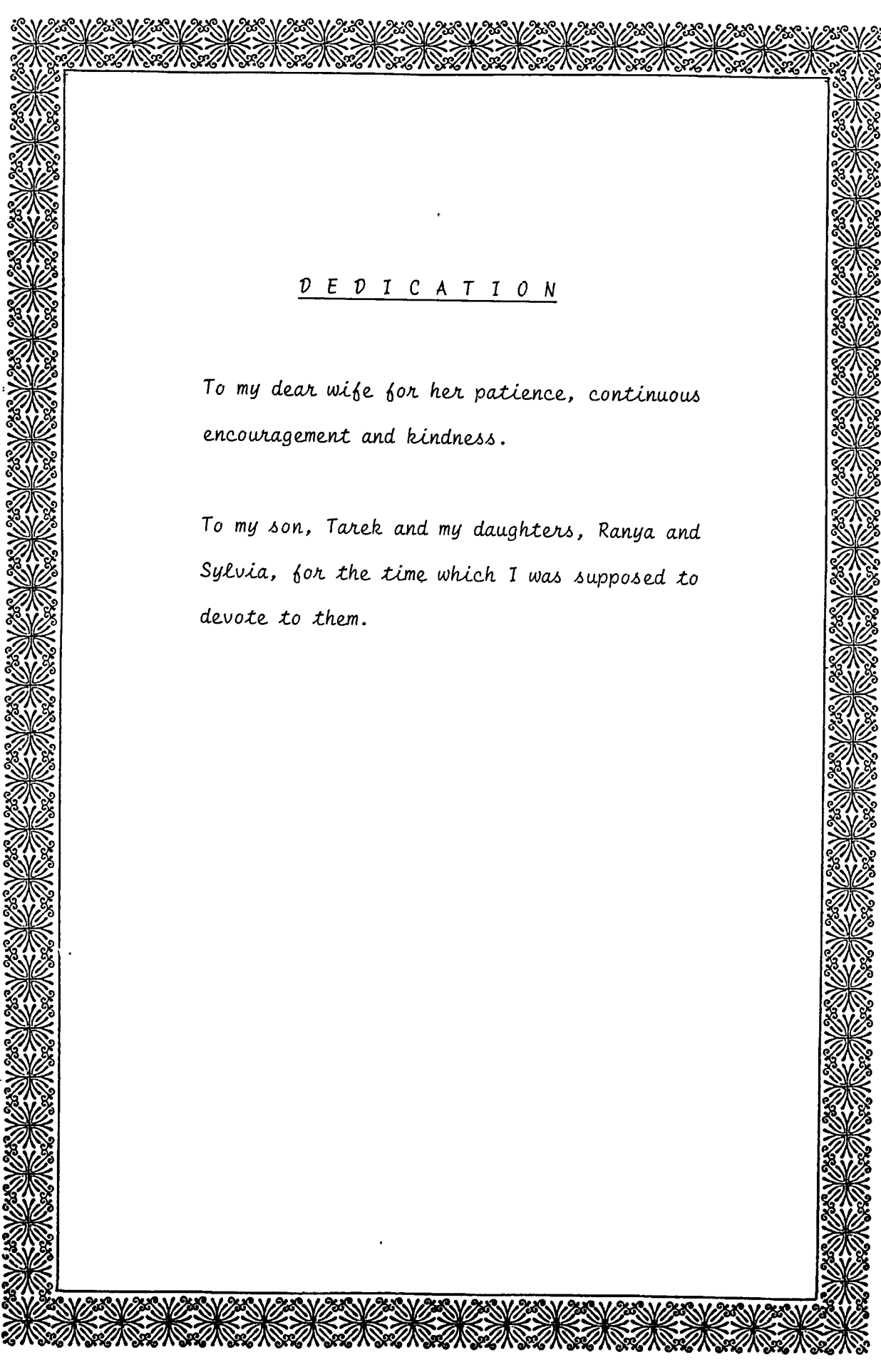


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D E D I C A T I O N

*To my dear wife for her patience, continuous  
encouragement and kindness.*

*To my son, Tarek and my daughters, Ranya and  
Sylvia, for the time which I was supposed to  
devote to them.*

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I would also like to thank Ms. Sue MacAlpine for her friendly attitude and assistance in typing this project.

## A B S T R A C T

This project deals with the importance of a **PROPER** Maritime Sea Training of deck officers, with the aim to improve the present system at Alexandria Maritime Transport Academy, hoping an integrated system can be attained. It is also hoped that the proposed system will meet the increasingly changing demand of the shipping industry in the world, with particular reference to Egypt.

Chapter one deals with the philosophy of Maritime Training, highlighting the tremendous importance of such a training to produce qualified deck officers.

Chapter two introduces A.M.T.A. and its training facilities, as a regional maritime institution.

Chapter three is a comparative study of maritime education and training in various maritime developed countries, as successful examples for A.M.T.A.

Chapter four concentrates on proposed points felt to be needed to improve the present Maritime Sea Training System at A.M.T.A.

Chapter five ends up the project reaching a conclusion of various recommendations believed to improve the system of Maritime Sea Training System at A.M.T.A.



## CHAPTER ONE

### MARITIME TRAINING

#### 1.1 INTRODUCTION:

Investigations into the causes of shipping accidents have revealed five major categories into which all accidents can be placed. The accident can be due to:

1. Natural conditions (storm, darkness, etc.)
2. Conditions of the sea route (routes which are difficult to navigate)
3. Ship conditions (deficiencies or faults with the ship itself)
4. Traffic conditions (i.e. congested routes), and
5. Condition of seafarers by which is meant the knowledge, skill and attitude of seafarers. (1)

Although there are five categories, the latter is by far the most significant, because if the seafarers condition is tip-top they will be able to cope with the conditions mentioned in the first four categories. Whereas if all the first four categories were put to right, accident could and would still occur due to seafarers inefficiency.

So it is not too far from the truth to claim that an extremely high percentage of all shipping accidents result, directly or indirectly, from human failure. And yet why should there be human failure? Are these seafarers not trained to full competency? Clearly, they are not. Why, one must then ask oneself, are they not?

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(1) Source: Seminar on The Education and Training System for Seafarers in Japan - 7 October 1983, Paper by: Captain Yutaka Tanabe, page 20.

To state that seafarers are universally incompetent would be ludicrous and far from the truth. So who are the seafarers whose incompetency leads sooner or later to accident? Where are they to be found and why are they not trained to unequivocal competency?

We must look at the Academic Institutions which spawn seafarers. The first prerequisite for safe sailing must be maritime tutors and lecturers who themselves have been educated and trained to the highest professional and academic standards.

Then we must look at the seafarers, and here it is clear that those from developing countries are at a serious disadvantage compared to those from developed countries. To begin with they lack training facilities in their own countries and so they are forced to travel abroad to carry out their studies to attain certificates of competency. Besides the obvious language problem which they will often have to surmount, the length of their education would normally be prolonged by the extra problems they have to solve: learning in a foreign language, travel, adapting to foreign ways, etc.

I did say "would normally" be prolonged, because in fact in most cases they complete their education in the same time-span as seafarers who study in their own country. Whether this is due to them being more capable, or working harder in the time available than the "home" seafarers, is hard to say. But what is to be feared is that they do not in fact complete their studies to full satisfaction. In other words the certification of competence which they receive does not accurately and precisely reflect their actual competency, at the very least when it comes to the crunch at sea - or rather, avoid the crunch at sea.

Government representatives who are responsible for sending their fellow countrymen to be educated at Maritime Academic

Institutions must, understandably, be loathe to spend the large amounts of foreign currency which unavoidably are incurred in such a venture. Who can blame them for wanting to cut corners wherever they can?

Many countries have adopted the International Convention on Standards of Training Certification and Watchkeeping for Seafarers of 1978. The aim is admirable and it was and is a step in the right direction. However, one thing is adoption, another is putting into practice, and the large number of accidents that occur at sea every year can only point to the fact that much is left to be desired in the full application of the STCW Convention.

To establish the precise causes of these accidents which result in heavy loss of life, considerable loss of property and vast pollution of the sea, extensive investigations must be carried out. These investigations must isolate the precise causes and suggest the most effective remedies, and only once the remedies have been put into effect can the number of accidents be expected to fall. Investigators must realise that accidents are seldom caused by one specific circumstance, but rather are a culmination of a chain of events. Further, the investigations' invaluable conclusions must be made available to all interested parties. From there on, it is up to the appropriate authorities in each country to ensure that an investigation's findings do not remain at the theory stage, but are implemented.

Having said all this, many developing countries do not possess, at present, the well-trained, specialist investigators necessary to effectuate these inquiries, which brings us back to the crux of the matter-training.

## 1.2 PHILOSOPHY OF TRAINING:

Historically, people who have been successful in shipping

have, at the same time, always had power and influence in important areas, e.g. government, insurance, societies, etc.

Throughout the centuries, this power has been used to introduce legislation to improve safety and reliability in shipping. Laudible though this principle may be, it has always played second fiddle to a much more basic principle: to ensure that seafarers stay on board the ship, being submitted to severe discipline for long periods for, until recently, very low pay. What is more they have used their influence to block legislation intended to improve the seafarer's lot, when they considered it impractical, i.e. it did not suit their purposes. Thus, the working conditions of the seafarer, if not downright primitive, have at least lagged considerably behind those of other professions. Clearly, these unsafe and unattractive working conditions have hardly appealed to the brighter and more perceptive young men, the majority of whom, when considering a life on the ocean wave as a way of life almost certainly must have turned their talent elsewhere.

The greater tragedy, however, has been the tailoring of training schemes and courses to fit the conditions at sea. Young seafarers in training ought not to have their natural exuberance, optimism and idealism curbed by the strictness of a suppressive regime. Discipline at sea is of course, absolutely essential and without it the lives of every man on board are in jeopardy. But discipline must not be mistaken for plain suppression, and keeping seafarers ignorant as a mean of upholding discipline can no longer, as we enter the 21st century, be tolerated. Enlightenment not ignorance saves lives and prevents accidents.

Rank, just like discipline is a must at sea. Each man must be fully aware of his position and fulfill the duties of that position in full collaboration with his fellow seafarers. Therefore it is all the more regrettable that the custom

exists to carefully select deck officers from the brightest of the young men, only to segregate them from other seafarers and their families for long periods of training. At an early stage a class system is hammered into new recruits of all ranks and the training system as it exists today only serves to perpetuate the distinctions and barriers which exist between the ranks. Team spirit rather than an "us and them" attitude can only be to everyone's benefit, but team spirit must be created and as it is the officers that set the standards, it must come from them. For it to come from them they must learn about it in their training, and learn how to create it.

When looking with a critical eye at the training of officers it must be noted that the training is often very narrow and limited and the qualifications obtained are kept at a standard below the equivalent in other professions. So the philosophy applies, apparently, regardless of rank: Teach the bare minimum in order to sail the ship, and never to the point of enlightenment. Encourage rank privileges and anything which may drive a wedge between officers and ratings. Above all maintain discipline and the minimum of education. In recent years, this philosophy, never overt, has been tempered and many new officers joining the fleet can be trained to special tasks and to create closer relationships. All this through reformed initial sea training and education, which is a step in the direction of a more sensible philosophy, though there is a long way still to go.

### 1.3 TECHNICAL APPROACH:

Training programmes exist in which situations at sea are simulated so that the trainee can be accustomed to conditions and tasks at sea, and do so in safe surroundings so that no-one and nothing can come to harm. It is, however, tempting to approach this part of a seafarer's education in a rote

fashion. To give an example of this point: it is not enough to teach a child how to keep his balance on the bike and be satisfied when he can do that. How and when to apply brakes and use a gear should be taught, not to mention how to take corners and a minimum of knowledge of the Highway Code must be known.

Applying this to seafarers one can clearly see that training seafarers in one technique does not suffice. Multiple techniques are available and must be utilized.

It is still not enough to apply all the techniques available if this is done mechanically without a second thought to the individual need of the seafarer under training. To use the bike parallel once again: an expert in motor-cross may be useless at speedway or a BMX competition. One must look to what use the seafarer in training will put his training. What exactly must become an expert in. This must be the basic consideration when training a seafarer. There are, however, other things to bear in mind when compiling a programme of practice in training techniques.

First of all, which skills are already possessed prior to training. The instructor must discover this before any training is commenced, otherwise many things can appear impossibly difficult to the trainee or boringly irrelevant.

How much time is available for training. How much can one reasonably expect the trainee to learn within the time available. You may discover the level of the trainee and instruct him accordingly but if he is set impossible or too easy targets the results will be the same as instruction at the wrong level.

Many techniques are available, some are more expensive than others, some are more effective than others - expense need not

be directly comparable with effectiveness. Instructor must once again use their discrimination as to which is the most suitable equipment or technique bearing in mind the particular trainee(s) he has on his hands. He also has to bear in mind the immediate feedback as opposed to the delayed feedback. And should trainees be instructed individually or in groups in this particular technique?

An instructor approach must always bear in mind the individual requirements of the potential seafarer. In this way, not only will the trainee's attention and interest be secured but also, and as a consequence of this, his abilities will be improved.

#### 1.4 OBJECTIVES OF TRAINING:

Training objectives recommend a sequence of modules, each module being addressed to a particular objective. The sequence of modules is compiled in accordance with the general academy curriculum. This is fine and good but if we look at the contents of a single module we find that there is one training objective only per module, and this is insufficient. Each training objective must be divided into minor objectives, which, after they have all been attained, will be equivalent to achieving the main objective. This division is to be recommended as, at present, the activities within a module cannot be adequately sequenced and developed without minor objectives which would function as guidelines.

To achieve this, each academy's instructor must translate the main objectives into minor objectives - let us rather call them topic objectives - which would be more refined and detailed than the objective for the module as a whole.

Each topic objective should specify every aspect of information and skill which is to be learnt or acquired during any particular hour of training.

Clarifying objectives can only serve to increase understanding of both the overall goals and the content of any particular module, which in turn will give a better seafarer.

This "ideal scene" is not to be found at present. In fact, it has been observed that some instructors in simulator-based training have a tendency to combine two or more objectives in one simulator exercise! Cutting corners in this way is not and never has been advisable.

The effective training programme is well-designed, well-planned and clearly expressed. It must provide all the information and instruction necessary to achieve the required objectives in the required sequence.

## 1.5 TRAINING METHODS:

### a. Training in Practice:

When considering which training methods to use, there is one factor which must come before all others: effectiveness. In order to decide which methods to apply one must first of all think about the trainee. How old is he? Does he have any experience, if so what? What education does he have? What will he need to learn most of all? Where do his interests lie? Then one must be aware of which demonstration equipment is available, and last but not least, how extensive are the financial resources available? Only once all these factors are known can an effective training programme be compiled. Some may object that you cannot tailor-make a training programme for every one of the hundreds of thousands of young men who undertake a seafarer's education every year. But why not? Look to every other profession or branch of education and you will find individual treatment to be a fundamental concept in the education of coming professionals.



Once one is familiar with the demonstration equipment available, one must select the appropriate equipment. By appropriate is meant: simulator engines, boat models, life-saving, fire-fighting and navigational aids, ship and cargo equipment. For each of these items there exists various versions, and those selected should correspond with the machinery and equipment which the trainee will be called upon to use.

A practical training programme does not deserve the title if it does not require active participation from the trainee. There are various ways in which this can be provided: a seafarer in training can be assigned to merchant ships for periods of training at sea, he can be assigned to workshops or shipyards, or to shipping company offices. Which of these is chosen (if not all) depends on what is intended for the trainee. Selection of a proper training ground, although important, is not as important as the fact that the trainee gets out into the real world where "shipping" and "seamanship" is practiced. No theory is ever as good as useful as first-hand experience.

Thus, when out at sea, a trainee should be sure to get firsthand knowledge of, experience at and instruction in: navigation, seamanship, how to operate the various machines, how to maintain the equipment on board a ship, how to handle cargo, what shipboard safety entails and any other relevant nautical subject. And he should DO all of these things, not just once or twice, but until he learns about them and begins to feel comfortable with them. If the instruction is good, this practice can only serve to whet the trainee's appetite and make him keen for more.

Training with demonstration equipment can and should be supplemented by films and other audio-visual aids wherever possible and appropriate. An example would be language

training where audio-visual aids can throw the emphasis over to speaking and understanding spoken language which is, after all, the prime reason for teaching seafarers a foreign language.

Theoretical and general sea education must, as has been previously implied if not stated, be based upon the knowledge which the seafarer will require when he embarks upon his career.

## CHAPTER TWO

### MARITIME EDUCATION AND TRAINING IN EGYPT

#### THE ALEXANDRIA MARITIME TRANSPORT ACADEMY

##### 2.1 THE HISTORICAL BACKGROUND OF A.M.T.A. (1)

The A.M.T.A. was conceived in March 1970, a brainchild of the Arab League. During the fifty third meeting of the Permanent Committee for Transportation and Communications, recommendation No. 9 was approved in accordance with decision No. 2631/1970.

What exactly was "recommendation No. 9"? It was a recommendation to establish a centre, to be located in Alexandria, which would provide the training necessary to produce competent personnel to work in the field of Marine transportation, in particular, personnel of Arabian nationality.

The concept had then to be realized. As the centre was to be located in Alexandria, the Arab Republic of Egypt (A.R.E.) was delegated to contact the International Maritime Organization. This United Nations' agency was, and is, an organization which was able to provide both the technical and the financial aid necessary to establish the kind of training centre recommended by the Arab League. At the same time that Egypt made its approach, various other Arab countries were asked to inform the United Nations of their approval and support of the project. Once they had done this, the I.M.O. went about making up a committee of representatives of various organizations. The committee was to decide upon the worthiness of the cause and, more importantly, whether or not to give aid.

The Committee consisted of representatives of various United

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(1) Source: A.M.T.A. Catalogue (1985-1988) Page 17.

Nations agencies besides the I.M.O. including U.N.C.T.A.D. (The United Nations Conference on Trade and Development) and U.N.D.P. (The United Nations Development Programme). Once the Committee was established they visited Egypt, Libya and Sudan. Finally they recommended that the proposed training centre be established and that it should receive technical and financial support, provided that a sufficient number of Arab countries were also willing to participate in the project. To be more precise: Approval was given in January 1972 for the project to be established and the sum \$2.3 million to be allocated in aid, provided the costs involved in running the project were born by the Arab countries involved.

The I.M.O. appointed a project manager who began on March 1st 1972. His name was Captain Mohamed Zakauallah.

The very first meeting of the Board of Directors of the Arab Maritime Transport Academy was held in May, 1972. At this meeting, Dr. Gamal El-Din Moukhtar was appointed Director General of the Academy.

In October 1972 the first students were welcomed by the Academy. the students came from the Arab countries which were participating in the venture. For the first phase of their studies they went to the Merchant Marine section of the Egyptian Naval Academy. Apart from basic courses, the Academy offered upgrading courses for officers and engineers. Besides the basic and upgrading courses, courses were also run in economics, management and law; these are for land-based personnel working in ports and for maritime companies.

Once the Academy was set up and running, it was the duty of the Economic Council of the Arab League to take over the financial "reins" from the International Maritime Organization's Committee. On December 12th, 1972, the Council duly publicized its

decision to make the Academy one of the Council's group "A" affiliated organizations.

There then only remained the legal and formal "loose ends" to be tied up. These were duly knotted, firstly on November 9th, 1974, when the Secretary General of the Arab League, Mr. Mahmoud Riad and the Secretary General of the I.M.O., Mr. C.P. Srivastava, signed the project document for the establishment of the Academy.

Then, just 5 days later, at the main headquarters of the Arab League, the document received the further signatures of the Minister of Maritime Transport and another representative of each of the Arab countries participating in the project.

So, the brainchild conceived in March 1970 received what must be considered its official baptism four and a half years later. Since then the Academy has existed as a legal agency of the Arab League, not only enjoying all the privileges and diplomatic immunities that this entails but, and what is much more important, also providing the means to train and qualify the personnel necessary to man and run the Arab Merchant Fleet.

## 2.2 THE LOCATION OF A.M.T.A.

Due to certain political developments and uncertainties Egypt was, to a certain extent, estranged from the rest of the Arab world in the late seventies and early eighties. One of the consequences of this estrangement was the decision of the remaining Arab countries to transfer the Academy from Egypt to an Arab country in the Gulf. The Egyptian Government, however, refused to accept the transfer of the Academy as a national Egyptian institution, with a multi-national scope.

It is hardly surprising that the Egyptian Government did not wish to part with the Academy. It had, after all, provided the land, buildings and equipment for the Academy, and the majority of the personnel were Egyptian.

Today, the Academy has its temporary premises in Sidi-Bishr while it utilizes the workshops and practical training facilities in Abu-Qir. Once the main campus is completed in Abu-Qir, it will be able to realize a high standard of accommodation for shipboard personnel.

In the meantime, curricula and syllabi are under continuous development and moral assistance from the Egyptian Government in order to maintain the Academy's prestige as a specialized Arab organization.

### 2.3 WHAT EDUCATION AND QUALIFICATIONS CAN THE ACADEMY OFFER? AND WHO IS ELIGIBLE?

The Academy offers educational and training activities within various fields. It begins by receiving students who have recently acquired exam passes at G.C.E. level. These students are admitted to the Basic Studies courses so as to educate, train and qualify them to work at sea as Deck, Engineering or Radio Officers. In doing so, the Academy strives to provide the students not only with the knowledge of maritime sciences and the techniques they are required to know, but also the mental, physical and social abilities and skills required to obtain an international certificate of competency.

As suggested above, an academic qualification in itself is no guarantee that a student will be a successful sailor. For this reason, the Academy places great emphasis on getting students used to life at sea during their training and, what is more, impressing upon them a feeling of being part of a team and a feeling of pride in their profession.

As the Academy employs an "open channels" system of education, students have the opportunity to pursue their studies to University level. In particular the students who are found to excel on the basic courses are encouraged to take up advanced

academic sciences and/or various maritime sciences and techniques which lead to a Bachelor of Science Degree; a degree in Maritime Transport, Marine Engineering Technology or Marine Electronics Technology would be possible.

Besides G.C.E. graduates, the Academy also receives and trains Deck Officers and Marine Engineers, who satisfy the sea service conditions laid down in the regulations. Those may wish to be promoted to a higher grade within their field. The Academy provides them with an integrated theoretical education with practical experience which enables them to sit for the higher competency examinations, which in turn will qualify them for the specialized positions they are seeking.

Radio officers can also receive a higher education; in their case leading possibly to a Diploma in Maintenance of Radar and Electronic Navigational aids, or simply a higher certificate of competency than that which they already possess.

"Landlubbers" may also be accepted, providing they work in establishments which specialize in maritime affairs. Such establishments would be shipping companies or any organization involved in maritime transport. At the academy, students with such a background can obtain specialized knowledge in the fields of Management and Economics of Maritime Transport, Marine Insurance or Maritime Law of Foreign Trade and Maritime Transport.

The Academy is aware of the social barriers that exist between ratings and officers, and have as one of their prime goals better integration of the personnel working in the field of Maritime transport. Thus holders of intermediate technical qualifications may, again in accordance with the regulations which pertain to their particular field, receive training which will qualify them as cooks, stewards, mechanics, seamen or electricians. These qualifications and the pride and confidence they imbue, go a long way to reducing social gaps.

In accordance with the wishes of the organizations and countries which sponsor the Academy, various educational programmes are specially designed at the Academy (still within a maritime context) to assist neophytes improve their performances.

The Academy also has research and consultation facilities so as to fulfil another of its prime goals: that of making available its experiences and knowledge to any organization or institution that may benefit from it.

The distribution of the students among the different subjects available for study can be seen from the following table. The total number of students enrolled in the various Academy departments in its first year (1972-73) was 733. The number has risen steadily since reaching 2500 in the year 1983-84.

It is note worthy that since 1978, a number of cadets from African countries have joined the Academy. In the present academic year, 1987-88, cadets from Liberia, Nigeria and Ghana have enrolled as full-time students. These students are sponsored either by their own governments, by other delegating organizations or through the Arab Fund for Technical Assistance to the African countries.



## 2.4 ORGANIZATIONS COOPERATING WITH A.M.T.A.

No organization, particularly within the world of education can or does exist alone. So, too, the Alexandria Maritime Transport Academy. Its numerous ties with both national and interantional organizations could be categorized chronically, according to the nature of the tie, or geographically. I have chosen to group them as follows:

### 2.4.1 UNITED NATIONS ORGANIZATIONS:

- A. The International Maritime Organization (IMO) must be considered to be of prime importance to the A.M.T.A. as it has been the general supervisor for the whole project, since its inception in 1972. The original agreed-upon period of IMO's participation was extended in 1979 to extent to 1986, during which time IMO's assistance was particularly directed to the Examination Unit and the Sea Training Sector.

IMO experts helped the faculty in planning and implementing the curricula for the Nautical, Engineering and Radio-Communication Studies. IMO organized study visits for senior members of the educational sector, and some members of the faculty were awarded educational and/or training scholarships.

IMO has also provided the Academy with some more tangible aid, including a variety of training equipment useful in Nautical, Marine, Engineering and Radio-Communications studies.

The assistance has not been completely one-sided, however, IMO has been able to reap the benefits of its efforts, in appointing several faculty members of the Academy as IMO experts in other similar

projects recently embarked upon in some African and Asian countries.

- B. The United Nations Conference on Trade and Development (UNCTAD) (1) collaborated with IMO in establishing courses at the Academy in Maritime Economics and Management Studies. This organization, like IMO, awarded a number of educational scholarships to members of the faculty in Maritime Economics and Management Studies.
- C. Like UNCTAD, The International Labour Organization collaborated with IMO to establish training courses for seamen at the Academy. Unfortunately their collaboration was brought to an end in 1977.
- D. Finally, mention must be made of the United Nations Development Programme (UNDP). This was the organization which, once the United Nations had given its approval for the A.M.T.A. project to go ahead, provided the necessary financial assistance to start the Academy.

2.4.2 The second group can be roughly characterized by the term ARAB ORGANIZATIONS:

- A. In 1977, a group of various Arab organizations offered the Academy \$50,000 to purchase training aids which were particularly needed in the field of Tanker Operation.
- B. The Arab Fund for Technical Assistance of Arab and African Countries is a provider of scholarships for

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(1) Source: A.M.T.A. Catalogue (1985-1988) Page 231

those wishing to study at the Academy. Not to any Tom, Dick or Ahmed, of course, nevertheless, as of the Academic year 1984/85, the Fund had offered over 120 scholarships. As may be clear from the full title of the Fund, African students can also receive scholarships.

- C. The Arab Maritime Transport Academy is a member of the Arab Association of Collegiate Registers and Admission Officers (AACRAO). The Association comprises those universities which apply the credit hour system, and it is the Academy's intention to integrate this system to its own present system. The Association held its seventh annual conference at the Academy in Alexandria in April, 1985.

#### 2.4.3 AFRICAN ORGANIZATIONS:

- A. A mutually beneficial and regular contact has been established with the Organization of African Unity (OAU). The contact revolves around the maritime affairs of West African countries.
- B. A group of Academy faculty members, headed by the First Deputy Director, made a considerable contribution in the establishing and planning of the programmes at the Academic Regionale des Sciences et Techniques De La Mer (ARSTM), Ivory Coast. This is an example of the collaboration which was originally intended by IMO for the Academy.
- C. The Academy also has a team of faculty members presently developing the Maritime College in Nigeria, and another delegation running and developing the Regional Maritime Academy, Ghana.

- D. The Academy plays a role in the Ministerial Conference of Western and Central Africa on Maritime Transport (MCWCA) where it participates in the Conference's annual meetings, but only as an "observer".
- E. The Academy receives help from the Economic Commission for Africa (ECA) which plays an active part in the modernization and expansion of the Academy.
- F. Great wealth of knowledge can be procured through exchange visits, and the Academy arranges such visits with the following Ministeries and Authorities:
- The Ministry of Transport and Communications, Sudan.
  - Sudanese Shipping Lines & the Sudanese Port Authority.
  - The Ministry of Transport and Communications, Kenya.
  - The Mombassa Port Authority & Bandary College, Kenya.
  - The Ministry of Maritime Transport and Communications, Tanzania.
  - Tanzanian Shipping Lines and the Zanzibar Shipping Company, Tanzania.
  - The Ministry of Transport and Maritime Affairs, Malagash, and the Institue of Mjunga.
  - The Ministry of Power, Transport and Communication, Zambia.
  - The Merchant Marine Department, School of Nautical Studies, Mozambique.
  - The Maritime and Transit Services Corporation, Ethiopia.

- The Marine Transport Authority and Ethiopian Shipping Lines.
- The Murchius Marine Authority.

#### 2.4.4 FOREIGN ORGANIZATIONS:

Whereas A.M.T.A. is mainly of assistance to developing countries, it is more often than not the receiver of assistance from developed countries.

- A. The Governments of Japan and the Arab Republic of Egypt have concluded an agreement whereby A.M.T.A. receives technical aid. Indeed, the Japanese government has called upon the Japan International Cooperation Agency to supervise the implementation of the items in the agreement, which provides the Academy with: machinery, equipment and training aids for the Seaman's Training Centre and the Nautical Studies and Marine Engineering departments, in the fields of tanker operation and two-stroke diesel engines.
- B. The Academy has also received financial aid from the United States of America. The benefactor was "U.S. Aid", which provided a subsidy that went to setting up a computer center, increasing the capacity of the Automatic Control Laboratory Computer and purchasing the latest photocopyng machine. It has also offered a number of scholarships for Academy Faculty members to study for higher degrees in America, which naturally have been gratefully accepted.

At present, an agreement is in the process of being formulated which will provide the Academy with new workshops in El-Montada and new courses in the Department of Maritime Studies.

- C. The Academy has also concluded an agreement with Engineering and Maritime Institute of the Germany Democratic Republic, which is based in Warnemünde. (1) Although the agreement is about the exchange of expertise, and is brought about by reciprocated academic visits, it is clearly the Academy's Faculty Members that have most to gain at present, benefiting greatly from the German Democratic Republic's advanced sea-training education. However, it is also a salute to the Academy's rosy future, that countries such as G.D.R., U.S.A. and Japan are investing in its future.
- D. As the World Maritime University (WMU) has been set up by the I.M.O., it is quite logical that it and the Academy should enjoy close collaboration. The background connections to I.M.O. are not the only reason; the Director General of the Academy, Dr. G. Mokhtar is a member of WMU's Board of Governors.

I am one of several Faculty Members presently pursuing my studies at the World Maritime University, in an attempt to attain a higher degree.

- E. The procedure of sending Faculty Members to foreign countries does not stop at Sweden and G.D.R. The Academy also cooperates with British and American Universities and other Institutions of Higher Education. Professors from such institutions are invited to the Academy to give series of lectures and exchange views on the Academy's curricula and

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(1) Source: A.M.T.A. Catalogue (1985-1988) Page 234

syllabi with Faculty Members, in order to continually improve and expand the range of educational activities at the Academy.

To be more precise, the British institutions are:

- The University of Wales, Southampton University, Strathclyde University, Glasgow University, Reading University, London Polytechnic, Plymouth Polytechnic, Liverpool Polytechnic and the South Shields Marine and Technical College.

The American institutions are:

- The State University of New York, Columbia University, The University of Pennsylvania and George Washington University.

While we are on the American front, it should be added that the Academy is a member of the American Association of Collegiate Registrar and Admission Officers, and is represented at its meetings. The purpose of the Academy's participation is to strengthen its educational system in any way which may become apparent through the enlightenment of such auspices.

#### 2.4.5 Miscellaneous:

The Academy continues to broaden its horizons and establish new, valuable contacts in the world of Maritime Education, so no list of institutions collaborating with the Academy can ever be complete. Here, however, is a list of the organizations which the Academy "deals with" (for want of a better phrase) which have so far not been

mentioned: (1)

- Arab Fund for Economic and Social Development
- Arab Maritime Petroleum Transport Company (AMPTC)
- Norwegian Agency for International Development (NORAD)
- The State University of New York Maritime College (SUNY)
- The American University at Cairo (AUC)
- Netherland Maritime Institute, Netherlands
- Govan Shipyard, United Kingdom
- Galbraith Wrightson Limited
- Norwegian Shipowners Association



## 2.5 THE SEA TRAINING SECTOR:

The most important part of the Arab Maritime Transport Academy is the Sea Training Sector. As I stressed in the introduction, actually being at sea and learning through experience are the most essential ingredients of any sailor's training. The Sector is the part of the Academy which provides cadets with their sea-training on board ships. The aim of the stay on the ship is to develop the cadets' skills and attitudes and raise their competence to a level where they can work as marine officers in full compliance with international standards.

The Sector is therefore responsible for the planning and execution of all the sea-training cruises, which are carried out on the Academy's own training ship. Some of the longer sea-training periods are carried out on board merchant marine ships, in which case the Sector is responsible for the coordination and supervision of these ventures.

There are the three sea-training phases that the Academy offers:

### 2.5.1 Short Sea-Training Phase:

Students join this programme if they are either in their second semester of Basic Studies, or they are students of the Seaman's Training Centre.

The Programme is carried out in the Red Sea. The cruise lasts about a fortnight and is offered four times a year. Each student is given the opportunity to sail on the ship for one cruise.

As this is the first and most basic training programme offered, the main activities are concerned with getting acquainted with the different parts of the ship.

Furthermore, students are made familiar with all the safety precautions and measures, including the fire-fighting procedures, which are necessary to maintain safety of life at sea.

#### 2.5.2 Guided Sea-Training Phase:

This also takes place on the Academy's Training Ship, the "Aida III". The students admitted to this programme are limited to Deck and Engineering cadets who have completed the second phase of the Basic Studies.

This second programme demands much more of the students. It lasts for four months, not least because the students have to complete a training assignment. Faculty members are present to supervise and guide the students through their assignments.

As it lasts four months, the programme is only offered twice a year, in March and July.

The programme consists of four separate cruises during which a total of 710 hours are spent in training the various disciplines. These hours are distributed as follows:

- 150 hours training in Seamanship
- 300 hours watchkeeping on the Bridge
- 50 hours training in Navigation and Chartwork
- 30 hours Cargo-handling
- 10 hours in the Engine Room
- 20 hours training in Stability Calculations
- 50 hours training in Fire-fighting and Survival-at-sea operations.
- 100 hours training in navigational aids and instruments

In terms of examination requirements, the four months are considered equivalent to six months of sea-service.

### 2.5.3 Long Sea-Training Phase:

This phase is intended to compliment the guided training period of the deck and engineering cadets.

The students carry out their training assignments on board merchant marine vessels, and while doing this, they send regular reports to the Sector, to keep them informed as to their progress. The reports are assessed at the Sector and returned to the students with comments so that their training procedure is continually adjusted and progressed.

The assignments which the students are expected to do usually include the following disciplines:

#### Seamanship and Ship Maintenance (300 hours)

Deck equipment - stage gang way - bosun's chair-pilot ladder-rope work - knots and hitches - strength of ropes, wires, chains and their calculations - marring lines of a ship - types of blocks and shackles - anchor work - derrick work and fitting gears - preparation of heavy derrick - electric windlass - capstan helm - steering orders - windlass steering gear - corrosion - maintenance - paint work deck officer's responsibilities and duties.

#### Watch-Keeping Duties (450 hours)

Bridge layout - sailing plan - the chronometer and the sextant - the nautical almanac and its uses - gyro compass - auto-pilot - knowledge of automatic pilot

systems and procedures - ship's logs - errors of the ship's logs - radio signals - radar as an aid to get ship's position.

#### Training in Fire-Fighting (100 hours)

Triangle of fire - ignition temperature - self ignition methods of fire extinguishing - causes of fire accidents on board ships - methods of fire prevention - portable fire extinguishers - fire hoses - their use and maintenance - breathing apparatus - fixed installations of fire-fighting - control centres of fire - damage control - organization of fire-fighting teams - fire-fighting drill - muster list.

#### Survival at Sea (104 hours)

Different emergency cases liable to occur on ship such as collision, fire-drawing - types of life-saving appliances available on board. Procedures during emergencies and before abandoning ship - man overboard drill - uprighting capsized rafts - practical drill (for lifeboats - rafts - bouy - jackets).

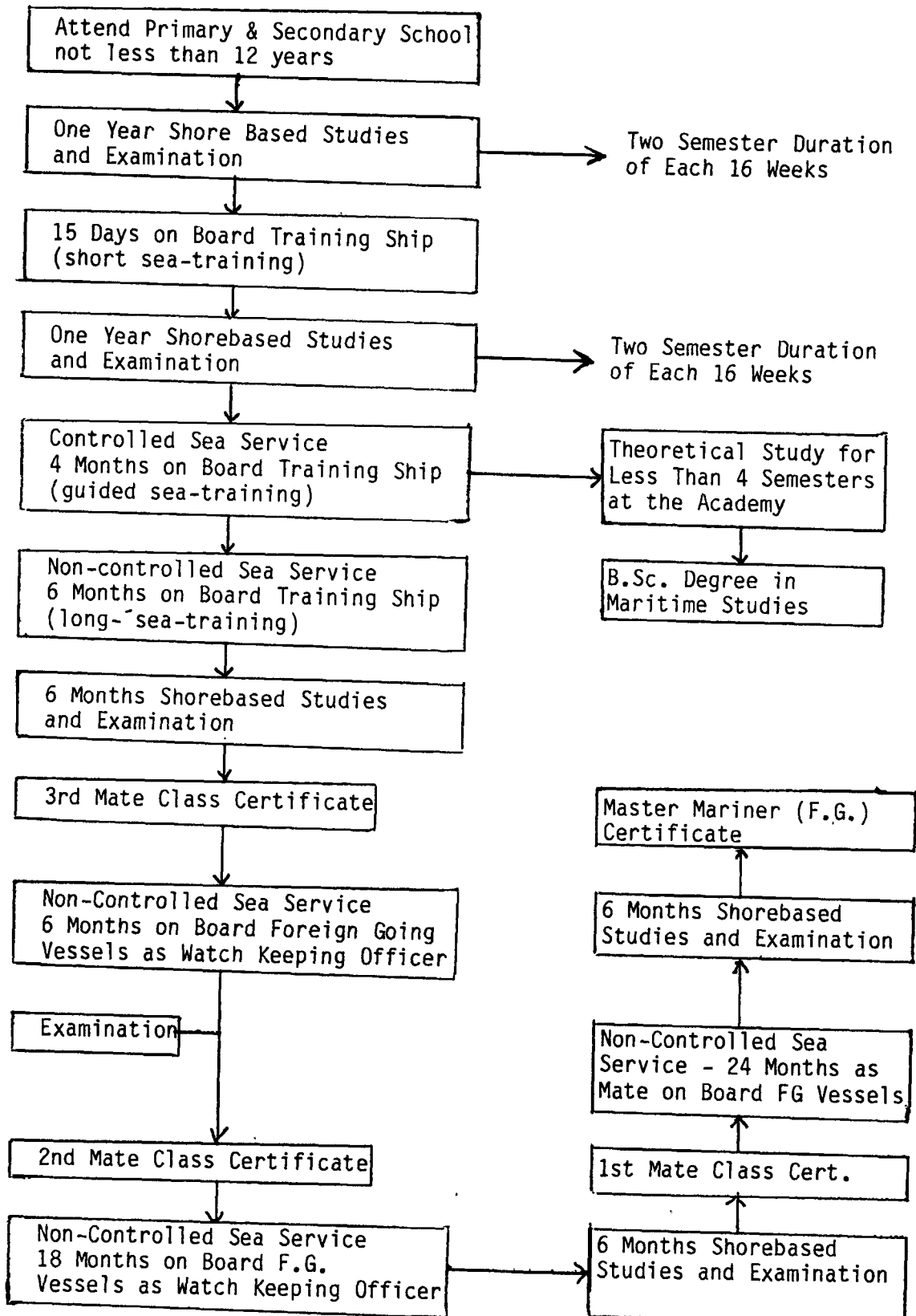
#### Cargo Work (200 hours)

Review of cargo gear, rigging and safety precautions - types of cargo - stowage and care of cargo - ventilation theory - preparation for loading/discharging - cargo documentations - damage reports.

#### General (50 hours)

Bridge movement book - learn the international cods of signal flags - emergency steering systems - collision regulations - taking and sounding fresh water.

**STRUCTURE OF MARITIME EDUCATION AND TRAINING OF  
MASTER MARINERS IN EGYPT**



**STRUCTURE OF MARINE EDUCATION AND TRAINING OF  
MASTER MARINERS IN EGYPT**

SHOREBASED STUDIES:

- General Education Requirements: Attend Primary & Secondary School for not less than 12 years.
- Average entrance age: 19 years
- Total years of studies: 8 years
- Total months of studies: 53 Months
- Total average weeks per academic year including assessments: 40 weeks
- Average number of lectures per week: 38 lectures
- Duration of lectues: 45 minutes

SEA SERVICES:

- Total net years non-controlled: 4.5 years
- Total net months controlled: 16 months
- Total gross years required: 6 years

GENERAL:

- Age to master mariner certificate: 28 years
- Total Certificates of competency: 4

TOTAL CERTIFICATES OF COMPETENCY:

- Master Mariner (F.G.)
- 1st Mate Class (F.G.)
- 2nd Mate Class (F.G.)
- 3rd Mate Class (F.G.)

ADDITIONAL COURSES/CERTIFICATES:

- Radio Telephone
- Safety Operation
- Fire-fighting
- Radar Navigation
- Ship's Captain Medical

<u>Academic Year</u>	<u>72/73</u>	<u>73/74</u>	<u>74/75</u>	<u>75/76</u>	<u>76/77</u>	<u>77/78</u>	<u>78/79</u>	<u>79/80</u>	<u>80/81</u>	<u>81/82</u>	<u>82/83</u>	<u>83/84</u>
Basic Studies	144	222	352	636	801	958	997	923	878	965	826	1055
B.Sc. Studies	-	-	-	-	-	-	-	-	-	-	83	103
Upgrad. Studies												
Deck Officers	136	158	204	360	379	374	411	325	218	211	217	175
Marine Engineers	-	31	113	219	239	313	498	389	277	268	274	243
Maritime Economics & Management	385	318	291	236	192	194	83	150	234	194	153	169
Specialized Seamen	68	114	67	121	142	126	98	116	176	182	162	277
Other Courses	-	-	-	-	-	-	107	102	282	366	386	478
<b>TOTAL</b>	<b>733</b>	<b>843</b>	<b>1027</b>	<b>1572</b>	<b>1753</b>	<b>1965</b>	<b>2104</b>	<b>2005</b>	<b>2065</b>	<b>2186</b>	<b>2137</b>	<b>2500</b>

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Source: A.M.T.A. Catalogue (1985-1988), page 20.



## CHAPTER THREE

### MARITIME EDUCATION AND TRAINING IN DEVELOPED COUNTRIES

#### 3.1 INTRODUCTION:

In chapter one, an attempt was made to give a broad generalized picture of the factors that have contributed to create the maritime world as it can be seen today. This included historical, social and political influences, but so far the picture is merely a general one. The writer is therefore convinced that it is important to fill in some background colours before the attempt is made to focus on the foreground.

This chapter deals with the systems which developed countries use to educate and train students to become competent sailors, as it is they who set the standards for developing countries' maritime educational training.

We will see that, although certain basic principles are common to every country, each country does have its own particularities. These arise as often as not from the country's general education system, i.e. what applied to a student at university (whether studying arts or science) will often apply to a student undergoing a maritime education in terms of length of studies and the arrangement of the curriculum.

We will start by looking at maritime education and training in the Federal Republic of Germany.

### 3.2 STRUCTURE OF MARITIME EDUCATION AND TRAINING OF MASTER MARINERS IN THE FEDERAL REPUBLIC OF GERMANY

#### SHOREBASED STUDIES:

- General education requirement: Completion of secondary education (with examination).  
6 years.
- Average entrance age: 18
- Total years of studies 5
- Total net months of studies 51
- Total average of weeks/academic year, including assessments: 37
- Average number of lectures/week: 30
- Duration of a lecture: 45 minutes

#### SEA SERVICE:

- Total net years non controlled: 2
- Total gross years required: 3

#### GENERAL:

- Total net years up to master mariner: 7
- Total gross years up to master mariner: 8
- Age to master mariner certificate: 26
- Total certificates of competency: 3 (Master Mariner, Chief Mate, 2nd Deck Officer)
- Required certificate of competency to serve as Chief Mate: Master Mariner
- Additional Courses/Certificates after basic studies: Radar Navigation/ARPA - Oil gas chemical tankers courses  
as required (advanced).

### 3.2.1 Training System

The training is given to secondary school leavers usually at the age of 18 years. It is extended upto not less than six years, and grouped into three phases:

1. Two years pre-sea training.
  - a. Nine months shipboard training officer apprentice.
  - b. Fifteen months shipboard training officer assistant.
2. Three years nautical college.
3. Two years non-controlled sea service.

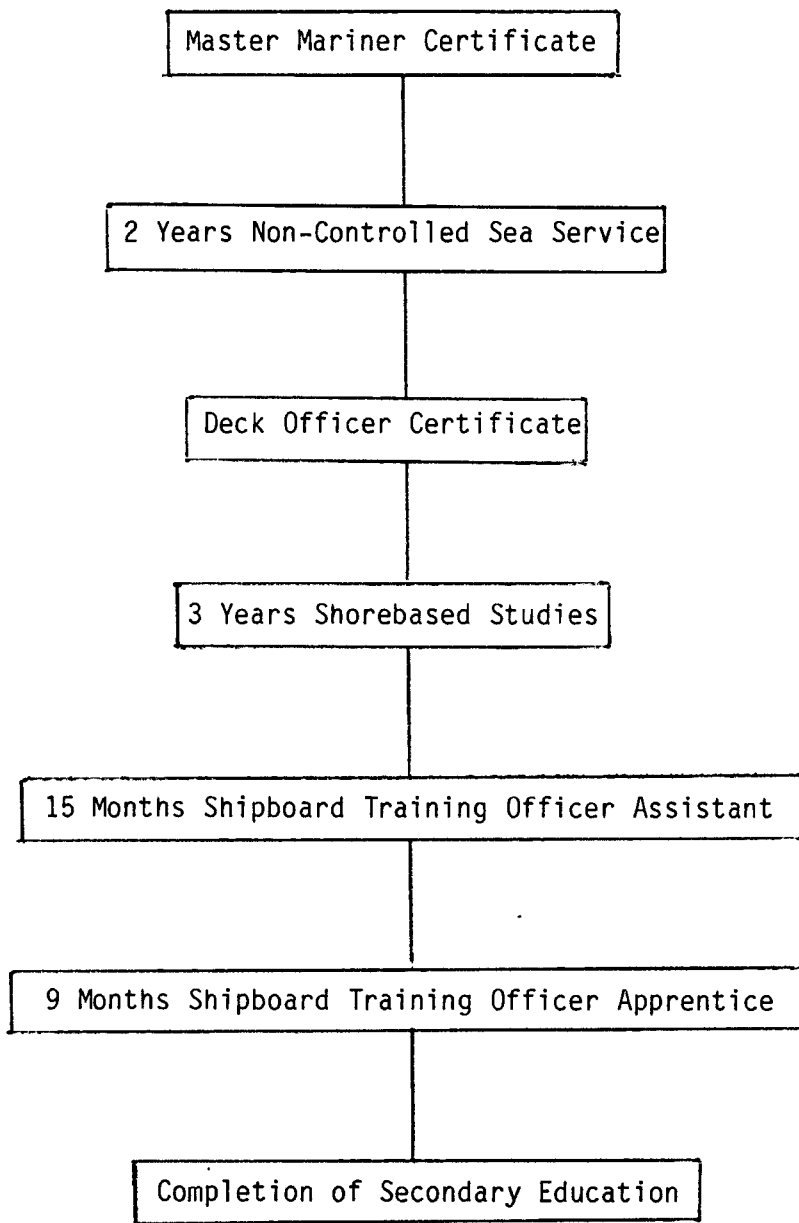
#### 3.2.1.1 Pre-Sea Training Curriculum:

##### Controlled Sea Service:

Basic Seamanship	350 hours
Safety at Sea	200 hours
Navigation, Rules of the Road	200 hours
Ship's Maintenance Work	430 hours
Basic Marine Technology	150 hours
Fire Fighting	100 hours
General Subjects	300 hours

#### 3.2.1.2 Seagoing Services:

This is a non-controlled sea service, and such a service must be spent on board seagoing ships in the deck department in the capacity of mate apprentice and deck officer.



**FIGURE 3.1 - STRUCTURE OF MARITIME EDUCATION AND TRAINING OF MASTER MARINERS**

### 3.3 THE TRAINING SYSTEM FOR THE EDUCATION OF MATES AND MASTERS IN DENMARK:

#### 3.3.1 Introduction:

The training which is open to any young man or woman having attended primary and secondary schools for not less than 9 years is grouped into three phases:

1. Pre-sea training,
2. Seagoing service, and
3. Nautical college.

#### 3.3.2 Pre-Sea Training:

Pre-sea training is given to young men and women usually between 16 and 20 years of age who are physically fit and have attended primary and secondary schools for not less than nine years. This basic training is given at shore-based boarding schools or on board sail training vessels. The duration is five months during which time trainees are taught according to the curriculum shown below.

#### CURRICULUM - PRE-SEA TRAINING SCHOOLS

General Subjects	100 hours
Ships' Machinery including reading of diagrams	60 hours
General Workshp Practice	120 hours
Navigation, Rules of the Road, Visual Communication	40 hours
Life Boat Drills	80 hours
Safety at Sea	40 hours
Fire Fighting	20 hours
Basic Seamanship	80 hours

Basic Marine Technology	40 hours
Ship's Maintenance Work	140 hours
Basic First Aid and Hygiene	20 hours
Gymnastics and Swimming	60 hours

**T O T A L** **800 hours**

In addition to above-mentioned 20 hours in fire fighting which are theoretical lessons the students carry out drills in fire fighting for one day at a fire fighting training centre.

### 3.3.3 Seagoing Services:

Seagoing service must be on board ships of 20 tons or more in the deck department as mate apprentice or as ordinary seaman or alternate service in the deck and engine department as ship's assistant. The required service may be obtained in four different ways:

- A. Service as mate apprentice in the deck department on board merchant ships of 200 tons or more for 20.5 months of which 12 months must be in foreign trade. During the service as apprentice training onboard must take place according to a training scheme approved by the directorate for maritime education and controlled by logging completion of individual parts of the training scheme in a cadet's training manual which must be presented to the directorate before admission to nautical college.
- B. Service onboard seagoing ships of 20 tons or more in the deck department for 18 months of which 12 months must be as ordinary seaman onboard merchant

ships of 200 tons or more in foreign trade concluded with a 2.5 months Final Vocational Training Course for deck crew at a shore-based training school.

- C. Service and concluding course as under B above but service as ship's assistant.
- D. Service onboard seagoing ships of 20 tons or more in the deck department for 36 months of which 12 months must be as ordinary seaman onboard merchant ships of 200 tons or more in foreign trade. A five-month Basic Training Course at an approved pre-sea training school may be included in the 36 months service.

Danish students will in the future have to obtain their sea-going service as described under A, B, or C above, but foreigners complying with D will be accepted for entrance to nautical college.

The above-mentioned Final Vocational Training Course for deck crew or for ship's assistants after a Basic training Course at an approved pre-sea training school and 18 months service onboard sea-going ships qualifies the trainee to sign on as able seaman or experienced ship's assistant. The Curriculum for the course is shown below.

#### CURRICULUM - FINAL VOCATIONAL TRAINING COURSE

Safety at Sea, Safety at Work, Fire Fighting	100 hours
Ship's Machinery and Knowledge of Electricity	60 hours
Workshop Practice and Ship's Maintenance	120 hours
Navigation and Rules of the Road	20 hours
Practical Seamanship	30 hours

Marine Technology	20 hours
Hygiene	10 hours
General Subjects	40 hours

**T O T A L** **400 hours**

In addition the trainees attend a fire fighting course for three days at a fire fighting training centre.

#### 3.3.4 Nautical College:

The latest amendment in June 1985 to the Merchant Shipping Act on Education and Seafarers abolished the Mate's Examination Certificate so that the only Examination Certificate qualifying for competency as Mate is now the Master's Examination Certificate. Preparation time at the nautical college for the final examination is three years and is normally completed without break.

Admission to the nautical college requires the pre-sea training and seagoing service as described earlier to be completed, whereas there are no entrance examinations required for admission to the beginning of the first term of 12 months.

In the first six months of the first one year term only basic subjects like mathematics, physics and language are taught. Students on sufficient level of attainment may skip the first six months provided he or she passes an entrance examination. Likewise students may skip the first six months in this way, whereas only a very few are on sufficient standards to skip the first 12 months. Curriculum for the three one year terms as well as the number of examination marks are shown in the



table shown under Figure 3.2

### 3.3.5 Certificates of Competency:

On completion of the education and having successfully passed the required examinations and sight tests candidates acquire certificate of competency as Mate, 2nd Class. This certificate entitles the holder to be watchkeeping officer of any ship without limitations and Chief Mate of ships of less than 1600 tons.

After one year's service in a position where this certificate is required a certificate of competency as Mate, 1st Class is issued. This certificate entitles the holder to be Chief Mate of any ship without limitations.

After two years' service in a position where certificate as Mate, 2nd Class is required of which one year as Chief or only Mate a certificate of competency as Master may be obtained. This certificate entitles the holder to be Master of any ship without limitation.

Certificate of competency as Master may alternatively be obtained after five years service in a position where certificate as Mate 2nd Class is required of which three years as Second Mate in ships of more than 1600 tons.

Subject	First year hours	Second year hours	Third year hours	Total hours	Examina- tion written	Oral
Danish Language	160	120	80	280	1	1
Computer Science		40	80	120		1
English Language	240	120	200	560	1	1
Physics & Chemistry	360	160		520	1	1
Communication & Rules of the Road	40	100	80	220	1	2
Ship's Machinery and Fire Fighting		100		100		1
Mathematics	480			480	1	
Meteorology & Oceanography			140	140	1	1
Navigation	120	380	300	800	3	2
Ship's Business			160	160	1	1
Marine Technology, Stability, Cargo Handling, etc.		300	280	580	1	1
Medical Care		80		80		1
Maritime Law			160	160	1	1

**FIGURE 3.2 - THREE YEARS CURRICULUM**

### 3.3.6 Structure of Marine Education and Training of Master Mariner in Denmark:

#### SHOREBASED STUDIES:

- General education requirement: attended primary & secondary school for not less than 9 years.
- Average entrance age: 18
- Total years of studies: 5.1
- Total net months of studies: \* 53
- Total average weeks per academic year including assessments: 40
- Average number of lectures per week: 38
- Duration of a lecture: 50 minutes

\* Including 5 months of compulsory pre-sea training course, and 20 months of controlled sea-going service as mate apprentice with a work book.

#### SEA SERVICE:

- Total net years non controlled: 3
- Total gross years required: 5

#### GENERAL:

- Total net years up to Master Mariner: 8
- Total gross years up to M. Mariner: 10
- Age to Master Mariner Certificate: 28
- Total Certificates of Competency: 3 (Master Mariner, Mate 1st Class, Mate 2nd Class)
- Required Certificate of Competency to serve as Chief Mate: Chief Mate
- Additional courses/certificates after basic studies: Radio telephone operator's certificate oil, chemical gas tanker safety and operation, as required. And 13 different optional courses for refreshing and updating.

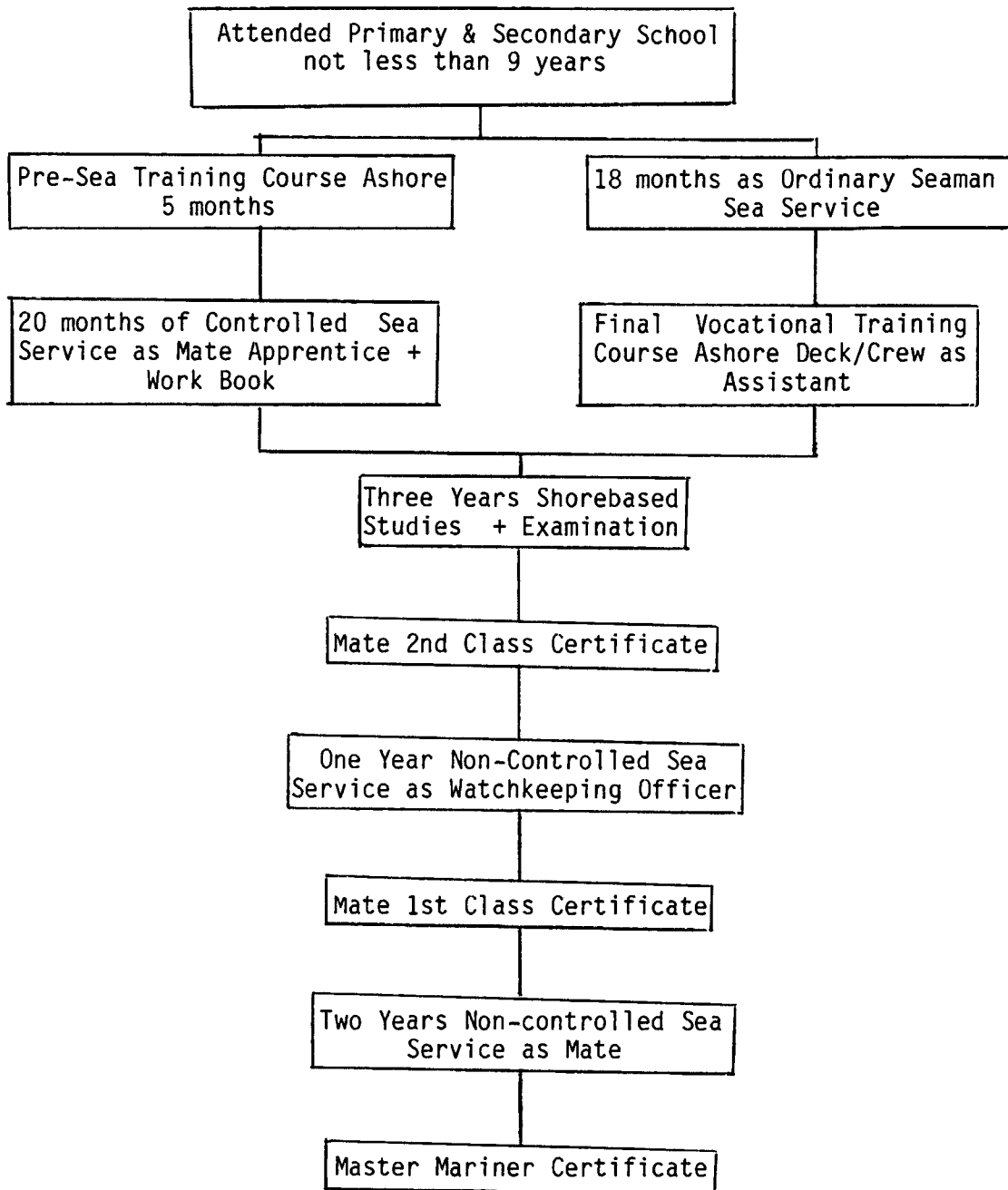


FIGURE 3.3 - STRUCTURE OF MARITIME EDUCATION AND TRAINING OF  
MASTER MARINERS IN DENMARK

### 3.5 MARITIME EDUCATION AND TRAINING IN THE NETHERLANDS:

#### 3.5.1 Introduction:

In the Netherlands two ways are leading to a certificate of competency. One way is through state-examinations, the other is through school examinations.

#### 3.5.2 State-Examinations:

Nowadays this system is often referred to as "second chance education". It is of the so-called "sandwich type".

The examinations are conducted by the Board of Examiners (BoE) in The Hague without participation or involvement of the schools or the regular teacher. There are no requirements regarding preparatory courses, except the possession of the preceding certificate in some cases.

After the exam the successful candidate receives a certificate of competency if he also meets any other requirements, such as a seetime and/or a radar certificate. If he does not meet the other requirements he receives a declaration that he passed, which can be exchanged with the certificate of competency later.

Since the only requirement is to pass the examination, courses preparing candidates for these examinations exist in most schools of the types (MVE) and (HVE), as well as in 8-10 private institutes.

This explains why the shore-based training periods are absent in the following flow-diagram (Figure 2).

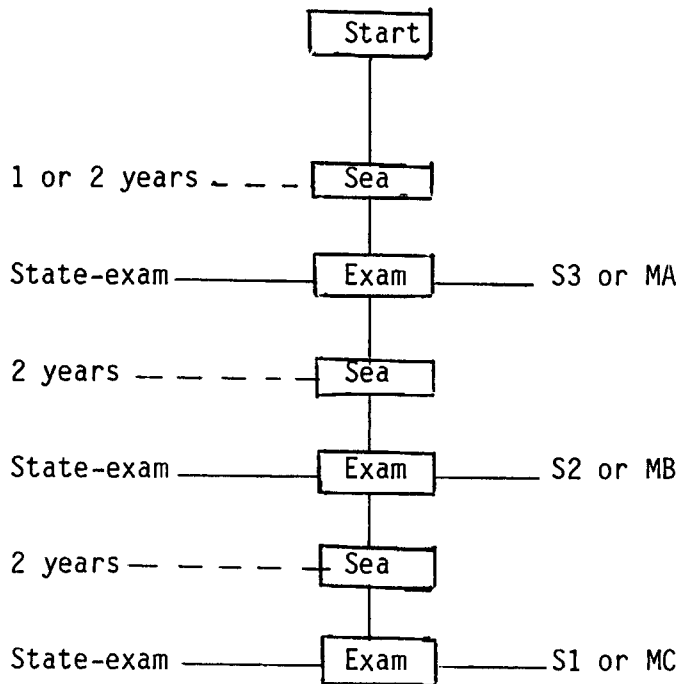


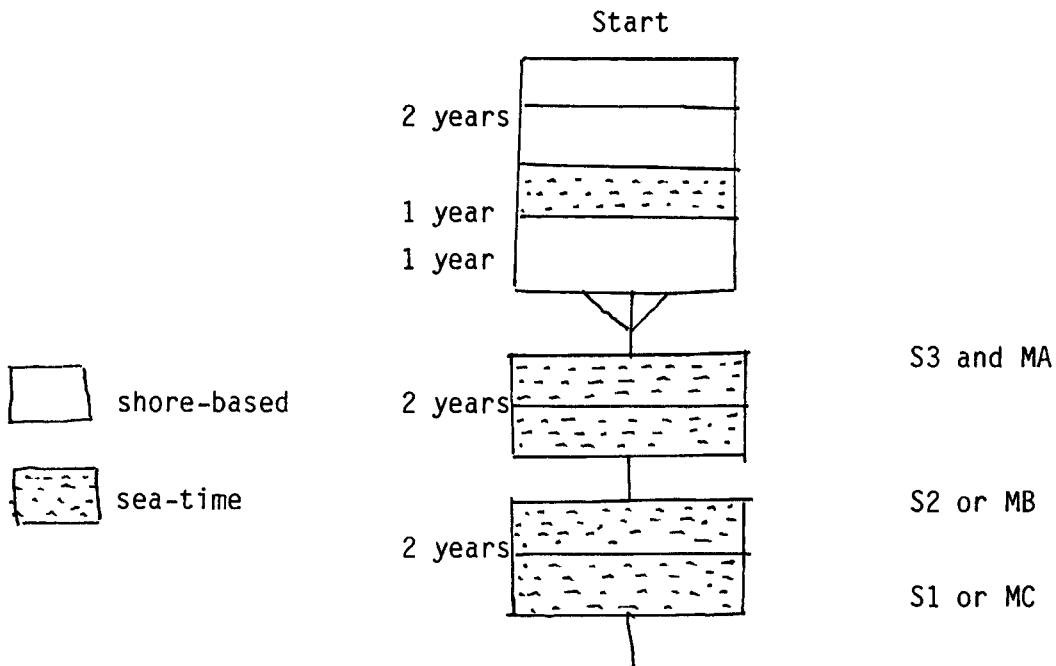
FIGURE 2

### 3.5.3 School Examinations:

During the Seventies it became possible to pass a final school exam and to receive (without further examinations) a certificate if the other requirements (sea-time, etc.) had been met.

Two mono-valent systems developed. One for unlimited (part of HVE) and one for limited (<6000 gt or <3000 kW) ocean going certificates (part of MVE). The person possessing a limited certificate could get an unlimited one by continuing in the sandwich system, because there was no possibility of joining higher education with a limited certificate.

Now the mono-valent system for unlimited certificates is on its way out. Since 1985 all new students have followed a bivalent course (4 years) for "maritime officer". (Figure 3)



**FIGURE 3 - FLOW DIAGRAM OCEAN GOING (UNLIMITED)**

During the first two years there is no distinction between the subjects which each student attends. At the end of those years he/she is supposed to have the knowledge required of a watchkeeping officer, be it in the engine room or on the bridge.

Each year every student participates in a two-week trip onboard the training vessel of the ministry of education.

During the third year (320 days), the student serves as

a trainee onboard a Dutch vessel. He/she has to keep a work book. This work book is assessed by the school and by a member of the BoE.

During the practical year the student is ment:

- To gain experience in all aspects of the operation of the ship the trainee is working on.
- To compare critically the knowledge with daily practice onboard acquired at school.

The practical year should, apart from providing the required seetime:

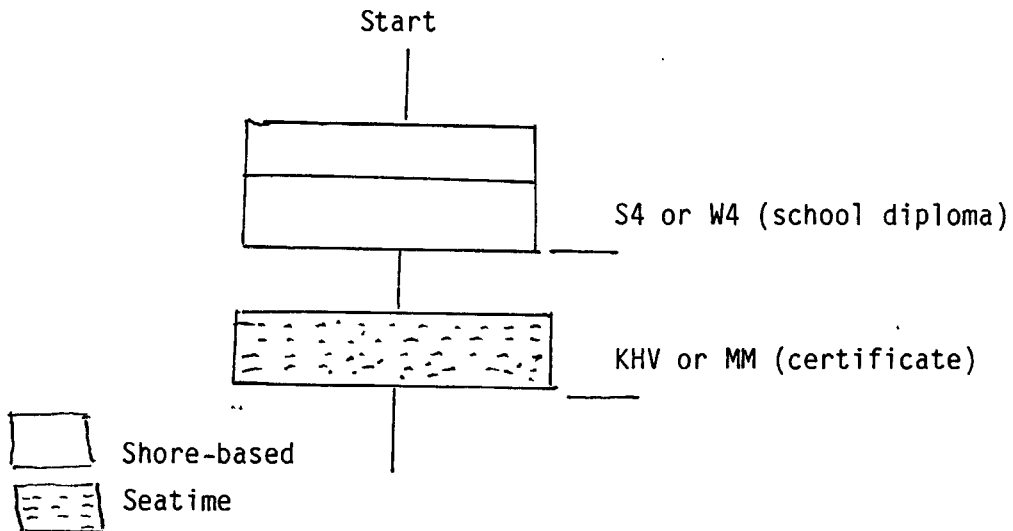
- Support and complement the lessons in practical sense.
- Prepare the student for his/her future position.

The fourth year is for specialization in nautical or marine engineering subjects. The student has to produce a project in his/her specialization.

At the end of the 4th year and after passing the tests and examinations the students receive a BSc degree from the Ministry of Education and two watchkeeping certificates from the Ministry of Transport.

Figures 4 and 5 show the time-frame in which both courses take place.





**FIGURE 4: TIME FRAME**

An important difference with the 4-year system above is that the students go to sea after they finish school. This means that they are on their own. During their required seetime they have to keep a work book too, but only the examiner from the BoE looks at. Since their seetime has a different basis they often meet this requirement by sailing as an AB.

In the bivalent scheme, the possibility has been introduced of joining the HVE-type schools. In this case an entrance examination is required.

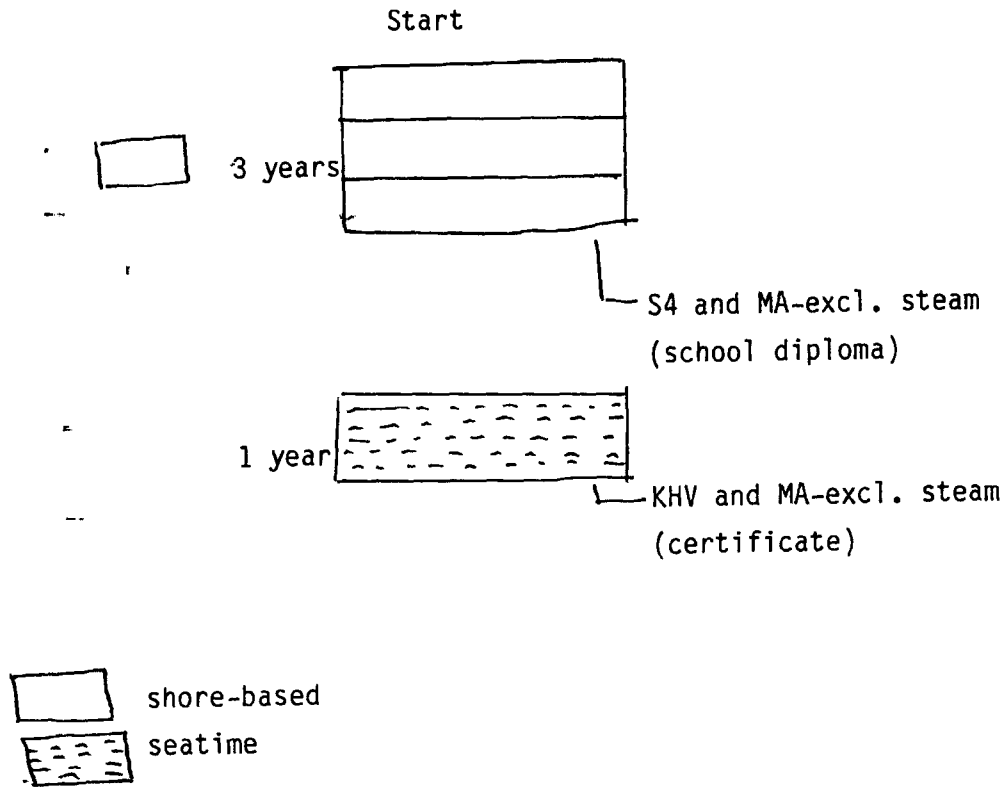


FIGURE 5

### 3.5.4 Structure of Maritime Education and Training of Master Mariners:

Dual purpose system (since 1985)

#### SHOREBASED STUDIES:

- General education requirement: completion of secondary education for higher vocational studies (5 years)
- Average entrance age: 17
- Total years of studies: 4
- Total net months of studies: 37
- Total average weeks per academic year, including assessments: 37
- Average number of lectures per week: 32
- Duration of a lecture: 50 minutes

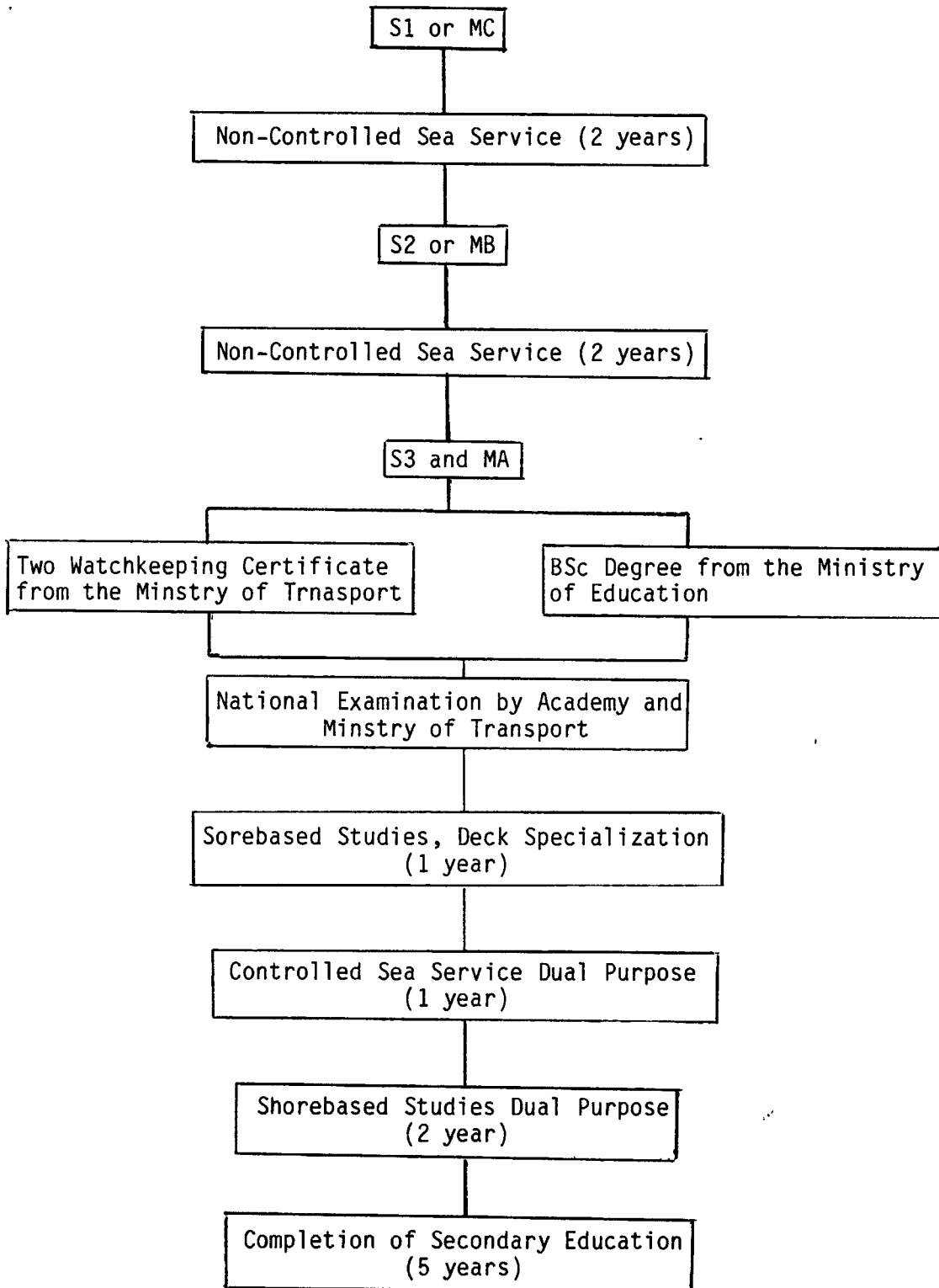
Including 11 months of controlled sea service.

#### SEA SERVICE:

- Total net years non controlled: 4
- Total gross years required: 7

#### GENERALS:

- Total net years up to master mariner: 8
- Total gross years up to M. mariner: 11
- Age to master mariner certificate: 28
- Total certificates of competency: 3 (Master Mariner, Chief Mate, Second Mate and Third Engineer)
- Required certificate of competency to serve as a Chief Mate: Master Mariner
- Additional courses/certificates after basic studies: Radar Navigation; Ship's Captain; medical; Management.



**FIGURE 3.5 - STRUCTURE OF MARITIME EDUCATION AND TRAINING OF MASTER MARINERS**

### 3.6 STRUCTURE OF MARITIME EDUCATION AND TRAINING OF MASTER MARINER IN SOVIET UNION:

#### 3.6.1 Introduction:

This training which is open to any young man or woman having attended primary and secondary schools for not less than 10 years and is grouped into three phases:

1. Controlled sea service - 15 months on board training ship as officer apprentice.
2. Non-controlled sea service - 5 years on board seagoing ships as watchkeeping officer.
3. 5 months shorebased refreshing and study courses.

#### 3.6.2 Sea Training Curriculum:

- Navigation	160 hours
- Seamanship	200 hours
- Ship's Maintenance Work	310 hours
- Safety at Sea	80 hours
- Marine Technology	70 hours
- Fire Fighting	60 hours
- General Subjects	190 hours

### 3.6.3 Structure of Maritime Education and Training of Master Mariners:

#### SHOREBASED STUDIES:

- General education requirement: completion of 10 years of studies after starting at 6 years old.
- Average entrance age: 17
- Total years of studies: 5.5
- Total net months of studies: \* 46
- Total average weeks per academic year, including assessment 32
- Average number of lectures per week: 36 (6 days a week)
- Duration of a lecture: 45 minutes

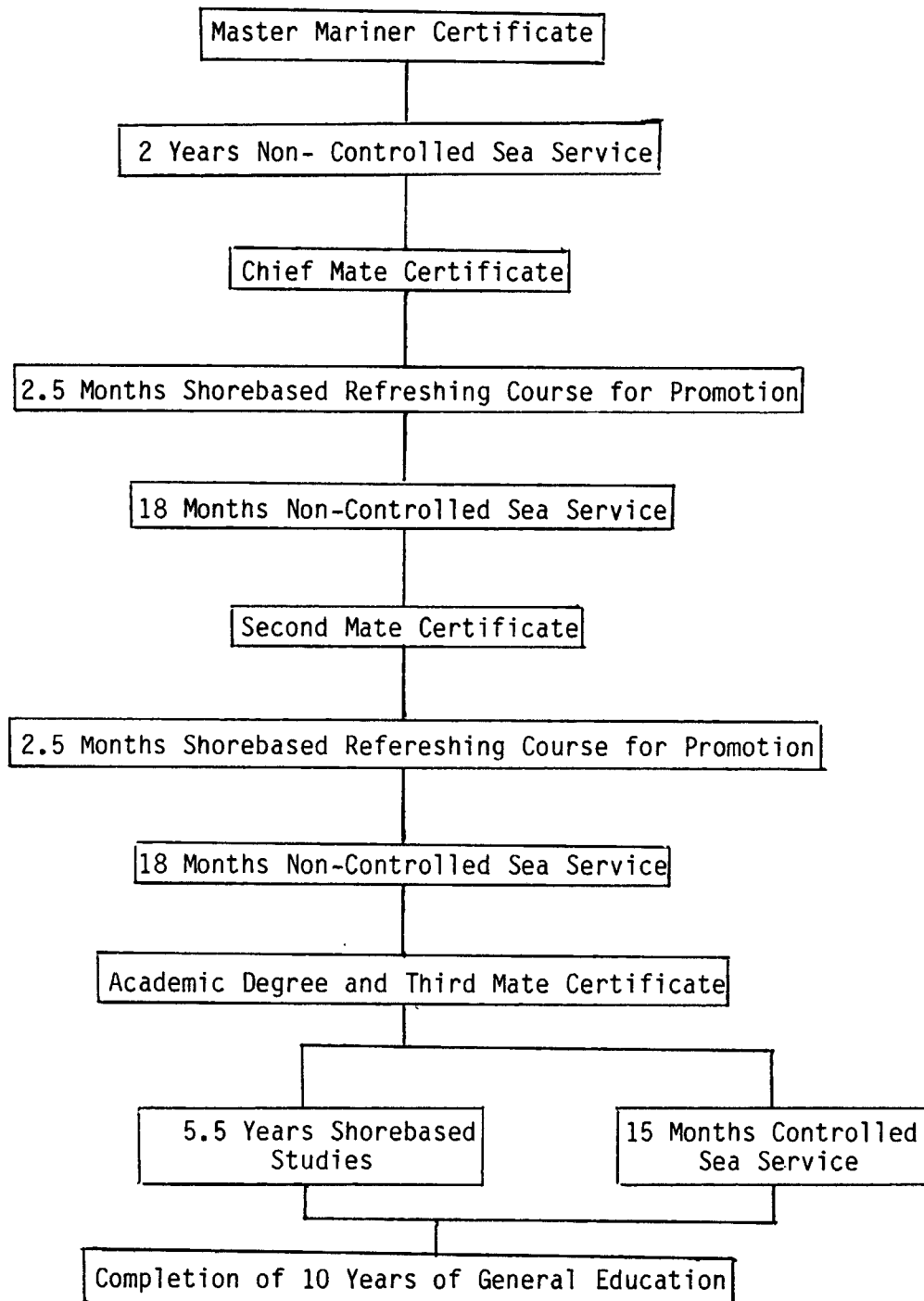
\* Including 8 months of controlled sea service.

#### SEA SERVICE:

- Total net years non-controlled: 5
- Total gross years required: 10  
(refreshing courses before promotion)

#### GENERAL:

- Total net years up to master mariner: 10.5
- Total gross years up to master mariner: 15.5
- Age to master mariner certificate: 33
- Total certificates of competency: 4 (Master Mariner, Chief Mate, Second Mate, Third Mate)
- Required certificate of competency to serve as Chief Mate: Master Mariner
- Additional courses/certificates after basic studies: Radar Navigation, ARPA (after each 5 years); refreshing courses for promotion.



**FIGURE 6 - STRUCTURE OF MARITIME EDUCATION AND TRAINING  
OR MASTER MARINERS**

### 3.7 MARITIME EDUCATION AND TRAINING IN FRANCE:

#### 3.7.1 The Bivalent First Level Certificate:

It takes nearly 12 years from entering the system of MET at the age of 18, 19 or 20 to the award of the highest certificate of Capitaine de lère Classe de la Navigation Maritime at an age of 30 or more. Four of the 12 years are devoted to studies at one of the EsNsMM in Le Havre, with the largest number of first level students, in Nantes or Marseilles. Five years have to be served on board of ships, of which four months are served during summer holidays of the academy. The remaining four years and eight months have to be effective seetime, i.e. Saturdays, Sundays and holidays do not count. Since a seaman in France acquires eighteen days leave for one month of shipboard service, it takes about eight years to meet the requirements for seetime.

Studies and shipboard service are sequenced as follows (main stream):

1. Entrance examination for holders of Baccalauréats C (12 years of general education).
2. First year of studies at ENMM (30 weeks from October to May and at least one month shipboard service).
3. **Examination:** Second year of studies at ENMM (30 weeks from October to May) and shipboard service which completes the shipboard service of the first year to four months.
4. **Examination:** Third year of studies at ENMM (30 weeks from October to May).



Major Examination: Diploma as merchant marine cadet.

This is not a certificate of Competency.

5. Ten months shipboard service as cadet.  
Certificate of competency as Dual-Purpose Watch Officer.
6. Ten months shipboard service as 4th and 3rd officer on deck or in the engine room including at least three months in each of the two departments.
7. Fourth year of studies at ENMM (30 weeks from October to May).

Major examination for ENMM diploma for higher studies of the merchant marine which entitles the holder to sail as chief mate or second engineer.  
This is not a certificate of competency.

The dual-purpose certificate of competency is obtained after 36 months of effective seetime (of which at least 16 months each have to be spent on deck and in the engine room). It entitles the holder to serve on ships of all sizes worldwide as master or chief engineer.

### 3.7.2 The Bivalent Second Level Certificate:

The new bivalent programme for the second level was introduced after a good year of discussions between all parties concerned. It differs in two main aspects from the first level programme: Firstly, students who have completed 10 years of general education i.e. two years less than required for the first level (Baccalauréat) can enter the programme. Secondly, the studies at an ENMM comprise three years, i.e. one year less than for the first level.

The sequence of the new programme (main stream):

10 years of general education

2 years at ENMM (2 times 30 weeks from October to May)

2 years on ships of which one year each as cadet on deck and in the engine

Certificate as bivalent Watch Officer.

1 year at ENMM (30 weeks from October to May)

3 years on ships of which 18 months each on deck and in engine

Dual Purpose Certificate of Competency.

As for the programme for the Capitaine de 1ère Classe, the 5 years of shipboard service have to be effective time, i.e. it will take about 8 years to acquire them. The entire programme can be completed in 11 years, i.e. one year less than for the first level programme. The first students from the ENMM in Nantes can be expected to obtain the second level certificate in 1997. They will, however, not be as old as the first level graduates. They will normally be three years younger.

### 3.7.3 The Monovalent Third Level Certificate:

The training for the certificates of master and engine operators on coastal ships is monovalent. The training courses are normally taken by seafarers with extended shipboard experience who are normally older than students for first or second level certificates at the beginning of their studies. The programme might in future also offer an alternative for those who fail in the programme for the second level. On the other hand, no scheme provides for holders of coastal certificates who might wish to upgrade themselves to the second level.

The master on coastal ships has normally to fulfill the following training and seetime requirements (main stream). No particular level of general education is required but the EsNsMM hold an informal assessment in which it is established whether or not the candidate has sufficient knowledge in French and basic mathematics.

#### 3.7.4 Requirements:

Up to 16 months at one of the about 20 schools for ratings 20 or more months on ships as rating so that together with the time spent in a ratings' school 36 months have been spent in the profession before entering the third level programme at one of the 4 EsNsMM.

30 weeks at ENMM

Examination

10 months on ships as cadet

Certificate as Bridge Watch Office on coastal ships.

24 months on coasta ships as Watch Officer

18 weeks at ENMM

Examination

6 months or more on coastal ships as bridge officer in order to complete a total of 60 months effective seetime.

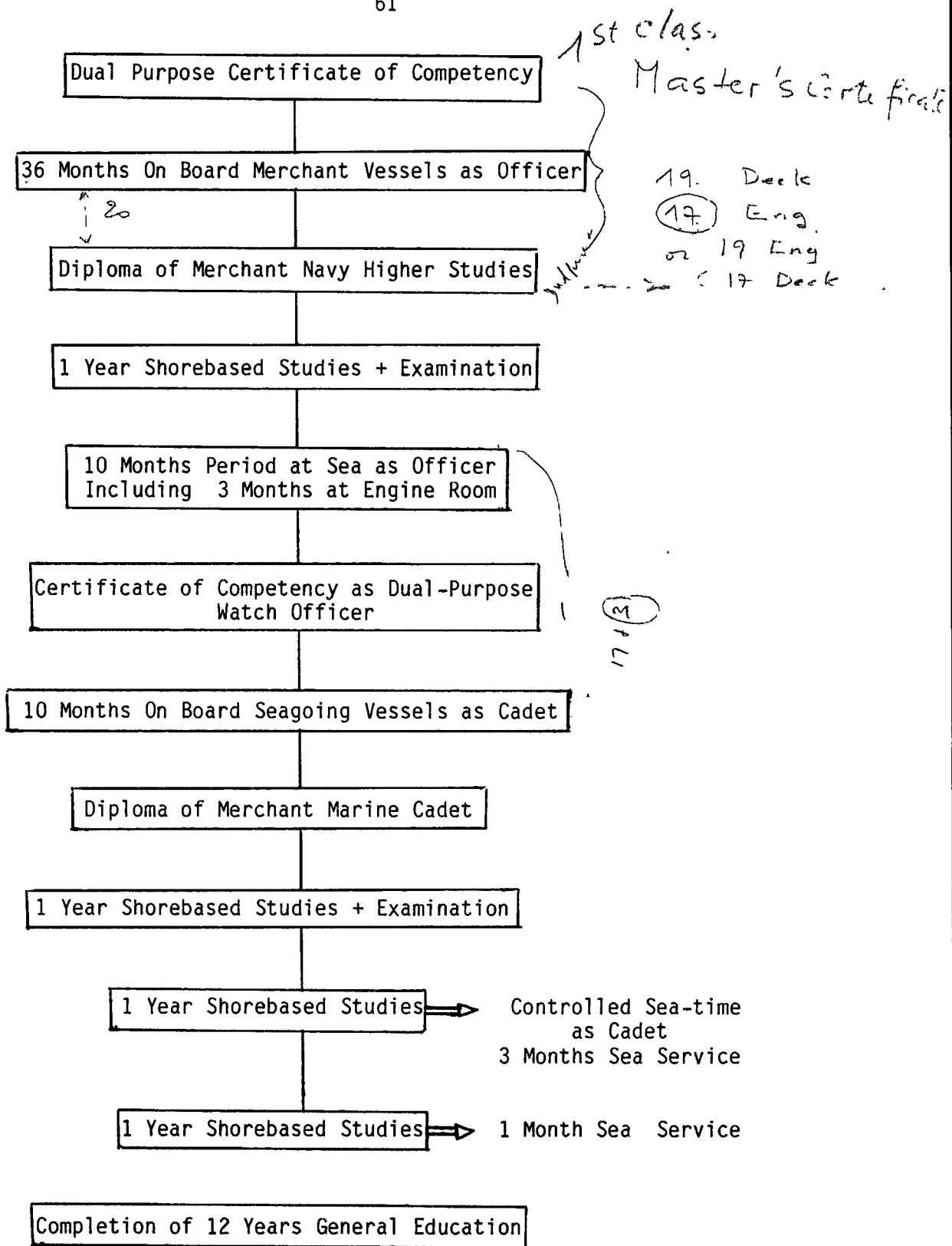
Certificate as Master on coastal ships.

For the time being there is no intention to introduce a bivalent training scheme for the coastal certificates. The programme aims at experienced seafarers who wish to operate coastal vessels in the nautical or engine capacity but wo did not obtain the general education required for the second or the first level of certificates.

### 3.7.5 The Study Programme:

Students for the highest certificate of competency have to attend an average of 31 hours of lectures during the 4 times 30 weeks of their studies. Academic subjects are emphasized in the first three years of studies whereas the fourth and last year has a more practical bias and takes into consideration the shipboard experience of the students as watch officers.

The programme consists mainly of lectures, on average 23.5 x 60 minutes per week and work in laboratories, on average 7.5 x 60 minutes per week and 13 x 60 minutes per week during the third year of studies. Thursday afternoon is free for sports as in all French institutions of higher education. During the first year 2.75 x 60 minutes per week are spent on first aid and on practical seamanship, i.e. on rope work, life boats and life saving appliances.



**FIGURE - STRUCTURE OF MARITIME EDUCATION AND TRAINING OF MASTER MARINERS**

### 3.8 POLISH NAUTICAL TRAINING SYSTEM

#### 3.8.1 Introduction:

The Merchant Navy Academy in Gdynia educates future officers of the merchant ships.

Graduates of the Academy are employed on board cargo vessels of the Polish Merchant Fleet.

The course of daily studies at Merchant Navy Academy covers the following specializations.

- I. Sea transport at the Faculty of Navigation.
- II. Marine power plant operation at the Faculty of Marine Engineering.
- III. Ship's electricity and sea radio communication at the Faculty of Electricity.
- IV. Stewardship at the Faculty of Administration. Studies at the Faculty of Navigation, Marine Engineering and Electricity take 4-5 years.

Graduates of the above faculties receive a MSc. Diploma of a given specialization.

Studies at the Faculty of Administration takes 4 years, graduates at this faculty also receive a MSc. Diploma.

Apart from the above faculties the following inter-faculty unite included in all the courses of studies are:

1. The Institute of Social Sciences.

2. Foreign Language Department.
3. Military Training Department.
4. Physical Training Department.

During the first three years of their studies the students undergo military training. They attend military training classes once a week. Once ending the military courses it is no longer necessary for them to attend military services and they are transferred to the reserve of the Navy. As far as discipline is concerned there is a difference between the Merchant Navy Academy and other colleges. Students of the first year have obligatory boarding and the military training differs in its schools, too.

### 3.8.2 The Faculty of Navigation:

At the Faculty of Navigation the future navigating officers of merchant ships study. In course of their studies the students acquire theoretical knowledge in engineering, economics and legal problems. After sea apprenticeship this knowledge enables the student to perform the duties of a deck officer on board sea-going vessels. Candidates for navigational studies ought to excel in scientific subjects, possess great imagination as well as abilities to cooperate with the crew.

Candidates for the navigational studies have to pass an entrance examination which enables them next to undergo a six weeks candidate test consisting in sailing on board the school training trigate the "Mxodziczy".

After fully completing this period of training, the candidates are enrolled on the list of students and in the course of the 4-5 years they acquire knowledge that may be divided into three parts:

- A. General and basic subjects including: mathematics, physics, chemistry, economics, introduction into philosophy, introduction into political science, the English language and physical training.
- B. Basic technical subjects: computer science, electronics, automatic control engineering.
- C. Specialistic and vocational subjects, among other things: ship's operation, ship's power engineering, metrology and oceanography, technical navigation, international regulations for preventing collisions at sea, sea-communication safety and hygiene of work, ship's hygiene, fire protection economics of sea transport, salvage.

### 3.8.3 Training Vessel of the Merchant Navy Academy:

On passing the entrance examination and after having been enrolled in the list of students, the candidates undergo a period of training aboard the school trainings vessels, in shipyards and school workshops where they become familiar with the conditions of their future work. There they are tested whether they are physically and mentally fit for their profession.

### 3.8.3 Training System:

The nautical training time can be divided into three parts:

1. Controlled sea service on board training ship as apprentice (14 months).
2. Shore-based studies (4 years).
3. Non-controlled sea service on board merchant fleet (42 months).



### 3.8.3.1 Sea Training Curriculum:

- Radar, navigation, ARPA	hours
- Seamanship	hours
- Fire-fighting	hours
- Watch keeping	hours
- Cargo handling	hours
- Life saving equipment	hours
- Deck maintenance	hours

### 3.8.4 Structure of Maritime Education and Training of Master Mariners:

#### Shorebased Studies:

- General education requirement: attend high school
- Average entrance age: 23 or 25 after completion military service
- Total years of studies: 5 years
- Total average of weeks/academic year, including assessments: 2 semester-each 16 week
- Average number of lecturers/week: 40 week
- Duration of a lecture: 45 min.

#### Sea Service:

- Total net years non-controlled: 4 years + 10 months
- Total gross years required: 6 years + 14 months

#### General:

- Total net years up to Master Mariner: 6 years
- Age to master mariner certificate: 35-40
- Total certificates of competency: -Officer on Watch  
-1st Officer  
-Master

### 3.9 THE SWEDISH NAUTICAL TRAINING SYSTEM:

#### 3.9.1 Introduction:

There is a number of different alternatives open to school learners in Sweden. However, the main problem is how to get the necessary sea-going practice.

#### 3.9.2 The System:

##### 3.9.2.1 First Part:

Operation and Maintenance (DU-line) system; in this system, the student has to study at a special so called "Du-line" for ship technics. This is a two-year high school course including a combination of theoretical studies and practical training in various ship-board jobs such as steering, look-out, maintenance work etc. and should be trained on board a training vessel.

If a student completes this two-year high school training including the practice on board the training vessel he/she is entitled to enter the nautical college and he/she even could count this training as one year sea-going practice. Before entering the nautical college one more year sea-going practice is necessary.

##### 3.9.2.2 The Second Part:

Seagoing practice, should include two years seagoing practice, but as mentioned above the

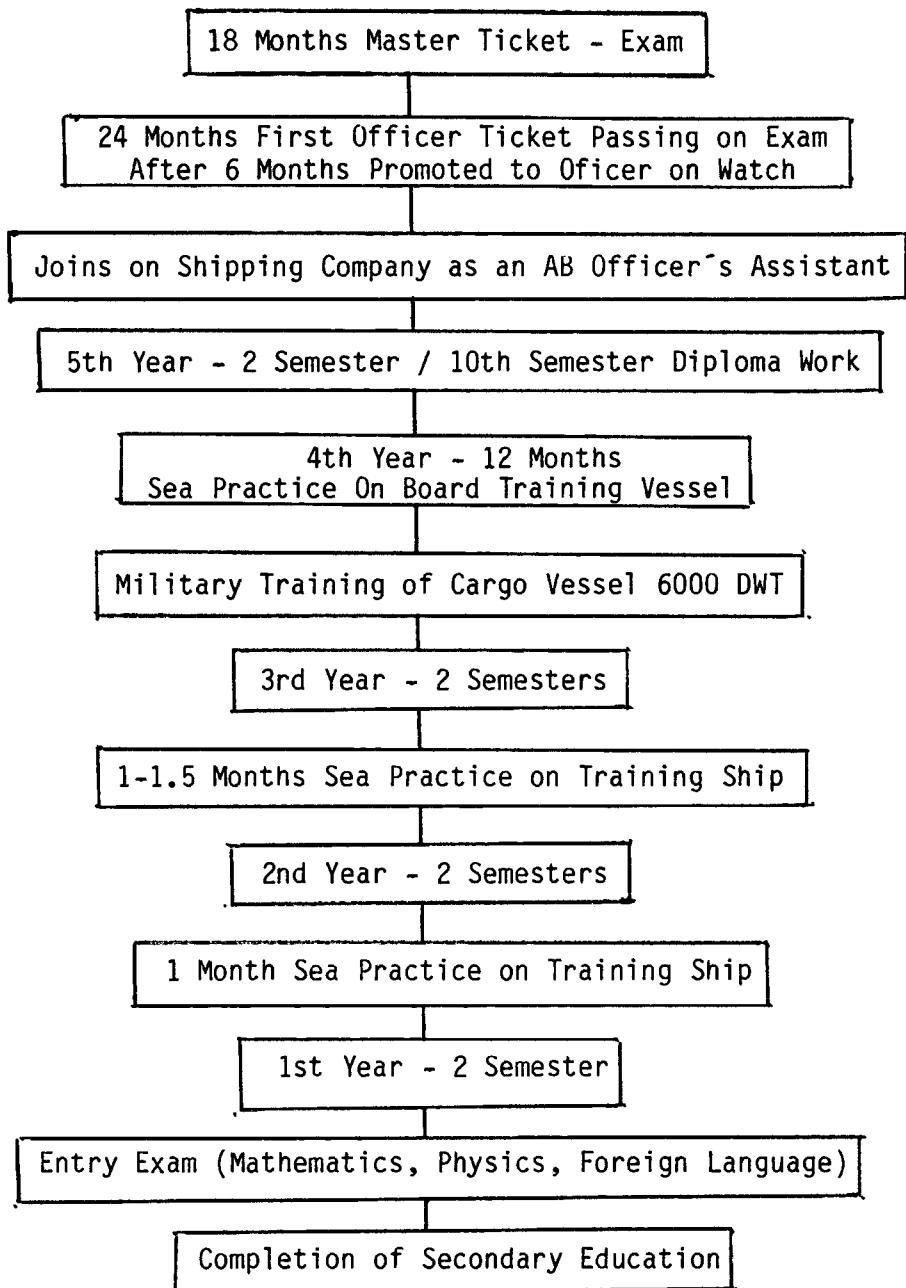


FIGURE - STRUCTURE OF MARITIME EDUCATION AND TRAINING OF MASTER MARINERS

Higher Economic and  
Technical Course  
(20 Points)

SPECIAL COURSES:

- Ship Handling
- Tanker Safety
- Dangerous Goods
- A R P A
- Bridge Team Training

C

CAPTAINS' CLASS  
1 year (40 Points)

Possible Professional  
Work

MATES' Studies  
2 years

Class 2 (40 Points)

Class 1 (40 Points)

B + 8 Points

S

Skipper A  
4 months (20 Points)

After completed seagoing service:

- C - Certificate of competency as Captain (Master Mariner)
- A - Certificate of competency as Mate A
- B - Certificate of competency as Mate B
- S - Certificate of competency as Skipper A

**STUDIES AT NAUTICAL COLLEGE**

student could get one year from the DU-line, so only 12 months remain to be done. If the student could get a job as apprentice on specially accepted commercial vessels under supervision, 6 months time on board could be counted as 12 months normal seagoing practice.

So in reality the necessary 24 months of seagoing practice could be reduced to six months on board as an apprentice, the rest comes from the DU-line and as a bonus from the time as an apprentice.

If this system really worked a student could enter the nautical college with a minimum of six months of real seagoing experience.

As mentioned in Part A when the high school course, the "DU-line", was introduced some years ago the intention was that all seafarers in spe should pass that training, receive a basic theoretical and practical training and be prepared for the studies at the nautical colleges. But this DU-line started at about the same time that the nautical colleges introduced their rules for admission to the colleges, so naturally there were no students available for the colleges who had really passed the DU-line.

So for some years students had to be accepted according to the older requirements with 9 years school and 30 months seagoing experience.

Later it became clear that too few students choose the DU-line. A sufficient number of qualified students cannot be recruited to the nautical colleges from the DU-line alone. So in practice today, the rules are changing and all students with at least 2 years studies

at high-school level may be accepted, provided they have got sufficient marks (at least 3) in Swedish, English, mathematics, physics or technic.

### 3.9.3 The Nautical College:

One year's studies at the college includes 4 study-periods of 8 weeks studies each, followed by one week for written and/or oral examination. During the 4 periods different subjects are studied.

One week of study equals 1 point, one year 40 points. The MATE'S studies cover 2 consecutive years 80 points. Some of the more important and time-consuming subjects may be studied over a longer period, for instance navigation in mates' class during 4 periods. As mentioned above, 1 week of studies, which should mean about 40 hours work for the student, equals one point. In most subjects half this number or 20 hours are classroom lessons and the rest should be either studies at home or at the college.

The normal procedure at the college is to pass the two-year mates' studies in succession and, provided the student has passed all examinations with approved marks, he may continue directly to the captains' class and thus get his captains licence after three years.

When the theoretical studies for mate's degree or for captain's degree are finished, additional seagoing practice is necessary in order to get the certificate of competency, the mate's licence or the captain's licence.

A student, who for any reason wants to finish his studies after one year in the mates' class may add some specified points up to a total of 48 points and thus

get his theoretical examination for "Mate B" and with sufficient sea practice receive his certificate of competency as Mate B (corresponding to Reg. II/4 - Watchkeeping Officer).

A special four months course, 20 points, is arranged for skippers of small vessels and fishing vessels. This course is completely separate from the ordinary mate-captain studies.

At the Nautical Colleges a lot of special courses are arranged, like Oil, Chemical and Gas tanker Safety, Dangerous Goods, ARPA, Ship Handling, Bridge Team Training and other special courses on request from the owners.

#### 3.9.4 Seagoing Practice:

As can be seen from the "Ordinance concerning the Competency of Seafarers" the practice needed for receiving the certificate of competency differs from the practice needed for entering the college.

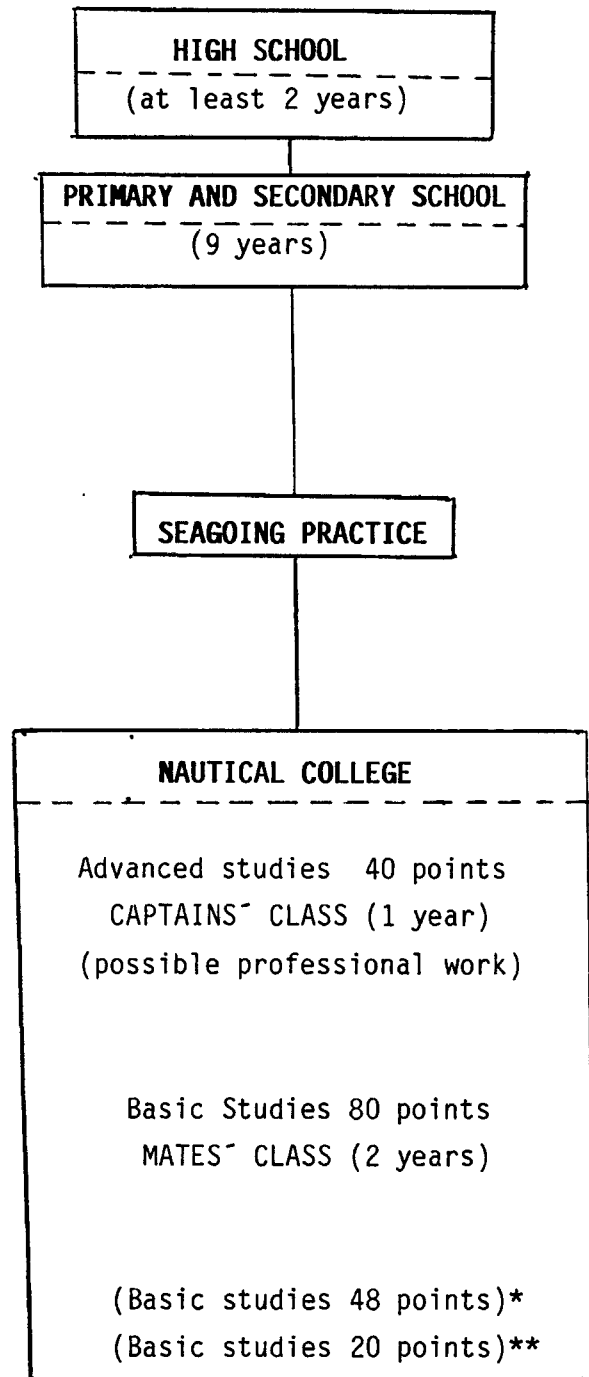
For a certificate of competency (mate's licence) for Mate A and Mate B, 36 months deck service is needed. In those months are included the deck service needed for entering the college and may thus include 12 months received during the DU-line studies and six more months received as bonus if the service has been made as apprentice for six months. Thus only 12 more months seagoing service is needed.

For a student who has not passed the DU-line or served as apprentice 36 real seagoing months are needed.

Subject	Points		Captains
	Mates		
	1 Year	2 Years	
Mathematics	8.0	2.0	1.0
Computer and data	2.0		
Physics	2.0		
Chemistry	1.0		
Swedish language		3.0	
English language	4.0	2.0	4.0
Personnel administration	1.0		2.0
Labour market and laws	1.5		
Business economics		2.0	3.0
Technics		4.0	
Ship building and stability	4.0		1.5
Ship maintenance		2.0	2.0
Fire protection and fighting		2.0	
Medical care	2.0		1.0
Environment technics		2.0	2.0
Communication	1.0	3.0	
Cargo handling and transport	4.0	4.0	5.0
Seamanship	3.0	2.0	3.0
Maritime law		3.0	1.0
Navigation	5.0	4.5	2.0
Nautical instruments			5.5
Meteorology and oceanography		1.5	2.0
Bridge work	1.5	1.0	1.0
Project paper (own research		2.0	4.0
<b>T O T A L</b>	<b>40.0</b>	<b>40.0</b>	<b>40.0</b>

**SYLLABI FOR MATES AND CAPTAINS STUDIES  
AT KALMAR MERCHANT MARINE ACADEMY**





\* After one year's studies watchkeeping officer.

\*\* One half year studies for "Skipper A".

**PROCEDURE AT NAUTICAL COLLEGE**

## CHAPTER FOUR

### DEVELOPMENT OF SEA TRAINING SYSTEM

#### AT A.M.T.A.

#### 4.1 INTRODUCTION:

The guidelines/recommendations are based upon a comparative approach in so far as the evaluation of an educational structure is concerned. A number of maritime training institutions in Europe will be the basis of this approach. These are all major maritime academies with well established and time tested training institutions which cope with the need of the maritime industry.

Every maritime academy has to be, and nearly always is, a product of its environment in which it exists and operates.

Whilst the study has critically evaluated certain existing maritime educational system does not however attempt to suggest a new system or a change in the existing system. The fundamental approach has been to cause change only with the minimum disruption, not change for its sake, but change where it may lead to an overall improvement of AMTA maritime training system.

What would emerge from the proposed evaluation is a clear definition of responsibilities and, tasks and thereby strengthening of the existing capabilities within the academy (AMTA) to proceed with this vital and dynamic institution in a more confident and professional manner. Every effort has been made to ensure that the guidelines/recommendations are practical and may be easily implemented. This may not necessarily mean that problems will not arise in implementation. Problems are bound to arise especially when changes are contemplated within the

existing nature of the training sector at AMTA.

Both the sea training sector and the training ship AIDA III are placed under the supervision of the Deputy Director General for Training , i.e. that Head of the Sea Training Sector.

In this chapter the recommendation for the establishment of a Sea Training Organization and the details concerned are dealt with.

#### 4.2 DUTIES OF THE ORGANIZATION FOR SEA TRAINING:

1. The present organization for sea training is responsible for implementing the sea training programmes in the Academy. Therefore, it is advisable to include the following in order to strengthen and improve the existing training programme:-
  - a. guided sea training on board the training ship, AIDA III, for the cadets in Phase II and Phase I (1) of the Academy.
  - b. apprenticed sea training on board the training/trading ship and merchant ships for the cadets in Phase II of the Academy after completing the guided sea training.

What is really proposed in (b) is to provide deck cadets with the practicable training needed to absorb and implement all the theories received whilst at AMTA by facilitating, in co-ordination with existing national shipping companies, accommodation for a specified number of cadets including a training officer from AMTA staff to supervise

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(1) Summer cruise and winter cruise.

their practical training, whereby the shipping company and AMTA will mutually benefit from this arrangement.

2. The duties of the organization for sea training would be assumed on the basis of the study's scheme (mentioned in the following pages) for executing the sea training programmes for the Academic year, and other schemes for the sea training on board merchant ships.

By being separated from education, this top level group should concentrate on developing the sea training programmes and could strengthen the staff members to execute the practical training on board the training ships, who must be experienced practitioners being able to perform the practical applications of the knowledge gained in the classrooms, workshops and laboratories.

However, apart from providing training officers, the organization for sea training need not assume the responsibility for the well-being of the cadets on the above mentioned ships because these ships are not owned by the Academy.

Therefore, the existing sea training sector may remain at the present level, unless the burdon of this new development exceeds its capabilities, then it will be necessary to strengthen the existing capabilities. This is Phase I of the proposed practical sea-training. Phase II, when funds are available, will be the acquisition of a specially built cargo ship with the required accommodation/facilities to absorb the full complement of the cadets due for practical sea training.

The operational aspects of this ship may be controlled by a national shipping company, whilst the training and well-being of the cadets will be the responsibility of AMTA Training Sector.

#### 4.3 ORGANIZATION STRUCTURES OF THE TRAINING SHIP AIDA III

1. The proposed organization of the training ship AIDA III to execute the guided sea training shows the staff organization in the relationship between the existing crew members and the new additional training staff members.

The advisable staffing for a training ship should be composed of crew members and training staff members who could perform both purposes of training instructions and ship operations.

But in case of the AIDA III, as the Academy does not own the ship (as which the crew members are provided by and supervised under the Lighthouse Authority owning the ship.) This will certainly cause various problems (lack of training of the crew) in the running of the ship as a training ship. For this, it is suggested that ownership/responsibility should be placed with AMTA who will then be able to provide an efficient and well staffed crew for the ship and through them will be capable in implementing the training programme to its full extent.

2. The training staff members should be stationed onboard Aida III to perform training instructions and cadet affairs only during the periods of the sea training programmes. The deck and engineering officers as the fixed crew members will be composed of the Academy's personnel, who would be also able to serve as training instructors and help in cadets' affairs, such as guidance of cadets in discipline, moral, autonomous activities, physical and social activities, and personal counselling in practical training and cadet life on board the ship. And, in order to develop these abilities, they should be in possession of the highest qualifications and have accumulated experience in both seagoing service and training

instructions, and sufficient in number to cover their duties and obligations.

#### 4.4 ORGANIZATION STRUCTURE OF THE SHORE ADMINISTRATIVE ORGANIZATION FOR SEA TRAINING: (See Chart No. 1)

The organization of the Sea Training Sector should meet the sea training programme between the administrative staff members ashore and both the training staff and the crew members on board the training ship AIDA III and the training/trading ship.

Responsibility for the practical guided sea-training on board national merchant ships and Aida III should be placed under the auspices of the "Nautical Training Sector".

The Head of Nautical Training Department would be responsible for implementation of the nautical sea training programmes and supervision of the staff members of his own department.

The Chief Nautical Instructor and nautical instructors for the guided sea training would perform training instructions and help in cadets' affairs while being stationed on board the AIDA III during the sea training periods, and in case of needlessness of the shipboard service they would engage at the shore office of the department in planning, preparing and reviewing the shipboard training and study techniques of sea training. Their duties would be supervised by the Chief Nautical Instructor.

The Chief Nautical Instructor of sea training would serve at the shore office for arranging liaison with masters and shipping companies, selecting ships for cadets, coordinating training programmes with the educational departments connected with cadets on board merchant ships, following up on cadets' and companies' complaints, reviewing of

cadet performance and appropriateness of instruction, maintaining records of cadets' performance, etc.

Nautical instructors/trainers would serve as training officers and cadets' affairs on board the training /trading ships during practical sea training periods.

In order to develop and maintain the organization and its operation, the following considerations should be observed.

1. Considerations for the Organization of the AIDA III:  
(See Chart No. 2)

For improving the safety and efficiency of the ship operation and the efficiency of the practical training, the following factors have to be considered:

- a. Distribution and Definition of Duties:

Job descriptions to distribute and define duties and responsibilities should be prepared for all new training staff members and all existing crew members including that of the Lighthouse Authority aboard the AIDA III.

When arranging the descriptions, it is important that the duties and responsibilities of the crew members are distributed with a clear identification, and also the chain of authority through each of the departments is established with a distinct flow on the basis of the principle of a direct line of command.

Particularly, in the case of the organization structure the instructors only or both the instructors and cadets' supervisors being separated from the crew

members, the relationships between their responsibilities must be defined so that the smooth operation of the ship might not be disturbed and jeopardized by practical training activities.

Moreover, when defining the responsibilities of the individual crew members, it is desirable for them to be designed to form a structure of decentralization of authority in harmony with responsibility and accountability.

It would facilitate the motivation for shipboard service, the development of management skills and techniques, and the improvement of work efficiency of the crew members.

However, the degree of decentralization of authority should be arranged on the basis of their experiences and techniques.

b. Communication and Human Relations:

The top level staff of each of the departments must serve for promoting the mutual good communications and the close human relations between the members of their own department and between each of the departments in order to form the sympathetic cooperation between the crew members.

This is the most important condition for the smooth operation of the ship in which, as the ship is a complete and complex organization of men and machinery, the activities of each of the departments must function as coordinated units of the whole structure.

Especially, in the case of the organization structure



of the form separated between the training staff and the crew, the instructors must have the closest contact and coordination with the crew staff members so as to give the cadets as many chances of practical training as possible while not disturbing the smooth operation of the ship.

Regarding the educational atmosphere in the ship, all the members should realize that it is important to have not only the strong sense of responsibility, the strict observance of discipline and the sympathetic cooperation for the jobs, but also mutual good understanding and close friendship in the formal and informal human relationships between various kinds of group members.

c. Meetings:

The following meetings should be established in the organization of the AIDA III.

- A faculty meeting on planning and execution of training and cadets' affairs should be established with instructors, cadets' supervisors (incase of being stationed), the fixed crew members from the Academy except ratings and other crew members concerned.
- A liaison meeting on ship operation, and training and cadets' affairs should be established with small top-level membership.
- A meeting on safety and sanitation should be established with personnel in charge of safety and sanitation from each of the departments.

d. Qualification and Cultivation of Instructors and Trainers:

Regarding the qualification requirements for the training staff aboard the ship, the instructors should be experienced practitioners who are competent in their respective duties of all aspects of ship operation, training instruction and guidance for cadets' training life. The objectives of the practical training are to promote knowledge and proficiency of the cadets through sea-going experience for the purpose of cultivating the necessary quality and ability to be a competent ship's officer.

Consequently, it is an essential prerequisite that the training activities performed by the instructors are executed through practical ship operation activities and also cover the aspect of cultivation of practical attributes and abilities of cadets.

The ability of the competent instructor is cultivated only through accumulating the experiences in both ship operation and training instructions service on board the training ship. Therefore, in order to provide the training staff of the ship with the necessary number of competent instructors including recruits and reserve members, the instructors as the training staff aboard should be arranged in the system of interchanging the personnel between the positions of the instructor or the staff ashore of the Sea Training Sector, the officer as the fixed crew members of the AIDA III and the lecturer of the education departments of the Academy.

In this system, the period of office of the instructor

aboard the ship should be not less than two years. Moreover, this system would be so effective that it would give the instructors aboard the opportunity to update their theoretical knowledge and to be promoted to their optional courses on the basis of the Academy's promotion standard that should be newly established. It also serves to enrich the classroom instructions of the Academy in the field of practical knowledge.

Furthermore, a training and development programme should be established for the trainer of the Sector and the crew members of the Lighthouse Authority as the fixed members of the AIDA III, in order to obtain their assistance to form a sympathetic cooperation and an educational atmosphere in the ship during sea training periods.

## 2. Administration:

Under present conditions the following administration activities should be noted:-

- Developing and maintaining consistent practical training standards through close interaction between the classroom instructions by the education departments and the shipboard training by the Sector in due consideration of the recent developments in maritime affairs and ship operation techniques.
- Promoting the plan for providing the competent training staff aboard the training ship.
- Developing the sea training methods.

- Promoting the plan for maintaining and improving textbooks, cadets' report books, and training aids, equipment and materials for shipboard training including the procedure of budget.
- Promoting the plan for arrangement to obtain a new training ship.

### 3. Communication:

In planning and executing the shipboard training, the liaisons with the Lighthouse Authority, and the master of the ships and their shipping companies concerned, in addition to the communications with the internal subdivisions should be performed sufficiently, so as to provide safe, smooth and effective shipboard training.

### 4. Rules and Regulations:

In order to settle and develop the organization for sea training, the following rules and regulations should be prepared:-

- Managerial Regulations of the Sea Training Institute.
- By-laws of the shipboard training.
- By-laws of the shipboard service.
- Personnel rules and regulations concerning all positions for the Sea Training Institute such as recruitment and selection, job descriptions and qualifications requirements, performance evaluations, position classification and pay administration, promotion practices, training and development, and other personnel practices.

## 5. Training Through Collaboration:

One way in which the quality of sea training can be greatly improved is through increased collaboration on an international basis. First of all, countries must apply themselves to promoting the vocational aspect of a seafarer's training. "Profession and professional" are key words which should become (automatically) identified with a seafarer's training.

This is something which each country must go about in whichever way it deems suitable, but their efforts can all go to waste if there is no background of international collaboration between national governments and international seafarer organizations and institutions, in particular inter-governmental maritime consultative agencies.

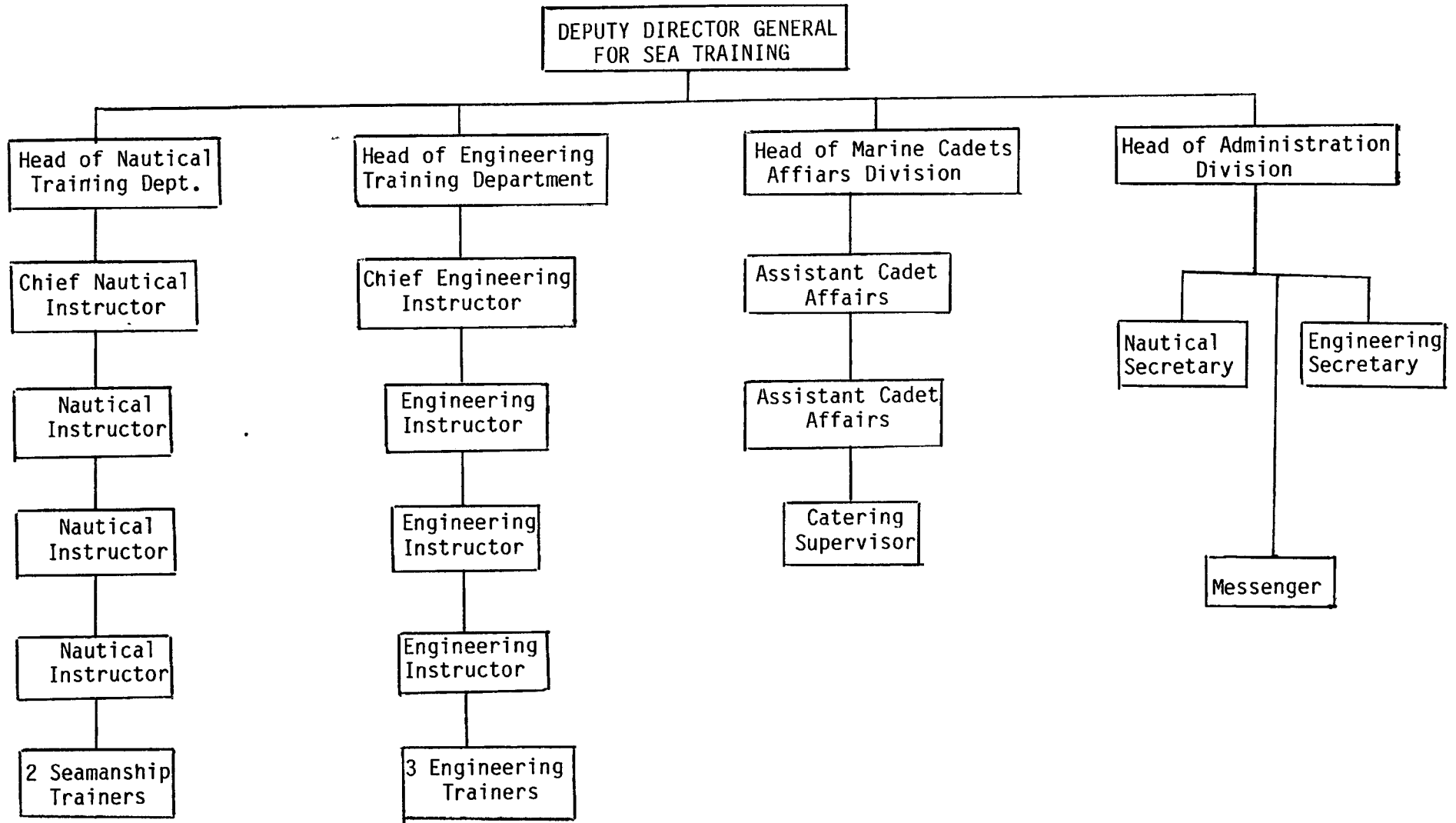
Such collaboration does, of course, exist today, but to a far too limited extent. The benefits and potential offered by such collaboration are manifold, but here are some of the most relevant:

1. Seafarers can be recruited more easily and recruits will be of higher quality once the quality of sea training can be guaranteed by international education possibilities.
2. Existing sea training facilities for deck officers could and would be improved by sharing and exchanging know-how.
3. Countries could set up joint sea training facilities.
4. Existing sea training facilities can be shared by trainees and instructors alike, selected from other countries.

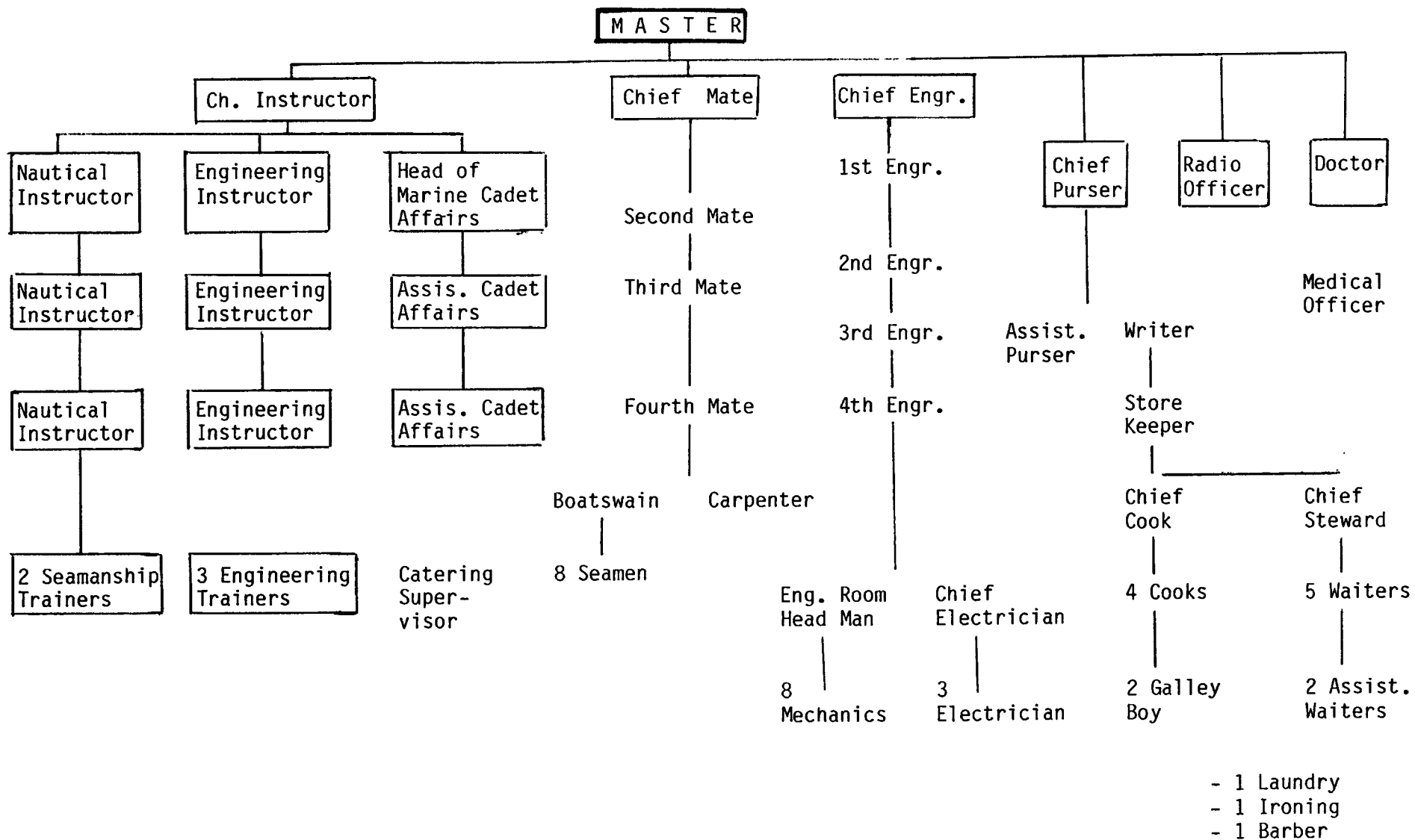
5. Personnel information and teaching subjects can be exchanged on an international basis, and
6. International seminars and working groups can be set up and organized more easily.

International collaboration in seafarers training is the only surefire way to guarantee a high standard of sea training in the long run and everything should be done to promote it.

**ALEXANDRIA MARITIME TRANSPORT ACADEMY**  
**ORGANIZATION FOR SEA TRAINING SECTOR**  
(CHART NO. 1)



**ALEXANDRIA MARITIME TRANSPORT ACADEMY**  
**ORGANIZATION FOR TRAINING SHIP AIDA III**  
 (CHART NO. 2)





## CHAPTER FIVE

### CONCLUSION

The need for a comprehensive practical training plan is vital, and the shipping industry can not afford to lack efficiency at this stage. When considering the practical training offered at A.M.T.A., one could confidently appreciate efforts being made to improve the system and the facilities. However, the writer is convinced that some further improvements could be expected for consideration.

The present training ship (AIDA III) does not seem to be technically the most suitable ship. It is therefore proposed that a purpose built training ship be investigated; coordination with concerned governments/agencies is accordingly needed in order to arrange the necessary funds. Such a ship will therefore be expected to offer up-to-date facilities, similar to those fitted on various merchant ships, where officers will be working to complete their courses at A.M.T.A.

Further considerations will be expected when staffing both the training sector and the training vessel. The need for the "proper" instructors and trainers can not be emphasized. Instructors are expected to have the following qualifications to meet the demand for high training standards:

1. Master (F.G.) certificate of competency.
2. Experience in the capacity of Master (F.G.) for not less than three years.
3. Experience in lecturing/training will always be an advantage.
4. Short courses certificates of relevance to their responsibilities.

5. With the availability of facilities offered by World Maritime University of Malmö, Sweden, efforts should be made to send bright candidates for their post-graduate studies in Maritime Education and Training.

Further need for in-depth co-operation between A.M.T.A. and ship-owners is sighted. The main aim will be to extend the period of controlled sea service up to the master certificate of competency. Such a proposal may not be easily injected into the spirits of shipowners. Some will be very reluctant to accept such innovation where officers' service will be controlled by the training sector in co-operation with concerned departments of the shipping company. Such a co-operation may include the purchase of a trading/training vessel, which can be commercially operated by the shipping company. The training sector will, on the other hand, provide training programmes from the level of a cadet up to the masters.

In order to further improve the productivity of deck officers, it would be of great value if the training sector of A.M.T.A. were to conduct short courses in management, mainly of human behaviour. This will assist to a great extent when serving on board where the principle of shipboard management is being widely utilized.

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