Staff training and development: a practical approach for Academi Laut Malaysia

Wan Karma Wan Shukry
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WORLD MARITIME UNIVERSITY
MALMO, SWEDEN

STAFF TRAINING AND DEVELOPMENT
A PRACTICAL APPROACH FOR AKADEMI LAUT MALAYSIA

by

Wan Shukry Wan Karma

Malaysia

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

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

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

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STAFF TRAINING AND DEVELOPMENT

A practical approach for
Akademi Laut Malaysia
For my mother

and for Tina, Adri and Azman
ACKNOWLEDGEMENTS

I should like to record my sincerest thanks and profound gratitude to Prof. Zade, who, as assessor not only provided me with excellent guidance but has also enlightened me on the wider aspects of maritime education and training. It is but one of the many rewarding spin-offs of the thesis project and I remain indebted to him for having been, in many ways a "teacher" as well as a "mentor" to me throughout my two years at the World Maritime University.

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I am indebted to the Sasakawa foundation for their generosity in sponsoring my studies and to the MATES foundation (my employer) for giving me this wonderful opportunity of studying at the World Maritime University.

Much of the sources for this thesis especially with regards to the different education and training systems and the training of lecturers were drawn heavily from the many field trips undertaken by the course group. In particular, thanks are due to the following institutions for providing information through briefings and personal discussions conducted during the visits: The "Coenelius
Douwes Vereeninging Amsterdam; Department of nautical Studies, Bremen Polytechnic; School of maritime Studies, Hamburg Polytechnic; Ecole Nationale de la Marine Marchande, St. Malo; Ecole Nationale de la Marine Marchande, Le Havre; The School of Navigation, Copenhagen; Admiral Makarov Higher Marine Engineering College, Leningrad; United States Merchant Marine Academy, King's Point, New York; State University of New York Maritime College, New York; The College of Maritime Studies, Warsash, U.K.

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Mr. Richard Poisson and Ms. Cecilia Londahl, WMU librarian and assistance librarian respectively, deserve special thanks for their willingness and patience in responding to my many requests for assistance. My thanks are also due to all my colleagues in MET(N) 89 who have helped me in one way or another — in particular to Mr. S. Kundargi, Mr. L. Bereiweriso and Mr. Soe Lwin of MSA(N) 89.

Above all, my very personal and most heartfelt thanks and gratitude go to my family without whose support, understanding and sacrifices this thesis would not have been possible.
Adapting the structure and system of education and training to suit new environment and changing circumstances is perhaps the most challenging task facing those involved in MET today. The rapid changes that are taking place brought about by advancement in technology and social and economic pressures among others, necessitate a fresh look at the system and structure of maritime education and training. This state of affairs has led to two important consequences:

(i) the growing disparity and mismatch between education and training and actual needs of the industry

(ii) a widening gap between staff's qualification (and experience) and the present day demand of MET on one hand and technological changes and development on the other.

These two factors exert a heavy pressure for change in the total approach to MET. Many countries, in endeavouring to adapt to these changes are introducing major reforms and restructuring to their existing system. As a result we now have a common entry for deck and engineering cadets, the dual certification (semi-bivalent) and the bivalent systems. Concurrent with technological development is the development and expansion of the maritime activities in the country which have generated a greater demand for a more comprehensive maritime education and training as a whole.
Of crucial importance in determining the success of any reform or restructuring is the availability of well qualified staff and the need to keep abreast of developments. This in turn underlines the need for a good staff training and development programmes.

This thesis attempts to analyse the requirements for staff training and development against the present and future roles of maritime education and training in Malaysia. The main objective is to explore strategies and solutions that can be applied at ALAM. Emphasis being placed on practicality and ease of implementation rather than conceptual approach giving due regards to the many constraints the organisation currently faces.

Chapter I introduces a broad overview of the present state of development in the maritime industry in Malaysia. It highlights the need for qualified personnel for the industry both afloat and ashore and the growing demand for shore-based shipping related courses.

The following chapter examines the various changes taking place within the industry, their impact on MET in Malaysia and at how the different sectors respond to these changes. The present and future roles of ALAM are analysed against the background of changes and their implications on the need for staff development. In chapter III, specific areas for staff training and development are identified. Chapter IV concentrates on the need for advanced qualifications and various courses that are applicable whilst chapter V focuses on the aspect of teacher training. Different systems of training for lecturers in different countries are evaluated in formulating a suitable approach for ALAM.
The need for personal skills development for the faculty and areas requiring training are examined in chapter VI. Chapter VII discusses the question of updating and the requirement for industry experience exploring various methods and possibilities. The retention of competent staff is not only a problem to educational institutions but a problem endemic to all organisations. This is dealt with in chapter VIII which looks at the aspect of motivation and examines practical strategies that can be applied to improve staff's performance and commitment to the organisation.

Finally chapter IX concludes with a summary giving appropriate recommendations for implementation.
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LIST OF ABBREVIATIONS

ALAM  Akademi Laut Malaysia
ASEAN  Association of South East Asian Nations
BIMCO  Baltic and International Maritime Council
BTEC  Business and Technitian Education Council
COLREG  Convention on The International Regulations for Preventing Collisions at Sea, 1972
Dip.Ed.  Diploma in Education
D.Litt.  Doctor of Letters
D.Sc.  Doctor of Science
F.G.  Foreign going
ICS  International Chamber of Shipping
ILO  International Labour Organisation
IMO  International Maritime Organisation
INTER-TANKO  International independent tanker owners
LL.D.  Doctor of laws
MARPOL  International Convention for the Prevention of
Pollution from Ships, 1973

MET Maritime education and training

M.Sc. Master of science

OECD Organisation for Economic Cooperation and Development

ONC Ordinary National Certificate

OND Ordinary National Diploma

Ph.D. Doctor of Philosophy

P&I Protection and Indemnity Club

SOLAS International Convention for the Safety of Life at Sea, 1972

STCW International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978

UNCTAD United Nation Conference on Trade and Development

UNDP United nation Development Programme

UNESCO United Nation Economic and Social Council

WMO World Meteorological Organisation

WMU World Maritime University
CHAPTER I

INTRODUCTION

1.1 The shipping industry

The early 80s was an intense period of shipping expansion which saw the setting up of many new companies largely through joint ventures and the relocation from other centres to Malaysia. The main reason being to take advantage of the cabotage policy and a share of the national cargo (through the UN Code of Conduct for Liner Conferences - UNCTAD’s 40-40-20). The emergence of new companies saw national tonnage increased by 150% between 1980 -1986.

Cabotage policy, introduced at the beginning of the decade has come a long way in increasing participation by local shipowners. Coastal shipping tonnage increased fivefold over the period 1981/1985 and the number of ships more than doubled from 132 (151,937 grt) to 275 (776,349 grt) respectively. The year 1988 however saw a decline in the tonnage due to global recession and the inherent time lag of supply/demand of tonnage (Lloyds Maritime Asia, 1988).

Additional boost to shipping can be achieved if cargo flow through Singapore can be reduced or diverted altogether. This is possible now with the Malaysian ports more efficient and aggressive in wooing shippers and ship calls thus offering customers a more economical alternative. The advent of intermodalism also, has to some extent,
helped arrest cargo flow through Singapore by combining land and sea transport via Port Kelang and Penang.


The global economic recovery has brought about a major improvement in foreign trade. This is characterised by the large increase in the volume of goods leaving the country.
as manifested in the total volume of cargo handled by Malaysian ports. In all major ports container traffic registered the highest growth.

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source: Containerisation yearbook 1987/1988 - world container port traffic league.

On the international level, the government has entered into bilateral shipping agreements with several countries. These agreements cover, among other things, equitable sharing of cargoes between the national lines of the two countries and reciprocal favourable treatment to vessels of each state. This should result in the greater need for and utilisation of national tonnage.
1.2 Other maritime activities

The rapid development of the shipping industry since the beginning of the 70s was not confined only to shipping tonnage. Other sectors too were undergoing a similar pace of development. In the port sector, there are presently seven major ports in Malaysia providing a combined total of about 12,206 metres of berth. Together they handled over 70m tonnes of cargo in 1985. Besides major ports, there are about 17 smaller ports with facilities ranging from small to medium size vessels situated throughout the country. In shipbuilding and repairs, two main shipyards are capable of building vessels of up to 400,000 tonnes and 12,000 tonnes deadweight respectively. In addition to this there are over 25 smaller yards around the country, some with capacity of up to 10,000 tonnes deadweight. (Lloyds Asean Shipping Directory, 1987-88).

The offshore oil and gas industry, though not directly related, is of major significance to the shipping industry as a whole including for MET. In 1987 Malaysia ranks 21st in terms of production and 17th on a reserve per-capita basis in the world table. There were a total of 44 oil fields and 47 gas fields throughout Malaysia as of 1987. Petroleum production stood at 23.6 m tonnes in 1987. Of the total production, about 25% is processed locally thus creating a sizable demand for the coastal tanker market. Export of natural gas totalled 5.9 m tonnes for the same year (Bowie, 1987). Fisheries too, though not directly related to commercial shipping is important in the context of maritime activities as a whole. Its present activity is restricted only to artisinal and coastal fishing. There are however, plans to introduce deep sea fishing but so far development in this area has been slow. Total catch
in 1986 amounted to 616.3 m tonnes. Another sector which may have a sizable market potential in the future is ocean and sea cruising. At the moment only a few vessels are engaged in ferrying tourists to the nearby islands and to Sumatra.

1.3 Requirements for qualified manpower

The setting up of the national shipping line, Malaysian International Shipping Corporation (MISC), coincided with the cyclical beginning of a long period of shipping boom that was to last for over a decade. During this period, fleet expansion in the local shipping industry took place at such a rapid pace that manning soon became a problem. Demand for trained manpower far outstripped supply creating an acute shortage of qualified personnel to man the national fleet. Simultaneous developments in other sectors intensified the need for personnel not only for shipboard services but also ashore. As a result, large vacancies existed for holders of Master and Chief Engineer qualifications in the shipping companies, in government service, ports, shipyards, offshore (oil and gas) and other ancillary support services.

1.4 The establishment of ALAM

The developments in the industry and the consequent need for qualified personnel led to the establishment, in 1981 of the Maritime Academy Malaysia (ALAM) with the award of a government charter.

In its short history the academy has been successful in introducing the full range of professional courses. These include all certificates of competency courses for deck
and engineering up to the Master and Chief Engineers level, radio officers course, ratings training (in the deck, engine and catering disciplines), and short courses. It is a remarkable achievement by any standard and a tribute to those instrumental in its development. As part of the development programme it recently acquired a Norcontrol radar and navigational simulator.

The setting up of the national maritime academy bears testimony to the recognition of the importance given by the government to the industry and the need for human resource development in this sector. Nevertheless, in the light of technological advances in the industry today, it is important to reflect on the roles of the academy and to examine the necessary steps to ensure that it (the academy) is able to carry out effectively its roles and responsibilities. There are many pertinent questions that have to be addressed - are the courses in line with current developments; are they consistent with the national education structure; is the existence of ALAM purely for the training of shipboard personnel or for the shipping industry as a whole? The last point has to be examined with regards to current development vis-a-vis the charter of the academy which provides, in addition to the conduct of courses in MET, the carrying out of research and publications of materials on areas relating to shipping (MATES Foundation, 1981).

1.5 The faculty

Teaching staff at ALAM comprises of instructors and lecturers which currently has a total strength of 52: 22 nautical, 5 engineering, 4 radio and 4 academic
academic lecturers, and 18 instructors. Almost half of the nautical and engineering lecturers are expatriate staff. A number of lecturers have had previous teaching and shore industry experience ranging from one to fifteen years. The majority however joined the academy fresh from a career at sea. The teaching staff thus comprise of individuals of greatly varying experience.

The instructors too have a varied background and working experience. Some of those who joined earlier and involved in the teaching of ratings and basic safety course have a navy background. Others are ex-seafarers with petty officer, home and local trade certificates including the lower level of foreign going qualifications.
CHAPTER II

THE NEED FOR STAFF DEVELOPMENT

2.1 Definition

The term "staff development" may mean different thing to different people. It is also likely to differ from organisation to organisation depending on the type, nature of work and, aims, objectives and policy of the individual organisation.

In the context of maritime education "Staff development" may be defined as the process by which an individual is given the opportunity to increase his understanding and broaden his knowledge applicable to his area of work to ensure continued proficiency and professional competence; improve his skills and abilities in order to be able to perform more effectively at his current tasks towards fulfilling departmental expectations and meeting organisational objectives; prepare himself for wider future responsibilities; provide him with the necessary tools to undertake applied and operational research towards enhancing MET and thus enabling him to contribute to the development of the industry.

On a more general theme the need for staff development can satisfy both the organisational requirements as well as the individual needs. That is, beyond the immediate organisational needs staff development must facilitate the
integration of staff’s need for personal growth and the organisational goals and objectives. Advanced qualification for example, is one area in which both individual and organisational need can be satisfied.

The following table provides a comparison of the scope and extent of the aims of staff development on organizational and individual needs. The organisation’s main objective of staff development is to enhance group and individual performance whilst for the staff it is primarily to meet his need for career development and personal growth.

**Fig. 2.1**

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<th>Organisation and individual needs factors and purpose of staff development</th>
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<td>organisational needs</td>
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<td>group performance</td>
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<tr>
<td>career development</td>
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<tr>
<td>personal education</td>
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Adaptation of diagram from Getzel and Guba (1957): OECD in service ed. and training for teachers, CERI (82).
Factors pointing to the need for staff development will be discussed in relation to the development and the increasing importance of the industry, the changing nature of MET brought about by the change in practices, technology and general education system. These factors will be examined against the present and the future roles of the maritime academy.

2.2 CHANGES IN THE INDUSTRY

2.2.1 Technological change

Ships today have not only generally increased in size but have also become highly specialised. The latest generation of container vessels for example, will be hatchless, of 4500 TEUs (twenty foot equivalent units) capacity (almost four times the size of a conventional cargo vessel) close to 300 metres in length and a gross tonnage close to 60 thousand tonnes. The conventional general cargo vessels have now given way to multi purpose carriers, cellular container vessels and chemical and (the highly sophisticated) gas tankers (liquefied natural gas and liquefied petroleum gas). Bulk carriers have gone from homogeneous bulk to ore/bulk/oil (OBO) carriers and now there is even a hybrid carrier of product/ore/bulk/oil (PROBO). Other specialised vessels include the roll-on roll-off (Ro-ro), lighter aboard ship (LASH) and barge carriers, and the roll-on roll-off/load-on load-off (RO-1o). In the cruise industry technology has brought about more changes in new design and innovations.

Changes are taking place not only with respect to ship size and specialisation but in every aspect of ship design
and operation - machinery, navigation, cargo handling and communication system. A modern feature onboard today will include fully automated unmanned engine room, computerised cargo control system, modern communication facility providing telex, telephone, video and data communication via satellite and an integrated navigation system. With the advent of advanced computers and the combined potentials of Global Positioning Satellites System (GPS), satellite communication and vessel traffic system, a fully automated ship may only be a few years away.

Current developments are centered on electronic charts, integrated radio telephone system (VHF) with radar giving instantaneous target identification and the concept of ship operation center (SOC) where all shipboard operations and control will be carried out in one center. The ships of the future project launched by a number of advanced countries (Japan, Federal Republic of Germany and Norway) are leading the way in technological innovations.

Technological obsolescence are likely to leave the shipowners with no choice. Take the case of electronic chart for instance, which is already at an advanced stage of development and on experimental use on a few ships. With the system now (at least technically) capable of being used, it will not be long before electronic charts will replace the paper charts. The continued retention on board of paper charts may only be in meeting regulatory requirement up to a certain point in time. Thus, no matter where a ship trades, up-to-date paper charts may no longer be readily available as manual correction will be too laborious and keeping two systems running in parallel indefinitely, too expensive. The industry as well as those responsible for MET will therefore have to take this
factor into account in addressing manpower needs.

2.2.2 Changes in shipboard operation

The number of ship's crew has reduced from about 35 in the 70s to between 20 and 25 in the early 80s. Today a crew of 15 (and fewer on some ships) is not uncommon on modern vessels. And experiments are continuing especially with the ship of the future project to bring this level even lower. With parallel developments taking place in other facets of the industry the target of even smaller crew will be a reality in the very near future.

On modern seagoing vessels, the traditional shipboard organisation of deck, engine, radio and catering departments have largely disappeared. It is however, still a common feature on ships of the developing countries. On modern vessels with small crew, the junior officers are dual certificated able to keep bridge as well as engine room watches. At the senior officer's level specialisation as an engineer or a deck officer is still prevalent. On the vessels (unmanned machinery space) the engineers would only be involved in the day maintenance tasks. As for the radio officer, his role has changed mostly to that of the maintenance technician of electronic equipment. The master, although still in traditional command of the vessel is increasingly assuming the role of a ship's manager.

Shipboard operations, along with crew size and organizational structure are also undergoing profound changes. Major shipboard maintenance, for example, long the pre-occupation of ship's crew has now been taken over by the shore crew and more urgent repairs and maintenance
2.2.3 Changes in shipping operation

Current trends towards cost reduction have resulted in a radical change in the operations of the shipping industry. In Europe, following flagging out is the establishment of an international register or offshore register as an alternative to the more restrictive national register. One of the flexibilities offered by the new register is the possibility of employing foreign crew. The result is a crew of mixed nationalities on board many vessels today. With ship registry came independent ship management companies who manage ships on behalf of owners. Thus many seafarers today are no longer employed by the shipowners but by ship management companies who may or may not include crewing as part of their mainline activities.

The advent of intermodalism and new commercial practices such as the just-in-time concept are among the developments which place new and greater demands on ships officers and ultimately on maritime education and training.

2.2.4 Legislative and regulatory changes

Apart from the on going legislative changes affecting ships operations through such international conventions as SOLAS, MARPOL and COLREG other regulatory changes have also brought about significant impact on shipping and MET. Having come into force in 1985, the STCW Convention brought about major global changes to MET. It defines the extent of training required and the minimum standards to be met. It addresses, inter alia, the aspects of training
and certification, specialised training and updating of seafarers knowledge. Although, due to the inherent time lag, some aspects of the convention may be outdated, its principles nevertheless, still apply in many cases (IMO, 1978).

Other developments that have an impact on shipping is the establishment of the Paris Memorandum of Understanding on port state control. Ships are subjected to inspection when calling at a port in the countries that are parties to the agreement and in countries that later signed the agreement. The U.N. Law of the Sea Convention, although not yet fully ratified, will also affect shipping in some ways. Part VII of the convention covers shipping, flag state and collision and part XII on pollution. In addition there are also a number of changes in the commercial shipping and trade laws which affect shipping operations.

2.3 Socio-economic changes

The buoyant national economy has created many job opportunities in the country with the accompanying improvement in the standard of living. Per capita income has risen from US$ 1618 in 1987 to US$ 1820 in 1989 (June) [Asia week, 87, 89]. An average family now owns a comfortable house, a car and other modern amenities with an annual holiday abroad not uncommon among the middle income families. In education, the standard has been constantly improving. Most children completed primary (99% in 1985) and secondary (53% in 1985) education and an increasing number go on to tertiary education (FEFC, 1989). There are currently 7 universities in the country. A high social demand in the society results in parental pressure for children to do well in school and to
In terms of career, most graduates nowadays no longer hope for job security only but one which promises a good career prospects. All these factors, combined with the present MET system do not augur well in attracting young people towards a career at sea. Cultural and religious awareness taking root not only in the rural areas but more significantly among urban young men and women adds to the problem of attracting students. Another factor is that the average Malaysian has a strong family ties which also present problems in the recruitment of suitable school leavers.

2.4 Global changes in MET systems

Engendered by significant and continuing changes in the industry, those concerned with MET, particularly in the developed countries are endeavouring to bring about major reform in adapting to these changes. In some cases curriculum has been completely overhauled and rewritten. New and more relevent subjects have replaced many of the outdated ones. Most notably however, are the changes that are taking place with respect to the structure and system of MET. These include the introduction of the common entry scheme of education and training for deck and engineer officers (also known as the Y system), the semi-bivalent or dual certification system and the fully bivalent system. A common feature with all these systems is the conduct of the main part of the education and training in a single block at the beginning. Courses last from 3 to 4 years and lead to an equivalent academic award in addition to professional qualifications. The level of professional qualifications awarded at this stage is
usually restricted to watchkeeping certificates with subsequent qualifications being obtainable after the completion of appropriate sea time and in some cases including passing the oral examination.

Many countries that adopted the predominantly British system of MET (most Commonwealth countries) have also changed to the full front-ended system. They include Australia, India and Pakistan. The United Kingdom is currently about to harmonised its differing and varied approaches to MET towards a similar system (Mathews 1989) However, in most other countries for example, the United States, Japan, South Korea and in many of the West European and the Eastern Bloc countries, MET has always been based on the front-ended system or in a few cases, have been in existence for a long time.

The present system of various stages of training, examination and certification is clearly unsuitable and gives no benefits whatsoever. The continuity either of service or education is interrupted several times towards achieving a Master or a Chief Engineer certificate. This system is disadvantageous both from the students' point of view as well as the employer (Waters, 1989).

As regards certificates of competency examinations, the trend now is towards internal examination and assessment. In this respect it is appreciated that colleges are better equipped to assess and examine candidates based on their extensive knowledge. It would be very difficult for those not in constant touch with new developments to be able to quickly adapt and comprehend fully new technology. Take for instance the principles and operation of the raster scan radar which is quite different from conventional
radars. As these equipment are fast replacing conventional ones examination cannot possibly continue to be based on conventional radars. In this respect, examiners who are not able to constantly update themselves are likely to find remaining competent in their subject area an almost impossible task. Therefore it is inconceivable that those outside colleges can continue to be sufficiently informed and updated to be able to undertake effective examination and assessment. Furthermore, to be a competent examiner a person needs to have a superior qualification and a wide experience in shipboard service in addition to being an authority on the subject.

2.5 Government and industry response to changes

The recent upsurge in the national economy and the consequential increase in the demand for efficient transport prompted the government to direct efforts to improve the overall transport industry. Infrastructurally, the shipping industry can only operate efficiently if the important integral components are sufficiently developed.

1 - capital resources (shipping companies, shipyards, ancillary services)

2 - administrative and institutional framework

3 - human resource (ashore and afloat)

These three components can be viewed as a tripod supporting the stability and engendering the growth of the industry.
2.5.1 Capital resources

In this sector a number of major developments have taken place. The recently commissioned National Port Study made several recommendations to improve performance of the major ports in the country. Privatisation of port operations and facilities (as evidenced by the Kelang Container Terminal) will undoubtedly result in greater efficiency and profitability for the ports. Tonnage is
also set to increase with the Malaysian International Shipping Corporation (MISC) recently placing four new orders for product carriers to increase its share of the carriage of palm oil which currently only stands at between 5% and 7%. Orders have also been placed for four container vessels and in addition it has plans for two more smaller tankers (Lloyds Maritime Asia, 1988). With these orders, tonnage in the international as well as the domestic sectors is set to increase.

2.5.2 Administrative and institutional frameworks

The 80s have also seen remarkable progress being made in the administrative and institutional frameworks. In 1982 the Ministry of Transport’s Maritime Division was set up to replace the then existing shipping unit which was too small to deal with the large and diversified maritime interests. Its early tasks include the implementation of cabotage policy and the commencement of work towards amending and harmonising the separate and outdated Merchant Shipping Ordinances that exist for Peninsular Malaysia and the states of Sabah and Sarawak (Ramadas, 1985).

Equally significant are the setting up of the following agencies:

1. National Shipping Council - responsible for coordinating the numerous independent bodies related to shipping. The inclusion of ALAM within the council is a good sign that the importance of MET is beginning to be recognised.

2. The National Maritime Council - recently set up,
this body is mainly concerned with matters pertaining to the law of the sea. It acts as a central coordinating body for the various departments and agencies that are involved (Sheikh Osman S. 1989).

The setting up of the National Freight Booking Center is a further manifestation of the government's effort to develop national shipping and protecting the interest of local shippers.

2.5.3 Human resource

Hitherto, emphasis has mostly been directed towards boosting the capital resource and improving institutional frameworks. Whilst changes and improvements in these areas are to be commended, a vacuum is unfortunately left in the form of the most fundamental and important integral component of the basic infrastructure - the development of the human resource.

ALAM is the only institution in the country conducting MET courses whether for shipboard or commercial shipping sectors. However, presently its activities are confined mainly to MET for shipboard services. There is evidently a high demand for the shore based type of courses also due to concurrent developments in other sectors of the industry. These include for example, courses on shipping operations and management and ship agency and forwarding. The fact that a large number of locals are known to have registered (the exact number is difficult to determine) for shipping related courses overseas is further evidence of the existence of demand locally. Such courses are conducted through correspondence or distance learning.
programmes with course fees costing as much as between 600 - 5500 per person per course (Centre for Advanced Maritime Studies, 1989). It is being increasingly expected that the academy would offer such courses in the future.

2.6 Impact of changes on MET in Malaysia

To suggest that Malaysia is approaching a MET crisis would almost certainly draw criticism and be regarded perhaps as stretching things too far. However, the disparity that exists today between curriculum content and technological development is so great as to make one wonder whether we are indeed making any progress at all. One would be radically inclined to conclude that in many developing countries and to some extent even the developed countries, the MET system responded but little to the various technological and environmental developments.

In the late 60s, Coomb (Coombs, 1968) called for a global change in the national education system. Among other things, he spelled out the growing obsolescence of the old educational curriculum content in relation to the advancing state of knowledge and the actual learning needs of students. The factors - custom, tradition and institutional structure blocked nations from making optimum use of education and educated manpower to further national growth. He pointed out that the developing countries were at a distinct disadvantage and in an even worst situation than their western counterparts. The system they adopted was not only outdated but designed to fit different circumstances with different objectives and purposes. This phenomenon was further emphasised at the Organisation for Economic Cooperation and Development.
(OECD) intergovernmental conference on policies on higher education in the 80s (OECD, 1981). This case reflects rather explicitly the situation of MET in Malaysia today.

2.7 Present and future roles of ALAM

To enable a proper analysis of the present and future roles to be made it is first necessary to look at the changing nature of MET. Malaysia being a former colony of the United Kingdom, inherited most of that country’s political, governmental and administrative systems. It quite naturally also modelled its courses on the old United Kingdom’s system of MET. However, it is hard to clearly distinguish the MET in Malaysia with that of the United Kingdom beyond the structure of examination and certification for there are various schemes that were in existence in the United Kingdom. It would be more appropriate therefore, to refer to the system of MET in Malaysia as being based on the old structure of examination and certification of the United Kingdom. That is the system is characterised by short preparatory courses of between 3 to 6 months duration to prepare candidates for the various levels of the certificates of competency examinations.

The United Kingdom, realising the shortcomings of this system, that the industry ashore requires personnel with knowledge far beyond their shipboard skills, introduced the extra master and the extra first class certificates (Rochdale Report, 1970). This is primarily intended for those who would be potential candidates for jobs ashore in the marine related industry particularly as superintendents in shipping companies, lecturers, surveyors and examiners. This was followed by the
Introduction of degree and post-graduate courses in the 60s. Later changes include the merging with the BTEC diploma scheme.

Against this background of rapid changes, MET would need to be restructured and improved to take account of the current changes. It needs to reflect at the very least the general improvement in national education system and the prevailing operational and technological changes in the industry. In Malaysia however, we have not gone beyond the certificate of competency level. Syllabi still reflect almost entirely the aspects of safety with little or no emphasis on managerial or commercial subjects which are very important today if the ships are to be economically and efficiently run, and safety procedures effectively carried out.

Similarly, the industry ashore requires people with broader knowledge of the maritime field. The gradual shift of the commercial shipping operations (ship management, shipbroking, ship-building and repairs, insurance) from the traditional centres in Europe to the East, notably to Hong Kong and Singapore presents new opportunities to the local industry. Therefore, to take advantage of these developments, Malaysia needs to upgrade not only its physical infra-structure but equally importantly its human resource.

Thus, having looked at the present needs and future requirements it becomes distinctly clear what is expected of the institution and its faculty. Training institutions today must be able to quickly adapt to rapidly changing scenes and play a far greater role than they previously assumed.
Broadly, the roles can be categorised into three stages:

1. Immediate - involves improving present courses/syllabi content, curriculum, introduction of specialised courses for the industry ashore.

2. Short/medium term (1-3 yrs) - advancing the present system of MET consistent with technical and professional developments, in the general education system. Identify areas within the industry requiring training.

3. Long term (6-10 yrs) - carrying out of educational and applied research, publications of materials in the field and the enhancement of MET in general.

There is therefore a need to review and upgrade courses, introduce specialised courses, develop shore based related courses and to carry out research and publish materials in the areas of shipping.

2.8 Implications on the faculty - the need for staff development

Having started at a time when the industry is shifting from the industrialised countries to the developing countries and with the benefits of the experiences of others, the type of training and education in the maritime sector should have started on a more appropriate
foundation. Nevertheless, there cannot be a more opportune time than now to rationalise, upgrade and identify areas for change to harmonise MET and professional and vocational needs.

One of the most important elements in meeting this goal is the availability of highly qualified and competent core of teaching staff. The present faculty members who are all qualified professionals but rather lacking the additional advanced qualifications (post-graduate) and shore based industry experience are likely to find it increasingly difficult to cope with changes. This is in no way reflecting inefficiency on the part of the faculty, on the contrary, what has been achieved within a short time span is indicative of their diligence, hard work and potential. Notwithstanding the aforementioned, the fact remains that there is a widening gap between staff’s qualifications and technological developments on one hand, and courses being offered and requirements in the industry on the other. These developments place a heavy demand on the need for staff to be retrained as many of the traditional field of study will have to make way for the new more relevant subjects.

Many aspects would require on the part of the staff a deep understanding in areas such as principles of automation, mathematics, control theory, electronics and computer knowledge. Systems accuracy implies at least a higher level of physics and mathematics than generally possessed. This places a heavy burden on the traditional lecturers and the organisation. Therefore, the sooner this situation is realised and actions taken to remedy it the easier will be the transition.
CHAPTER III

AREAS FOR DEVELOPMENT

3.1 INTRODUCTION

A need for staff training and development exists once a situation is established whereby there is a gap between the present level of qualification and the desired level of qualification and/or the present level of performance and the desired level of performance towards achieving organisational objectives.

Fig. 3.1

<table>
<thead>
<tr>
<th>Desired level of performance (or qualification)</th>
<th>-</th>
<th>present level of performance (or qualification)</th>
</tr>
</thead>
</table>

= gap = training and development needs

The needs for training and development for the faculty have been identified broadly in the previous chapter. However, before proceeding to examine in detail what these
needs are, it is necessary to be absolutely clear as to the exact nature of the work of a maritime lecturer involved in Maritime Education and Training and the nature of the MET itself.

To assist the management in planning a proper staff training and development programme it is vitally important that training institutions, like any other organisations have a clearly formulated goals and objectives. Problems and shortcomings are not necessarily confined only to the present situation, they should also be examined in the light of future developments and directions of the organisation. It is for this reason that clear goals and objectives would be useful. Objectives and goals should not be regarded as sacrosanct and should therefore be subjected to periodic review or as and when necessary.

3.2 The learning process - is it "training" or "Education" (or Training and Education)?

It has long been a source of debate amongst people in the MET circle as to whether the learning process towards obtaining qualification in the merchant marine constitute training or training and education.

Whilst a definitive answer is not proposed here, some views would, it is hoped serve to differentiate the two more clearly. At the outset there is no single definition and the two can and often overlap. In the ordinary context (formal) education means simply schooling from primary school up to the university level. In its widest sense education can be regarded as the total process of
developing human knowledge, skills and attitude.

The word training on the other hand refers mainly to the teaching of skills, emphasis being on what to do and how to do rather than the reasons for doing. It usually implies practices involving physical drill to improve or sharpen skills or performance as in military and sports training. Where the term "training course" is used as in management training one immediately conjures up a short instructional course likely to involve active participation by the participants. Nevertheless in a wider context the word implies a process of learning towards a specific objective.

What is clear however is the fact that there is no clearcut definition and no right or wrong in whatever way one chooses to define training and education for maritime application. It depends largely on the system being referred to. Any particular view would, in most cases be influenced by the individual system, curriculum and the relationship to the national education system. A more sensible view is to regard the two not as a dichotomy as some do but as complementary.

Thus in one country, the term "maritime training" may fit the process nicely, in others it may not and in yet another system it may be both 'training and education'. Often there are other reasons which could be a strong influencing factor in and therefore reasons for wishing to classify the process as being training or education. One such reason relates to the cost of training and education. This is where a clear boundary is drawn between Training and Education - the view here is that what takes place in formal schools and universities is education and what
takes place in industry is training. This drawing of boundary has an important financial implication in that what is required outside the general education system has to be paid for thus freeing the government of the financial burden.

To consider two extremes—a system where a person can go straight to sea without having to attend any initial and subsequent training courses and thereafter is allowed to sit for the certificate of competency examinations can hardly be considered education in the formal sense. On the other hand, a full front-ended course of study leading to professional qualifications and an academic award cannot therefore be classified as just pure training.

In many countries the process is more likely to involve both education and training. The development of attitude which is so crucial in the maritime profession can only be achieved through a proper process of training and education. Future trends certainly point towards equal emphasis on education and training and also a greater overlapping of academic, technical and vocational inputs in MET.

At ALAM, where the aim is to provide total education to personnel in the maritime industry, the process is one of education and training. The objective is to produce officers who would not only be well qualified for shipboard services but also well qualified to take up positions in the maritime industry ashore.

3.3 Identification of staff training needs
If training and developmental needs arise due to a gap between the present level and the desired level what has to be considered next is how to identify these needs. The most effective way is to carry out a needs analysis. The needs would invariably be related to the objectives, aims and goals of the organisation.

Two methods commonly used are task analysis and performance analysis.

3.3.1 Task analysis:

Task analysis looks at how and what are the tasks that a competent person should perform to accomplish a given job - a step by step analysis of the components and tasks required to perform a job. That is, it analyses where the weakness is, be it knowledge, skill or attitude and determines an appropriate solution which may be by way of specific training (Mager, 1984).

3.3.2 Performance analysis:

Where the actual performance is below the desired performance, performance analysis can help determine the likely causes. It attempts to find out whether the shortcomings are due to a lack of knowledge and skills required to do a job, or lack of motivation or because of certain obstacles preventing the desired performance from being achieved. It is basically used to determine why people are not doing what they are supposed to do or why performance is below the desired level.

3.3.3 Training needs survey:
The third commonly used method is the training needs survey. This involves the carrying out of surveys among staff and senior members of the faculty to obtain their attitudes and opinions. The findings can be further supplemented by knowledge of the practices normally undertaken by established institutions. The result of the survey and recommendations have to be balanced against what management, through its own careful observation feel ought to be included.

In institutions where the needs are fairly obvious which is often the case with regards to, for instance staff qualifications then training need is immediately identifiable. If a problem relates to lack of certain specialised knowledge or experience then the solution is to train the staff in that particular field or where opportunities occur to employ staff with relevant experience. General developmental requirement on the other hand may not be immediately obvious or if not properly identified could lead to a situation of overtraining or undertraining. Either way is not desirable as it can lead to wastage of resources or weaknesses remaining unresolved. In such a case performance analysis may have to be applied.

3.4 Method applicable to ALAM

In the context of ALAM the situation as regards needs can be said to be fairly obvious. The most appropriate method therefore would be the carrying out of a task analysis supported by a training needs survey. The analysis should lead to a clearly defined scope of work of a maritime lecturer. A more complex analysis would only be required
in cases where the performance level is below the expected level or where generally it is felt that results are poor.

Surveys involving interviews and or questionnaire among the staff and students should be extensively used either as the main or a supporting instrument. The questionnaire/interview should cover among others:

1. areas concerning qualification
2. individual staff's strengths and field of interest
3. further training courses deemed necessary
4. given the freedom and flexibility what would staff most like to have included in the training programme.
5. any other aspects considered desirable

Soliciting of views from the staff will give them the feelings that their views and recommendations are valued and thereby fostering a sense of participation.

It is also necessary to be able to reasonably measure the extent of those needs. Measurement and assessment of needs other than the obvious (e.g. qualification) and specific training needs (new technology) may be achieved through careful observation and evaluation of courses, assessment and evaluation of teaching, feedback from students, staff and industry including an analysis of students performance in the examination.

In addition to general and developmental training needs outlined above, there arise from time to time specific training needs. Such needs could arise for example as a result of specific development, introduction of new
technology, equipment, new specialised training, etc. Another area for training may include identification of staff for special task such as counselling and career officer, to develop a research unit or to conduct certain special courses that are outside the general disciplines.

**Fig. 3.2**

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**Steps in carrying out a training needs analysis**

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1. main requirements for the job: qualifications, experience.

2. tasks to meet job requirement: teaching evaluation, assessment

3. understand procedures required to perform each task: preparation for lecture, lesson plan, teaching methods, assessment, evaluation

4. analyse knowledge, skills required to perform the procedures: teaching skills, communication skills, research skills, specialised knowledge

5. identify special problems and analyse particular knowledge and or skills required - new technology changes in practices, specialised knowledge
3.5 The work of a maritime lecturer

Maritime training institution such as ALAM which conduct the full range of courses is by its very nature an academic, technical, vocational and a training organisation. As such a lecturer may start his teaching career as an instructor (although in actual fact he is employed as a lecturer) gradually working up and lecturing to the advanced courses. There may be specialisation in that a person may remain within one section such as the short course section and engages and specialises only in those courses. On the other hand he may have to be called upon to conduct any of the listed courses. His role and the teaching methodology he chooses will therefore vary from course to course. The approach when conducting say a practical safety course (instructor) is very different to the conduct of shipboard management course (trainer). Because of the diversity in the number and types of courses and the nature of MET a maritime lecturer is essentially a teacher, tutor, lecturer, instructor, trainer and facilitator.

A maritime lecturer should not be regarded as only a person who teachers or lectures but should be seen as a person who in the course of his work would need to carry out all the tasks mentioned in the training matrix in table 3.1 and be regarded as a potential candidate for promotion to supervisory level. Additionally, he is expected to develop himself into an authority and a resource person in the area of his subjects and a valuable and expensive asset to the institution and the industry.
The training needs matrix in Table 3.1 shows the main tasks of a maritime lecturer at ALAM. It can be seen that the work of a lecturer is not merely confined to teaching and lecturing alone but encompasses a wide spectrum of tasks normally associated with teaching plus a host of administrative and general functions. A lecturer has to lecture, tutor, instruct, carry out research, conduct tests and examinations, manage class/course, provide counselling and guidance to students, design courses and develop curriculum, evaluate and validate courses and maintain students training and educational records. He will also have to communicate with the industry and other external agencies. The degree of involvement depends on his position and seniority. From time to time he may be required to attend and chair meetings, present papers at seminars/conferences, provide conference and seminar leadership and assumes the task of a project leader.
<table>
<thead>
<tr>
<th>No.</th>
<th>TASK</th>
<th>PERFORMANCE</th>
<th>TRAINING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Teach</td>
<td>lecturino, tutoring, instructing</td>
<td>pedagogic</td>
</tr>
<tr>
<td>2.</td>
<td>Assess, evaluate</td>
<td>assessment, testing, examination</td>
<td>pedagogic</td>
</tr>
<tr>
<td>3.</td>
<td>Update and improve course</td>
<td>review, evaluate and validate courses</td>
<td>pedagogic/advance qualification</td>
</tr>
<tr>
<td>4.</td>
<td>Class lecturer/tutor</td>
<td>handle students problems/ grievence, time tabling, monitor class progress, ensure adequacy of materials/aids discipline</td>
<td>pedagogic/counseling</td>
</tr>
<tr>
<td>5.</td>
<td>Class management</td>
<td>control, organise, motivate</td>
<td>pedagogic</td>
</tr>
<tr>
<td>6.</td>
<td>Development of new courses</td>
<td>design/develop new courses</td>
<td>pedagogic/advance qualification</td>
</tr>
<tr>
<td>7.</td>
<td>Counselling and career guidance</td>
<td>provide services to students</td>
<td>pedagogic/management skills</td>
</tr>
<tr>
<td>8.</td>
<td>influence attitudinal development</td>
<td>act as mentor to student</td>
<td>pedagogic/management skills</td>
</tr>
<tr>
<td>9.</td>
<td>Contribute to advancement of area of study</td>
<td>research/publication</td>
<td>advance qualification</td>
</tr>
<tr>
<td>10.</td>
<td>Seminar, conference, workshop</td>
<td>attend, provide leadership</td>
<td>management skills</td>
</tr>
<tr>
<td>11.</td>
<td>Implement agreed changes</td>
<td>assume role of change agent</td>
<td>management skills</td>
</tr>
<tr>
<td>12.</td>
<td>Research &amp; development projects</td>
<td>undertake research &amp; development in-house/external</td>
<td>advance qualification</td>
</tr>
<tr>
<td>13.</td>
<td>Examiner</td>
<td>set question, mark, assess</td>
<td>pedagogic/advance qualification</td>
</tr>
<tr>
<td>14.</td>
<td>Project leader</td>
<td>provide leadership and undertake students assignment</td>
<td>advance qualification/management skills</td>
</tr>
<tr>
<td>15.</td>
<td>liaison with industry/ external agencies</td>
<td>communication</td>
<td>management skills</td>
</tr>
<tr>
<td>16.</td>
<td>Administration</td>
<td>maintain students/academic records, performance</td>
<td>administrative skills</td>
</tr>
<tr>
<td>17.</td>
<td>Budget preparation and cost control</td>
<td>assist in preparing budget</td>
<td>management skills</td>
</tr>
</tbody>
</table>
3.6 Implications on the need for training and development

3.6.1 Pedagogical aspect

Under the present structure ALAM is neither a college nor a university. The former is where formal teacher training is a pre-requisite to becoming a teacher while in the latter in most cases lecturers do not concern themselves at all with the question of pedagogy - academic qualification and research work being the main criteria. The general view is that too explicit a teaching method is distrusted and the assumption is that bright students can be expected to develop cognitive skills without being over-organised by their teachers.

The approach to staff training and development particularly with respect to teacher training cannot therefore be based entirely on one approach or the other. Entrance level for various courses for instance is as diversified as the courses offered which varies from Lower Certificate of Education (LCE), though in reality most pupils reached the School Certificate level) to diploma holders. However some form of teacher training is highly desirable especially on areas of teaching and training methodologies, assessment and evaluation, course design and curriculum development.

It must be appreciated that at ALAM as in most other nautical colleges, considerable freedom is enjoyed by subject lecturers in choosing his content and material to meet the objectives defined in the teaching and examination syllabus. Poor judgement and the lack of in-depth knowledge on the part of the lecturer can lead to a deterioration in the quality of teaching.
3.6.2 Research and investigation

Research is another area requiring attention. It can be defined as any methodical process to add to or in the search for (new) knowledge. It can be a process of literature search, systematic observation as in case study, survey or laboratory and field experiments.

In many developing countries, the lack of research activities on a national level has hindered the proper analysis and development of human resource and progress of the industry. In the context of MET the lack of research has meant that there has been little or no development and no addition of new knowledge. Outdated syllabuses are still being used and subjects which are no longer relevant still being taught even to this day. The government, industry and colleges should work together to initiate this activity and exploit the existing capabilities of maritime training institution.

Research work can cover such broad areas as analysis of students and staff's performance, evaluate courses by undertaking survey among users, extent of computer application on Malaysian vessels, impact of modern technology on traditionally trained seafarers and the need for retraining. Educational research can also be carried out in areas such as survey of secondary school childrens awareness and interest towards a career in the merchant navy, adequacy and effectiveness of contact hours per subjects. Additionally, lecturers will need to undertake extensive literature research to improve teaching materials and enhance their personal knowledge.

It should be noted that all the research outlined above do
not necessarily require an in-depth research skills, considerable financing or even a laboratory facility.

3.6.3 Other skills

The need for continually updating the course content and syllabi calls for a close contact and cooperation with the industry. A close relationship will similarly have to be maintained with other external agencies connected with the industry. Such interaction and cooperation entail the holding of meetings, dialogues and discussions. Often the intermediary for such undertakings are lecturers or the section head themselves. Hence staff require a certain level of communication skill and need to be fairly good at interpersonal skills to generally ensure the interests of the institution being maintained and to uphold the good image of the institution.

3.7 Categorisation of training needs

Based on the work of a maritime lecturer (training needs matrix), and the implications it has on staff's training and development, the areas for staff training and development necessary for the faculty may be summarised as follows:

| Advanced qualification | : obtain post-graduate qualifications |
| Teacher training      | : learning theories, methodology, teaching techniques, course design, curriculum development, examination and assessment. |
Industry experience: gaining experience in related sectors of the industry

Interpersonal and managerial skills: interpersonal skills, counselling, communication skills, conflict management, information system, computer and data processing.

Fig. 3.3

Categories of training needs

-----------------------------------------------

Advanced Qualifications

Teacher Training

Maritime Lecturer

Interpersonal & Managerial Skills

Industry Experience

-----------------------------------------------

40
3.8 Formulation of a training and development programme - factors to be considered

Ideally all lecturers must have in addition to their professional qualifications, an academic degree preferably at post-graduate level including a PhD in related field. Appropriate industry experience would be another major criterion. However, at this stage it would be too optimistic and unrealistic to expect to be able to recruit personnel with the above qualifications. Nevertheless, a move towards this direction must be initiated as early as possible to enable the upgrading of MET to be implemented.

Fig. 34

----------------------------------------
Training needs for various levels of the faculty
----------------------------------------

snr.lect. ➔ prin. lect.
/snr. staff

managerial & interpersonal skills
advanced qual -ification/industry exp.
teacher training

managerial & interpersonal skills
advanced qual -ification/industry exp.
teacher training

jnr.lect. ➔ lecturer
The above table shows the differing needs for training and development for various levels. In general it can be seen that at the lower level the need is to acquire technical skills while at the higher level the need is to enhance social skills and develop conceptual skills (not reflected). At the lowest level (junior or probationary lecturer), the urgent need for the new recruit to the institution will be mainly on the aspects of teacher training. He will need some exposure to enable him to start in his new vocation. When the junior lecturer is confirmed that is, he is given tenure of service, the concern should be in obtaining an advanced qualification (if not already possessed). This is necessary as the lecturer will be expected to assume lecturing duties at a more advanced level and to begin to participate in course evaluation and development. Efforts in gaining industry experience in the appropriate field should be facilitated.

Senior lecturers who can be expected to have gained considerable teaching experience and who have assumed administrative responsibilities require less of teacher training. They will need instead training in interpersonal skills with teacher training being limited to keeping abreast of technological development. At the senior staff level (principal lecturers/head of department) more emphasis should be placed on managerial skills.

A training and development programme would in general have to include induction training, familiarisation, understudy teacher training, gaining industry experience, interpersonal skills and courses leading to the award of higher degrees.
CHAPTER IV

ADVANCED QUALIFICATIONS

4.1 Introduction

The requirement to be a maritime lecturer at ALAM at present is the possession of a professional qualification of Master or Chief Engineer. Any other qualification or experience would be an added advantage. Upon joining, under most circumstances a lecturer is given a period of time to familiarise, adapt and understudy. Thereafter he is expected to start teaching, beginning at the lower level and gradually working up to the higher level.

In the early days, practises in many countries follow a similar approach. In all these cases lecturers draw heavily on their previous training and experience which under the present environment is seriously inadequate especially to teach up to the level he is qualified at. This is prevalent in colleges of the developing countries where highly qualified staff are not available. The result is inefficient teaching, deteriorating quality, inability to improve and often giving rise to conflict with the present day students who are the product of modern schooling and therefore more highly educated compared to their predecessors.

In the world of academia potential lecturers are recruited as assistant tutors from the pool of outstanding students who obtain a good honours degree. These individuals would
also work as research assistant working their way through to higher qualifications. The acquisition of a postgraduate degree is generally regarded as a pre-requisite to a career in tertiary education.

4.2 The need for expertise

Teachers should be able to master their subjects and specialise on a narrower field. Their knowledge should not just cover the syllabus which in most cases consists of brief statements and is rather vague. They should strive to be an authority in their field of interest, be up to date on its development including current literature available and should aspire to improve and add to the existing knowledge. They need to develop expertise in their field not only for the purpose of teaching and advancing knowledge in a particular subject but also to enable them to become resource persons to the institution, industry and the government.

In the developing countries particularly where there is a dearth of experts the improving knowledge of the college faculty can be a useful source to tap. This readily available source of information is often overlooked in an environment where various sectors rather than cooperating are skeptical of one another. As an example, one area where lecturers can readily advise on is the suitability of navigational equipment for ships (including government crafts and pleasure crafts). Shipping companies often rely on their superintendents purchasing assessment backed by suppliers recommendation and perhaps the views of ships officers. Unfortunately, knowledge of company superintendents is often based on cost price, minimum performance standards and their previous experience which
is likely to be out of date whilst knowledge of ships officers rarely goes beyond knobology and the operating procedure. As lecturers familiarity with equipment is backed by indepth knowledge of the principles, technical specifications, functions and limitations and weaknesses of equipments, their advise can usefully serve to supplement in assisting companies decide on the most suitable and cost effective configuration (Zade, 1989).

A high standard of knowledge and qualification among lecturers can also be a valuable asset to the country especially in developing countries where specialised research institutes are scarce and major equipment manufacturers with research and development facilities are not available. Input from the faculty can therefore assist national administration in formulating national standards particularly on safety and navigational equipment. Their expertise should also be sought in drawing up national proposals, comments and recommendations for submission or discussion in all areas of work of the IMO and other relevant international organisations.

4.3 Further rationale

There are other equally important reasons which necessitate the need for advanced qualification.

1 It is a fundamental requirement that a person teaching at a particular level needs to have a qualification higher than that level. This is true at least for training and education up to the undergraduate level. It is sine qua non in the teaching profession.
It has been recognised as early as in 1970 (well before profound changes took place) in the Rochdale report that maritime lecturers need higher qualification than their traditional Master/Chief engineer or even Extra Master/Chief Engineer qualifications.

2. The recommendation in the Rochdale report was followed fifteen years later by the Rainers scrutiny (Rainers Scrutiny, 1985) which strongly recommended an academically more advanced qualifications on the part of examiners. As ALAM is in the process to start conducting examinations on behalf of the Marine Department it would be most appropriate for the staff, many of whom will eventually be examiners, to have higher qualifications.

3. If a move is envisaged which at the moment appears inevitable, towards improving the curriculum and enhancing the level of courses (degree/diploma) in the direction of front-ended system, implementation cannot take place without first having an adequate pool of properly qualified staff.

4. The different background among lecturers due to having followed different systems in different countries led to varying levels of basic knowledge within the faculty. At one end of the spectrum we have those who went straight to sea as a direct entry and at the other end those who underwent a comprehensive pre-sea education. Further courses will help bring every lecturer to or near a common level.
To meet the need for advanced knowledge of the profession through a formal course of study for those involved in education and training. Previously the only avenue was through the Extra Master/Extra Chief courses which provided a rather limited scope.

A college cannot be regarded as an institution of higher learning if all its staff are qualified only to the first degree level. Under such circumstances it will have to struggle extremely hard to shed the stigma of incompetence and low level and the scepticism often directed against a local professional institution.

Rightly or wrongly staff's qualification is often taken as an indicator of the net worth of an institution, its status, respectability, credibility and accreditation.

Advanced qualifications among the staff are required in order to enable them to successfully carry out the functions embodied in the charter of ALAM in particular the development and enhancement of MET.

To enable ALAM to meet the twin objectives of producing high calibre officers and the carrying out of research and developmental work with the industry requires staff that are suitably qualified. This is important if the diversified training needs are to be fully met.

The ability to update one's knowledge and stay abreast of rapid technological development and to ensure the capability to adapt to changing
environment require a high educational and training background. Professional skills alone would not guarantee staff's ability to adapt as skills can become redundant as soon as present technology is replaced.

Traditionally, in the merchant marine, for the highest level of professional qualification one could enroll for the Extra Master/Chief courses (U.K.). These were introduced in the 60s to enable those who wished to prove their superior qualifications and as a requirement for those intending to become surveyors, examiners, lecturers, company superintendents and various other posts ashore. Those intending to go into other commercial sectors of shipping (e.g. equipment manufacturers, insurance, shipbrokers, agencies) would normally opt for a bachelor of science degree in addition to obtaining their Master or Chief Engineer certificate. Many of the holders of this dual qualification also find their way into maritime colleges as junior lecturers.

4.4 A look at the different post graduate qualifications

The higher qualifications applicable in this field include

- Extra Master/First class engineer
- Post-graduate diploma
- Master of Science (M.Sc.)
- Doctoral degrees (Ph.D)

4.4.1 Extra Master/First Class Engineer

These are superior qualifications in the professional maritime studies intended for those wishing to occupy
senior posts in the industry ashore such as shipping company superintendents, surveyors and lecturers in nautical colleges. In the United Kingdom it is also the qualification required to become a Department of Trade nautical surveyor.

The Merchant Shipping notice number M 1126 of the Department of Trade, United Kingdom cites the purpose of the Extra Master course as being "voluntary and intended for those officers who aspire to senior positions in the shipping industry where a sound knowledge of professional subjects taken to a greater depth than for class I (master mariner) is an essential requirement. The Extra First Class Engineer course has a similar purpose and is accredited by the Institute of Marine Engineers as satisfying the academic standard necessary for registration as a chartered engineer by the Engineering Council (Merchant Shipping notice number M1335).

The period of study for the Extra Master/First Class Engineer is extremely intensive and of at least one year duration. Bridging courses are available for those who need academic preparation especially in mathematics and physics prior to enrolment for the course. Assessment is through final examination. The pass rate has been very low in the past but presently it is about 60% which is still rather low.

4.4.2 Post graduate diploma

This programme is open to graduates as well as non graduates who do not wish to attain a standard as high as the master’s degree. However, the programme may or may not be the same as that of the masters degree. The time period
is usually between 9 to 12 months. Unlike many of the post-graduate courses, there is usually no requirement for students to write a thesis for a post-graduate diploma course.

Various post-graduate diploma courses in ports and shipping are available at many centres in the U.K. and in some other West European countries.

4.4.3 Masters degree

A variety of ways are available today in which one can pursue a master's degree programme. It can be in the form of a full time taught course and coursework, on the submission of a thesis or part course work and part thesis. This is obtainable either through attendance at an advanced course of study or having spent a certain period of time in supervised research. Where the award is through research, a student undertakes an agreed research work under the supervision of an academic staff. However it does not normally require a high standard of originality as the PhD. It is in fact a record of research undertaken embodying a critical survey of literature in the field of study. Where the award is through coursework, a student attends formal lectures, participates in seminars, workshops and discussion. Assessment is usually by way of coursework, examination and or the submission of a dissertation. The whole course usually lasts from one to two years. Systems and duration vary from course to course and from country to country.

A master's degree by origin entails the qualification to teach or to practice as a professional. It proves that a person has knowledge above the general level that is
applicable to, for example, the undergraduate. In other words, the person has attained an advanced knowledge in a particular field.

The Master of philosophy (M.Phil) degree is obtainable by submission of thesis. It is usually awarded on the basis of research work the standard of which does not quite reach the level of the PhD. As such it is generally regarded as lying between an M.Sc. and the doctoral degree (UNESCO, 1983).

4.4.4 Doctor of philosophy - Ph.D

The word "doctor" originally means teacher (Webster, 1987) and "philosophy" means a search for the underlying principles and causes of truth and reality. Thus a holder of Ph.D is a person competent by skill and knowledge to teach or expound authoritatively on a particular subject or field of knowledge. He is in other words a full professional (Phillips & Pugh, 1987). The main aim of the doctoral programme is training in research methodology and advanced research techniques - to be able to identify a narrow researchable area, to master the research techniques and to put the findings to test. The time scale for getting a Ph.D. is usually between 2 1/2 to 5 years. The award of Ph.D is by submission and successful defence of an original thesis and in many cases satisfying the examination board through the viva examination. In the United States the doctoral degree is usually a general progression of the education system and the highest level of qualification. It consists of extensive taught courses and thesis work. In the United Kingdom and in the Netherlands for instance, it is generally obtainable only by research Although a holder of Ph.D is now widely found
outside the bounds of academia, its original concept is however related to academic work.

4.4.5 Higher doctorates (D.Sc., D.Litt, LL.D)

The so called higher doctorates, for example, Doctor of Science (DSc) and Doctor of Letters (DLitt) are awarded to scholars who have made outstanding contributions to knowledge (U.K.). This is generally awarded to graduates of the particular university or other persons whose work or activity is closely connected with the university, on the evidence of published work contributing substantially to knowledge. The work has to be original and displaying a wide and an indepth knowledge of the field including critical judgement. (The British Council, 1987). In Malaysia higher doctorates may be awarded after five years of study in literature and seven years in science (UNESCO, 1982).

4.5 Which course ?

4.5.1 Post-graduate diploma

Although this course is intended for and more useful to people in the industry, it can be valuable to supplement staff knowledge in the commercial and management aspects of shipping. It is also appropriate for those who do not wish to pursue a more advanced post graduate studies for one reason or another but need to enhance their knowledge. This may be an older member of the faculty who because of family reason or personal background is unable to undertake a MSc or a PhD programme but who has to give supporting lectures to courses such as shipping management. The advantage is that the post-graduate
diploma course is less demanding and of a shorter
duration. It can also be pursued on a part time basis or
as a distance learning package.

4.5.2 Extra Master/First Class Engineer

Though the Extra Master/Chief is arguably a superior
qualification its usefulness is rather limited to the
nautical field only and at the present time is fast
becoming outdated. This is evident from the subject
coverage the course contains. It may suffice for the
purpose of teaching the traditional certificate of
competency courses but hardly beyond. For development into
the wider field of maritime education its value too is
limited. This fact is evidenced by the constantly
decreasing popularity of these courses where the number of
candidates has drastically reduced in the last 10 years
with an alternate increase in the enrollment for graduate
courses. In 1984, only 10-12 candidates sat for the Extra
Master certificate examination while in 1988 the number
was reduced to between 5 and 10. There are currently only
three colleges conducting the extra master's course and
two for extra First Class Engineer course (Chief Examiner
of Masters and Mates, 1989). Institutions offering
undergraduate and post graduate courses have likewise
increased. It is therefore no longer useful for anyone to
pursue an Extra Master or Extra First Class Engineer
course.

4.5.3 Master of Science

All lecturers with the exception of those who are very
senior, that is those who have been in the teaching
profession for an extended period and have had many years
of experience, should possess post graduate qualification at the master’s degree level in appropriate field. Lecturers must possess a higher level of knowledge than the general level attained at the Class I (deck or engineer) level. The constant development and diversification in education ensued the availability of courses of study in virtually every discipline. Where a particular taught course is not available provision can usually be made for an independent research work in the chosen field.

4.5.4 Doctor of Philosophy

For this level a number of personnel based on needs and planned development should be qualified at the PhD level. Before starting degree level courses considerable research will have to be carried out and PhD holders will be suitably qualified for the purpose. And in order to develop a research unit it is imperative that a number of staff be qualified at the doctoral level. In carrying out research particularly applied research for the industry personnel with PhD will have the necessary training and skills to carry out the work. Advanced knowledge is also highly essential for developing high tech course modules. Choice of personnel for the higher degree can be made through appraisal and recommendations by heads of department and/or competitive selection by way of examination.

4.5.5 Higher Doctorates

This is not normally a formal qualification through study that is in most cases it is conferred upon the person for having made a significant contribution to the advancement
of knowledge through previously published work. In some countries the system itself has two levels of doctoral degrees. Examples include the Federal Republic of Germany, Union of Soviet Socialist Republic, and German Democratic Republic. These degrees are usually referred to as the lower and the higher doctorates and possession of the lower doctorates is prerequisite to registering for the higher doctorate. This is therefore not applicable for ALAM.

4.6 Avenues to higher qualifications - possible alternatives

A variety of ways are available to colleges to train their faculty staff towards obtaining higher qualifications. The most effective is an enrolment at a full time programme whether for a post-graduate diploma, master or doctoral degree. This would ensure that staff under most circumstances qualify within the assigned period. They would then be available to assume a new role or to meet a planned development target. Subsequent members of staff selected to enroll for a course can prepare himself in advance.

It is appreciated however that to have all the staff at ALAM where the average age is between 30-35 years, qualified with higher degrees would take a very long time. Bearing in mind also the need to ensure sufficient number of staff being available at all times and especially to meet a sudden upsurge in the demand for courses. Attrition is another problem that has to be taken into account.

Thus it may not always be possible to send staff on a long
post-graduate programme due to one of several reasons. Courses may be running at full strength and thus require the input from all staff. As full time post-graduate programme can be very costly budgetary constraint may interrupt the ongoing programme of sending staff to such a course. It can also be that staff may have personal commitments making them reluctant to be away for a long period. Others may no longer have the temperament nor the drive and rigorous discipline required in pursuing advanced studies.

Under these circumstances, a part time course where available can be a suitable alternative. Unfortunately for advanced degrees in maritime studies courses are not yet available locally.

However, for post-graduate diploma and in some cases for masters degree, the distance learning programme offers an excellent opportunity to study for higher degrees without being away from the work place.

4.7 Financial aids/study grants

For pursuing post-graduate qualifications financial study aids are available in various forms - grants, scholarships and fellowships. International organisations such as the IMO, UNDP, national development agencies of some countries and private foundations make available study aids to students either directly or through their governments.

The Grants Register (Lerner, 1988) lists all the sources of financial aids for graduate studies. Where available such opportunities should be utilised by ALAM.
4.8 Payback Loan Scheme

The Payback Loan scheme is useful for certain courses especially part time or correspondence. It can provide greater choice for personnel for self development. It is ideal for those who are restricted from pursuing a rigorous full time higher degree courses. This scheme allows the staff to obtain a study loan to pursue part time or correspondence courses leading to an award of higher qualifications without having to be absent from the campus for an extended period. In other words their services would remain unaffected. Should they be successful such a loan would be waived but if not then the amount borrowed will have to be repaid. The awards of payback loans should be given for those intending to pursue courses that are approved by ALAM only. This will prevent staff from pursuing courses that are not related and of no beneficial consequence to the organisation. Examples of courses that can be approved are law, ship brokering, transport and education.

A time limit should be imposed depending on the normal length of time required to complete a given course.

The payback Loan Scheme is similar to the Tuition Refund Plan practiced by some corporations.

4.8 The World Maritime University

The World Maritime University was set up in 1983 in Malmo, Sweden under the auspices of the Internatioal Maritime Organisation, a specialised agency of the United Nations. Its primary objective is to provide a high level training
for the developing countries to help reduce their acute shortage of expert personnel in the maritime field. All courses are at the post-graduate level leading to the award of a Master of Science degree. The duration for all courses is two academic years divided into four semesters.

Despite the many teething problems and the usual initial criticism, the university has, within a relatively short time span developed into a respected institution and an international center of excellence. To date, over 400 students from nearly 100 mainly developing countries have been trained in various maritime disciplines at the university. Many of them have now assumed responsible positions in their home country (Zade 1987). There has also been a number of students from the developed countries such as Spain, Sweden, Canada, and more recently the Soviet Union enrolled at the WMU. The response for enrolment is now very encouraging and competition for places which are limited is high.

One of the most enriching aspects of the university besides its formal course work is the unique opportunity of meeting and interacting with professionals and others related to the industry from virtually every corners of the world. This combined with the fact that there are over 80 visiting professors provide graduating students with international network that has no equal. Visiting professors are among the most renowned in their respective field internationally. Other important benefits include the opportunity for gaining exposure on the various aspects of the maritime industry on an international basis. Areas such as different systems, practices, contact with governmental and non-governmental international organisations having connection with the maritime field.
the latest trend and directions each facet of the industry is heading, are all very useful indeed.

Another unique feature of the university is its dynamism and adaptability. Courses are being constantly reviewed and changes incorporated to keep abreast of development and to maintain a high standard.

There are currently 7 courses offered, namely:

1. General Maritime Administration
2. Ports and Shipping Administration
3. Maritime Safety Administration (nautical)
4. Maritime Safety Administration (Engineering)
5. Maritime Education and Training (nautical)
6. Maritime Education and Training (Engineering)
7. Technical Management of Shipping Companies

4.8.1 Courses in Maritime Education and Training (Deck and Engineering)

These courses are tailor made for lecturers (and would be lecturers) teaching professional subjects at all levels of the deck and engineering disciplines. Entry requirement is possession of the highest qualification of Master Foreign Going for the nautical course and First Class Engineer for the engineering course.

The aims of these courses are to produce highly qualified lecturers who would be able to teach, update and develop the entire range and at all levels of maritime courses. It also gives considerable emphasis on the training and development of administrators/managers of maritime
training institution (WMU, 1989).

The programmes consist mainly of course work (lectures, seminars, projects and assignments) and are supplemented by extensive field trips that cover a broad area of interest. The submission of a written thesis forms a partial but nonetheless important requirement for the successful completion of the course.

For specialised tailor made solution to the problems of many countries the WMU is the ideal for many courses at the master’s degree level.
CHAPTER V

TEACHER TRAINING

5.1 Teacher training in general education

The training of school teachers in general education is a compulsory pre-service requirement in most countries. In Malaysia, teacher training which has a duration of three years and leads to a certificate in education, is conducted at the teacher training colleges under the direct supervision of the Ministry of Education.

For secondary schools, would-be teachers attend either a similar teacher training course or a specialised course. Alternatively, as is common today many are graduates who went on to do a post-graduate diploma in education (Dip.Ed.). The difference between the graduate and non-graduate teachers is in the salary scale and in the prospects for promotion. Graduate teachers are generally assigned to higher secondary classes.

A similar pattern is to be found in many other countries in particular those of the Commonwealth. The United Kingdom has a more varied teacher training courses ranging from a specialist pre-school nursery training to a 3 or a 4-year full time bachelor in education (B.Ed.) degrees conducted by universities and polytechnics. Diploma of higher education (Dip. HE) is granted to students who complete a full time 2 year course covering the same content as the first two years of the degree course. Other courses include a post-graduate certificate in
education (PGCE) lasting a full one year and a three year certificate in education course for non-graduates. Part time and in-service courses leading to the same awards are also available from the numerous polytechnics and colleges of higher education (Kurian, 1988). Besides teacher training courses, advanced courses leading to the award of post-graduate diploma, master's degree or a doctorate in education are also available on a wide area of studies from curriculum and educational research to education management.

5.2 Recent developments

In recent times many advanced courses in the field of education have been introduced. The leader in this is the United States where advanced degrees in the teaching profession are available in many universities. A Doctor of Arts degree is offered as an alternative to the Ph.D. Such a course offers extensive work on teaching practice, curriculum development and teaching skills in addition to advanced study in a particular discipline.

However, in Malaysia, graduates with higher qualifications eventually find their way into the faculty of education in universities, teacher training colleges or in the departments of the ministry of education. They seldom end up as teachers in schools or colleges.

In-service teacher training is also conducted extensively for primary and secondary school teachers. This is very useful especially in introducing innovation in teaching technique, new technology and to improve teachers performance.
5.3 Teacher training in higher education

In higher education and especially in universities, by contrast, teachers are not required to have any formal teacher training. In-service training, often voluntary for the staff is a matter for the individual institution. This is almost a universal characteristic of tertiary education. There are very few countries indeed where a formal teacher training is required for teaching in higher education. An example is the Democratic Republic of Germany.

The lack of emphasis on teaching or teacher training in higher education may be attributed to the fact that teaching skill is seldom regarded as a criteria for promotion (Husen & Postlethwaite 1985). More generally but perhaps less readily admitted is the fact that universities regard teacher training with a low esteem required only for primary and secondary education.

This practice is now changing particularly in the last decade or so. More and more educationist and academics are no longer convinced that university lecturers are doing an effective job due to their lack of professional teacher training. This awareness led to the introduction of in-service training in many universities and institutions of higher learning. These training courses concentrates on the development of teaching skills, viz. teaching methodology and teaching skills, choice and ordering of subject content, assessment and evaluation, curriculum development and course design (Miller, 1988).
5.4 Content of teacher training courses

Teacher training courses cover a great deal of theoretical aspects of pedagogy and a certain amount of practical teaching. In general the areas covered include:

1. educational psychology
2. school subjects
3. language proficiency
4. teaching techniques
5. teaching methodology
6. audio visual aids
7. efficient use of library
8. civics
9. co-curricula activities
10. practical teaching practice

The post graduate diploma in education course conducted by the universities basically trains teachers in specialist subjects for higher secondary classes. Other aspects of teacher education such as educational philosophy, psychology (learning theories) and teaching practice are also included.

5.5 Teacher training in maritime education

In MET the training of teachers has no general trend or prevailing similarity in practices. This is true even in the case of traditional maritime nations where maritime training has been in existence for a long time. In the Netherlands as in Norway formal teacher training is a prerequisite whereas in other European countries the approach is somewhat different. France for example does not have
any formal requirement on this. In the United Kingdom, teacher training whilst not compulsory, is in many cases usually carried out on an ad-hoc basis.

In contrast, even today teacher training and qualification in the developing countries has not received much attention. The reasons are likely to be more than just a matter of priority, or the lack of resources. The system adopted and the traditional influence may be the more significant reasons underlying this state of affairs.

MET in many developing countries is based mostly on the British or the French system and neither system give much emphasis on staff training. Another factor relates to the adoption and implementation of the STCW convention. The nautical advisers and training consultants (experts) at IMO who advised on the setting up of national maritime academies were mostly British. Not surprisingly then that the system as regards teaching, syllabus and the organisation of maritime colleges proposed in many a developing country is closely based on the British system. The system proposed is seldom modified to suit local or current needs.

5.6 Approaches to teacher training in other maritime nations

As stated in earlier chapters, the system of MET vary greatly from one country to another. It follows then that the educational and training background of lecturers irrespective of their teacher training background varies accordingly. At one end of the scale the total input of education and training (not counting the seatime) to reach the highest level can be as low as 1 to 2 years while at
the other end it can be as intensive as 5 to 6 years. Therefore, to better appreciate the differences and to make a more meaningful comparison between the levels of training and qualifications required to become a maritime lecturer, it is necessary to compare at the same time the various national systems of MET.

5.6.1 Denmark

MET in Denmark is a 3 year front ended course. However before enrolling for the course, candidates must have (I) completed a 5 month pre-sea course and (II) a minimum of 21 months as an apprentice onboard ship. Denmark may soon change to bivalent training.

Lecturer:

To be a lecturer candidates must have obtained a very good grade in the final examination with a minimum average score of 10.5 (13 being the highest possible score on a scale of 1 to 13). Successful candidates must undergo a 3-year advanced course in mathematics and physics at a technical university. Other subjects such as electronics, computer science, marine technology) are also covered. Thereafter lecturers attend a 1-year teacher training course.

5.6.2 Netherlands

The Netherlands is now training exclusively towards dual purpose certification. The system commenced (1985) with a 4-year front-ended programme of which the 3rd year is spent at sea with special project and assignment. In the 4th year students specialise into either deck or
engineering. Students are also required to submit a thesis. The qualification awarded at the end of the 4-year programme is a bachelor of science degree and watchkeeping certificates. An integrated system was started in 1984 integrating deck and engineering training up to the watchkeeping level. Thus, a person specialising say in the deck discipline will receive in addition to his academic and the deck qualification a watchkeeping engineers certificate and vice versa.

Lecturer:

Those qualified as master foreign going may apply to become a lecturer at the nautical colleges. Upon joining a new lecturer has to undergo a training programme lasting 5 years. They have to attend lectures conducted over the weekends on Friday afternoon and evening and Saturday (morning and afternoon) in addition to their teaching duties at the college during the week. Homeworlks and assignments are also given in addition to lectures. In view of the intensive training programme new teachers undergoing this programme are given reduced teaching workload at the college.

The objectives of teacher training in the Netherlands are to provide lecturers with teacher training and advanced professional knowledge and the constant updating of lecturers in a changing environment and technology. The latter is achieved through the conduct of updating courses. Course subjects and duration vary from a few days to several years. The updating course on automation and control systems for instance was conducted for all maritime lecturers spread over a period of four years at the Delft University. This was seen to be necessary in
the light of the impact and importance automation had in shipping. However most updating courses average about 30/40 lecturing hours.

Two types of courses are conducted – the first degree (Univ. degree) which is of five years duration and the second degree (advanced diploma) of a two year duration. The first four years comprise of approximately 1800 lecture hours plus homeworks assignments and examinations. The final year is given to the writing of a thesis. In the first degree a lecturer can choose to specialise in either one of the four subjects. These are navigation, seamanship, marine engineering and communication.

In both courses there are supporting subjects on mathematics, digital techniques, computers, physics, and chemical technology.

In the second degree diploma slightly fewer subjects are taken and topics and depth of subjects are more relevant to the teaching of junior level courses. (Vereeniging "Cornelis Douwes" 1988)

Although it may appear that lecturers at the Dutch maritime colleges may be better qualified than say, their British counterparts because of the 5-year training course, this is not however strictly the case. In the U.K. most lecturers possess in addition to their professional qualifications, an advanced degree including doctoral degrees. The reason for this is mainly due to employment policy and lecturers service conditions. Dutch lecturers have a heavy workload of almost 30 teaching hours per week leaving them with no time at all to pursue academic and other advancements. British lecturers on the other hand
have a relatively lower workload thus allowing them more opportunities to carry out research, work as consultants and so on.

5.6.3 France

The MET in France is arguably the most demanding and therefore of the highest qualified in Europe. France is also the leader and a strong advocate of the bivalent system having been conducting it for the last 20 years or so. MET comprises three levels of training namely (1) level I -bivalent. Entry requirement is a baccalaureate in mathematics and the total time from commencement to obtaining first class dual-purpose master is approximately 12 years (4 years college based and 5 years required seatime). (2) level II -was polyvalent until 1986 thence changed to bivalent. Holders of these certificates are qualified to command ships of not more than 7500 grt and in charge of engines of not more than 7500 kw. Entry requirement is lower than for level one and college based education totals three years instead of four. (3) level III - This is a monovalent training equivalent for officers working on coastal ships, equivalent to Home trade and Local trade officers. (Zade, 1988).

Lecturer:

There are three types of lecturers - Scientific deck (subjects that are referred to as science subjects e.g. mathematics, navigation, astronomy, electronics, dataprocessing) Engineering (engineering subjects) and Technical deck (covering safety, rules of the road, ship construction, transport economics).
lecturers at higher marine college are now open only to holders of cl.I bivalent (master). Entrance is by competitive examination meaning that only the best is selected. The examination requires for example a higher knowledge in mathematics than at masters level. The oral part of the examination is conducted over three days in front of a board of examiners. Candidates are required to conduct a one hour lesson each on a given subject for a total of four subjects (only 24 hrs given for preparation). Successful candidates undergo a one year internship during which period their performance is assessed by an inspector from the maritime administration and the senior officers of the college (vice-principal/ head of department). Lecturers under probation are also required to submit a thesis as part of the assessment. In service courses are also conducted on a wide range of subjects including those relating to education, automation, data processing and electronics.

5.6.4 Union of Soviet Socialist Republic

The shore based training and education programme consists of a very intensive 5 1/2 year course out of which 1 1/4 years is spent on board ships. As part of the training programme students have to submit a thesis and successfully defend it before a board of examiners. Successful candidates are awarded a degree and professional qualification.

Lecturer:

To become a lecturer at maritime colleges only the top students who graduated with an equivalent of good honours degree are eligible. Upon joining, a probationary
lecturer has to first complete a three year post-graduate by dissertation (equivalent to PhD). Successful candidates are offered the post of assistant lecturers. Provision is given to those who wish to pursue higher doctorate (D.Sc). Minimum requirement is the publication of at least 10 works in leading maritime journals and of at least 3 books on current topics. Lecturers do a voyage at sea once in every 5 years to keep abreast of development at sea.

5.6.5 United Kingdom

Apart from the system of examination and certification, there is no clearly defined 'system' of MET in the U.K. The approach has always been haphazard with no coherent pattern among the colleges, polytechnics or individual companies training scheme. Established shipping companies not only has its own training scheme but also considerable influence on the training establishments in which they funded. This is due to the fact that training in the merchant navy is considered vocational or industrial expenses has therefore to be met by the industry itself. The system is further complicated by the fact that there is no regulatory requirement for education and training or on academic entry standard. Anybody with the required sea time could apply to sit for the certificate of competency examinations - hence the varying approach and practices.

Pressure from owners to cut training time and cost and to produce officers as quickly as possible led to the abandonment of the one-year pre sea training in the early 60s. The result has been that officers became more and more narrow in their education and training. The absorption of nautical colleges into the local colleges of
higher education in the early 60s (mainly as a result of the binary system) coupled with recommendations of the Merchant Navy Training Board led for the first time to the introduction of sandwich courses and mid-apprenticeship release courses. At the same time academic recognition was also introduced alongside certificates of competency—the TEC diploma OND. Later on the ONC and HND were introduced followed by degree courses.

Despite developments in the industry, the situation as regards MET system has not changed much to this day. The training of officers continue to be haphazard. There are still many avenues that an aspiring officer could follow—he can still go straight to sea without any pre-sea training or he can follow a sandwich course leading to the BTEC qualification, or depending on which company he joins, follow that company’s training scheme. Some companies have a graduate entry scheme while others vary from ‘O’ level to ‘A’ level. It can be seen that the level of basic education among those qualified with a Master Foreign Going certificate can vary greatly. More recently, efforts are being directed towards formulating a systematic approach. Plymouth Polytechnic for example supported by Shell Tankers (U.K.) had started the common entry scheme for deck and engineering cadets. (Moreby 1987).

Lecturer:

Just as there is no standard MET scheme in the United Kingdom there is similarly no standard entry requirement for teaching. Generally however, teachers are recruited from those having either an extra-masters qualification or a combination of a Master’s certificate and an academic
degree. There is no formal requirement for teachers to undergo teacher training. although, in practice most lecturers have had some form of teacher training. The great majority completed their teacher training as an in-service programme on a part time or day release arrangement. The training is either done in-house for colleges which are a part of a polytechnic or university or for smaller nautical schools, at the nearby teacher training colleges.

See appendix for a description of the systems in Sweden and The Federal Republic of Germany.

5.7 General conclusions from various systems

It is apparent from the above descriptions (and those contained in the appendix) that not only the programmes and requirements for teacher training vary but also due to the individual system of MET the basic qualification among lecturers vary considerably. Teacher training range from no formal requirement to an intensive 5-year programme. However, the general observable trend appears to be putting more emphasis on mastery of subjects than aspects of pedagogy. The objective being the acquisition of depth of knowledge through either a teacher training programme or higher academic qualification. This is in line with the common practice in tertiary education.

Against this diversified background, what should be the practical approach to teacher training in a national maritime academy such as ALAM? Is there a model that could be based on from those described above? These questions cannot be addressed in isolation. Much depend on, inter alia, the system of MET, the background and
qualifications of lecturers, the range of courses conducted, other activities of the institution, its aim and objectives, and the philosophy and policy of the national MET system.

The important conclusion that can be drawn is that based on the present status of ALAM and considering the above factors, some form of teacher training is highly essential. At the same time apart from being a complex undertaking, teaching at whatever level is a profession in its own right and need therefore proper training. This point has been widely recognised in the field of education and efforts to decategorise teachers in respect of teacher training for different purposes is underway. The philosophy behind this approach is that all teachers regardless of level would need similar background knowledge in teaching (OECD, 1984). The Rochdale report of the U.K. also substantiated the need for teachers to be well trained in pedagogy as well as professional subjects.

5.8 Teacher training for ALAM

5.8.1 Rationale

At ALAM as in most other maritime academies there is a definite and an urgent need for teacher training. The rationale is based, among others, on the following factors:

1. Lecturers are ex-seafarers who have had little or no exposure to teaching or educational environment before joining ALAM.

2. Changing concept of MET from a crash course in
preparation for examination to one of proper education and training. Lecturers have a responsibility to ensure that effective learning (knowledge/skills/attitude) takes place.

3 trends for colleges to assume the task of assessment and examination. Therefore staff need to be well versed in the principles and practice of assessment and examination.

4 diverse educational and professional background among lecturers - need to train faculty to a common acceptable level.

5 accountability - expectations among the public, the government and the industry (especially if they are paying the cost) are becoming increasingly critical with regards to performance and efficiency of the institution. Colleges must ensure efficiency on the part of the faculty to do their fundamental duty - to educate and to train.

6 for courses to be able to meet their objectives, they must be continually evaluated, incorporate changes and changing needs. This requires skills and knowledge in curriculum planning and course design.

7 at ALAM where not only students' age group vary (17 to over 50) but also their professional and academic background (from no formal education to diplomas/degrees and from seafarers to executives). This calls for lecturers to be
flexible and to have a repertoire of teaching methods and techniques to enable them to quickly adapt from one environment to another which can happen as frequently as on a daily or weekly basis.

To illustrate the above point, teaching a home trade class of 40 year olds with lower and diversified academic qualification and working background (seafarers, marine police personnel) calls for a different teaching techniques and approach than for instance, a post-sea engineering course. A lecturer with no knowledge on teaching techniques and methodology who is likely to concentrate only on lecturing and concerned mainly with completing the syllabus is likely to have considerable problems. Problems in handling the class, in ensuring effective learning and in communicating with the students.

The ideal situation would be for lecturers to specialise in subjects, course and also by levels. However, due to shortage of lecturers and the present fluctuation in the demand for courses specialisation cannot yet be implemented. Nevertheless, as the situation improves more specialisation should be encouraged.

5.8.2 Content

For maritime lecturers what is required more is teacher training (applied) rather than teacher education (conceptual). The contents of teacher training should cover at least the following areas:

1. basic knowledge on educational principles (learning theories and concepts)
.2 theory of adult learning (andragogy)

.3 teaching and training methodology

.4 teaching techniques and skills

.5 instructional technology (audio visual aids/models)

.6 curriculum and course design

.7 teaching and student assessment and course evaluation

.8 subject specialisation

See appendix B for details of content.

5.8.3 Conduct of teacher training programme

Under the present situation, requiring a full time teacher training course either as a pre-service or in service activity is not practicable due to the many constraints - lack of suitable relevant courses, physical distance from training establishments and lack of staff. Neither is the course that is designed for general education totally suitable and necessary for MET. Likewise, possession of a pre-service teacher education is not a practical expectations in the recruitment of maritime lecturers, at least not in the near future. The two areas for ALAM to concentrate on with respect to teacher training is therefore induction and in-service training.
All of the components stated under para 5.2.8 should form the primary requirement for the training of maritime lecturers at ALAM. Each component can be suitably grouped into individual modules such that scheduling of the training programme can be made as flexible as possible. Prioritisation of the modules has been deliberately avoided as such a move would place undue strain on the institution already faced with various constraints.

The training period for each module should take from one week to ten days. The planning of these courses has to be suitably timed especially if it involves all or most of the teaching staff. The usual period is the term or semester break or during such other time when as many staff as possible can attend. However, the need for staff to go on holidays or to carry out other duties should also be taken into account. The alternative would be to run the courses on a weekend basis. Lecturers to conduct such courses can be obtained from training establishments, training consultants, teacher training colleges and education support unit of local universities.

5.8.4 Induction training

This thesis is not concerned with the normal administrative procedure of induction of new staff but concentrates solely on the aspects of teacher training. Upon joining an academy new lecturers invariably need some form of an induction training. Unless they have had a pre-service teacher training, they can not be expected to go straight into independent teaching.

Ideally a new lecturer should be given a few weeks to
understudy. He should be assigned to an experienced member of the faculty who would also act as a mentor for the whole of the understudy period. The new lecturer should sit in during his mentor’s classes as an observer and discussion and exchange of views should be at the optimum between the two. At a later stage the new lecturer can start conducting classes whence his performance will be observed (in an informal way) by his mentor. Ideally this should take place after one academic term. The choice of a senior lecturer for this purpose must be done carefully taking into account his experience and capability, temperament and commitment. The benefits to be gained are many - does not involve cost, no disruption to normal classes, expedite settling down for the new staff through the interaction and friendship.

5.8.5 Microteaching

A concept that is gaining worldwide popularity because of its effectiveness and ease of implementation is microteaching. Its use is not restricted to pre-service training but can equally be used during induction as well as in-service. Microteaching is a practical simulation training involving a small group of fellow teachers. The exercise is scaled down in terms of size, duration and training parameters, that is being narrowed down to tasks.

A participating lecturer would teach for a short duration, say, 20 minutes on a particular subject during which he would be assessed by the rest of the group. The focus is on teaching skills and techniques - presentation, handling of discussion, questioning, assessment, classroom management, etc. The exercise is recorded on video and played back to the class for critical assessment.
particularly by the person giving the lecture. At the end of the exercise each member of the group will comment objectively on the performance. Usually standard criteria for evaluation are used for the purpose. The whole exercise should be supervised by a senior member who is well experienced in teaching. Microteaching is a very useful tool for new lecturer to get a feel of teaching before going into an actual class and as a means of improving their teaching skill.

A video recording of a good teaching model should be available to the new lecturer for viewing. Many videos on the subject of training are now widely available and reasonably priced. The college should have a collection of these training videos and new lecturers should be encouraged to make full use of the facility. (Dunkin, 1987).

Microteaching, the proper use of training videos and informal ‘coaching’ by the mentor should adequately cover at least parts .3, .4 and .5 of the aspects of teacher training outlined under para 5.8.2. It should also give a basic foundation and confidence for the new inexperienced lecturer to start his new and challenging task.

5.8.6 In-service

In-service training covers every training programme and activity undertaken after the initial induction training. It can be formal or informal and take from a few days to several years in the case of post-graduate qualification. However, with regard to teacher training, in-service education and training (commonly abbreviated to INSET) can cover the development of the remaining areas of
teacher training. This can be achieved by way of short courses, seminars and workshops or even an informal in-house discussion group. An informal discussion group is useful in helping new lecturers gain as much knowledge of their profession as possible.

5.9 Other possibilities

Opportunity should be availed by the staff to hold a rotational routine presentation exercise say, on a weekly/fortnightly basis. It can be performed by lecturers to members of the faculty to enhance group learning. Lively discussion should again be encouraged. The presentation should be on any professional, pedagogy or management topic. This kind of exercise not only provide useful training in lecturing and presentation but also in researching on academic papers and reinforcing the individual's knowledge besides providing a forum for disseminating new knowledge. Heads of section should provide the necessary leadership to ensure such an exercise functions smoothly.

ALAM should also consider when available, a part time (day release) attendance at a training programme conducted by local institution. Universities usually conduct various training programmes for their staff either as an induction or a continuing programme. Detailed information can be obtained upon enquiry and arrangements made for lecturers to participate in such a programme.

Teacher exchange programme with neighbouring or regional college, if one is available can provide a mutually beneficial and useful learning opportunity. In this
respect ALAM should continue to work towards the setting up of a regional association of maritime colleges. If necessary the assistance of international organizations should be sought.
CHAPTER VI

PERSONAL SKILLS DEVELOPMENT

6.1 Introduction

Besides imparting knowledge and skills to the students, lecturers have a great responsibility to bring about a positive change in attitude. It is the more complex of the three. Attitude determines how a person feels about something and how he reacts or responses to a situation. The need to nurture and develop in the students a sense of responsibility, safety consciousness, emotional and intellectual maturity, and self confidence would require on the part of lecturers an understanding of human development and psychology. Knowledge of subjects and work experience alone would not be adequate. Advanced academic qualification among lecturers too cannot ensure the satisfactory attitudinal development in the students.

6.2 The human side of the lecturer's job

As stated in chapter III teaching is just one part of a lecturer's job. A new lecturer will no doubt be preoccupied with the teaching tasks - preparing lecture notes, handouts, questions, teaching materials and so on. At the same time he will be fully involved in learning the various methodology and techniques. As time goes, he will slowly come to realise that there are more to teaching than just lecturing to and assessing the students. He will be faced with students' problems, supervision of students' projects and assignments and administrative tasks.
including meetings and committee works to deal with. In all of these tasks, a lecturer is constantly in contact with people - students, fellow lecturers, subordinates (for those at a higher level) and superiors. Interaction with fellow lecturers and superiors may not be as easy as expected.

At later stages he may be promoted to a senior lecturer which will most likely be accompanied with increased administrative responsibility. He will have more planning and developmental work (e.g., developing distance learning, part-time courses) including project management, committees to head, external meetings to attend and perhaps even papers to be presented at conferences. All in addition to lecturing. Again it implies a lot of interacting with people. Hence, over and above a commanding grasp of his subject areas a lecturer needs to be able to interact effectively and harmoniously with other people.

Apart from the administrative and managerial tasks which necessitate the faculty to have some related skills, there are other equally important factors which further emphasise this needs. Since the objective of ALAM is to provide courses as required by the industry any changes in the industry will immediately affect the need, structure and the system of MET. In other words a maritime college can no longer play a passive role of merely ensuring the smooth functioning of the day to day administration. In order to be effective a maritime college has to be able to adapt quickly to changes - identify future needs and develop courses accordingly.

The significant implication and the realisation emerging
from the present state of affairs is the need for all faculty staff to be adequately exposed to some aspects of interpersonal and managerial skills development. Areas to be included are those that would be directly useful and relevant to the varied functions of a lecturer. These should include an understanding of inter-personal skills and human behavior, counselling, communication, computer knowledge, information management, and conflict management. Other skills such as writing skills, time management and so on can be personally developed by the staff or if the need is especially great, organised by the college. Senior personnel should have additional training on advanced courses such as advanced management, financial management, problem solving and decision making.

6.3 Interpersonal skills and human relations

Stated simply, interpersonal skills determine a person’s ability to interact well with others. Human relations is concerned with the study of the behaviour of people - why a person behaves in the way he does or what motivates a person to do what he wants to do. Every behavior has a reason, a sort of cause and effect phenomenon. One is thus able to influence or modify the other’s behavior if one knows the factors that can lead to such modification. There are many aspects of interpersonal skills and theories and concepts of human relation. All of which can help lecturers perform better at managing teaching as well as coping effectively with their administrative and social activities. Although critics tend to label one concept as being better than the other or even challenge the validity of some, basically all well researched and tested theories may well apply to different people under different situation. The more senior the lecturer the more important
are the needs for these skills.

In this context some exposure on the more common and generally accepted theories and concepts of human behavior should be given to all staff. It should cover at least the human model of theory X and theory Y (MacGregor, 1962), hierarchy of human needs (Maslow, 1954), motivator/hygiene factors (Hersberg, 1966) group dynamics (Lewin, 1960) and transactional analysis (Berne, 1964).

6.3.1 T' Group

To increase the effectiveness of group dynamics and foster team spirit a training system known as 'T' group ( T stands for training) has been widely applied. A group meets for about two weeks without any specific training plan or agenda. Learning and interaction being left entirely to the group to decide with minimal supervision being given by a facilitator. This type of training encourages emotional and visceral learning. It helps increase an individual's sensitivity to the reasons behind his own behavior, the behavior of others and how the behavior is perceived by others. Group dynamics training can help in team building and foster the spirit of teamwork. (Rush, 1987).

6.3.2 Transactional analysis

One of the most useful concepts in interpersonal relations is transactional analysis (TA). This regards any form of exchange between two people as involving a transaction and that such an exchange can be carefully analysed. Everyone is said to have three ego states - parent; adult; child. The best type of person is one who has a good balance of
the three. Transaction can be "open" which lead to open communication or it can be "blocked" where communication is argumentative or destructive. When a person is democratic the ego state is said to be "nurturing parent" and when he is autocratic it is "critical parent".

Other distinct behaviors defined under TA include psychological game analysis where a person is said to be playing games when he tries to 'get a one up’ on others at their expense by a superficial sincerity or innocence. Script analysis relates to a person’s general attitude towards others which results in a situation of "I am not OK, you are OK", "I am OK, you are not OK" and so on.

Trading stamps is the internalising and collecting of feelings which can be good feelings - gold stamps; or bad feelings - brown stamps. When trading stamps involve good feelings, at some point in time the person will respond in a positive manner and conversely if it involves bad feelings a person may eventually explode. If such a development is noticed a remedial action can often help to improve the situation.

In addition to general understanding of interpersonal skills and human behavior several aspects of managerial skills are especially important to all faculty members. Those considered directly useful will be elaborated.

6.4 Some aspects of managerial skills

6.4.1 Counselling

Counselling is a process whereby the counsellor attempts to help a person having a problem through intervention. An
untrained person when counselling usually tries to give advice and recommendation, cajoling the counselee into taking a certain cause of action. This approach can often be counter-corrective.

Those whose functions require them to have to come into contact with students, should be familiar with or at least have some basic training in counselling. This applies to all teaching staff and others in the administration that deal directly with the students. If the college has a permanent counselor, it is highly desirable that he or she be professionally qualified. However, in the absence of such a person a member(s) of the staff with appropriate training must be appointed to assume the responsibilities of a counsellor. For lecturers, an introduction to counselling should be a part of the teacher training programme. The fundamental knowledge acquired can then be built upon through further courses.

The need for students' counselling at ALAM is especially great bearing in mind the nature of the profession and the type of training conducted at the college. A case in point is the pre-sea training which is both physically and mentally demanding. Young people in most cases are away from home, parents and friends for the first time. Adjusting to a strict paramilitary type of training and a highly disciplined residential living can be traumatic for youngsters. Furthermore students enrolling for the pre-sea courses are at a critical transition from childhood into the adult stage. The experience can therefore be very unsettling which can result in personal, social and emotional difficulties. Consequently, psychological and emotional instability, fears and worries may set in. This is where proper counselling is most needed. Similarly,
even with post-sea students, there can be problems relating to personal or financial matters. Others may relate to interaction among students, between students and staff and so on.

In most educational institutions of higher learning, each will have its own full time counsellors who are professionally qualified. Their main concern besides personal problems and career guidance is towards personal development of students. In schools however, teachers with appropriate training usually assume the role of counsellors and career guidance officer.

6.4.2 Management of conflicts

This is another area which is extremely important and yet most lacking among staff. Conflicts are disagreement or disputes between two parties arising out of differences in opinions, beliefs or interest. It can arise between individuals, groups, organisations and indeed between states or regions. Managing conflict is not an easy task. Many people often overestimate their own ability to handle conflicts. Conflicts in colleges can arise for example among students, as regards teaching and examination, and between students and the faculty. Conflicts can never be completely eliminated but it can be reduced. And when managed properly, can even be a useful source of feedback for improving the organisation. In some cases conflict that surfaced gives an indication of the underlying situation.

Conflicts between persons of similar seniority should be handled by confrontation. That is both parties should be brought together and asked to explain his perception of
the situation. While one party explains the other should listen to what is being said and thereafter states what he has understood. Suggestions as to how to solve the problem should be sought from both parties. That is get them to be involved. This type of participative approach can usually lead to positive results.

De Bono talks about mapping design in handling conflict rather than problem solving. What he means is that all possible informations and facts relating to the matter should be gathered. Then fit them together and look for a solution in all its possibilities to find a logical conclusion so that a solution can be found which will result in a win-win situation for all concerned.

[De Bono, 1986].

6.4.3 Communication

Communication skills is of utmost importance to lecturers and indeed to all staff. Most of the working time of the staff is spent in communication. A lecturer communicates in trying to impart knowledge and skills to the students and to develop their attitude. Communication can be verbal, non-verbal, or written. Non-verbal communication includes body language (kinesics), movements of parts of the body, posture and facial expression.
### Table 5.1

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Apart from the communication required in teaching the faculty also need communication skills in their dealing with outside agencies. Not too infrequently, ideas differ, therefore to influence others skills in communication (working paper, proposals, and meetings) will be a potent determining factor in the success of any negotiation.
6.4.4 Information and information system

Information includes any fact or data which can add to knowledge. An information system on the other hand, is a set of procedures or network for the collection and processing of data, storage and retrieval of information. Circulation of papers/files, use of audio visual aids, computer technology such as on-line terminals, notice boards, memos, reports, face to face meeting, faculty bulletin, briefing and discussion are all means of communicating information.

The primary need for information is to help a person make decisions. Other needs can be procedural or legal in nature. Examples are the maintenance of record of financial transactions for audit and tax purposes, annual and board reports, students records and so forth.

It is commonly found that information system is haphazard, usually created to serve a particular purpose rather than coordinated on a departmental basis. This results in unstructured, duplication, overlapping and numerous errors in the information.

6.4.5 Lecturers need for information

A lecturer needs information on his students' background, qualifications and experience. He needs a record of each student's performance on work assignments, in tests and examinations, and to have a good idea of his own performance in teaching. He has to ensure proper attendance at lectures by all students and know which students require extra coaching and tutorial. He needs to stay abreast of the developments in his field and be fully
aware of the organisation’s policy with regards to education and training. At the same time he needs to be sufficiently aware of his standing with his peers and superiors.

In other words, he needs to ensure some form of efficient information flow. To achieve this he has to be able to identify or pre-plan the useful data that he needs. If all raw data were to land at his table he will need a lot of time to sort and obtain what is relevant. This is clearly very time consuming. An efficient information system would ensure that he gets the precise information he needs, in the prescribed manner and as and when he requires it. The use of micro processors in information systems and processing has greatly facilitated information management.

6.4.6 Areas where information is required

Operational

- conduct of courses (curriculum, syllabus, time table)
- assessment and examination
- training aids, laboratory and supporting services
- quality of teaching
- evaluation of courses

Administrative

- personnel
- campus matters
- student affairs
- students admissions and records
- public relations and marketing
- finance
Social and political

- general feelings and attitude of staff - more relevant to those in managerial and administrative position.
- general feelings among students

Public relation

- relationship with:
  - local community
  - local administration (town/city council, government departments, hospital, etc.)
  - shipping companies and industries
  - maritime administration, ministries
  - the media

Strategic

- trends in national/international trade
- status and likely future direction of the maritime industry
- manpower requirement
- demographic trend
- social changes
- changes or imminent changes in technology, operation, trade pattern which would signal likely changes in policy and approach to MET
- government policies concerning education, shipping and trade - is there a shift of priority?
6.4.7 Computer knowledge

Computer application is so widespread today that it is already a common feature in many educational organisations including in schools, colleges and universities. Those that have not yet adopted the use of this versatile and powerful tool will find themselves severely handicapped in coping with the development in educational technology. Added to this is the technological demands of the present and future shipboard operations which give rise to a more pressing need for students to be familiar with computer applications. In the near future we are likely to see the integration of expert systems in shipboard application thus taking computer technology one step further. It is therefore absolutely necessary that colleges include computer studies as part of their curriculum.

Computers can be used for a variety of purposes — word processing, data processing and as a teaching tool (demonstration, simulation, computer aided learning). In word processing, it can be very effective for lecturers in preparing notes and handouts especially when used in conjunction with software packages such as on graphics and computer aided designs. Their application as a lecture aids is almost limitless. It depends on how versatile the equipment is and how capable the staff are at creating demonstration programmes. Specialised systems are available on the market but these tend to be costly as they are produced for the commercial market. Ship loading programme and tank monitoring system are two examples. For creating teaching programs lecturers need an adequate knowledge in simple programming language (e.g. BASIC). They should then be able to create teaching programs for various subjects including physics, statistics and the
simulation of electronic navigation instruments.

6.5 Conduct of courses

Communication skills courses are best conducted in the form of a workshop ensuring maximum participation by participants. Nowadays there are a proliferation of courses related to communication skills - effective speaking and writing skills, presentation skills, skills in public speaking, report writing, speed reading and so on. Thus choosing a suitable course should not present a problem.

At least one staff member either in the faculty or the administration should have a formal qualification in counselling (bachelor's, master's or a doctoral degree in counselling). Therefore a suitable staff should be selected to pursue such a qualification or alternatively when opportunity arise to recruit new staff, possession of a degree in counselling should be taken into account. Additionally those dealing with students services should be exposed to counselling techniques through courses. Student services personnel can also use their counselling knowledge (industrial psychology) to improve the campus environment making it more congenial to learning. These would include areas such as adequate provision of telephones, flexible library opening hours, sufficient recreational spaces, leisure facilities, sufficiency of notice boards, comfort in classroom, etc. (Gilmore 1984).

Learning computers is best done in-house. Access to privately run evening or weekend courses would be ideal but difficult for the staff due to the location of ALAM.
The unit in charge of computers should be given the responsibility of providing introductory sessions those requiring it. Thereafter more computer literate members of the staff should endeavour to conduct spacial sessions. Self learning as far as computer is concerned can be wasteful to staff because of the time consuming nature of learning it which will have to be at the expense of some other developmental work.

With regards to behavioral sciences specialists should be invited to conduct a short in-house course to the staff. Once a good foundation is established individual staff can pursue self study if they wish to gain a deeper knowledge in any particular area.

Staff in each unit can be encouraged to form an informal discussion group where they can meet frequently to discuss problems, find solutions and to come out with their own ideas for improving their work and performance. Giving the staff some responsibility and recognition in their ability to solve problems can help boost their morale and lead to better quality of work and performance.
CHAPTER VII

UPDATING AND INDUSTRY EXPERIENCE

7.1 Introduction

The question of updating is becoming crucial in all fields of education and profession. In MET it is more significant for maritime academies in the developing countries than in the developed countries. This is because in many cases access to sources and resources are limited or not available. Take the case of satellites in the Global Positioning System (GPS) for instance. Apart from the operation manual of receivers that are fitted on board there is little else that is available. Lecturers teaching the subject rely heavily on whatever is available in the textbooks which tend to give superficial coverage and often out of date. Many more examples on areas lacking reference materials can be quoted such as the new raster scan radar and the electronic chart which is already at the advanced stage of development. Very soon mariners will encounter this new technology without being properly prepared because maritime colleges are hampered by the lack of references and difficulty in gaining access to information.
7.2 The present scene

The importance of updating in an environment of rapid change cannot be overemphasised. In the United Kingdom for example, the triple role of higher education of (i) developing knowledge (ii) application of knowledge to contemporary problems and (iii) training highly skilled human resource, has been added with a fourth role. That is of providing updating for adults in science, technology and business subjects. (Postlethwaite, 1988). Whether we like it or not there will always be rapid introduction of new technology and new changes. Owners will always be alert to the introduction of new techniques and equipment which can contribute to reduction of costs. Manufacturers on their part, will continue to compete for greater market share and in doing so will continually introduce new version and new equipment. They will be quick for example, to react to reports and recommendations arising from accidents investigations. Stated simply mariners and those responsible for their training and education will have to strive to stay abreast of these developments.

In the private sector large corporations today have their own training division. It exists primarily to cater to the training needs of the organisation utilising both in-house as well as external inputs. In universities and other institutions of higher learning staff update their knowledge mainly through research activities. Their research and development units and staff support units also provide training courses for their staff. At ALAM where the number of staff and the activities are relatively small and resources limited, the setting up of a formal staff training unit is not called for. However, the need for updating may well be greater than at
universities or elsewhere as it is imperative that both staff’s knowledge and teaching must be in consonance with development.

7.3 What can be done ?

There are no special courses for updating of lecturers. Some organisations and schools conduct courses on an ad-hoc basis. An example is the maritime teachers training college (Vereeniging Cornelis Douwes) in the Netherlands where updating courses for lecturers have been conducted since 1965. Courses are conducted as and when the needs arise. This is certainly a good way but for many colleges in the developing countries there is neither the resources nor sources (expertise) available to conduct such courses. Therefore various other means have to be explored to ensure continued updating of lecturers.

7.4 Sources and Resources

Before examining the various ways and means available for the purpose of updating it is useful to first look at the broad range of sources available for updating. They include:

  1. publications - books, academic and professional journals, periodicals, magazines, technical press.
  2. technical papers, reports, proceedings
  3. people - colleagues in the faculty, industry, experts and students,
  4. manufacturers
  5. specialised exhibitions and trade fairs
  6. courses, seminars and conferences
  7. professional associations
.8 specialised organisations and bodies [IMO, ILO, WMO, UNCTAD, BIMCO, ICS, INTERTANKO, Class Societies ]

.9 technology based learning - films, slides and tapes, videos, computers

.10 vessels in trade, shipping companies and related agencies

.11 national and international rules and regulations including government reports

.12 shipping analysts - Lloyds, Fearnleys, Drewry.

.13 insurance companies, P.I. clubs, ports and shipyards

7.4.1 Publications

Included under the broad heading of publications are textbooks, journals, periodicals, papers, reports and other published literature. Textbooks tend to be either too academic or give very superficial subject coverage. Technical and academic journals, and seminar/conference proceedings are the best source for latest developments. They provide most comprehensive and up to date information on current fields. Research papers can provide the latest thinking and breakthrough in the field.

7.4.2 Technology based learning

Computer assisted learning (CAL) is learning with the help of computers where users are presented with texts, graphics or animation (moving pictures). Interaction is achieved by typing on the keyboard or using a mouse. It can be used for drills and practices, tutoring, simulation and problem solving. Some textbooks nowadays even come with floppy disks providing instructions on how to use the book (replacing the traditional accompanying guide to using the book) and doing the exercises contained therein.
Computer based instruction (CBI) which is a form of computer assisted learning is an interactive technique combining microprocessor and video technologies enabling the user to respond to questions displayed on the screen. A series of responds will complete an exercise in CBI in a learning module or unit. In this manner the user is routed through the lesson. As every step can be recorded learning statistics for all users can be determined. A complete or good CBI will contain not only the study material but also help option, advise on appropriate action and prompts user when he forgets to do something. [Kearsley, 1984]

Other technology based learning resources include training videos developed by specialised companies (e.g., videotel) are available on many topics from safety training to new technology, and tapes and slides i.e. slides which are synchronised with audio presentation.

7.4.3 Students as a source of knowledge

In an adult setting students' experience is frequently neglected as a source of updating to complement the knowledge of lecturers. They can provide an up to date link with what is happening in the industry. Those attending senior courses especially, will have a lot of experiences which they are only too willing to share/relate. Lecturers can prompt students to share/relate their experiences when discussing associated topic. For example, when discussing shiphandling, a student attending master's course or senior officers attending simulator course may have a lot to contribute. Lecturers must know how to solicit information and must not adopt the attitude that their knowledge is supreme.
7.4.4 Professional associations

A browse through the constitution of all professional associations reveal a similar objective. That is, they exist to promote the field of knowledge and to advance the art and science of the profession; to provide a forum for members to discuss new issues, views and ideas; to disseminate information; and to provide an authoritative view representing the profession to the government and other interested bodies. As such these bodies would be the best source for new ideas and knowledge. They provide the first forum at which new developments are presented. The proceedings of seminars and conferences provide not only an indepth knowledge of a particular subject but through ensuing debates and discussions, the intents, reasons, advantages and disadvantages of the subject.

Membership with such a body entitles a person to attend and participate at their meetings, receive the regular newsmagazine/monthly journals and other information as it arises. A staff who is a member of a professional body can get his views published in the association's journal which would be good for the advancement of knowledge and scholarship. These bodies also tend to bring together experts in the field from a wide spectrum of interests and on a broad geographical basis. Examples of the more relevant professional institutes and associations are the Nautical Institute of Malaysia, The Nautical Institute (based in U.K.), Institute of Marine Engineers, Institute of naval architechs, Royal Institute of Navigation, International Maritime Lecturers Association, Chartered institute of Transport and the Institute of Chartered Shipbrokers. See appendix C for details of various organisations and associations.
7.4.5 International organisations - Governmental

International organisations such as IMO, UNCTAD and ILO have direct connection with shipping activities. IMO, whose work encompasses the whole spectrum of technical matters relating to shipping has made remarkable progress in improving the safety of navigation and the prevention of marine pollution. UNCTAD's committee on shipping have over the years made significant contributions to shipping on the trade and commercial aspects. ILO through its joint maritime commission have produced a lot of work concerning the welfare, economic and social conditions of seafarers. Other international bodies which deal with maritime issues include IHO (International Hydrographic Organisation), WMO (World Meteorological Organisation), INMARSAT (International Maritime Satellite Organisation), and ITU (International Telecommunication Union). (Dagenhart, 1985).

Their committee papers, reports and proceedings provide not only a vast amount of information but more importantly a detailed account of the discussions on the topics leading to the adoption of conventions, amendments, resolutions and guidelines. Most of these information can be obtained from the country's representative or in cases where there is no representative, on request made to the organisation concerned through the appropriate national ministry.

For areas concerning training and education the Organisation for Economic Development (OECD) in particular through its center for educational research and innovation (CERI) regularly publishes authoritative materials in the field of education and training including new technology in education. The UN educational and social commision
(UNESCO) publishes a lot of articles and information booklets on educational matters in addition to several periodicals.

7.4.6 Non-governmental

There are other non-governmental international organisations concerned with shipping which also provide a valuable source of information. Chief among them are The International Chamber of Shipping (ICS), The Baltic and International Maritime Council (BIMCO), Classification societies, and International Association of Independent Tanker Owners (INTERTANKO).

ICS whose members are national shipowners associations provides authoritative guidance mainly on matters pertaining to marine safety and pollution prevention and covering aspects such as container, insurance, safety, marine law, tankers and trade procedures. BIMCO whose membership comprises of shipowners and shipping organisations deals with the aspects of commercial shipping practices on matters such as documentation, port procedures, freight taxes and other regulatory matters. INTERTANKO have over the years produced credible sources of views and comments ranging from aspects of MARPOL to tanker charter parties. One of the major sources of information on technical aspects of ships (construction rules, stability criteria ) is the classification societies who also publish annual ships register. Marine research institutes abroad would be a good source for technical information. National associations like Malaysian National Shipowners Association, association of shipping agencies, shippers council are also potential sources of information.
7.5 Means of updating

There are a number of ways available to an institution for updating. They include:

1. attendance at short courses, seminars/workshops and conferences
2. self-directed learning (reading/observing/listening)
3. group discussions
4. membership with professional associations
5. association of colleges
6. personal networking
7. regional cooperation
8. sailing on board at suitable interval
9. setting up of a task group
10. attachment training with shipping companies and outside agencies

The means for updating can be broadly categorised into organisation led and self-directed.

7.5.1 Organisation led

Adults are motivated to learn as they experience the needs and develop an interest that learning will satisfy. Work demands which reveal knowledge and skills deficiency can also result in the desire to learn. Thus encouraging staff to learn and improve themselves should not be a very difficult task. Leading proponents of adult learning expound that adults learn best in an informal, flexible and in an environment free from external pressures. (Knowles, 1984).
7.5.2 Courses, seminars/workshops and conferences

When there are major issues to be discussed, information to be disseminated or training needs to be addressed, courses, seminars, workshops and conferences are the means. Courses here refer to short courses of between one to about 12 weeks duration. Short courses on technical subjects are conducted regularly by competent bodies and institutions. The IMO through its technical cooperation division conducts courses and seminars on a regional basis. The establishment of the IMO’s international Maritime Academy in Triest, Italy will enhance the conduct of specialised courses and add another dimension to the Short Course Branches of the WMU. Trainmar project under the purview of UNCTAD provides courses that are mainly designed for ports and shipping company personnel. Classification societies too provide courses especially on technical aspects and the maintenance of ships and machinery.

Seminars and workshops are also conducted by IMO, UNCTAD and other international organisations. Professional bodies (e.g. NI, IRNSLC, IMLA, RIN) conducts seminars on topical issues affecting the profession and hold conferences on new developments or to discuss solutions to current problems.

Where a course, seminar or conference is conducted in the locality on topics of relevance to ALAM as many staff as possible should be given the opportunity to attend. For those conducted abroad depending on importance one or two should attend when possible. Where participation is not possible for any reason, the proceedings should be procured if considered useful. For this reason it is
important to keep track of developments. In the non-technical areas, for example management and, training and education there are many institutions (public and private) offering courses. Thus updating in this field does not present as big a problem as in the technical field.

7.5.3 Regular trip on board

For the lecturers to stay abreast with the operations and management onboard so that teaching will become more meaningful and relevant, it is important that they be given the opportunity to sail at a suitable interval. A short trip (two to four weeks) at an interval of about three years should be desirable. A longer interval than this will not be adequate in today's context. A staff member going on such a trip onboard should endeavour to make a detailed report and include any slides and photographs of new equipments/technology onboard. A video camera if available would be most useful. The report should then be circulated to each member of the staff or deposited in the library for anyone interested. A briefing given by the particular person will ensure a wide dissemination of information.

7.5.4 Discussion/task group on updating

A potentially beneficial approach to updating is the setting up of a discussion/task groups within the faculty and involving all faculty members. This is in addition to all the means of updating already mentioned. A group consisting of several staff based on their field of teaching (area of work) should form a discussion/task group. The group would be charged with the researching.
collecting and compiling information and generally staying abreast of developments in the assigned field. By virtue of each group's field of task, the faculty will be able to stay abreast in all areas of developments related to the activities of the college. (Blake and Mouton, 1984).

Whilst it is important to keep the work of the task group informal and flexible some guidelines are necessary to avoid problems such as clarity of purpose and duplication of work.

Where work overlaps between groups, such groups are to liaise with each other. Reports of the task group may appear on an ad-hoc basis or as determined. That is, whenever there is new development and sufficient knowledge has been obtained a report can be published. Alternatively, at a predetermined interval for example quarterly or biannually each task group writes an update on the developments in its field. The use of faculty bulletin for this purpose can be very effective. A faculty bulletin can also contain other information which would be of general interest to the staff.
Table 7.1

Discussion/task group for various fields of work

<table>
<thead>
<tr>
<th>GROUP</th>
<th>TASK</th>
</tr>
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<tbody>
<tr>
<td>Navigation</td>
<td>new technology, equipments, systems,</td>
</tr>
<tr>
<td></td>
<td>seamanship</td>
</tr>
<tr>
<td>International organisations</td>
<td>governmental and non-governmental</td>
</tr>
<tr>
<td>Shipping</td>
<td>shiptypes, new technology, designs,</td>
</tr>
<tr>
<td>operations</td>
<td>shipboard practices, shipping company</td>
</tr>
<tr>
<td></td>
<td>operations, market news</td>
</tr>
<tr>
<td>Computer and</td>
<td>overall developments in the field as</td>
</tr>
<tr>
<td>data processing</td>
<td>well as EDI ECDIS</td>
</tr>
<tr>
<td>Engineering</td>
<td>developments in this field</td>
</tr>
<tr>
<td>Radio and</td>
<td>new equipment, means of communication</td>
</tr>
<tr>
<td>communication</td>
<td>and general development (may be combined with computers)</td>
</tr>
<tr>
<td>Legal</td>
<td>insurance and law, international conventions</td>
</tr>
<tr>
<td>Management</td>
<td>new management ideas, systems and practices; governmental information</td>
</tr>
<tr>
<td>Training and</td>
<td>new training schemes and approaches</td>
</tr>
<tr>
<td>education</td>
<td>training technology, methodologies, and theories.</td>
</tr>
</tbody>
</table>
7.5.5 Regional and international cooperation

MET being a relatively narrow field means that not all countries can be totally self-sufficient in providing all the necessary sources and resources required. Neither would it be cost effective even if a country could afford. It would be more logical to share resources and cooperate in exchanging information and materials. Advancement in technology has made communication efficient and inexpensive. A regional association of maritime colleges would be an appropriate machinery to address this requirement and would supplement the existing structure of international cooperation. The loan of equipment and staff exchange for instance can be achieved more easily on a regional rather than international basis. Although a proposal put forward to the secretariat of ASEAN for the setting up of ASEAN association of maritime colleges did not receive formal backing, a self help association could perhaps be initiated to provide an avenue for the exchange of information. The major problem with regards to forming such an association is the source of financing. ALAM could initiate the first step towards a self help association by sending out a questionnaire to gauge the level of interest among the maritime colleges in ASEAN.

7.5.6 Informal discussion group

Training can also be internally generated. Senior lecturers for example, can conduct lectures on various topical issues from training skills to management skills. Informal discussion on a specific subject can be held among the staff at any chosen time. The pooling of knowledge in this way can greatly help in updating for all members of the staff. For example, if a new management
technique has been developed a senior management staff can conduct a discussion group on that particular topic or where a person has attended such a course he should be able to lead the discussion.

7.5.7 Self directed

Self development or self-directed learning is becoming increasingly important today than ever before. Keeping pace with new developments can not be achieved by formal training alone. If this were to be the case a person will have to spend the best part of his working career attending courses. Under self-directed learning an individual takes responsibility for his own learning.

In order to maximise the benefits from self-learning an individual would need to have at least the following learning abilities:

1. Selectivity - this is the ability to know useful from less useful material. It involves scanning quickly and selecting the relevant part for proper reading.

2. Critical reading - here the reader must know his objective and he should look for the points while reading and analyse them mentally.

3. SQ3R - SQ3R stand for survey, question, read, recall and review. It is a good technique for effective reading. It involves first scanning through the material quickly to get the general idea followed by proper reading of the parts considered important. Then try to recall the main
points. After that read the material again. [Rountree, 1988]

7.5.8 Self-directed learning

Self-directed learning has to start off by the individual assessing his own learning needs. He has to assess his strengths and weaknesses, areas in which he needs to acquire more knowledge and what can he do about it. He can then proceed to plan his own learning activity say, for a six monthly or yearly basis. For example, if a person feels he wants to know more about financial management he can plan to learn more about the subject within a certain period of time. Similarly, if a person feels he needs to learn more on calculus in order for him to understand and utilise some operational research techniques, he can do the same.

Self-directed learning is best achieved by drawing up a personal learning plan (also known as learning contract). A learning plan may contain the subject(s) to be learned, resources, methods, and means of assessment. Resources can be colleagues, associates, publications and books and training videos. An assessment criteria is a means of knowing that learning has taken place or target met. This may be by way of ability to do the work examples. If there are several subjects that a person wishes to learn he can schedule or prioritise them in the same learning contract.
<table>
<thead>
<tr>
<th>Subject</th>
<th>Sources / Resources</th>
<th>Strategies / Methodologies</th>
<th>Schedule</th>
<th>Time Frame</th>
<th>Evidence of Assessment</th>
</tr>
</thead>
</table>
7.5.9 Programmed Instruction

Programmed Instruction (PI) is a method designed to enable the learner to undertake self-learning of a module or learning unit (e.g. basic calculus). The whole unit is broken up into small steps known as frames. Each step is followed by a question with the correct answer given at the following page. If the answer given is correct the learner is rewarded by an instruction to move on to the next frame. An incorrect answer will cause him to have to move one or several frames back. This method is popular in the teach-yourself series of books. A good background and reasonable intelligence is assumed on the part of the learner for PI to be successful. Its use is less popular today. Kearsley (Kearsley, 1984) claimed that PI is an unsuccessful training technology and cited several reasons for that including difficulty in obtaining suitable programs. More likely perhaps with the advent of PCs and softwares PI has been transformed into CAI or CBI.

7.5.10 Personal networking

Personal networking refers to a network of personal contacts from whom information can be obtained and exchanged. It can be on a local, national, regional or international basis. Contacts should as far as possible be established for all related organisations -shipping companies, marine department, ministry, shipping agents, shippers councils, brokers, insurance companies and universities and colleges. The WMU has to be credited for providing its students with a strong basis for developing this network. Graduates not only have a large network among graduates but also contacts made at the establishments they visited during their studies as well
as with the many visiting professors that lectured at the WMU.

Having friends and associates in other maritime colleges in the region and throughout the world can bring many valuable benefits. Information can be sought and exchanged. A contact at a Polytechnic in Hong Kong for instance, may be able to extend help in the area of computer application. Associates in shipping companies can help update on new developments and a source of much needed practical knowledge from obtaining ships technical drawings to insurance matters. Likewise a friend in a shipbroking and chartering firm can provide latest trends in shipping and trade practices.

7.6 Implementation

The effectiveness of updating depends on the combination of several factors. Chief among them are the commitment and willingness on the part of the staff, their background and level, the support given by the organisation and available resources.

The time needed for effective and meaningful updating should be taken into account and allowed for in the staff’s workload. Thus time for research is to be accounted for in allocating contact hours. When planning for staff to attend courses and seminars available resources to cover adequately must not be overlooked.

Wherever appropriate each method of updating should be evaluated for their effectiveness and benefits to the individual. It is not suggested here that the organization jump into the bandwagon and adopt any training courses or
seminars that are conducted. There should be a careful assessment as to the usefulness, reliability and reputation of the speakers, trainers, organisers, course content and costs.

By virtue of its remote location away from the centre of shipping/maritime activity the question of updating is of special significance to ALAM. It has therefore to be given special emphasis.

7.7 Industry experience

7.8.1 Rationale

An area that is most lacking among the staff in many maritime educational and training institutions is industry experience. By this is meant the working experience appropriate for a particular area of teaching. This aspect is increasing in its importance because of the growing specialisation of knowledge. Previously, a maritime lecturer could teach the full range of subjects at any level. Today this is no longer possible if appropriate standards are to be maintained. Otherwise the quality of teaching will suffer greatly.

A lecturer teaching shiphandling for example, should ideally have had some experience sailing as a master and/or experience as a pilot. Likewise a person teaching casualty investigation would require some experience in the subject and so on. It is appreciated that for many reasons to recruit staff with the necessary industry experience would be very difficult under the present situation. The availability of many vacancies in the commercial sector means that training institutions would
be the least attractive to senior sea staff wishing to come ashore. Salary, job prospects and status do not compare well with the other sectors. The problem is further compounded by the fact that those with appropriate experience would not join at a level with a salary they feel not commensurate with their experience. Because of this the majority of lecturers in maritime colleges comprised of people with minimal industry experience.

There is of course a way in which this deficiency in industry experience can be overcome. It would not be realistic for a maritime college to have within its internal resources all the experiences to meet the full teaching needs of various courses nor would it be practical and economic to do so. Furthermore there is often a trade off between industry experience and educational and teaching experience. To gain sufficient experience as a master for instance, a person would normally be in the region of 35 to 40 years of age. A person who joins the academy say, at the age of 30 after sailing as a mate would, by the time he is 40 have accumulated considerable amount of knowledge on education and training, theoretical aspects of professional subjects and the wider workings of the industry. On the other hand a person who continues to sail until he gets a command and later joins the academy would have little of this but more experience in shipboard operations and shiphandling. The amount of experience gained in terms of fields of knowledge may however, in most cases be disproportionately lesser than when compared to what can be obtained ashore.

This observation in no way suggests that experience at sea and command experience are not important. What is needed
for a maritime college is a good balance between ship and shore experience.

7.8.2 Approach

In colleges that are ideally located within the proximity of the various sectors of the industry, external lecturers are utilised to give supporting lectures. For example a person from the insurance company can give lectures on marine insurance, a maritime lawyer can lecture on the more demanding aspects of the subject and a shipping company executive can give lectures on the organisation and operation of a shipping company and so on.

As ALAM's location is unfortunately not ideal in this respect, the utilisation of such external input is very limited. It cannot certainly be conducted on a regular basis. Therefore some other means would have to be adopted to ensure sufficient level of industry experience within the faculty members.

7.8.3 Attachment training with maritime agencies

Lecturers' previous experience supplemented by regular trip onboard will provide one aspect of the technical and professional updating i.e. shipboard. Others will have to come from the remaining sectors of the industry - departments within a shipping company, classification societies, maritime administration, shipping agents, surveying firms and shipyards. The objective of the industry attachment training is twofold. One is to update lecturers on changes that have taken place. The other is to enable them to gain new experience on areas not directly related to shipboard operations but nevertheless
important in the overall conduct of MET.

Lecturers involved in teaching naval architecture for instance should benefit from visits or attachment at a shipyard. Those teaching technical surveys would gain by spending a period with a classification society. For casualty investigation both maritime administration and class society should provide a good resource. Lecturers teaching navigation and shiphandling simulator courses would benefit greatly by accompanying pilots in their practical work. There are many other possibilities such as attachment with the Marine Department’s examiners, hydrographic surveying units, technical department of a shipping company, shipping agent and so on. A period of between a few days to about three months depending on the objective and circumstances should be sufficient for such a programme.

During this attachment period the staff participating should be on full pay just as they would when attending courses. In this respect, ALAM will have to make a formal request to relevant agencies where attachment trainings are required. There should in most cases be no objections from the agencies concerned if the stated objective is to enhance education and training for the industry. On the contrary, agencies that are short handed may even welcome an additional qualified professional at no cost to their organisations. To ALAM such an attachment training will also help foster relationship with the industry and lead to a better recognition of its status.

There is of course an element of risk in this type of arrangement in the sense that it may further exacerbate the problem of staff attrition. If there is a mutual need
between the staff on attachment and the host agency there is a strong likelihood that it may lead to the staff leaving. Therefore the choice of personnel, agency, and a clear understanding between all parties can help to minimise this likelihood.

7.8.4 Command experience

A longer period of service on a ship for a period of from one to two years can be included within the regular updating trip programme. In this way a participating lecturer not only gain command experience but can at the same time update himself on the aspects of shipboard operations. For this the programme will have to considered as part of a full time course within the staff development programme and the appropriate conditions will have to apply.
CHAPTER VIII

MOTIVATION AND THE RETENTION OF HIGH CALIBRE STAFF

8.1 Introduction

In advanced countries the problem of staff attrition is not normally so serious since people usually plan their career well ahead and also there is no shortage of qualified personnel ashore. Salary and work condition too tend to be favourable. In Malaysia and in many other developing countries the situation is not quite the same. With an expanding maritime industry, vacancies in the private sector often exists. Under this circumstances the college faculty, with its ‘ready pool’ of professionals is an ideal source for qualified personnel. Lecturers, lured by better pay and job prospects would not hesitate to resign from the academy. The situation will be more serious with the general improvement taking place in the industry.

With regards to motivation there are two aspects involved. One relates to motivation to encourage better performance and commitment to their work and the other is to create an environment which will induce staff to want to remain with the organisation. The context may be different the solution however is not. Factors that can motivate staff to perform better will similarly apply to addressing the problem of attrition. A satisfied staff, one who is not
likely to leave need not necessarily be a good performer. A satisfied and motivated staff on the other hand will not only perform better but is also not likely to leave. As such the concerns with motivation is not only to help improve performance and productivity but equally importantly to induce staff to stay.

8.2 The situation at ALAM

Basically professionals who join the academy are of several types.

1. seafarers wanting to quit the sea and come ashore to a secure job. Among their list of choices is ALAM
2. same as for 1 but joins ALAM consciously as a stepping stone
3. those who join because they like teaching
4. those who join because they like the peaceful quiet life the environment offers
5. those who perceive wrongly that teaching is an easy 9 to 5 type of job because they do not like the pressures usually attached to the private sector.

Of those listed above 3 is the least and 1, 2 and 5 perhaps form the majority. It is to the latter groups that greater attention need to be focussed. If, despite knowing what the job at ALAM entails some staff still leave after a certain period the reason may not be entirely for better prospects. In some cases it may be more likely due to disillusionment.

Being a closed service the opportunity for promotion is limited in ALAM and the prospects too are limited. The situation is aggravated by the fact that the majority of
the staff are of similar age group and start service at about the same time

8.3 Why do staff become demotivated and why do they leave?

There can be numerous reasons for the staff to become dissatisfied or demotivated. The more common reasons include:

- Pay equity
- Lack of promotional prospects
- Lack of sensitiveness on the part of the organisation to their needs, feelings and expectations
- Lack of skills and knowledge to perform required tasks
- Organisational policies not perceived as favourable
- Lack of opportunities for personal growth
- General unhappiness with attitude of management
- Routine tasks offering no job challenge and responsibilities
- Environmental factors which relate to others in the organization, facilities and surroundings.

Dissatisfaction can lead to low morale, low productivity, poor performance and ultimately if better opportunities exist outside (even if slight) to resignation.

Of course there are instances when staff leave despite being happy and content with his current job. For example when there is a definitely better job with better career prospects and the employee feels that ALAM is too small for his talents and aspirations. For others it may be due
to an opportunity to go back to the hometown or to be close to ageing parents, locality of good school and so on.

8.4 Assessing staff's attitude and expectations

To motivate and to reduce attrition, the organisation has to know what exactly is bothering the staff, which factors they value more than others. Once the parameters are established proper action can then be taken. If the reasons are not clearly established any attempt will not bring the desired result and it can leave the management wondering why things have not improved. In this respect a properly conducted survey can provide the much needed information.

The value of conducting organisational surveys should not be underestimated. Organisation can utilise the results of surveys for a variety of purpose. Finding out employee satisfaction/disatisfaction, soliciting suggestions on courses, organisational policies, working conditions, training needs, level of workload, job challenge and so forth. Surveys can be achieved in several ways – through observation and reporting, interview or questionnaire or a combination of one and the other if necessary. Each having its advantages and disadvantages. Perhaps the most effective for ALAM is the questionnaire. Provided that clarity of purpose is reflected and proper design of the questionnaire made it should adequately serve the purpose. Questionnaires can be quickly executed and it offers a degree of reliability because of anonymity and confidentiality.
An annual/biannual questionnaire should be utilised to prompt the staff to state their views and to give suggestions. Allow them to comment on what they feel are not proper at the moment and to give suggestions for improvement. An exit interview where resignation is amicable can also provide valuable information as to the reasons for leaving and the general feelings among the staff.

8.5 How can motivation work?

In broad terms there are many areas in which the organization can look into in order to improve motivation and reduce attrition. They include:

1. Staff's efforts need to be rewarded
2. Give recognition for their achievement - thank you, pat on the back
3. Show concern for their welfare and well being (health, recreation, religion, etc.)
4. Make them feel that their contributions are valued
5. Build team spirit, esprit de corps among the staff
6. Be receptive to their views and grievances
7. Concern for their development and career prospects
8. Allow them as much as possible to participate in management and decision making
9. Encourage staff to take part in organisation building so that they feel they are a part of the organisation
10. Equal opportunities to attend courses, seminars and conferences.
11. Wherever possible give them greater role and responsibility.
12. Reward those who deserve
To be able to implement all of the above a manager needs to understand people. An exposure (training, course) on behavioral science and interpersonal skills covered in chapter VII should provide sufficient background.

To reduce the rate of attrition and improve performance all factors stated above will have to be tackled. Some areas may be outside the direct control of the organisation nevertheless indirect influence could still be applied.

8.5.1 A promotion structure giving greater opportunities

The common feature of the staff at ALAM is the relatively young and similar age group. Thus when posts such as that of section head are filled, their colleagues either within or contemplating joining would be discouraged because of the diminished promotional prospects. An alternative will therefore have to be introduced in order to overcome this drawback. One way in which opportunities can be created to ensure those who remain, and who are dedicated and competent can aspire for reward is a better promotion structure.

In this regard a promotion structure that widens the narrow pyramidal structure would present greater opportunities to the staff for career development. What is proposed here is an increase in the number of posts for principal and senior lecturerships. A percentage of 20%, 30% and 50% for the grades of lecturer, senior lecturer and principal lecturer respectively, would offer reasonable career prospects. Thus, in a department with say, 20 staff and one head there would be 4 principal
lecturers, 6 senior lecturers and 10 lecturers. In the case of junior lecturers, promotion to lecturer should be based only on the requisite probationary period being met unless there are serious weaknesses shown during this period.

\[\text{Fig. 8.1}\]

<table>
<thead>
<tr>
<th>Time frame for promotion</th>
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</thead>
<tbody>
<tr>
<td>1 - 3 yrs</td>
</tr>
<tr>
<td>Junior lecturer</td>
</tr>
<tr>
<td>3 - 10 yrs</td>
</tr>
<tr>
<td>Lecturer</td>
</tr>
<tr>
<td>10 - 15 yrs</td>
</tr>
<tr>
<td>Principal lecturer</td>
</tr>
<tr>
<td>15 yrs</td>
</tr>
<tr>
<td>Senior lecturer</td>
</tr>
</tbody>
</table>

The above figure shows time frame criterion necessary to be eligible for promotion. It is of course only one of the requisite criteria, nonetheless an important one. To be eligible for promotion an individual will need to satisfy other criteria determined by the organisation. These would include among others, demonstration of competence, additional experience and qualification, other positive and tangible contributions such as publication of research, papers or books, teaching abilities and effectiveness (may be difficult to assess) and be actively involved in the development or improvement of courses.
8.5.2 The post of Section Head: on rotation basis

The present system of permanent headship for section and unit need to be reviewed. Following on from the promotion structure, the headship for units and sections should not be made a permanent post. That is the tenure of office should be on a rotational basis. In this way the senior members of the staff would be eligible to occupy the post when his turn is due. The period of office should be for a 2-year term during which time the person concerned shall assume the full responsibilities and the duties applicable to the post. It should be mandated that only those at the level of principal lecturer are eligible for the post. An acting allowance (amount to be determined) shall be paid to the person holding the office. A figure of about $300 should be reasonable. A person whose turn is due may for any reason decide to decline the office for which his refusal should be accepted and the post offered to the next eligible staff. In this way senior members of the faculty will have something to look forward to.

The benefits of this system can be multifold. In addition to providing members an opportunity to be the section head with the attached financial incentive, a person will also look forward to the change in his work and responsibility. In other words it offers an opportunity for job enrichment. Besides, it is also a learning experience which will contribute greatly to improving the overall quality of faculty members.

This is certainly not the only solution nor a panacea for the retention of high calibre staff but certainly a practical alternative. It should therefore be given serious consideration. This practice is common in
universities where the deanship rotates among professors in the faculty.

8.5.3 Motivation and the opportunity for personal growth: staff development programme

The organisation has to ensure that the staff have the skills and knowledge for the tasks they are required to perform. There is no use for example, telling a lecturer to review the curriculum and expect a good result if he has had no exposure on the subject. Likewise one cannot expect a lecturer to conduct a proper survey if he has had no exposure on research methodology. This situation, frequently not realised or given enough attention leads to dissatisfaction and demotivation on the part of the lecturer. It is important to realise that training need such as this is not a personal need but an organisational need. Nevertheless staff’s personal need for growth can be aligned to complement organisational training needs. A post-graduate diploma course in business studies for instance for a lecturer due to teach ship business can satisfy both personal as well as organisational needs.

The organisation has a human purpose to ensure that individuals meet their own needs and it is a challenge to managers to bring this personal needs in line with organisational needs. The main aim of staff development programme is to meet the organisational need for qualified personnel. To the staff this provides a strong incentive in the form of an avenue for personal growth. At the same time it can be regarded as an organizational strategy for the retention of competent staff.
8.5.4 Staff development programme: a strategy for the retention of staff

With regards to staff development programme involving major courses a contract binding the staff to serve for a specified period after the completion of the course is usually applicable. Hence, if a staff attends a full time course on full pay and in addition, all expenses relating to fees and living allowance are paid by the organisation (or other sponsoring body) it would be fair on both parties to enter into an agreement. That is the organisation agrees to send the staff on full salary and the staff in return agrees to be bound by a contract.

A contract binding an individual participating in the development programme can assure the organisation of a certain period of service. A series of binding contracts will keep the staff for a reasonable length of time within the academy. As far as the staff is concerned this is a fair bargain.

If a lecturer joins ALAM at the average age of 32 and participates in the staff development programme as shown in the example below he would remain with the academy for a good part of his career unless he is willing to revoke the contract by paying the stated amount.
It may be argued that the proportion who may eventually go on to pursue the doctoral programme will be very small and hence the above does not give a fair representation. However, even if a staff only reaches the second degree level it will still ensure that he remains at least till his early forties by which time it may not be as easy to leave.

A good formal staff development programme that offers opportunities for personal growth is a strong motivator in itself. The opportunity to go for further studies, attend courses where an individual can gain more knowledge and broaden his skills would be beneficial to the staff as well as the organisation.
8.5.5 Sabbatical leave

This is an extended period of leave from lecturing duties for the purpose of pursuing new skills or training. The length and eligibility for sabbatical leave varies but a period of 6 to 12 months paid leave after a continuous service of 6 years is quite reasonable. This is also a practice common with institutions of higher learning. Sabbatical leave should be offered on the understanding that it will be utilised for purposes related to studies and personal advancement. Conditions of eligibility, period of service and length of leave and so on varies from institution to institution. This is certainly a legitimate incentive to offer to the staff.

8.6 Sources of additional income

In an organisation where the pay structure is rigid (scheme for the public sector) the pay itself cannot be a strong motivational factor. Nevertheless as pay is important in the decision to join and to stay, it is useful to examine the possible sources of obtaining additional income.

There are several ways in which an academy can exploit to help bring additional income to the staff:

1. Set up a commercial arm to undertake consultancy work and projects. For example, the use of simulators in casualty cases and making feasibility studies can be undertaken by the staff. A reasonable percentage of the proceeds to be shared among the participating staff.
.2 giving external lectures to maritime related bodies and organisations - maritime departments and units of universities, naval reserves, yacht clubs, students for the Chartered Institute of Transport examinations

.3 part time surveyors, independent or to surveying firms - it would not be cost effective for surveying firms to maintain the full strength of surveyors needed to meet market upturn and at the same time maintain that strength during the downturn. The faculty can therefore provide mutually beneficial support in times of surges in work demand.

.4 conducting certificate of competency examinations on behalf of the Marine Department - setting questions and marking papers. This is possible up to the point when ALAM officially takes over the conduct of examinations and till such functions being considered an official part of the faculty's work.

.5 set up correspondence/distance learning courses - based on the evidence of current needs there should be a good market for such courses for certificate of competency examinations as well as shore based type of courses (CIT, ICS). This can also be carried out on the basis of percentage sharing with the organisation depending on how much working time is utilised.

.6 Privatise profitable courses - as demand for short courses have always far exceeded supply the possibility of privatising should be considered. Demand for short courses especially from the offshore industry should continue at least into the near
future. This activity can be handled by the commercial arm stated in .1 above.

.7 staff cooperative society — although already existing its activities has not been fully exploited. Given the five year new industry status where earnings are non-taxable, more efforts should be directed in expanding the commercial activities. This is definitely one of the best sources of income to all the staff besides providing challenges, satisfaction and the opportunity to broaden one’s commercial knowledge.

Staff attrition not only causes a big loss in expertise but also a decline in the overall staff’s morale and substantial financial loss to the organisation. The cost of training the person plus the cost of training his replacement can be high. Where the person concerned happens to be a key member of the staff the consequence of the loss will even be greater.

Staff attrition is however inevitable in any organisation. In rare cases attrition can even be beneficial if those that leave are below average performers. Such a situation will create the chance to look for a better replacement. Furthermore, if the departure is amicable a valuable contact for the academy will automatically be established with the person’s new organisation. In most cases the organisation would likely be maritime related. Unfortunately, more often than not those that leave are highly motivated and high calibre individuals.
9.1 Summary and recommendations

The present changes and the anticipated future development in the maritime industry have prompted the MET authorities worldwide to reexamine their roles. The outcome are major restructuring of curriculum, courses and indeed the whole approach to education and training. This is necessary in order to take account not only of technological and operational changes but also educational, social and economic developments.

An important factor in implementing any major planned changes is the availability of adequate basic resources. In an educational and training institution the most important factor is the availability of suitably qualified teaching staff, without which no effective changes can be made. And in view of the long lead time associated with any major staff development programme, it is essential that such a programme be implemented without undue delay.

This thesis has identified five major areas for staff training and development:

.1 advanced qualifications
.2 teacher training
.3 personal skills development
9.1.1 Advanced qualification

It is inevitable that maritime lecturers today need more than just professional qualifications. Additional advanced qualifications must form a major part of staff development programme. In this respect all lecturers should be required to obtain additional qualification in the related field. This factor should form a major criterion for promotion. Advanced courses that are applicable include an MSc course at the WMU, MSc and postgraduate diploma in maritime or shipping studies in the U.K. and similar courses through distance learning and part time programme locally.

For obtaining post-graduate qualifications, a systematic and carefully planned approach has to be considered in view of the many difficulties associated with it. Factors such as availability of staff, length of course and costs will have to be considered.

9.1.2 Teacher training

A full time teacher training course though desirable is not deemed to be necessary for all teaching staff. In this context it is recommended that teaching staff be given modules of short courses on topics useful for MET. They include learning theories and concepts, training methodology, teaching techniques, instructional technology, curriculum and course design, assessment and examination, course evaluation and subject specialisation. These modules of between one to two weeks duration should
be conducted during the term breaks or at other suitable periods. Lecturers for these courses can be arranged from local training establishments, teacher training colleges and universities. Where possible senior resident staff can be utilised for supporting lectures. In addition, all new lecturers should have an induction programme consisting of a period of understudy, and an extensive use of microteaching.

Other possibilities that have to be considered include the holding of a routine lecture training by the staff, part time attendance at a training course at local institutions and teacher exchange programme.

9.1.3 Personal skills

With regards to personal and managerial skills a number of courses have been identified as being essential for the personal development of lecturers. These are T Group, Transactional Analysis, counselling, conflict management, communication skills, information system and computer training. These courses should be conducted in-house for all the staff where possible. It is with a view to reduce cost as well as allowing the involvement of the whole faculty. Trainers or specialists can be invited to conduct courses during term breaks or whenever a suitable slot is available. Weekend lectures lasting for several weeks to cover the module can be considered if a block period is not available.

Financial loan for buying a personal computer to induce staff to own a computer is strongly encouraged. This should be regarded as an investment to the organisation. A computer literate workforce achieved through self-
learning is a bonus to any forward looking organisation.

9.1.4 Updating

The effectiveness of updating depends on the commitment and willingness on the part of the lecturers, their level and background and the support of the organisation. Personal efforts are as important as organisation's arranged programme. As many staff as possible should attend courses, seminars, workshops and conferences on related topics.

It is important to enhance the library to be a respectable resource centre. In maritime colleges, it is surprising how little the library is utilised by the staff. Many may not even be aware of the numerous sources of information available and most tend to stick only with what they are familiar with over the years. As a result most libraries in maritime colleges tend to be poorly stocked. In the area of updating the library plays a very important role. Apart from books and other publications, other learning resources such as slides, videos and computer disks should also be available.

9.1.5 Industry experience

Due to increased specialisation, greater demand for training from other sectors of the industry and a need for a higher level of MET, appropriate industry experience among lecturers is becoming an essential requirement. To this end, several ways have been identified to enable the staff to gain industry experience. A lecturer may apply to go back to sea for a period of about one year as part of the development programme.
Arrangements should also be made for each staff to do an attachment training on areas related to his teaching with shipping companies and other agencies connected with shipping. A regular trip onboard at an interval of about three years for lecturers should be an on going programme.

9.2 Sources

There are many institutions and organisations today offering post-graduate studies and various short courses. For obtaining graduate qualifications the United Kingdom still offers the widest choice. Many universities and polytechnics conduct a range of courses ranging from first degrees to masters and a number of them offer PhD programmes. Australia, Canada and the United States also offer various post-graduate courses in the maritime field. Courses and research programmes in related subjects that are available include hydrographic surveying, transportation planning and management, port operations, marine policy and law, maritime economics and navigation. However, as a specialised tailor-made solution to the problems of many countries, the WMU is the ideal for many courses at the master’s degree level.

Locally there are private training organisations, institute of public administration and local universities which can meet most of the training needs on short courses. From time to time international organisations such as the IMO organises short courses on a regional basis.
9.3 Development programme: guideline for implementation

The staff development programme should be divided into two main areas – full time and short courses. Courses having a duration longer than four months should come under the category of full time courses and those of four months or less under short courses. A master schedule which will be used for planning purposes can be drawn up for both categories of courses.

Tables 9.1 and 9.2 show the master formats for a full time and short courses staff development programmes respectively. The full time programme covers a five-year planning period (1990 to 1994 in this example) whilst the short courses programme is for a one-year period (in this case 1990). The programme format should contain at least information regarding previous courses attended, name of course, type of award, duration, place, commence/end, sponsor, total cost of training and applicable contract.

Detailed information for every member of the faculty whether nominated to attend any course during the planned period or not should be entered in the master format. In this way the format can provide a source of ready reference for important information with regards to planning such as:

.1 record and current status on courses and seminars each individual has attended

.2 total staff available/away at any given time

.3 total cost of training and development programme.
9.4 Financial implication

Of greatest importance will be the financial implication. This will have to be planned for a five year period for full time courses and annually for short courses. The cost of implementing the programmes can then be submitted in the budget proposals for the five year (five year national plan) and annual budget submissions respectively.

It must be appreciated that to introduce the full staff development programme as recommended would involve among others, extra personnel to ensure sufficient number being available at all times for running the courses and meeting other operational needs. With full time courses particularly, at least one or two staff will be away or otherwise engaged in the development programmes at any one time. Thus additional staff means additional operating expenditure for the organisation.

9.4.1 Determining cost of staff training and development programme

A simple method can be used to determine the total cost of a staff development programme. Costs can be divided into direct and indirect cost.

Direct cost is the cost associated with the programme itself e.g. fees, daily subsistance allowance, hotel travel, etc.

Indirect cost is the cost associated with additional staff salary and emolument (the figure can easily be obtained from existing staff cost).
To find the number of additional staff required:

From the master programme the number of staff, courses and costs can be determined.

Fig. 9.1

Cost of training and development programme

Total required teaching hours \[ \frac{\text{minimum number of staff required}}{\text{total required teaching hours}} \]

avr. teachers workload in hours =

Required strength - present strength = additional staff required

Projected total staff cost - current total staff cost = cost of training and development programme
NOTES:

(i) Total teaching hours include contact hours; time for research; examination and assessment; administrative function; average sick leave; average time on courses (all inclusive), for all courses and training functions.

(ii) Average working hour is the average total working hour per lecturer per week.

(iii) Total staff cost = cost of training and development + salary, emoluments and other benefits.

(iv) Cost of training and development is obtainable direct from the master format whilst other staff cost is available with the accounts section.

Then, assuming there is no increase in the number of courses conducted and/or an increase in the operating cost (e.g. additional consumables used or price increases) which if applicable would have to be allowed for, the cost of the development programme can be estimated by subtracting current total staff cost from the projected total staff cost.
APPENDIX A

Maritime education and training and lecturer recruitment and training systems in Sweden and The Federal Republic of Germany.

Sweden

MET system

The Swedish system requires candidates entering the nautical college to have completed two years seafar-time as an apprentice onboard a vessel. This two years seafar-time can be reduced to one year if the candidate has completed a two year technical high school (nautical) and may in some cases be further reduced to six months if the candidate has served an acceptable supervised apprenticeship. The course duration for a qualification as mate is two years and if a candidate performed well in the examination (pass/distinction) he may continue into the third year and complete his studies for master. Candidates who have passed the masters course are awarded a Bachelor of Science degree in nautical science and consequent upon completion of required seafar-time will be issued with the appropriate certificates of competency.

Lecturer

To be eligible to become a maritime lecturer, (e.g. nautical lecturer) a person must have the following:
(i) a Master F.G. qualification

(ii) must have obtained very good grades in the Master F.G. examination

(iii) had successfully completed a 1-year intensive course in mathematics at any approved university.

Because the above requirements are prerequisite it must be appreciated that item three (iii) has to be pursued individually and at the candidate's own time and expense.

Upon selection, each would be lecturer has to undergo a further 2-year maritime lecturers course conducted at the maritime college in Stockholm. This course covers all the major subjects contained in the nautical education and training syllabuses. Lecturers for the course comprise senior teaching staff of the college as well as external inputs from non-professionals such as industry personnel and experts from universities. Within this 2-year course approximately 6 months are utilised for training in pedagogy. This is usually carried out at a nearby teacher training institute.

In view of the declining demand for MET and the consequent reduction in the number of maritime lecturers required, the system of recruitment and training for lecturers will also change. The shift will be towards greater academic work and specialisation. Lecturer training will no longer take the old form and be conducted by a maritime college. It will be replaced by post-graduate research and degree courses available at some universities in a number of specialised subjects such as navigation and control
engineering. Those with appropriate advanced qualifications can apply to become a maritime lecturer. The new approach is part of an overall development in MET which puts greater emphasis on maritime education as a whole i.e. embracing, for example, marine insurance, shipbroking and shipping management. The philosophy behind this is the acceptance of the fact that on average mariners remain at sea for a very short period (10-12 years). Therefore a more wholesome MET will enable those coming ashore to go into maritime related industry thereby avoiding wastage of expertise.

West Germany

MET system

As a federal republic comprising a number of states and education being a state matter MET may differ slightly between states. However, the general structure is more or less similar.

Entry requirement is highest secondary education i.e. pre-university. A period at sea is pre-requisite to entering the college e.g. 9 months as cadet officer apprentice or 15 months as officer assistant. The college based course has a duration of three years comprising of six semesters of basic and advanced studies. Examinations are conducted at the end of each semesters on completion of respective subjects. Every student has to submit a final thesis on which there is an oral examination (defend the thesis). On successful completion candidates are awarded the Bachelor of Science degree and the watchkeeping
certificate issued by the federal Ministry of Transport. Subsequent certificates of competency can be obtained upon completion of the required sea time.

Lecturer

Lecturers for maritime colleges (e.g., nautical) used to be recruited from two sources:

(i) holders of the highest professional qualification who had obtained a distinction or were among the top in the course (Bremen), very good grades or occasionally good grades in the case of Hamburg. Such candidates also hold the equivalent of a BSc degree in nautical or engineering studies.

(ii) University graduates who had obtained the equivalent of a MSc or in a few cases an M.A. degree. (e.g., language lecturer) or a doctorate in a subject relevant to the education and training of masters or chief engineers.

Maritime colleges require new lecturers to undergo additional training programme mostly in-house. Additionally, nautical lecturers (at Bremen college for example) had to prepare a thesis on a technical as well as pedagogic subject. The thesis is assessed and had to be defended by the candidate as part of a state examination which lead to a degree equivalent to a MSc in education and nautical studies. Lecturers from a non-technical background (university graduates) had to do a similar thesis and examination but only on the pedagogic aspect.

The examinations are carried out by the senior staff of
the college and university professors and in some cases depending on the technicality of the thesis, also by senior experts from the industry. The deputy state minister for ports, shipping and transport acts as chairman of the examination board.

Since the inception of maritime colleges into the polytechnics (or becoming an independent polytechnics) the system of recruitment and training has also changed to conform to the system of the polytechnics. A lecturer has to normally hold a doctoral degree in an area that is relevent to department. In this case maritime studies. Because of the necessary practical bias of MET exceptions to hold a doctoral degree can be made. Holders of the highest professional qualification who possess in addition, a higher degree in a relevent subject (e.g. naval architecture, law, economics) are still accepted as lecturers. The higher degrees may even be substituted by an appropriate industry experience, for example, as a superintendent in a shipping company.
APPENDIX B

Detailed content of teacher training modules

.1 Educational principles:

includes philosophy and psychology of education - behavior, learning process, learning theories (stimuli-response/cognitive), learning models (advance organiser/student centred/enquiry teaching).

.2 Theories of adult learning (andragogy):

now widely accepted that adults learn differently compared to children. The needs, objectives, motivational factors and personal experience are different.

.3 Teaching and training methodology:

different methods of teaching and training - lecture, discussion, laboratory, case study, role play and simulation, brainstorming, quizzes, seminar and workshop.

.4 Teaching techniques and teaching skills:

concerns with the actual teaching skills - the various techniques and skills e.g. questioning, leading, motivating, voice tone, eye contact, non-verbal communication.
.5 Instructional technology:
use of whiteboard, newsprint, overhead projector,
tape-slides, video, films and computers.

.6 Curriculum development and course design:
defining objectives, selecting content, teaching
method, material, assessment and evaluation.

.7 Teaching and student assessment and course
evaluation:
methods of assessment of effectiveness of teaching/
teacher's performance, assessment of students'
learning - continuous assessment/test/examination,
evaluating effectiveness of the course with a view to
improve.

.8 Subject specialisation:
in higher education depth of knowledge of subject/s is
paramount. Ability to impart that knowledge is
necessarily a mastery of the subject itself, then
comes the medium.
APPENDIX C

List of organisations and professional associations

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International Maritime Organisation (IMO)
4 Albert Embankment
London
United Kingdom

United Nation Conference on Trade and Development (UNCTAD)
Committee on Shipping
Palais De Nations
1211 Geneva 10
Switzerland

International Labour Organisation (ILO)
Route des Morillons
1211 Geneva 22
Switzerland

United Nation Educational Scientific and Cultural Organisation (UNESCO)
7 Place de Fontenoy
75700 Paris
France

Organisation for Economic Cooperation and Development (OECD)
2 Rue Andre Pascal
75775 Paris CEDEX 16
France

World Meteorological Organisation (WMO)
41 Avenue Giuseppe Motta
1211 Geneva 20
Switzerland

Food and Agricultural Organisation (FAO)
Via Delle Terme di Carracalla
00100 Rome
Italy

International Maritime Satellite Organisation (INMARSAT)
40 Melton Street
London NW1 2EQ
United Kingdom
International Hydrographic Organisation (IHO)
Int. Hydrographic Bureau
Ave. President JF Kennedy
(B.P. 345) Monte Carlo
MC 98000 Monaco

Baltic and International Maritime Council (BIMCO)
Kristianagade 19
DK 2100
Copenhagen 0
Denmark

International Association of Classification Societies (IACS)
P.O. Box 300 1322 Hovik
Norway

INTERTANKO
Radhusgatan 25
P.O. Box 1452 - Vika
N 0016 Oslo 1
Norway

International Association of Lighthouses Authority (IALA)
13 Rue Yvon Villarceau
75116 Paris
France

International Telecommunication Union (ITU)
Palais des Nations
CH 1211 Geneva 20
Switzerland

International Chamber of Commerce (ICC)
38 Cours Albert 1er
F-75008 Paris
France

International Chamber of Shipping (ICS)
30-32 St. Mary Axe
London EC3 8ET
United Kingdom

International Maritime Bureau (IMB)
Maritime House
1 Linton Road
Barking, Essex IG11 8HG
United Kingdom

International Maritime Pilots Association (IMPA)
20 Peel Street
London W8 7PD
United Kingdom
International Association of Institutes of Navigation
C/o Royal Inst. of Navigation
Royal Geographical Society
1 Kensington Gore
London SW7 2AT
United Kingdom

United Nation Economic and Social Commission for Asia Pacific (ESCAP)
UN Building
Rajadamneru Avenue
Bangkok 10200
Thailand
(Shipping and Waterways Division)

South East Asian Agency for Regional Transport and Communications Development (SEATAC)
MUI Plaza 6th Floor
3 Jin. P. Ramlee
P.O.Box 11078
50734 Kuala Lumpur
Malaysia

International Shipping Federation (ISF)
30-32 St. Mary Axe
London EC3A 8ET
United Kingdom

Nautical Institute of Malaysia
c/o Akademi Laut Malaysia
P.O. Box 31 Kuala Sungai Baru, Melaka
Malaysia

The Nautical Institute
202 Lambeth Road
London SE1 7LQ
United Kingdom

The Institute of Marine Engineers
76 Mark Lane
London EC3R 7JN
United Kingdom

Royal Institutions of Naval Architects
10 Upper Belgrave Street
London SW1X 8BQ
United Kingdom
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