IMO NEWS

IMO and the new millennium
INF Code to become mandatory

The Committee adopted amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, aimed at making the International Code for the Safe carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on board Ships (INF Code) mandatory. The amendments relate to chapter VII (Carriage of dangerous goods) of SOLAS.

The amendments making the INF Code mandatory are expected to enter into force (under tacit acceptance) on 1 January 2001.

The INF Code sets out how the material covered by the Code should be carried, including specifications for ships. The material covered by the Code includes:

- **Irradiated nuclear fuel** – material containing uranium, thorium and/or plutonium isotopes which has been used to maintain a self-sustaining nuclear chain reaction.

- **Plutonium** – the resultant mixture of isotopes of that material extracted from irradiated nuclear fuel from reprocessing.

- **High-level radioactive wastes** – liquid wastes resulting from the operation of the first stage extraction system or the concentrated wastes from subsequent extraction stages, in a facility for reprocessing irradiated nuclear fuel, or solids into which such liquid wastes have been converted.

The INF Code applies to all ships regardless of the date of construction and size, including cargo ships of less than 500 gross tonnage, engaged in the carriage of INF cargo. The INF Code does not apply to warships, to naval auxiliary vessels or to other ships used only on government non-commercial service, although Administrations are expected to ensure such ships are in compliance with the Code.

Specific regulations in the Code cover a number of issues, including: damage stability, fire protection, temperature control of cargo spaces, structural consideration, cargo securing arrangements, electrical supplies, radiological protection equipment and management, training and shipboard emergency plans.

Ships carrying INF cargo are assigned to one of three classes, depending on the total radioactivity of INF cargo which is carried on board, and regulations vary slightly according to the class:

- **Class INF 1 ship** – Ships which are certified to carry INF cargo with an aggregate activity less than 4,000 TBq (terabecquerel – measurement of radioactivity).

- **Class INF 2 ship** – Ships which are certified to carry irradiated nuclear fuel or high-level radioactive wastes with an aggregate activity less than \(2 \times 10^6\) TBq and ships which are certified to carry plutonium with an aggregate activity less than \(2 \times 10^7\) TBq.

- **Class INF 3 ship** – Ships which are certified to carry irradiated nuclear fuel or high-level radioactive wastes and ships which are certified to carry plutonium with no restriction of the maximum aggregate activity of the materials.

The INF Code was first adopted as a recommendatory Code by the eighteenth session of the Assembly on 4 November 1993 (resolution A.748(18)). The twentieth session of the Assembly adopted amendments to the INF Code to include specific requirements for shipboard emergency plans and notification in the event of an incident (resolution A.853(20), adopted on 27 November 1997).

The Maritime Safety Committee, at its sixty-eighth session in May–June 1997, and the Marine Environment, Protection Committee (MEPC), at its thirty-ninth session in March 1997, agreed that the INF Code should be made mandatory under the 1974 SOLAS Convention. Redrafting was done to make the text of the INF Code suitable for a mandatory instrument.

1995 amendments to the STCW Convention – implementation

The Committee reviewed progress in implementing the 1995 amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW Convention), which require Parties to the Convention to communicate to IMO information on compliance with the 1995 amendments. The information is being reviewed by panels of competent persons, who will report on their findings to the IMO Secretary-General, who will, in turn, report to the MSC on the Parties which fully comply.

By the 1 August 1998 deadline, 82 out of the 133 STCW Parties had communicated information on compliance with the requirements of the revised Convention. The 82 Parties which met the deadline represent well over 90% of the world’s ships and seafarers.

By 21 May 1999, a further 13 Parties had communicated information, 15 panels of competent persons had completed their work and reported to the Secretary-General; 40 panels had completed their initial evaluations and clarifications had been requested from the Parties concerned; and, of those, 20 panels were considering clarifications that had been provided by the respective Parties.

The Committee decided at its 69th session in 1998 that the Secretary-General’s report to the Committee will not be submitted until after all the information communicated by Parties received by 1 August 1998 has been evaluated by the competent persons concerned. The original tentative date of MSC 72 for the Secretary-General’s report to the Committee was based on an estimated average of 20 weeks for each evaluation. To date, the average time taken by those panels which have completed their work is 21 weeks.

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1 Terabecquerel (1 TBq = 10^{12} Bq); becquerel = activity unit (1 Bq = 2.7 \times 10^{-11} Ci); (Ci = curie)

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Front cover: The technological revolution that has marked the shipping industry at the end of the current millennium will probably accelerate in the first years of the next one. But that will tend to make the seafarers of the future more rather than less important. The future is the theme of this year’s World Maritime Day, which is featured in a special section beginning on page 16. (photograph courtesy of Bergesen)
Overall, the average time taken by panels to complete their initial evaluations to date is 15 weeks and the average time taken by Parties to provide clarifications is 7 weeks.

It is envisaged that all panels will complete their work by the deadline of 15 January 2000, so that the Secretary-General can have his report prepared by 1 March 2000 — two and a half months before the Committee meets.

**Fight against fraudulent STCW certificates**

The Committee agreed to a draft Assembly resolution on the issue of fraudulent certificates of competency to highlight the problem and encourage action by Member States to eliminate the circulation of fraudulent certificates.

The proposed resolution on unlawful practices associated with certificates of competency and endorsements was drafted following concern about a proliferation of fraudulent certificates of competency, or authentic certificates reportedly issued on the basis of forged foreign certificates, which have been found during port State control inspections and applications for recognition of certificates.

The Sub-Committee on Standards of Training and Watchkeeping, at its 30th session in January 1999, finalized a MSC circular on fraudulent certificates of competency (MSC/Circ. 900) which invites Member States and Parties to STCW to report to IMO and to the relevant Administration any cases or suspected cases of fraudulent certificates, to intensify efforts to eliminate the problem, and to act under the terms of the Convention, including prosecution of those involved, if seafarers on board are found to be holding fraudulent certificates — this could also mean detaining the ship.

The draft Assembly resolution also urges Member Governments to take all possible steps to investigate cases and to prosecute, or assist in the investigation and prosecution of, those found to be involved in the processing or obtaining of fraudulent certificates or endorsements, including the holders of such certificates or endorsements.

The draft Assembly resolution also urges Governments who endorse certificates issued by another Party to first confirm the authenticity of the original certificate from the issuing authority and to include details of the underlying certificate on the new document.

**Bulk carrier safety**

The MSC established a Working Group on Bulk Carrier Safety to review relevant submissions and agreed to establish a similar group at the next session.

Major issues relating to bulk carrier safety were addressed in November 1997, when IMO adopted a new chapter XII (Additional safety measures for bulk carriers) to SOLAS 1974 which enters into force on 1 July 1999. The regulations in the chapter aim to prevent losses of bulk carriers due to structural failure following flooding of any hold in new ships and of the foremost hold of existing ships, identified as the cause of a number of losses of bulk carriers in the early 1990s. The chapter contains a number of requirements for improving the structural integrity of bulk carriers, including strengthening the double bottom and bulkhead of the foremost hold where required.

However, a 1998 report on the sinking of the bulk carrier *Derbyshire* in 1980 with the loss of 44 lives, presented at the 69th session of the MSC in May 1998 by the United Kingdom, contains further recommendations relating to the design and construction of bulk carriers.

At its last (70th) session in December 1998, the Committee referred a number of issues to the Sub-Committee on Stability and Load Lines and on Fishing Vessel Safety (SLF), and agreed to continue work at the current session.

Issues being looked at by the SLF Sub-Committee include: strength of hatch covers and coamings; freeboard and bow height; reserve buoyancy at fore end, including forecastles; structural means to reduce loads on hatch covers and forward structure; and foredeck and fore-end access.

The Committee agreed that the SLF Sub-Committee should continue its work on these areas.

The Committee also agreed:

- resolution MSC.89(71), Interpretation of the provisions of SOLAS chapter XII on additional safety measures for bulk carriers, which includes guidance on application of and interpretation of the chapter to certain bulk carriers, including Interpretation of the term “bulk carrier of single side skin construction” and Interpretation of the requirement for certain bulk carriers to be permanently marked on the side shell with a triangle.

- MSC circular on Uniform method of measurement of the density of bulk cargoes, including a performance specification for the measurement of the density of such cargoes.

**Formal safety assessment study on bulk carrier safety**

The Committee reviewed progress in carrying out a formal safety assessment (FSA) study of bulk carriers, to aid future IMO decision-making on bulk carrier safety, and agreed to a framework setting out project objectives, scope and application, namely:

1. to inform IMO’s future decision-making regarding measures to improve the safety of bulk carriers;

2. to apply FSA methodology to the safety of dry bulk shipping; and

3. to secure international collaboration and agreement.

The United Kingdom is co-ordinating the FSA study, which is expected to take two years.

Formal safety assessment is described as a rational and systematic process for assessing the risks associated with any sphere of activity, and for evaluating the costs and benefits of different options for reducing those risks. It therefore enables, in its potential application to the rule-making process, an objective assessment to be made of the need for, and content of, safety regulations.

Formal safety assessment consists of five steps: identification of hazards (a list of all relevant accident scenarios with potential causes and outcomes); assessment of risks (evaluation of risk factors; risk-control options (devising regulatory measures to control and reduce the identified risks); cost/benefit assessment (determining cost-effectiveness of each risk-control option); and recommendations for decision-making.
(information about the hazards, their associated risks and the cost-effectiveness of alternative risk-control options is provided).

The International Association of Classification Societies (IACS) has carried out a hazard identification study on the watertight integrity of the fore end of bulk carriers, and has identified 51 hazards relating to the technical system, on-board operations, shore-side operations during loading/unloading, and the management. Ten of these hazards are judged to represent an unacceptable level of risk and IACS notes that they merit a more detailed assessment to determine the exact nature of the problem.

**Helicopter landing area regulation to apply to ro-ro passenger ships only**

The MSC agreed that the requirement in SOLAS chapter III, regulation 28.2 for helicopter landing areas to be fitted to passenger ships of 130 m in length and upwards constructed on or after 1 July 1999 should in fact only apply to ro-ro passenger ships.

The Committee approved a draft amendment to regulation III/28.2 to require a helicopter landing area only for ro-ro passenger ships. The amendment is expected to be adopted at the 72nd session of the Committee in May 2000 and to enter into force on 1 January 2002 under tacit acceptance.

The decision to review the existing requirement was made at the last (70th) session following trial applications of formal safety assessment to the requirement.

The requirement was part of a package of amendments to SOLAS adopted in November 1995, based on proposals put forward by a panel of experts set up by IMO in December 1994 following the ro-ro ferry *Estonia* disaster of September 1994 in which more than 850 people were killed.

Regulation III/28.1 of SOLAS requires all ro-ro passenger ships to be provided with a helicopter pick-up

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**Circulars approved**

The Committee approved the following circulars:

MSC/Circ.907  Application of SOLAS regulation III/28.2 concerning helicopter landing areas on non-ro-ro passenger ships
MSC/Circ.908  Uniform method of measurement of the density of bulk cargoes
MSC/Circ.909  Interim Guidelines for a simplified evacuation analysis of ro-ro passenger ships
MSC/Circ.910  Strength of ro-ro passenger ship “B” class bulkheads to which handrails are attached
MSC/Circ.911  Interpretations of the fire-protection-related provisions of the HSC Code
MSC/Circ.912  Interpretations of the standards for fixed sprinkler systems for high-speed craft
MSC/Circ.913  Guidelines for the approval of fixed water-based local application fire-fighting systems for use in category A machinery spaces
MSC/Circ.914  Guidelines for the approval of alternative fixed water-based fire-fighting systems for special-category spaces
MSC/Circ.915  Unified interpretations of vague expressions and other vague wording of SOLAS chapter II-2
MSC/Circ.916  Unified interpretations of the Fire Test Procedures (FTP) Code and the fire test procedures referred to therein
MSC/Circ.917  Guidelines on fire safety construction in accommodation areas
MSC/Circ.918  Guidance for port State control officers in respect of certificates of competency issued under the provisions of the STCW Convention
MSC/Circ.919  Guidelines for damage control plans
MSC/Circ.920  Model Loading and Stability Manual
MSC/Circ.921  Amendments to the BC Code
MSC/Circ.922  Recommendations on performance standards and tests for thermal protective lifejackets (TP-lifejackets)
STCW.7/Circ.9  Guidance for competent persons evaluating information communicated by Parties on the implementation of the STCW Convention and STCW Code amendments which entered into force after 1 August 1998
LL.3/Circ.130  Unified interpretations of the 1966 Load Line Convention
area, and existing ro–ro passenger ships were required to comply with this regulation not later than the first periodical survey after 1 July 1997. But the requirement for a helicopter landing area for all passenger ships of 130 m in length and upwards was deferred to 1 July 1999.

The Committee approved a circular recommending that non-ro–ro passenger ships of 130 m in length and upwards constructed on or after 1 July 1999 need not be fitted with helicopter landing areas, and this should not constitute a reason for detaining or delaying the ship – since there is a delay between the regulation coming into effect for new ships and the adoption of the amendment making it applicable to ro–ro passenger ships only.

Piracy and armed robbery against ships – correspondence group to develop code

The MSC established a correspondence group to prepare a preliminary draft text of an instrument for the investigation and prosecution of the crime of piracy and armed robbery against ships.

The idea for such a code was developed at a series of expert missions and seminars around the world organized by IMO.

Participants at the seminars already held have recommended that Governments need to intensify their efforts to combat piracy and armed robbery against ships and that IMO should consider developing an international code for the investigation of piracy and armed robbery against ships and recommending an appropriate punishment for the crime.

The correspondence group is expected to submit the preliminary draft text of the proposed instrument to the next session of the Committee.

The Committee agreed to revisions to two circulars aimed at dealing with piracy and armed robbery against ships, which were originally adopted in 1993. The changes update the circulars and make the guidelines more comprehensive. The circulars concerned are:

– Revised MSC/Circ. 622, Recommendations to Governments for preventing and suppressing piracy and armed robbery against ships, suggests possible counter-measures that could be employed by rescue co-ordination centres and security forces. Now also includes draft Regional agreement on co-operation in preventing and suppressing acts of piracy and armed robbery against ships.

– Revised MSC/Circ. 623, Guidance to shipowners and ship operators, shipmasters and crews on preventing and suppressing acts of piracy and armed robbery against ships, contains comprehensive advice on measures that can be taken on board to prevent attacks or, when they occur, to minimize the danger to the crew and ship.

Fatigue guidance to be developed

The Committee agreed to a definition of fatigue3 and to develop guidance on dealing with fatigue, in particular in implementing existing regulations which address the problem of fatigue and how it may contribute to accidents.

The decision follows work on fatigue by the Joint MSC/Marine Environment Protection Committee (MEPC) Working Group on the Human Element and a correspondence group on fatigue. The correspondence group has been given the task of developing guidance for all concerned, taking into consideration existing related regulations, such as STCW regulations concerning minimum rest periods, and International Labour Organization (ILO) Convention 180, which provides requirements for maximum work or minimum rest hours. The group will also take into consideration the results of investigations into fatigue presented to IMO and any relevant national work/rest rule requirements.

Fatigue has been recognized around the world as a contributor to many accidents involving means of transport. There have been many incidences where fatigue has been suspected of contributing to or causing transportation and industrial accidents; however, that connection was difficult to justify because the vital links between the unsafe acts and decisions which led to the accidents and the fatigue state of the people involved were not made.

The reasons for not making the links have varied. At one time, fatigue was discounted as a potential cause of human error; indeed, a common myth existed that fatigue could be prevented by characteristics of personality, intelligence, education, training, skill, compensation, motivation, physical size, strength, attractiveness or professionalism. Also, the lack of scientifically accepted information on how fatigue affects not only mood and feelings, but individual and team performance as well, constrained investigators and analysts. Further, guidance on how to investigate for fatigue and build the links between a person’s recent history and potential impairment has been lacking. Unlike alcohol and drugs, which can be measured by, for example, blood tests, there is no unequivocal physical or chemical test which can tell us that a person was impaired to a certain extent by fatigue.

Navigation through the Strait of Istanbul, Strait of Çanakkale and the Marmara Sea

The Committee agreed to discontinue discussions on reviewing the IMO Rules and Recommendations on Navigation through the Strait of Istanbul, Strait of Çanakkale and the Marmara Sea after a working group on ships’ routing and related matters met during the session to look at the issue.

The working group, after extensive technical discussion, did not reach any firm conclusion that any change to the rules would make a clear and definitive contribution to the safety of navigation in the Straits. Turkey stated that it would inform the Organization of any developments in the establishment of vessel traffic services in the Straits, the provision of pilotage services and

3 As contained in MSC/Circ.813/MEPC/Circ.330, issued 23 June 1997, containing List of human element common terms.

Fatigue: A reduction in physical and/or mental capability as the result of physical, mental or emotional exertion which may impair nearly all physical abilities, including: strength; speed; reaction time; co-ordination; decision making; or balance.
further efforts to enhance the safety of navigation and environmental protection. For the time being, the present IMO-adopted routeing system, including the associated IMO Rules and recommendations (resolution A.827(19), adopted in 1995) will continue to apply. Any future information and proposals received concerning the routeing system and the Rules and recommendations will be given appropriate consideration.

Rules and recommendations on navigation through the Straits were adopted by IMO in 1994. The IMO Assembly in 1995 (in resolution A.827(19)) called on the MSC to review these rules.

Draft resolutions
The MSC approved the following draft resolutions for submission to the 21st Assembly in November 1999:

- Procedure for adoption of, and amendments to, performance standards and technical specifications – states that the MSC is responsible for adopting performance standards and technical specifications and amendments thereto.

- Principles of safe manning – a revised resolution is intended to take into account developments in the shipping industry since 1981. It includes basic principles to be applied when considering manning levels in order to ensure the safe operation of the ship. It also includes detailed guidelines for the application of principles of safe manning and guidance on contents and a model format of a minimum safe manning document. Each ship should be issued with a “minimum safe manning document”, specifying the minimum safe manning levels. The document can then be inspected during port State control. The revised resolution will replace resolution A.481(XII) adopted in 1981.

- Unlawful practices associated with certificates of competency and endorsements (see above).

- Self-assessment of flag State performance – includes the Flag State Performance Self-Assessment Form, already approved by the MSC and MEPC. The Form is intended to establish a uniform set of internal and external criteria which can be used by flag States on a voluntary basis to obtain a clear picture of how well their maritime Administrations are functioning and to make their own assessment of their performance as flag States.

- Amendments to the Code for the Investigation of Marine Casualties and Incidents (resolution A.849(20)) – to add Guidelines on investigation of human factors, which were developed by a Joint IMO/ILO Working Group on Investigation of Human Factors in Maritime Casualties.

- Amendments to the procedures for port State control (resolution A.787(19)) – aimed at updating the resolution, which contains comprehensive guidelines and recommendations on port State control procedures. New sections will incorporate procedures for port State control relating to the International Safety Management (ISM) Code.

- Global and uniform implementation of the harmonized system of survey and certification (HSSC) – aimed at encouraging all States to implement the harmonized system, even if they are not parties to the relevant Protocols. The harmonized system of survey and certification was introduced by the 1988 Protocols to SOLAS 1974 and the International Convention on Load Lines, 1966 (1966 Load Line Convention). The 1988 Protocols will enter into force on 3 February 2000.

- International Aeronautical and Maritime Search and Rescue Manual – sets out a procedure for updating the Manual which has been developed by IMO and the International Civil Aviation Organization (ICAO).

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The Marine Environment Protection Committee (MEPC) has decided to propose to the IMO Council in November the holding of a conference in the 2000–2001 biennium to adopt a legal instrument to regulate the use of shipboard anti-fouling systems, in particular to phase out those containing organotins such as tributyltin (TBT).

The decision to request a conference on anti-fouling systems followed progress by a working group in developing the basic structure of a proposed legal instrument to effect the phasing out of organotins acting as biocides in anti-fouling systems on ships.

At the last session (MEPC 42), the Committee agreed a draft Assembly resolution which includes a proposed deadline of 2008 for the complete prohibition of organotins acting as biocides in anti-fouling systems on ships. The draft Assembly resolution will be considered by the 21st IMO Assembly in November 1999 for adoption.

Anti-fouling paints are used to coat the bottoms of ships to prevent seaf Life such as algae and molluscs attaching themselves to the hull – thereby slowing down the ship and increasing fuel consumption. In the early days of sailing ships, lime, and later arsenic, was used to coat ships’ hulls, until the modern chemicals industry developed effective anti-fouling paints using metallic compounds.

The compounds slowly “leach” into the seawater, killing barnacles and other marine life that have attached to the ship – but studies have shown that these compounds persist in the water, killing seaf Life, harming the environment and possibly entering the food chain. One of the most effective anti-fouling paints, developed in the 1960s, contains the organotin tributyltin (TBT), which has been proven to cause deformations in oysters and sex changes in whelks.

The harmful environmental effects of organotin compounds were recognized by IMO in 1990, when the MEPC adopted a resolution which recommended that Governments adopt measures to eliminate the use of anti-fouling paint containing TBT on non-aluminium-hulled vessels of less than 25 metres in length and to eliminate the use of anti-fouling paints with a leaching rate of more than 4 micrograms of TBT per day. Some countries, such as Japan, have already banned TBT in anti-fouling paint for most ships.

Alternatives to TBT paint include copper-based coatings and silicon-based paints, which make the surface of the ship slippery so that seaf Life will be easily washed off as the ship moves through water. Further development of alternative anti-fouling systems is being carried out. Underwater cleaning systems avoid the ship having to be put into dry dock for ridding the hull of seaf Life, while ultrasonic or electrolytic devices may also work to rid the ship of foulers.

The anti-fouling working group will continue its work on developing the draft regulations at MEPC 44.

Harmful aquatic organisms in ballast water

An MEPC working group continued developing draft new regulations for ballast water management.

The proposed new regulations are intended to address the environmental damage caused by the introduction of harmful aquatic organisms in ballast water, used to stabilize vessels at sea. Globally, it is estimated that about 10 billion tonnes of ballast water are transferred each year.

The water taken on board for ballasting a vessel may contain aquatic organisms, including dormant stages of microscopic toxic aquatic organisms such as dinoflagellates, which may cause harmful algal blooms after their release. In addition, pathogens such as the bacterium *Vibrio cholerae* (cholera) have been transported with ballast water. As ships travel faster and faster, the survival rates of species carried in ballast tanks have increased. As a result, many introductions of non-indigenous organisms in new locations have occurred, often with disastrous consequences for the local ecosystem – which may include important fish stocks or rare species.

The working group reviewed a number of key issues based on the current proposed draft regulations, with progress reported in achieving consensus on the content of certain draft regulations. However, a number of important issues and aspects remain open for further consideration, including:

- the preferred approach to application – whether the globalized approach, the designation of Ballast Water Management Areas or other approaches;
- development of a range of standards, e.g., for evaluation and acceptance of new ballast-water management and control options;
- development of a regionalization concept; and
- the extent of application of the provisions to some categories of vessels, such as fishing vessels, pleasure boats, etc.

The overall outline of a draft legal instrument was prepared and some draft text was developed, but the Committee agreed that preparation of the instrument was not sufficiently advanced to be able to propose (to the IMO Council which meets prior to the Assembly in November) the holding of a diplomatic conference to adopt an instrument in the next biennium (2000–2001).

The issue will remain a high-priority item in the work programme and the Committee agreed that the Working Group on Ballast Water should continue its work at the next session.

Options for introducing the proposed regulations include:

- a new Annex to MARPOL 73/78; and
- a completely new convention on ballast water management, under which the terms for entry into force would be determined by a Conference, instead of having to comply with existing terms established by MARPOL 73/78.

Current options for preventing the spread of harmful aquatic organisms in ballast water include exchanging the ballast water in deep ocean, where there is less marine life and where organisms are less likely to survive. Other options include various treatments (filtration, thermo, chemical, radiation) treatments of the ballast.
water en route to kill the living organisms.

Regulations for tankers carrying persistent oil and shipboard pollution emergency plan for chemical tankers adopted

The Committee adopted regulations making certain-sized tankers carrying persistent oils (such as heavy fuel oil) as cargo subject to the same stringent requirements as crude oil tankers.

The amendments to MARPOL 73/78 will make existing oil tankers between 20,000 and 30,000 tons deadweight carrying persistent product oil, including heavy diesel oil and fuel oil, subject to the same construction requirements as crude oil tankers. The amendments, expected to enter into force on 1 January 2001, under tacit acceptance, relate to regulation 13G of Annex I (Regulations for the Prevention of Pollution by Oil).

Regulation 13G requires, in principle, existing tankers to comply with requirements for new tankers in regulation 13F, including double-hull requirements for new tankers or alternative arrangements, not later than 25 years after date of delivery. Currently, the regulation applies to crude oil tankers of 20,000 tons deadweight and above and to product carriers of 30,000 tons deadweight and above, but does not currently apply to tankers between 20,000 and 30,000 tons deadweight which carry heavy diesel oil or fuel oil.

The aim of the amendments is to address concerns that oil pollution incidents involving persistent oils are as severe as those involving crude oil, so regulations applicable to crude oil tankers should also apply to tankers carrying persistent oils.

The Committee also adopted related amendments to the Supplement to the IOPP (International Oil Pollution Prevention) Certificate, covering in particular oil separating/filtering equipment and retention and disposal of oil residues.

A third amendment adopted relates to Annex II of MARPOL (Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk). The amendment adds a new regulation 16, requiring a shipboard marine pollution emergency plan for noxious liquid substances.

The Committee also adopted amendments, addressing the maintenance of venting systems, to the International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code) and the Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (BCH Code).

The Committee also adopted an MEPC Circular on implementation of the 1999 amendments to the IOPP Certificate, to clarify implementation in particular as regards ships whose existing IOPP Certificate may expire after the amendments (and requirement for revised IOPP Certificate) enter into force.

Deletion of tainting as criterion for marine pollutants

The Committee approved proposed amendments to MARPOL Annex III (Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form) to delete tainting as a criterion for marine pollutants from the Guidelines for the identification of harmful substances in packaged form.

Tainting refers to the ability of a product to be taken up by an organism and thereby affect the taste or smell of seafood, making it unpalatable. A substance is defined as tainting when it has been found to taint seafood.

The proposed draft amendments will now be circulated, in accordance with the provisions of the MARPOL Convention, with a view to adoption at the next session of the Committee in March 2000 (MEPC 44). If adopted, the amendments will mean that products identified as being marine pollutants solely on the basis of their tainting properties will no longer be considered marine pollutants.

Annex III of MARPOL applies to all ships carrying harmful substances in packaged form, or in freight containers, portable tanks or road and rail tank wagons. The regulations require the issuing of detailed standards on packaging, marking, labelling, documentation, stowage, quantity limitations, exceptions and notifications, for preventing or minimizing pollution by harmful substances.

“Harmful substances” covered by Annex III are those substances which are identified as marine pollutants in the International Maritime Dangerous Goods Code (IMDG Code).

Recycling of ships

The Committee agreed to include an agenda item on ship recycling during its next session in March 2000 (MEPC 44).

The decision followed a proposal put forward by Norway to add ship scrapping to the work programme of the MEPC with the aim of developing safety and environmental measures regarding ship scrapping. Ships sold for scrapping may contain environmentally hazardous substances such as asbestos, heavy metals, hydrocarbons, ozone-depleting substances and others. Concerns have been raised about the working and environmental conditions at many of the world’s ship scrapping locations.

MEPC 44 is expected to discuss how the Committee might proceed or otherwise with the issue.

Particularly sensitive sea areas

The MEPC approved new procedures for designation of a particularly sensitive sea area (PSSA), which will supersede the current procedures set out in the guidelines in resolution A.720(17) (adopted in 1991).

The current guidelines in resolution A.720(17) allow areas to be designated a PSSA if they fulfill a number of criteria, including: ecological criteria, such as unique or rare ecosystem, diversity of the ecosystem, or vulnerability to degradation by natural events or human activities; social, cultural and economic criteria, such as significance of the area for recreation or tourism; and scientific and educational criteria, such as biological research or historical value.

The proposed new procedures are intended to make the process of consideration at IMO simpler, taking into account environmental, ship safety and navigational aspects. The proposed new procedures will be submitted to the 21st Assembly in November for adoption as a resolution.

When an area is approved as a particularly sensitive sea area, specific measures can be used to control the maritime activities in that area, such as routing measures; strict application of MARPOL discharge and equipment requirements for ships, such as oil tankers; and installation of vessel traffic services (VTS). There are currently two designated PSSAs: the Great Barrier Reef, Australia, and the Saba-
na–Camagüey Archipelago in Cuba. The Sabana–Camagüey Archipelago was designated a PSSA in September 1997.

The Committee considered proposals for PSSA designation from Egypt and Colombia and requested that these Governments provide further information for consideration at the next session.

**Inadequacy of reception facilities**

The MEPC approved a draft Assembly resolution on provision and use of port waste reception facilities which requests MEPC to develop guidelines on the provision and use of port waste reception facilities. Draft guidelines have already been prepared by a correspondence group on reception facilities; they contain information for the provision and improvement of port waste reception facilities and provide information relating to the ongoing management of existing facilities, as well as for the planning and establishment of new facilities. The guidelines are also intended to encourage the better and more active use of waste facilities, with the ultimate aim of helping to achieve the complete elimination of intentional pollution of the marine environment by oil, plastic and other harmful substances.

The lack of reception facilities for dirty ballast water, waste oil and garbage is still a major problem in some areas for the shipping industry and represents the main reason for pollution of the marine environment. Parties to MARPOL have a duty to ensure the provision of adequate reception facilities in ports, terminals, ship-repair yards and marinas.

The provision of reception facilities is particularly important when countries wish their coastal areas to be designated as special areas.

Information, provided by Member States, on provision of reception facilities is available on the IMO web site (at http://www.imo.org/imo/circs/mepe/listrec.htm).

**Follow-up to air pollution conference and new Annex VI**

The MEPC adopted a resolution including Guidelines for monitoring the worldwide average sulphur content of residual fuel oils supplied for use on board ships. The Guidelines are intended to establish an agreed method to monitor the average sulphur content of residual fuel oils supplied for use on board ships. The MEPC will at future sessions further discuss measures to reduce SO₂ emissions from ships, should the average sulphur level in fuels, calculated on the basis of these Guidelines, show a sustained increase.

The Committee was asked by the 1997 Conference on Air Pollution, which adopted a new Annex VI (Prevention of Air Pollution from Ships) of MARPOL 73/78, to develop sulphur monitoring guidelines.

Annex VI, when it comes into force, will set limits on sulphur oxide and nitrogen oxide emissions from ship exhausts and prohibit deliberate emissions of ozone-depleting substances.

**Draft HNS–OPRC Protocol**

The Committee considered necessary arrangements for holding a diplomatic conference to adopt a revised draft Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (HNS Protocol) in March 2000. The conference will be held alongside the next session of the Committee. The IMO Council in June gave the go-ahead for the conference to be held.

The draft Protocol was approved in principle at MEPC 42 in November 1998 and no further changes were made, though a number of draft conference resolutions were finalized.

The draft HNS–OPRC Protocol follows the principles of the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC Convention) and is intended to be adopted by States already Party to the OPRC Convention. Like the OPRC Convention, it aims to provide a global framework for international co-operation in combating major incidents or threats of marine pollution. Parties to the HNS–OPRC Protocol will be required to establish measures for dealing with pollution incidents, either nationally or in co-operation with other countries. Ships will be required to carry a shipboard pollution emergency plan.

The proposed Protocol, when it comes into force, will ensure that ships carrying hazardous and noxious liquid substances are covered, or will be covered, by regimes similar to those already in existence for oil incidents.
Revised crude oil washing specifications
The Committee approved proposed amendments to resolution A.446(XI), as amended by resolution A.497(XII), to the revised specifications for the design, operation and control of crude oil washing systems. The proposed amendments will be submitted to the 21st Assembly in November for adoption.

Crude oil washing (COW), which was introduced into MARPOL 73/78 as part of the 1978 Protocol, involves cleaning of oil tanks by washing with crude oil rather than water – in other words, the cargo itself. When sprayed onto the sediments clinging to the tank walls, the oil simply dissolves them, turning them back into usable oil that can be pumped off with the rest of the cargo. There is no need for slop tanks to be used since the process leaves virtually no oily wastes.

The draft amendments are aimed at simplifying the system for monitoring and controlling COW in order to avoid any health risks associated with internal examinations of tanks by surveyors.

Meanwhile, the Committee adopted amendments to section 9 of the Standard format for the COW Operations and Equipment Manual. Section 9 covers determination of the suitability of a crude oil for use in crude oil washing.

Revision of MARPOL Annex IV
The Committee considered draft texts of amendments to MARPOL Annex IV (Regulations for the Prevention of Pollution by Sewage from Ships) prepared by the correspondence group. The Committee agreed to establish a drafting group on revision of MARPOL Annex IV at the next session in order to make further progress in preparation of the draft text of amendments.

MARPOL Annex IV has not yet entered into force, and the Committee has been considering modifications to requirements of Annex IV which may facilitate wider acceptance by Member Governments and entry into force of the Annex.

Enforcement of MARPOL 73/78
The Committee considered the report of the correspondence group on preparation of the draft text of a new edition of the publication MARPOL – How to do it, which should also provide guidance as to how the MARPOL Convention should be enforced. The Committee considered the draft texts prepared by the correspondence group in the light of provisions of UNCLOS (United Nations Convention on the Law of the Sea) and agreed to further consider them at the next session.

Environmental awareness in youth
The Committee noted the initiatives taken by the Hellenic Marine Environment Protection Association (HELMEPA) to raise environmental awareness among youth. The Committee fully agreed that it is clearly of paramount importance that young people be made aware of the oceans and the issues facing them. In order to ensure the successful continuation of IMO activities by generations to follow, the Committee agreed that it is essential to raise the awareness of young people to the environment in general, and, in particular, the activities of IMO for the protection of the marine environment, providing opportunities to the young in encouraging them to take part in the leadership of various activities related to IMO. Member Governments were invited to submit information to the next session on their activities aimed at raising awareness in youth.

Amendments adopted
The Committee adopted the following amendments:
- amendments to MARPOL Annex I, Annex II and the IOPP Certificate;
- amendments to the IBC Code; and
- amendments to the BHC Code.

Amendments approved
The Committee approved the following amendments for adoption by MEPC 44:
- amendments to MARPOL Annex III to delete tainting from the criteria for harmful substances in packaged form.

The Committee approved the following amendments for adoption by MEPC 45:
- amendments to the IBC Code regarding the carriage of carbon disulphide;
- amendments to the IBC and BCH Codes resulting from the revision of the Medical First Aid Guide; and
- amendments to the IBC Code and BCH Code regarding cargo hose requirements.

MEPC circulars approved
The Committee approved the following MEPC circulars:
- MSC/MEPC circular on harmonized reporting procedures;
- MSC/MEPC circular on application of cargo tank venting requirements to combined chemical/oil tankers;
- MEPC circular on revised guidelines on tank cleaning additives;
- MSC/MEPC circular on guidelines on methods for making reference to IMO and other instruments in IMO conventions and other mandatory instruments;
- MEPC circular on hydrostatic balance loading; and
- MSC/MEPC circular on clarification related to the implementation of the ISM Code.

Draft Assembly resolutions approved
The Committee approved the following draft Assembly resolutions:
- draft Assembly resolution on self-assessment of flag State performance;
- draft Assembly resolution on global and uniform implementation of the harmonized system of survey and certification;
- draft Assembly resolution on investigation of human factors in marine casualties and incidents;
- draft Assembly resolution on amendments to the procedures for port State control (resolution A.787(19));
- draft Assembly resolution on amendments to the COW specifications; and
- draft Assembly resolution on procedures for adoption of, and amendments to, performance standards and technical specifications.
Work programme endorsed, budget referred for revision

The Council strongly endorsed the IMO work programme for the twenty-first financial period, the biennium 2000–2001, but reservations were expressed as to the number of proposed diplomatic conferences. The proposed budget for the biennium was referred back to the Secretariat for revision and presentation to the twentieth extraordinary session of the Council to be held ahead of the 21st Assembly scheduled for 15–26 November 1999.

The work programme itself has two main themes: first, to promulgate the global implementation of the Organization’s safety standards, by challenging the operation of sub-standard shipping, wherever these ships may trade; second, to bridge the remaining gaps in the Organization’s safety and environmental protection legislation.

The proposed conferences for the 2000–2001 biennium include:

- Conference to revise the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC) by considering a Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances (HNS Protocol);
- Conference(s) to consider legal instruments for the control and management of ships’ ballast water and the prohibition of harmful anti-fouling systems; and
- Conference(s) to consider amendments to the Athens Convention and to consider a draft convention for compensation for pollution from ships’ bunkers.

The Council proposed that, in principle, only two diplomatic conferences should be held in the 2000–2001 biennium. The proposed conference to revise the OPRC Convention was supported.

In terms of the budget, the Council was in the majority against a proposed appropriation for 2000–2001 of £37,545,200, comprising an appropriation of £18,666,100 for 2000 and of £18,879,100 for 2001 – representing an increase for the biennium 2000–2001 of 2.5% above the provision for the current biennium and for the previous biennium.

The majority of the Council favoured a zero nominal growth budget for the 2000–2001 biennium (in other words, zero increase in appropriations), and the Secretary-General was invited to present a revised budget to the twentieth extraordinary session of the Council ahead of the 21st Assembly in November.

Draft resolution on IMO objectives approved

The Council approved a draft Assembly resolution on objectives of the Organization in the 2000s. In particular, the draft resolution directs the IMO Committees, under the co-ordination of the Council, to use Formal Safety Assessment (a risk-analysis system) in the rule-making process as a way of identifying trends which might adversely affect the safety of ships and those on board and/or the environment at the earliest feasible stage and taking action to avoid or mitigate such effects.

The draft resolution also directs the IMO Committees to focus their attention on: shifting emphasis onto people; ensuring the effective uniform implementation of existing IMO standards and regulations; developing a safety culture and environmental conscience; avoiding excessive regulation; strengthening the Organization’s technical co-operation programmes; and promoting the intensification by Governments and industry of efforts to prevent and suppress unlawful acts which threaten the security of ships, the safety of those on board and the environment (in particular, terrorism at sea, piracy and armed robbery against ships, illicit drug trafficking, illegal migration by sea and stowaway cases).

International Maritime Prize 1998 for ILF

The Council decided to award the International Maritime Prize for 1998 to the International Lifeboat Federation (ILF). The prize will be presented later in the year.

The ILF includes both voluntary and government-supported sea rescue organizations, with 57 members in 44 countries. The ILF, which celebrates its 75th anniversary in 1999, was granted consultative status with IMO in 1985.

Seafarers Memorial Trust Fund

The Council was informed that more than US$1.5 million had been contributed or pledged to the Seafarers Memorial Trust Fund.

The Trust Fund was established last year by the IMO Council to mark the 50th anniversary of the adoption of the international treaty that led to the establishment of IMO. The aim of the Fund is to provide for:

- the erection of an International Memorial to Seafarers, at IMO headquarters on the River Thames;
- the establishment of a Chair on maritime safety and pollution prevention at the World Maritime University in Malmö, Sweden;
- the provision of fellowships to students at certain maritime institutes around the world; and
- any other activity related to the training of seafarers, as might be determined by the administrators of the Fund.

Recent publications from IMO

IAMSAR Manual on CD-ROM

Prominent amongst the recent publications from IMO is the electronic version of the IAMSAR Manual, which includes all three volumes of the Manual in English, French and Spanish. (CD-701, £165.00) (order from the Publishing Service (Electronic Sales) by telephoning + 44(0) 20 7463 4137/4132)

SOLAS amendments

Recent new books include the 1997/1998 amendments to SOLAS (IMO-158E, £5.00; add £2 per copy for Airmail) and the associated Resolutions of the 1997 SOLAS Conference relating to bulk carrier safety (IMO-160E, £8.00 + £2 per copy for Airmail) in English. French and Spanish editions are expected soon.

MARPOL 73/78, consolidated edition 1997

French and Russian editions are now available (IMO-521F and IMO-523R, £42.00; add £10 per copy for Airmail).

MARPOL 73/78, 1997 and 1999 amendments

Amendments to regulations 10, 13G and 26 and to the IOPP Certificate and a new regulation 25A of Annex I are included in these amendments, which also include a new regulation 16 of Annex II. (IMO-670E, £5.00; add £2 per copy for Airmail)

Manual on Chemical Pollution, Section 1 (1999 edition)

An extensively altered edition of the Section of the Manual that was first published in 1986 has been produced in English. (IMO-630E, £7.00; add £2 per copy for Airmail). French and Spanish editions are expected to be available soon.

STCW-F 95

Arabic and Chinese editions of the International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel, 1995 (IMO-919A and IMO-920C, £9.00; add £2.50 per copy for Airmail) are now available.

Unless otherwise stated, please contact the Publishing Service, 4 Albert Embankment, London SE1 7SR, U.K. for further information or to order these publications (tel. +44 (0) 20 7735 7611; fax +44 (0) 20 7587 3241; e-mail publications.sales@imo.org). A catalogue can be viewed or downloaded from the IMO website at http://www.imo.org or it can be requested from the Publishing Service.
TC Fund Programme for 2000–2001 approved

The Committee approved the Technical Co-operation Fund Programme for 2000–2001, which comprises a programme of technical co-operation activities to be implemented during the 2000–2001 biennium with financing or co-financing from the Technical Co-operation Fund (TC Fund).

The TC Fund includes donations as well as an amount of surplus from the IMO Printing Fund (gained from sales of IMO publications).

The proposed TC Fund contribution to the Integrated Technical Co-operation Programme (ITCP) for 2000–2001 stands at £3 million, or US$5,010,000\(^1\) for priority issues, representing 30% of the total funding required to implement the new ITCP in its entirety (some US$16.6 million). IMO is already in discussions with several potential development partners to secure the additional funding required.

The TC Fund allocation for 2000–2001 will be distributed among the Organization’s major programmes and programmes, giving emphasis to: human element matters (International Safety Management (ISM) Code and International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) implementation); marine environment protection (implementation of International Convention for the Prevention of Pollution from Ships, 1973, as amended by the Protocol of 1978 (MARPOL 73/78) and International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC Convention)); the development of maritime legislation; cross-sectoral activities (capacity-building for flag and port State functions); as well as training and institution development (provision of fellowships and support to training centres).

The ITCP 2000–2001 key priorities, by Committee, are as follows:

**Maritime Safety Committee**
1. fostering the effective implementation of conventions, with particular emphasis on the revised STCW Convention and the ISM Code;
2. strengthening maritime Administrations in respect of examination and certification responsibilities relating to the revised STCW Convention and the ISM Code;
3. establishing and/or further strengthening maritime Administrations to enable them to meet their responsibilities as flag and port States; and
4. supporting maritime training institutions and fellowship programmes.

**Marine Environment Protection Committee**
1. fostering regional co-operation for the implementation and enforcement of the relevant IMO instruments;
2. enhancing regional co-operation in the protection of the marine environment, more specifically in maritime pollution preparedness, response and co-

### Breakdown of TC Fund allocation for 2000–2001 by programmes

<table>
<thead>
<tr>
<th>MAJOR PROGRAMME</th>
<th>PROGRAMME</th>
<th>USS(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maritime safety</td>
<td>Training and human element matters</td>
<td>670,000</td>
</tr>
<tr>
<td></td>
<td>Radiocommunications and search and rescue</td>
<td>210,000</td>
</tr>
<tr>
<td>Marine environment protection</td>
<td>Amendments to and implementation of MARPOL and related Codes</td>
<td>300,000</td>
</tr>
<tr>
<td></td>
<td>Pollution preparedness and response (OPRC Convention)</td>
<td>440,000</td>
</tr>
<tr>
<td>Legal affairs</td>
<td>Legal affairs</td>
<td>220,000</td>
</tr>
<tr>
<td>Cross-sectoral activities</td>
<td>Flag State implementation</td>
<td>485,000</td>
</tr>
<tr>
<td></td>
<td>Port State control</td>
<td>685,000</td>
</tr>
<tr>
<td>Technical co-operation and institutional development</td>
<td>ITCP: strategy and programme development</td>
<td>500,000</td>
</tr>
<tr>
<td></td>
<td>Management of ITCP execution</td>
<td>800,000</td>
</tr>
<tr>
<td></td>
<td>Training and institution support</td>
<td>700,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>5,010,000</strong></td>
</tr>
</tbody>
</table>

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\(^1\) UN rate of exchange for February 1999 (US$1.67 to £1).

\(^2\) Hereinafter, all figures relating to the TC Fund programme are expressed in US dollars only.
operation, including implementing the OPRC Convention and its extension to cover hazardous and noxious substances;

3 strengthen national and regional capacity to prevent, control, combat and mitigate marine pollution, in particular through the implementation of training programmes and exchange of expertise and know-how and the assistance in developing, revising and updating national legislation; and

4 assisting countries in implementing their obligations with respect to MARPOL 73/78 and other rules, standards and recommendations developed by MEPC, inter alia, those relating to provision of port reception facilities and waste management as well as ballast water management and control.

Legal Committee
1 provide means to strengthen the legal capacity and infrastructure of national maritime authorities;

2 train national expert personnel to undertake the tasks of developing, reviewing and updating of maritime legislation;

3 provide advice of the legal (national and international) implications of acceptance of IMO conventions and the enactment of IMO codes and guidelines;

4 assist States on the implementation of their rights and duties as flag, coastal and port States Parties to IMO treaty instruments, including the enforcement of compliance with maritime safety and environmental standards by national and foreign ships; and

5 assist States in drafting, updating and bringing into force primary and secondary maritime legislation in matters related to IMO instruments.

Facilitation Committee
1 introduce and accept electronic data-processing and interchange techniques based on Electronic Data Interchange Maritime (EDIMAR) standards to facilitate the clearance of ships, crews, passengers and cargo, effective port operation and vessels’ turnaround.

2 train personnel involved in ship/port interface activities, with the aim of raising awareness and understanding of their responsibilities and improving communication and co-operation between all parties involved at the ship/port interface, including Administrations.

Programmes have been developed on a regional basis: Africa; Arab States/Mediterranean; Asia and Pacific Islands; CIS/Eastern Europe; and Latin America and the Caribbean. A number of programmes are identified as global activities, and support will also be provided for the regional co-ordination of IMO activities in the field.

A total of 45 regional and global projects are proposed in the ITCP for 2000–2001.

Status of current projects
Delivery of technical co-operation projects in the 1997–1998 biennium amounted to some US$14.5 million. In the current 1998–1999 biennium, 87 projects/activities are currently operational and 23 projects have been completed. However, although new funds have been obtained through a supplementary TC Fund contribution for 1998–1999, the IMO/Norway Co-operation Programme and other donors, the secured funding accounts for only 40% of the total requirement, which means many projects/activities in the current ITCP cannot be implemented until funding is secured.

Resource mobilization
The Committee reviewed a report of a working group on long-term funding and resource mobilization and agreed the group should remain active. The group was established at the last session in November to look at funding strategies for the technical assistance programme.

IMO relies mostly on extra-budgetary sources for financing the ITCP and funding has become a serious problem, in particular since the strategic reorientation of the United Nations Development Programme (UNDP), traditionally the core provider of funding. In 1990 approximately US$5.6 million was received from UNDP; by 1997 its support had dwindled to US$393,000.

<table>
<thead>
<tr>
<th>REGION/COMPONENT</th>
<th>PERCENTAGE</th>
<th>US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>16</td>
<td>800,000</td>
</tr>
<tr>
<td>Arab and Mediterranean States</td>
<td>9</td>
<td>450,000</td>
</tr>
<tr>
<td>Asia and the Pacific</td>
<td>13</td>
<td>650,000</td>
</tr>
<tr>
<td>CIS/Eastern Europe</td>
<td>10</td>
<td>510,000</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>12</td>
<td>600,000</td>
</tr>
<tr>
<td>Global activities</td>
<td>24</td>
<td>1,200,000</td>
</tr>
<tr>
<td>Regional co-ordination</td>
<td>16</td>
<td>800,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100</strong></td>
<td><strong>5,010,000</strong></td>
</tr>
</tbody>
</table>
IMO’s resources for technical assistance projects come in cash or in kind:

- **In cash:** voluntary cash contributions made by Member States, multilateral institutions, corporate bodies or private individuals; corporate maritime-related bodies and institutions which have their own funds but lack the expertise to support the technical co-operation activities of IMO through a trust-fund agreement whereby IMO undertakes specialized studies/investigations or implements a project or activity on behalf of the funding authority through a self-benefiting scheme.

- **In kind:** includes expertise and consultancies; provision of hostship facilities; fellowships; provision of equipment; Technical Co-operation amongst Developing Countries (TCDC) fellowships programme; co-operative framework with the oil and shipping industries.

The Committee endorsed a number of suggestions made by the working group for developing a pragmatic strategy for resource mobilization, including:

- Highlighting (to potential donors) the inter-relation between a viable safe and environmentally friendly maritime transport infrastructure, sustainable development and poverty alleviation.

- Categorizing projects applicable to specific funding mechanisms such as EC programmes.

- Inviting members of the donor community to enter into partnership agreements with IMO.

- Inviting beneficiary Member States and regional entities to work in close co-operation with IMO and use project profiles and documents to attract and generate funding support.

- Inviting Member States to organize national meetings bringing together development co-operation and maritime entities, representatives of the corporate sector and IMO to build ITCP support.

- Requesting Member States to make enquiries, at the national level, as to whether corporate donations to the ITCP are eligible for tax relief.

- Appealing to the producer of the film *Titanic* – given its box office success – for funding support.

- Considering entering into agreements with manufacturers of maritime training equipment to fund support or give discounts.

- Appointing more regional co-ordinators (two regional co-ordinators have already been appointed in Africa).

**Women in Development Programme – a decade**

The Committee approved a report on the implementation activities undertaken under the IMO Women in Development Programme from its inception in 1989 to 1999. *(See separate article on page 33)*
World Maritime Day 1999

A message from Mr. William A. O’Neil
Secretary-General of the International Maritime Organization

A hundred years ago, as the world was poised on the brink of a new century, few people believed that their lives would be changed to any great extent. Life, it was assumed, would go on much the same as it always had done – and that included life at sea. Time showed them to be wrong. More changes took place in the twentieth century than during the whole of previous history.

Today, as we approach not only another new century but a new millennium as well, most of us anticipate that the changes which lie ahead will be enormous. While we cannot predict precisely what they will be, we can make a few educated guesses about what will happen to our own industry, shipping.

As the world’s population continues to grow, so the need for food and goods will increase. As a result, trade across the oceans will rise – and so will the demand for ships to carry it. As the developed countries reach maturity they will need more food, more raw materials for their expanding industries, more fuel to satisfy their increasing energy needs and, on the other hand, they will also have more goods to export. This means that shipping will play an even more important role, because ships will remain the best, most economical and most environmentally friendly means of transport available.

The accelerating changes in technology will affect ships themselves. One major change will be in the speed of the vessels. Today most merchant ships operate at 20 knots or less, not much faster than they did fifty years ago. But already innovations in design have provided passenger ships that can travel at 50 knots and within a few years we can anticipate that even this speed will be substantially exceeded. Later, cargo ships will follow the same path.

We can expect to see major changes in ships’ propulsion. A hundred years ago, sailing ships were still common and most powered ships used coal. Today nearly all ships are fuelled by petroleum products. But as the new millennium wears on, they will become increasingly scarce. Will what will the ships of tomorrow turn to as a fuel source? Nuclear or solar energy perhaps? Will sail make a return? Or will something completely undreamed of now be developed?

While ships will become faster, they could also become bigger. But this will only happen if the economics and logistics of larger vessels are positive. If we look into the evolution of tankers and some of the grandiose plans of the past, I suspect that it will be many years before even larger vessels are built.

But ships will certainly become more complex. They will be fitted with more powerful computers and the links to shore by satellite communication systems will become increasingly sophisticated. Their navigation will become more dependent on electronic innovations such as the global positioning system, which will be combined with electronic charts and automatic alerting mechanisms to ensure that it will be impossible for a ship to disappear without a trace. Ships will become safer and they will continue to improve on their substantial achievements in pollution abatement.

In an era when change is the order of the day, it is difficult to predict with any certainty what the future holds for world shipping. But we do know that technology will provide many opportunities and that we can expect that it will also create some problems. The shipping industry must be alert to this fact and take heed of the knowledge that some accidents at sea over the past few decades have been attributed to technological changes that were not thoroughly assessed from the safety point of view before they were introduced operationally.

To facilitate this, IMO has already instigated procedures that will ensure new concepts are evaluated before they are accepted. We cannot let events unfold and then respond to ensuing disasters. We have to prevent them from happening in the first place. New technology will help in this process, because by compiling data and examining accident reports and statistics carefully we will be able to gain a better idea of what actually causes accidents.

One of the most common phrases used in shipping is that most accidents at sea are caused by human error, yet until fairly recently little has been done to try to determine why highly skilled, well-trained professional seafarers make mistakes. We must concentrate on finding an answer to this puzzle.

This issue will become even more important as the new millennium unfolds, because the complexity of the ships of the future will require greater expertise on the part of those who operate them. So crew training must be improved and the standards of everyone involved in shipping, on shore as well as at sea, will have to be raised. The proper implementation of the revised STCW Convention as well as the ISM Code will go a long way towards achieving these objectives. The important role of those providing the training should be highlighted because we must ensure that they are highly qualified, well motivated and are
provided with a work environment and compensation package which takes into account their advanced skills and encourages them in their professional responsibilities.

We will have to pay particular attention to certain specific types of ships. For instance, passenger vessels will require special care, because so many people are involved. There have been a number of incidents in recent years in which these craft have had to be evacuated. Very few lives have been lost – but that has to some extent been a matter of good fortune. We must make sure that the existing regulatory regime and operating procedures are capable of dealing with the tremendous increase in the size of these vessels. We cannot afford to wait for an accident to result in tragedy before taking action.

This does not mean that we need more and more regulations. IMO and the shipping industry agree that this is not necessarily the best way to raise standards, but that we should focus on ensuring that existing measures are properly implemented. Part of the problem is related to the fact that industry and Governments are having difficulties coping with the legislation that has already been produced, without adding any more to the list. Therefore, we have to make sure that conventions and regulations that are in place are applied and enforced before we set about developing new ones. The IMO Technical Co-operation Programme, which has been conceived and structured as an integral component of the implementation process, will facilitate this. Its already proven usefulness will be enhanced in the future by expanding the current use of Regional Officers to other areas of the world.

There is, however, one other positive thing we can do as we prepare for the new millennium – one factor that we can introduce ourselves – and that is to change our attitude towards shipping safety and the protection of the environment. We must continue to foster a culture of safety within our industry with quality as its fulcrum. New technology will not create a culture, but we as individuals can. It is up to us to make sure that in everything we do, quality and safety are our first thoughts. During the past forty years IMO has achieved a great deal of success in dealing with its prime objectives. Accidents and total losses of ships have gone down steadily. The amount of oil getting into the sea from ships has been cut by as much as 60% and the number of major oil spills reduced by half.

It is a record that we can be proud of. But it is one upon which we must ceaselessly continue to build. That must be our goal for the future.

The task is never-ending but the rewards are immense, and I am sure that in the new millennium all who are engaged in the myriad of components that make up the shipping industry will rise to the challenge and we will further improve safety at sea and the marine environment.

**IMO and the new millennium**

As the world approaches the end of the second millennium the temptation to look back on the past is as strong as the desire to look forward to the future. Either way, the strongest impression is one of accelerating change. By the end of the 19th century, most of the world’s ships were still powered by sailing – just as they had been a thousand years before. Radio had just been invented, but existed on only a handful of ships; even electricity was a rarity. Most of the powered ships that did exist were steamers fuelled by coal. Oil, diesel and turbine engines were still in their infancy.

During the remaining hundred years of the millennium, shipping, like almost everything else, was revolutionized. Sail gave way to steam, and then coal gave way to oil. Radio became commonplace, then mandatory. Radar was invented, communications satellites were launched. Ships grew bigger and faster. Transatlantic passenger liners became the largest, most powerful and most glamorous structures ever built – until their passengers switched to aircraft, which had not even been invented when the century began.

New types of ships were invented to carry oil and dry bulk cargoes in quantities that could not have been imagined a few decades before. Container ships and roll-on/roll-off ships not only speeded up trade – they also helped spell the end of many of the world’s most famous ports as new docks were developed downstream, on greenfield sites far away from the congestion and constrictions of the cities they helped to create. New shipping nations emerged as traditional ones declined. The industry, which had always been international, became more and more fragmented.

Halfway through the century (in 1948 to be precise) the International Maritime Organization was created. Its chief mandate was to improve the safety of international shipping by acting as a forum where legal treaties and technical measures could be formulated and adopted. In the half century that followed, IMO developed more than 40 conventions and codes and was made responsible not only for maritime safety but also for pollution prevention, liability and compensation and other issues. Its membership grew from 32 in 1959 to 157 in 1999. Half of those Member States did not exist when the Organization was created.

The current millennium is ending in a period of often bewildering technological upheaval accompanied by political and economic transformation. But what will the next one bring?

**The shape of things to come... perhaps**

It seems certain that the revolution in technology will continue. It will probably accelerate, so that the world in 2099 will be even more different from today than today is from 1899.

Some of the changes that might take place are suggested below. It is probable that some of them will occur, although it is more likely that most of them will not. But all of them could one day soon become technically possible.
In general, the technology revolution will be beneficial to shipping and those associated with the industry. Perhaps the greatest change of the past century has been in the field of communication. Although radio was first used to carry out a rescue at sea in 1899, the medium was still in its infancy. When most ships left port in 1899, they were virtually cut off from the rest of the world until they reached their destination. Today ships are linked by radio to their owners and others on shore and other ships at sea, their position can be pinpointed through global positioning systems (GPS), their course can be tracked by radar and, in the event of an emergency, their position can be automatically transmitted to rescue authorities on shore. Communications will continue to improve into the foreseeable future – and costs will continue to fall.

Shipmasters will be able to participate in video conferences with their company and others. Seafarers and passengers will be able to watch their favourite television programmes, even if they are 10,000 miles from home, and will be able to talk to and see their families via video telephones. If an accident does happen (and they will become less and less frequent as the new millennium advances), the search and rescue response will be almost immediate and will usually be successful. Advances in meteorology will make weather forecasting ever more accurate, so that ships will be able to dodge dangerous storms. The days when a ship can disappear without trace will come to an end.

Ships themselves will continue to develop. At present there is considerable interest in high-speed craft, especially on short-sea passenger routes. Where 25 knots was once regarded as fast, some new designs are capable of 60 knots and before long the 100-knot barrier will be broken. Extra speed will enable high-speed craft to compete more effectively with airlines and other forms of transport, thereby winning back passengers.

The development of “wing-in-ground” effect craft will see speeds increase even further. The line between ships and aircraft will become more and more blurred and IMO and the International Civil Aviation Organization (ICAO), which are already cooperating on developments in this area, will set up a permanent Secretariat to regulate the safety of craft which can float, fly and, if necessary, travel by land as well.

At the same time, the current boom in cruise shipping will continue for as long as the economy of the world continues to flourish and its population continues to age. The ships themselves will become larger and more luxurious. The equipment used on ships will become more sophisticated. It is already possible to install systems on ships that enable their position to be determined to within a few metres. This accuracy will improve – and the cost of the equipment will go down until it is cheap enough to install on small coasters, fishing boats and pleasure craft. Electronic charts will also become so cheap and user-friendly that eventually conventional paper charts will no longer be required. Magnetic compasses will join them as museum items, on the grounds that the tendency of the magnetic North Pole to wander around the geographical pole makes it too unreliable to continue to serve as a direction-finding device.

High-speed craft like this one have proved very successful. Faster and bigger craft are certain to appear in the future. It is important that all safety aspects are thoroughly considered before they enter into service.
Deck officers will still be taught how to navigate by traditional methods – but in practice they will rely on electronic means, using satellite communications because it will be quicker and more accurate. Global positioning systems will be combined with electronic charts to enable ships to change course automatically, avoiding shallows, reefs and other navigational hazards and always observing traffic separation schemes and other routeing systems.

Shipowners, aware that most accidents at sea are caused by human error, will endeavour to dispense with the humans who make the errors and contribute an excessive amount to operating costs. Will robot ships become common, directed from the shore by managers and computer experts?

Disputes will develop over who is responsible for ships operating within mandatory routeing systems: the operators of the routeing system and the shipowners who use it will both try to pass responsibility (and hence liability) to the other. After a major collision, IMO will be called upon to develop a convention.

As oil deposits run out during the course of the century, other sources of energy will be developed, including wind and wave power. The marine environment will improve as the world oil tanker fleet dwindles, but the rapid development of hundreds of kilometres of wave-energy plants and thousands of offshore windmills will cause environmental hazards in many areas. Nuclear-powered merchant ships will make comeback.

In 2009 small groups of former seafarers will gather in ports around the world and reminisce about the good old days. They will grow misty-eyed about the joys of bulk carrier terminals and tell their friends of turn-rounds in container ports that sometimes lasted several hours. They will tell each other horror stories about ships without stabilisers and the misery of not being able to watch soap operas in the South Pacific because of reception difficulties. They will complain about the lack of reception facilities for ships’ wastes. They will agree that the younger generation has no idea what true seafaring is all about and, since most of the world’s seafarers by then will be women, they will also sadly agree that seafaring has nothing to offer the young girl of the future.

**Technology: the only constant will be change**

As the previous section has tried to demonstrate, predicting the future is not an exact science. Some guesses will be more accurate than others. It seems likely, for example, that shipping will still be important in the next millennium, because it has proved itself to be the most economic way of shifting large quantities of goods across the ocean. As long as international trade exists, ships will continue to have a place.

It also seems probable that alternative power sources will have to be found, because at some stage the supply of carbon-based fuels will run out. Oil, which now powers most of the world fleet, will become too expensive to use. Finding a suitable replacement will become one of the most important missions of the next hundred years (let alone the next thousand) for humanity as a whole rather than shipping as an industry. But some of the ideas that are currently being considered, such as wave and geothermal power or hydro-electricity, are not going to be practical for ships. Cleaner fuels derived from sugar (already being used in some countries) could catch on. Coal could make a return (if environmental objections can be overcome) before that, too, runs out. There might even be a second chance for nuclear power. Wind power and solar power might also prove useful in some cases.

IMO’s task will be to ensure that whatever changes are made will be safe and environmentally sound. This is easier said than done: if IMO adopts regulations that are too strict, then the development of valid and useful technology will be inhibited or even prevented altogether. If the regulations are not strict enough, then the results could be disastrous.

One of the difficulties with introducing new technology is that the advantages are so tempting, from the commercial point of view, that the potential drawbacks are sometimes not properly assessed. In the late 1960s, for example, a number of oil tankers suffered from explosions during tank cleaning operations. Subsequent investigations found that these were caused by static electricity generated by the tank cleaning process. Although the oil in the tank had been pumped out, the tanks still contained explosive gas. The solution was to make it mandatory for oil tankers to be fitted with an inert gas system, which involved filling the cargo tanks with non-explosive gas from the ship’s exhaust system. This enabled tank cleaning to be carried out safely, without the fear of an electrical spark leading to disaster.

In 1967 the tanker Torrey Canyon ran aground off the west coast of England, resulting in the world’s first major oil pollution disaster. One of the most striking features of the incident was the virtually complete failure of measures to contain the spill and then to clean up the pollution that resulted. Some of the measures taken may even have made matters worse.

The reason was that although the shipping industry and Governments were aware of the fact that oil tankers were growing bigger to take advantage of the economies of scale presented, no one had given serious consideration to what would happen if something went wrong.

The development of the roll-on/roll-off ship could be seen as another example of the benefits of a new idea being so great that the possible disadvantages were not properly taken into account. The hulls of conventional ships are divided into watertight compartments, the idea being that the bulkheads between them will either prevent the ship from sinking, or will at least enable it to survive long enough for those on board to evacuate it safely. A ro-ro ship, however, has doors opening on to a completely open deck. If water gets on to the car deck in sufficient quantities, the stability of the ship can be so impaired that the ship will not only sink very quickly but also will probably capsize.

Despite this, the ro-ro design proved to be an outstanding commercial success and the potential dangers were glossed over. Over the years, measures were introduced to improve cargo safety, but with hindsight one can see that very little was done to solve the crucial problem of what would happen to a ro-ro if water got on to the car deck. Then, in March 1987, the Herald of Free Enterprise sank and 193 people died.

As a result of this tragedy, caused by water pouring on to the car deck when the bow door was left open, further measures were introduced, including an improved stability standard that became known as SOLAS 90 (it was actually inspired not by the sinking of the Herald of Free Enterprise but that of another ro-ro called the European
Shipping is vital to world trade, as these two maps show. Because of their ability to carry huge cargoes relatively cheaply over huge distances, ships are likely to remain important to the global economy for centuries to come.
Crude oil seaborne trade
Main inter-area movements in million metric tonnes, 1994.

WORLD TRADE: 1,403 million tonnes

Main suppliers
Main receivers

Area totals include smaller routes not shown separately.
Gateway in 1982). The new standard was approved for new ships, but attempts to extend it to existing ships under a ten-year phase-in period were turned down and a modified, less costly alternative was adopted. Then in 1994 the ferry Estonia capsized in the Baltic. Further measures were introduced and this time the SOLAS 90 standard was accepted. For ships operating in north-western Europe, SOLAS 90 also has to take into account the presence of 0.5 metres of water on the vehicle deck. This proposal, however, was only accepted by a number of countries in north-western Europe. Elsewhere the existing standard was maintained.

There is no doubt that many of IMO's most important initiatives have been prompted by disasters. The Torrey Canyon led to several conventions dealing with legal issues, including liability and compensation as well as the International Convention for the Prevention of Pollution from Ships (MARPOL), 1973. A series of tanker accidents off the coast of the United States led to the adoption of the 1978 Protocols to MARPOL and to the International Convention for the Safety of Life at Sea, 1974 (SOLAS). Ro-ro safety would not have been improved to the extent that it has without the shocks of the Herald of Free Enterprise and the Estonia. A series of bulk carriers sinking in the early 1990s led to a sustained effort by IMO to improve the safety of this type of ship, which at one stage was sinking at the rate of almost one every two weeks. Important improvements have been made to the fire safety of passenger ships following various incidents, including the Scandivanian Star disaster of 1988 in which 165 people died.

One reason for this is that, until something goes wrong, the general public and most politicians are not aware that there is a problem. The need for change is not apparent and so things are allowed to stay the same. When a disaster does occur the shock is therefore considerable and the public demands an instant response. The Secretary-General of IMO, Mr. William A. O'Neil, said in a speech to the General Council of the Baltic and International Maritime Council in May 1999: “Public opinion forces governments into action and it is impossible to avoid this reaction. How could the British or Swedish authorities hope to convince the public that ro-ros were safe when the Herald of Free Enterprise and Estonia had just sunk? How could the United States tell people that tankers were good for them when their television screens were filled with images of the Exxon Valdez surrounded by dead seabirds covered in oil?”

Decisions made in such circumstances are not always the best. In the same speech Mr. O’Neil said: “There is no doubt that some of the legislation which was developed in the past was prompted by political rather than technical considerations. Some of it may even have been marginally necessary and it is not surprising that one of the complaints that is heard about IMO is that it is introducing new regulations at too rapid a rate.”

There are a number of developments in shipping today which have caused concern. One is the trend towards speed. Twenty years ago 20 knots was considered fast, but some ships today can operate at three times that speed. It seems likely that the 100-knot barrier will be broken before long. But how safe are such ships likely to be—and what would be the consequences if, for example, a passenger ferry travelling at 80 knots were to collide with another ship?

The first major attempt to deal with high-speed craft was made in 1977, when the IMO Assembly adopted the Code of Safety for Dynamically Supported Craft (DSC), which included hydrofoils and air-cushion vehicles such as hovercraft. It was not a mandatory instrument, but was designed to be used by shipbuilders and Administrations when such craft were developed. The preamble to the Code states: “Over a period of some 30 years, new designs of marine vehicles, some of which are amphibious, have been developed, and while these cannot fully comply with the provisions of the international conventions relating to passenger ships, they have demonstrated an ability to operate at an acceptable level of safety when engaged on restricted voyages under restricted operational weather conditions and with approved maintenance and supervision schedules.”

By the 1990s, the DSC Code was becoming out of date and in 1994 IMO adopted a new International Code of Safety for High-Speed Craft (HSC Code) which was later made mandatory through amendments to SOLAS which entered into force on 1 January 1996. The Code covers the craft that were covered by the original DSC Code, but it also recognizes the further development of craft that are much larger and operate over much longer distances.

Yet almost before the HSC Code had entered into force as a mandatory instrument it was clear that it was no longer suitable for some of the designs that were being put forward. It was decided, therefore, that it would have to be amended. IMO has now agreed to develop a new edition relating to new high-speed craft and to apply the existing Code to existing craft.

A number of draft amendments have already been prepared which are intended to bring it into line with amendments to SOLAS and new recommendations that have been adopted in the past four years—for example, requirements covering public address systems and helicopter pick-up areas. If it is difficult keeping pace with high-speed craft, the development of wing-in-ground (WIG) craft, which skim the surface of sea at very high speeds and in some cases have the ability to take off and fly as well, has presented even bigger problems. IMO is also developing a Code of safety for WIG craft, which is derived from the HSC Code.

At the same time, the WIG craft can fly, and therefore appropriate provisions of the International Civil Aviation Organization (ICAO) will also be incorporated. An article in the shipping magazine Fairplay Solutions in January 1999 commented on the possible safety hazards of high-speed craft and wondered if the high speeds which can now be achieved meant that passengers would be expected to wear seatbelts and would not be able to walk around, because of the danger of a collision. It concluded: “The modern fast ferry has more in common with an aircraft than a ship.”

It is not always new technology that causes problems. When a tanker or bulk carrier unloads its cargo and embarks on the return voyage, it may have to take on ballast water to ensure that the ship is stable and that the rudder and propeller are immersed. This is a tried and tested practice which, from a safety point of view, has worked well since it was first introduced in the 1880s. Yet in the process marine life forms have been transported from one place to another. The problem was first identified in 1903 but it was not until the 1980s that the extent of the danger to the environment was fully recognized. It has been estimated that ballast water may be carrying 3,000 species of
animals and plants a day around the world. IMO is now working on counter-measures which could take the form of a new convention or a protocol or annex to MARPOL 73/78.

Containers have also been used on ships for many years, since being developed in the 1950s. The ships on which they are carried have increased steadily in size and some can now carry 6,000 twenty-foot long units – enough, it has been claimed, to create a line of trucks and lorries 150 kilometres long. But has safety always been treated as a priority?

In December 1998 the MSC was sufficiently concerned to issue a circular on the subject. It “expressed serious concern at the dangers to personnel working at the top of containers during container securing operations, which result from container-secure arrangements being located in difficult and dangerous locations”. The annex to the circular contained a number of recommendations on safety of personnel during container-securing operations. The introduction states:

“It has been noted that a number of fatal accidents to crew and dockworkers have involved falls from the top of containers during container-securing and -unsecuring operations. Although fall-protection and fall-arrest systems and equipment are available for use whenever container-top work is involved, they are cumbersome and reduce the speed of loading and unloading operations of a ship, and are thus of limited use and effect.”

“The conventional means of securing containers in non-cellular deck spaces are heavy and difficult to handle, resulting in accidents and non-fatal physical injuries. Newly developed equipment such as semi-automatic and dual-function twistlocks are only partially effective in eliminating danger. They depend on the stacking height of containers on deck not exceeding four and require a safe workplace on the quayside for their application or removal.”

“A safer environment for personnel involved in the securing of containers can be achieved by shipowners and ship designers focusing on the safety of container securement at the initial stages of the building of a ship, rather than relying on operational methods for this purpose after the ship is built.”

An article in Seaways, the magazine of the Nautical Institute, in May 1999 said: “A number of disturbing incidents in recent years indicate that container-ships may now be designed beyond safe limits.” It claimed that the hull size of containerships was being kept deliberately low to minimize harbour dues and other costs. The International Convention on Tonnage Measurement of Ships, 1969, does not take deck cargoes into account, and on some modern containerships up to 73% of the cargo is now carried on deck.

As a result, containers are exposed to sea and bad weather; the stacks are so high the containers cannot be secured properly and the ship can become unmanoeuvrable at low speeds, due to strong winds; visibility from the bridge is restricted; and the high position of the bridge means that ship movement causes more fatigue.

The head of safety and emergency services at a port in the United Kingdom was quoted as saying: “It sometimes appears to me when I visit container terminals that the ship designer has put much thought into designing a beautiful vessel up to the deckline and then entirely forgotten that approximately 50% of the vessel’s cargo is built above that line where design ceases.”

Another sector of the shipping industry that is currently doing well is cruise shipping. According to statistics issued by the International Council for Cruise Lines (ICCL), the cruise line business contributed $11.6 billion to the economy of the United States (the centre of the world cruise industry) in 1997 and this figure could rise to $18.3 billion by 2002. New ships are continuously being ordered and some of these currently planned can accommodate 6,000 passengers and crew – equivalent to a small town. Over the years, the requirements of chapter III of SOLAS, which deals with life-saving appliances and arrangements, have been repeatedly updated, but nevertheless there is still some concern about how such large numbers could be saved in the event of an emergency.

The Secretary-General told a conference held in September last year in Hamburg: “According to SOLAS, life-saving appliances should be capable of being launched within 30 minutes. Can we guarantee that this will apply on the new cruise ships that have 5,000 people or more on board? “And even if they are all safely evacuated, how will they be rescued? Survival may ultimately depend on how quickly other ships can reach the scene of the accident. How many ships would be required to save 5,000 people? How many ships today have equipment that can pick shipwrecked survivors out of the water – at night and perhaps in stormy conditions?”

In December 1998, the magazine Seaways published a letter from a cruise ship captain in which he said: “The thought of having to evacuate a considerable number of ‘souls’ into life-boats and liferafts in rough weather is alarming. No matter how good our training, I have an uneasy feeling that the ship have to be evacuated in rough weather there will be boats and rafts put out of action.” This problem could become worse as the next millennium develops. In 1997, 20% of the population of the United Kingdom were over 60 years of age; by 2010 the total will be 25% and by 2025 it will reach 33%. Many will choose to spend some of their leisure time by going on a cruise. Since elderly people are always more at risk in an emergency than young ones, it is imperative that their safety is properly taken into account. Some cruise line operators are targeting customers with young families – which means that special care has to be taken to ensure the safety of children.

Technical change is generally prompted by commercial considerations. A new idea promises some sort of commercial reward and, as the examples above show, the safety and environmental issues have not always been fully explored. The idea that IMO and the industry should wait for the inevitable disaster before taking action is clearly unacceptable. But the problem that needs to be solved very quickly is how to ensure that the advantages offered by new technology are introduced quickly – and at the same time safely.

Why don’t we learn from history?

The need for the shipping industry to learn from its mistakes has always been recognized by IMO. The first convention to be adopted by IMO after it came into being in 1959 was the 1960 version of SOLAS. Regulation 21 of chapter I states: “Each Administration undertakes to conduct an investigation of any casualty occurring to any of its ships subject to the provisions of the present Convention when it judges that such an investigation may assist in determining what changes in the pre-
sent Regulations might be desirable.

The same text appears in the 1974 version.

The purpose of this regulation is to make sure that accidents do not happen twice. In theory, the accident investigation will establish the cause and IMO can then change the regulations accordingly. In practice, very few reports into serious casualties are sent to IMO each year.

One reason for this might be the traditional secrecy of the shipping industry and the fear that by disclosing information about casualties, owners might be providing valuable information that could be used by their competitors – or might be used against them in a dispute over liability and compensation. In April 1998, the International Association of Independent Tanker Owners (INTERTANKO) prepared a discussion paper entitled “Systematic approaches to tanker accident analysis – lessons learnt”.

The paper tells how, 15 years before, INTERTANKO made concerted efforts to find remedies to rectify an increasing number of tanker accidents caused by fires and explosions. The response from shipowners, underwriters, cargo interests and flag States was disappointing: they all showed “unwillingness to reveal facts.” The reason, INTERTANKO said, “may largely stem from legal difficulties involved in the release of information, particularly where such information might reveal negligence or liability by the parties concerned.” Despite assurances that information would be treated in confidence, INTERTANKO found that “shipowners demonstrated reluctance to divulge information before such time as all legal formalities had been completed, or a legal settlement had been finalized.”

The INTERTANKO paper states: “Not much has changed over the last ten years to correct the current lack of transparency existing in accident investigations. When errors are made, it is human nature that individuals try to protect their own integrity, as incidents causing damage can lead to legal liability and even accusation of a criminal offence. The real causes of accidents may not be revealed and new legislation may therefore be passed for the wrong reasons.”

The irony is that there is a great deal of information available within the industry that could be used to carry out a proper analysis of accidents and their causes, enabling effective countermeasures to be adopted without the imperative of a major disaster acting as the spur. The inquiry into the Estonia disaster revealed that between 1975 and 1986 there had been at least 16 incidents involving bow door defects on Finnish and Swedish ro-ro ships (the Estonia sank because the bow door was ripped off in heavy seas). Had this information been made generally available it is possible that some action could have been taken in time to save the Estonia and the 850 passengers who died. The shipping writer Michael Grey commented in Lloyd’s List: “Were owners of ex-Baltic boats working in the Mediterranean or Far East ever told of the problems that were experienced by the operators of the Finlandia or Viking Saga, of the fright that the watchkeeper of Wellanno received when he saw the bow visor lifting as he ran down from Helsinki to Stockholm in a storm one night in 1975?”

Apart from shipping companies and port authorities, classification societies possess a huge amount of information, and more recently the inspections carried out by port State control bodies have provided another huge database of information that could prove useful to IMO.

It should be possible, by using this information, to ascertain not just which ships or types of ship are a safety hazard, but what problems individual ship types are likely to encounter. An analysis of collision statistics, for example, could reveal which impacts are most dangerous and which sections of ships are most vulnerable. The information could then be used to improve the design of ships and equipment.

Five years ago IMO tried to establish an international ship information database, which would enable this sort of systematic approach to be carried out. But budgetary constraints meant that the idea had to be abandoned in 1995. Despite this, the Organization still attaches great importance to making better use of casualty statistics.

In 1997 the procedures for reporting casualties and incidents contained in SOLAS and in the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78) were harmonized. A circular was issued listing casualties according to seriousness (very serious casualties are those which involve total loss of the ship, loss of life or severe pollution) and defining the sort of information that should be provided regarding each incident.

Since then IMO has requested Member States to provide information relating to 2,896 casualties and to date 1,676 reports have been received. The reports have been forwarded to a permanent correspondence group of the Sub-Committee on Flag State Implementation (FSI), which identifies trends and makes recommendations to relevant IMO bodies. In December 1998 it reported that “full value could not be obtained from many reports due to the lack of information provided. It was evident that no investigation had been undertaken in some cases.” Investigators sometimes appear to be hampered by being “deprived of the opportunity of interviewing crews because of issues of blame and liability... Legal intervention in safety investigations is a major problem.”

The correspondence group said that many lessons learned from casualties analysed relate to operational and management behaviour. The report says: “The probability of preventing such casualties in future is remote, unless the lessons learned are passed on to seafarers. At present, there seems to be no mechanism for getting the message through to them.”

In an attempt to improve the quality of casualty investigations and of information provided to IMO, in 1997 the IMO Assembly adopted a Code for the Investigation of Marine Casualties and Incidents. The introduction to the Code states that its aim is to “promote a common approach to the safety investigation of marine casualties and incidents ... the result of this common approach and co-operation will be to aid remedial action and to enhance the safety of seafarers and the protection of the marine environment.”

There is certainly scope for a more searching analysis of the reasons why ships sink or have accidents. Each year the International Underwriting Association issues shipping casualty statistics. Total losses are attributed to six different causes: collision or contact, fire or explosion, grounding, machinery, weather or other. Between 1994 and 1998 there were 540 total losses, 153 of which were attributed to weather. Commenting on these figures in the 1999 Lloyd’s Register Lecture in March 1999, the Secretary-General, Mr. O’Neil, said: “As a professional engineer I find this explanation unaccep-
table. We do not build bridges expecting that they will collapse if they are exposed to certain weather conditions. Dams are not built so that they will automatically burst when the water level reaches a certain point ... ships are not launched with a warning attached saying that they must not be used if the wave height exceeds a certain magnitude, or if a gale reaches a specific force.”

Mr. O’Neil said that attributing losses to weather or other causes “can no longer be accepted because it does not get to the root cause of the problem and does not give sufficient recognition to the fact that when ships go down lives are usually lost.”

Another generalization that is frequently quoted is that 80% of accidents at sea are due to human error. The phrase implies that fault lies primarily with the seafarer and that the errors made are due to carelessness. Yet this is not necessarily true. The International Safety Management (ISM) Code was adopted by IMO because experience had shown that many accidents at sea could be attributed not to mistakes made by those on board ship but to decisions made in the boardroom of the shipowner. Other mistakes, it now emerges, can be attributed to bad design.

One of the problems that have been encountered since the introduction of the global maritime distress and safety system is that of false alerts. While the blame was initially put on seafarers, a recent study by the United States Coast Guard has come to a different conclusion. The Coast Guard carried out a series of tests on DSC radios, which revealed numerous design errors. One model occasionally inserted the wrong identity of the ship into a distress relay message. Three models continued to transmit distress alerts on one DSC channel after an acknowledgement had been received on another channel.

Investigations into shipping accidents have often been hindered by the fact that when a ship sinks it disappears from view. Once it would have been given up as lost forever – but the discovery of the wreck of the bulk carrier Derbyshire has changed that. The ship was lost in the Pacific in 1980 and sank so quickly that no distress message was sent. Nearly two decades later, an expedition funded by the International Transport Workers Federation (ITF) found the ship more than two miles down and further study has produced so much evidence about why the ship sank that the inquiry into the loss has been re-opened. New proposals for improving bulk carrier safety have already been submitted to IMO. The finding of the Derbyshire was a triumph of technology and persistence and it showed that, if the determination and resources are there, more or less any shipwreck can be located and analysed to find out what went wrong. As technology improves, such investigations will become more and more common.

The more effective use of casualty investigations and statistics should help accidents at sea to be reduced. Formal safety assessment (FSA) is another promising development. FSA is described as a rational and systematic process for assessing the risks associated with any sphere of activity, and for evaluating the costs and benefits of different options for reducing those risks. It therefore enables an objective assessment to be made of the need for, and content of, safety regulations.

Formal safety assessment consists of five steps: identification of hazards (a list of all relevant accident scenarios with potential causes and outcomes); assessment of risks (evaluation of risk factors); risk-control options (deriving regulatory measures to control and reduce the identified risks); cost/benefit assessment (determining cost-effectiveness of each risk-control option); and recommendations for decision-making (information about the hazards, their associated risks and the cost-effectiveness of alternative risk-control options is provided). One major advantage of FSA is that it will make sure that safety is taken into account throughout the design and construction process – and not treated as an afterthought as has sometimes been the case in the past.

The MSC and MEPC have approved Interim Guidelines for the Application of Formal Safety Assessment (FSA) to the IMO Rule-Making Process, so that trial applications of FSA can be carried out to assess its worth. In December 1998 the MSC accepted a United Kingdom proposal to carry out a FSA study of bulk carriers, to aid future IMO decision-making on bulk carrier safety.

The FSA study, scheduled to be completed over a two-year period by a number of IMO Member States in collaboration with observer organizations, will look at a range of measures to improve bulk carrier safety, including problem areas referred to the MSC by the SOLAS Conference of November 1997, which adopted the new chapter XII of SOLAS on bulk carrier safety.

It seems likely that the use of FSA and similar methods will increase in the years to come. While improved casualty investigations (aided by the fitting of voyage data recorders) may help to stop disasters happening again, FSA might enable them to be prevented in the first place. Model testing and computer analysis is bound to make great strides in the future. One day, perhaps, the world will see the construction of the first truly unsinkable ship – maybe less than a century after the sinking of the Titanic.

Putting people first

The impact of technology on the modern world has been so enormous that the role of people has sometimes been overlooked or forgotten. The INTERTANKO paper quoted earlier says: “Some experts believe that while technology is increasing equipment reliability, it is actually reducing the human reliability of its operation ... as control has become more precise, local human intervention has been removed, moving crews to remote control rooms with computer displays.”

The old idea that “human error” was simply another term for “carelessness” can no longer be sustained. The evidence suggests that it is in fact an extremely complex subject, with no simple solutions. But a good start would be to consider the people who will serve on the ship when it is being designed. Rear Admiral J. C. Card told the Webb Institute in New York in March 1997: “It is time to consider the human element as the key to the long-term welfare of any ship and design the ship accordingly.” He gave as an example of how not to do it the traffic controllers’ stations at Washington National Airport’s new terminal, which had to be ripped out and replaced because traffic controllers who were shorter than the average could not see the runway from the station provided.

Such mistakes can be even easier to make in shipping, which is such an international industry. The American Bureau of Shipping, emphasizing that design should take into account the people who are going to do the work, issued Guidance Notes on the Application of Ergonomics to Marine Systems.
1998, which pointed out that people from different parts of the world are of different heights. The 95th percentile standing height of a North European, for example, is 1880 mm. That of a man from south-east Asia is 1693 mm. The moral is that a dial or control panel that can be easily reached by a Norwegian might be inaccessible to a Filipino.

The correspondence group on casualty statistics reported to the Flag State Implementation Sub-Committee that many accidents have involved the use of lifeboats. “Inherently complicated equipment continues to lead operators to make mistakes with catastrophic results. It would be interesting to know the proportion of lives saved using lifeboats, compared with the number of injuries and lives lost in operation of launching devices over the last few years.”

Because decisions are sometimes made by those on shore without consulting those who serve at sea, responsibility for mistakes can often become blurred. The correspondence group on casualty statistics also reported to IMO’s FSI Sub-Committee that many groundings are due to the lack of adequate charts. The report states: “Although it is the ultimate responsibility of masters to ensure that correct charts are on board, this fact does not absolve companies of their responsibility to facilitate supply. To establish the reason why correct charts are not placed on board, the role of the company should be investigated.”

Sometimes the possibility of incurring the displeasure of shore management can influence the actions of seagoing personnel. An inquiry by the Australian Marine Incident Investigation Unit into a fire on board a dredger resulting from an oil leak praised the crew for their fire-fighting efforts. But it noted that a previous leak had not been dealt with, as it would have involved stopping the dredger for an hour. The chief engineer had been criticized by the company for stopping the ship on an earlier occasion and had been told that stoppages cost AUS$10,000 an hour.

For some time now, the shipping industry has been concerned about the supply of seafarers. The International Shipping Federation (ISF) says in its 1999 annual report that the “international industry is approaching a critical point regarding manpower supply.” In particular, the demand for officers appears to be exceeding supply, and this could have implications for the shore-based maritime industries because, as the ISF report points out, “the shore-based work force is closely linked to an adequate supply of high-calibre seafarers.”

Hopes that this imbalance would be resolved were raised in the short term by the Asian economic crisis, which suggested that some former seafarers were going back to sea because of the shortage of jobs ashore. The ISF report comments that “their return is expected to be short-lived once the Asian economies recover.”

Even if this is not the case, the shipping industry can hardly take comfort from the implication that people only go to sea (or at least stay there) because they cannot find anything better on shore. Other evidence does indicate that morale of seafarers is not as high as it should be. A survey of life at sea carried out by the ITF in 1998 showed a high level of racism and low pay, and there was an indication of a link between hours worked and the levels of accidents on board and a correlation between long hours, stress and poor morale. An ITF official was quoted in Lloyd’s List as saying: “The worst type of competition is taking place at the bottom of the shipping market. Owners seem to be fighting to see who can pay the least, work the longest hours and provide the most meagre conditions.”

For officers, life might be better, but there still appear to be problems. An article in the Nautical Institute’s magazine Seaways in December 1998 said: “The public image of the shipmaster is appalling. He is assassinated by the media whenever there is an incident and the industry is entirely to blame for this ... no company can go public to back up their masters without committing commercial suicide.” As a result, the article said, “there is no doubt that masters feel insecure and vulnerable to summary dismissal without recourse.”

This is a far cry indeed from the days when Lloyd’s Register of Shipping listed the name of the captain alongside that of the ship, when the power of the captain was so great that he was allowed to marry people on board – and his authority so unquestioned that the captain was usually called the master.

People are so important to the future of the shipping industry that IMO has adopted numerous regulations, codes and recommendations on the subject. The IMO Assembly in November will consider a draft resolution on the principles of safe manning. This is intended to replace a resolution adopted in 1981. It includes basic principles to be applied when considering manning levels in order to ensure the safe operation of the ship. It also includes detailed guidelines for the application of principles of safe manning and guidance on contents and a model format of a minimum safe manning document. Each ship should be issued with a “minimum safe manning document”, specifying the minimum safe manning levels. The document can then be inspected during port State control.

The Assembly will also be asked to consider proposed amendments to the Code for the Investigation of Marine Casualties and Incidents so that the human element is taken into account. The introduction to the proposed new sections states: “Ships operate in a highly dynamic environment; frequently the people on board follow a set routine of shift work disrupted by arrival at, working in, and sailing from port. This is an existence that involves living in the place of work for prolonged periods, creating a unique form of working life which almost certainly increases the risk of human error.”

“Historically, the international maritime community has approached maritime safety from a predominantly technical perspective. The conventional wisdom has been to apply engineering and technological solutions to promote safety and minimize the consequences of marine casualties and incidents. Accordingly, safety standards have primarily addressed ship design and equipment requirements. Despite these technical innovations, significant marine casualties and incidents have continued to occur.”

“Analyses of marine casualties and incidents that have occurred over the past 30 years have prompted the international maritime community and the various safety regimes concerned to evolve from an approach which focuses on technical requirements for ship design and equipment to one which seeks to recognize and more fully address the role of human factors in maritime safety within the entire marine industry. These general analyses have indicated that, given the involvement of the human in all aspects of marine endeavours including design, manufacture, management, operations and mainte-
nance, almost all marine casualties and incidents involve human factors.”

The introduction goes on to say that one way the maritime community has sought to address the contribution of the human factor to marine casualties and incidents has been to emphasize the proper training and certification of ships’ crews. It has become increasingly clear, however, that training is only one aspect of human factors. There are other factors which contribute to marine casualties and incidents which must be understood, investigated and addressed. They include communication, competence, culture, experience, fatigue, health, situational awareness, stress and working conditions.

An important contribution to human error is made by fatigue. IMO adopted resolution A.772(18) “Fatigue factors in manning and safety” in 1993 and work on the subject has continued ever since. In December 1998 the MSC reviewed work carried out by the Joint MSC/MEPC Working Group on the Human Element. The Working Group noted that there is a need to: understand the nature of fatigue; identify the extent of the problem; identify the factors that have an influence on fatigue; and develop strategies to manage the problem.

The report points out that fatigue has been recognized around the world as a contributor to many accidents involving means of transport. There have been many incidents where fatigue has been suspected of contributing or causing transportation and industrial accidents; however, that connection was difficult to justify because the vital links between the unsafe acts and decisions which led to the accidents and the fatigue state of the people involved were not made.

The reasons for not making the links have varied. At one time, fatigue was discounted as a potential cause of human error; indeed, a common myth existed that fatigue could be prevented by characteristics of personality, intelligence, education, training, skill, compensation, motivation, physical size, strength, attractiveness, or professionalism. Also, the lack of scientifically accepted information on how fatigue affects not only mood and feelings, but individual and team performance as well constrained investigators and analysts. Further guidance on how to investigate for fatigue and build the links between a person’s recent history and potential impairment has been lacking. Unlike alcohol and drugs, which can be measured by, for example, blood tests, there is no unequivocal physical or chemical test that can tell us that a person was impaired by fatigue.

The MSC has established a correspondence group, to be co-ordinated by the United States, which will review how “fatigue” affects maritime safety and develop strategies to combat it.

What seems certain is that IMO’s current concern for the human element will continue for many years to come. If it is true that 80% of accidents at sea are caused by human error, then certainly this is the area that needs most attention. It is also apparent that, although humans have always been involved in shipping, there is still a vast amount to be learned about them and the reasons why they make mistakes.

**Immediate priorities**

IMO’s immediate programme of action in the new millennium is likely to be established by a draft resolution entitled “Objectives of the Organization in the 2000s”. The Assembly will consider this for adoption in November 1999. The draft resolution stresses the importance of implementation and refers to two resolutions previously adopted by the Assembly. In 1981 resolution A.500(XII) defined the objectives of IMO for the 1980s and referred to the fact that “time is needed for maritime Administrations to formulate national rules and regulations for effective implementation of IMO conventions”. In 1993 the Assembly adopted resolution A.777(18), which also referred to the need for better implementation and directed IMO committees to review their work methods and organization of work.

The draft resolution calls on IMO’s committees:

1. to take measures to implement the pro-active policy agreed in the 1990s more actively than in the past, so that trends which might adversely affect the safety of ships and those on board and/or the environment may be identified at the earliest feasible stage and action taken to avoid or mitigate such effects. In implementing this directive, formal safety assessment should be used to the extent possible in any rule-making process;

2. to focus their attention on:
   - shifting emphasis onto people;
   - ensuring the effective implementation of existing IMO standards and regulations relating to maritime safety and environmental protection, placing particular emphasis on the implementation of the revised STCW Convention and the ISM Code and putting in place the necessary infrastructure for the implementation of the global SAR plan and the MARPOL requirements concerning oil reception facilities;
   - addressing safety and environmental protection issues, to the extent feasible, by ship types, with particular emphasis on passenger ships (including high-speed passenger craft) and bulk carriers;
   - ensuring the wide early acceptance of those Annexes to the MARPOL Convention which have not yet entered into force;
   - developing a safety culture and environmental conscience in all activities undertaken by the Organization;
   - avoiding unnecessary over-regulation; and
   - strengthening the Organization’s technical co-operation programmes and delivery to achieve sustainable development and effective implementation of the Integrated Technical Co-operation Programme;

3. to promote the intensification by Governments and industry of efforts to prevent and suppress unlawful acts which threaten the security of ships, the safety of those on board and the environment (in particular, terrorism at sea, piracy and armed robbery against ships, illicit drug trafficking, illegal migitation by sea, and stowaway cases); and

4. to continue observing resolutions A.500(XI) and A.777(18), the continuing relevance of which has been reaffirmed on many occasions since their adoption.

It seems likely that IMO’s priorities in the next millennium will be to find ways of ensuring that new technology is introduced safely and that its impact upon people – and vice versa – is taken fully into account. The introduction of the ISM Code and the amendments
made to the 1978 STCW Convention will both have far-reaching effects in the early years of the next century. But there are many other issues that will have to be considered as well.

The relationship between ship and shore

Traditionally, once a ship set sail the authority of the captain was absolute, mainly because, in the days before radio, there was no way in which he could be contacted. The invention of radio, satellite communications and radar have all helped to undermine that authority, since the shipowner is now only a telephone call away from the captain. As a result, in an emergency, shipmasters are often expected to contact head office before making a decision, such as whether to call for assistance.

The development of routing measures over the past thirty years has also tended to reduce the authority of the master. Mandatory traffic separation schemes have been in force for twenty years and mandatory reporting systems and vessel traffic services have also been introduced. These have all made a major contribution to safety, but at the same time have imposed further limits on the traditional freedom of action of ships’ masters. The Secretary-General summed up the position in a speech made at a seminar on VTS standards in May.

He said: “Improved navigational aids and communications mean that those on shore often have a better idea of conditions involving the ship than those on board the vessel itself. In the circumstances it is not surprising that masters have often developed doubts and uncertainties about their authority. If a ship is in trouble because of engine failure or some other technical fault, the reaction is frequently for the captain to contact the owner for instructions rather than to make a decision on the spot that might cost the company a substantial amount of money and possibly cost the captain his job.”

Mr. O’Neil continued: “Despite all the qualifications and restrictions, the trend is unmistakable. It is towards more and more shore-based control. Comparisons are frequently made between shipping and aviation, and although the two forms of transport are very different, the idea of aircraft operating without being subject to control from the ground is somewhat terrifying. When it is recognized that all forms of transportation except ships are controlled remote from the vehicle, it is hard to sustain any valid argument that vessels should continue to be exempted.”

The need for greater control could become even greater as speeds increase. High-speed craft tend to operate on short-sea routes that are already crowded. Although there have been relatively few accidents involving such craft, there have been enough to cause concern. Today, the idea of allowing aircraft pilots to operate as they see fit, without any control from the land, is unthinkable. Will the same things apply to ships in twenty or thirty years’ time?

The centre of gravity

When the IMO Convention was adopted in 1948 shipping was dominated by a handful of traditional maritime countries, mostly situated around the North Atlantic. In the half century that has followed, this balance has shifted, but the traditional maritime countries still have perhaps a dominant role. This is not likely to last for many decades. Countries in Asia have already established themselves as major economic and trading powers, many of them with huge populations. It is inevitable that their shipping sectors will develop in the same way.

As that trend develops, and extends to Latin America and Africa, the countries concerned will play an increasingly important role in IMO discussions. Over the years, IMO has proved itself capable of adapting to change very quickly and has always prided itself on keeping politics out of what are normally technical discussions. It is likely that further changes will be called for in the years to come. What is important is that the basic IMO principles, including the consensus approach to decision-making, are maintained.

Crime at sea

One of the most worrying developments of the past two or three decades has been the increase in criminal activities at sea. Piracy is now a major problem in many parts of the world and there has also been an increase in the number of stowaways, illegal immigrants and drug smuggling.

Piracy, one of the traditional scourges of the sea, seemed to have been eradicated a hundred years ago, but most of the other criminal activities that have appeared recently are new. They serve to make life even more difficult for the seafarers who have become accustomed to the normal perils of the sea but could now find themselves being threatened by criminals – and possibly being murdered.

IMO, at the request of Member States, has taken action to combat these threats, but there is a limit to what an international organization can do. Crime prevention is primarily a matter for individual and regional Governments, and it is important that effective counter-measures are implemented as quickly as possible.

Implementation

Ever since 1981, when the IMO Assembly adopted resolution A.500(XII), IMO has tried to concentrate on implementing existing regulations rather than the adoption of new ones. This has been a difficult task in an age of rapidly changing technology – if the regulations are not changed quickly enough, IMO risks being accused of standing in the way of progress. Another complication has been the need to take action following a major disaster.

Nevertheless, it is generally agreed that the Organization’s priority – or rather the shipping industry’s priority – must continue to be the implementation of existing safety and environmental regulations. But implementation is the responsibility of the industry and of Governments, and the evidence is that it has not always been given its proper importance. More than 25 years after the adoption of the MARPOL Convention, many ports still do not possess the waste reception facilities that they require. The fleets of some countries still have casualty rates that are a hundred times worse than others. The establishment of regional port State control systems has led to the detection and detention of numerous sub-standard ships. Yet such ships are still allowed to operate.

One of IMO’s tasks in the new century will be to do more to encourage the implementation of standards.

A changing role for IMO?

One of the traditional complaints about IMO is that it has “no teeth.” In fact it does: they are the Governments who form its membership and are respon-
sible for ensuring that the standards they adopt in the IMO forum are put into effect. But the fact that implementation varies so widely and is so often ineffective has led some people to challenge the traditional approach and to ask if there should be a greater role for IMO.

The 1995 amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW Convention) required Parties to submit to IMO details of their training, examination and certification procedures. This information is then examined by a panel of experts, who then advise the MSC whether or not the requirements of the Convention have been met. This process is currently under way and no recommendations have so far been made.

But the fact that this authority has been delegated to IMO by Member States indicates that the Organization could be given a greater role in implementation in other areas. Could there, for example, be a role for IMO in establishing examination syllabi (the Organization already issues model courses for use in maritime academies)? Could there one day be a standard IMO examination? Will the time one day arrive when ships’ officers are awarded IMO rather than national certificates of competency?

Has the time arrived for more openness in the shipping industry? Should Governments be required to carry out investigations into all serious casualties and to submit the findings to IMO? This could mean removing the long-standing opt-out clause in chapter II, regulation 21 of SOLAS which states that the Government only has to do this “when it judges that such an investigation may assist in determining what changes in the present regulations might be desirable.”

When it comes to determining what went wrong in accidents at sea, it seems likely that technology will be able to help. The idea of installing voyage data recorders (VDRs) on ships has been around for a long time, but they are not mandatory, partly because of technical difficulties (for one thing, a ship may take weeks to reach its destination – and aircraft only a few hours). But in 1997 the IMO Assembly adopted a recommendation on performance standards for VDRs, and chapter V of the SOLAS Convention is also likely to be amended to make the use of VDRs mandatory on certain ships.

It seems certain that their use will be extended to other ships in due course and the technology of the recorders will increase enormously in the years to come. One result will be the provision of even more information about ships and casualties.

Coastal States

No matter what changes occur in shipping in the future, many countries will continue to have small merchant fleets compared with others. Yet many of these countries are and will be coastal States. As such they are often in a difficult position. They are expected to provide search and rescue facilities because of their geographical position, yet very few of the ships that benefit will be theirs. They own very few tankers – yet are continually threatened by operational and accidental pollution. They are expected to provide navigational aids and other systems – primarily for the benefit of others.

It is likely that there will be increasing demands for more to be done in this area by the shipping industry – which not only provides the ships but enjoys the profits made by them. The “marine electronic highway” in South-East Asia is an example of co-operation that may become more common in the future. The Malacca Strait is one of the world’s busiest shipping routes. Navigational infrastructure is being upgraded through a co-operative programme involving IMO, the coastal States and Japanese shipping interests, who are major users of the route.

Technical co-operation

Ever since the late 1960s, IMO has operated a technical co-operation programme. Many of today’s shipping nations did not even exist when IMO came into being in 1959 and it is likely that more countries will wish to expand their shipping activities as the new millennium progresses. Yet they could be handicapped by lack of experience and resources. IMO has recognized this and done a great deal to overcome the problem. The World Maritime University, the IMO International Maritime Law Institute and the IMO International Maritime Academy were all set up in the 1980s to help developing countries to acquire the knowledge and skills necessary.

The traditional maritime countries among IMO’s membership gave generous support to this process, realizing that it is in everybody’s interest to encourage high shipping standards.

Technology

When looking ahead, it seems inevitable that one of the dominant forces in the future will be technology. It will transform the world of the future even more quickly – and more extensively – than it has changed the past. When it comes to the details, this paper has been and will continue to be deliberately vague. But one forecast does seem to be justified, and that is that the continuation of the technological revolution in shipping will be of enormous benefit to the industry and those who work in it as well as to the marine environment itself. Providing, of course, that the shipping industry uses it wisely.

A change of culture

Perhaps the greatest challenge for IMO and the shipping industry will be to make safety such a priority that it becomes part of shipping culture. Other modes of transport have proved that this can be done: in some countries car drivers automatically put on their safety belts before they set off and motor cyclists always wear crash helmets. Passengers accept safety checks in airports because they are seen to be essential. In the past, the inherent dangers of the sea have resulted in seafaring itself being regarded as a dangerous occupation, where accidents are inevitable and have to be tolerated. There will be no excuse for allowing such attitudes to linger on into the next millennium.

World Maritime Day message and background paper

The text of this message and background paper is available on the IMO website at: www.imo.org

The messages and papers from 1998 and 1999 are also available on the website.
Six Black Sea States have agreed a preliminary draft Memorandum of Understanding (MOU) on port State control for the Black Sea region.

The draft MOU was discussed at the First Preparatory Meeting for the establishment of a Port State Control System in the Black Sea Region, held in Varna, Bulgaria from 14 to 17 September 1999 and attended by delegates from Bulgaria, Georgia, Romania, the Russian Federation, Turkey and Ukraine. Representatives from IMO, the International Labour Organization (ILO), the International Association of Classification Societies (IACS), the Danish Maritime Authority and other regional organizations also attended the meeting.

The representatives of the Black Sea States agreed to co-operate in the eradication of sub-standard ships operating in the Region and to promote a port State control regime and a related training scheme. They also agreed on the need to establish or further update their national administration capacity to efficiently act as flag and port States.

A Second Preparatory Meeting to adopt the finalized MOU is scheduled to be held in Turkey in February 2000.

IMO has been instrumental in instigating the establishment of regional port State control agreements around the world. All countries have the right to inspect ships visiting their ports to ensure they meet IMO requirements regarding safety and marine pollution prevention, and experience has shown that port State control works best when it is organized on a regional basis.

The first regional port State control agreement, covering Europe and the North Atlantic, was signed in 1982 and is known as the Paris Memorandum of Understanding (Paris MOU).

Regional port State control agreements require each signatory maritime Administration to establish and maintain an effective system of port State control and to set an annual required percentage of inspections of foreign merchant ships entering the region’s ports during the year.

Exchange of information is encouraged, so that sub-standard ships can be identified and targeted. On the other hand, ships which have been inspected by one port State and found to be complying with all safety and marine pollution-prevention rules will not be subject to too frequent inspections.

Pacific 2000 will be the most comprehensive commercial maritime and naval defence exhibition ever held in the Asia Pacific region.

Directed towards both the naval defence and commercial maritime industry sectors, Pacific 2000 will cover the full range of naval and commercial maritime equipment, facilities and operations.

Supported by the Royal Australian Navy, the Institute of Marine Engineers, the Royal Institution of Naval Architects and the Institution of Engineers, Australia. Pacific 2000 will incorporate a range of maritime industry, technical and defence forums, featuring the Sea Australia 2000 conference and Royal Australian Navy Conference.

Pacific 2000 is an event that must not be missed.

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False distress alerts – the problem continues

False distress alerts continue to create problems for search and rescue (SAR) services, the Sub-Committee was told. They impose a considerable burden on rescue co-ordination centres (RCCs) and divert SAR resources away from real distress situations.

A number of submissions from different Member States highlighted the fact that false alerts make up a majority of all alerts received by rescue co-ordination centres. The Sub-Committee agreed that Administrations should be invited to conduct operational tests of digital selective calling (DSC) equipment with a view to submitting the results to the next session of the Sub-Committee. This would facilitate discussions with manufacturers, government agencies and standards committees in attempts to find solutions.

In addition, the Sub-Committee agreed to look into developing a circular at its next session, which would ask Administrations to submit information on false distress alerts received.

The Sub-Committee at its last session developed two circulars (subsequently approved by the MSC) on combating the issue: Measures to reduce the number of false distress alerts; and Clarifications of certain requirements in IMO performance standards for GMDSS equipment, which gives design requirements for reducing the risk of false alerts and notes that investigations into false distress alerts indicate that a large proportion are caused by a combination of operational errors and equipment being inadequately protected against initiation of false distress alerts.

Assembly resolution A.814(19) also gives guidance for the avoidance of false distress alerts.

Circulants on dealing with distress alerts agreed

The Sub-Committee agreed circulars aimed at giving guidance on dealing with any distress alert:

COMSAR Circular “Procedure for responding to VHF, VHF/MF and HF DSC distress alerts by ships” – includes flowcharts designed for use on the ship’s bridge detailing actions to be taken on receipt of a distress alert. The Sub-Committee agreed to issue the Circular immediately.

Draft MSC circular “Interim procedures for Maritime Rescue Co-ordination Centre (MRCC) on receipt of distress alerts” – gives guidance for co-ordination centres on procedures to follow on receipt of a distress alert.

Draft COMSAR circular “Guidance for central alerting posts” – gives guidance for the central alerting post (CAP) in any country – which is defined as the sole point of contact for SAR matters between all authorities and SAR facilities of the country and the foreign MRCC. The aim is to provide guidance to the competent body involved in SAR operations, even when the country concerned has not ratified the 1979 Search and Rescue Convention.

GMDSS – draft resolution agreed

The Sub-Committee finalized a draft Assembly resolution on criteria for the provision of mobile-satellite communication systems for the global maritime distress and safety system (GMDSS). The draft resolution, intended for adoption by the 21st Assembly in November, recommends Governments to provide the mobile-satellite system elements necessary for the proper operation of the GMDSS. The annex to the draft resolution outlines criteria for the provision of satellite communications systems and coast earth stations in the GMDSS, including giving priority to distress alerts and urgency and safety calls. Governments providing mobile-satellite systems and coast earth stations should inform IMO, so that the information can be analysed with a view to possible acceptance of those systems for GMDSS.

The draft resolution was developed by the previous session of the Sub-Committee and was referred back to COMSAR by the MSC for further elaboration before submission to the Assembly.

International SAR Fund

The Sub-Committee considered the technical aspects of an International SAR Fund proposed by the 1998 Fremantle Conference on SAR/GMDSS for Indian Ocean countries, and identified East and West Africa and some parts of Asia and the Pacific, Central and South America and the Mediterranean region as the areas mainly lacking SAR and GMDSS facilities. The Sub-Committee agreed that priority should be given to the African region first when any action was taken.

The Sub-Committee recommended that a study/assessment analysis should be carried out, agreeing that by pooling facilities and action in a well co-ordinated fashion, at the regional level, efficiency in delivery of SAR/GMDSS services was maximized and the corresponding costs were minimized.

Medical assistance at sea – circular agreed

The Sub-Committee agreed a draft MSC circular on medical assistance at sea for submission to the MSC for approval. The draft circular covers medical assistance at sea and the role of telemedical assistance services. The use of a telemedical advice centre may assist a master in providing the right treatment for an injured or sick seafarer, or may help resolve a situation where evacuation is difficult or impossible.

NAVTEX system – amendments to Manual

The Sub-Committee agreed amendments to update the NAVTEX Manual as well as amendments to resolution A.706(17), World-Wide Navigational Warning Service.

NAVTEX is an automated broadcasting system which sends messages relating to casualties, weather or other
navigational issues directly to special printers on board ships. International messages are broadcast at set times in English on 518 kHz, in each of 16 fixed geographical areas (called NAVAREAs). SafetyNET is a satellite-based system to broadcast the same information when out of range of NAVTEX coverage.

The amendments to the resolution and to the NAVTEX Manual will be submitted to the next session of the MSC in 2000 for adoption.

The Sub-Committee also approved proposed actions to improve the NAVTEX system, following concerns raised by the results of a survey of NAVTEX users. The survey, conducted in 1997 by the NAVTEX Co-ordinating Panel in conjunction with the International Chamber of Shipping, received over 800 responses, which highlighted the following concerns:

.1 Meteorological information – excessive quantities in each broadcast slot and inconsistent formats.

*Proposed action:* consider introducing systems which optimize the content of broadcasts within the allowed 10-minute time slots, as a function of message priority, type, length, etc.; liaise with World Meteorological Organization (WMO) regarding the promulgation, particularly the length and format, of meteorological information over NAVTEX.

.2 Stations over-running their allotted 10-minute slot – may lead to occasional serious safety consequences as broadcasts from stations in subsequent time slots may be masked.

*Proposed action:* As above, plus liaising with NAVAREA co-ordinators to assess whether there is likely to be a problem with over-running time slots in their areas and consider the need to change the character/time slot of certain stations to give a better time separation between adjacent stations.

.3 Dual-language output on 518 kHz, often in alternate time slots, leading, in effect, to 8-hour gaps between usable data.

*Proposed action:* cease non-English language broadcasts on 518 kHz forthwith and set up national language broadcasts on 490 kHz or 4209.5 kHz as required;

.4 Interference with stations in other NAVAREAs, often due to excessive transmitter power output, particularly at night.

*Proposed action:* restrict the power output from their transmitters to that required to cover the designated area, particularly at night.

.5 Lack of user understanding of the system and the equipment fitted in vessels.

*Proposed action:* during port State inspections, check the settings on NAVTEX and SafetyNET receivers and, where necessary, explain the optimum settings to users.

**COSPAS–SARSAT update**

There are now some 185,000 406 MHz distress beacons in service under the COSPAS–SARSAT system, according to information provided to the Sub-Committee. By the end of 1998, 10,000 people had been rescued using COSPAS–SARSAT alert data.

The COSPAS–SARSAT international satellite search and rescue system consists of a constellation of satellites in polar orbit and a network of ground receiving stations, which provide distress alert and location information to appropriate rescue authorities about maritime, aviation and land users in distress.

In May 1999, the COSPAS–SARSAT low-earth-orbit (LEOSAR) space segment included seven satellites. During 1998, two satellites were launched, Sarsat-7 in May 1998 and Cospas-8 in December 1998. The Sarsat-7 payload includes a second-generation 406 MHz processor (SARP-2) which provides improved performance in terms of capacity and protection from interference and an expanded bandwidth to allow for future growth in the 406 MHz beacon population.

Thirty-six ground receiving stations (LEOLUTs, or LEOSAR Local User Terminals) are in operation in twenty countries. There are also 21 Mission Control Centres (MCCs) in operation, responsible for the world-wide distribution of COSPAS–SARSAT alert data to SAR services.
Women on board – ten years of the IMO Women in Development Programme

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The integration of women into all levels of political, economic and social development has become a major objective within the United Nations system over the past 25 years. The years 1976–1985 were designated the United Nations Decade for Women, during which many agencies of the United Nations sought to implement programmes to achieve the advancement of women and promote gender equality. These goals – highlighted at the Fourth United Nations Conference for Women held in Beijing in 1995 – are seen as prerequisites for achieving political, social, economic, cultural and environmental security among all people. IMO produced its strategy for the integration of women into the maritime sector in 1988 and began implementation of the IMO Women In Development Programme in 1989, concentrating on equal access to maritime training through both mainstream programmes and gender-specific projects. The increased percentage of women students at the World Maritime University in Malmö, Sweden and the International Maritime Law Institute, Malta illustrates the programme’s wider influence at the highest level of maritime training.

This article looks at women in the maritime sector, reviews the objectives and aims of the programme and examines its achievements over the past decade.

Women and shipping
In some countries, the shipping industry offers a way out of poverty for many workers. Employment in the shipping industry provides access to foreign currency and a regular salary with a direct impact on the economic viability of seafarers and their extended families.

There is no intrinsic reason why women should not participate in and benefit from employment within the shipping industry.

However, the shipping industry is traditionally regarded as an exclusively male preserve and only one or two per cent of the global workforce of seafarers are women.

The relevance of sea experience to many shore-based jobs means the resource of women with appropriate skills is limited and will continue to act as a long-term constraint on the representation of women in the maritime sector as a whole.

There may also be cultural resistance to women working outside the home, but the principal objections to employing women at sea appear to centre around the lack of adequate separate facilities for women on board and stringent physical requirements.

The perception that seafaring is a man’s job can lead to lack of training and work-experience opportunities for women, compounded by employers’ reluctance to appoint those women that are trained. To break the cycle, adequate training has a critical role in the integration of women into all spheres of professional life, with special emphasis on improving accessibility at all levels to potential women applicants.

Women as seafarers
The number of women going to sea is insignificant, with women representing just one to two per cent of the world’s 1.25 million seafarers. Most women at sea are from developed countries.

Women on board ship tend to be found in catering and administrative services; the proportion of women crew on passenger ships and ferries is relatively high. Radiocommunications is another area employing women.

In European Union fleets, women represent four to five per cent of the total workforce of seafarers while in South-East Asia, the proportion of women is less than 0.5%.

In the Philippines – a major supplier of seafarers to the world’s merchant fleets – only 225 women out of 230,000 seafarers appear on the national seaman’s register for 1983–1990. All of these women are hired as waitresses or utility personnel for luxury line operators.

Socio-cultural factors are thought to be behind the extremely low proportion of women seafarers in some countries.
Industry studies suggest that the technological revolution within the maritime sector is calling for a highly trained workforce, leaving the sector with an estimated shortfall of some 50,000 officers in the year 2000. Female seafarers are an under-utilized and underdeveloped resource that could provide part of the solution to the problem of crewing the world merchant fleet.

However, it is clear that to achieve this there is a need for changes in attitude towards employing women as seafarers, recruitment of women in the shipping sector generally and increased training opportunities for women.

**Shore-based occupations**

Women are involved across the spectrum of shore-based employment and account for 40 to 60 per cent of staff in administration of national maritime affairs, including secretarial support staff, but the number of women in the higher managerial levels is still low.

There is also scope for increased representation of women in port services, maritime radio and electronics, marine pollution-prevention control, naval architecture and marine biology.

**Maritime legislation**

While the basis of maritime laws is generally international, national legislation must be formulated to implement these laws. The legal profession attracts a great number of women who could be encouraged to specialize in maritime law in order to alleviate the demand for specialists at the national level.

IMO’s International Maritime Law Institute (IMLI) in Malta reserves 50% of its places on its post-graduate courses for women.

**Maritime administration**

Women have an important role to play in maritime Administrations and already work at all levels of national ministries responsible for shipping and ports as well as other maritime authorities.

However, some developing countries rely on expatriates to fill professional and senior positions in their maritime infrastructure, and extending training to qualified women can help to reduce this dependency.

To promote women at the professional level of maritime administration, Russian Captain Anna Ivanovna Schetinina was probably the first female captain in the twentieth century. Born in 1908, she began working on ships in 1930 and became captain in 1935, serving with distinction during the Second World War, sailing between Russia, the United States of America and Canada. Later, she became Senior Lecturer and Dean of Maritime Academies in Saint Petersburg and Vladivostok – with many of her former students also attaining the rank of captain. She has also authored books on navigation theory and practice.

On 26 February 1998, she celebrated her 90th birthday, and IMO Secretary-General Mr. William A. O’Neil sent her the following message:

“…The history of shipping is full of anniversaries – but I doubt if any of them have commemorated such a happy event as the one we are honouring today. To reach the age of 90 is a rarity that deserves to be recognized. But when the person concerned is Captain Anna Ivanovna Schetinina then we really do have a reason for celebrating.

There are few professions that have been more dominated by males than shipping. Today we are beginning to make some progress towards breaking down the barriers of tradition that have prevented women from advancing their careers. And yet Anna Ivanovna has been a merchant marine captain for more than fifty years!

This is a tribute to her and her own skill, dedication and determination. The fact that she was able to achieve this rank so long ago is also a tribute to the Russian merchant marine and her colleagues of that generation. But today I think that all eyes will be on Captain Anna Ivanovna. She showed the way. She demonstrated, through her own efforts, that almost anything is possible to those who try hard enough. She is an example not only to women who wish to become seafarers but to men who fear that the barriers they face are insurmountable. Anna Ivanovna showed that they are not.”
their access to appropriate education at
the post-graduate level has to be
improved. Special measures, such as
gender-specific fellowships, can be a
useful tool for encouraging women
candidates.

In the sectors of ports and harbour
administration, short training courses
would be adequate for all levels of
administration personnel. Practical
steps need to be taken in a systematic
manner to secure the participation of
women in all branches of maritime
administration and port activity.

Marine pollution prevention
and control
Implementation of conventions relat-
ing to pollution prevention and control
is vital in the many developing coun-
tries with important tourism and fish-
ing industries.

Women who are qualified in mar-
itime science or fisheries research as
marine biologists and scientists, or with
specialized knowledge of the chemical
industry, should be encouraged to
attend courses and seminars relating to
marine environment protection, in
order to provide developing countries
with the required expertise in imple-
menting conventions relating to the
prevention and control of marine
pollution.

Technical management of
shipping companies
Women make up a significant propor-
tion of shipping companies’ staff but
generally remain under-represented at
managerial/decision-making levels.
Managerial posts which are occupied
by women tend to be in financial,
marketing and training rather than in
technical or operational divisions.

There are opportunities for women
to serve in managerial capacity, for
example as fleet managers, marine or
engineering superintendents. Women
should be encouraged to participate in
technical training on every level, in-
cluding specialized short courses, cor-
respondence courses and seminars.

Maritime training and education
There are over 90 maritime training
institutions in more than 60 countries.
Many admit only men or just a small
number of women. Female lecturers
are in a minority and tend to provide
expertise in courses aimed at shore
personnel, in maritime law and in
general subjects such as English lan-
guage, computer science, maritime and
business studies and shipping manage-
ment.

Studies suggest an implied need for
an additional 170 maritime lecturers
world-wide over the period 1990–2005
to service the needs of the merchant
fleets registered under flags of de-
veloping countries. Most gaps will be in
nautical studies and engineering, but
lecturers are also needed in maritime
law, economics and shipping insur-
ance.

The availability of more opportu-
nities for women could increase the
self-sufficiency of developing countries
in their supply of qualified maritime
teachers while providing increased visi-
bility of women as role models in a
variety of key maritime professions.

Women should be encouraged to
apply to the national institutions and
to apply for training in technical
subjects. At the same time, national
and regional maritime training centres
should be encouraged to admit women
students with the requisite educational
background.

The IMO Women in
Development Programme
From the beginning, the aim of the
Women in Development Programme
was to make this concept an integral
part of IMO’s Technical Co-operation
Programme, initiated in 1966, which
assists in the strengthening of national
and regional maritime capacities through
a variety of maritime-related projects.

By improving the access of women
to all levels of training and employ-
ment in the maritime sector, the
technical co-operation programme as
a whole is strengthened, not least
because women often represent an
under-used resource in many countries.

The WID Programme is incorpo-
rated into the Technical Co-operation
Programme as a global, cross-sectoral
element, by focusing on equal access to
training through both mainstream
programmes and gender-specific pro-
jects:

- Mainstream programmes/projects
  - These projects seek to integrate
    women in mainstream sectoral
    initiatives of IMO. Integrated
    projects require gender-sensitive
    design in order to ensure from the
    project’s inception that women
    will be specific target groups
    both as participants and as
    beneficiaries in the formulation
    and impact of a programme or
    project.

  - Gender-specific and promotional
    projects – Women-specific
    projects represent a phased
    approach to facilitating the
    integration of women into the
    mainstream sectoral development
    of the maritime industry. They
    represent an engine for change,
    through activities which include
dedicated fellowship funding for
technical training programmes,
which, in addition to improving
specific maritime skills, are
designed to assist women in
overcoming attitudinal and
environmental constraints and
ensure their access to training.

WID Programme – initial phase
The WID Programme began with a
project to look at ways of incorporat-
ing the aims of the Programme into
IMO’s policies and procedures.

With funding support from the
Government of Norway, a shipping
analyst and specialist in gender de-
velopment was recruited to study the
employment potential for women in
the maritime sector, including a
detailed analysis of shore-based and
sea-going disciplines which would be of
particular relevance to women profes-
sionals.

This provided the baseline data for
developing an IMO gender-specific
fellowship programme which initially
focused on disciplines which offered
the most immediate and practical
interest to women in the maritime field,
including maritime law, marine biol-
gy, maritime administration, and
marine sciences. Promotional activities
were also developed.

In addition, the Co-ordinator of the
Unit for the Integration of Women
into Industrial Development, UNIDO,
assisted in drafting a consolidated
Medium-Term Plan of Action.

1992–1996 Medium-Term Plan
for the Integration of Women in the
Maritime Sector
The 1992–1996 Medium-Term Plan for
the Integration of Women in the
Maritime Sector was based on the
precept of encouraging the economic empowerment of women and it identified a critical development path from the training stages through to employment and career development, while also targeting the advancement of women into the middle and higher managerial levels of policy-making administrations.

In particular, the Plan focused on promoting the training of women in all maritime-related disciplines and fostering their access to national and regional maritime training academies. At the same time, the Plan addressed the need for training of IMO officers involved at the planning stages of technical co-operation projects, in order for them to be able to integrate the aims of the Women in Development Programme into the overall Technical Co-operation Programme.

**In-house training**

The need for in-house training was heightened by the fact that most IMO technical co-operation projects focus primarily on technological aspects rather than giving attention to specific target groups/beneficiaries.

A series of workshops on gender-planning methodology – tailored to the specific needs of the maritime sector and targeted at IMO officers involved in both policy development and project implementation – was conducted by a specialist in gender training from University College, London. The training was based on a methodology, initiated in the UK and Scandinavia, for incorporating gender into the development context and formalizing the WID mechanisms into the design and implementation of IMO’s technical co-operation projects.

A series of workshops in 1992 and 1993, built around case studies of operational IMO projects, provided the baseline for analysing the Women in Development components and for establishing verifiers to assess the impact of IMO assistance to women at the grass-roots level. The workshops also used additional training materials from other agencies within the UN system.

The result was an increased awareness of the role and contribution of women within the technical functions of maritime development projects, a greater understanding of the rationale behind gender analysis within the programming context, and a practical knowledge of gender-analysis techniques within the programme formulation process.

**Fellowship programme**

Donor support – from the Government of Norway in particular – enabled a Special Fellowship Programme for Women to be established in 1993 to provide gender-specific fellowships in response to the infrastructural and socio-cultural constraints which prevent women from acceding to equal training and employment opportunities.

The programme objective was to provide the initial impetus to overcome some of the barriers of access to the highest level maritime posts. The immediate objective of the programme was to circumvent situations where male candidates may traditionally be given preference, particularly when funding is scarce, by increasing the training and funding opportunities accessible to women candidates so that they may acquire the high-level specialized training required to work at the managerial level.

The long-term objective of the fellowship programme was to encourage equity in the appointment and promotion of women to high-level posts with managerial responsibilities.

Feedback received from fellows confirms the impact that this training has provided both to the individuals concerned and to their national authorities. Such affirmative action measures have proved significant in meeting the specific policy objectives of the Women in Development Programme – improving women’s access to maritime training and technology and thereby increasing the percentage of women at the senior management level within the maritime sector.

**Promoting gender awareness in the maritime sector**

Ahead of the 1992–1996 Medium-Term Plan, the IMO Focal Point for Women in Development conducted two sensitization workshops on the theme of the integration and advancement of women in the maritime sector:

1. March 1990, held at the Alexandria Maritime Training Academy under the auspices of the Association of African Maritime Training Institutes; and
2. April 1990, held at the Centro de Formação Nautica, Mindelo, Cape Verde.

In September 1993, the Congreso Iberoamericano de Educación Náutica, held in Veracruz, Mexico, also addressed the role of women in the maritime sector. The IMO Focal Point for Women in Development presented IMO’s programme of activities for the integration of women in the maritime sector, highlighting the issue of women’s access to maritime training at all levels. The 250 participants included students from Veracruz, Tampico and Mazatlán Maritime Training Academies with representatives from other major maritime training institutions in the region. The participants included women cadets from Mexico, who urged IMO to maintain its sensitization activities which would help to publicize existing opportunities for women and alleviate some of the obstacles they encounter when seeking advancement in the maritime field.

**System-wide co-operation**

Co-operation with other UN agencies was also important, through IMO’s active participation in the annual Ad Hoc Inter-Agency Meetings on Women and in the special session of the Ad Hoc Inter-Agency Meeting on Women convened in November 1995 to formulate the System-Wide Medium-Term Plan for the Advancement of Women. IMO’s interventions on the System-Wide Plan policies centred primarily on women’s access to high-level technical training and the need to provide adequate funding, with a more focused thrust on the highly specialized nature of the training required in the maritime sector.

IMO’s participation in the UN Inter-Agency Forum succeeded in promoting a practical approach to the integration of women in a traditionally male-oriented industry, drawing on the experiences of other agencies to facilitate women’s access to employment and income-generating activities.

At the invitation of the Department for Multilateral Development Co-operation of the Royal Ministry of Foreign Affairs of Norway, IMO’s Focal Point for Women in Development participated in informal consultations on “Strategies for Women in Development” in Oslo, Norway, in 1988, 1990, and 1993. The consultations were attended by Focal Points for
Women from selected international organizations and national development co-operation agencies, and reviewed progress achieved by multilateral development organizations in their Women in Development work. These provided opportunities to exchange views on the institutional strategies used to ensure that programmes and projects benefit both women and men in equal measure.

IMO’s achievements with its WID Programme were recognized by the UN Joint Inspection Unit (JIU) in 1995, in its report entitled “The advancement of women through and in the programmes of the United Nations system: what happens after the Fourth World Conference on Women?”. The JIU concluded:

“The smaller and more technical agencies have a more limited set of activities and policies for women’s advancement, following the belief that their small secretariats and the technical focus of their operations makes a programme for women’s advancement especially difficult to achieve. An exception that indicates what can still be done in a ‘man’s domain’ is provided by the International Maritime Organization. IMO produced a Strategy for the Integration of Women in the Maritime Sector in 1988, and it has worked with its governing bodies to implement a Medium-Term Plan on this topic. On the human resources side, IMO is one of only three system agencies which has actually met its present target of professional women staff. Its present proportion of 30.6% places it among the system leaders, well ahead of other small technical specialized agencies. IMO has also established a policy and procedures on sexual harassment, and is considering work-family actions, actions to improve recruitment and retention of more women staff, and special training seminars requested by women staff. The IMO example also indicates the essential elements for success: firm leadership and support from top management, a dynamic women's adviser, and responsive implementation by programme and personnel managers.”

1997–2001 Action Programme for Equal Opportunities and Advancement of Women in the Maritime Sector

The Action Programme for Equal Opportunities and Advancement of Women in the Maritime Sector 1997–2001 was formulated as a follow-up strategy to the 1992–1996 Medium-Term Plan, to consolidate the integration of gender issues within IMO’s technical co-operation activities.

Lessons learned in the field led to a redirection of the focus of the new Action Programme towards a more specific goal, namely equal opportunities for women and men in all spheres of the maritime industry.

The Action Programme continues the aim of working towards the systematic integration of women in the Organization’s technical co-operation activities while the long-term goals focus on equal access for women to maritime training resources and equal benefits in the transfer of technology through the following development objectives:

1. to integrate women into mainstream maritime activities;
2. to improve women’s access to maritime training and technology;
3. to increase the percentage of women at the senior management level within the maritime sector; and
4. to consolidate the integration of women in the maritime sector as an integral element of IMO’s technical co-operation activities.

The Action Programme for Equal Opportunities and Advancement of Women in the Maritime Sector 1997–2001 was approved by the Technical Co-operation Committee (TCC) at its 44th session in June 1997.

In-house gender awareness

A further series of workshops on the practical aspects of gender planning in technical co-operation development and implementation is envisaged under the 1997–2001 Action Programme.

The value of linking the WID Programme to practical in-house gender-awareness activities was clearly illustrated by the positive response to a presentation by Capt. Wendy Maughan, who was invited by the IMO Women’s Association as guest speaker to address the Organization on the occasion of the 1998 International Women’s Day.

Capt. Maughan’s presentation – which reflected her personal and professional experiences as a female seafarer – evoked a significant response from IMO staff members and from guest participants: this represented a practical demonstration of the impact which role models can make in dispelling some of the more entrenched myths regarding the role of women as seafarers in a modern age.

Fostering regional co-operation: sub-regional seminars on “Women in the maritime sector: opportunities and challenges”

The first sub-regional seminars were held in Malawi in October 1997 as a pilot scheme under the sensitization and information component of the Action Programme. The idea of the seminars is to target national authorities and the administrators of regional/national maritime institutes from the participating countries in order to encourage the greater participation of women as students, as academic staff, and as decision-makers within the maritime industry as a whole.

The sub-regional seminar on “Women in the maritime sector: opportunities and challenges” was held in Mangochi, Malawi, in October 1997, funded under the Women in Development component of the IMO/Norway Co-operation Programme and hosted by the Government of Malawi with the collaboration of the Marine Services of the Ministry of Transport and Communications (Malawi). Participating countries included Malawi, Mozambique and Tanzania, with representatives from their national maritime Administrations and national maritime training institutions. Two one-day national seminars were also conducted at the Malawi Polytechnic (Blantyre) and Chancellor College (Zomba) respectively, with the participation of academic and administrative staff of the Malawi Polytechnic and of prospective students.

The participation of women graduates from both the World Maritime University and the International Maritime Law Institute was of significant benefit to the forum, bringing some incisive testimony to the general debate.
and lending credence to the concept of “role models” in decision-making posts. Their presence served as a useful example of success at the managerial level in the maritime field while also emphasizing the priority which IMO has given to promoting global training standards.

Three working groups – on Access to training, Access to employment, and Women as decision-makers – issued a catalogue of recommendations, and the lessons learned were integrated into the planning schedule of the Action Programme.

The working groups also developed a collective resolution on “The promotion of the participation of women in the maritime industry”, which was adopted by the Technical Co-operation Committee (TCC) at its 45th session under resolution TC.3(45).

The resolution invites the participation of national authorities in encouraging the participation of women at all levels of technical and scientific education, leading on to specialized maritime training, with the long-term aim of promoting equal access by men and women to all professions within the maritime industry. The resolution also notes the importance of providing women candidates with practical maritime experience through the provision of on-the-job training opportunities.

The seminar and working-group format will be used as a blueprint for further implementation in Africa and other regions.

Promoting gender awareness in the maritime sector

The IMO Focal Point for Women in Development attended the First International Conference on “Arab Women Managers and Sustainable Development”, held in Alexandria in March 1997, as guest speaker on “The role of women in the maritime sector: opportunities and challenges”.

The Conference revealed the practical benefits of regional networking as a mechanism for supporting individual women in professions where women represent a minority percentage of the managers and decision-makers.

The women employed in the maritime sector face similar organizational constraints which stem from the lack of a nucleus or core-group: the isolation of women in their respective professional fora is a proven disadvantage in terms of receiving practical support on operational issues which are compounded by long-term consequences relating to promotion opportunities.

The role of IMO as a participant at the Conference reinforced the cross-sectoral linkages which can impact on the socio-economic context of a region. The Action Programme for Equal Opportunities and Advancement of Women in the Maritime Sector adopts this concept by advocating strong networking associations and linkages amongst female graduates of the World Maritime University, the International Maritime Law Institute, and other maritime training institutions.

Inter-agency forum

As a member of the UN Inter-agency Committee on Women and Gender Equality, IMO strongly advocates the strengthening of institutional mechanisms for mainstreaming Women in Development issues within national and regional programmes. The IMO Focal Point for Women in Development is currently co-operating with the Committee on the following issues:

1. the compilation of “Good practices” within the UN System;
2. a WID/Gender Focal Point Study; and
3. methodologies for gender impact-analysis.

Implementation of Special Fellowship Programme for Women

The Special Fellowship Programme established in 1993 is continuing under the 1997–2001 Action Programme, with donor support from the Government of Norway and from the Technical Co-operation Fund (TC Fund).

To date, some 35 fellowships have been awarded for a wide range of maritime-related fields, including: Maritime Law and Shipping Management, Port Terminal Operations, Computerization in Oil Spill Control, Post-Graduate Training in Maritime Legislation, Safety in the Port Environment, and Hydrodynamics of Offshore Platforms in Maritime Engineering.

Feedback received from the women fellows reinforces the key focus of the gender-specific programme, which is to promote training opportunities for women, with the long-term objective of increasing the self-sufficiency of developing countries in their supply of qualified maritime teachers, and also to increase the visibility of women as role models in a variety of key maritime professions.

Conclusion

The first ten years of the IMO Women in Development Programme have culminated in the institutional integration of this element into the work of IMO governing bodies and into the technical co-operation planning structures, resulting in a strategic planning framework and a comprehensive operational Plan of Action.

The increased percentage of women students at the World Maritime University and the International Maritime Law Institute (IMLI), Malta is one example of the “multiplier effect” of this Programme. In the case of the World Maritime University, the WMU Board of Governors approved the use of internal funds to enhance enrolment of women – with the proportion of women students increasing from 6% of total numbers in 1996 to 22% of total numbers in 1997. IMLI already allocates 50% of its places on its post-graduate maritime law courses to women.

The WID Programme remains a modest but cost-effective element of the Integrated Technical Co-operation Programme, poverty alleviation and income generation.

Unlike the major agencies for whom this is a mainstream operation activity, staffed full-time by specialized units, IMO uses the programme as a catalytic role within the maritime sector: IMO effectively acts as the facilitator for what is actually implemented at the national and regional level.

At the same time, the need to attract well-trained and qualified young people to go to sea could lead the way open for more young women to become seafarers. Shorter voyages and/or longer home leave, improved on-board accommodation and facilities and proper training will work in attracting more women to the profession – but the benefits would be for all, regardless of gender.
Captain Margaret Pidgeon was presented with the Victoria Drummond Award on 13 May 1999. The Award is awarded every four years by the UK National Union of Marine Aviation and Shipping Transport Officers (NUMAST) to a woman who has achieved distinction in seafaring.

Presenting the award during the NUMAST biannual General Meeting, IMO Secretary-General Mr. William A. O’Neill said:

“It is always a pleasure to be present when someone receives an award. It is an even greater pleasure to be invited to present the award, especially when it is the Victoria Drummond Award and the recipient is someone so worthy as Captain Pidgeon.

You do not need to be outstandingly perceptive to recognize that shipping is still a male-dominated industry – a glance at the delegates assembled here today is proof enough of that. I think we would also agree that, unfortunately, prejudices and preconceived notions about the abilities of women do still exist. Therefore, for a woman to succeed in our industry, she has to have very special qualities.

One woman with these special qualities was Victoria Drummond, the first woman to become an engineer officer in the UK Merchant Navy. It was decided shortly after her death in 1978 that an award would be presented every four years to a woman who had achieved distinction in seafaring. It is an indication, perhaps, of how difficult it is to meet the standards required that only two women until today have ever received the award.

That makes Captain Margaret Pidgeon’s achievement in being the recipient of the award this year even more exceptional. Captain Pidgeon was born in Australia and began her seafaring career as a deckhand. She soon found that she enjoyed life at sea and wanted to get on in her chosen profession. She studied and became a junior officer, joining Swire Pacific Ship Management ten years ago.

Her career since then has been exemplary, resulting in steady promotion and a string of warm recommendations by her employers. She was appointed master of her first ship in 1997 and lives today in Auckland, New Zealand.

That is a very quick résumé of Captain Pidgeon’s career, but it is sufficient I think to give an indication of what she has achieved and also to show what can be achieved by anyone – male or female – providing that the person concerned has sufficient determination and is willing to work hard. Her record shows that it is still possible to start at the bottom of the seafaring ladder and work your way to the top, whether you are male or female.

I am particularly pleased to be invited to present the Victoria Drummond Award because this year IMO is celebrating the tenth anniversary of its Women in Development Programme. This Programme was started with a number of objectives:

- to integrate women into mainstream maritime activities;
- to improve women’s access to maritime training and technology;
- to increase the percentage of women at the senior management level within the maritime sector; and
- to promote women’s economic self-reliance, including access to employment.

The integration of women into shipping is now a regular item on the agenda of our Technical Co-operation Committee. The World Maritime University has always been keen to provide places for women and the IMO International Maritime Law Institute in Malta actually reserves half the places on offer each year for women. IMO not only believes that there is a place for women in the world of shipping but that women should be just as able as men to rise to the highest levels. I would like to thank NUMAST for establishing this prize and the fact that you did so twenty years ago indicates, I think, your commitment to this issue.

But our chief praise today must be reserved for Captain Pidgeon herself. When it comes to seafaring, the top job of all is to be master of your own ship, and that is what Captain Pidgeon has achieved. I would like to congratulate you, Captain, not only on my own behalf but also on behalf of the whole IMO community of 157 Member States.”
Gulf States agree to establish Port State Control regime

Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates have drafted a Port State Control (PSC) agreement, aimed at eradicating sub-standard ships from the region.

The nations, at a meeting in Manama, Bahrain held from 7 to 9 June 1999, agreed on a preliminary draft text of a Memorandum of Understanding (MOU) on Port State Control for the ROPME Sea Area (RSA) and agreed to draft complementary training programmes for its implementation.

ROPME is the Regional Organization for the Protection of the Marine Environment, and its members are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

The meeting was organized by the Marine Emergency Mutual Aid Centre (MEMAC), Bahrain in co-operation with the GCC (Gulf Co-operation Council) and IMO. Representatives from the United Nations Environment Programme Regional Office for West Africa (UNEP/ROWA) also attended.

The meeting follows the successful establishment of other regional PSC agreements in different parts of the world. The first was established by the Paris MOU in 1982, and since then others have been formed in Asia and the Pacific, Latin America, the Mediterranean, the Caribbean and the Indian Ocean. The first preparatory meeting towards establishing a PSC regime in West and Central Africa was held in February 1998.

Many of IMO's technical conventions contain regulations enabling Governments to inspect foreign ships visiting their ports to make sure that they meet IMO standards. This process is known as port State control, and experience has shown that it is most effective when co-ordinated on a regional basis.

A second meeting to continue preparations for establishing the ROPME MOU is to be organized in the future, but no date has yet been fixed.

MEMAC offered to host the interim Secretariat and Information Centre at the centre in Bahrain, but the matter will be decided at a future meeting.

Six regional agreements cover the world's oceans, with only three exceptions: West and Central Africa (the finalized MOU is expected to be adopted later in 1999); the ROPME Sea Area and finally the Black Sea, for which a first preparatory meeting has been scheduled for September 1999.

Port State control is seen as a crucial step towards the eradication of sub-standard ships. By allowing the inspection of foreign-flagged vessels, it can act as a safety-net when shipowners, classification societies, insurers or flag State administrators have in one way or another failed to do their job.

North-West European waters “special area” effective 1 August 1999

Discharge into the sea of oil or oily mixtures from any oil tanker (regardless of tonnage) and any other ship over 400 gross tonnage has been prohibited in the North-West European waters special area since 1 August 1999, under the 1997 amendments to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).

The North-West European waters cover the North Sea and its approaches, the Irish Sea and its approaches, the Celtic Sea, the English Channel and its approaches and part of the north-east Atlantic immediately to the west of Ireland.

MARPOL Annex I includes requirements to prevent the pollution of the marine environment by oil from ships. It includes measures to minimize harm from accidental spillages as well as measures to prevent or reduce operational discharges of oil.

Special areas under MARPOL 73/78 are established where the particular region has specific environmental concerns, for example due to high density of shipping traffic. In these areas, more stringent discharge standards for the discharge of oily waters are applicable, while the littoral States concerned must provide adequate reception facilities for dirty ballast and other oily residues.

Other special areas under MARPOL Annex I which have been established and have taken effect are the Antarctic, Baltic Sea, Black Sea and the Mediterranean.

Draft PSC regime for Black Sea

A draft regime for the Black Sea has recently been agreed. See the article on page 30.

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