

## **INTERNATIONAL SHIPPING – CARRIER OF WORLD TRADE**

### **Background paper**

#### **Globalization and international trade**

It may seem obvious to say that, today, we live in a global world, and it is certainly true that international trade among all the nations and regions of the world is nothing new. From the Phoenicians, through the Egyptians, the Greeks and the Carthaginians, the Chinese, the Vikings, the Omanis, the Spaniards, the Portuguese, the Italians, the British, the French, the Dutch, the Polynesians and Celts, the history of the world is a history of exploration, conquest and trade by sea.

But there is no doubt that we have now entered a new era of global interdependence from which there can be no turning back. In today's world, national boundaries offer little impediment to multi-national corporations: automobiles with far-eastern brands are not only sold but also assembled in Europe, while European brands are assembled and sold in North America; "western" energy companies invest millions of dollars in Asia and the far-east and the strategy and investment decisions they make can affect millions of people all over the world.

The high-flyers of the business world can cross oceans in just hours, communicating by email and telephone as they go. In the financial markets, brokers and traders have thrown off the constraints of time zones and distance and now access the markets all over the world via their computers. In the 21<sup>st</sup> century, emerging industries such as computer software, media and fashion have no obvious geographical dimension and recognise no physical boundaries. In today's consumer world, the same brands are recognised, understood and valued all over the world.

The process of globalization and the factors that have enabled it to evolve were recognized by the Secretary-General of the United Nations, Mr. Kofi Annan, in 2000. He observed, "Globalization has been made possible by the progressive dismantling of barriers to trade and capital mobility, fundamental technological advances, steadily declining costs of transport, communication and computing. Its integrative logic seems inexorable, its momentum irresistible."

Looking back into history, we can trace the stages through which we have progressed to arrive at this new world order. There was a time when, for any given community, the most important raw materials, the most important products and the most important markets were essentially local. But, as interaction between communities grew, trade developed and regional specialities, often founded on the availability of particular raw materials or on saleable skill-sets that had been developed over time, began to emerge.

As the world became more developed, proximity to raw materials and to markets became the factors that, above all others, shaped the world's economy and, in particular, the major trade patterns and shipping routes.

Eventually, the great seaborne trades became established: coal from Australia, Southern Africa and North America to Europe and the Far East; grain from North and South America to

Asia, Africa and the Far East; iron ore from South America and Australia to Europe and the Far East; oil from the Middle East, West Africa, South America and the Caribbean to Europe, North America and Asia; and now we must add to this list containerized manufactures from China, Japan and South-east Asia to the consumer markets of the western world. Global trade has effectively permitted an enormous variety of resources to be more widely accessible and has thus facilitated the widespread distribution of our planet's common wealth.

Today, international trade has evolved to the point where almost no nation can be fully self-sufficient. Every country is involved, at one level or another, in the process of selling what it produces and acquiring what it lacks: none can be dependent only on its domestic resources.

Global trade has fostered an interdependency and inter-connectivity between peoples who would previously have considered themselves completely unconnected. The potential benefits are clear: growth can be accelerated and prosperity more widespread; skills and technology can be more evenly dispersed, and both individuals and countries can take advantage of previously unimagined economic opportunities.

Shipping has always provided the only really cost-effective method of bulk transport over any great distance, and the development of shipping and the establishment of a global system of trade have moved forward together, hand-in-hand. Those with access to natural resources; those with the ability to convert those resources into useful products for the good of mankind; and those with a requirement and the wherewithal to utilize and consume those end products are all joined by the common thread of shipping. The eternal triangle of producers, manufacturers and markets are brought together through shipping. This has always been the case and will remain so for the foreseeable future.

### **Shipping and the global economy**

In selecting the theme for World Maritime Day 2005 – International Shipping - Carrier of World Trade – it is hoped that Governments, organizations, the shipping industry and all other stakeholders will be able to draw attention to the vital role that shipping plays in underpinning international commerce and the world economy as the most efficient, safe and environmentally friendly method of transporting goods around the globe. We live in a global society which is supported by a global economy – and that economy simply could not function if it were not for ships and the shipping industry.

More than 90 per cent of global trade is carried by sea. It is almost impossible to quantify the value of volume of world seaborne trade in monetary terms: however, the United Nations Conference on Trade and Development (UNCTAD) estimates that the operation of merchant ships contributes about US\$380 billion in freight rates within the global economy, equivalent to about 5% of total world trade.

Shipping trade estimates are usually calculated in tonne-miles – a measurement of tonnes carried, multiplied by the distance travelled. In 2003, for example, the industry shipped around 6.1 thousand million tonnes over a distance of about 4 million miles, resulting in a staggering total of over 25 thousand billion tonne-miles of trade.

Throughout the last century the shipping industry has seen a general trend of increases in total trade volume. Increasing industrialization and the liberalization of national economies have fuelled free trade and a growing demand for consumer products. Advances in technology have also made shipping an increasingly efficient and swift method of transport. Over the last four decades, total seaborne trade estimates have more than quadrupled, from less than 6 thousand

billion tonne-miles in 1965 to the latest full-year figure of 25 thousand billion tonne-miles in 2003.

As with all industrial sectors, however, shipping is not immune to occasional economic downturns – a notable fall in trade occurred, for example, during the worldwide economic recession of the early 1980s. However, although the growth in seaborne trade was tempered by the Asian financial crisis of the late 1990s, there has generally been healthy growth in maritime trade since 1993. Overall, between 1980 and 1999, the value of world trade grew at 12% per year, while total freight costs, during the same period, increased by only 7%, demonstrating the falling unit costs of marine transportation.

The transport cost element in the shelf price of consumer goods varies from product to product, but is ultimately marginal. For example, transport costs account for only around 2% of the shelf price of a television set and only around 1.2% of a kilo of coffee.

Shipping is truly the lynchpin of the global economy. Without shipping, intercontinental trade, the bulk transport of raw materials and the import/export of affordable food and manufactured goods would simply not be possible. Today's world fleet is registered in over 150 nations and is manned by over a million seafarers of virtually every nationality.

In the context of a global economy, the contribution made by shipping as a major industry in its own right is very significant, and increasingly so for the developing world. Maritime activity already provides an important source of income to many developing countries. Indeed, developing countries now lead the world in some of shipping's most important ancillary businesses, including the registration of ships, the supply of sea-going manpower and ship recycling. They also play a significant part in shipowning and operating, shipbuilding and repair and port services, among others.

As seaborne trade continues to expand, it brings benefits for consumers throughout the world through low freight costs that are continuing to decrease in real terms. Thanks to the growing efficiency of shipping as a mode of transport and to increased economic liberalization, the prospects for the industry's further growth continue to be strong.

### **The world fleet and modern ships**

The history of shipping is a glorious and proud one. There is no doubt, for example, that the magnificent square riggers of the era of sail or the early 20<sup>th</sup> century's prestigious ocean liners could stir the hearts of all those that beheld them. But the ships of today are just as worthy of our admiration, for shipping today is in another truly golden age. Ships have never been so technically advanced, never been so sophisticated, never been more immense, never carried so much cargo, never been safer and never been so environmentally-friendly as they are today.

Mammoth containerships nudging the 10,000 TEU barrier yet still capable of 25 knot operating speeds; huge oil tankers and bulk carriers that carry vast quantities of fuel, minerals, and grain and other commodities around our planet economically, safely and cleanly; the complex and highly specialized workhorses of the offshore industry; and the wonderful giants of the passenger ship world are all worthy of our greatest admiration.

In shipping today we can see many marvels of state-of-the-art engineering and technology that deserve to be ranked alongside the very finest achievements of our global infrastructure. We all marvel at the wonders of the modern world – skyscrapers, bridges, dams, ship canals, tunnels and so on. Although they all deserve our admiration, there should be no question that today's

finest ships are also worthy of the sort of recognition usually reserved for the great icons of land-based civil engineering – with one substantial difference in favour of the former: while skyscrapers, bridges, dams *et al* are static structures designed to withstand the elements coming to them, the very essence of marine vehicles sends them out to sea to face the elements at full force, alone in the vastness of the ocean. They should, therefore, be robust when built and maintained as such throughout their entire lifetime.

Ships are high value assets, with the larger of them costing over US \$100 million to build. They are also technically sophisticated: you are more likely to find one of today's modern vessels being controlled by a single joystick and a mouse-ball in the arm of the helmsman's seat than by a horny-handed bosun grappling with a spoked wheel; the chief engineer will probably have clean hands and the calluses on his or her fingers will be from tapping a keyboard rather than wielding a spanner. The crew accommodation will be clean, light and airy with modern recreation facilities; the food will be good; and you may well find the first officer exchanging emails with his family at home via the satellite communication system. Ships today are modern, technologically advanced workplaces and the work of IMO has played, and continues to play, an important part in shaping that environment.

As at 1 January 2005, the world trading fleet was made up of 46,222 ships, with a combined tonnage of 597,709,000 gross tonnes. The vast bulk of the fleet was made up of: general cargo ships (18,150), tankers (11,356), bulk carriers (6,139), passenger ships (5,679) and containerhips (3,165). Other ship types accounted for 1,733 vessels.

Although general cargo ships are still the largest single category, the trend among new ships is more and more in favour of specialization (although it could be argued that handy-sized, geared bulk carriers and versatile medium-sized containerhips, of which some have the ability to accommodate several different box sizes as well as palletised cargo are the natural successors of the old general cargo vessels); indeed, it is interesting to note that, in the most recent edition of the annual "Significant Ships" publication from the United Kingdom's Royal Institution of Naval Architects, not a single one of the 50 selected for 2004 was a general cargo vessel.

Tankers make up the second largest category. There are many different types of tanker, ranging from those carrying crude oil, through those built to transport various refined hydrocarbon products, to highly specialized ships that carry liquefied petroleum gas and natural gas. There are even tankers designed to carry cargoes such as fresh water, wine or orange juice. In size terms, the heyday of the tanker was the early 1970s, when the so-called Ultra-Large Crude Carriers (ULCCs), capable of lifting more than half a million tonnes of cargo, bestrode the oceans. After the oil crisis of the 70s, tanker owners became a little more modest in their ambitions and, since then, most large modern tankers are in the 200-300,000 tonnage range. These are still massive vessels and enormously expensive to build, but today's high price of oil means they can pay for themselves in a relatively short period of time.

The world's largest ship today is a 564,765 dwt tanker with an interesting and varied history. She was built in 1976 and having undergone some work to increase her load-carrying capacity, was finally floated two years later and named **Seawise Giant**.

At first, she operated in the Gulf of Mexico and the Caribbean Sea, but was then used for exporting oil from Iran during the Iran-Iraq War. In 1986, she was attacked but not sunk in the Strait of Hormuz and at the end of the war in 1989 she was repaired and renamed **Happy Giant**. In 1991, she was renamed again, this time to **Jahre Viking**.

In March 2004, the ship was sold and sent by its new owner to be refitted as a floating storage and offloading unit. There, she was given her current name, **Knock Nevis**, and plans have been made to operate her in the Al Shaheen oilfield in the waters of Qatar.

Perhaps more typical of the kind of large crude oil carrier being built today is the **Irene SL**, also built in Japan in 2004. Selected as one of the Naval Architect's 50 "Significant Ships" of 2004, **Irene SL** has a design deadweight of just under 300,000 dwt, a double-hull construction and is capable of handling three different grades of oil simultaneously in her 15 cargo tanks. Her cargo and ballast control systems, including the operation of pumps, valves and ullage measurement are all computerized. For safety, inert gas is pumped into the cargo tanks when they are empty and, to comply with the most recent requirements on emissions, the ship is fitted with a scrubber system to clean the exhaust gas.

Bulk carriers are often called the workhorses of the international shipping fleet. They can be thought of as simple, relatively unsophisticated but nevertheless highly efficient vessels that typically transport commodities such as grain, coal and mineral ores. If tankers provide the fuel that powers the modern economy, bulk carriers are responsible for moving the raw materials that are its lifeblood.

In terms of size, the world's bulk carrier fleet has three categories; ships of up to 50,000 dwt are known as "handy-sized"; ships of 50,000 to 80,000 dwt are known as "Panamax" (being the largest ships able to transit the Panama Canal) and ships of more than 80,000 dwt are known as "capesize". Bulk carriers embrace a number of variations – single or double hull, with or without their own cargo-handling equipment – but all are characterized by the huge hatch covers that can be rolled or lifted away to reveal cavernous holds beneath.

Because of the nature of the cargoes they carry – often heavy, high-density commodities – accidents involving bulk carriers have sometimes resulted in considerable loss of life. For this reason IMO has, over a long period of time, undertaken a great deal of work to improve the safety of this type of vessel. There is, for example, a special chapter on bulk carrier safety in the Safety of Life at Sea Convention, covering such topics as damage stability, structural strength, surveys and loading. In a casualty analysis undertaken recently by the International Association of Dry Cargo Shipowners – Intercargo – for bulk carriers for the ten years to 2001 it revealed that the number of ships, lives and tonnage being lost in this sector are all decreasing. Moreover, the report has specifically identified that IMO measures such as the Enhanced Programme of Inspections during Surveys and SOLAS chapter XII on bulk carrier safety, have reduced the risk of fatality on new and existing ships by 50 % and 25 % respectively.

Passenger ships come next in the world fleet league table. There are two basic categories – which can be summed up as "fun" or "function". In the latter category are those which are designed to move people and, often, vehicles on regular itineraries from one place to another as quickly and cheaply as possible (ie ferries) and, in the former, those which the passengers see as a leisure destination in their own right (ie cruise ships). In both categories, the size, sophistication and the sheer number of passengers that can be carried have reached mind-boggling proportions. Because of their individuality, as well as their resonance with the great ocean liners of a bygone era, these ships tend to be the best known and most recognized among the general public at large.

One of the finest modern examples is the **Queen Mary II**, built in France for Carnival Corp's Cunard in 2004. **QM2** is the largest, longest, tallest, widest ocean liner ever and has cost an estimated \$800 million dollars. She incorporates all the very latest international standards with regard to safety, security and environmental protection, offering her passengers an unparalleled opportunity to experience the wonders of ocean travel in the finest style.

With ships such as this, it is little wonder that, over the past ten or fifteen years, the cruise and passenger sector has become one of the industry's most vibrant sectors and is now a major force within shipping, both in terms of technological development and commercial success.

But the one sector which can be said to have transformed the face of shipping, certainly in the latter half of the 20<sup>th</sup> century, is that of container shipping. Unheard of before the 1960s, the container is now ubiquitous and is the standard unit of cargo for just about every form of manufactured item on the planet (there are exceptions: automobiles, for example, are transported in special ships designed solely for the purpose).

Today's giant containerships can carry more than 8,000 "boxes" and typically operate between purpose-built ports served by massive cranes that can load and unload containers at astonishing rates. Containership operators can offer fixed sailing schedules with tight delivery margins and these ships are now an integral part of the modern, multi-modal transport and logistics industry.

### **Safety and sustainability**

The sea has always been a potentially hazardous and dangerous working environment. Yet, ship operators today have new factors and new pressures to contend with. The structure of the global marketplace requires that goods and materials be delivered not only to the geographical location where they are required but also within a very precise timeframe. Today, goods in transit are carefully factored-in to the supply chain and, as a result, the transportation industry – which embraces both shipping and ports – has become a key component of a manufacturing sector which sets its store by providing a complete "door-to-door" service.

As a consequence, safety and efficiency have now, more than ever before, become two sides of the same coin: accidents are not only undesirable outcomes in themselves; they also have a negative impact on the supply chain that is at the heart of the new global economy. Seen in this light, IMO's responsibility to ensure the highest practicable, globally acceptable, standards that will improve maritime safety and security and, at the same time, help prevent marine pollution takes on a new dimension.

Shipping in the 21<sup>st</sup> century is the safest and most environmentally benign form of commercial transport. Commitment to safety has long pervaded virtually all deep sea shipping operations and shipping was amongst the very first industries to adopt widely implemented international safety standards.

From the mid-19th century onwards, a number of international maritime agreements were adopted. A treaty of 1863, for example, introduced certain common navigational procedures that ships should follow, when encountering each other at sea, so as to avoid collision, and was signed by some 30 countries. And the infamous **Titanic** disaster of 1912 spawned the first Safety of Life at Sea - or SOLAS - Convention, which, albeit completely modified and updated, and nowadays within the responsibility of IMO, is still the most important international instrument addressing maritime safety today, covering, among others, such areas as ship design, construction and equipment, subdivision and stability, fire protection, radiocommunications, safety of navigation, carriage of cargoes (including dangerous cargoes), safety management and maritime security.

The overall safety record of shipping has been improving steadily for many years. Take, for example, the numbers of ships lost in maritime casualties: according to casualty statistics

produced by Lloyds Register of Shipping (and latterly by LR-Fairplay), between 1966 and 1985 there were never fewer than 300 ships lost annually. The worst years, 1978 and 1979, together saw 938 losses at a ratio of 6.7 ships per thousand in the world fleet. In 1959, when IMO began, the ratio of vessels lost was running at 5 per thousand vessels. The number and percentage of losses began to dip significantly in 1980 and has continued on a downward curve ever since. In 1990, the number of annual losses dipped under 200, at 2.4 per thousand vessels. By 2000 the figure had further decreased to 167 at 1.9 per thousand ships. By 2004, the overall figure had approached the 100 mark.

In fact, relatively few ships actually sink at sea. The vast majority of so-called “losses” are actually those which are damaged and “written off” by the hull insurers as being beyond economical repair – described by underwriters as “constructive total losses”.

Furthermore, figures produced by the United Kingdom P&I Club, which insures around 20% of the world's ships, reveal similar reductions in insurance claims for third party liability, such as incidents involving personal injury, cargo damage, pollution or damage to property (e.g. other ships or port equipment). The decrease in the number of large claims is all the more significant given the increasing value of claims that are made.

Figures from the International Salvage Union also confirm that safety at sea has improved dramatically in recent years. According to them, the numbers of major ship casualties and significant pollution incidents have decreased sharply. In 1974 there were 26 oil spills in excess of 700 tonnes. In 2004, there were just five such spills.

As in all transport sectors, lives are sadly lost as a result of accidents. However, the loss of life in shipping is in fact relatively modest and the overall trend is one of reduction in the number of fatalities, which is all the more impressive in view of the growth in the number of ships in the world fleet. Figures from LR Fairplay relating to lives lost on cargo ships show a continuing downward trend – and this covers the entire international industry, which employs over one and a quarter million people, plus many more employed in coastal trades.

Shipping is one of the least environmentally damaging forms of commercial transport and, compared with the land-based industry, is a comparatively minor contributor to marine pollution from human activities. There has been a substantial reduction in marine pollution over the last 15 years, especially with regard to the amount of oil spilled into the sea, again despite a massive increase in world seaborne trade.

It is estimated that land based discharge (sewage, industrial effluent and urban/river run off etc.) and atmospheric inputs from land industry sources account for some 77% of marine pollution generated from human activities. In contrast, maritime transport is only responsible for some 12% of the total and further reduction of this figure is vigorously pursued. The shipping industry is also a relatively small contributor to the total volume of atmospheric emissions compared to road vehicles and public utilities such as power stations while atmospheric pollution from ships has reduced in the last decade. There have been significant improvements in engine efficiency. Improved hull design and the use of ships with larger cargo carrying capacities have led to a reduction in emissions and an increase in fuel efficiency. Moreover, a new annex to IMO's MARPOL (Marine Pollution) Convention entered into force this year, setting formal limits on sulphur oxide (SO<sub>x</sub>) and nitrogen oxide (NO<sub>x</sub>) emissions from ship-generated (bunkers or engine) exhausts and prohibiting deliberate emissions of ozone-depleting substances.

In the future, improvements in hull design are expected to lead to further reductions in fuel oil consumption with consequent reductions in air pollution. The latest marine engines give a 30%-40% reduction in discharges of nitrogen oxide, with reductions of 60% likely in the future.

In those sectors where it competes directly with other means of transport, shipping remains by far the most energy efficient. Research undertaken by the United Kingdom Government, for example, has demonstrated that energy consumption of road transport by truck lies in the range 0.7 to 1.2 Megajoules/tonne-km. By comparison, the consumption of a 3,000 dwt coastal tanker at 14 knots is about 0.3 Mj/tonne-km and that of a medium-size containership at 18.5 knots is about 0.12 Mj/tonne km.

Looking at the larger picture, there can be no doubt that transport and communication are crucial for sustainable development in the global environment. Sustainable development calls for economic and social systems in which the consumption of the environment and natural resources is reduced to a permanently affordable level, while economic output, which is a prerequisite to meeting society's material requirements, is maintained.

In order to gauge the sustainability of shipping, it is necessary to evaluate the contribution the activity as a whole makes to global economic and social prosperity and weigh that against any detrimental effect it may have on the environment and in other respects. The ideal situation must be to achieve the maximum possible contribution on the one hand, at minimal consequent expense on the other.

If shipping were to consume environmental capital (in the form of pollution) or social capital (by being an inherently unsafe activity that costs thousands of lives each year) or economic capital (perhaps through enormous insurance premiums and massive claims) to a greater extent than its overall positive contribution, then clearly it could not be considered "sustainable". However, in this respect, shipping has an excellent record. Furthermore, there is no viable alternative to shipping and so any steps that can be taken towards making shipping a safer, more efficient and more environmentally-friendly activity can only increase, overall, the positive contribution the activity makes to global sustainability and to sustainable development.

Accidents do, of course, unfortunately happen from time to time and, when they do, they may result in loss of life and damage to the environment. However, every occasion in which a ship – any ship – becomes involved in a pollution incident or a major casualty must be set against the literally billions of trouble-free, clean and economically efficient tonne-miles that shipping achieves every day, and all the consequent benefits that accrue from this activity.

### **Seafarers today**

On World Maritime Day, it is important to celebrate not only the vital contribution that ships and shipping make to the prosperity and well-being of us all but also the men and women who take on the onerous task of operating them.

The worldwide population of seafarers serving on internationally trading merchant ships today is estimated to be in the order of 400,000 officers and 825,000 ratings. The OECD countries (North America, Western Europe, Japan etc.) remain the most important source for officers although growing numbers of officers are now recruited from other Far-Eastern countries and from Eastern Europe.

As far as ratings are concerned they are, in the majority, recruited from developing countries, especially the Far East. The Philippines alone provides almost 20% of the global

maritime workforce. China and India are also significant maritime labour supply nations, with many seafarers from these countries enjoying employment opportunities on foreign flag ships operated by international shipping companies.

Given the enormous responsibility those in command have both for the very lives of those they carry on passenger ships, and those who serve with them and for the environment, not to mention the commercial success of the enterprise in which they are engaged, it requires a very special kind of person to take up the challenge of a seafaring career – especially these days when ships, because of their capacity to carry passengers in their thousands and cargoes in hundreds of thousands of tons, have the potential to cause enormous loss of life or environmental catastrophes of unimaginable dimensions.

The sea can be an unforgiving environment and, over the centuries, its rigours have encouraged seafarers to build a tradition of selfless endeavour and of high regard for others, particularly those who find themselves in difficulty or distress. It is a tradition that persists today – indeed, IMO is to establish a special award for courage at sea, to recognize those who, at the risk of losing their own life, commit acts of extreme bravery to rescue persons in distress at sea or to prevent catastrophic pollution of the environment thus exhibiting virtues of self sacrifice in line with the highest traditions at sea and the humanitarian aspect of shipping.

In 2005, we have also witnessed the humanitarian aspect of shipping at work in the tremendous response of the maritime community and industries, both in kind and in direct financial terms, to last year's dreadful Boxing Day tsunami tragedy in the Indian Ocean.

### **The work of IMO**

Shipping is perhaps the most international of all the world's great industries. The ownership and management chain surrounding any particular vessel can embrace many different countries; it is not unusual to find that the owners, operators, shippers, charterers, insurers and the classification society, not to mention the officers and crew, are all of different nationalities and that none of these is from the country whose flag flies at the ship's stern.

There is, therefore, an over-arching logic in favour of a framework of international standards to regulate shipping – standards which can be adopted, accepted, implemented and enforced by all. Without internationally recognized and accepted standards, you might have the ludicrous situation that a ship leaves country A bound with cargo for country B, fully compliant with country A's requirements for ship design, construction, equipment, manning and operation, only to find that country B has its own, different requirements. Clearly there has to be a common approach, so that ships can ply their trade around the world and that countries receiving foreign ships can be confident that, in accepting them, they do not place their safety, security and environmental integrity at an unreasonable risk.

The first attempts at such a common approach date back to well beyond the formation of IMO. But it was not until the establishment of the Organization after World War II that there was a recognized, international body to address such concerns. Since its formation, IMO's main task has been to develop and maintain a comprehensive regulatory framework for international shipping. Its mandate was originally limited to safety-related issues, but subsequently its remit has expanded to embrace environmental considerations, legal matters, technical co-operation, issues that affect the overall efficiency of shipping – such as how to deal with stowaways or how a cargo manifest should be transmitted to the authorities ashore; piracy and armed robbery against ships and, most recently, maritime security.

The direct output of IMO's regulatory work is a comprehensive body of international conventions, supported by literally hundreds of guidelines and recommendations that, between them, govern just about every facet of the shipping industry.

It is impossible to generalize with complete accuracy but, broadly speaking, IMO measures fall into three categories. There are those aimed primarily at the prevention of accidents, casualties and environmental damage from ships in the first place. This group comprises conventions setting standards for ship design, construction, equipment, operation and manning. Then there is a series of measures which recognize that accidents do happen, despite the best efforts of all concerned and which, therefore, try to mitigate their negative effects. Rules concerning distress and safety communications, the provision of search and rescue facilities and oil spill clean-up and response mechanisms, all fall into this category. The final group is concerned with the aftermath of accidents and, in particular, with establishing a mechanism for ensuring that those who suffer the consequences of an accident – and this refers, in particular, although not exclusively, to pollution victims – can be adequately compensated.

Although IMO does not have a massive field presence, the Organization as a whole does recognize that not all of its Members have an equal ability to implement the measures they agree to at IMO. Some lack resources, some lack expertise, some both. To this end, IMO has established an extensive technical co-operation programme, in which it tries to identify particular needs among the resource-shy Member countries and match them to offers of help and assistance from those that are better off. Typically, this might involve arranging training, workshops and seminars on particular subjects at national, sub-regional or regional level. IMO has also founded three high-level educational establishments in Sweden, Malta and Italy, specializing in maritime subjects, which are designed principally to offer advanced level education in maritime subjects to students from less developed countries.

The list of shipping-related topics that fall under the aegis of IMO is huge. But there are, of course, some things that the Organization is not. It is not, for example, a police force; it does not have the mandate or the capacity to put teams of inspectors aboard ships and check their compliance with international standards. It is not “operational” in the sense that it does not follow incidents and accidents at sea, such as groundings, collisions, explosions etc. on a 24-hour basis, and it is not a court; there is an International Tribunal for the Law of the Sea, in Hamburg, but this is established under the United Nations Convention on the Law of the Sea (UNCLOS) which is not an IMO Convention. IMO does not get involved with issues such as territorial waters, EEZs or fishing rights. Again, these are regulated by UNCLOS and fall within the remit of other international organizations.

To a considerable extent, this success story of shipping in terms of its improving safety and environmental record can be attributed to the comprehensive framework of rules, regulations and standards developed over many years by IMO, through international collaboration among its Members and with full industry participation. It is thanks in no small measure to the Organization's outcomes that all those millions of trouble-free tonne-miles referred to earlier are possible. Just about every technical aspect of shipping is covered by an IMO measure, from the drawing board to scrapyards. Every single piece of this all-embracing regulatory structure makes a contribution towards the overall sustainability of shipping and is a testimony to the highly responsible attitude that pervades the activity of shipping and the industry of shipping at all levels.

## **The public image of shipping**

Of all the sectors that make up the global transport infrastructure, shipping probably has the lowest public profile and the least representative public image. In the developed world, most people are familiar with the rituals and the frustrations of air travel; railway trains not only cross vast empty plains but also rattle through busy cities and suburban towns; and the lorries, cars and vans that crowd onto the road network are simply a part of everyday life. By contrast, most people never encounter a ship, except perhaps for the occasional trip on a ferry. Even in the case of coastal cities, as ships grew exponentially in size, the latter half of the 20th century witnessed a migration of maritime traffic from traditional port areas to purpose-built, dedicated sites away from the main centres of population. To all intents and purposes, shipping is “out of sight and out of mind”.

It is a pity, although perhaps inevitable in a world where good news is no news, that it is the accidents which tend to make the headlines and inform public opinion. An oil tanker, for example, can be either a menacing pollution accident waiting to happen, filled to the brim with a scarce natural resource that we should be preserving, not plundering; or, a modern, clean, safe and efficient carrier of the vital energy resource that provides the power we need in order to enjoy the comfort and living standards we expect from life in the 21st century - it just depends on which way you look at it.

The former European Union Transport Commissioner, Lord Kinnock, had some pertinent comments to make when he addressed the centenary celebrations of the shipping industry body BIMCO at IMO headquarters earlier this year. Among other things, he observed that “much of the world community, particularly its elected representatives, most of the time, in most cases, appear to be blissfully unaware of the significance of sea transport to the civilization, consumption and production of the world.”

Yet, shipping actually has a very positive story to tell. In terms of efficiency, safety, the environment and its contribution to global trade, shipping is unmatched by any other transport sector. Overall, quality is high and getting higher – and, yet, it always seems to be the small minority, at the lower end of the scale, that grab the headlines and – unfortunately – shape public opinions.

What tends to be overlooked is that vast supplies of seaborne oil, for example, are needed every day, literally to fuel the lives and lifestyles we have become accustomed to. The real picture is revealed in industry figures which show that 60 per cent of the annual world oil consumption of 3.6 billion tonnes is transported by sea and, of this, 99.9997 per cent is delivered safely.

## **The challenges ahead**

Gazing into a crystal ball to glimpse the future may be nothing more than a parlour game but even so-called experts with the benefit of experience, research and proper academic discipline have found trends in the transport industries notoriously hard to predict with any accuracy. In 1838, for example, the philosopher, physicist and astronomer Dionysius Lardner told the British Association for the Advancement of Science that “Men might as well project a voyage to the moon as attempt to employ steam navigation against the stormy north Atlantic Ocean.” In similar vein is the statement by Lord Kelvin in 1895 that “heavier-than-air flying machines are impossible” and that he would not have “the smallest molecule of faith in aerial navigation other than ballooning...”.

History may be the harshest of judges but few commentators today would consider it reckless to predict that no form of commercial transport is likely to emerge to challenge shipping as the carrier of world trade in the foreseeable future. Nevertheless, shipping cannot afford to be complacent and the shipping community is preparing to face up to some important challenges in the coming years.

There will, for example, undoubtedly be a continuing and growing emphasis placed on environmental protection, emanating from public pressure and expectations, and affecting the international regulatory framework adopted through IMO. Matters such as the ready supply of appropriate fuel to ensure compliance with the new air pollution requirements; the development of environmentally friendly hull coatings in compliance with the IMO's Anti-Fouling Convention and improved ballast water management methods will all have an impact. But the shipping industry is a responsible one and it will adjust to these new international requirements conscientiously and effectively.

As far as maritime security is concerned, it is appropriate to recall, once again, the words of UN Secretary-General Kofi Annan in his report to the up-coming September World Summit. He says: "We will not enjoy development without security, we will not enjoy security without development, and we will not enjoy either without respect for human dignity. Unless all these causes are advanced, none will succeed."

In the current global climate the challenge for the maritime community in this respect will be twofold: on the one hand, to ensure that security consciousness and heightened vigilance become so ingrained as to become second nature; and, on the other, to achieve an effective and workable balance between security measures, which inevitably impose a degree of inconvenience, and the free and uninterrupted flow of maritime traffic – which does, after all, underpin the entire global economy. Maintaining strategically vital sea passages, such as the Malacca Strait, as trouble-free shipping routes is of crucial importance to everyone, not just those involved in shipping. Failure in this respect could result in very serious consequences indeed.

Another important issue that has to be faced without delay is whether or not the physical assets and the infrastructures of the shipping and port industries are able to adapt quickly enough to keep pace with changes in global trading patterns and, more fundamentally, whether it is commercially sensible to equip for levels of activity and for patterns of activity that may or may not be long-lasting. Commercial considerations of this nature have always vexed the maritime industries and they will continue to be among the issues that will dominate them over the next decade.

Two other key challenges are also emerging. First, there is the question of how to secure the industry's future manpower resource – adequate in numbers, properly trained and of sufficient calibre to operate the increasingly sophisticated and valuable ships already in service and those that will emerge over the next decade. This will be crucial.

And, second, the innovative use of information technology to combine environmental, safety, operational and navigational systems and data in ways that we are only just beginning to explore, will have a major impact on shipping. The information revolution seems set to take hold of shipping over the next decade and will present new ways of blending economic and safety considerations into common applications.

One very important challenge that faces IMO, but which again has potentially far-reaching consequences, is the preservation of unity among the Organization's Members. As

stressed earlier on, the very structure of shipping, in which the prime assets physically move between countries, between different regions of the world and, therefore, between different legal regimes, makes internationally agreed and universally applied standards an absolute prerequisite. There is simply no room for unilateralism or even regionalism in the regulation of shipping – unless, of course, the need for regional standards has been recognized and sanctioned by IMO itself, such as in the case of the Stockholm Agreement ro-ro passenger ship damage stability standards or the MARPOL Special Areas and Particularly Sensitive Sea Areas (PSSAs), and so on.

IMO was founded to provide a global forum for Governments to meet, discuss, exchange views and conclude the adoption of international technical standards, which, once ratified through national legislation, these same Governments must respect and implement throughout. Through IMO, countries with maritime interests consent to be bound by international conventions on maritime safety and protection of the marine environment which they themselves develop and adopt (at the international (IMO) level) and ratify (at the national level). Indeed, on his appointment, IMO Secretary-General Efthimios E. Mitropoulos said that he considered the preservation of unity among the IMO Members as his paramount duty. A united membership finds it easier to make decisions by consensus and standards adopted by consensus stand a good chance of being implemented widely and effectively globally, which is what an industry as international as shipping needs.

## **Conclusion**

For IMO, creating the conditions in which international shipping can operate safely, securely and with a minimal impact on the global environment remains the Organization's mission. Through the diligence, expertise and commitment of all those involved in any capacity in the Organization, considerable, measurable success towards these goals has been achieved and will continue into the future.

Shipping affects us all. No matter where you may be in the world, if you look around you it is almost certain that you will see something that either has been or will be transported by sea, whether in the form of raw materials, components or the finished article.

The sea knows no international boundaries and, although most maritime enterprise takes place out of sight of land, the ship is as important now as it ever was, perhaps more so. Standards of living in the industrialized and developed world, the jobs and livelihoods of billions in the developing world: all depend on ships and shipping.

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