PAJ Oil Spill Symposium 2007 – Oil Spill Risks: Old and New

Keynote address - IMO's Response to Current Oil and HNS Spill Risks

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Abstract
Great strides have been made in maritime shipping over the past twenty years to address the issue of oil pollution from ships and, through the development of new international legislation, standards and codes of practice, as well as increased advocacy and capacity building, to effectively reduce both the risk and occurrence of major oil pollution incidents from ships. Though these improved measures have translated into a major reduction in the number of large-scale oil spills from ships, operational and accidental pollution continues finding its way to the sea and onto shorelines, threatening the rich diversity and well-being of coastal flora and fauna, as well as human health and safety, sometimes with devastating consequences.

The International Maritime Organization (IMO), as the specialized agency of the United Nations with a global mandate for the protection of the marine environment from pollution caused by shipping, discharges its commitment to protecting the marine environment from oil spills at the global level along four different but mutually supporting paths: prevention, preparedness and response, and technical co-operation. By developing and adopting international treaties such as MARPOL and its mandatory Codes, which applies to, amongst other things, the prevention of accidental and operational discharges of oil from ships and the OPRC Convention 1990, which addresses preparedness, response and co-operation for oil pollution incidents, flag States are provided with the necessary tools to eliminate the introduction of oil into the marine environment and, where this is not possible, effectively manage the consequences.

While these instruments have gone a long way towards managing and mitigating traditional areas of marine oil spill risks, the world is currently facing many new risks from activities such as offshore oil exploration, the expansion of oil pipelines, spills from land-based sources, and an increased demand for oil, leading to increased transportation and, correspondingly, increased risk. In addition, the threat of chemical spills, or spills of 'hazardous and noxious substances' as defined by the Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (HNS Protocol), presents a new challenge for which nations must initiate and/or strengthen existing capacity, as the risk of spills of such substances is also on the rise

The paper will expand on the above outline and provide a summary of the most relevant IMO instruments, as well as a more detailed account of the functions and activities the Organization performs under the OPRC Convention and the OPRC-HNS Protocol.

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Distinguished representatives of the Petroleum Association of Japan; kind hosts and organizers, ladies and gentlemen,

I am pleased to be here before you today and would like to begin by thanking the Petroleum Association of Japan, the Organizer of the 2007 Oil Spill Symposium, for its kind hospitality and for inviting me here to speak on behalf of the International Maritime Organization regarding the efforts IMO is making in connection with the prevention of, preparedness and response to, oil and HNS spills, as well as the prevention of air pollution caused by ship engine exhaust gases, and their associated risks. In doing so, I would also like to convey to you the best wishes of Mr. Efthimios Mitropoulos, Secretary-General of IMO.

The issue of oil spills into the marine environment has long been a major concern and the focus of international attention throughout the world. Very few things grab public attention or raise alarm quite like the vivid images associated with a major ship-source oil pollution incident. Photos and video footage of large offshore oil slicks, oil coated beaches and birds and wildlife in distress, covered in sticky black oil, evoke a sense of outrage and can, in an instant, draw the critical and often negative attention of the media and the public, as to how, in spite of major advancements, such events can still occur.

In the past thirty years, as the global environmental agenda has moved from the fringes of international attention to centre stage, shipping's environmental performance has come under sharper scrutiny than ever before. And under this scrutiny, with the experience and lessons learned from some of the largest oil spills the world has ever experienced, we have collectively, within the maritime sector and with the support of the petroleum industry, responded to these challenges to make maritime transport one of the safest and most environmentally sound forms of transportation.

Great strides have been made over the past twenty years through a variety of measures, such as the development of new international legislation, standards and codes of practice, as well as increased advocacy and capacity building, to effectively reduce both the risk and occurrence of major oil pollution incidents from ships. Though these improved measures have translated into a major reduction in the number of large-scale oil spills from ships, operational and accidental pollution continues finding its way to the sea and onto shorelines, threatening the rich diversity and well-being of coastal flora and fauna, as well as human health and safety, usually at considerable economic cost to countries, notably developing countries, that may be least able to afford the consequences.

The International Maritime Organization

The International Maritime Organization (IMO), as most of you know, is the specialized agency of the United Nations with a global mandate for the protection of the marine environment from pollution caused by shipping, among other very important functions such as maritime safety and security and, generally, the safeguard of life at sea. IMO discharges its commitment to protecting the marine environment from pollution at the global level along three different but mutually supporting paths: prevention, preparedness and response, and technical co-operation. By developing and adopting international treaties such as MARPOL and its mandatory Codes, which apply to, amongst other things, the prevention of accidental and operational discharges of oil from ships, and the OPRC Convention 1990, which addresses preparedness, response and co-operation for oil pollution incidents, Flag States are provided with the necessary tools to limit the

introduction of oil and other unwanted pollutants into the marine environment and, where this is not possible, to effectively manage the consequences.

In the words of Mr. Efthimios Mitropoulos, Secretary General of IMO: "One of the greatest challenges faced by anyone involved in environmental work is how to overcome the feeling that, because of the sheer scale of the problems to be addressed, individual efforts appear minuscule by comparison with the daunting tasks ahead."

To overcome this notion, continuous and collective efforts are necessary to effectively protect the marine environment from the adverse effects of shipping and, recognizing this, the IMO Council has selected environmental issues to be a major area of focus for 2007, selecting the theme for World Maritime Day as "IMO's response to current environmental challenges". To raise awareness, a host of activities and initiatives, forming part of a concerted action plan, will take place during the course of the year, beginning with an orchestrated, IMO-led campaign to educate people, to increase their awareness about the true, and deteriorating, state of the planet, and to underscore our collective responsibility as the maritime and petroleum sectors, and as responsible citizens, to make all necessary efforts, however small, to preserve the planet and its oceans for future generations.

Prevention – The probability side of the risk equation

Central to the Prevention-Preparedness-Response continuum, is the concept of 'risk'. Within the oil spill community, risk is defined as a function of the probability of an occurrence and the consequences of that occurrence (i.e. risk = probability x consequences). This definition of risk is the fundamental basis for the development of emergency management programmes, legal instruments, and voluntary codes aimed at protecting the marine environment from accidental oil and other pollutant spills and operational discharges.

Recognizing that risk will always be present, the intrinsic goal of prevention programmes is to first assess and quantify the relative risk of a given activity, in this case maritime transportation and petroleum exploitation, and then to manage that risk accordingly. The MARPOL Convention is a prime example of such a prevention instrument.

The International Convention for the Prevention of pollution from Ships, 1973, as modified by the Protocols of 1978 and 1997 relating thereto (MARPOL), is the main international convention aimed at protecting the marine environment from operational and accidental pollution by ships. Its six Annexes regulate the prevention of marine pollution by oil; noxious liquid substances in bulk; harmful substances carried by sea in packaged form; sewage; and garbage, as well as the prevention of air pollution.

According to the provisions of MARPOL, vessels should be designed, constructed and operated in an integrated manner, with the objective of preventing and, ultimately, eliminating all harmful discharges and emissions throughout their working life. This holistic philosophy encompasses all vessel operations and their possible impact on the environment, and provides increased opportunities for transport managers to choose environmentally-sound sea transport options.

If one considers MARPOL Annex I, the portion of the Convention that covers prevention of pollution by oil, several measures have been introduced to specifically address and lower the element of risk and, more importantly, to ensure oil tankers are constructed and operated in a way that reduces the amount of oil spilled from operational activities or in the event of an incident. This Annex has recently been amended to incorporate more stringent requirements for existing and newly-constructed ships, including the phasing-in of double hull requirements for

oil tankers; improvements to pump-room bottom protection on oil tankers exceeding 5,000 tonnes deadweight; a requirement for double bottom pump rooms for vessels constructed on or after 1 January 2007; and more stringent requirements aimed at reducing the accidental outflow of oil in the event of stranding or collision. Together, these measures will significantly reduce the probability portion of the risk equation, therefore significantly reducing the overall risk of oil pollution.

Recent amendments to MARPOL Annex II, which addresses the prevention of pollution from noxious liquid substances carried in bulk, have also entered into force at the beginning of this year and will also contribute to lowering the risk of damage to the environment or to human health.

Preparedness and Response – The consequence side of the risk equation

Good prevention initiatives can go a long way to reducing risk and the aim should be to reduce this risk as much as possible. At the same time, it must be recognized that, in spite of best efforts, oil spills will continue to occur, underscoring the need for a good state of preparedness to ensure a timely and effective response to limit the adverse consequences of oil and other pollutants spills.

The International Convention on Oil Pollution Preparedness, Response and Co-operation 1990 (OPRC 90) is the international instrument that provides a framework designed to facilitate international co-operation and mutual assistance in preparing for, and responding to, major oil pollution incidents and to encourage States to plan and prepare by developing emergency response structures in their respective countries, and by maintaining adequate capacity and resources to address oil pollution emergencies.

Specifically, OPRC 90 includes requirements for oil pollution emergency plans for ships, offshore units, sea ports and oil handling facilities operating in State waters, and procedures for reporting oil pollution incidents when these occur. The Convention also requires a national emergency system, including the development of a national contingency plan and the designation of a competent national authority and a national operational contact point(s). In addition, Parties to the Convention are obliged to have trained staff and a minimum level of pre-positioned oil spill equipment available at the State level or through bi-lateral or multi-lateral arrangements. Possibly the most important aspect of the OPRC 90 Convention is the international co-operation dimension, which enables a Party to request international assistance from other State Parties and, at the same time, to facilitate the receipt of such assistance in-country by expediting the processing of incoming personnel and equipment through customs and immigration during an emergency. Through the provisions concerning regional arrangements, States are urged to develop bi-lateral and multi-lateral agreements for preparedness and response. We have a very good example in this region, which illustrates how China, Japan, the Republic of Korea and the Russian Federation, with the support of NOWPAP-MERRAC and IMO, have agreed to assist each other in the event of a major oil spill under a regional arrangement and the associated regional contingency plan. A similar arrangement addressing hazardous and noxious substances is also being developed.

To assist countries in ratifying and implementing the OPRC Convention and its HNS Protocol with the overall aim of improving preparedness and response to oil and HNS incidents at national, regional and international levels, the Organization established the OPRC-HNS Technical Group, a subsidiary body of IMO's Marine Environment Protection Committee.

The Technical Group, for which IMO serves as the Secretariat, is composed of scientific oil and chemical experts from Member States and Observer Organizations from all over the world, which contribute to developing tools, resources, manuals and guidance aimed at facilitating implementation of the Convention and Protocol.

Of the many resources and guidance material developed by the Group over the years, I would wish to highlight one in particular, given the theme of this symposium, which is currently under development to address the issue of risk: this is the Manual on oil spill risk evaluation and assessment of response preparedness. This manual will assist countries in carrying out the necessary risk assessments to be used as the basis for identifying and implementing appropriate preparedness structures and response plans.

Emerging Risks

The introduction of various international instruments with rigorous construction standards, as well as enhanced attention to prevention, preparedness and response, has led to an encouraging decrease in the number and frequency of large-scale oil spills from ships. Notably, the number of spills exceeding 700 tonnes has gone down, on average, some 60-70 percent since the 1970s.

While the efforts made and the legal instruments, codes and best practices that have been adopted have been successful in managing and mitigating traditional areas of marine oil spill risk, the concept of risk is a fluid one. The world is currently facing many new risks and though many of these are not directly related to marine transportation, IMO's main business, the potential for resulting oil spills affecting the marine environment is high, with the preparedness and response requirements being the same as those for ship-source spills.

The demand for oil has increased substantially in recent years, and will continue to do so into the foreseeable future. Traditional consumer countries are demanding more petroleum than ever before and a number of newly emerging economies, notably China, is seeing its demand for petroleum soar. For example, China's oil imports are set to exceed 6 million barrels per day (mb/d) by 2020, more than six times the 1999 level, bringing its imports to an expected 50 billion cubic metres per year in 2020[1].

According to OPEC, crude oil production capacity, excluding Iraq, is projected to increase from 31.7 (mb/d) in 2005 to 36.9 mb/d by 2010[2]. To meet this escalating demand and to achieve such ambitious targets, the petroleum industry needs to engage in increased offshore oil exploration and, as near-shore reserves reach a critical stage, will increasingly expand operations to deep and ultra deep water exploration, which carries with it a much higher risk of oil spills.

Pipelines carrying oil and natural gas are also being constructed at a considerable pace, for instance, the Baku-Tbilisi-Ceyhan pipeline, the second largest pipeline in the world, is already in operation and, when fully completed, its trajectory will skirt the Caspian Sea, the Black Sea and the Mediterranean Sea, areas already under substantial environmental threat, without mentioning other risks endemic in a part of the world that has historically been, and continues to be, vulnerable to conflict.

This leads to another emerging source of risk, which is that of conflict itself. One readily recalls the raging oil well fires in the Persian Gulf arising from the first Gulf War in the early 1990s and the major concerns of a similar occurrence at the onset of the recent Iraq conflict, which

[1] Emerging Markets Online (www.emerging-markets.com)
[2] OPEC figures (www.opec.org)

fortunately did not materialize. However, the more recent hostilities in Lebanon did not have such a positive result. Instead, they resulted in a major oil spill and fire in a power plant, culminating in one of the worst spills ever to have occurred in the Mediterranean and in a country ill equipped to manage it, particularly in the midst of an armed conflict.

The risk from Hazardous and Noxious Substances

Although oil spills remain the largest threat due to the volumes transported, the risk of incidents involving chemicals or 'hazardous and noxious substances (HNS)' is on the rise, with the volume of chemicals transported by sea increasing considerably, even as we speak. These substances also generally represent a higher degree of hazard than petroleum products, not only to the marine environment, but also to human health. Acknowledging the growing threat from the carriage of HNS by sea, IMO adopted seven years ago the Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (HNS Protocol), which although follows the principles of the OPRC Convention, it applies to hazardous and noxious substances other than oil. The OPRC-HNS Protocol 2000 provides the same basic framework for co-operation and mutual assistance as provided by the OPRC Convention and will enter into force at last on 14 June 2007.

There are some particular challenges in addressing HNS, thus the higher risk element associated with them. Hazardous and noxious substances represent a category of compounds numbering in the millions, with widely varying properties and hazards and completely different behaviours. Consequently, response options may vary widely and must be considered on a case by case basis, often based on very limited information. Because many of these substances are flammable, explosive, corrosive or toxic, or a combination thereof, the threat to human health is a significant consideration, not usually a major factor when addressing oil spills. Because of the relative newness of the issue, maritime Administrations generally have very little, if any, knowledge and expertise related to HNS. This type of expertise typically resides in other areas, primarily with those who normally respond to inland chemical spills, such as emergency services (fire brigades), chemical industry-based emergency responders, and commercial contractors. In order to address these challenges, maritime administrations will be obliged to reconsider the issue from a much broader perspective and forge important relationships with non-traditional partners to maximize resources and effectiveness, or face developing costly capacity within their own organizations.

The risk from air pollutants and greenhouse gases

There is a growing concern virtually everywhere in the world that our global environment is, more than ever before in recent history, under unprecedented threat. There is also a genuine fear that, if we do not change our ways, the damage we will inflict on our planet will render it incapable of sustaining the way of life that much of humankind has grown accustomed to. Only one or two generations ago, concepts such as climate change, ozone layer depletion or greenhouse gas emissions were considered science-fiction material. Today they are perceived almost universally as very serious risks to the sustained well-being of mankind and the environment.

Recently, IMO Member Sates, based on new knowledge of the harmful impact that ship engine exhaust gases may have on the environment, and recognizing the availability of more recent technological developments that will enable significant improvements, have decided to revise MARPOL Annex VI, which addresses the prevention of air pollution from ships. The revision process is based on a holistic approach involving all maritime industry stakeholders in a process that acknowledges the need to encourage further innovation. And although shipping may only be held responsible for a small fraction of the total input of the polluting gases introduced into

the atmosphere and can, therefore, be considered as one of the most environmentally-friendly and energy-efficient modes of transport, every effort needs to be made to bring this particular risk to a level such that the current deteriorating trend may enter into reversal.

Additionally, the threat from global warming is far too serious to be ignored, as clearly illustrated in the recent report of the UN´s Intergovernmental Panel on Climate Change (IPCC). And, although MARPOL Annex VI does not cover emissions of greenhouse gases (GHG) from ships, IMO places great importance on the matter and, therefore, continues to work also on minimizing the effect of such emissions, by considering, among other possibilities, the sequestration of CO_2 streams in sub-sea geological formations, in the framework of the 1996 London Protocol.

Concluding remarks

In summary, IMO has, over the years, adopted a wide range of what could be considered as risk-control measures to prevent pollution caused by ships and to mitigate the environmental effects of any consequential damage. These are all positive proof of the firm determination of Governments and the shipping and petroleum industries to work together with the aim of reducing to the minimum the impact that shipping may have on our fragile environment.

While we must reconcile ourselves to the fact that the risk factors affecting oil spills are fluid and ever changing, and accept that risk can never be zero, we must strive to minimize this risk to the extent possible and be fully cognizant of the new and emerging risk areas that lie before us. Through focussed attention, close cooperation and firm commitment, I feel certain that these new challenges are not insurmountable and with technology advancing at such a phenomenal rate, it can only serve to help us in these continued efforts.

Again in the words of the Secretary-General, in essence, the global maritime community must continue embracing the notion that good environmental and social stewardship make good business sense; we must ensure that shipping and, indeed, the petroleum industry, are environmentally sustainable; and we must acknowledge that the cost of action, today, against the threats to the marine environment is far lower than the cost of inaction.

Ladies and gentlemen,

I am sure this symposium will provide us with an excellent platform to consider these and other new and interesting issues in greater detail and I look forward to fully engaging in that dialogue with you. So I shall stop here and take the opportunity to thank, once again, our kind hosts and to wish us all the very best for a fruitful symposium and a successful outcome.
