THE ROLE OF ITOPF
IN
MAJOR OIL SPILL RESPONSES

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The views expressed here are those of the author and do not necessarily reflect those of ITOPF Directors, Members and Associates.

INTRODUCTION

The International Tanker Owners Pollution Federation (ITOPF) was established as a non-profit making organisation in 1968 for the principal purpose of administering the TOVALOP voluntary oil spill compensation agreement. However, for more than 25 years ITOPF has also provided a broad range of technical and information services in the field of marine pollution. Since the termination of TOVALOP in February 1997, the provision of these technical services has become ITOPF's sole function.

ITOPF regularly contributes to national and international discussions on matters relating to marine pollution. Since 1980 it has had observer status at both the International Maritime Organisation (IMO) and the International Oil Pollution Compensation Funds (IOPC Funds).

This paper introduces ITOPF's core activities and then considers the role of ITOPF on site in a major spill in more detail.

MEMBERSHIP

ITOPF's Membership currently comprises over 4,000 tanker owners and bareboat charterers, who between them own or operate more than 8,000 tankers, barges and combination carriers with a total gross tonnage of some 189 million GT. This represents virtually all the world's oil and chemical tank vessel tonnage (including LNG and LPG carriers) and so it is exceedingly rare that the owner of any such ship engaged in international trade is not a Member of ITOPF.

With effect from 20th February 1999 the owners and bareboat charterers of most of the world's other types of ship became Associates of ITOPF. This now allows them to call on ITOPF's technical services on a similar basis to the tanker owner Members. The introduction of Associate Status recognises ITOPF's increasingly important role in responding to bunker spills from non-tankers (about 25% of all spills attended by ITOPF staff over the past 10 years, increasing to about 50% in the last eighteen months). There is also the likelihood that in future, technical advice will be more frequently required in relation to spills of hazardous and noxious substances.

ITOPF TECHNICAL AND INFORMATION SERVICES

Response to Marine Spills - ITOPF's highly experienced technical staff are at constant readiness to respond to marine spills anywhere in the world. This priority service is normally performed at the request of a pollution insurer (usually one of the major P&I Clubs) on behalf of one of ITOPF's Members or Associates. The International Oil Pollution Compensation Funds (IOPC Funds) also usually call on ITOPF's technical services for tanker spills with which they

are involved. Since the mid-1970s ITOPF staff have attended on-site at over 400 incidents in more than 80 countries.

In all cases ITOPF staff endeavour to co-operate and work closely with all the parties involved in a spill in order to try to reach agreement on response measures that are technically justified in the particular circumstances. This helps ensure that the clean-up is as effective as possible and that the minimum of damage is caused. As well as providing advice on technical issues, ITOPF staff has extensive knowledge of the workings of the international compensation Conventions and of the bodies that actually pay the compensation. They are therefore also able to give guidance to potential claimants on issues related to the admissibility of different classes of claims, as summarised in the IOPC Funds' Claims Manuals. This can help facilitate the prompt and amicable settlement of claims.

Damage Assessment and Claims Analysis - The objective assessment of the technical merits of claims for compensation is a natural extension of ITOPF's on-site attendance at the time of the spill. It usually involves assessing the reasonableness of claims for clean-up costs and the merits of claims for damage to economic resources. Adherence to the IOPC Funds' claims admissibility guidelines and to other established principles helps ensure a consistent approach irrespective of the location of the spill.

The assessment of claims for damage to fisheries - especially mariculture - is one area of ITOPF specialisation, which often requires the detailed analysis of complex claims, frequently in conjunction with other specialists who have particular knowledge of the affected area and the economics of its fisheries. ITOPF's advice is also regularly sought on environmental damage caused by spills and by shipping casualties in general. The organisation's technical staff have been actively involved in a number of damage assessment studies around the world conducted by independent scientists, as well as in specific restoration projects.

ITOPF's role in damage assessment and claims analysis is limited to providing objective advice on the technical merit of claims. The final decision on settling any claim always rests with those who pay the compensation, usually a P&I insurer and, in the case of tanker spills also the International Oil Pollution Compensation Funds.

Contingency Planning and Advisory Work - A major oil spill will present those in charge with numerous, complex problems, some of which will be non-technical in nature. There is a greater likelihood that prompt and effective response decisions will be made if considerable effort has been devoted in advance of any spill to the preparation of comprehensive and realistic contingency plans for different levels of risk. It is far better to try to resolve difficult issues resulting from conflicting demands in 'peace time'. Despite

there being the common goal of cleaning up the oil as effectively as possible with the minimum of damage to the environment and economic resources, such issues are likely to escalate in the highly charged atmosphere following a major spill.

Because of ITOPF's extensive practical involvement in spill response around the world, it is often asked by governments, industry, international agencies and other organisations to advise on the preparation of contingency plans and also to undertake other advisory assignments.

Training and Education **-** ITOPF organises and participates in numerous training courses and seminars for government and industry personnel around the world. It also frequently assists with oil spill exercises. Efforts are also made to educate all interested groups on the practical problems of dealing with major marine oil spills and their impact on marine resources.

Information **-** ITOPF has devoted considerable effort over the years to producing and disseminating practical information on oil spill response techniques. Among its publications are twelve Technical Information Papers and a book entitled, 'Response to Marine Oil Spills'. This book is available in English, French, Spanish and Korean and, thanks to the generous initiative of the Petroleum Association of Japan (PAJ), it is also available in Japanese. ITOPF's annual newsletter, *Ocean Orbit*, aims to keep Members and others around the world up to date with developments. Copies of the 1999 issue of *Ocean Orbit* will be available at the Seminar.

ITOPF maintains a comprehensive technical library, as well as a number of databases, including one on the incidence of oil spills from tankers, combination carriers and barges, and another on the availability of clean-up equipment and materials at specific locations around the world.

The ITOPF Web site at ***http://www.itopf.com*** contains information on the organisation and on various subjects connected with contingency planning, spill response and compensation. It also has links with other useful Web sites. A relatively recent addition to the Web site is ITOPF's series of Country Profiles, which provide a brief overview of the spill response arrangements in about 160 coastal nations.

ITOPF TECHNICAL ADVISERS' RESPONSE TO MAJOR OIL SPILLS

Technical Advisers **-** There are nine Technical Advisers on standby 365 days a year for response to ship-source oil spills. These members of staff all have scientific or technical, rather than seafaring backgrounds; chemists, marine biologists and engineers. In addition, we have two Technical Support Coordinators based in our office in London to support staff in the field. In a major incident these support staff may also be deployed in the field. Their role

is particularly concerned with the location, mobilisation and tracking of oil spill response equipment.

The Technical Advisers are divided into three teams. The teams are led by Dr Tosh Moller (Europe, Middle East and Africa), Dr Brian Dicks (Indian Subcontinent, Far East and Australasia) and myself, Hugh Parker, (North and South America and the Caribbean). The team structure is not related to spill response but is concerned with our internal management as well as distributing responsibility for maintaining contacts with the spill response community around the world. All members of each team are available to travel anywhere in the world to respond to a spill.

Notification **-** Upon learning of an incident every effort is made to collect all the information needed to evaluate its seriousness, usually while provisional arrangements are being made to fly at least one member of the ITOPF technical staff to the country concerned. As well as basic information on the incident itself, it will be vital to establish the type of oil involved and to predict its probable movement, behaviour and fate in order to evaluate the risk to coastlines and the likely impact of the spill on environmental and economic resources. In addition, the organisation and resources available to respond to the spill are reviewed and if necessary, an assessment made of the additional equipment that might be brought in to supplement resources available in the country concerned.

If this evaluation indicates that the oil will remain offshore where it will dissipate and eventually degrade naturally, it may only be necessary, and indeed feasible, for both ITOPF and the responsible authorities to monitor the movement and fate of the floating slicks to confirm the predictions. If, on the other hand, the evaluation of the spill suggests that the oil does pose a serious threat to coastal resources, one or more members of the ITOPF technical staff will travel to the site of the incident with minimum delay.

It is important that ITOPF is notified as early as possible after the incident has occurred. We maintain an emergency telephone voice mail service which activates a pager to notify the Technical Adviser on duty: **+44 142 691 4221**. Information is received from Lloyds casualty services, the ship-owner concerned, the P&I Club, government agencies or a number of other sources. ITOPF's early arrival onsite facilitates integration into the response organisation and provision of technical advice at the early stages of the incident when decisions made can affect the overall course of the response to an incident.

ITOPF role onsite **-** The role of the ITOPF staff member at the site of a spill varies according to the circumstances but is always advisory. Generally it will consist of advising all parties on the most appropriate clean-up response, with the aim of mitigating any damage to economic and environmental resources.

Staff have extensive first-hand experience of the effectiveness and potential environmental impact of different techniques for at-sea response and for shoreline clean-up in different geographic and climatic regions of the world and for different oils.

During the response to any spill the ITOPF staff member on site will monitor clean-up operations and investigate any damage to coastal resources such as fisheries and mariculture, and to the environment in general. This monitoring role is important in relation to the later assessment of claims for compensation on behalf of the shipowner, P&I insurer and, when appropriate, the IOPC Funds. The ITOPF technical staff member will normally be assisted by the P&I insurer's local correspondent, as well as local surveyors. In some countries, such as Japan, these correspondents and surveyors have considerable previous oil spill experience. Depending upon the particular incident it may also be necessary for the P&I insurer and, when appropriate, the IOPC Funds to engage other local or international experts to work alongside ITOPF staff to investigate specific issues such as fisheries and tourism.

Advice on reasonable measures **-** One of ITOPF's key roles on site is to provide technical advice to all parties on response measures that are likely to be considered *"reasonable"* and therefore admissible for compensation under the Civil Liability (CLC) and Fund Conventions (FC). While the test of reasonableness is incorporated within these Conventions, it is not defined. However, it is interpreted by the IOPC Fund Assembly to mean measures taken which on the basis of a technical assessment made at the time were likely to be successful in minimising damage both to the environment and to economic resources. Measures taken for purely political or public relations purposes which could be seen at the time to have no benefit in mitigating the effects of the spill are likely to be viewed as unreasonable. Even measures ordered or undertaken by government agencies are subject to the test of reasonableness in order for the costs incurred to be reimbursed under the CLC and FC regimes.

ITOPF provides this advice at any spill but during a major incident this role is particularly difficult because the demands of the public and the media exert much greater pressures on all parties involved in the response. In particular, this advice is often misinterpreted as having the intention of minimising costs but as can be seen from the above definition of reasonable, there is no such emphasis. ITOPF advice focuses on selecting and implementing response measures, which can be technically justified in the particular circumstances, presented by an incident. Some of the issues involved are discussed in more detail below.

At sea response - The evidence from a number of major spills demonstrates that operations to contain and recover oil at sea are extremely difficult and that it is unlikely that more than 10% of the quantity of oil spilled can be recovered. As far as ITOPF is aware there has been only one notable exception, the

VOLGENEFT 263 incident, (May 1990) in the Baltic Sea when all recoverable oil from a spill of 840 tonnes of waste oil was collected at sea by nine vessels from different Baltic nations. This was achieved with ideal weather conditions and with vessels working under well rehearsed response arrangements.

In most cases efforts made to respond to oil at sea have had little benefit in mitigating shoreline clean-up. In the recent ERIKA incident (December 1999) in France, an international response operation involving vessels from Germany, Holland, Spain, UK and France reportedly recovered some 1,100 tonnes of the 16,000 tonnes of oil spilled. Despite this, the west coast of France suffered severe contamination over some 400 km. In the SEA EMPRESS incident (February 1996) in Wales, UK, vessels from UK, Holland and France recovered less than 2% of the quantity spilled. On the other hand, the aerial application of dispersant during the SEA EMPRESS incident led to an estimated 60,000 to 110,000 tonnes of emulsified oil being prevented from reaching the shoreline. While dispersants can therefore play a significant role in the right circumstances, on many other occasions dispersant use may have no benefit, or worse may be both wasteful and harmful to the environment. For example, dispersants are not effective in dispersing heavy fuel oils in cold water or on heavily weathered oils. In the EVOIKOS incident (October 1997) in Singapore dispersants were found to be ineffective on a spill of 29,000 tonnes of heavy fuel oil after four days at sea. In such cases the viscosity of the oil is far too high to achieve any significant dispersion and so the use of dispersants would not be recommended as a reasonable response.

It is often argued that the cost/tonne of operations at sea is less than for shoreline clean-up. However, as described above, it is usually inevitable that despite all best efforts to respond to the spill at sea, the oil will reach the shoreline calling for a shoreline clean-up operation. The costs involved cannot therefore be considered as either those of an at sea response or shoreline clean-up but the cumulative costs of both.

The key factors in terms of shoreline clean-up are i) the length and ii) type of shoreline affected:-

i) If we consider the clean-up of a length of oiled shoreline, for example, a sandy beach of say 1 km, polluted with 10 tonnes of oil across a 5 metre swath, this would represent an oil thickness of 2mm. A similar situation along the same length of beach but with 20 tonnes of oil would result in an oil layer only 2mm thicker. Clearly, there would only be a marginal difference in effort and expense to remove 10 tonnes rather than 20 tonnes of oil. On the other hand, removing 10 tonnes from two beaches each of 1km would result in twice as much work.

ii) The clean-up of different shoreline types presents varying degrees of difficulty, for example, the relative ease of cleaning a sand beach contrasts

strongly with the difficulties presented by cobble beaches or environmentally sensitive saltmarshes. Thus in order for a response at sea to be technically justified it should present a high likelihood of significantly reducing the length of shoreline polluted or providing effective protection of shorelines which are likely to be difficult to clean or environmentally sensitive.

Shoreline clean-up - The issues surrounding reasonable shoreline cleanup are most often related firstly to the use of the most appropriate methodology for different shoreline types and sensitivity and secondly, to the point when these operations should be terminated. The expectation that every last trace of the spilled oil should be removed is obviously unrealistic. Not only could it never be physically achieved but also the removal of every last drop is not necessary for the restoration of the affected area to a state which allows the same *"use"* to be made of the area as before the spill. The normal *"use"* of the affected environment can be considered in terms of the *services* provided by the affected area in terms of natural habitat, amenity use and economic exploitation.

In contrast to environmental concerns, amenity concerns focus primarily on the aesthetic appearance of the coastline and its availability for recreational use. These concerns tend to drive clean-up measures to extremes, particularly at important tourist sites with the result that environmental considerations are often overridden and aggressive clean-up techniques are used to produce the desired results quickly. The desired level of cleanliness is to meet the perception that oil is no longer present, generally through the pragmatic test that any oil remaining cannot be seen, smelled or felt on sand or solid surfaces. Such an approach is usually restricted to the immediate area of high amenity value during the tourist season. A much greater reliance is placed on natural cleaning processes in more remote areas where there is no easy public access.

The assessment of four broad criteria provide a first approach to deciding when clean-up operations should reasonably be brought to a close:-

- Is the remaining oil a potential source of harm to environmentally sensitive resources?
- Does it interfere with the aesthetic appeal and amenity use of the shoreline?
- Is this oil affecting economic resources detrimentally or disrupting economic activities?
- Do the benefits of further cleaning outweigh the environmental and economic costs?

With negative answers to these questions, the need for continued clean-up must be open to question.

Other technical matters - Concerns about the potential economic impact of a spill arise due to uses made of the marine environment other than for recreation, such as fishing and coastal industries. In the case of fishing, the

removal of bulk oil from the sea surface might be considered sufficient to allow a fishery to be reopened. For shellfish and caged fish, it is the often concentration of oil in the water column which is of more concern. High concentrations present a risk of toxic effects and even low levels may taint or impart an oily flavour to the product. Some industries using seawater for cooling are able to tolerate quite high levels of oil in water without serious effects, but other processes demand very high water quality, for example, the production of salt from seawater. One clear difficulty throughout all sectors is the lack of guidelines in terms of the levels of hydrocarbon contamination that can be tolerated. This presents a particular difficulty when authorities shut down production without having a clear idea of what criteria must be met in order for the affected facility to be reopened.

Obviously issues such of these can have a very important impact on claims for business interruption. In addition to monitoring the impact on these economic resources, ITOPF Technical Advisers have to consider appropriate methods to mitigate the effects of the incident including providing advice on reasonable criteria for re-starting production.

CONCLUDING REMARKS

It has to be recognised that national agencies responsible for the clean-up operation have to achieve a delicate balance. A compromise has to be struck between the expectations of the public, politicians and the media reflecting concerns over the environment, the local economy and recreational resources, against the limitations of available clean-up techniques, the level of cleaning that is feasible and within the constraints of the costs of operation being reasonable. While ITOPF provide one source of advice, they cannot work in isolation and make their advice available to representatives of the national authorities with the aim of reaching a consensus on issues such as the point at which such operations risk being judged unreasonable.

For response at sea to be technically justified, ie. reasonable, it should offer a realistic chance of significantly reducing shoreline clean-up and minimising the risk of further damages. In circumstances such as bad weather conditions, poor logistic support or where the oil has become too scattered, the merits of such operations would be questionable. Most oil spill clean-up techniques have been in existence for two or three decades and experience has been built up from their use in spills worldwide. As result it is usually possible to judge whether or not a particular technique is appropriate and reasonable in given circumstances. Ideally ITOPF advisers work closely with national authorities to evaluate the success of the operations and when it becomes clear that no further benefit can be derived, will recommend their termination on technical grounds.

The ITOPF Technical Adviser on site has to provide advice on a wide range of technical issues presented by the spill. These include advice on effective

cleaning techniques, monitoring effects and damages to environmental and economic resources and advising on appropriate measures to mitigate such impacts. Often an unrealistic expectation of what can be achieved can lead to activities and expenditures that may not be considered reasonable and so inadmissible for compensation under CLC and FC regimes. The key role for the ITOPF Technical Adviser is to bring an understanding of the realities of oil spill response and to provide practical advice aimed at making the most effective use of the available resources and avoiding wasted effort and expense.

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ITOPF PUBLICATIONS:

TECHNICAL INFORMATION PAPERS 1-12 (1981-1986).

1 "Aerial Observation of Oil at Sea"
2 "Use of Booms in Combating Oil Pollution"
3 "Aerial Application of Oil Spill Dispersants"
4 "Use of Oil Spill Dispersants"
5 "Use of Skimmers in Combating Oil Pollution"
6 "Recognition of Oil on Shorelines"
7 "Shoreline Clean-up"
8 "Disposal of Oil and Debris"
9 "Contingency Planning for Oil Spills"
10 "The Effects of Marine Oil Spills"
11 "Fate of Marine Oil Spills"
12 "Action: Oil Spill"

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