

CLAIMS ABOUT OIL-SLICKS

DR IAN WHITE



MORE than once again, the world's media are highlighting the threat of marine pollution from oil, such as that resulting from the recent hostilities in the gulf. Later cases have included the tanker, which foundered off Genoa, and another accident off the Italian coast, jeopardising Mediterranean beaches — though, happily, the *Rendez-vous de Septembre* is unscathed in Monte Carlo.

However it was the incident of the *Exxon Valdez* off Alaska in March 1989

which really projected this problem into the public arena. The high costs associated with the *Exxon Valdez* as well as recent legislative developments, particularly in the United States, have also caused considerable concern among tanker owners, cargo interests, the insurance community and many other groups involved directly or indirectly in the vital international transport of crude oil and derived products. But one might ask whether tanker spills really are as frequent as the media like to portray. When they do occur, why can we not deal with them more effectively, and why are the costs associated with oil spills so high, especially when they occur in the USA?

A more sober and detailed assessment of such cases is made by the International Tanker Owners Pollution Federation (ITOPF) which was established in 1968 to administer the Tanker Owners' Voluntary Agreement concerning Liability for Oil Pollution — known in the trade as TOVALOP. This function is now rivalled by technical services, especially assisting and advising both members and their P&I insurers on the spot where oil is spilt. The unparalleled experience of combating major spills of oil stems from witnessing more than 200 incidents of marine pollution worldwide. Thus, ITOPF's team of technical experts is now providing contingency-planning as well as training — partly through videos and publications. All this has helped to curb spills of oil and the consequent pay-outs by underwriters.

Whilst there is a general perception that the number of major oil spills from tankers has

increased greatly in the last few years, this is not the case. The incidence of major oil spills decreased dramatically at the beginning of the eighties, and between 1980 and 1989 the annual average was about one third of that witnessed in the previous decade; (for the purposes of this exercise 'major' is defined as in excess of 5000 barrels or about 700 tonnes). A combination of reasons can be put forward for this decrease, including the impact of international conventions; better standards of operation; increased aware-

ness of the adverse consequences of oil spills; and a reduction in the amount of oil being transported. Whatever the underlying reasons, the fact is that the situation is not progressively getting worse. There is, of course, no room for complacency and both governments and the tanker and oil industries are continually seeking to improve vessels' design and to encourage safe operating practices in order to decrease further the incidence of major spills of oil.

Each time a major marine oil spill occurs, questions are inevitably asked about why, over twenty years after the *Torrey Canyon*, we remain unable to deal with spilled oil on the surface of the sea and thereby prevent it from fouling beaches and damaging wildlife and coastal resources. The truth is that the problem is far more difficult than politicians, the media, the public and even many of those within the tanker and oil industries are willing to acknowledge.

When oil is spilled on to the surface of the sea, it spreads very rapidly and after a few hours the slick will usually begin to break up to form bands of oil parallel to the wind's direction. Within a very short time, therefore, the oil will often be scattered within an area of many square miles with large variations in thickness being evident. Whilst this spreading and fragmentation can assist the natural removal of spilled oil, it also limits the possibility of an effective clean-up of an instantaneous release of oil.

Two main options are available for combat-



ing oil on the surface of the sea: containment and collection; and chemical dispersion. The use of floating booms to contain and concentrate floating oil prior to its recovery by specialised skimmers is often seen as the ideal solution since, if effective, it would remove the pollutant from the marine environment. Unfortunately, this approach suffers from a number of fundamental problems, not least of which is the fact that it is in direct opposition to the natural tendency of the oil to spread, fragment and disperse.

Thus, even if ship-borne containment and collection systems are operating within a few hours of an initial release they will tend to encounter floating oil at an extremely low rate. In addition, wind, waves and currents, even quite moderate ones, limit the effectiveness of collection systems on the open sea by making correct deployment difficult and causing oil to splash over the top of booms or be swept underneath.

The main alternative to containment and collection of floating oil is to try to enhance its natural dispersion through using chemical dispersants applied from ships or aircraft. This approach also suffers from a number of fundamental limitations of which the most significant is the ineffectiveness of the chemical dispersants against viscous oils and 'chocolate mousse' which forms naturally as the oil absorbs up to four times its own volume of water. In a number of countries the use of dispersants is also severely restricted on environmental grounds, although there is a considerable body of evidence that biological damage in the open sea as a result of their correct use is highly improbable.

Whilst containment and recovery and chemical dispersion are the main techniques for

dealing with oil at sea, others from time to time capture the media's attention. Burning; the use of sinking agents; chemicals that solidify the oil; and bacteria and nutrients to enhance natural biodegradation — these are among those that often appear particularly attractive. Whilst each can be shown to be effective under laboratory test conditions and in limited circumstances in an actual spill, in reality all have severe limitations on a large scale and none is the panacea that will prevent oil reaching shorelines.

Because of the considerable problems associated with combating oil at sea, it is rare that more than 10% of the original volume of a major spill is removed from the sea surface as a result of clean-up operations. It would be incorrect, however, to give the impression that nothing can be done to reduce the impact of oil spills on coastal resources, or that cleaning contaminated shorelines is necessarily as difficult and as expensive as it is often held out to be. Protection of sensitive coastal resources, such as mariculture facilities, power stations and ecological sites of particular importance, can be accomplished through the correct deployment of booms.

Nevertheless, in a major spill it will be impossible to protect all threatened areas with equal success and so some contamination of shorelines is virtually inevitable. Whilst this often leads to a public outcry and adverse publicity, many types of shorelines are easy to clean without the need for specialised equipment. For example, thick oil layers can usually be removed without difficulty from hard-packed sand beaches using a combination of well-organised teams of manual labourers assisted by road-graders and front-end loaders, as long as care is taken not to remove excessive

quantities of uncontaminated sand or to mix the oil deeply into the beach substrate.

Greater problems are caused where oil penetrates deeply into shorelines consisting of boulders, cobbles or gravel since it is rarely practical to do more than remove surface accumulations of oil which would otherwise provide a reservoir for the recontamination of other previously cleaned or unaffected areas. If amenity or wildlife concerns dictate a more thorough clean-up of such shorelines, the most effective technique is likely to be seawater flushing, with the collection and recovery of any oil that is released using booms and skimmers. On many occasions, however, it will be more appropriate to leave natural processes to remove any residual oil since the only other option would be to use environmentally destructive cleaning techniques. A similar approach of leaving the oil alone is usually also recommended for sensitive shoreline types such as salt marshes and mangroves which have been shown to be more easily damaged by the physical disturbance caused by clean-up teams than by the oil itself.

Whilst the technical aspects of dealing with oil spills are important, the effectiveness of the response to major pollution will very much depend upon the quality of the contingency plan and of the management of the various aspects of the clean-up.

Numerous difficult decisions as well as compromises will be required at all stages of any operation, and the widely differing requirements of a multitude of governmental and private organisations, as well as public and political pressures will have to be reconciled. This all calls for the overall responsibility for oil-spill contingency planning and response to be vested in a single body that has the authority to make and implement decisions in a speedy manner. In most countries this is given to an agency of government, and the owner of a tanker causing a spill will usually be expected to do little more than offer his full cooperation and, along with his third party liability insurer, meet the resulting reasonable costs of clean-up and any damage.

Various factors will determine the cost of a particular spill. The type of oil spilled is one of the most important since, in general, the more persistent and viscous the oil, the more widespread will be the contamination and the more difficult the clean-up. This is one reason why many of the most expensive spills based on a cost per tonne of oil spilled have involved heavy fuel oil or heavy crude oils.

The location of a spill will also have a considerable bearing on costs. The physical characteristics of the spill site, including the prevailing marine and meteorological conditions, will determine whether an active clean-up response at sea is necessary and also whether or not it is likely to be feasible.

Similarly, the ease of shoreline clean-up will depend upon the type of coast. The use made of the shorelines and coastal waters, as well as the time of the year will also be critical. Thus, contamination of an amenity area just before the start of the main holiday season or of a fishing ground just when major catches are expected will inevitably result in demands for a very prompt response and a high level of clean-up. On the other hand, it may be preferable on all counts to leave an isolated rocky coast to clean itself naturally through wave action.

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Many other factors will clearly have a major effect on clean-up costs, including the total amount of oil spilled and the duration of the release. Ultimately, however, the cost of dealing with a major spill will largely be determined by whether decisions are made primarily on technical grounds or whether other factors are paramount. Thus, on many occasions the

ineffectiveness of techniques to combat oil offshore and the inappropriateness of cleaning certain types of shoreline will be ignored and as many resources as possible will be deployed in an attempt to persuade politicians, the media and public that everything possible is being done to deal with the problem. The fact that the operations themselves may be more damaging to the environment than the oil is often not a persuasive argument. Equally, the requirement that every trace of oil must be removed to assuage public anger and to meet the demands of politicians is neither possible nor environmentally sound. The fact that it is also likely to result in exorbitant clean-up costs is unlikely to be a major concern for those making the demands unless, of course, they will have to directly bear the costs, in which case a greater degree of realism may prevail.

Whilst the need to be seen to be doing everything possible to combat a major spill will often be a high priority for governments and prominent companies involved in an incident, and consequently the root cause of the high costs of cleaning up, many other factors will play a part. The effectiveness of the organisation and degree of pre-planning and training, as well as the availability of technical expertise, clean-up resources, operators and logistic support, will all be contributory factors. So too will be the ease with which the enormous amount of oil and oily debris that results from clean-up can be disposed of — either locally or at some designated site.

As well as clean-up costs, most spills will result in claims for compensation for damage allegedly caused by the oil. For example, hotel owners will claim for tourists who cancel holidays and fishermen will claim if the oil on the surface prevents them from fishing or because they are unable to sell their catch as people believe it to be contaminated. The validity of claims from these and many other categories of people who allegedly suffer physical damage or economic loss as a result of spill will, in most cases, be relatively easy to determine and quantify. Far greater problems arise when compensation is sought for alleged damage to the environment and to non-commercial species of wildlife.

Every major spill of oil these days, be it from a tanker or other source, is likely to be labelled an environmental disaster, the like of which has never been witnessed before. Reports of the amount of oil spilled, its geographical spread and the impact on wildlife are often greatly exaggerated, especially in the initial stages. So-called experts appear on television predicting the end of marine life in the region for generations. The truth is that, whilst oil spills do cause local impacts on wildlife, the scientific community has long recognised that oil is by no means the most serious marine pollutant, and that most animal and plant populations recover

rapidly.

Yet a major spill is a spectacular event that is extremely easy to photograph. Pictures of oil-coated sea birds or otters quite understandably rouse strong emotions in the general public. As a consequence, there will often be pressure to establish rehabilitation centres to treat oiled creatures, despite the fact that the success rate is usually low and insignificant in terms of population numbers. In view of this the cost per individual animal returned to the wild is frequently enormous.

Further costs may arise as a result of actual claims for compensation for environmental damage, even though the animals and plants allegedly killed or injured have no commercial value. Since there is rarely any knowledge of what the populations were like before the event and little or no direct evidence of the real extent of any impact. The assessment of alleged damage is normally a largely theoretical exercise which frequently ignores natural population fluctuations and the likelihood of natural recovery.

The next stage is to determine some economic value for the allegedly damaged non-commercial natural resources. Various methods are employed to do this, all inevitably artificial but all invariably resulting in enormous claims. Since they have little or no relation to the real damage caused by the spill and since any money received is unlikely to be used to the benefit of the environment that has allegedly been damaged, this process is best regarded as punitive rather than compensation.

Whilst the USA is among the few countries routinely following this approach at present, there can be little doubt that others will be encouraged to follow suit, if it seems rewarding, even though the international conventions and related voluntary agreements on compensation regarding tankers do not currently recognise such types of claims. A more widespread tendency to seek compensation for environmental damage will not only further escalate the cost of oil spills but could contribute to the downfall of the unique international system of compensation that has been in operation for some 20 years and which has proven to be of considerable benefit to those who incur clean-up costs and who suffer real damage. ■

Jan White BSc PhD has spent four years as managing director of the International Tanker Owners Pollution Federation which he joined in 1977. A marine biologist, he graduated from Queen Mary College, University of London, in 1967 before lecturing at Royal Holloway. From 1971 until 1973 he was scientific administrator at the Natural Environment Research Council. He then spent four years as senior scientific officer at the Essex fisheries laboratory of the Ministry of Agriculture. He is the author of numerous papers on marine oil pollution.