



# PREPARATION AND SUBMISSION OF CLAIMS FROM OIL POLLUTION

TECHNICAL INFORMATION PAPER

15



# Introduction

A spill of oil can cause a financial loss for a variety of organisations and individuals. Despite the best efforts of those concerned, the resultant clean-up can be protracted and costly. Oil may arrive on a shoreline causing damage to property and economic loss, particularly affecting local fishing or tourism industries. Those placed at a financial disadvantage as a result of a spill of oil may be eligible for compensation.

This paper provides guidance on the information to be recorded and the documentation or other evidence required to support a claim. The process by which a claim should be compiled and submitted is also outlined. This paper is applicable primarily to spills of oil from ships although many of the points raised will be relevant to spills of oil from other sources.

## Overview

The payment of compensation for damage caused as a result of ship-source oil spills is dependent to a large extent upon the legal regime applicable within the country in which the incident or damage occurs. Many countries are signatories to one or more of a number of international compensation regimes designed to expedite payment of claims<sup>1</sup>. For countries that are not signatories to an applicable convention, national law will determine the compensation available<sup>2</sup>.

A detailed explanation of the regimes is beyond the scope of this paper. However, in most instances, the vessel's third party liability insurer, usually a Protection & Indemnity (P&I) Club will be the primary source of compensation. For tankers carrying persistent oil, the International Oil Pollution Compensation Funds (IOPC Funds) may be involved in the payment of claims. In other instances, compensation may be available from a national government fund. Irrespective of the expected source of compensation, the submission of claims will usually follow a defined path with the onus of responsibility resting with a claimant to prove their loss. To allow the bodies paying compensation a full understanding of the claim, sufficient and suitable supporting information should be provided.

Detailed information on the preparation and submission of claims can be found in a number of claims manuals appropriate to individual compensation regimes. Specifically, the IOPC Funds' Claims Manual<sup>3</sup>, while applying strictly to incidents involving the IOPC Funds, provides guidance helpful to many other jurisdictions, including incidents in non-Fund countries, involving vessels other than tankers, and other marine incidents. This ITOPF paper does not consider in detail



▲ *Figure 1: In the event of a spill of oil from a ship, compensation for losses incurred may be available from a number of sources, dependent upon the legal regime applicable.*

the processes by which claims are assessed or settled and is intended to supplement rather than replace the guidance given in the claims manuals. Claims for removal of oil remaining in a casualty or wreck are also not considered.

## The assessment process

In many instances, the claims settlement process is undertaken as a series of steps (*Figure 2*). Where a loss is anticipated, notification should be made at the earliest opportunity, supported by information on the quantum of the loss. It is the responsibility of the claimant to provide adequate evidence of their loss and further information and evidence may be requested during the claim assessment process. The assessment may therefore take the form of iterative exchanges between the claimant and those responsible for settling the claim, until the process has been completed. In most cases, agreement on the amount of compensation to be paid is reached on an amicable basis, without the need for legal action and associated costs.

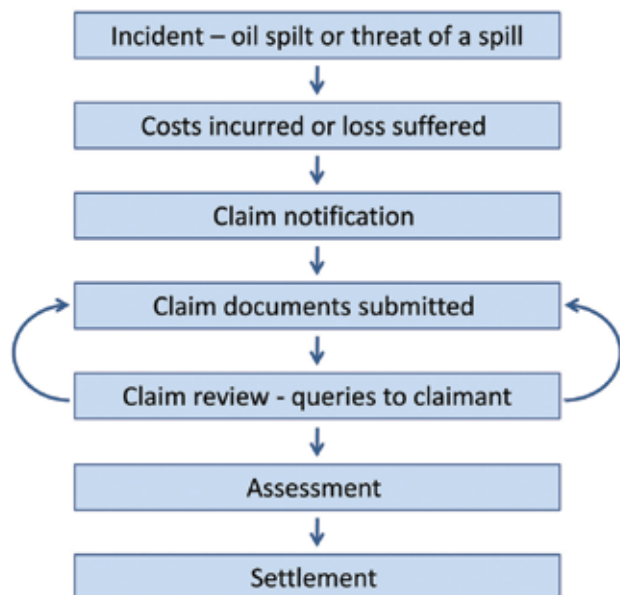
## Notification of claims

Delays often occur between a loss being incurred and the claim

<sup>1</sup> *International schemes include the Civil Liability and Fund Conventions applicable to spills of persistent oil from tankers, the Bunkers Convention applicable to spills of bunker oil from ships and the HNS Convention (not yet in force) applicable to spills of non-persistent oil from ships. The Convention on Limitation of Liability for Maritime Claims may also be relevant (see [www.imo.org](http://www.imo.org)). The definition of persistent oil can be found in the separate ITOPF paper on the Fate of Marine Oil Spills.*

<sup>2</sup> *for example, the US Oil Pollution Act 1990.*

<sup>3</sup> [www.iopcfund.org/publications.htm](http://www.iopcfund.org/publications.htm)



▲ *Figure 2: The typical steps by which straightforward claims are settled. Incidents or claims that are complex may involve other steps not shown, for example surveys and iterative assessments.*

being submitted. For example, time may be required to compile a claim involving the costs incurred by different organisations or to collate supporting documentation from various sources. It is to the benefit of all parties that formal notification is made by a claimant to the vessel owner, the relevant P&I Club or other insurer of an intention to make a claim, as soon as practicable after losses are incurred. Dependent upon the circumstances of the incident, formal notification to the IOPC Funds or relevant national compensation scheme may also be required. In large-scale incidents, advice on the process for notification of claims may be provided in local media and a claims office may be established locally to facilitate the process.

If appropriate, the body paying compensation will send a representative to site. Often, this representative will be from the insurer's local correspondent or from a local surveying company. In some jurisdictions, other organisations, for example, spill management teams, will be mobilised. The insurer or IOPC Funds may also appoint experts, including ITOPE, to provide advice to those involved in a pollution

response and affected by the incident, although it is important to note that advice provided by experts is not binding on those determining compensation.

A clear advantage of early notification of a claim is that advice and assistance from appointed experts can be provided in a timely manner, for example on appropriate clean-up techniques and on measures to mitigate economic losses. Furthermore, surveys can be conducted promptly at the time an alleged loss is occurring. Guidance may also be provided on the admissibility of potential claims, the types of evidence required to support a claim and how a claim should be formulated and submitted, thereby helping to avoid subsequent difficulties in verifying the nature and quantum of the loss and preventing unnecessary delays in the settlement of claims. Additionally, the bodies paying compensation can gain an early indication of potential losses, an important requirement if the total of expected claims has the potential to exceed the amount of compensation available.

## Preparation of claims

The type of information required to support a claim depends upon the type of loss, in particular whether the loss is incurred as a result of the cost of responding to the incident or as a result of the effects of the oil on, for example, a tourism or fisheries business (*Figures 3 and 4*). While the quality of the documentation and other information required in support of a claim depends to a large extent upon the measures taken to record and preserve this information at the time the loss is incurred, for claims for economic loss, records of income and profit prior to an incident may also be required. In simple terms, for all claims, answers to the following questions may be required:

- who** is it about?
- what** happened?
- why** did it happen?
- when** did it take place?
- how** did it happen?
- where** did it take place?

As time passes and unless records are meticulous, the



▲ *Figures 3 and 4: Claims for the costs of labour intensive clean-up and losses associated with fishing operations require different types of supporting documentation.*

availability of information to support claims, verify losses, and answer these questions is likely to diminish. Settlement of a claim may require time and if key personnel are no longer available to answer queries during this period, the records may be the sole source of information. Similarly, unless evidence is preserved correctly, substantiation of a subsequent claim may not be possible, for example if biological samples are not preserved and recorded properly, evidence of damage to mariculture could be compromised.

It is important to note that under the International Conventions, the losses claimed should be technically reasonable. As such, a claim should be based on the actual costs or losses incurred and should not result in an excessive level of profit. Furthermore, a claim for response costs should reflect the activities undertaken to achieve an effective and efficient response.

The preparation of claims for four categories of pollution damage are considered below: clean-up and preventive measures, property damage, economic loss and environmental monitoring, damage and restoration.

## Clean-up and preventive measures

For many oil spills, significant costs will be incurred in the initial, emergency phase of a response as a result of deploying resources to protect sensitive areas and to recover the oil. In later phases, many of these same resources, especially personnel, may be used for cleaning damaged property and for undertaking subsequent environmental studies. While this section of the paper focuses primarily on claims for clean-up and preventive measures (collectively termed clean-up), much of the information, particularly on record keeping and the applicability of rates for personnel and equipment, is relevant to other categories.

The process of preparing a claim for clean-up costs is undertaken generally in two stages:

- keeping detailed records at the time the costs are incurred; and
- linking the records and costs with the rationale for the activity at the time the claim is compiled, usually when the response has been completed.

In some circumstances, for example when clean-up operations are protracted, the parties may agree to the submission of interim claims prior to the completion of activities. The process of preparing a claim is considered in detail below.

## Record keeping for clean-up

In the initial emergency phase, the need to record the information necessary for the subsequent reimbursement of costs is commonly overlooked as operational personnel will be occupied on other tasks focusing on the response. Nevertheless, the importance of accurate records cannot be over-emphasised. Reliance on memory for subsequent claims compilation is not realistic, particularly during a lengthy and fast-moving response. To be most effective, the recording of information should be the responsibility of all

personnel, with the gathering of the information necessary to support a claim allocated to a dedicated person or group with a good understanding of the structure and accounting practices of the claimant organisation.

Maintaining comprehensive and accurate records at the time costs are incurred creates plausible evidence of expenses and will ease the process of compiling the claim as well as facilitate answering any queries that may be generated during the subsequent assessment process. In organisations that have a fully prepared and frequently exercised contingency plan, record keeping may be instinctive, logical and ordered, while for others, the task may be overwhelming and less structured. As a consequence, organisations that have anticipated the task will be better prepared.

The period necessary for completion of the response and the quantity and extent of the documentation generated as a consequence of this work is difficult to predict. As a result of the potentially protracted nature of oil spill response, records should be kept in a logical order from the outset of an incident, for example by date, activity, clean-up site or sub-contractor, in order to assist compilation of the claim. These records may serve several important objectives, including some that may not be foreseen at the start of a response, such as investigations or evaluations of the incident response for updating and improving contingency plans. Consequently, it is often preferable to aim to record more information rather than too little.

A claim for clean-up that is considered to be well supported will usually include five generic types of information:

- records of information received;
- records of meetings and decisions;
- records of activity;
- records of expenditure; and
- records of effectiveness and results of actions.

Each is considered in further detail below.

## Records of information received

Information is key to effective management, command



▲ *Figure 5: Minutes of any meetings held to discuss and decide upon response options should be included within documentation to support a claim.*



- fuel usage;
- the type and amount of response equipment or oiled waste on-board;
- the activity being undertaken and its duration;
- maps, images and narrative of the work done; and
- the type and characteristics of the aircraft or vessels, with aircraft call signs or vessel names.

These records will allow a greater understanding of the involvement of the resource in the response and can be particularly useful when large numbers of vessels are mobilised to assist from a number of different ports (*Figure 6*).

Timesheets, work records or other logs of activity of personnel and equipment are an important component of supporting documentation required to substantiate claimed expenditure. For shoreline clean-up, the affected area is often divided into individual worksites, delineated typically by natural features, such as individual bays or estuaries. Supervisor reports for each worksite (*Figure 7*) should be used to record details of the site and everything that is on site for future reference, including the:

- name of the worksite and/or its location relative to local landmarks;
- type of shoreline, for example sand beach, harbour wall or mangrove;
- dates and hours of activity;
- state of the tides;
- names, affiliations, roles and responsibilities of the members of each clean-up team;
- level of oiling of the work site (see the separate ITOFF paper on Recognition of Oil on Shorelines);
- methods of clean-up undertaken;
- progress made during the period of the report (for example, the length of beach cleaned);
- type and amount of consumable items used (for example, sorbent, personal protective equipment (PPE) and hand tools);
- type and amount of waste collected; and
- equipment and other resources employed on the work site, such as skimmers, pumps, cranes, trucks, excavators,

vessels and waste storage containers, together with the providers of each resource. Specialised equipment should be described to allow a clear understanding of its use.

Personnel, and much of the equipment used in a response, are highly mobile and may move between several sites in a day, for example workers may be deployed on various tasks to accommodate tides, and waste skips may be transferred regularly between the shoreline and waste storage or disposal areas. In an incident covering a large area or long distance, assigning a code or tag to a particular resource and logging electronically the movements of that resource may simplify the task of determining how, when and where a particular resource was used. Constructing a record of activity that includes all resources and eliminates double-counting may be assisted by the use of a Geographic Information System (GIS) with output from the GIS submitted in support of a claim. With suitable computer programs, the resultant data may also allow the generation of associated spreadsheets that can facilitate compilation of a claim. However, electronic systems should be used only where a clear benefit in the management of the response or the costs of claim preparation can be shown.

Waste should be tracked as it is generated from clean-up operations, for example from each pollution response vessel and each work site, through temporary storage to final disposal or treatment. This information can assist with the management of the response by providing a clear idea of the clean-up work undertaken and of the overall amount of waste generated. Weighbridge tickets and waybills or consignment notes will allow the amount of waste transported to be verified. Records of pump throughput on road tankers, on-board recovery vessels or at waste receiving stations will allow the volume of liquid waste to be recorded.

Wildlife cleaning and rehabilitation stations may require considerable resources and logistics to operate. Comprehensive records should be kept of the scale of the operation, including the personnel involved, any work undertaken to fit out the premises and of the equipment, protective clothing, medicines, food etc. provided for the care of the wildlife and for the workers (*Figure 8*). An inventory of the animals or birds handled by the station should also be maintained.

Photographs provide an invaluable record of the level of oiling, the work undertaken and the resources involved at a particular site. Labelling images with the date, time and location will assist with subsequent cataloguing and identification of activities.

### Records of expenditure

Even for a minor incident, a pollution response may involve a number of different organisations. In addition to utilising owned resources, each organisation may spend relatively large amounts of money to purchase or contract-in goods and services. The resulting trail of expenditure, including tender documents, purchase and sales orders, charter or hire agreements, contracts, invoices, delivery notes, vouchers, receipts etc, can be complex and can number many hundreds or thousands of individual documents. Consequently, it



▲ *Figure 8: Cleaning and rehabilitation of wildlife can generate significant claims. Costs may include heating and lighting of the facilities, protective clothing for the workers and food for the birds.*

is important that an orderly system for logging and filing associated records is established as quickly as possible after the response commences.

Electronic spreadsheets and databases allow for rapid entry of data and calculation of costs but care should be taken to ensure that the supporting paperwork associated with the expenditure is referenced in a logical way. Paperwork scanned electronically can be linked directly to the relevant costs within a database although claimants should retain original documents to allow for future reference.

In many organisations, for example local government or private response companies, an established accounts department will serve to record expenditure. However, a large incident can quickly overwhelm the existing capability and temporary assistance may be required to ensure that the information is recorded and logged with minimal delay.

Dependent upon the size of the incident, an accurate indication of the overall cost of the response may not be known fully for some time. However, the ability to obtain an estimate of the costs incurred on a regular basis throughout the period of the response is often needed for planning and notification of claims. Establishing a cost-tracking system from the outset of a response can enhance operational efficiency and can allow identification and rationalisation of areas of high expenditure.

### Records of effectiveness and results of actions

The sources of information described above will contribute to an understanding of the effectiveness and the results of activities. For example, use of manpower and equipment, as noted in the minutes of meetings, on timesheets, etc. will allow the effort and the results of that activity to be determined. Other sources, such as reports from site surveys, post-spill monitoring and reviews of the incident and response will also assist.

### Compiling a clean-up claim

A variety of different organisations and individuals may be



▲ Figure 9: Military personnel mobilised to assist in shoreline clean-up. A claim for the associated costs of their involvement may be made directly by the army or as part of a wider government claim.

entitled to make a claim for compensation following an oil spill that can lead, in the case of a large incident, to many hundreds or thousands of claims.

The arrangement and co-ordination of claims preparation will be important to ensure costs are not omitted or duplicated. In some cases, lead organisations may elect to submit a single claim incorporating the claims of individuals and other organisations (Figure 9), and this can be helpful to those charged with assessing the claims. Nevertheless, in many instances, the incorporation of separate claims may be inappropriate or claimants may prefer to submit individually. In such instances, the claims submitted can vary enormously in complexity and quality.

Once all the components of the claim have been identified, the relevant supporting paperwork can be collated and the claim compiled. The total amount claimed can be presented in a covering letter, explaining the basis of the claim and the involvement of the claimant in the response. This total will be the sum of the individual components of the claim and can be summarised in a single table at the front of the supporting documentation (Figure 10).

By way of example, a claim submitted by a national authority covering the entire period of the response, may list the components of the claim according to activity in the air, at sea,

|                                                                                                               |                  |
|---------------------------------------------------------------------------------------------------------------|------------------|
| <br>National Coast Guard |                  |
| Claim for costs of the response to release of oil from GROUNDED BULKER                                        |                  |
| Incident date: 1/9/2011<br>Date claim submitted: 12/1/2012                                                    |                  |
| <b>Coast Guard Resources</b>                                                                                  |                  |
| <b>Aerial Activity</b>                                                                                        |                  |
| 1 Helicopters and other aircraft.                                                                             | 139,975          |
| <b>Maritime Activity</b>                                                                                      |                  |
| 2 Coast Guard cutters and launches                                                                            | 308,576          |
| <b>Response resources</b>                                                                                     |                  |
| 3 Coast Guard vehicles and equipment                                                                          | 699,293          |
| <b>Personnel</b>                                                                                              |                  |
| 4 Salaries for Coast Guard personnel                                                                          | 301,393          |
| <b>Expenses</b>                                                                                               |                  |
| 5 Expenses of Coast Guard personnel                                                                           | 55,621           |
| <b>Other Resources</b>                                                                                        |                  |
| <b>Sub-contractors</b>                                                                                        |                  |
| 6 Costs of sub-contracted equipment                                                                           | 100,145          |
| 7 Costs of sub-contracted personnel                                                                           | 379,623          |
| <b>Miscellaneous</b>                                                                                          |                  |
| 8 Other third party services and purchases, including consumable items                                        | 111,102          |
| <b>Total</b>                                                                                                  | <b>2,095,728</b> |

▲ Figure 10: Example summary of a claim for the cost of clean-up from a national coast guard agency, illustrating the typical components of a claim.

on the shoreline and in the command centre. Alternatively, a claim by a local authority or shoreline clean-up contractor may divide the claim according to individual worksites or into periods of work. In many instances, the components of the claim are ordered according to the costs of owned and contracted equipment, employed and contracted personnel, associated personnel expenses, purchases of consumable items and third party services. In any event, costs should be cross-referenced to the worksites where the resources were deployed.

A detailed breakdown of each component of the claim, listing individual items of equipment or workers, should be listed in a separate table (*Figure 11*), with reference to relevant supporting documentation. Additional tables may be necessary, dependent upon the complexity of the claim. The supporting documentation should be collated according to the component of the claim to which it relates and numbered sequentially or otherwise identified and referenced.

The following sections cover potential components of a clean-up claim and describe the basis upon which claims for reasonable costs might be constructed.

### Owned resources

Generally, the costs for use of equipment owned by a claimant will be determined by multiplying the period of use by the

unit rate for that period. Examples may include skimmers provided by a government agency, vessels owned by a spill response contractor or salvage company, or cranes and excavators owned by a construction company. The period of use can be determined from appropriate logs or timesheets.

Claims for use of aircraft are usually based on the number of flying hours with additional landing charges, crew expenses etc. as appropriate. If aircraft are not able to fly because of poor weather or other reasons, a daily stand-by charge may be applicable. For military aircraft, a comparison of local market rates for comparable commercial aircraft may provide a suitable hourly charge.

The costs of vessels are commonly based on a daily or hourly rate, dependent upon the duration of use (*Figure 12*), which is usually linked to the annual costs of running the vessel. The amortised capital value of the vessel, with maintenance, survey and running costs, crew wages and insurance, would be divided by the number of days in the year that the vessel would be available for service to achieve an appropriate daily cost. In most cases, fuel would be charged according to the amount consumed during operations. This ensures the claim reflects the costs incurred by the operator of a vessel as a direct result of the incident.

Alternatively, formulaic and comparative methods for determining a rate that are based on vessel characteristics

| GROUNDED BULKER oil spill - Costs incurred by National Coast Guard in Week 1 |          |              |       |       |       |       |       |       |       |           |          |
|------------------------------------------------------------------------------|----------|--------------|-------|-------|-------|-------|-------|-------|-------|-----------|----------|
| Equipment and consumables                                                    |          |              |       |       |       |       |       |       |       |           |          |
|                                                                              | Use      | Rate         | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Total use | Cost     |
| Workboat - 8m, 60hp                                                          | In-use   | 500 /day     | 1     | 1     | 1     |       | 1     | 1     | 1     | 6         | 3,000.00 |
|                                                                              | Stand-by | 200 /day     |       |       |       | 1     |       |       |       | 1         | 200.00   |
| Boom inflatable 2000mm                                                       | In-use   | 8 /m/day     |       | 200   | 200   | 200   | 200   | 100   | 100   | 1000      | 8,000.00 |
|                                                                              | Stand-by | 3 /m/day     | 200   |       |       |       |       | 100   | 100   | 400       | 1,200.00 |
| Boom anchors                                                                 | In-use   | 1 each/day   |       | 20    | 25    | 25    | 25    | 15    |       | 110       | 110.00   |
|                                                                              | Stand-by | 0.5 each/day | 25    | 5     |       |       |       | 10    | 25    | 65        | 32.50    |
| Skimmer 30m3/hr                                                              | In-use   | 250 /day     | 1     | 1     | 1     | 1     | 1     | 1     |       | 6         | 1,500.00 |
|                                                                              | Stand-by | 125 /day     |       |       |       |       |       |       | 1     | 1         | 125.00   |
| Storage tank 7.5m3                                                           | In-use   | 60 /day      | 2     | 2     | 5     | 8     | 8     | 8     | 5     | 38        | 2,280.00 |
|                                                                              | Stand-by | 20 /day      | 6     | 6     | 3     |       |       |       | 3     | 18        | 360.00   |
| Screw pump 6"                                                                | In-use   | 200 /day     |       | 1     | 1     | 1     | 2     | 2     | 1     | 8         | 1,600.00 |
|                                                                              | Stand-by | 50 /day      | 2     | 1     | 1     | 1     |       |       | 1     | 6         | 300.00   |
| Pressure washer                                                              | In-use   | 100 /day     |       |       |       | 2     | 2     | 2     | 1     | 7         | 700.00   |
|                                                                              | Stand-by | 50 /day      |       |       | 2     |       |       |       | 1     | 3         | 150.00   |
| Car - 4 door saloon                                                          |          | 80 /day      | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 7         | 560.00   |
| Car - four-wheel drive                                                       |          | 100 /day     |       |       | 1     | 1     | 1     | 1     | 1     | 5         | 500.00   |
| Truck - flat-bed with crane                                                  |          | 160 /day     |       |       | 1     | 1     | 1     | 1     | 1     | 5         | 800.00   |
| Subtotal cost of equipment:                                                  |          |              |       |       |       |       |       |       |       | 16,357.50 |          |
| Sorbent boom                                                                 |          | 15 metre     |       | 24    |       | 36    |       | 15    |       | 75        | 1,125.00 |
| Sorbent pads                                                                 |          | 1 pad        |       | 100   |       | 100   | 100   |       |       | 300       | 300.00   |
| Shovels                                                                      |          | 7 each       | 20    |       | 5     | 15    |       |       |       | 40        | 280.00   |
| Work suits                                                                   |          | 4 each       | 20    | 30    | 30    | 40    | 20    | 20    | 10    | 170       | 680.00   |
| Gloves                                                                       |          | 2 pair       | 20    | 40    | 30    | 50    | 20    | 20    | 5     | 185       | 370.00   |
| Boots                                                                        |          | 10 pair      | 20    | 20    | 30    | 20    | 20    | 20    |       | 130       | 1,300.00 |
| 25 kg bags                                                                   |          | 0.5 each     | 20    | 50    | 100   | 80    | 30    | 30    | 5     | 315       | 157.50   |
| 1 tonne bags                                                                 |          | 8 each       |       | 5     | 5     | 4     | 2     | 2     | 5     | 23        | 184.00   |
| Subtotal cost of consumables:                                                |          |              |       |       |       |       |       |       |       | 4,396.50  |          |

▲ *Figure 11: Example spreadsheet detailing the use of equipment and consumables during a one week period of a response. Each item of equipment is shown when in use and on standby with an appropriate rate differential. Consumable items are shown when used. Consumable items brought to site but not used are not included. The cost of each item is calculated by multiplying the total use by the rate. Further spreadsheets would show the use of equipment and consumable items in subsequent periods and other, similar spreadsheets would show the use and costs for other components of a claim, for example aircraft or personnel.*



▲ *Figure 12: The costs for use of specialised response vessels should be based on the costs of running the vessel with an allowance for profit where applicable.*

may be applicable in the absence of actual operating costs of a vessel, particularly in the case of tugs and similar vessels. Nevertheless, these methods should produce realistic and reasonable rates and it should be borne in mind that formulae designed to calculate rates for use in salvage work reflect the inherent risk of that work compared to the lower risk associated with pollution response generally.

For specialised response equipment, such as skimmers and boom, a reasonable rate can be determined by amortising the value of the equipment over its expected lifetime, with an addition for overheads, such as storage, maintenance, and insurance. The amortisation periods vary according to the type of equipment and are based on the expected durability. For extended periods of use, the rate charged should decrease once the value of the item has been reached, to allow maintenance and operational costs only, with profit as appropriate. Stepped rates, that decrease in intervals after specific periods of use, may also be appropriate to reflect lower fixed costs proportionately with extended use. A description or specification sheet for the equipment should be attached to the claim.

The rates for non-specialised resources, such as construction, agricultural, waste storage, catering and sanitary equipment, portable shelters, lighting and vehicles should be comparable to the rate obtainable from local commercial lease or hire companies. Where relevant, an explanation should be given as to whether the rate includes the costs of drivers and/or operators, fuel and ancillary equipment.

Costs of resources owned by public authorities that would have arisen for the authorities even if the incident had not occurred may be admissible under some compensation regimes in some countries, for example the hire of coast guard vessels usually on patrol but diverted to respond to an incident. For all resources owned publicly, particularly from the military, the rate applied should not include a disproportionate level of indirect charges, for example, back-office or headquarters costs. Indirect charges should not be too remote, in terms of time and distance, from the incident. By way of example, the rates for military vessels should reflect their role in the response and not include

charges for any armaments on-board that will not normally be used in the response.

The rate applied may vary according to the operational status of the resource. For periods of hire where equipment is not in use but is held on stand-by or is in transit, or when a vessel remains in port as a result of poor weather or is undergoing cleaning, a reduced stand-by rate may be appropriate. This reduction reflects the continued involvement of the resource in the response but also accounts for the lack of wear and tear and savings in fuel if appropriate, when not deployed. As a consequence, accurate recording of the use and status of resources is required to compile the claim correctly.

For resources operated commercially, a reasonable element of profit would be considered, whereas for government assets no such allowance would be made. Similarly, a reasonable level of administrative expenses may be considered as a mark-up on incurred costs. For large claims, a decreasing percentage mark-up, applied at specified monetary intervals, may be appropriate in order to reflect a lower administrative burden proportionately. Nevertheless, itemised costs for administrative personnel and expenses should be listed in preference to a mark-up in order to reflect the actual costs incurred in administering the response.

Some contractors operate a member scheme, whereby organisations can use resources at a lower rate than non-members in return for a fee, usually paid annually. In such instances, the membership fee may cover annual overheads, such as storage, maintenance etc. and the rate claimed for use of the resource during the response would be correspondingly lower.

### Contracted or hired-in resources

A response will often require resources in addition to those owned by the lead organisation and these may be contracted-in. Where resources are contracted or hired, similar information as described above will be required in order to calculate and support the expenditure claimed. Copies of contracts or hire agreements will allow an understanding of how the appropriate contractual terms and conditions affect the claim.

Certain response resources, such as dispersant spraying aircraft or fleet vehicles, are commonly on long-term lease or charter for use by governments or private organisations. Claims for use of the leased or chartered resource should bear a close relationship to the cost of the lease or charter. For example, an appropriate cost for use of a vehicle may be determined as a proportion of the cost of the lease for the period that the vehicle was used in the response.

In a large incident, where sub-contracting can occur at several levels, care should be taken to ensure that the sum of all the administrative mark-ups applied at each level is not excessive.

### Personnel

A response may include a wide range of personnel, including specialised consultants, oil spill contractors, aircraft and

vessel crew, industry or government employees, agency staff, fire and rescue services, police, military, local residents and volunteers. The costs for their involvement will vary widely, primarily according to local living standards, levels of training and their roles and responsibilities in the response.

Accurate and annotated timesheets should be kept for all personnel. Information contained in minutes of meeting and shoreline activity reports, as well as aircraft and vessel logs, can be used to corroborate personnel involvement. The rate paid for the work should be appropriate for the tasks undertaken and be related closely to the cost of the employee to the employer at the time of their involvement. This cost would include remuneration, national and local taxes, insurance, overheads and profit where applicable. Clothing and PPE provided to workers are usually listed separately as consumable items.

For salaried workers, a rate is usually applied daily, irrespective of the length of the working day. Waged (non-salaried) workers are usually paid hourly with an increase in the rate for anti-social hours of work i.e. evenings, weekends and public holidays. Where the costs for equipment operators are claimed as a part of the rate for the equipment, for example, truck drivers or vessel crew, the uplift for overtime should apply to the personnel component of the hourly rate only and not to the truck or vessel.

Costs for the normal salaries of personnel permanently employed by public authorities, that would have arisen for the authorities even if the incident had not occurred, may be admissible under some compensation regimes in some countries. Claims should be limited to personnel involved in an incident, such as those recovering oil on-board vessels, working on the shoreline or making decisions within a command centre. Under many compensation regimes, the costs for personnel located remotely from the area of the incident or involved solely for political or public relations reasons are not admissible. Conversely, costs for personnel to record, collate and compile information and to prepare and submit a claim may be eligible for compensation, provided that these costs are in proportion to the claimed amount. Despite the best efforts of a claimant to submit a fully comprehensive claim, the bodies assessing a claim will often require clarification of certain items. As a consequence, the continued involvement of the claimant to address these queries and follow the claim through to a conclusion may be necessary. Time for these tasks should be logged carefully to differentiate between any ongoing spill response work.

It is important to recognise that volunteer participation in clean-up operations is not cost-free. Although volunteer labour is offered free of charge *per se*, each volunteer will require some level of PPE, food, transport to the clean-up site as well as competent supervision. In large-scale incidents, significant numbers of volunteers may arrive from outside the local area, requiring accommodation and other assistance (Figure 13). Volunteers may be given a *per diem* payment to cover expenses, unless food and accommodation are provided separately. Liability insurance may also be required. A record of the names of each volunteer, their allocated work sites and activities undertaken, should be kept. Mandatory

signing in and out of work sites may facilitate accurate recording of this information.

### Personnel expenses

Claims for costs to feed and house personnel should be based on receipts and invoices from shops, restaurants, cafés, hotels etc. If workers are based locally, the cost of transport to clean-up sites or command centres may be based on appropriate mileage rates using workers' own vehicles. Otherwise, hired vehicles may be used, or local transport companies contracted for the purpose. Receipts, vouchers and tickets for any air and train travel undertaken should be provided. Workers may be paid an allowance for their own food or alternatively, local catering companies may be engaged to feed workers on-site. The name, role and responsibility of the persons incurring the expense should be recorded and linked to the relevant supporting documents, work site and activity.

### Consumables/purchases

A response operation will involve the use and purchase of a wide variety of items. Consumable items, such as dispersant, sorbent material, PPE and tools used in the response, printer ink, toner and paper used to record information and to compile the claim etc. may either be held in store and require restocking after termination of the response or may be purchased specifically for use at the time.

Purchasing non-consumable resources may be an alternative to hiring-in, particularly in situations where the expected use may be protracted and the hire costs may exceed the purchase cost. Purchased items, such as pumps and other response resources, and furniture, computers, and mobile telephones for use in the command centre, may have a residual value following their use in an incident. This value will depend on the period of use in the incident and whether, subsequent to completion of the clean-up, they are suitable for use in future incidents or for some other purpose. The usual method is to 'write-down' or depreciate the items over a number of years, dependent upon local accounting standards, with an appropriate fraction of this period allocated in the claim. Spill response can make severe demands on



▲ Figure 13: The large scale involvement of volunteers in a response can incur significant costs for protective clothing, food and accommodation.



▲ *Figure 14: The handling, storage, transport, treatment and disposal of waste can be costly. Special attention should be paid to recording the quantities of waste collected, moved and treated.*

resources and items that are considered to have worn-out prematurely should be identified and explained.

The reason for the use of the consumable or purchased items in the response, the date and location of their use and the purchase cost should all be recorded. Tracking the use of bulk purchases, particularly sorbent and PPE, from central warehouses to local distribution areas and on to specific work sites or vessels can be difficult, particularly during the emergency phase of a large response. For this reason, suitably experienced logistics personnel should be allocated to the task in order to ensure accuracy. Purchase orders, warehouse stock release forms, inventory reports, invoices and receipts should be retained and indexed appropriately. Receipts for fuel should be annotated to identify the response vessel, vehicle or equipment for which the purchase was made.

### Third party services

Additional third party services may be required during a response, for example for cleaning equipment, sample analysis, oil trajectory modelling and mapping, providing scientific advice or satellite imagery, security for clean-up sites and equipment storage, and for waste storage and disposal. Adequate documentation should be provided to allow a full understanding of the service provided and how the costs were calculated.

Utility costs, such as water, electricity, mobile and fixed telephone line and call charges should be supported by the relevant paperwork, with the component of the bill appropriate to the response period identified.

Waste storage and disposal can be a significant part of the total costs of a response (*Figure 14*). Claims for waste are often based on a cost per unit of waste handled, by weight or volume. Where appropriate, a breakdown of the unit cost is helpful to allow a full understanding of the individual components, such as transport, storage, handling and ultimate treatment or disposal of the waste, with appropriate invoices attached to the claim.

## Property damage

Oil can cause damage to various types of property resulting in claims for cleaning, repair or replacement. Items affected commonly include: hulls of fishing and other commercial vessels; pleasure craft; marina pontoons; fishing gear, such as nets and traps; and mariculture structures, such as fish farms, mussel rafts and oyster trestles. For further information on oil spills and fisheries, the separate ITOFF paper on the Effects of Oil on Fisheries and Mariculture and the IOPC Funds' document on Guidelines for Presenting Claims in the Fisheries, Mariculture and Fish Processing Sector<sup>4</sup> may be consulted.

Property damage claims may also arise as a result of clean-up activity, for example, damage to roads or paths used for access by workers and vehicles. Rectification of damage to vehicles, vessels and other equipment as a direct result of their involvement in a response may also form part of a claim, although, where applicable, compensation should be sought first under vehicle or other insurance policies.

In the event that a separate clean-up claim is not submitted, a claim for costs associated with mitigation measures undertaken to prevent property damage can be included in a property damage claim. This might include protective booming of a mariculture facility, industrial water intake or marina.

### Information to support property damage claims

As a minimum, photographs of the property before and after restoration should be provided in support of a claim. Where relevant and practical, the contaminated or damaged property should be disposed of only with the prior consent of the organisation paying compensation. A detailed description of the cause of the damage should also be provided. When possible, several quotations should be sought prior to contracting for the cleaning or repair work and all invoices and receipts should be retained. A claim for replacement rather than repair of a damaged item should be supported by cost estimates, for example from cleaning or repair companies and manufacturers, and include an explanation as to why the item is to be written off.

For many property damage claims, a survey will be necessary prior to the commencement of work to restore the property. This is usually undertaken jointly with representatives of the organisation paying compensation. Surveys are necessary to confirm the link of causation to the incident, to corroborate the level of contamination or other damage claimed and to advise on the appropriate work to be undertaken (*Figure 15*).

The assessment of property damage claims often takes into account the condition and age of the property prior to contamination and payment is typically not made on a 'new for old' basis. For example, a deduction to payments may be made for replacement of fishing gear oiled towards the end of its working life. As a consequence, purchase receipts should be submitted as part of a claim. Deductions may

<sup>4</sup> [www.iopcfund.org/publications.htm](http://www.iopcfund.org/publications.htm)



▲ *Figure 15: A field severely damaged by movement of heavy machinery to and from an oiled shoreline. A claim for restoration of the field would necessitate a survey to establish the exact level of damage and any betterment that may arise from the work.*



▲ *Figure 16: An oiled fish cage undergoing cleaning. Any resulting loss of income may lead to a claim for consequential economic loss.*



▲ *Figure 17: Clean-up on a tourist beach may affect the overall number of visitors to the region and result in claims for pure economic loss for a number of businesses.*

also be made to account for betterment, for example to resurface a former gravel road with a tarmac covering, and any such betterment should be taken into account when preparing the claim.

## Economic losses

The income of companies, organisations and individuals may be affected adversely resulting in economic loss as a direct result of an oil spill. Economic loss can be divided into consequential economic loss and pure economic loss.

Claims for economic losses as a result of an oil spill are submitted most commonly from the fisheries and tourism sectors. A wide variety of financial and operational arrangements have been adopted in these business sectors worldwide, and, consequently, the precise information that a particular claimant might provide in support of a claim for economic loss is wide ranging and dependent upon the specific circumstances of the loss. The following information therefore focuses on some of the more common issues with

regard to economic loss claims, with particular emphasis on fisheries and mariculture claims.

### Consequential economic loss

Claims for consequential economic loss arise typically as a result of contamination of fishing vessels, fishing gear, mariculture facilities (*Figure 16*) or tourism assets, which prevents their subsequent use. Income lost while the oiled items are cleaned or replaced may form the basis of a claim for consequential economic loss. In addition to the documentation required to support the property damage, evidence of the ensuing loss of income will also be required. In this regard, the information required to support claims for consequential economic loss is similar to that required to support claims for pure economic loss and both are discussed together below.

### Pure economic loss

Claims for pure economic loss arise even though no damage to property has occurred, for example, if oil at sea prevents a fishing fleet from departing port, or access to a tourism facility is blocked by response activities (*Figure 17*). Media reports of an oil spill may also result in a loss of market confidence, which might deter tourists from visiting a coastal area or the public from purchasing or eating seafood that they perceive to be contaminated by oil. Although accepted under the international compensation regimes, in some national jurisdictions claims for pure economic loss are not admissible. Where claims for pure economic loss are accepted, losses can be seen on a balance sheet only, rather than as a consequence of damage to property. Therefore, for many such claims, the most important supporting documentation will be copies of company accounts or other financial statements.

As a precautionary measure to safeguard public health, authorities may impose restrictions on fisheries activities and the sale of seafood products by merchants, hotels and restaurants from the coastal area affected by the oil spill. Any fisheries restrictions should be managed on technical grounds to ensure that the criteria for imposing, maintaining and lifting the restrictions are understood clearly. Claims



▲ Figure 18: Financial records for subsistence fishing are often not available to support a claim. Other means and sources of information can sometimes be used to determine the losses.



▲ Figure 19: Catch awaiting sale at a fish market. Detailed sales figures will assist in the assessment of any claims for losses as a result of an oil spill.

for business interruption as a result of fishery restrictions should include copies of the relevant notices issued by the authorities. It should be noted that, while fisheries restrictions may make it illegal for fishing activities to continue, claims may not be considered admissible if the restrictions were imposed or maintained with insufficient technical justification.

## Compiling a claim for economic loss

The first step in compiling a claim for economic loss is usually to provide evidence of a legal involvement in a particular business activity. For example, fishing activities are commonly licensed and evidence of membership of a fishing co-operative or vessel registration documents may be available. Similarly, a tourism operator will often be subject to licensing and registration and copies of these documents should be provided. In some parts of the world, illegal or unregulated activities are tolerated but this may lead to difficulties in some claims being accepted.

Official licensing and tax regulations in some parts of the world do not require small-scale fishing to be recorded. In addition, subsistence or artisanal fisheries (Figure 18) may focus on the provision of daily food or seafood for barter that may not include financial transactions. These factors combine to make the assessment of claims for many fisheries problematic as the fishermen are often unable to provide any supporting documentation for their claims other than verbal reports of their activities. In these circumstances, it is important that the claimants, appointed experts (including ITOFF), local authorities, fisheries officers and other relevant parties work together to create a realistic financial picture of the fisheries impacted during a spill. This can be a lengthy process requiring extensive field work and information gathering. A similar approach may be necessary for small-scale tourism and other businesses.

Where records exist, copies of financial accounts for at least three years before the incident should be provided to allow an understanding of the business and normal trading patterns and any effects on income due to the oil spill (Figures 19 and 20). If circumstances allow, accounts for a period after the

| Year | Month    | Catch (kg) | Average market price (cost per kg) | Catch sale price |
|------|----------|------------|------------------------------------|------------------|
| 2005 | January  | 300        | 1.40                               | 420              |
|      | February | 1201       | 1.44                               | 1,729            |
|      | March    | 378        | 1.45                               | 548              |
|      | Total    | 1879       |                                    | 2,698            |
| 2006 | January  | 405        | 1.49                               | 603              |
|      | February | 1105       | 1.51                               | 1,669            |
|      | March    | 312        | 1.50                               | 468              |
|      | Total    | 1822       |                                    | 2,740            |
| 2007 | January  | 314        | 1.50                               | 471              |
|      | February | 216        | 1.57                               | 339              |
|      | March    | 222        | 1.56                               | 346              |
|      | Total    | 752        |                                    | 1,156            |

| Vessel mortgage/maintenance | Crew | Fuel | Ice | Electricity | Total Costs | Profit |
|-----------------------------|------|------|-----|-------------|-------------|--------|
| 155                         | 125  | 54   | 10  | 14          |             |        |
| 175                         | 432  | 167  | 45  | 32          |             |        |
| 155                         | 200  | 32   | 15  | 16          |             |        |
| 485                         | 757  | 253  | 70  | 62          | 1,627       | 1,071  |
| 165                         | 145  | 59   | 10  | 17          |             |        |
| 174                         | 500  | 179  | 50  | 38          |             |        |
| 145                         | 210  | 38   | 15  | 13          |             |        |
| 484                         | 855  | 276  | 75  | 68          | 1,758       | 982    |
| 134                         | 145  | 60   | 10  | 17          |             |        |
| 120                         | 110  | 50   | 10  | 11          |             |        |
| 145                         | 254  | 34   | 15  | 15          |             |        |
| 399                         | 509  | 144  | 35  | 43          | 1,130       | 26     |

▲ Figure 20: Example figures provided in support of a claim for loss of income for a fishing vessel owner. The spill in February 2007 resulted in a fisheries closure during that month, giving rise to a significantly lower catch of fish than for the same period in the two years previously. While savings were made in associated operational costs (vessel maintenance, crew, fuel, ice etc.), the overall profit was reduced. Further analysis would be required to determine whether the loss could have been mitigated, for example by fishing in an area away from the oil spill.

incident may also be provided. If formal financial accounts are unavailable, copies of business records, tax receipts, fishing catch and sales notes, receipts of purchases such as fish food, ice and fuel, a calendar of fishing activity, feeding and harvesting patterns may all be required to support a claim from fishing businesses. For tourism businesses, similar records may be necessary with details of, for example, the number of hotel rooms or camping pitches let, the number of restaurant customers served, or tickets sold for an attraction.

As with property damage claims, a survey of the claimant's business may be required to corroborate the economic loss claimed and also to determine whether the loss can be mitigated or reduced by considering alternative sources of income.

If circumstances prevent a survey from taking place, a full description of the claimant's business should be provided to assist with the assessment. For example, for fisheries and mariculture claims, a claimant could provide details of the cultured or catch species, production cycles, seasonal and weather factors, gear types and customers. A hotelier could provide a description of the hotel facilities, bookings, visitor demographic and places of interest close by. As with clean-up claims, it is often preferable to provide more rather than less information.

Savings made as a result of restrictions in activity should be noted and accounted for in the claim, for example savings in fuel for fishing vessels remaining in port or reduced food costs for hotel guests that have cancelled their bookings.

Businesses rarely operate in isolation and consequently, companies or individuals reliant on those affected directly by the oil spill may also be affected. This might include fish feed suppliers, fish processors, seafood wholesalers, ship chandlers or hotel suppliers. A claim for economic loss from these parties should contain similar information as for those impacted directly by a spill and should also include details of the contractual arrangements between the claimant and the supplier or buyer if available. A similar situation may arise with a fishing vessel crew where payment may be in the form of a salary, a share of the catch profit or a combination of both. In this circumstance, the crew payment arrangements should be detailed and, if appropriate, a crew waiver provided to indicate that all claims for a fishing vessel will be dealt with collectively.

It is important to note that there should be a clear and close link between any economic loss claimed and the oil spill. Furthermore, claimants should provide evidence to show that they have taken reasonable measures to mitigate their losses, for example a restaurant may be able to purchase seafood from alternative suppliers or a business may be able to minimise variable costs for the period they were unable to operate. The documentation necessary to establish the link of causation and other criteria are varied and specific to individual claimants.

The level of income or profit a business may earn will vary, sometimes considerably, on a daily, seasonal or annual basis and be influenced by many factors that are independent of

an oil spill. For example, a downturn in a national economy or a season of bad weather may reduce tourist numbers, and natural variations in spawning and recruitment may increase or decrease the adult fish stock and catch quantities. It is important to distinguish losses incurred as a direct result of the oil spill from those that might have occurred in the absence of the spill. Identifying and quantifying only those economic losses attributable to an oil spill is often complex and may require the assistance of experts and surveys undertaken jointly with other parties.

Fisheries and tourism organisations may undertake a marketing campaign to alleviate adverse publicity from a spill. Such campaigns might include television, radio and newspaper advertisements, the costs of which should be itemised in a claim. Additional information, such as the timing and intended targets of the campaign, together with measurable results, may be required. It is prudent to discuss the objectives of any marketing campaign with those paying compensation at an early stage.

In complex cases, a claimant might consider it appropriate to engage advisers to assist with the preparation of a claim. Advisers should be suitably qualified and have knowledge of the claims process and the standards of claims documentation required. Reasonable costs incurred for the work of advisers may be compensated under some compensation regimes. Costs for advisers should be proportionate to the losses claimed and the work undertaken. ITOPF and other experts appointed by the organisation paying compensation may be able to advise on preparing claims.

## Environmental monitoring, damage and restoration

Monitoring of an area affected by a spill of oil can be required for a variety of reasons, including determining the extent and duration of clean-up operations and the level of contamination of the shoreline or biological species. Monitoring can range from straightforward intermittent visual observations to an extensive campaign of sampling and analysis over a period of time. Sampling may also be required to allow identification of the oil. Preferably, monitoring programmes should be agreed with the body paying compensation prior to the commencement of the work.

The documentation necessary to support claims for monitoring, sampling and analysis will vary. Claims for sampling should include the rationale for the work, key information on the type of sample (i.e. oil, water, sediment or biota), the date and location the sample was collected, and the date and method of the analysis. Reports or advisory notices based on the results of monitoring programmes should also be provided. Further information is provided in the separate ITOPF paper on Sampling and Monitoring of Marine Oil Spills.

Under the international compensation regimes, claims for economic loss incurred as result of damage to the environment and the costs of reinstatement of damage may be considered. The documentation required to support economic loss under this heading will be similar to that

discussed above, requiring financial records and details of the claimant's business.

Claims for work done to restore damaged resources and encourage natural recovery are acceptable under the International Conventions only if certain criteria are met. Costs should be itemised to explain clearly the work done. Claims based on calculations made according to theoretical models and claims for compensation for loss of function of the environment *per se* are recognised under some national and regional compensation regimes but are inadmissible under the international compensation regimes. Further information is provided in the separate ITOPF paper on Effects of Oil Pollution on the Marine Environment.

## Submission of claims

In its most basic form, a claim should include the identity and contact details of the claimant, the name of the incident (usually the vessel name), the amount claimed and the reason for the claim. While a claim submitted in this basic form may serve as a useful notification of intent, in most instances, this will be insufficient to allow an assessment to be made and usually much more information will be required.

Supporting documentation provided as boxes of unreferenced invoices, statements and other documents, will require considerable additional effort to reach a point from which an assessment can be undertaken. In a large-

scale incident, the claims documentation can be voluminous and, ideally, should be submitted in a form that can be understood readily by the organisations and their experts who will be tasked with the assessment. In particular, a description of supporting invoices, records and other documents should be provided to explain their relevance to the incident and how they support the claim and be referenced to individual items in the claim. Claim summaries and detailed tables of figures submitted in a readily useable electronic format, preferably in spreadsheets, will negate the need to transcribe the detail of a claim by those undertaking its analysis. Furthermore, the assessment of claims is often a team effort between national and international experts and the electronic submission of documents may assist the process, particularly if translation is required. However, it is important to note that submission of a well documented claim may not mean that, as a consequence, the claim will be admissible and will therefore qualify for compensation.

Unforeseen costs may be incurred after a claim has been submitted. If relatively small, the original claim may be modified to include these costs, although this may delay the subsequent assessment process. Otherwise a supplementary claim can be submitted at a later date but claimants should be aware that under many jurisdictions, including the International Conventions, time bars prevent claims being accepted once a certain period after the incident has elapsed.

## Key points

- Losses incurred as a result of a spill of oil from a vessel should be notified to the vessel owner as quickly as possible.
- A basic claim should include information, such as the identity of the claimant, the name of the incident, the amount claimed and the reason for the claim.
- The type of additional documentation required will depend on the type of claim.
- For clean-up claims, the quality of supporting documentation is enhanced by measures taken to record and preserve information from the outset.
- The task of recording information should be incumbent on all personnel. Gathering the information necessary to support a claim should be allocated to a specific person or group and be included in contingency plans.
- Records of all meetings, activity and expenditure should be preserved as it is better to record more information than not enough.
- Clean-up claims should be structured to show the separate components and should be based on reasonable rates for work that has been undertaken in support of the response.
- Claims for damage to property will in many instances require an independent survey to determine the extent of the damage and appropriate repair work.
- Consequential economic loss and pure economic loss claims, particularly in the tourism and fisheries sectors, should be supported by full financial accounts and sales information.
- For small scale and subsistence operations, this data may not be available and other means of corroborating losses may be required.
- Ultimately, it is the responsibility of the claimant to prove their loss.

## TECHNICAL INFORMATION PAPERS

- 1 Aerial Observation of Marine Oil Spills
- 2 Fate of Marine Oil Spills
- 3 Use of Booms in Oil Pollution Response
- 4 Use of Dispersants to Treat Oil Spills
- 5 Use of Skimmers in Oil Pollution Response
- 6 Recognition of Oil on Shorelines
- 7 Clean-up of Oil from Shorelines
- 8 Use of Sorbent Materials in Oil Spill Response
- 9 Disposal of Oil and Debris
- 10 Leadership, Command & Management of Oil Spills
- 11 Effects of Oil Pollution on Fisheries and Mariculture
- 12 Effects of Oil Pollution on Social and Economic Activities
- 13 Effects of Oil Pollution on the Environment
- 14 Sampling and Monitoring of Marine Oil Spills
- 15 Preparation and Submission of Claims from Oil Pollution
- 16 Contingency Planning for Marine Oil Spills
- 17 Response to Marine Chemical Incidents

ITOPF is a not-for-profit organisation established on behalf of the world's shipowners and their insurers to promote effective response to marine spills of oil, chemicals and other hazardous substances. Technical services include emergency response, advice on clean-up techniques, pollution damage assessment, assistance with spill response planning and the provision of training. ITOPF is a source of comprehensive information on marine oil pollution and this paper is one of a series based on the experience of ITOPF's technical staff. Information in this paper may be reproduced with the prior express permission of ITOPF. For further information please contact:



### THE INTERNATIONAL TANKER OWNERS POLLUTION FEDERATION LIMITED

1 Oliver's Yard, 55 City Road, London EC1Y 1HQ, United Kingdom

Tel: +44 (0)20 7566 6999

Fax: +44 (0)20 7566 6950

24hr: +44 (0)7623 984 606

E-mail: [central@itopf.com](mailto:central@itopf.com)

Web: [www.itopf.com](http://www.itopf.com)