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Oil Spill Incident and the Change of Oil Spill Response Program after the Incident

The Australian Experience

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Introduction

Maritime transport activity around the Australian coast produces a continual risk of pollution of the marine environment by the various forms of liquid hydrocarbons, chemicals, bulk and packaged noxious substances and waste products either carried or generated on board ships. This can cover fuel oils, cargo (liquid or solid) and operational refuse.

The Australian Maritime Safety Authority (AMSA) is responsible for the prevention and control of ship-sourced marine pollution by virtue of subsection 6(1) of the *Australian Maritime Safety Authority Act 1990*. The Petroleum Association of Japan's Conference on "Oil Spill Incident and the Change of Oil Spill Response Program after the Incident" is therefore a particularly appropriate forum to advise not only of lessons learned following oil spills in Australia but also of lessons learned from selected international incidents that have had an impact on the Australian domestic situation.

Australia's National Plan

It is important to recognise that Australia is a federation of States and Territories (hereafter referred to in this paper as the States) that have their own legal jurisdictions. Australia also has a long coastline (37,000 kilometres) and a relatively small population (19 million) that relies on sea transport for most of its international trade. The Australian Federal, State and Territory Governments have therefore decided, in consultation with industry, that Australian emergency response arrangements for oil pollution be a co-operative arrangement that respects jurisdictional imperatives, but utilises all the resources of the nation to provide an optimal plan that will deliver effective readiness and response capability.

Since October 1973 Australia has had in place a pre-planned national strategy to respond to marine spills. The original strategy dealt only with oil spills and was known as the National Plan to Combat Pollution of the Sea by Oil. In April 1998 the strategy was extended to deal with the response to maritime chemical spills in Australian waters and is now known as the National Plan to Combat Pollution of the Sea by Oil and other Noxious and Hazardous Substances (the National Plan). AMSA manages the National Plan.

Today, the objective of the National Plan is to protect the natural and built environments of Australia's marine and foreshore zones from the adverse effects of oil and other noxious or hazardous substances. The National Plan provides a framework for responding promptly and efficiently to marine pollution incidents by designating competent national and local authorities to respond to marine pollution incidents wherever they occur in Australian waters. The responsibilities of National Plan participants are clearly defined in the National Plan Administrative Arrangements. The Arrangements identify relevant Federal, State and industry combat agencies responsible for initiating the response to a pollution incident.

Funding of the National Plan is based on the "potential polluter pays" principle. To achieve this, a levy is imposed on commercial shipping using Australian ports. The levy provides funds for ongoing development, maintenance and administration of the National Plan. This includes the acquisition of equipment and the

development and implementation of certain components of the National Plan training program. The levy also provides contingency funds to cover costs incurred in responding to incidents where the polluter cannot be identified and costs cannot be recovered.

This paper provides information on the development and implementation of Australia's National Plan and its continuing enhancement as a result of experience learned from the review and analysis of the response to marine pollution incidents.

Oil Spills in Australia

Australia has been fortunate in not having experienced any catastrophic oil spills to date. Australia's largest spill, the loss of some 17,000 tonnes of light crude oil from the Greek registered tanker *"Kirki"* off the coast of Western Australia in July 1991, resulted in minimal environmental damage and is well short, in terms of quantity, of inclusion in the 50 largest tanker spills since 1965.

Apart from the *"Kirki"*, Australia has experienced lesser spills of cargo from tankers, including the *"Oceanic Grandeur"* (Queensland), *"Bethioua"* (Tasmania) and *"Laura D'Amato"* (New South Wales), spills of bunkers from the tankers *"Era"* (South Australia) and *"Barrington"* (Queensland) and spills of bunkers from non-tankers, including *"Korean Star"* (Western Australia), *"Sanko Harvest"* (Western Australia), *"Al Qurain"* (Victoria) and *"Iron Baron"* (Tasmania). Some of the bunker spills have involved the loss of more than 500 tonnes of heavy fuel oil.

Australia enjoys some degree of protection from the ultimate catastrophic spill by virtue of its relatively shallow refinery ports. The resulting draught constraints limit the capacity of tankers visiting Australia to around 100,000 tonnes for most ports and up to 250,000 tonnes on an infrequent basis at others where offshore ship-to-ship lightering operations can take place, for example off Mobil Oil's Port Stanvac refinery in South Australia. By contrast some overseas ports are handling tankers in excess of 400,000 tonnes.

No matter the size of a spill, they all have the capacity to cause damage to the environment and coastal resources. They also provide the opportunity to review and learn from the response and implement changes to enhance Australia's National Plan.

Most incidents in Australia and many overseas incidents have had some impact on oil spill response arrangements in Australia, either at the local, State or national level. These include the following:

Oceanic Grandeur

The catalyst to the development and implementation of Australia's National Plan was the grounding of the tanker *"Oceanic Grandeur"* in March 1970 in Torres Strait, an area close to the highly sensitive region of the Great Barrier Reef. At that time the potential impact of major oil pollution incidents was only beginning to be understood.

The grounding resulted in a loss of approximately 1,100 tonnes of cargo, about half of this occurred on the day the grounding took place and the remainder during the ship-to-ship transfer operation with the tanker *"Leslie J Thompson"*.

An Action Statement report was prepared on completion of the *"Oceanic Grandeur"* response. The Action Statement contained 23 general conclusions, among these were:

- *that the general responsibility for overall planning to deal with offshore oil spills must rest with the Federal Government.*

As stated earlier, the *"Oceanic Grandeur"* incident was the catalyst to the development and implementation of Australia's National Plan. AMSA is the Federal Government agency responsible for the management of the National Plan.

- *that the responsibility to take all necessary steps to deal with an oil spill be clearly defined.*

An integral component of Australia's National Plan is a set of administrative arrangements that delegate responsibility for responding to marine oil spills. All government and industry agencies that are party to the National Plan have agreed to and support these arrangements.

- *that the oil processing industry in Australia should be called upon to participate in the arrangements to deal with oil spills*

Since the development and implementation of the National Plan the oil industry in Australia has been an integral component of the Plan. The industry is an active participant with government and other agencies in a wide range of joint activities including training, exercises and incident response.

Sanko Harvest

The bulk carrier *"Sanko Harvest"* struck a rock pinnacle off Esperance, Western Australia in February 1991. The ship broke up and released its cargo of 30,000 tonnes of soluble fertiliser and 700 tonnes of fuel oil bunkers, the majority being heavy fuel oil. Most of the spilled fuel oil bunkers impacted the beaches of Cape Le Grand National Park. Foreshore cleanup operations continued for over 9 weeks. Clean up operations were successful, with no long term impact from the oil.

The report on the pollution response operations by the West Australian Department of Marine and Harbours concluded that the response was successful and noted that this was mainly due to "...the effort and co-operation of all the people and agencies involved, including the owners and their insurers."

The report made 17 recommendations, the majority of which suggested improvements in the organisational structure. Some of the recommendations highlighted difficulties that commonly arise in any major spill, and would no doubt arise in managing other types of emergencies:

- *the need for access to expert media advice and more media training for those involved in the response;*

- *liaison with local communities;*

- *a public awareness and education campaign to improve understanding of aims, limitations and capabilities of oil spill response combat operations.*

These recommendations were addressed during the 1993 Review of the National Plan that is discussed in more detail below under *"Kirki"*.

Kirki

In July 1991 the tanker *"Kirki"* lost its bow section some 22 nautical miles off the Western Australian coast near the townships of Cervantes and Jurien Bay. The loss of the bow and further damage sustained to the ship in heavy weather during the tow to the offloading location resulted in the total loss of some 17,700 tonnes of light crude oil. Of the total loss, 7,900 tonnes of cargo was lost initially and the other 9,800 tonnes during the tow north to a position off Dampier where the remaining 64,500 tonnes of cargo was transferred in an at sea ship-to-ship operation with the tanker *"Flying Clipper"*.

In this particular incident the National Plan was called upon to prepare for its greatest test. Serious pollution of the West Australian coast was avoided due to the dual combination of severe weather conditions and the effects of the Leeuwin Current. The Current took the majority of oil away from the coastline where much of it dissipated naturally assisted by the prevailing severe weather conditions.

The response to the *"Kirki"* spill involved in excess of 100 salvage, pollution clean-up and emergency response experts. In addition, to supplement existing stockpiles, significant quantities of both National Plan and oil industry equipment from other States were moved by air and road to locations in Western Australian at very short notice.

A report on the response to the *"Kirki"* spill was prepared jointly by AMSA, the Australian Institute of Petroleum, the West Australian Department of Marine and Harbours, Esso and BP. The report made 18 recommendations that addressed a wide range of National Plan activity.

One of the major recommendations, which would later have a significant impact on the National Plan, was the need to appoint a senior person to manage the response and liaise directly with Ministers and senior members of government and industry. Known as the Marine Pollution Controller this position is now in place in AMSA and each Australian State and Territory. Persons in this position are supported by Incident Controllers who have responsibility to attend to the operational components of any marine pollution response.

The incident highlighted the importance of the need for authorities to adopt a broad view of an operation and not be parochial and look at it from a single issue perspective only. With this in mind, and dependent upon the circumstances, it brought

recognition that it may at times be prudent to compromise and accept short term economic and environmental damage in order to prevent long term or lasting damage.

In early 1991 AMSA identified the need for a fundamental review and overhaul of the spill response arrangements enshrined in the National Plan. The *"Kirki"* incident in July 1991 provided impetus to the proposed review. After consultation with and agreement from State/Territory Ministers of Government the Federal Government Minister initiated a wide-ranging review to ensure that Australian oil spill response arrangements were adequate to meet both contemporary circumstances and community expectations.

The review commenced in October 1991 and was completed in 1993. Known as the 1993 Review it made a total of 30 recommendations covering a broad spectrum of policy, administration and operations designed to enhance the operation of Australia's National Plan. All recommendations were implemented by the end of 1995. Recommendations included:

- *the National Plan should respond to oil spills in the marine environment from any source.*

Prior to the 1993 Review the National Plan was intended to respond to ship sourced spills only. National Plan agencies now respond to all spills in the marine environment.

- *that AMSA and National Plan State Committees mount a national campaign to adequately inform elected representatives, leaders of coastal communities and the media, regarding the realities of the implications of a major spill.*

The Review concluded that leaders of coastal communities and the media needed to be informed of the realities of a major oil spill and the message that needed to be communicated was "...that other than in favourable circumstances current technology does not exist to prevent weather driven oil coming ashore on a coastline or to guarantee prevention of environmental damage and economic loss, and in many cases the most environmentally friendly solution may be to leave it alone and let nature take its course." This message is now included in all AMSA promotional material on the National Plan and is actively reiterated in conferences and forums.

- *that in accordance with the OPRC 90 Convention the National Plan recognises relevant regional agreements such as the South Pacific Regional Environment Program (SPREP) and the Torres Strait Treaty as well as those with neighbouring countries.*

Australia recognises SPREP and the Torres Strait Treaty and since the 1993 Review has established a Memorandum of Understanding with each of New Zealand, Papua New Guinea, Indonesia and New Caledonia that address mutual aid and support issues. Support to date has included assistance with training and marine pollution response.

- *that a review be undertaken by AMSA in conjunction with interested parties into the requirements to respond to chemical spills at sea.*

Australia's National Plan has been expanded to incorporate chemical response.

- *that AMSA and the Australian Institute of Petroleum (AIP) explore arrangements to ensure the availability of suitable aircraft around Australia for dispersant spraying and the optimum method of engaging such aircraft.*

Since January 1997 Australia has had in place a fixed wing aerial dispersant capability. The capability is provided by the use of large single engine turbine powered aircraft with a payload capacity of between 1,850 and 3,100 litres of dispersant, dependent upon aircraft type.

The annual cost of $AUD400,000 to provided the capability is met equally by AMSA and AIP through its subsidiary, the Australian Marine Oil Spill Centre (AMOSC). Flying costs are not included in the $AUD400,000. They are met by the polluter in accordance with Australia's "polluter pays" policy.

Iron Baron

The bulk carrier *"Iron Baron"* grounded on Hebe Reef, off the north coast of Tasmania in July 1995. Shortly after it grounded the ship started to lose most of its heavy fuel oil bunkers. An estimated 350-400 tonnes of bunker fuel escaped to the sea and impacted the foreshores of the Tamar River and Port Sorell estuaries and foreshore areas to the west and east of Hebe Reef as well as a number of offshore islands.

During the course of the response government and industry personnel were mobilised from all Australian States, Canberra and overseas and additional equipment was brought in by sea and air from three States.

Approximately 550 people were involved in the response. They were engaged in a range of activities, including response planning, management of personnel spread over a reasonably wide geographic area, on-water oil recovery and foreshore cleanup operations and the establishment and maintenance of an oiled wildlife rescue and rehabilitation program.

A recommendation of the 1993 Review of the National Plan was that a small sub-committee "...review all significant oil spill response activity with the objective of ascertaining lessons to be learnt from each spill response, and to revise operational procedures as necessary." An independent review team undertook the Review of the *"Iron Baron"* oil spill response and their report was provided to Ministers of government in December 1995.

The *"Iron Baron"* incident review team attended key debriefing sessions of the main organisations involved with the response; conducted public hearings in both Port Sorell and George Town, Tasmania; received submissions from interested and affected individuals and organisations; carried out site and equipment inspections; and

conducted personal interviews and discussions with many people involved with the response.

The *"Iron Baron"* incident confirmed the previously held view that most oil pollution response equipment has its limitations, especially in waters affected by rough weather or in areas of high current or tidal streams. The report concluded that the *"Iron Baron"* oil spill response was generally well planned, managed and sustained. Equipment and personnel resources were used effectively and planning of the response in an operational priority sense was well managed. There was dedicated support from Tasmania's Marine Pollution Committee and other Tasmanian government departments and agencies, AMSA, AMOSC, private companies and businesses and a large workforce who volunteered their assistance.

Of particular note was the high level of integration of Federal, State and industry equipment and personnel resources.

Clearly, however, lessons were learned from the *"Iron Baron"* incident and these were addressed in the report produced by the review team.

The 36 recommendations made in the report were essentially operational in nature, and did not require major changes to the existing National Plan structure. The recommendations were, however, important. They included:

- *AMSA's proposal to establish a National Response Team should be pursued as a matter of priority*

For some time it had been recognised by key oil spill response managers and planners that no one single organisation contained sufficient human resources to respond effectively to a major oil spill incident within its own right. It was acknowledged that the most appropriate way to ensure combat agencies were best positioned to respond effectively to a major spill was to have access to support provided by a team of people with experience in a number of oil spill response disciplines, including operational, technical, administrative, environmental and scientific.

A National Response Team (NRT) of approximately fifty persons was established in accordance with this recommendation. Comprising experienced response personnel from government and industry it provides support and advice to local response managers on an as requested basis. AMSA co-ordinated the development and implementation of the NRT concept and is responsible for its ongoing management and maintenance.

Personnel from the NRT have participated in support of a number of incidents since its inception, including the Port Stanvac Refinery spill in South Australia in 1999, the tanker *"Laura D'Amato"* spill in Sydney in 1999 and as a contingency arrangement following groundings of the refrigerated carrier *"Peacock"* on the Great Barrier Reef in July 1996 and the container ship *"Bunga Teratai Satu"* on the Great Barrier Reef in November 2000.

- *Appropriate wildlife rescue and rehabilitation kits should be included in any pool of response material and made available at key locations around the country*

AMSA has purchased and distributed wildlife rescue and rehabilitation kits at key national locations in accordance with this recommendation.

- *During an incident where casualties being salvaged have caused or are likely to cause oil pollution, the lead agency should appoint a senior representative who remains onboard with the objective of providing best available information on a continuing basis to the Incident Controller and others*

The National Plan's Oil Spill Response Incident Control System has been modified to include a Casualty Co-ordinator position to provide the linkage between the Incident Controller and the Salvage Master. A training program has been developed for AMSA surveyors who have been identified as Casualty Co-ordinators. An AMSA surveyor was employed as Casualty Co-ordinator on the *"Bunga Teratai Satu"* after it ran aground in November 2000.

- *During an incident, independent salvage advice may need to be provided to the Incident Controller, State Marine Pollution Committee and AMSA. AMSA should explore the availability of resources to provide independent salvage advice and make arrangements to ensure that this independent opinion is available during an incident involving any severely damaged vessel*

Arrangements are now in place with three highly experienced international salvage experts to provide such advice if required in the future.

- *A senior wildlife manager with clearly identified roles and responsibilities should from the outset be included on the response planning committee for all future oil spill incidents in Australia*

Plans are in place to include a senior wildlife manager as part of the incident response planning process.

- *Future State and Regional Plans should have regard to cultural and heritage issues*

Plans are in place to give effect to this recommendation. By way of example, in response to the groundings of the *"Peacock"* and *"Bunga Teratai Satu"* on the Great Barrier Reef in 1996 and 2000 respectively, indigenous liaison officers were employed to liaise with the indigenous communities who had cultural and heritage attachments to the general areas where the two ships ran aground. Their findings were communicated to the Incident Controllers who took these into account when putting in place contingency arrangements should a spill occur during the time the ships were on the reefs.

Although the response to both the *"Kirki"* and *"Iron Baron"* spills was found to be professional and adequate, there were, nonetheless, problems with the response management structures that were used. The problem was that they did not have the

flexibility to accommodate all requirements, particularly planning. In view of this, arrangements were put in place to introduce the Incident Control System on a national basis as Australia's marine pollution response management tool. This would also provide compatibility with response systems used by other emergency response agencies, for example, fire brigades, police, State environmental agencies and State Emergency Service organisations.

The Australian system is known as the Oil Spill Response Incident Control System (OSRICS) and is designed to accommodate single or multiple agencies involved in a single incident. The system has flexibility as it can be added to or changed as necessary, depending on incident requirements. OSRICS provides for appropriate control and co-ordination as well as the delegation of tasks.

All marine pollution response agencies are progressively implementing OSRICS in order to meet a deadline of 31 December 2001 for final implementation on a national basis.

Peacock

The refrigerated cargo ship *"Peacock"* grounded on Piper Reef 580 kilometres north of Cairns in far north Queensland and 220 kilometres south of Thursday Island in July 1996. The 6500 tonne vessel was carrying 605 tonnes of heavy fuel oil and 57 tonnes of diesel on board and no cargo. Of immediate concern was the 600 tonnes of heavy fuel oil bunkers held in double bottom tanks onboard *"Peacock"*. A release of oil in the extremely environmentally sensitive area of the northern Great Barrier Reef would have had long lasting consequences unless contingency arrangements were put in place to respond to the threat.

The regional city of Cairns was the nearest centre having sufficient infrastructure to support the response and it was from here that the response was managed. Additional personnel and equipment resources had to be brought in from elsewhere in Australia to support the response.

The *"Peacock"* was refloated nine days after it grounded. There was no loss of oil although response teams supported the salvors in removing approximately 300 tonnes of heavy fuel oil bunkers to lighten the ship for refloat. They also pumped the oil back to the ship after the successful refloat.

Although there was no loss of oil, a subsequent report of the response to the incident highlighted a number of key points:

- *the role of the National Response Team*

The Incident Controller's report acknowledged "the professionalism and expertise of the National Response Team proved to be an invaluable support resource for the successful outcome of this incident. The team's knowledge and hands-on experience from past responses played an integral part in establishing thorough and effective procedures to ensure all possible eventualities were covered".

- *communications*

The grounding occurred in a remote location with no access to mobile telephone networks and no long distance radio facilities. Communications with the Incident Controller and his management staff in Cairns was via satellite telephone (satphone). The type of satphones that were used were not suitable for small craft operations and contact with Cairns was at times difficult. AMSA has subsequently upgraded its satphone equipment.

- *Powers of Intervention*

AMSA issued an Intervention Notice under the *Protection of The Sea (Powers of Intervention) Act 1981* to the owners, salvors, agents and the Master. The notice required that attempts to refloat the vessel not be undertaken without AMSA's prior approval and before appropriate oil response measures were in place. It required further that the vessel remain at anchor in the area until detailed assessment of damage was made and that advice be provided to AMSA in the event that necessary repairs could not be made at the site.

Port Stanvac

In June 1999 approximately 270 tonnes of Oman crude oil spilled from an offshore cargo discharge line at Mobil Oil's Port Stanvac refinery south of Adelaide. At risk were recreation beaches, commercial resources as well as mangrove stands to the north of Adelaide and commercial resources.

Personnel and equipment from the refinery, State government response agencies and AMSA were mobilised in response to the spill. National Response Team personnel in Melbourne and Brisbane were alerted should their assistance be required. AMOSC was notified in the event that additional oil industry personnel and equipment resources were required.

In view of the nature of the oil and its amenability to dispersant, response managers decided that the most effective and quickest way to deal with the problem was to apply oil spill dispersants. Two Air Tractor aircraft were mobilised under the terms of Australia's national fixed wing aerial dispersant capability and used on the first day. A single Air Tractor was used on the second day of the response. Most of the oil was dealt with by applying dispersants over a two day period. The spray operation was successful and only a small amount of oil impacted 800 metres of beach. Response crews quickly dealt with this problem.

Prior to the dispersant application operation commencing, an on water recovery operation took place and nine tonnes of oil were recovered in a short space of time. This operation was curtailed and craft removed from the area on commencement of aerial spraying.

An Incident Analysis Team was put in place to review the response. The team made 14 recommendations designed to enhance Australia's ability to respond to oil spills. The recommendations included:

- *the need to establish clear principles on the provision of timely and accurate information to the media and the community on spill size. These principles to be used by all parties including the oil industry*

The initial advice of spill size that went to the media and the community indicated a much smaller spill had occurred, ie 25 to 50 tonnes, rather than the correct figure of 270 tonnes

- *the National Plan includes in its training program a seminar or workshop for media personnel from AMSA, State agencies and industry who have responsibility for managing the media in an oil spill response. The workshop should review current procedures and practices for managing media interests during a major pollution incident and update the National Plan Media Plan to ensure a consistent approach to dealing with media issues which arise in pollution incidents.*

After the *"Laura D'Amato"* spill in Sydney in August 1999, NSW authorities convened a workshop for media and operational people involved in the response to address lessons learned from the Sydney incident. This recommendation is to be addressed more fully on an Australia wide basis.

- *AMSA and AMR (the provider of Australia's fixed wing aerial dispersant capability) review the aerial dispersant application operations in this incident and develop improved dispersant application techniques and prepare more comprehensive procedures on aerial dispersant application.*

AMSA in consultation with AMR has prepared revised procedures.

- *Mobil review the concept of the "local" area to which it provides letter box drops and other information on its activities during an incident to ensure those members of the wider community outside the Port Stanvac region are appropriately informed.*

This recommendation is to be addressed.

Laura D'Amato

In August 1999, approximately 250 to 300 tonnes of Murban crude oil was spilled in Sydney Harbour from the Italian flag tanker *"Laura D'Amato"* at Shell Australia's Gore Bay terminal. The oil was lost via two open sea chest valves during the discharge of 90,000 tonnes of Murban crude oil. Initial advice was that only about 14 tonnes of oil had been lost to the sea.

To many, Sydney Harbour is one of world's most attractive harbours and it was important that every effort be made to restore the area to its pre-spill condition without delay. Local authorities requested the assistance of personnel and equipment from interstate. The Australian air force provided two C130 Hercules aircraft to assist in the movement of equipment from interstate locations.

Over a seven day period 530 response personnel from Sydney Ports Corporation, State agencies, AMSA, AMOSC, Shell Australia and other oil companies, and private contractors, worked together to remove the bulk of the oil from the waters of Sydney Harbour and oil impacted foreshores.

The response to the *"Laura D'Amato"* spill was another positive example of the degree of co-operation between and integration of Federal, State and industry personnel and equipment resources.

An Incident Analysis Team was put in place to review the response and prepare a report. The team made 18 recommendations designed to enhance Australia's ability to respond to oil spills. The recommendations included:

- *the full implementation of the National Plan's Oil Spill Response Incident Control System, including training, should be speeded up.*

Wherever possible this is being done. However, resource constraints and the number of contingency plans that need to be amended to encompass OSRICS are causing delays in some areas. It is still intended that all contingency plans be amended in time to meet the agreed deadline of 31 December 2001 for completion of the OSRICS implementation process.

- *spill sizes should be estimated using all appropriate techniques and the estimated figures should be immediately communicated to all interested parties. When spill size estimates are found to be larger than first advised, the company involved should provide the revised figure to the State Marine Pollution Controller and Incident Controller without delay*

This recommendation is somewhat similar to a recommendation following the Mobil Port Stanvac spill. In the Sydney spill it was alleged that the true figure of 250-300 tonnes was not passed to the Incident Controller when known. The Incident Controller was working on a spill figure of 14 tonnes. Delays in advising true figures have the potential to create problems in the planning process, in particular the mobilisation of resources. It also has the potential to antagonise the media and local communities.

- *the National Plan should further develop guidelines on foreshore cleaning techniques for different shoreline types in tropical and subtropical areas of Australia. Additional training of personnel in shoreline cleaning techniques should also be provided.*

The first component of this recommendation is currently being addressed. In respect of the second component that deals with training, the development of a structured shoreline cleanup course was undertaken following a recommendation from the review of the *"Iron Baron"* spill in July 1995. AMSA, State and industry agencies will review the need to provide additional training in shoreline cleaning techniques.

- *the New South Wales National Plan Executive Committee should undertake a review of the NSW Marine Oil Spill Contingency Plan (to address 7 issues identified by the Incident Analysis Team)*

This recommendation is being addressed by NSW authorities.

Bunga Teratai Satu
The container ship *"Bunga Teratai Satu"* ran aground on Sudbury Reef in the Great Barrier Reef system off Cairns, Queensland in November 2000. The ship was carrying 1,200 tonnes of heavy fuel oil in its bunker tanks at the time of grounding. In view of the threat this oil posed to the marine environment contingency arrangements were put in place to respond should there be an oil spill.

The ship was refloated by professional salvors 12 days after it ran aground. There was no loss of oil.

A senior executive manager from AMSA who chaired the incident analysis teams that reviewed the Mobil Port Stanvac and *"Laura D'Amato"* spills and who is independent of the National Plan, is currently carrying out an analysis of the response arrangements that were put in place following the grounding of the *"Bunga Teratai Satu"*. It is expected that his report will be completed early this year (2001).

General Issues
The above incidents occurred in Australia and formal reviews have led to a range of recommendations designed to amend and enhance Australia's National Plan arrangements. However, overseas incidents also provide learning opportunities for Australia to enhance its response capabilities or to improve arrangements with our regional neighbours. One such incident was the *"Exxon Valdez"* incident in Alaska.

Exxon Valdez
The grounding of the tanker *"Exxon Valdez"* on Bligh Reef in Alaska's Prince William Sound in March 1989 contributed to the development and implementation of the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC).

The International Maritime Organization (IMO) concluded the OPRC Convention in November 1990. The Convention entered into force in May 1995, ie 12 months after the required 15 countries had accepted it. Australia acceded to the OPRC Convention in July 1992, becoming the 5th nation to do so.

The OPRC Convention renewed international focus on efforts to improve preparations for a major oil spill. The primary objectives of the Convention are to facilitate international co-operation and mutual assistance in preparing for and responding to a major oil pollution incident and to encourage countries to develop and maintain an adequate capability to deal with oil pollution emergencies.

One of the most significant provisions of the Convention is Article 10, which deals with co-operative arrangements between parties and states "Parties shall endeavour to conclude bilateral or multilateral agreements for oil pollution preparedness and response."

Another aspect of note is the undertaking of parties to cooperate with each other in responding to oil spill incidents and to render assistance when required to do so. Assistance can take the form of advisory services, technical support and the lending of equipment.

Australia has a longstanding Memorandum of Understanding on oil spill response with New Zealand. This MOU has been updated to take account of the OPRC Convention obligations.

The MOU addresses national contact points, loan of equipment and personnel, reimbursement of costs and consultation on issues such as contingency planning and exercises. The Maritime Safety Authority of New Zealand is represented on Australia's peak National Plan advisory body and Australia is represented on the New Zealand Oil Pollution Advisory Committee. A Maritime Safety Authority of New Zealand technician supported Australian personnel during their response to the *"Laura D'Amato"* spill. Personnel from both countries support each other during major exercises and other training events.

Similar MOU's have since been concluded with Indonesia, Papua New Guinea and New Caledonia.

The Indonesia/Australia MOU is designed to provide a cooperative plan for mutual assistance in the event of a major oil spill incident that exceeds the response capability of either national government. The area of application includes all waters within the territorial waters and EEZ of both countries and waters outside these areas in which an oil spill could affect one or both countries. The MOU contains detail relating to issues likely to arise if an oil spill were to occur, for example provision of assistance, inter-country movement of personnel and equipment, reimbursement of costs of assistance, transfer of recovered oil and ongoing consultation.

The grounding of the *"Exxon Valdez"* also provided impetus to a review and audit by the international oil industry of its response capabilities on a national basis. The review contributed to the establishment of a major industry oil spill response centre in Australia.

Established at a cost of $AUD10 million in 1990 and situated in Victoria close to very good road, rail, sea and air transport facilities, the Australian Marine Oil Spill Centre (AMOSC) was established as a subsidiary company of the Australian Institute of Petroleum (AIP) to provide the industry with significant capability to complement the Federal government in responding to major oil spills around the Australian coast. AMOSC also provides response capacity to adjacent areas in which Australian based oil companies operate.

Under an agreement between AMSA and AMOSC, the Centre's resources can also be made available to Federal and State/Northern Territory agencies for incidents not involving companies who are subscribers to AMOSC. Access to AMOSC resources is available through AMSA.

AMOSC is a vital component of Australia's response capability and the Centre and AMSA co-operate closely on a range of activities, including National Plan training.

Other Incident Outcomes

One of the questions asked when responding to a marine pollution incident is "who will pay"? A major incident involving an oil tanker provides greater surety of cost recovery, through the Civil Liability and Fund regime, than for a spill of bunkers from a non-tanker. When responding to a spill from a vessel other than an oil tanker, concerns over cost recovery are inevitably at the back of the mind of response managers. Although a conscious effort is normally made to ensure such concerns do

not reflect on the response operation, a response to a tanker spill does not normally give rise to any such concerns, as the shipowner is strictly liable to meet such costs.

In light of observations made following local spills from ships other than tankers, for several years Australia has been arguing at the IMO Legal Committee that an international convention is required to require all ships to have insurance cover to meet pollution damage, ie a Civil Liability Convention that applies to all ships. A Diplomatic Conference to conclude a Bunkers Convention will take place in London from 19 to 23 March 2001. As an interim measure Australian legislation to require all ships visiting Australian ports to have proof of insurance coverage will come into effect in April 2001.

Conclusion

The National Plan to Combat Pollution of the Sea by Oil and other Noxious and Hazardous Substances has served Australia well for nearly 30 years. On each occasion that it has been activated in response to a major spill it has been instrumental in achieving a positive outcome.

However, there is no reason for complacency and it is important that each response be reviewed to learn the lessons of history. At times this may not be palatable to everyone but Australia recognises that if it is to learn and enhance its ability to respond the next time an incident occurs it must not only identify the issues that worked well but identify those that didn't and take action to rectify the deficiencies.

The reports prepared by review and incident analysis teams are important to response agencies in that not only do they recognise the positive aspects of a spill response but they also identify the deficiencies and make recommendations to overcome them. They also provide solid evidence to Government for audit and review to ensure their policies on environment protection are working. This is a healthy and positive outcome.