

Response to the *Pacific Adventurer* Incident

Report of the Incident Analysis Team – February 2010

Strategic Issues Report



Report by the Incident Analysis Team into the Response by the
*National Plan to Combat Pollution of the Sea by Oil and Other
Noxious and Hazardous Substances* to the Container Loss and Oil
Spill from the *Pacific Adventurer* off the coast of Brisbane on 11
March 2009

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List of Acronyms Used in this Report

AIIMS – Australasian Inter-Service Incident Management System	OSRICS – Oil Spill Response Incident Command System
ALGA – Australian Local Government Association	OSTM – Oil Spill Trajectory Modelling
AMSA – Australian Maritime Safety Authority	QCCAP – Queensland Coastal Contingency Action Plan
BI – Bribie Island	QCH Act – <i>Queensland Cultural Heritage Act 2003</i>
B-ICC – Brisbane Incident Control Centre	QDM Act – <i>Queensland Disaster Management Act 2003</i>
BI-ICC – Bribie Island Incident Control Centre	QFRS – Queensland Fire and Rescue Service
DERM – Department of Environment and Resource Management	SAP – Scientific Advisory Panel
EMQ – Emergency Management Queensland	SAR – Search and Rescue
EPA – Environment Protection Agency (now DERM)	SC – Sunshine Coast
ESC – Environment and Scientific Coordination	SCAT – Shoreline Clean-up Assessment Team
ESST – Eastern Standard Summer Time	SC-ICC – Sunshine Coast Incident Control Centre
GBRMPA – Great Barrier Reef Marine Park Authority	SDMG – State Disaster Management Group
IAT – Incident Analysis Team	S-ICC – State Incident Control Centre
IC – Incident Controller	SMPC – State Marine Pollution Controller
ICC – Incident Control Centre	t/km – tonnes/kilometre
IMO – International Maritime Organization	
ITOPF – International Tanker Owners Pollution Federation Ltd	
LLMC 96 – Convention on Limitation of Liability for Maritime Claims, 1976 as amended by the 1996 Protocol	
MI – Moreton Island	
MI-IC – Moreton Island Incident Controller	
MI-ICC – Moreton Island Incident Control Centre	
MSQ – Maritime Safety Queensland	
NPMC – National Plan Management Committee	
NRT – National Response Team	
OH&S – Occupational health and Safety	
ORCA – Oil Response Company of Australia	

Preface

Following the *Pacific Adventurer* incident off Brisbane on 11 March 2009, a number of inquiries were undertaken to investigate the circumstances contributing to the cause of, and the response to, the incident.

The inquiry, which is the subject of this Report, was established by the Australian Maritime Safety Authority (AMSA) and Maritime Safety Queensland (MSQ) under the auspices of the *National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances* (the National Plan) and the National Plan Management Committee (NPMC).

An Incident Analysis Team (IAT) was established in April 2009. The IAT was charged with undertaking a comprehensive analysis of the management of the incident from an oil and chemical spill response perspective; to assess the adequacy of the response, and identify any lessons that could be learnt by Australian responders. The terms of reference for the incident analysis, including details of the IAT's membership are at Appendix 1.

IAT members attended debriefing sessions of the main organisations involved with the response and conducted interviews and discussions with many of the people involved, ranging from State-level management through to on-ground responders.

The IAT is grateful for the work undertaken by Mr Graham Miller of TMS Consulting who facilitated the MSQ sponsored debriefs.

The IAT has identified a number of issues that were raised either during or after the response. Each issue has been examined in detail using a range of available information sources to ascertain its veracity.

Based on this examination a series of conclusions and recommendations are presented. This report covers those issues which are more strategic in nature. A separate operational/technical report has been prepared for consideration by the National Plan Management Committee and the National Plan Operations Group.

The open response of the many individuals and organisations that provided information and made time available for interviews and discussion is appreciated by the IAT.

Any comments or criticisms in the Report must be read in a constructive sense. As with any analysis of an emergency incident it is important to ensure that the lessons learnt are used to improve preparedness and response arrangements in readiness for any future incidents.



Michael Julian
Chair, Incident Analysis Team
12 February 2009

Executive Summary

Following the *Pacific Adventurer* incident off Brisbane on 11 March 2009 an analysis was undertaken to examine the effectiveness of the preparedness and response arrangements for the chemical and oil spill response to the incident. The Australian Maritime Safety Authority (AMSA) and Maritime Safety Queensland (MSQ) established the review jointly under the auspices of the *National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances* (the National Plan) and the National Plan Management Committee (NPMC). The review was undertaken by a three person Incident Analysis Team (IAT) as outlined in Appendix 1.

The IAT found that overall the response to the incident was effective and generally in accordance with the policies and procedures set out in the National Plan and the Queensland Coastal Contingency Action Plan (QCCAP), which implements the National Plan in Queensland. A number of recommendations are made at the strategic level whereby National and State/NT marine pollution preparedness and response arrangements might be improved throughout Australia. The IAT has identified six key strategic areas warranting further consideration by NPMC.

Firstly, consideration should be given by the forthcoming National Plan review to providing a legal mandate for the National Plan (and/or each State/NT Plan) through supporting legislation, including *inter alia* defining the legal powers, authority and responder immunity for senior incident response personnel. Such legislation might be at the Commonwealth or State/NT level or both (see pages 29-31).

Secondly, the forthcoming National Plan review explores and clarifies the nexus between the National Plan (and each State/NT Plan) and Commonwealth and State/NT Disaster Management Plans with a view to exploring legislative and other arrangements to ensure that the significant resources, logistics and support capabilities of both Commonwealth and State/NT disaster and emergency management bodies, are better integrated into marine pollution preparedness and response arrangements. This would occur while allowing for command and control to remain under established National Plan procedures, even in the event of disaster management legislation being triggered. Such arrangements might be achieved through the legislative mandate proposed above (see pages 29-31).

Thirdly, consideration should be given by the forthcoming National Plan review to amending the Oil Spill Response Incident Command System (OSRICS) so as to ensure better integration with the Australasian Inter-Service Incident Management System (AIIMS), in order to facilitate the smooth insertion of personnel and management systems from agencies which use AIIMS into the oil spill response command structure (see pages 29-31).

Fourthly, AMSA/States/NT undertake a process to revitalise and raise awareness about the National/State/NT Plans amongst key players who play vital roles in support of the Plans, but which in many cases may not be fully aware of the National/State/NT Plans, relevant policies and procedures, nor their roles and responsibilities under the Plans. These key players include, but are not limited to; disaster and emergency management agencies, local government authorities and environment management agencies (see pages 29-31).

Fifthly, efforts be made by all parties to clarify and strengthen the role of local government in the National Plan and State/NT Plans as front-line responders for shoreline clean-up, including establishing appropriate training programs for local governments through the Australian Local Government Association (ALGA) and State-level Local Government Associations, in consultation and cooperation with AMSA and State/NT Lead Agencies, as part of the National Plan training program (see page 19).

Lastly, the National Plan and State/NT Plans need to provide clear guidelines on implementing clean-up operations of highly sensitive and valuable ecological resources such as wetlands. These should include setting priorities, the approval process and the agencies responsible (see pages 22 and 23).

During field visits in May and June 2009 by the IAT, the beaches were clean of oil and except for some remaining oil on the Moreton Island rocky shores and the ongoing clean-up efforts at Spitfire Creek, it was hard to tell that a 270 tonne spill of heavy fuel oil had occurred. The IAT formed the view that overall the response was effective. This result is a testament to those involved in the prolonged response which ended with a successful outcome.

While any spill usually entails a degree of political, public and media scrutiny, the fact that a Queensland State election was to be held only 10 days after the spill added a heightened focus that has not been seen in previous Australian oil spill responses.

1. Incident Description

At 0315¹ (Eastern Standard Summer Time, [0415 ESST]) on Wednesday 11 March 2009, the 1990 built, 23,737 dwt, Hong Kong China registered general cargo ship *Pacific Adventurer*, lost 31 containers of ammonium nitrate overboard whilst nearing the end of a voyage from Newcastle to Brisbane. The incident occurred some 7 nautical miles (nm) east of Cape Moreton as the vessel approached the pilot boarding ground off Mooloolaba prior to entering Moreton Bay.

The ship reported at 0600 that it was holed on its port side near its engine room and that No.1 fuel oil tank had been breached with the loss of some oil before the remainder could be pumped from the damaged tank. The Master listed the ship 3° to starboard to bring the hole in the ship's side plating above the waterline to further reduce the risk of oil escaping.

The Master estimated that at the time of the incident up to 30 tonnes of heavy fuel oil was lost into the sea. However, unknown to the Master, one of the ship's starboard bunker fuel tanks had also been damaged below the waterline by one of the containers lost overboard. This was not discovered until more than 48 hours later at Hamilton Wharf in the Port of Brisbane, when, during an independent audit of the oil on board, the 3° list was removed and the ship brought upright. The lists' removal was done to conduct additional soundings so as to more accurately assess the total volume of oil lost. In the process of removing the list, a further spill of oil occurred revealing for the first time the hole in the starboard side bunker tank. It was subsequently estimated that about 270 tonnes of heavy fuel oil, in total, had been lost from the vessel.

Before embarking the pilot, the *Pacific Adventurer's* Master indicated that he needed to bring the ship to a place of refuge as he was concerned for the safety of the ship's crew and the ship.

The Brisbane Harbour Master undertook an assessment according to the *National Maritime Place of Refuge Risk Assessment Guidelines* and advised the ship to take on board a pilot and proceed to the Sharks Spit anchorage west of Moreton Island in the southern part of Moreton Bay so that a full assessment of the ship and its damage could be made.

Beginning later that day and over the next several days, the ship's bunker oil impacted significant portions of the south-east Queensland coast. In particular the eastern and northern beaches and headlands of Moreton Island (MI) (a National Park surrounded by Marine Park); the eastern beaches of Bribie Island (BI) (north of Brisbane, much of which is National Park and is also surrounded by Marine Park); the beaches and foreshores of the Sunshine Coast (SC) (north of Brisbane) and small areas of the Brisbane River.

Under the National Plan response arrangements, the Queensland Government through MSQ was responsible for the management of the response, for the ammonium nitrate from the lost containers as well as the oil spill. AMSA, as the National Plan manager and statutory agency, provided specialist and logistical support to the response, but as the incident occurred outside State waters, AMSA

¹ All times in this Report are expressed in Eastern Standard Time

also assumed responsibility for locating the lost containers and deciding what action, if any would be necessary.

On receipt of the report of the lost 31 containers of ammonium nitrate the Brisbane Harbour Master alerted various agencies under the Queensland contingency arrangements for marine chemical spills, including the Queensland Fire and Rescue Service (QFRS), as MSQ's advisor and provider of operational support for chemical spills at sea. MSQ and AMSA also issued appropriate navigation safety warnings to shipping in the area with a request for sighting reports of the lost containers.

The State Incident Control Centre (S-ICC) was established at MSQ's Mineral House headquarters and the Brisbane Incident Control Centre (B-ICC) was setup at the MSQ Regional Harbour Master's office and marine operations base at Pinkenba. The State Marine Pollution Controller (SMPC) made arrangements for the Queensland National Plan State Committee (State Committee) to meet as soon as possible.

The QFRS ascertained that the ammonium nitrate spilt into the sea did not pose a threat to human safety. However, it was recommended that the ammonium nitrate on the ship's deck be washed off while the ship was at the Sharks Spit anchorage in Moreton Bay. The Queensland Environment Protection Agency (EPA) (now Department of Environment and Resource Management – DERM), was consulted on this proposal through the National Plan Environment and Scientific Coordinator (ESC) for Queensland, and gave approval for the washing of the ammonium nitrate overboard. Later, the ship moved to a berth at Fishermans Island in the Port of Brisbane, where the remaining containers were discharged prior to the ship relocating up-river to Hamilton Wharf.

On receipt of the Master's report that about 30 tonnes of oil had been lost, MSQ initiated an oil spill response in addition to the chemical spill response.

Given the close proximity to Moreton Island and knowledge of currents and the existing wind conditions, MSQ expected that oil would come ashore on Moreton Island later that day and possibly the Sunshine Coast the next day. Considering the initial relatively small reported size of the spill, a small response team was sent to Moreton Island to assess the extent of shoreline oiling and with basic equipment to establish de-contamination stations and prepare for shoreline clean-up operations.

To assist with spill response planning, Oil Spill Trajectory Modelling (OSTM) was undertaken. The oil spill trajectory modelling predicted considerable oiling would occur along the coastline at Moreton Island with lighter oiling on Bribie Island and the Sunshine Coast.

The first aerial surveillance flight at 1030 on Wednesday 11 March reported patches of mainly light sheen and one 'slick' 3nm x 500m at approximately 10% coverage in the vicinity of Flinders Reef north-west of Moreton Island.

The second flight between 1400 and 1500 later that day recorded pooling of oil in Honeymoon Bay and heavy oiling along the eastern beach from Cape Moreton to 1 kilometre south with heavy oil slicks sighted off the eastern beach on Moreton Island.

It was not until the aerial surveillance flight in the mid afternoon on Thursday 12 March by the SMPC that heavy oiling of beaches was seen on Moreton Island and mousse oil off the Sunshine Coast. The SMPC estimated at that time that the amount of oil spilt was approximately 250 tonnes.

Immediate steps were taken to step-up the response including alerting MSQ Mooloolaba of likely oil coming ashore and the establishment of Incident Control Centres on Moreton Island, Bribie Island and on the Sunshine Coast.

Over the next 100 days a major oil spill response and clean-up operation was undertaken over approximately a 75 kilometre stretch of Queensland’s shoreline.

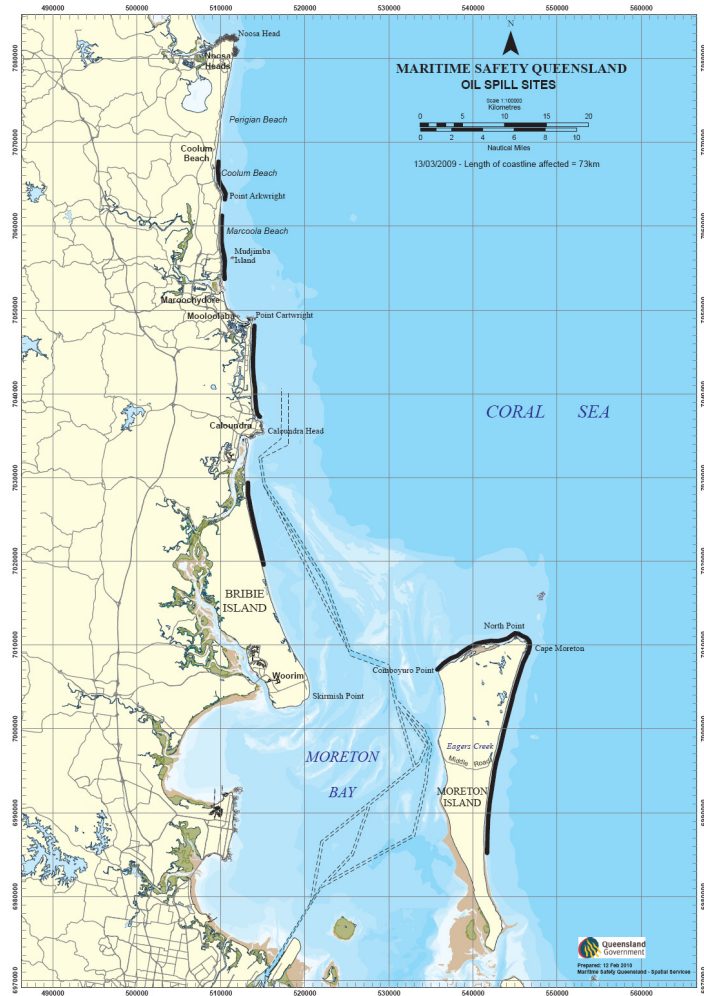


Figure 1: Diagrammatic map of extent of oiled coastline

The majority of oiling occurred on the exposed beaches subject to high-energy wave action on the east coast of Moreton and Bribie Islands and on the Sunshine Coast from Caloundra to Maroocha (see Figure 1). While oiled sand beaches are relatively straightforward to clean, the beach clean-up operations were complicated by the highly dynamic nature of the beaches, which caused beached oil to be covered by sand, establishing layers of oil beneath the beach surface. As all areas affected by the spill had high tourism, recreation and community amenity value, a high standard of clean-up was required to support the recovery of the tourism industry and restore previous levels of amenity.

Rocky headlands and shorelines at the northern end of Moreton Island were also impacted by the oil. As much of that shoreline is extremely rugged with only foot access – clean-up activities were restricted to manual removal of bulk oil where possible – thus leaving the rocky shores to clean naturally through environmental processes.

Two freshwater wetlands were also impacted by oil on the east coast of Moreton Island – Eagers Creek and Spitfire Creek. Mermaid Lagoon on Bribie Island was also oiled. Wetland response and clean-up operations on Moreton Island were significantly hampered due to delayed actions and approvals by EPA. This proved problematical, especially at Spitfire Creek.

On 12 March, a disaster situation was declared by the Queensland Premier and the Minister for Emergency Services under the *Queensland Disaster Management Act 2003* (QDM Act), covering the areas affected by the oil spill.

While the disaster declaration assisted in mobilising a wide range of personnel and resources, its primary benefit was in assisting with a whole-of-government approach to the response under the aegis of the Queensland State Disaster Management Group (SDMG).

However, the disaster declaration created a number of concerns such as lack of clarity of command and control through the new and untested relationship between the SMPC and EMQ and the potential overlap between agency responsibilities and functions and highlighted the need for greater coordination and integration between the National Plan and disaster management plan response arrangements.

While a number of beaches were opened by Easter (10-13 April) clean-up operations were completed at the Sunshine Coast and Bribie Island including the rehabilitation of staging areas and temporary waste sites by 20 April 2009. By 19 June 2009, Moreton Island beach clean-up operations were completed and most response personnel and equipment left the Island though there was still on going clean-up, assessment and monitoring work at Spitfire Creek.

At the height of the incident there were more than 2,500 people assigned to assist with the incident response and clean-up operations.

MSQ was supported by a range of organisations as part of the State's emergency management arrangements, including: Queensland Departments of Transport, Primary Industries, Health, Correctional Services and Public Works; Queensland Environment Protection Agency and its Parks & Wildlife Service; Queensland Department of Emergency Services including Emergency Management Queensland (EMQ), State Emergency Service; Queensland Ambulance Service and Queensland Fire & Rescue Service; Queensland Police; Queensland Rail; RoadTek; Quandamooka Land Council; Brisbane City Council; Moreton Bay and Sunshine Coast Regional Councils; Pelican and Seabird Rescue; Tourism Queensland and a range of consulting and contracting firms.

Personnel and equipment were also mobilised from interstate under the National Plan/National Response Team (NRT) arrangements. NRT participants included AMSA; Marine Safety Victoria; NSW Maritime; Sydney Ports Corporation; Newcastle Ports Corporation; Department of Environment, Tasmania; Department for Planning and Infrastructure, Western Australia; Fremantle Ports; Department for Transport, Energy and Infrastructure, South Australia; Department of Planning & Infrastructure, NT; Port of Brisbane Corporation and the Queensland Ports of Townsville, Gladstone; Great Barrier Reef Marine Park Authority (GBRMPA); the Australian Marine Oil Spill Centre and the Oil Response Company of Australia (ORCA).

Finally, under the Memorandum of Arrangement on Oil Pollution Preparedness and Response between Australia and New Zealand personnel from Maritime New Zealand were also mobilised.

Following temporary repairs to the ship and clearance by the ship's classification society, AMSA and MSQ assessed the ship as being in a seaworthy condition to undertake the voyage to an overseas shipyard for permanent repairs. The *Pacific Adventurer* departed the Port of Brisbane on 16 April 2009.

2. Initial Response

(a) Issue: Response to the Initial Report of the Loss of Oil

Background

By 0600 when the *Pacific Adventurer's* Master reported the loss of 30 tonnes of oil, the S-ICC and the B-ICC were in the early stages of being established to respond to the loss of containers and the chemical spill. The QCCAP was initiated and MSQ personnel and other authorities including AMSA were notified. The B-ICC organised through AMSA for an aerial surveillance flight tasked with determining the extent of the oil spill and to search for the containers. The flight took off at 1030.

The B-ICC also arranged for personnel and beach clean-up and decontamination equipment to be despatched to Moreton Island. This equipment was assembled and readied for shipment by barge which departed at 0830 on Thursday 12 March with a second barge departing later that day at 1330.

At the time, an initial decision was made that in view of the sea state and meteorological conditions including strong to gale force winds, the small amount of oil reported to have been lost and the presence of nearby sensitive reef areas, that dispersant spraying by National Plan aerial dispersant aircraft was inappropriate. Also, these conditions meant that on-water recovery would not be effective. Thus, the only effective response options generally available were foreshore clean-up and the booming of waterways likely to be impacted.

The IAT notes that the threat assessment at paragraph 6 in the QCCAP Sunshine Coast Area First-Strike Oil Spill Response Plan mainly concentrates on recreational and fishing vessels. However, it does recognise a threat of a heavy fuel oil spill incident of a vessel in the vicinity of the pilot boarding ground and states such an incident would be covered by the Port of Brisbane Oil Spill Action Plan. It states that booming Mooloolaba Boat Harbour entrance would be the first line of action in such a case to prevent ingress of oil into the harbour.

Conclusion

MSQ's initial call out procedures and response actions where appropriate, effective and timely.

Considering the prevailing environmental conditions, safety matters and the short time window between the discharge occurring and oil impacting the coastline, the initial decisions to undertake shoreline clean-up and not use chemical dispersants nor deploy containment booms and oil recovery equipment at sea were appropriate, sound and consistent with National and State Plan policies and procedures.

Given that the actual spill size in the early hours of the response was not known, the deployment of response equipment is considered adequate. However, the IAT notes that the deployment of booms to protect the entrances to the Maroochy and Mooloolaba Rivers in particular, could have been faster – within 12 hours rather than the 48 hours reported. While there was sufficient boom available locally to boom the Mooloolah River additional boom was deployed from Brisbane to boom the Maroochy River.

(b) Issue: Assessment of Damage to the Ship and Preparations Prior to Entering the Port of Brisbane

Background

Following the ships' request for a place of refuge, MSQ's Brisbane Harbour Master undertook an assessment according to the *National Maritime Place of Refuge Risk Assessment Guidelines*, and consulted with QFRS and EPA respectively, regarding the public safety and environmental risks associated with the ammonium nitrate spill. A decision was made to allow the ship to access a refuge at Sharks Spit anchorage west of Moreton Island in the southern part of Moreton Bay, so as to secure the safety of the ship and its crew.

Although the Master had requested that the ship be brought to a place of refuge so that a full damage assessment of the vessel and its cargo could be undertaken, an underwater inspection of the hull was not carried out. The IAT was advised that weather conditions precluded this inspection and also that "the water was very murky".

Tank soundings on the ship requested by MSQ and undertaken by an independent surveying company, were verified by an AMSA surveyor at the anchorage to determine the amount of oil remaining in the ship and so calculate the amount of oil lost. The tank soundings used the 'ullage' measurement technique.

It is customary that when a damaged ship, particularly one having released oil into the sea, enters a port, an oil spill response plan is developed. This may include appropriate boom and other response equipment being placed on vessels accompanying the damaged ship to the berth and the ship boomed after berthing. This was not done in this incident.

Conclusion

The decision making by the B-ICC to allow the ship place of refuge access to Moreton Bay and then the Port of Brisbane was seen as being decisive and pragmatic with priority appropriately being given to the safety of the ship and its crew.

While there was no evidence of an ongoing discharge whilst the ship transited Moreton Bay to its anchorage and therefore no reason to suspect additional damage, in hindsight, an underwater hull inspection could have identified the damaged starboard bunker tank and led to an earlier appreciation that 270 tonnes of oil had been spilt.

The IAT notes it is a very rare occurrence for a shipping container to puncture the hull of a ship it has fallen overboard from, for two containers to fall overboard and puncture a ships' hull is even rarer.

Had the ship been boomed on berthing at Hamilton Wharf the small release of oil into the Brisbane River from the starboard bunker tank would have been contained and therefore easier to clean-up and/or recover. Nevertheless, the oil discharged at Hamilton was quickly recovered.

(c) Issue: Establishment and Functions of Incident Control Centres (and Selection of Personnel to the Incident Management Teams)

Background

Additional Incident Control Centres were set up at Moreton and Bribie Islands and on the Sunshine Coast. This was undertaken when it became apparent to the SMPC that the spill was larger than previously advised and consequently that the initial response level was insufficient. It was also decided to place a senior Queensland Transport official as the Incident Controller (IC) at Moreton Island but initially not the Sunshine Coast. On Saturday 14 March the Deputy SMPC travelled to the Sunshine Coast and assumed the IC role.

Having five incident control centres (S-ICC, B-ICC, MI-ICC, BI-ICC and the SC-ICC) resulted in uncertainty with regard to command and control, particularly with the BI-ICC. Information flow, directions and reporting often by-passed the B-ICC which was supposed to be managing the on scene ICs. The roles and responsibilities of each of the IC's were not clearly established. This led to considerable difficulty in co-ordination. For example, there were many logistics requests that were either being duplicated or unrequested supplies being sent, particularly to Moreton Island.

The IAT believes that overall the performance of the SMPC and the ICs during this challenging response were highly commendable.

However, the number of ICC's highlighted the difficulties in selecting suitable National Plan trained IC's particularly over the initial 2 weeks of the response. In some cases, the appointment of senior officials as ICs without prior National Plan training as an IC led to some uncertainties and differences in approach and methods.

The placement of the Deputy SMPC as the Sunshine Coast IC meant that the SMPC was without a deputy supporting him in the S-ICC. Thus, the SMPC could not step back from the day-to-day incident management and undertake strategic planning for the following 24-48 hours. The retention of the deputy SMPC in Brisbane could also have relieved the SMPC who managed the entire incident, often up to 18 hours a day in the first few weeks of the incident, without relief. This highlights the lack of experienced personnel available and raises serious occupational health and safety (OH&S) issues at the highest level of the response.

Conclusion

In responding to the chemical and oil spill, the B-ICC established initial command and control well. However, the role of the B-ICC after the chemical response was completed and the oil spill response increased to deal with a much larger spill than first reported, became by default a logistics provider. Planning for the on-ground response was being undertaken on site by the forward ICs. The B-ICC was slow to recognise this evolution and continued trying to manage the response. This should have been addressed.

Under National Plan/OSRICS terminology, it is usual for there to be only one ICC with on scene operations centres usually called a forward field base or advanced operations centre. However, in view of the complexity in dealing with a large work force, lengthy oiled coastline and significant media interest over an extended area of coastline, these operations centres were appropriately given ICC roles and responsibilities.

Because of the complex arrangements, there was some uncertainty with regard to command and control. Having five ICC's also led to difficulties in staffing them with sufficient numbers of trained and experienced people. Personnel working in the B-ICC advised the IAT that the B-ICC was under-resourced which led to difficulties in managing and supporting the other ICC's. However, as indicated above, the B-ICC became more a logistics provider. If this role and its relationship to the other ICCs/ICs had been made clearer in the early stages of the response, then this would have helped improve perceptions and the operational functions of the B-ICC.

In the initial setting up of the ICC's, a lack of consideration was given to filling the positions identified under the OSRICS response structure with appropriate skilled and experienced people, again a result of perhaps too many ICCs.

The SMPC had neither a deputy nor access to a strategic advisor and ran a risk of fatigue and exhaustion. In previous incidents, a strategic oversighting function has frequently been provided by officers from AMSA, which has overall responsibility for the National Plan. The IAT notes both the loss of experienced personnel in recent years means AMSA's ability to undertake this role is uncertain and that the SMPC did not have access to strategic advisors in the private sector due to their unavailability.

The IAT notes that the National Plan and the current OSRICS structure does not provide for or define ICC arrangements including the provision for multiple ICCs and/or advanced operations centres. Where multiple ICCs are used it is essential that clear roles and responsibilities of each ICC are established by the SMPC and communicated to each IC/ICC, and that this in turn is communicated by the IC to all ICC personnel

(d) Issue: Aerial Surveillance

Background

The IAT noted that the initial aerial surveillance flights did not locate any significant signs of the 270 tonnes of heavy fuel oil.

The first aerial surveillance flight conducted by helicopter at 1030 on Wednesday 11 March reported patches of mainly light sheen and one 'slick' 3nm x 500m at approximately 10% coverage in the vicinity of Flinders Reef north-west of Moreton Island.

The second flight also conducted by helicopter between 1400 and 1500 later that day recorded pooling of oil in Honeymoon Bay and heavy oiling along the eastern beach from Cape Moreton to 1 kilometre south with heavy oil slicks sighted off the eastern beach on Moreton Island.

The information gained from the aerial surveillance flights on days 1 and 2 was consistent with the reported 30 tonne spill.

It was not until the aerial surveillance flight in the mid afternoon on Thursday 12 March by the SMPC that heavy oiling of beaches was seen on Moreton Island and mousse oil off the Sunshine Coast. The SMPC estimated at that time that the amount of oil spilt was approximately 250 tonnes.

The IAT has received advice from a representative of the International Tanker Owners Pollution Federation Ltd (ITOPF) suggesting that some heavy fuel oils with

densities close to that of seawater and/or very high viscosities, particularly after weathering, do have the propensity to become submerged, either fully or partially, particularly in rough seas. Essentially, the typical mechanism involved is that the waves 'push' the oil down just below the sea surface and keep it there until either the weather subsides or the oil comes ashore.

Thus, submerged oil can severely impair a responders' ability to detect floating oil slicks, predict volumes and trajectories and advise on response strategies. The capability of observing sheen is also reduced in overcast weather with poor visibility. Weather conditions on 11 and 12 March, at the tail end of Cyclone Hamish, were overcast, with some rain showers, so the utility of the aerial surveillance was extremely limited.

The early aerial surveillance flights suffered from some limitations in that:

- Although an experienced operator within the aviation sector, the initial aerial observer had not received specific training nor had experience in aerial observation of oil at sea.
- while the first flight task and altitude adopted did detect a 3nm x 500m sheen slick between the incident site and the Sunshine Coast, it did not detect any oil slick between the incident site and Moreton Island,
- the aerial observers were unable to fully describe the method used to determine the actual size of the slick observed or to calculate the volume of oil based on such observations, despite standard methods being available; and,
- a standard aerial surveillance data form was not used.

The IAT notes that two of the AMSA Dornier Search and Rescue (SAR) aircraft were used during this response to conduct aerial surveillance.

Conclusion

A key element in determining the response strategy and resource required is determining the size of the spill from source estimates other than that reported by a ships' Master.

It is highly likely that the above outlined ITOPF scenario actually occurred during the *Pacific Adventurer* spill: considering the severe weather, rough seas and accounts from those on aerial surveillance flights, it remains a strong possibility that a high proportion of the floating oil was 'overwashed' by waves while offshore rendering it undetectable from the air for some period of time.

What is certain is that it is essential that aerial surveillance be undertaken by observers with the appropriate training and experience.

AMSA Dornier aircraft were used for aerial surveillance between 12 and 19 March. This was the first oil spill response incident that the AMSA Dornier aircraft had been used. To ensure full benefits from the AMSA Dorniers are obtained in future pollution response incidents, information on the capabilities of these aircraft needs to be included in National Plan documentation and training for Dornier crews needs to maintain a focus on aerial observation of oil.

Issues to be Addressed

- The Sunshine Coast Area First-Strike Oil Spill Response Plan should be reviewed in terms of the adequacy of response equipment at Mooloolaba for use in booming sections of the rivers in this region and not rely on transporting equipment from Brisbane.
- The need to ensure that when a damaged ship is brought to a place of refuge following an oil spill, that a thorough response plan be developed, including an underwater hull inspection. NPMC should consider whether this requirement should be included in the *National Maritime Place of Refuge Risk Assessment Guidelines*.
- The need to ensure where multiple ICCs are used it is essential that clear roles and responsibilities of each ICC are established by the SMPC and communicated to each IC/ICC, and that this in turn is communicated by the IC to all ICC personnel.
- The need for a pool of experienced and trained ICs to be included in the NRT who can be used either in the role of Strategic Advisor to the SMPC and/or the State/NT IC or where circumstances demand, used as an IC.
- The National Plan training program should place an increased emphasis on training in aerial observation of oil at sea, including standard methods for calculation of slick dimensions and spill volumes, and access to, and capability of, the SAR Dorniers. Trained and experienced observers are to be used on all aerial surveillance flights wherever possible.
- The need to recognise that pollution reports from the polluter may prove to be imprecise, often conservative. All efforts should be made to validate the quantity to better inform planning and decision making.

3. Beach Cleaning Techniques and Resources

(a) Issue: Beach Cleaning Techniques

Background

During the response a debate ensued as to whether to use heavy equipment (front end loaders, excavators, etc) to clean oiled beaches, especially on the Sunshine Coast. While this matter was discussed at the operational level it also received open, on-air discussion at both the mayoral and Ministerial level with a disagreement as to the utility of such an approach.

The Sunshine Coast Regional Council expressed a view to the IAT that from an economic and tourism perspective, their interests were best served by removing the oiled sand as quickly as possible using their available heavy machinery.

The alternative perspective, that cleaning of oiled beaches is best achieved through the use of rakes, shovels, etc, was utilized on the beaches of both Moreton and Bribie Islands, which are National Parks.

The IAT notes that the Sunshine Coast Area First-Strike Oil Spill Response Plan (Appendix 10 to the QCCAP) has not been updated to accommodate the amalgamation of councils in 2008 and states that Caloundra City, Maroochy Shire, and Noosa Shire Councils are authorised to initiate and carry out first-strike response operations within their respective local government areas without further direction from MSQ. However, any response action taken by the respective councils must be in accordance with section 9 of this Plan (which amongst several other response actions also refers to beach clean-up) and must be reported to MSQ. Appendix 10 does not provide any guidance on beach clean-up techniques or defines a First-Strike Oil Spill Response.

Conclusion

While the Sunshine Coast Regional Council's approach was reasonable from their perspective, the manner in which the heavy machinery was used on the beach may have exacerbated the clean-up. Unless used correctly, heavy machinery compresses oil into the sand and significantly increases the volume of waste material and sand that needs to be removed from beaches, with an associated cost in the handling and disposal of that waste.

This is shown in figures derived from the Queensland EPA which indicates that 342.86 tonnes/kilometre (t/km), 76.73 t/km and 15.71 t/km of waste material and sand were collected from the Sunshine Coast, Moreton Island and Bribie island, respectively, during the clean-up.

Better and more cost effective beach clean-up could have been obtained by the Sunshine Coast Regional Council if they used graders rather than front end loaders. Graders have more precise controls to skim the beach surface rather than the coarse control exhibited by front end loaders. An experienced grader operator trained in beach clean-up techniques is very adept at pushing the oiled sand into windrows where it can then be picked up. The only wheels impacting the oiled beach would be those on the front of the grader.

(b) Issue: Use of Public Sector Workforce for Beach Clean-up

Background

It became apparent on the aerial surveillance flight by the SMPC on the afternoon of Thursday 12 March that the amount of oil lost by the vessel was significantly more than the amount initially reported. This necessitated that a larger response was required as well as an associated need for a work force of 'several hundred'.

The decision was made to send 300 public sector workers from Public Works, RoadTek and Brisbane City Council's work force to Moreton Island in order to quickly "ramp-up" the response capability, it would appear, with limited detailed consideration of the logistics planning to support this number of personnel in a remote location.

Conclusion

Given the circumstances and isolated location, the deployment of the Public Works, RoadTek and Brisbane City Council's workforce on Moreton Island was undertaken with limited pre-planning, logistics support or onsite supervisors in place to sustain and manage 300 response personnel in a comparatively remote area.

A related matter to the use of the public sector workforce was that some organisations were not familiar with National or State Plan arrangements nor were they aware of the planning and logistics required to support such a large number of field personnel. Some organisations such as RoadTek provided their own logistic support and supplemented the logistical support for other organisations. For example, at one time the RoadTek staging point on Moreton Island was feeding 220 to 250 workers per day when only 150 RoadTek personnel were on the Island.

The IAT notes the importance of the necessary logistics support and arrangements required to sustain and manage a large work force in a comparatively remote area.

(c) Issue: Use of Private Sector Work Force

Background

In week 3 of the response a decision was made to change from a public to private sector workforce for the beach clean-up operations. This was done to release public sector workers back to their core jobs in local and state government, where scheduled work was being delayed due to their diversion to the spill response.

By and large the transfer to private sector contractors was seen as effective although a number of areas have been identified for improvement which should be adopted under National Plan arrangements.

RoadTek, one of the main public sector workforce providers, was concerned that it was only given 24 hours notice that they would be leaving Moreton Island and handing over to private sector contractors – a longer handover period would have been desirable.

A longer hand-over would have benefited the newly arrived private sector contractors with practical experience that had been gained by RoadTek and other

workers. A request was made for a RoadTek Project Manager and team supervisor to stay on to assist with the hand-over to the private sector contractors.

The engagement of the private sector contractors required the urgent development of contractual arrangements and the fees schedule had to be developed *ad hoc*, and included an external, third party as the contract superintendent. This complicated the private sector contractors' command and control arrangements, as at times conflicting advice was being given by the contract superintendant and the IC who was the operational manager.

Conclusion

Based on interviews with a large number of spill responders, the IAT formed the view that both the public and private sector work forces performed well. The IAT notes that it would be desirable for better hand-over procedures to be in place when changing over large sections of the response workforce.

Issues to be Addressed

- The role of local government in State/NT Plans as front-line responders for shoreline clean-up needs to be clarified and promulgated to all concerned.
- Coastal councils throughout Australia should receive National Plan training on shoreline clean-up including the correct use of heavy equipment for oiled beaches and that councils be given responsibility to maintain that training.
- In light of the experience of utilising a large workforce in this response, NPOG should review the guidelines to ensure that they are appropriate.
- MSQ should update the Sunshine Coast First-Strike Plan to show current council boundaries.

4. Planning and Environmental Issues

(a) Issue: Incident Response Planning

Background

In the early days of the response, when it was determined that a spill of 270 tonnes had occurred, maximum effort was applied to recover large amounts of oil from the beaches, however delays occurred in the treatment and recovery of the more sensitive wetlands and rocky headlands.

After the first week, following the bulk removal of oil from the beaches, response planning became more orderly using standard techniques involving a systematic appraisal based on detailed beach assessments and the use of Shoreline Clean-up Assessment Teams (SCAT).

One area of ecological concern identified by the IAT was the delay in the clean-up operations of Spitfire Creek and its associated wetland on the north-east coast of Moreton Island. Although a wetlands response plan had been developed by a consultant on 19 March 2009, it was not until 12 days after it had been oiled (31 March) that some clean-up activities commenced in Spitfire Creek. The IAT was advised that although the S ICC had identified Spitfire Creek as a priority, delays in commencing clean-up operations were due to the responders not receiving formal approval. The IAT was informed by several of those interviewed that advice had been received to leave the clean-up of the wetland areas until later. However, no evidence was provided to support this.

The delay in approving appropriate clean-up activities in Spitfire Creek allowed the oil that was present on the surface of the Creek in the early days of the spill, which could have been removed with manual methods, to accumulate sediment, sink to the substrate and mix with the near-bottom detritus layer.

This would have significantly increased the ecological impact of the spill on the wetland and its associated flora and fauna. It would also have made the subsequent clean-up effort more difficult and expensive, and unnecessarily disruptive to the wetland itself, as the detritus/oil layer has had to be removed using a high-impact suction technique.

The development, approval and implementation of an adequate incident response plan for the Spitfire Creek wetlands should have been initiated immediately it was known that the wetland had become oiled (on day two of the spill).

The IAT also noted that at Honeymoon Bay, clean-up crews did not remove the bulk oil in the rock pools and around cliffs when they were undertaking beach clean-up activities. This oil could have easily been removed manually.

Conclusion

The IAT notes that the delays in obtaining the appropriate approvals led to highly sensitive environments such as the Spitfire Creek wetlands, not being cleaned as soon as practicable and this resulted in more expensive and disruptive techniques being required at a later date. This issue should have been resolved at the time by the parties concerned.

The procedures for approving response plans for environmentally sensitive areas need to be streamlined so that effective, low impact clean-up action can be initiated shortly after it is known that sensitive areas have been affected.

(b) Issue: Environmental and Scientific Inputs

Background

The IAT was advised that resource constraints prevented the development of an overall strategic environmental and scientific plan until after an independent consultant was engaged on 17 March. The SMPC also formed an independent Scientific Advisory Panel (SAP) on 24 March. The SAP provided important independent advice to the SMPC to inform response planning and decision making.

An additional consultant was also hired to determine the end point of the beach clean-up process so as to allow for the re-opening of beaches to the public.

Conclusion

The work undertaken by the independent consultants and the SAP would normally have been coordinated by EPA in fulfilling its role as ESC. However, EPA appeared not to have sufficient number of trained personnel with understanding of the National Plan or relevant knowledge and skills to perform the tasks required.

The establishment of the SAP was an effective means to meet the need for independent advice to inform response decision making.

Issues to be Addressed

- The NPMC should ensure that National Plan and State/NT Plans stress that high priority should be given to implementing the developed incident response plans for each area affected by a spill.
- Personnel with appropriate environmental and scientific skills, experience and qualifications (i.e. ESCs) should be included on the NRT.
- The Queensland EPA (now DERM) (and other State/NT environment agencies) should review their own oil spill response capabilities under the National and State/NT Plans in conjunction with the relevant State/NT lead agency.
- NPMC should consider endorsing an approach in situations where the environmental agency is slow in approving a response to a sensitive area affected by an oil spill, that the IC should be empowered to take the appropriate action.
- There is a need for the ESC to provide inputs directly to the SMPC as well as to the IC.

5. Interaction and Involvement of the Various Parties Involved in the Response

(a) Issue: Interactions with the Media

Background

The Queensland government invested considerable specialist media resources to manage media enquiries and issue regular press releases. By and large, this was handled efficiently and effectively with good use being made of both the 1800 telephone service to provide regular updates and MSQ's website.

In the early stages of the response senior technical people including the ICs were devoting significant time and effort to dealing directly with the media on an *ad hoc* basis.

On Moreton Island, the Tangalooma Resort Manager became a *de-facto* media spokesperson undertaking frequent interviews and providing advice to the media as to what was happening.

There was certainly some adverse media regarding the initial handling of, and perceived slow response to the oil spill. However, this needs to be tempered with the fact that media interest in the oil spill and the response was heightened in the lead up to the Queensland State election.

Conclusion

The IAT notes that senior technical people including the SMPC and ICs devoted significant time and effort to dealing directly with the media on an *ad hoc* basis rather than giving priority to managing the actual response. There should have been better control of areas and times for media access to the SMPC and IC's, with fixed daily times and locations for media briefings agreed to with media personnel in the early stages of the incident. Such an approach has been successful in previous incidents.

(b) Issue: Consultation with Moreton Island Residents

Background

The stakeholders on Moreton Island while critical of the lack of initial communications with them were particularly praiseworthy of the interaction of the MI-ICC and the media with themselves after Easter when they were advised for the first time what was going on and were kept informed on a regular basis.

Letterbox drops to the local community were conducted and notices were placed in selected locations in the community.

Conclusion

The IAT believes that post-Easter consultation with stakeholders on Moreton Island was highly effective.

(c) Issue: Consultation and Engagement with Traditional Land Owners

Background

The Quandamooka Land Council, the traditional land owners of Moreton Island, advised that they were disappointed that they were not formally contacted by response authorities and informed of the incident in the early days of the response, despite the impacted areas being of major significance to them. They only learnt of the spill through word-of-mouth, the news media and informal, personal networks. This is unfortunate as the National Plan clearly provides for the immediate notification of, and engagement with, relevant traditional owners if their areas are impacted by a spill.

Additionally, under the *Queensland Cultural Heritage Act 2003* (QCH Act), initial site works such as the establishment of staging areas and decontamination sites on Moreton Island should have been overseen by a traditional owner supervisor. This was not done.

However, the traditional owners reported that once they took the initiative and made contact with the response authorities, requesting a briefing and site visit, facilitation of their participation was outstanding. Activities included:

- hosting a delegation of senior traditional owners on Moreton Island on Saturday 14 March and providing a tour and briefing of clean-up actions;
- engaging the EPA's indigenous youth ranger training program to assist in the clean-up of Spitfire Creek wetland;
- displaying a map of significant cultural heritage sites from the Queensland cultural heritage database in the MI-ICC;
- providing response workers arriving on the Island with an induction handout on indigenous issues awareness; and,
- hosting a TV interview with traditional owner senior elder 'Uncle Bob Anderson' to communicate their views of the operation – which were highly complimentary.

The traditional owners had extremely high praise for the efforts undertaken by both MSQ and the Port of Brisbane Corporation (who provided the MI-IC for an extended period of the response) to engage and accommodate their concerns. However, they did express disappointment with EPA, which undertook a number of activities at culturally sensitive Spitfire Creek without informing the traditional owners. This disappointment was enhanced by the fact that EPA administers the QCH Act and is supposed to ensure that the interests of traditional owners are respected in such operations.

Conclusion

The traditional land owners were incorporated into the response effort in an appropriate and culturally sensitive manner. The contact with traditional land owners should have been initiated by the S-ICC or the B-ICC as soon as practicable after the incident. The traditional land owners should not have had to rely on TV news and personal contacts to be alerted to an oil spill impacting their land. Additionally, all relevant agencies, including EPA, should follow correct procedures in informing and consulting with traditional owners. However, despite this, once contact had been initiated by the traditional owners, the subsequent consultation with, and the

cooperation provided by, the traditional land owners greatly assisted in the overall response on Moreton Island.

(d) Interaction between various State Government agencies

Background

Overall there was good interaction and cooperation between agencies which may be attributed to the oversighting role provided by the Queensland Deputy Premier and the SDMG. Such an approach is not routine under National Plan arrangements, but it did help to ensure an effective whole-of-government approach.

A comment received frequently by the IAT was ‘we all worked well together with the common objective to get the job done’.

As will always occur in such incidents – especially in the early days, there was some confusion regarding demarcation of roles and responsibilities and command and control, and the declaration of a disaster situation under the QDM Act served to increase this confusion at least initially, although matters were rapidly clarified in most areas.

The SDMG, comprising the Director-General’s of all relevant State agencies, and the Mayors from affected local government areas, assisted an effective whole-of-government approach but is not consistent with National Plan arrangements, under which the State Oil Pollution Committee, which also includes representatives from the Commonwealth Government would normally perform this function.

The IAT believes that some line agencies, emergency management agencies and local governments require further awareness and training of their roles and responsibilities under the National Plan and relevant State Plans, and this should be provided for under the National Plan work program.

The IAT also believes that a number of matters could be improved in terms of the coordination and capacity of agencies involved in oil spill response. These included *inter alia*:

- the manner in which the EPA prioritised the areas of environmental concern and its apparent inability to provide advice and reach agreement on clean-up techniques to be used in the wetland areas on Moreton Island;
- insufficient number of trained ESCs to maintain the extended response;
- the level in seniority at which environment and scientific advice was being provided i.e. the SMPC did not have the benefit of this advice;
- direct communications between EPA officers in the field and their superiors in Brisbane by-passing the ICCs on Moreton Island and at Pinkenba;
- it appeared that EPA personnel on Moreton Island saw their role more as ensuring EPA regulations were complied with rather than assisting the response; and,
- the EPA system of seeking departmental ‘volunteers’ to go to Moreton Island and then only staying 3 days which hindered any consistency in advice or adoption of consistent operational practices.

Conclusion

The IAT formed the view that overall there was good interaction and cooperation between agencies. However, the IAT believes that some agencies could benefit from a greater understanding of roles and responsibilities as well as increased training for personnel providing environmental and scientific advice.

The IAT also notes that AMSA previously had a position responsible for maintaining a network of ESCs as well as running workshops for ESC's. This position has been left vacant for some time.

Issues to be Addressed

- The need to ensure that during a spill response, set times and locations are negotiated with the media for scheduled media briefings and releases and these adhered to as far as possible.
- National and State/NT Media Plans should be reviewed by a media consultant with expertise in emergency/disaster communications, to ensure the content is consistent with current best practice in communicating emergency/disaster operations to the media and all stakeholders, including the possible role of a "talking head" to be available more frequently in major incidents.
- National and State/NT Plan training must emphasise the importance of early and regular consultation with local communities including relevant traditional land owners.
- The need for councils to be represented on State/NT National Plan Committees.
- The National Plan review should give consideration to ensuring that the Australian Local Government Authority (ALGA) is represented on both NPMC and NPOG.
- The need for MSQ and EPA to clearly define roles and responsibilities with regard to marine pollution response at all levels.

6. Disaster Situation Declaration

Background

On 12 March, a disaster situation was declared by the Queensland Premier and the Minister for Emergency Services under the QDM Act covering the areas affected by the oil spill. The powers under the Act, which have been used in previous disasters in Queensland such as floods and cyclones, were sought for preventing or minimising illness or injury to humans, property loss or damage and damage to the environment.

The declaration in this incident could have been widely used, for example to close south-east Queensland beaches, stop the public from accessing Moreton Island or even close the Tangalooma Resort on Moreton Island should it have become necessary.

Following the declaration of the disaster situation, EMQ increased its support and coordinated the provision of additional EMQ/QFRS resources at all ICC's. However, these resources were available on request and were not directly related to the disaster situation declaration.

There was a perception from many interviewed by the IAT that the declaration of the disaster situation brought benefits to the spill response including enhanced access to resources, systems and personnel sourced from a wide range of Queensland Government agencies. However, the IAT's understanding is that this was mainly achieved through the whole-of-government approach adopted by MSQ and enhanced under the aegis of the Queensland SDMG which came together after the disaster declaration.

This approach saw Queensland Transport requesting RoadTek to provide a labour workforce, Brisbane City Council also sending personnel from its day labour force and EMQ calling upon QFRS to set up ICC's on Moreton Island and the Sunshine Coast.

The involvement of EMQ in the response clearly demonstrated the benefits of a much closer interaction with this agency in pollution response. EMQ is able to provide operations room equipment and personnel which are regularly used and practiced in other emergency situations such as floods, bush fires, etc. EMQ has disaster management facilities not only in Brisbane but throughout Queensland that could be used in future major oil spill response operations.

In a major oil pollution incident, for example one involving a several hundred tonnes spill in a remote part of either Queensland or any remote area of Australia, the logistics of setting up and managing a large workforce will be complex. A means of achieving this capability needs to be built into State/NT contingency plans. As this is 'core business' for emergency management agencies much greater integration between National Plan response agencies and State/NT emergency management agencies is required.

The disaster declaration led to a perception by some responders that MSQ no longer retained command and control and that the spill response was being coordinated by another agency. However this was not the case. The Premier confirmed on 13 March that command and control remained with MSQ.

The increased assistance by EMQ caused a change in the way the B-ICC operated as it moved from the standard National Plan OSRICS procedures, processes and forms to those used by emergency services under AIIMS. There is clearly a need to standardise and/or integrate procedures, processes and forms, to ensure that these are suitable for oil spill response operations and that emergency services personnel that are to be involved in supporting oil spill response are trained in these, without the need to impose differing procedures, processes and forms mid-way through an oil spill response.

Conclusion

The declaration of the disaster situation mobilised whole-of-government resources to support the oil spill clean-up, and by providing response authorities with the legal power to potentially commandeer accommodation facilities and transport resources on Moreton Island should that have been deemed necessary. However, it should be noted that although a disaster situation was declared by the Queensland Premier, the Queensland Disaster Management Arrangements were not formally activated.

Declaration of a disaster situation did create some initial uncertainty in terms of command and control and highlighted the need for the linkages between the National and State oil spill plans and disaster management plans to be further clarified and developed.

The greater involvement of EMQ in assisting the management of the ICC's in particular the B-ICC highlighted a number of differences between OSRICS used under the National Plan and AIIMS used by most other agencies. These differences included the lack of planning and financial recording elements under AIIMS, which are vital under OSRICS.

The IAT believes that better linkages need to be established between the National and State Plans and emergency management agencies at the National and State level. A proposed structure could be the SMPC and/or IC sitting next to the Emergency Management Controller from the very beginning of a major incident. The SMPC and/or IC retain overall command and control and tasks the Emergency Management Controller with providing logistical support. Clearly National Plan arrangements need to be more closely aligned and interlinked with emergency management arrangements. One suggestion, so as to build trust and experience at the local level is for State National Plan ICs and other positions to work with State/NT emergency management operations in non-oil spill incidents.

Issues to be Addressed

- Consideration should be given to providing a legal mandate for the National Plan (and/or each State/NT Plan) through supporting legislation, including *inter alia* defining the legal powers, authority and responder immunity for senior incident response personnel. Such legislation might be at the Commonwealth or State/NT level or both. Such new powers must complement and be able to operate alongside disaster management powers at both national and state levels.
- The need to explore and clarify the nexus between the National Plan (and each State/NT Plan) and Commonwealth and State/NT Disaster Management Plans with a view to exploring legislative and other arrangements to ensure

that the significant resources, logistics and support capabilities of disaster and emergency management bodies, are better integrated into marine pollution preparedness and response arrangements. This should occur while allowing for command and control to remain under established National Plan procedures, even in the event of disaster management legislation being triggered. Such arrangements might be achieved through the National Plan/State Plan legislation proposed above.

- Consideration should be given to amending OSRICS to make it more compatible with AIIMS, in order to facilitate the smooth insertion of personnel and management systems from agencies which use AIIMS into the oil spill response command structure.
- The need to undertake a process to revitalise and raise awareness about the National/State/NT Plans amongst key players who play vital roles in support of the Plans, but which in many cases may not be fully aware of the National/State/NT Plans, relevant policies and procedures, nor their roles and responsibilities under the Plans. These key players include but are not limited to disaster and emergency management agencies, local authorities and environment management agencies.

7. Compensation for the Costs of Clean-up and Recovery of Lost Containers

(a) Issue: Current Liability Regime For Ship-sourced Marine Pollution Incidents

Background

Under Part IIIA of the *Protection of the Sea (Civil Liability) Act 1981* domestic law in Australia requires ships of 400 gross tonnes and above to be insured for the shipowner's liability for pollution damage caused in Australia.

Australia is a Party to the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (Bunkers Convention), which entered into force for Australia on 16 June 2009. As the *Pacific Adventurer* incident occurred prior to the entry into force for Australia of the Bunkers Convention the relevant liability regime in this incident is that established under the Limitation of Liability for Maritime Claims, 1976 as amended by the 1996 Protocol (LLMC 96). At the date of the incident, 11 March, the liability limit for this incident was approximately A\$17.5 million.

The Bunkers Convention was adopted by the International Maritime Organization (IMO) to introduce the requirement for mandatory insurance and to ensure that adequate, prompt, and effective compensation is available to persons who suffer damage caused by spills of oil, when carried as fuel in ships' bunkers.

Even if the Bunkers Convention had been in force for Australia at the time of the incident the available liability limit would still have been A\$17.5 million outlined above as the liability limit under the Bunkers Convention is based on the limits established under LLMC 96.

The initial assessment of the clean-up costs made by the Queensland Government is over A\$30 million and this excludes any claims for compensation arising from loss of income from the fisheries and/or tourism sectors.

In IAT notes that in this incident, Swire Shipping agreed to provide \$25 million for the compensation of valid claims arising from the oil spill, towards a court-administered limitation fund and a donation to a trust established to help improve marine protection and maritime safety.

Nevertheless, in many respects, this incident represented a typical Tier 2 oil spill, involving the loss of heavy fuel oil. It is not unusual in such incidents for impacted beaches to require extensive and protracted manual clean-up. Indeed overseas experience is also demonstrating that the liability regime established under the Bunkers Convention is proving to be insufficient in many cases.

The IAT believes that incidents, such as the *Pacific Adventurer* and changes in monetary values due to inflation since the adoption of LLMC 96, clearly demonstrates that the liability limits as provided for in LLMC 96 are no longer sufficient to address incidents of this kind and does not provide 'adequate or effective compensation'.

Conclusion

The IAT believes that the liability limits established under LLMC 96 and consequently which apply to the Bunkers Convention are inadequate to cover reasonable cost-recovery and compensation for bunker oil spills.

The IAT supports the AMSA initiative to argue the case in the IMO to amend LLMC 96 and consequently the Bunkers Convention to increase the limits of liability to a level that is more realistic and reasonable in relation to likely costs and damages from bunker spills.

(b) Issue: International Liability and Compensation Convention for Lost Containers

Background

Under the 1973 Protocol Relating to Intervention on the High Seas in Cases of Pollution by Substances Other than Oil, given effect to in Australia under the Commonwealth's *Protection of the Sea (Powers of Intervention) Act 1981*, when AMSA is satisfied that:

“following upon a maritime casualty on the high seas ... there is grave and imminent danger to the coastline of Australia, or to the related interests of Australia, from pollution or threat of pollution of the sea by substances other than oil which may reasonably be expected to result in major harmful consequences, the Authority may take such measures, whether on the high seas or elsewhere, as it considers necessary to prevent, mitigate or eliminate the danger” (s.9).

Conclusion

While the loss of 31 containers was a serious concern, the substance, ammonium nitrate, is a fertiliser and under the 1973 Protocol, the incident and the substance did not meet the grave and imminent danger test. Accordingly, AMSA could not intervene to direct the shipowner to recover the lost containers.

The missing containers may pose a range of concerns including navigational safety, loss of available fishing ground to the local commercial trawling industry and the potential for trawling hook-ups and loss of life.

Issue to be Addressed

- AMSA should pursue through the Legal Committee of the IMO the development of an international liability and compensation regime for lost containers through either a new international instrument or an amendment to the Nairobi International Convention on the Removal of Wrecks, 2007.

8. Recommendations

The IAT recommends that:

1. The Review of the National Plan considers providing a legal mandate for the National Plan (and/or each State/NT Plan) through supporting legislation, including defining the legal powers, authority and responder immunity for senior incident response personnel. Such legislation might be at the Commonwealth or State/NT level or both. Such new powers must complement and be able to operate alongside disaster management powers at both national and state levels (pages 29-31).
2. The Review of the National Plan explores and clarifies the nexus between the National Plan (and each State/NT Plan) and Commonwealth and State/NT Disaster Management Plans with a view to exploring legislative and other arrangements to ensure that the significant resources, logistics and support capabilities of disaster and emergency management bodies, are better integrated into marine pollution preparedness and response arrangements. This would occur while allowing for command and control to remain under established National Plan procedures, even in the event of disaster management legislation being triggered. Such arrangements might be achieved through the National Plan/State Plan legislation proposed above (page 29-31).
3. The Review of the National Plan gives consideration to amending OSRICS to make it more compatible with AIIMS, in order to facilitate the smooth insertion of personnel from agencies which use AIIMS into the oil spill response command structure (page 29-31)
4. The Review of the National Plan gives consideration to the Australian Local Government Authority (ALGA) being represented on both NPMC and NPOG (page 27).
5. NPMC needs to ensure that when a damaged ship is brought to a place of refuge following an oil spill, that a thorough response plan be developed, including an underwater hull inspection. NPMC should also consider whether this requirement should be included in the *National Maritime Place of Refuge Risk Assessment Guidelines* (page 17).
6. NPOG identifies a pool of experienced and trained ICs as part of the NRT who can be used either in the role of IC or as a Strategic Advisor to the SMPC (page 17).
7. NPOG includes in the National Plan training program, the training of coastal councils throughout Australia on shoreline clean-up including the use of heavy equipment and that councils be given the responsibility of maintaining that training (page 20).
8. NPMC clarifies the role of local government as front line responders for shoreline clean-up and this be incorporated in State/NT plans (page 20).
9. NPMC should consider endorsing an approach in situations where the environmental agency is unable to approve in a timely manner a response to a

sensitive area affected by an oil spill, that the IC should be empowered to take the appropriate action (page 22).

10. National and State/NT Media Plans should be reviewed by a media consultant with expertise in emergency/disaster communications, to ensure the content is consistent with current best practice in communicating emergency/disaster operations to the media and all stakeholders, including the possible role of a “talking head” to be available more frequently in major incidents (page 27).
11. AMSA/States/NT undertake a process to revitalise and raise awareness about the National/State/NT Plans amongst key players who play vital roles in support of the Plans, but which in many cases may not be fully aware of the National/State/NT Plans, relevant policies and procedures, nor their roles and responsibilities under the Plans. These key players include but are not limited to disaster and emergency management agencies, local authorities and environment management agencies (page 30).
12. AMSA pursues through the Legal Committee of the IMO the development of an international liability and compensation regime for lost containers through either a new international instrument or an amendment to the Nairobi International Convention on the Removal of Wrecks, 2007 (page 32).
13. MSQ reviews the Sunshine Coast Area First-Strike Oil Spill Response Plan in terms of the adequacy of response equipment at Mooloolaba for use in booming sections of the rivers in this region (Page 17) and updates the Plan to show current council boundaries (page 20).
14. MSQ and EPA clearly define their roles and responsibilities with regard to marine pollution response at all levels (page 27).
15. In future pollution incidents, where a review is required, the IAT should be established at an appropriate time during the incident response to enable them to witness the response.
16. Finally, the IAT suggests that implementation feedback be provided to the National Plan Management Committee and the National Plan Operations Group from AMSA/States/NT as to how their spill response arrangements, planning and training, etc, have changed as a result of this Report’s recommendations.

Appendix 1 – Terms of Reference

National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances

Response to the *Pacific Adventurer* Incident

Aim: To undertake a comprehensive analysis of the response to the oiling of the Queensland coastline by oil discharged by the *Pacific Adventurer* into the Coral Sea off Brisbane on 11 March 2009 (the '*Pacific Adventurer* Incident'), as provided for under the National Plan Inter-Governmental Agreement.

Incident Analysis Team: The incident analysis team is to comprise persons with expertise in response to ship-sourced marine pollution incidents and related matters, but who had no direct role in the response to the *Pacific Adventurer* incident. Members of the incident analysis team are:

- Mr Mike Julian (Chair) – Director of M.H Julian Pty. Ltd and former Chair, IMO Marine Environment Protection Committee
- Mr Graham Edgley – Senior Manager, Marine Operations, Sydney Ports Corporation
- Mr John Gillies (Executive Officer) – Australian Maritime Safety Authority.

Terms of Reference: Analyse the management of the incident from the oil pollution preparedness / response perspective and make recommendations to improve the National Plan arrangements and how the actual response to the *Pacific Adventurer* incident might be improved upon for future reference. In this context:

1. Assess the oil pollution response aspects with particular reference to:
 - (i) the call out procedures used, the effectiveness and timeliness of the initial and subsequent response;
 - (ii) the suitability and accessibility of National Plan equipment including State and industry equipment;
 - (iii) availability, timeliness and management of the National Response team arrangements;
 - (iv) the decisions made in respect of calls for equipment and personnel in regard effectiveness, sufficiency and timeliness;
 - (v) the adequacy and effectiveness of the wildlife rescue and rehabilitation response;
 - (vi) the adequacy and effectiveness of incident response plans and their implementation;
 - (vii) the adequacy of the management of Occupational Health and Safety issues;
 - (viii) the adequacy of the administrative support, environmental advice and support, and other related activities;

- (ix) the interaction with the media and other interested parties;
 - (x) the adequacy and effectiveness of communications with affected and interested stakeholders.
2. Assess the involvement of the various parties to the response from the viewpoint of appropriateness, timeliness and adequacy. In this regard, particular attention should be given to:
 - (i) the effective involvement of the parties; and,
 - (ii) the interaction and cooperation between agencies.
 3. Within the context of this incident, assess the National, State and local contingency plans and report on the adequacy of each, including the Oil Spill Response Incident Control System (OSRICS).
 4. Review the effectiveness of Australia's current liability regime pertaining to ship-sourced marine pollution incidents and related matters, with special reference to the adequacy of the Limitation of Liability for Maritime Claims Convention in relation to significant bunker oil spills and the new Bunkers Convention regime and its implementation in Australia.
 5. Review the effectiveness and contribution to the response of the Declaration of a disaster situation on 12 March, under the *Queensland Disaster Management Act 2003*, covering the areas affected by the oil spill.
 6. Provide recommendations for improvements and initiatives based on the lessons learned from the incident.

In construing the Terms of Reference, the incident analysis team should consider the loss of containers and the request for assistance from the ship and how these actions impacted on any decision of management of the response.

As far as is practicable, the incident analysis team or member(s) thereof should attend the various debriefing sessions to be carried out by relevant agencies and bodies involved in the incident and consider the written reports of the various entities in the response.

Administrative support for the incident analysis team will be provided by AMSA.

A written report on the findings and recommendations of the incident analysis is to be submitted to the Australian Maritime Safety Authority.

Appendix 2 – Debriefs Attended and Personnel Interviewed by the IAT

a) Debriefs Attended by the IAT

Date	Venue	Group
13 May 2009	MSQ, Pinkenba	Personnel based at the Brisbane & Moreton Island Incident Control Centres
14 May 2009	Moreton Island	Field inspection and discussions with response personnel still on Moreton Island
21 May 2009	MSQ, Brisbane	Scientific Advisory Panel
	MSQ, Brisbane	Community Advisory Panel
22 May 2009	Kawana Surf Club	Personnel based at the Sunshine Coast and Bribie Island Incident Control Centres
25 May 2009	AMSA, Canberra	AMSA Responders
18 June 2009	Queensland Department of Premier & Cabinet	Personnel based at the State Incident Control Centre and representatives from Brisbane and Canberra based Departments and agencies

b) Personnel Interviewed by the IAT

Date	Venue	Name	Affiliation
14 May 2009	Moreton Island	Mr Ben Tidy Mr Darren Burns	Queensland Parks & Wildlife Service Queensland Parks & Wildlife Service
20 May 2009	MSQ Brisbane	Mr Patrick Quirk Superintendent Scott Trappet Mr Mark Alen Ms Natasha Paterson Mr Peter Keyte Mr Mike Short Mr Trevor Hassard Captain Richard Johnson Captain Glenn Hale	Queensland Transport Queensland Police Maritime Safety Queensland Queensland Environment Protection Agency Port of Brisbane Authority Queensland Environment Protection Agency Manager, Tangalooma Resort (by telephone) Maritime Safety Queensland Maritime Safety Queensland
22 May 2009	MSQ, Brisbane	Ms Cynthia Gillespie Mr Richard Williamson Mr Khriston Murphy	Queensland Transport RoadTek RoadTek
25 May 2009	AMSA, Canberra	Mr Jamie Storrie Mr Ben Cropley Mr Ray Lipscombe Ms Nerissa Bartlett Ms Nicola Udy	Australian Maritime Safety Authority Oil Response Company of Australia Oil Response Company of Australia Australian Maritime Safety Authority Queensland Parks & Wildlife Service (by telephone)
16 June 2009	Mooloolaba & Nambour	Sergeant Bob Murphy Mr Peter Kleinig Mr Rod Garner Mr Andrew Ryan Mr Tim Steele Mr Allan Rodgers	Queensland Police Maritime Safety Queensland Queensland Environment Protection Agency Sunshine Coast Regional Council Sunshine Coast Regional Council Sunshine Coast Regional Council

Date	Venue	Name	Affiliation
17 June 2009	MSQ, Brisbane	Ms Christine Williams Mr Clive Cook Ms Andrea Leverington Mr Steve Hoseck Dr John Roberston Mr Hugh Ellis Mr Jerry Price	Queensland Environment Protection Agency Queensland Environment Protection Agency Queensland Environment Protection Agency Queensland Environment Protection Agency Queensland Dept of Primary Industries Australian Maritime Safety Authority Australian Maritime Safety Authority
18 June 2009	MSQ Brisbane	Mr David Bamford Mr Keith Mcllwain Mr Bob Lowe Mr John Kavanagh Mr Darren Burns Mr Jim Huggett Mr David Rissik	Aramira Civil Engineering Pty Ltd Mcllwain Civil Maritime Safety Queensland Maritime Safety Queensland Queensland Parks & Wildlife Service Maritime Safety Queensland Queensland Environment Protection Agency
19 June 2009	MSQ, Brisbane	Captain John Watkinson Mr Peter Foster Mr John Wright Mr Matt Hanrahan Mr Les Burton Mr Shane Woods Mr Ian Hawkins	Maritime Safety Queensland The Consultancy Bureau Maritime Safety Queensland Maritime Safety Queensland Maritime Safety Queensland Department of Emergency Services Queensland Fire & Rescue Service
1 July 2009	Sydney Ports Corporation	Mr Rob Lea Mr Shayne Wilde Mr Adrian Hawes Mr Mathew Smith	NSW Maritime NSW Maritime Sydney Ports Corporation Australian Marine Oil Spill Centre (by telephone)
3 July 2009	Various	Mr Bruce Grady Mr Greg Scroupe Ms Jacqui Molenson Mr Jason Cameron	Emergency Management Queensland Brisbane City Council (by telephone) Queensland Transport Emergency Management Queensland