



**Australian Government**

**Australian Transport Safety Bureau**

# Propulsion failure and near stranding of *Portland Bay*

On the coast 22 km south of Port Botany (Sydney), New South Wales, on 4 July 2022



**ATSB Transport Safety Report**

Marine Occurrence Investigation (Systemic)

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# Investigation summary

## What happened

*Portland Bay* sailed from Port Kembla, New South Wales, on 3 July 2022 as bad weather was impacting its stay in port. It was expected to return when the weather improved. The ship then steamed and intermittently drifted about 12 nautical miles (miles) from the coastline.

In the early hours of 4 July, the main engine developed mechanical problems, which disabled the ship 12 miles from the lee shore. A couple of hours later, after unsuccessful attempts to resolve the engine problems, the ship's master asked Australian authorities for tug assistance. About 2 hours later, a harbour tug from Sydney was en route but the ship had closed to one mile from the shore. The master made emergency use of both anchors to prevent stranding on the rocky shore about 12 miles south of Port Botany (Sydney) about one hour before the tug arrived to assist.

In the afternoon, 2 more harbour tugs arrived on scene and later began towing the ship away from the coast. A couple of hours later in the evening, one of the tugs' tows parted in the rough sea conditions. The ship then drifted towards the shore and the master again anchored about one mile from the shore off Bate Bay near Sydney. Later that night, the state's nominated emergency towage vessel (ETV) deployed from Newcastle.

The ETV arrived on scene after midday on 5 July and connected a towline in preparation to tow the ship into Sydney. On the morning on 6 July, the ETV (with harbour tugs assisting) towed the ship into Port Botany, where it was berthed in the afternoon for refuge and subsequent repairs.

## What the ATSB found

The ATSB investigation found that the ship had remained near the coast instead of safely clearing it in accordance with its safety management system (SMS) procedures. Operating its main engine at low speed while rolling and pitching heavily resulted in engine load fluctuating with turbocharger surge and non-return flap hammering and distortion. Performance was further degraded by a leaky fuel injector, poor combustion and excessive cylinder lubrication resulting in sludge and deposits. When one of the 2 auxiliary blowers failed in the early hours of 4 July, air for fuel combustion significantly reduced and engine speed was limited to the minimum, effectively disabling the ship in bad weather.

The investigation also identified that when the master reported the situation to the ship's managers, Pacific Basin Shipping, it provided advice on engineering matters but not about notifying authorities as per the SMS procedures. This probably led the master to delay reporting to Port Kembla vessel traffic service (VTS) operated by the Port Authority of New South Wales (Port Authority). This delay was compounded when VTS did not promptly forward the master's report to the Australian Maritime Safety Authority (AMSA). The various delays resulted in delaying the tug assistance requested and the master had to deploy both anchors to prevent stranding.

In addition, the investigation identified several safety issues associated with the emergency response. Specifically, AMSA procedures to comply with the National Plan

for Maritime Environmental Emergencies (National Plan) were not effectively implemented. Similarly, the Port Authority's procedures to comply with the NSW Coastal Waters Marine Pollution Plan (NSW Plan) and its Port Safety Operating License (PSOL) were not effectively implemented. Further, the coordination of critical elements of the emergency response, including emergency towage, salvage and refuge, between the Port Authority, Transport for NSW (NSW Maritime) and AMSA with their respective roles and responsibilities was inadequate and inconsistent with National Plan principles. These safety issues prolonged the emergency and the exposure to stranding, with potentially severe consequences.

The ATSB also found that the AMSA process to issue directions was inefficient and resulted in excessive time to issue directions to enable *Portland Bay* to enter Port Botany for shelter. While this delay did not further prolong the emergency, such delays increase risk in time-critical situations. The investigation also found that United Salvage, the salvor, was severely limited in its ability to provide the salvage services required as it did not own or operate any towage vessels so was reliant on towage providers. This limitation was not made clearly known to the ship's master, owners or managers or the involved agencies to allow them to properly assess whether the most suitable towage vessels, including the ETV, had also been promptly deployed.

A key finding was that the ship's anchors prevented a catastrophic stranding on the rocky shore in heavy weather, noting that they were not designed for such use but can be used as a last resort in emergencies.

## **What has been done as a result**

Pacific Basin Shipping has revised its SMS crisis management procedures to include at least one exercise each year outside of office hours and conducted 2 such drills since the incident. A fleet-wide circular emphasising the importance of early reporting to authorities to shipboard staff and office-based teams was disseminated. In addition, the company produced a case study training video for seafarer training and office-based teams to enhance emergency response as per its procedures with an emphasis on early reporting to authorities. The ATSB has assessed the safety action as having adequately addressed the safety issue regarding the late reporting of the incident.

While AMSA only partially agreed with the safety issue about response coordination and did not agree with the 3 other safety issues addressed to it, a range of relevant safety action has been taken. This included a review of its procedures, fortnightly incident escalation exercises, review of emergency towage capability, review of emergency coordination arrangements, increased resourcing (staff) and training and a comprehensive review of the National Plan. The ATSB welcomes this action but has recommended that AMSA takes further necessary action to adequately address all 4 safety issues.

The Port Authority advised that as the incident did not involve a spill (pollution), its role as the state's combat agency was not 'enlivened'. It added that AMSA and NSW Maritime had roles and responsibilities for this incident. The Port Authority did not advise of any safety action, hence the ATSB has recommended that it take action to address both safety issues addressed to it.

Transport for NSW (NSW Maritime) advised that it had taken action to improve response coordination with the Port Authority, which included discussions and joint exercises.

However, given the Port Authority's response and lack of safety action, the ATSB considers it important that NSW Maritime takes safety action to adequately address the safety issue concerning response coordination and has issued a recommendation accordingly.

Finally, the ATSB has recommended that United Salvage takes action to address the safety issue with respect to clearly informing the master, owners or managers of the ship to be salvaged of the salvor's capabilities and limitations in performing the salvage services required.

Although no safety issue was addressed to Svitzer Australia, it has upgraded the towing equipment of its Sydney-based harbour tug that assisted with the response.

## **Safety message**

*Portland Bay's* near stranding provides invaluable lessons on managing emergencies to avoid severe consequences. Optimal emergency management relies on taking a series of appropriate actions in a timely manner, which often determine the degree of success of the response. Failure is usually associated with actions that are 'too little, too late'. Australia's National Plan reiterates the principle of over-escalation in an initial response as it is more effective to scale down than up.

Effective emergency response plans and procedures do not leave outcomes to good fortune, which on rare occasions have contributed to a positive outcome. The National Plan principles and arrangements provided the best available options to manage risks along Australia's extensive and pristine coastline, which also has inherently limited emergency response resources.

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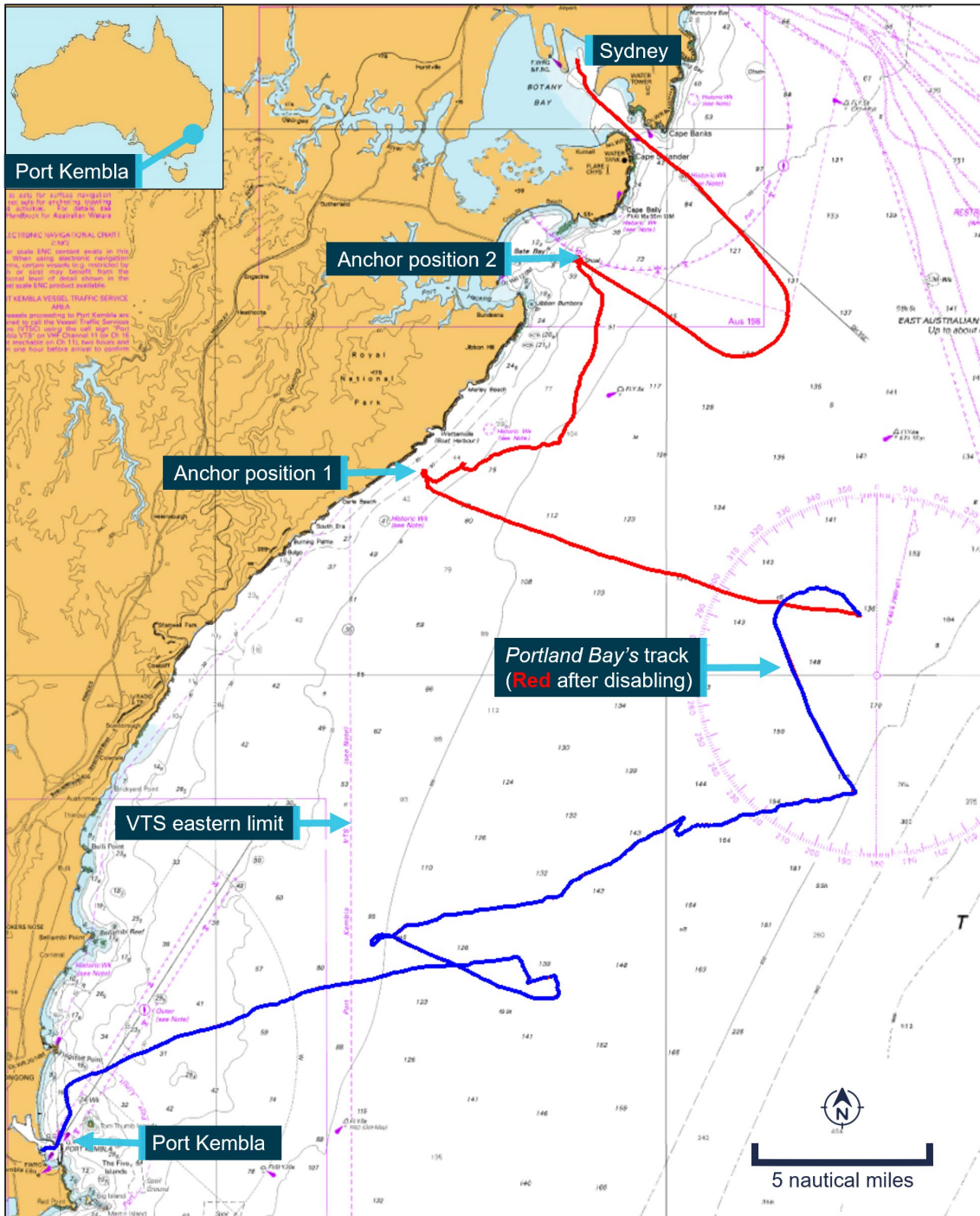
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# The occurrence

## Overview

On 3 July 2022, adverse weather that was forecast to further deteriorate had made it unsafe for the bulk carrier *Portland Bay* (cover) to remain berthed in Port Kembla, New South Wales (Figure 1). Consequently, the decision was made for the ship to leave the port and remain at sea until the weather improved sufficiently to allow a safe return.

Figure 1: *Portland Bay*'s movements from 3 to 6 July 2022



Source: Australian Hydrographic Office and *Portland Bay*'s recorded voyage data, annotated by the ATSB

*Portland Bay* departed the port in the afternoon and steamed on an east-north-easterly course until that evening when it was about 12 nautical miles (miles) from the coastline where its main engine was stopped. The ship drifted towards the coast in the south-easterly winds and seas and the engine was used intermittently that evening and night to avoid getting closer to the coast.

Shortly before 0500 local time on 4 July, the main engine developed mechanical problems, which limited the engine speed to dead slow ahead (the minimum). The problems could not be resolved, resulting in *Portland Bay* being effectively disabled about 12 miles from a lee shore. In the prevailing conditions, the ship began drifting at a rate of 2–3 knots<sup>1</sup> towards the coast.

Two hours later, at 0657, after attempts to resolve the engine problems were unsuccessful, the ship's master notified Port Kembla vessel traffic service that the ship's main engine had failed and requested tug assistance. At 0848, a harbour tug from Sydney<sup>2</sup> left the port for the ship's location, which was then about 1.5 miles from the coastline about 22 km south of Sydney.

At 0905, when about one mile from the shore, the master deployed the ship's anchors to prevent stranding on the rocky coastline of Royal National Park (Figure 1, Anchor position 1). Subsequently, unsuccessful attempts were made to evacuate the crew by helicopter.

At 1010, the tug arrived off the ship and, about 4 hours later, 2 other Sydney harbour tugs arrived. By late afternoon, these 2 tugs began towing the ship away from the coast. However, a couple of hours later, one of the tugs parted its towline and the ship again began drifting towards the shore.

At 2035, the ship was anchored about one mile from the shore to prevent stranding in Bate Bay near Sydney (Figure 1, Anchor position 2). Both tugs, one with its towline connected, remained with the ship. Later that night, the nominated emergency towage vessel (ETV) for New South Wales was deployed from Newcastle (about 90 miles north of Bate Bay) to tow the ship to safety.

On 5 July, at about 1300, the ETV arrived off Bate Bay and later connected a towline while plans to tow the ship into Sydney (Port Botany) in daylight on the following day were finalised. The harbour tug with a towline connected remained with the ship.

On 6 July, at about 1100, the ETV and 2 harbour tugs began towing *Portland Bay* to shelter in Port Botany (Figure 2). By late afternoon, the ship had been safely berthed in the port. Over the following week, the main engine was repaired to make the ship seaworthy.

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<sup>1</sup> One knot, or one nautical mile per hour, equals 1.852 kilometres per hour.

<sup>2</sup> Sydney hereafter generally refers to its ports, Port Botany and Port Jackson (Sydney Harbour).

**Figure 2: *Portland Bay* under tow on 6 July**



Source: Port Authority of New South Wales

The following sections outline key events preceding the incident and greater detail of the numerous events that occurred over the course of the incident between 4 and 6 July.

## The incident

### Background

*Portland Bay* arrived and anchored off Port Kembla on 19 June 2022, following a voyage from Susaki, Japan, loaded with a cargo of cement. On 21 June, the ship was conducted by a harbour pilot into the port's inner harbour and, at 1724 local time, secured at berth number 104.

Cargo unloading began that evening, and 8 new crew members, including the relieving master and chief engineer, joined the ship. On 22 June, another 5 relieving crew members joined the ship. The new chief engineer intended to complete several items of main engine maintenance, including a few that had been pending for some time, during the ship's stay in port.

While unloading cargo between 22 and 26 June, the master obtained permission from the Port Kembla harbour master to immobilise the main engine, from time to time, allowing the engineers to clean the charge air cooler, lubricating oil (LO) cooler and LO filters. When unloading was completed in the evening on 26 June, some maintenance items remained.

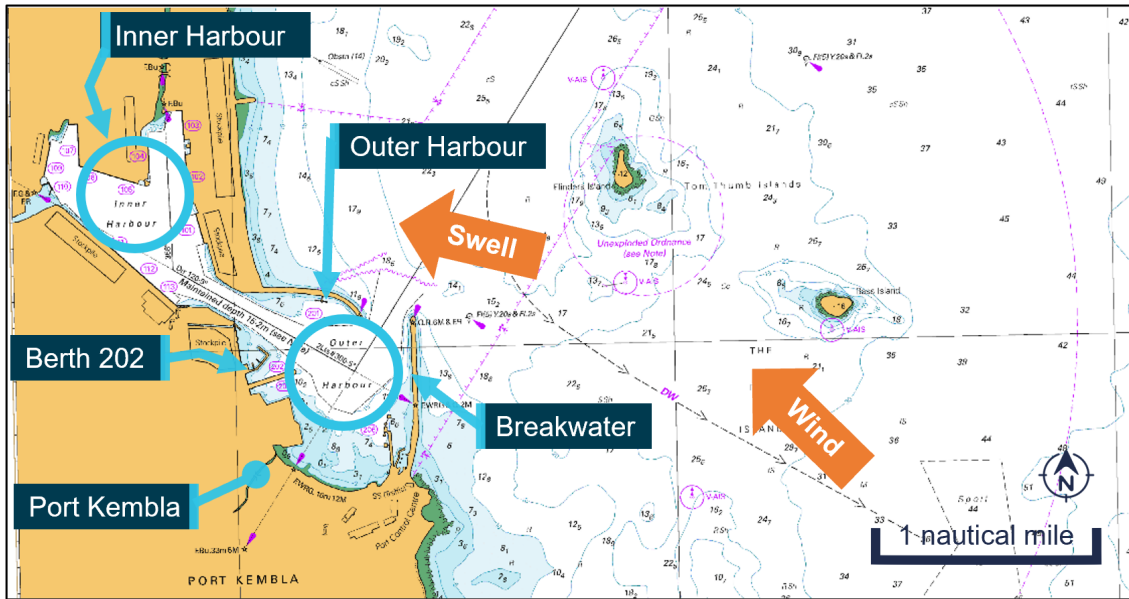
On 27 June, *Portland Bay* departed for sea to clean its cargo holds for the next cargo. The crew was to clean accessible areas of the cargo holds before berthing in Port Kembla on 2 July, where shore labour would clean the upper parts of the holds. The ship anchored or drifted off the port while the holds were cleaned.

On 1 July, the ship's agent in Port Kembla, Monson Agencies Australia (Monson), advised Pacific Basin Shipping (Pacific Basin), the ship's Hong Kong-based management company, of likely disruptions to hold cleaning due to heavy rain and a large north-easterly swell forecast for 3 and 4 July. Monson advised that the ship might be required to leave port to

avoid damage to the berth and ship due to the heavy swell. Pacific Basin decided to continue with the scheduled berthing.

At 0154 on 2 July, *Portland Bay* was secured starboard side alongside berth number 202 in the outer harbour (Figure 3). At 0410, the Bureau of Meteorology (BoM) issued a forecast for gale force winds up to 35 knots and an easterly swell of 3 to 4 m for the seas off the port on 3 July. At 0500, entries in the ship’s logbook indicated easterly winds at ‘force’<sup>3</sup> 3 (7–10 knots).

**Figure 3: Location of berth 202 (wind and swell direction at 1100 on 3 July)**



Source: Australian Hydrographic Office, annotated by the ATSB

As forecast, the weather continued worsening and, at 1600, southerly winds at force 6 (22–27 knots) were recorded in the logbook. At 2243, Monson advised the master via email that Port Kembla vessel traffic service (VTS)<sup>4</sup> had issued additional harbour master’s instructions due to worsening weather. They included running additional mooring lines and lowering the outboard anchor to the seabed. In addition, VTS advised that the anchorage was closed and ships drifting off the port were to keep ‘at a safe distance (around 12 miles)’. The anchorage and VTS area were shown on navigational charts.

The charted limits of the VTS area showed its eastern limit lay along longitude 151°04.5’ E and extended south from Garie Beach (about 19 miles north of the port entrance) to a southern limit along latitude 34°30.4’ S, which passed through Perkins Beach south of the port (Figure 1). The line of the eastern limit line passed 8.5 miles east of the port entrance and nautical publications described the ‘VTS area, VTS limit/reporting line or VTS area reporting line’ and detailed requirements to report to VTS when passing a reporting line.<sup>5</sup>

On the morning of 3 July, *Portland Bay* began to be affected by the swell at its berth in the outer harbour. At 1027, the terminal manager contacted VTS and requested that the duty pilot assess whether it was safe for the ship to remain at the berth in the worsening weather

<sup>3</sup> The Beaufort scale of wind force, developed in 1805 by Admiral Sir Francis Beaufort, enables sailors to estimate wind speeds through visual observations of sea states.  
<sup>4</sup> The Port Authority of New South Wales operated the VTS in Port Kembla and Sydney.  
<sup>5</sup> Including the Admiralty Sailing Directions, Admiralty List of Radio Signals and Port Kembla harbour master’s directions.

and swell. At 1035, the master requested and received permission from VTS to lower the port anchor to the seabed.

At about 1050, after a risk assessment by the duty pilot and the harbour master, VTS asked the master to prepare to depart the port to avoid damage to the wharf and ship due to its movement in the swell. The master agreed with the assessment and began preparing for departure. The pre-departure checks included testing the main engine (ahead and astern propulsion) and steering gear. A south-easterly wind at force 6 (22–27 knots) was recorded in the logbook at the time.

At 1235, a harbour pilot boarded *Portland Bay*, conducted a master-pilot information exchange and confirmed pre-departure checks had been completed. The ship had maximum water ballast on board, forward and aft draughts of 4.11 m and 5.30 m, respectively (the propeller was fully immersed at an aft draught of 5.1 m) and a displacement of approximately 15,500 tonnes.<sup>6</sup>

At 1300, all was in readiness to depart and, at 1312, the ship was manoeuvred clear of the berth with 2 tugs assisting. By 1334, the ship had cleared the port's entrance and the pilot disembarked.

### Propulsion failure

After disembarking the pilot, *Portland Bay's* master set an east-north-easterly course with the main engine at manoeuvring full ahead speed (90 rpm). In the prevailing heavy weather, the engine remained on standby with the engine room manned (the ship was equipped to operate with unattended machinery spaces – UMS). The mates were on usual bridge watches and the master attended periodically. The ship experienced moderate to heavy rolling and pitching and the master recalled having difficulty maintaining a steady course and achieving a speed<sup>7</sup> of 2–3 knots.

At 1800 on 3 July, when the ship was 14 miles east-north-east of Port Kembla, the master stopped the main engine and the ship began drifting about 12 miles off the coastline. A south-easterly wind at force 7 to 8 was recorded in the logbook. The ship was rolling and pitching heavily at times and was drifting in a westerly direction towards the coast at about 3 knots.

At 1937, when the ship was about 8 miles off the coast, the engine was restarted and speed gradually increased to manoeuvring full ahead to again steam on an east-north-east course. At midnight, east-south-easterly winds at force 7 (28–33 knots or near gale force) were recorded in the logbook. The third mate handed over the navigational watch to the second mate, conducted routine fire and safety rounds<sup>8</sup> and reported nothing untoward.

At 0200 on 4 July, when the ship was 15 miles from the coast (24 miles east-north-east of Port Kembla), the engine was stopped. The south-easterly wind had moderated to force 5 (17–21 knots) but the heavy swell from the gale force winds earlier persisted. At 0330, the ship surged<sup>9</sup> and rolled heavily. Soon after, the second mate put the engine dead slow ahead (42 rpm), the minimum speed. The master came up to the bridge and, at 0337, the

<sup>6</sup> A ship's displacement is the weight of water that it displaces, which equals its own weight (mass).

<sup>7</sup> Unless stated otherwise, all speeds in the report are over the ground.

<sup>8</sup> Fire and safety rounds conducted in the ship's accommodation spaces at regular intervals, especially in hours of darkness, to check for fire hazards or other hazards, such as unsecured equipment and open watertight doors.

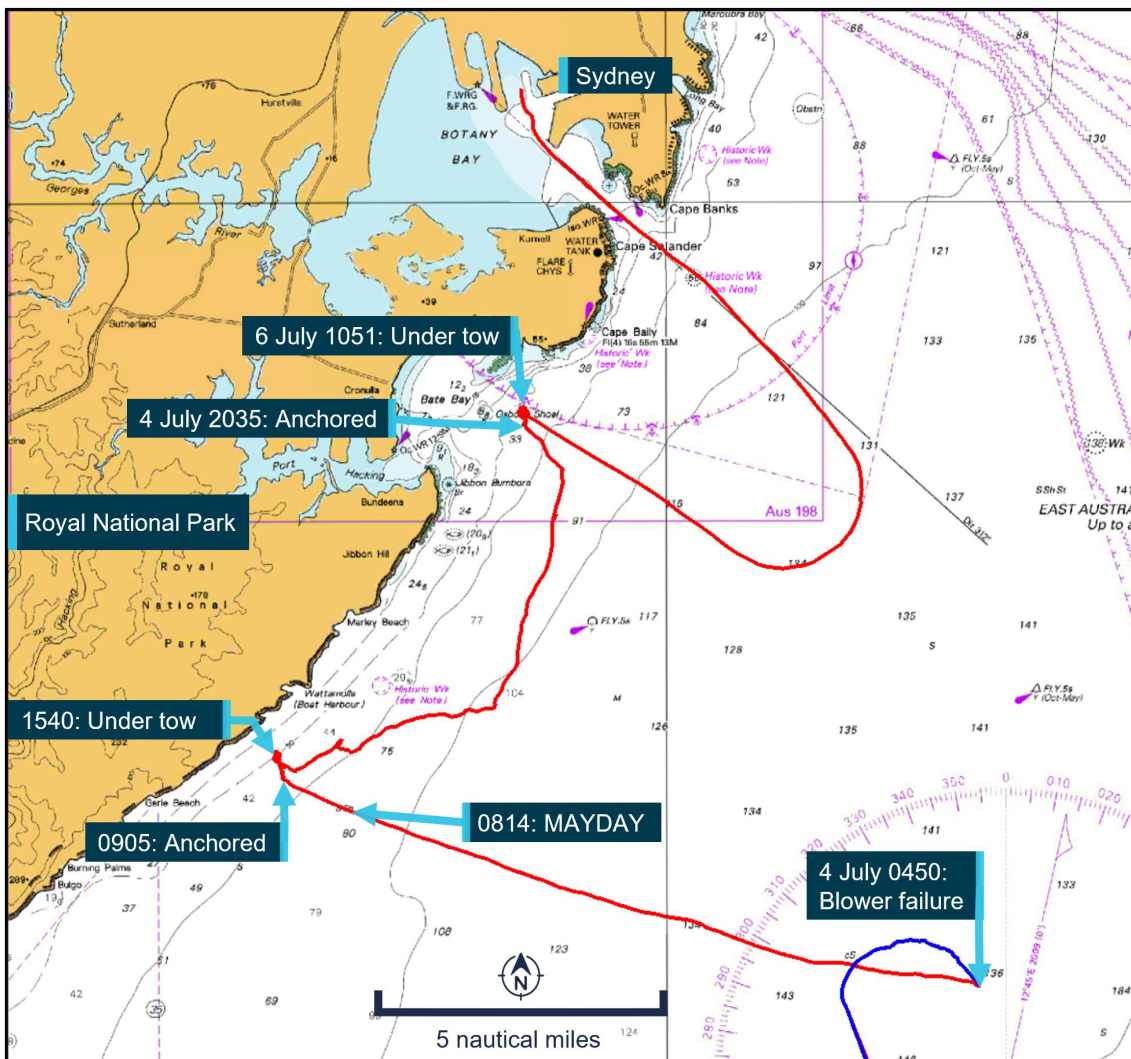
<sup>9</sup> Surge is the forward and aft motion of the vessel due to rapid acceleration and deceleration.

engine order was increased to half ahead (80 rpm). At 0344, the master ordered full ahead and a heading<sup>10</sup> of 110° to steam away from the coast (which at that stage was about 10 miles off) before returning to his cabin.

At 0400, when the second mate handed over the watch to the chief mate, a south-easterly wind at force 6 to 7 was recorded in the logbook. The second mate then completed fire and safety rounds and recorded nothing unusual. During those early hours of the morning, the BoM wave rider buoy off Sydney recorded waves with a 'significant wave height' of 5.04 m and a 'maximum wave height' of 8.44 m from the east-south-east.<sup>11</sup>

At 0450, when *Portland Bay* was about 12 miles from the coast, an alarm on the bridge fire alarm panel alerted the chief mate to 2 fire detectors in the lower, starboard side of the engine room that had been activated (Figure 4).

**Figure 4: Time and location of key events during the incident**



Source: Australian Hydrographic Office and *Portland Bay*'s recorded voyage data, annotated by the ATSB

<sup>10</sup> The ship's gyrocompass heading in degrees (practically the true heading).

<sup>11</sup> Significant wave height has been defined as the average height of the highest one-third of waves experienced over time. Also referred to as 'total wave height', about 14% (1 in every 7 waves) will be higher than the significant wave height. Maximum wave height ( $H_{max}$ ) can be up to twice the significant wave height.

The second engineer, on watch in the engine control room, and the chief engineer (also in the control room) investigated and found smoke and a burning smell coming from main engine auxiliary blower number 2 (see the section titled *Auxiliary blower number 2* under *Propulsion*). At about 0451, the second engineer returned to the control room, stopped the blower and called the bridge for engine speed to be reduced. The chief mate reduced speed and called the master. At 0453, when the master arrived on the bridge, the speed order was slow ahead (58 rpm).

By 0507, the engine speed had been reduced to dead slow ahead. On the ship's south-westerly heading, the wind was on the port beam and pushing it towards the coast. At 0513, the master ordered slow ahead but engine speed remained about 42 rpm (dead slow ahead). The master then ordered a course change to an easterly heading and pointed out to the chief mate that the ship was 3 or 4 hours away from (drifting onto) the coast about 11 miles off.

### Ship disabled

At 0519 on 4 July, the master asked the chief mate to get an update from the engine room and was advised that the chief engineer was coming up to the bridge. When the chief engineer arrived at 0522, the master stated that they had one hour to make repairs otherwise tugs would need to be called. The chief engineer advised that the blower could not be repaired in one hour and gave reasons for that assessment. When the master asked if the engine could be run at full ahead, the chief engineer advised that it was not possible due to the active engine alarms and limits.

At 0523, the master asked the chief engineer to call *Portland Bay's* dedicated manager (in Pacific Basin's office) and explain that it was 'really dangerous' if the speed could not be increased as the ship was drifting towards the coast (less than 11 miles off) at 3.5 knots. Subsequent attempts to call the ship's manager via satellite telephone were unsuccessful as the manager was travelling.

At 0533, the chief engineer instead called Pacific Basin's marine and safety manager (marine manager) and explained the situation. Meanwhile, to help turn the ship on to an easterly heading, the master had unsuccessfully tried increasing engine speed. At 0539, the master (who had joined the call to respond to the marine manager's questions) advised that it was not possible to steam 50 miles away from the coast as engine speed was limited to dead slow ahead.

Soon after, at 0541, the marine manager called the fleet manager and explained the ship's situation. Two minutes later, the fleet manager called the ship and suggested that the chief engineer override the engine torque limiter and active alarms to increase speed. While the chief engineer went to the engine room to do so, the master tried turning the ship to an easterly heading away from the coast, now less than 10 miles off. The master voiced concerns to the chief mate a few times about the rate at which the ship was closing the coast.

At 0555, after unsuccessful attempts to increase engine speed, the master asked the chief engineer to come to the bridge and call the fleet manager. From about 0600, the chief engineer discussed options with the fleet manager. When the call ended at 0606, the master told the chief engineer and chief mate that if speed could not be increased and no one helped, they would be on the 'rock' in the next hour.

Meanwhile ashore, at about 0615, the marine manager had called Pacific Basin's designated person ashore (DPA)<sup>12</sup> and provided an appraisal of the ship's situation.

At 0624, after the engine stopped and could not be restarted, the master ordered 'not under command' (NUC)<sup>13</sup> signals be displayed and the disabled ship's status on the 'automatic identification system' (AIS)<sup>14</sup> be set to NUC.

At 0627, the chief engineer updated the fleet manager and was asked to start the engine from the local emergency controls (adjacent to the engine) and increase rpm until the turbocharger became effective (see the section titled *Engine combustion air system* under *Propulsion*). At 0631, the master, having asked the chief engineer how long it would take to try the local controls, agreed to trying to start the engine. The master also noted that there was little available time remaining to obtain tug assistance.

At 0634, when the chief engineer started the engine from the local controls, the rpm would not increase beyond about 42 rpm (dead slow ahead). At 0640, the master took the fleet manager's call and advised that the engine speed had not increased beyond 27 rpm. They discussed the situation for 6 minutes before the master concluded the call, advising that the chief engineer would provide an update shortly. The master then asked the chief mate to check the ship's emergency procedures for contacts in the Sydney area.

At 0650, the master called the fleet manager and discussed requesting assistance from local authorities. The chief engineer also arrived on the bridge, provided the fleet manager an update and was asked to again try increasing speed to full ahead from the local controls.

At 0655, after the chief engineer's attempts to increase speed had again been unsuccessful, the master instructed the chief mate to call 'Marine Rescue Sydney'. At that time, the disabled ship was less than 7 miles from the coast.

Meanwhile, at 0656, Pacific Basin's management team established a virtual communications group to manage the emergency. The group comprised the marine and safety manager, fleet manager, fleet director and DPA (references to Pacific Basin hereafter mean this group or the company in general).

## Tugs called

At 0656 on 4 July, the chief mate called 'Marine Rescue Sydney' on very high frequency (VHF) radio channel 16 but received no response. At 0657, the chief mate called Port Kembla VTS and advised that *Portland Bay's* main engine had failed, that it was drifting towards the coast and required tug assistance. Port Kembla VTS suggested anchoring the ship, which the master ruled out due to the deep water in the ship's location (see the section titled *Bridge procedures* under *Safety management system*).

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<sup>12</sup> The International Safety Management (ISM) Code requires a ship's managers to have a Designated Person Ashore (DPA) who should aim to ensure the ship's safe operation and provide a link between all those on board and the highest level of management ashore.

<sup>13</sup> Not Under Command (NUC) – A vessel, which due to exceptional circumstances is not able to manoeuvre as required by the rules under Convention on the International Regulations for Preventing Collisions at Sea, 1972, as amended (COLREGs), and is therefore unable to keep out of the way of another vessel.

<sup>14</sup> The automatic identification system (AIS) is a very high frequency (VHF) radio broadcasting system which enables AIS equipped vessels and shore-based stations to send and receive identifying information.

At 0659, Port Kembla VTS informed the ships' agent in Port Kembla, Monson, that the ship's master had asked for tug assistance. The VTS then notified personnel within the Port Authority of New South Wales (Port Authority) of the ship's situation.

Meanwhile, the master and chief mate discussed whether 'RCC'<sup>15</sup> should be contacted as no response had been received from 'Marine Rescue Sydney'. Instead, at 0703, the chief mate called 'Marine Rescue Port Kembla' (Marine Rescue) and was advised that relevant authorities would be notified of the situation and to await an update. The ship was about 6 miles from the coast and drifting towards the 3-mile limit of New South Wales coastal waters (see the section titled *Legislation and plans under State level*).

While awaiting an update from Marine Rescue,<sup>16</sup> the master and chief mate discussed whether to broadcast an urgency (PAN)<sup>17</sup> or a distress (MAYDAY)<sup>18</sup> message. At 0709, the chief mate informed Marine Rescue that the ship was 1.5 hours away from the 'shore' and was advised that Marine Area Command (MAC)<sup>19</sup> and Sydney Water Police had been notified. Marine Rescue also suggested broadcasting a PAN message. Noting this advice, the master told the chief mate that, at the ship's drift rate of more than 4 knots, it would ground in 1.5 hours.

Ongoing communications with Pacific Basin had continued intermittently and, at 0714, the master advised that the ship was 2 hours from the coast and Australian authorities had been requested to provide tug assistance. At 0716, the chief mate broadcast a PAN message requesting assistance on VHF channel 16, which Marine Rescue acknowledged. At that time, the ship was 5.8 miles from the coast (about 11 miles south of Port Botany).

At about this time, the responsible NSW Maritime manager<sup>20</sup> called the joint rescue coordination centre (JRCC) operated by the Australian Maritime Safety Authority (AMSA)<sup>21</sup>, after being earlier alerted by an officer in NSW Maritime's Port Kembla office who had been advised by Marine Rescue that *Portland Bay* was drifting off the coast. The manager reported that JRCC 'was not aware of the incident'.

At 0719, Pacific Basin asked the master to prepare for emergency anchoring while waiting for tug assistance. At the same time, Sydney VTS (which had heard *Portland Bay's* PAN broadcast) started monitoring the ship's movement on its electronic displays.

A few minutes later, at 0725, Sydney VTS requested Svitzer Australia (Svitzer), the port's main towage provider, for 'emergency tug' availability (see the section titled *Towage licence system under State level*). Sydney VTS then asked Port Kembla VTS which emergency services had been notified or activated.

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<sup>15</sup> The Australian Maritime Safety Authority-operated Joint Rescue Coordination Centre or JRCC in Canberra.

<sup>16</sup> Marine Rescue NSW provided a 24/7 emergency service for the boating community and monitored marine radio. It was an independent, non-governmental, not-for-profit organisation that largely relied on volunteers.

<sup>17</sup> The urgency signal consists of the words 'PAN PAN' and indicates that the station sending it has a very urgent message to transmit concerning the safety of a vessel, aircraft, or person.

<sup>18</sup> MAYDAY is the internationally recognised radio call announcing a distress condition where a ship or its occupants are being threatened by serious and/or imminent danger and the master and crew require immediate assistance.

<sup>19</sup> The NSW Police Marine Area Command (MAC) duties include protecting life and property and coordinating search and rescue in waters up to 200 miles from the coastline.

<sup>20</sup> The Manager Marine Pollution and Emergency Response in NSW Maritime, which is the operational area responsible for maritime matters within Transport for NSW, the state's transport regulator.

<sup>21</sup> Hereafter, references to AMSA include its 'Operations' or 'Response' divisions (JRCC is part of the Response division and is specifically referred to where appropriate for clarity).

Meanwhile on board, at 0727, the master ordered the second and third mates to report to the bridge wearing working clothes and safety boots. A minute later, when Marine Rescue asked for the ship to be anchored, the master once again advised that anchoring was not possible in the deep water. The master asked if a tug could reach the ship in one hour and was advised that an estimated time of arrival (ETA) would be provided when available.

Sydney VTS followed up Svitzer for an available tug at 0731, and again at 0739, but no tug response time was provided. At 0740, Sydney VTS contacted the port's other towage provider, Engage Towage, and was advised that a tug would be immediately prepared to deploy.

Meanwhile on board, communications with Pacific Basin had continued with the chief engineer advising that the damaged blower could only be repaired when the engine was not required and not operating. The master advised that preparations were being made for anchoring when water depths permitted. At 0741, the master sounded the ship's general alarm and instructed the crew to standby inside the accommodation with their lifejackets.

At 0744, Port Kembla VTS called JRCC to report that *Portland Bay* was drifting towards the coast and 'could ground in 1.5 hours'. The ship was about 5 miles off the coast in Commonwealth waters and moving rapidly towards New South Wales coastal waters. Immediately afterwards, at 0745, Sydney VTS called JRCC, discussed 'emergency tug' activation and advised that Engage Towage was preparing a harbour tug.

On board, at 0746, the master ordered that the boatswain (a senior deck crewmember) go forward along the starboard side (the lee side) and remove the anchors' lashings. At 0749, another PAN message was broadcast advising that the ship would ground in one hour (the low engine speed allowed little control of the ship's heading and drift rate). Marine Rescue advised the master that assistance was being arranged and, at 0751, Sydney VTS asked the master to confirm that 'emergency tug assistance' was required. Soon after, Svitzer instructed the master of its tug, *Bullara*, in Port Jackson (Sydney) to prepare to deploy.

At 0752, after Sydney Water Police advised JRCC that 2 water police vessels from Port Botany and Port Kembla were deploying, AMSA took over search and rescue (SAR) coordination for the incident. Soon after, AMSA began identifying air and surface assets to evacuate the crew in case the ship stranded on the rocky coastline. At 0754, AMSA tasked the first asset, a Challenger aeroplane from Essendon Airport, Victoria.

At 0756, Pacific Basin emailed Monson advising that the ship was 1.5 hours away from the shore and asked for an update on tug arrangements. At 0757, Sydney VTS followed up AMSA for the 'emergency tug' and was advised that the nominated emergency towage vessel (ETV) for New South Wales (*Svitzer Glenrock*) was in Newcastle (see the section titled *Svitzer Glenrock* under *Svitzer Australia*). Sydney VTS then advised that it would be deploying any available tug(s) in Sydney.

At about 0758, Pacific Basin advised the master that the agent, Monson, was arranging a tug and suggested anchoring when the ship drifted into 45 m depths (expected to be in one hour). At 0800, the master instructed the chief mate to collect important ship certificates and documents and place them in the starboard lifeboat as it was too late for a tug to reach the ship in time.

At about 0800, Engage Towage contacted United Salvage, a salvage services provider, to advise that the disabled ship was drifting towards the shore and it was unlikely a tug could

reach the ship before it grounded. As part of an existing agreement between the 2 companies, they decided to mobilise *SL Diamantina*, an Engage Towage tug in Port Botany with a crew on board. Its most suitable tug, *SL Martinique*, was not mobilised at that time as it was not crewed (see the section titled *Engage Towage*).

At 0803, the NSW Maritime manager called JRCC again and was advised that it was ‘trying to organise tugs to assist as soon as possible’.

Meanwhile, *Bullara*’s crew had boarded at about 0800 and begun preparing to deploy. At 0804, Monson emailed the master (copying AMSA) and advised that a tug was being arranged (Monson had earlier asked Svitzer to provide a tug). A short time later, United Salvage asked Svitzer for *Bullara* and was advised that it was being prepared for hire by the ship’s owners.

At 0807, Marine Rescue advised the master that a water police vessel was en route and confirmed that the crew had mustered with lifejackets. Between 0800 and 0810, AMSA had contacted the NSW Police, NSW Helicopter Rescue Services, NSW Ambulance Services and the Australian Defence Force (ADF) to request air and surface craft to evacuate the ship’s crew (based on information that a tug could not reach the ship before it drifted on to the shore).

At about this time, the NSW Maritime manager called the Port Authority’s chief operating officer to discuss the information which the manager had obtained from JRCC and the response by New South Wales. They exchanged information, noting that the ship would soon be within New South Wales coastal waters and agreed to convene a meeting of relevant agencies to understand each other’s roles and responsibilities for the response.

Meanwhile, at 0811, the master advised Pacific Basin that a police vessel rather than a tug, was en route to the ship. The master then discussed the anchoring plan with the mates, advising them that when depths reduced to 80 m, 3 shackles<sup>22</sup> of the port anchor cable would be ‘walked back’<sup>23</sup> (veered) and when the depths were 50 m, the anchor would be ‘let go’<sup>24</sup>. The master noted to them that the PAN message suggested by Marine Rescue had not resulted in tug assistance being provided and ordered a distress message (MAYDAY) to be broadcast.

At 0814, the second mate transmitted distress alerts and messages on the ship’s global maritime distress and safety system (GMDSS) equipment. The distress messages were received by AMSA and other stations within one minute. By then, the ship had closed to 3.2 miles off the coastline.

At 0815, Engage Towage advised Sydney VTS that its tug, *SL Diamantina*, would depart its berth in about 15 minutes (the tug master had advised Engage Towage that its aft towing winch was not operational). Two minutes later, Monson sent an urgent email to the master (copying AMSA) to advise that a tug was being mobilised and Marine Rescue vessels were en route.

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<sup>22</sup> One shackle equals 90 feet or 27.43 m.

<sup>23</sup> Walking back the anchor means lowering it under windlass power (the term ‘veered’ is also used and refers to paying out anchor cable under power using the windlass).

<sup>24</sup> Let go the anchor means releasing the windlass brake to allow the anchor and cable to pay out under their own weight.

At 0822, the master updated Pacific Basin, noting the rocky seabed indicated on the chart in depths of 50 m and advised the intention to anchor in 40 m depths instead. At that time, the ship was 3 miles from the coast and entering New South Wales coastal waters.

In addition to communicating with Monson, Pacific Basin had contacted the ship's hull and machinery insurance underwriter to seek any immediately available tugs through international salvage companies.

At 0825, Marine Rescue advised the master to expect rescue helicopters in 45 minutes and confirmed that the evacuating crew would assemble on the starboard side of the deck near cargo hold number 5. By 0828, AMSA had tasked 3 rescue helicopters (2 from NSW Ambulance Services and one from Westpac Lifesaver Rescue).

On board, by 0831, the chief mate and crew were on the forecastle and, at 0836, walked back one shackle of both anchor cables. A couple of minutes later, the master advised Pacific Basin that veering further cable with the ship rolling 35° risked fouling (entangling) the 2 chains.

At 0840, AMSA established an incident management team (IMT) for a severity level 3 incident (moderate) as per its internal procedures (see the section titled *Maritime Assistance Services procedures* under *National level*). The AMSA Response Centre (ARC)<sup>25</sup> duty manager assumed the incident controller role in this IMT (incident coordinator)<sup>26</sup>. Six minutes later, AMSA formally requested the ADF for assistance indicating that the 'primary mission is rescue of crew' because the ship could ground at 0930 on the cliffs south of Wattamolla (Figure 4 and Figure 5). Meanwhile, NSW Police had tasked another helicopter operated by the Rural Fire Service (RFS) to assist with evacuating the ship's crew.

On board the ship, after further discussion with Pacific Basin, at 0843, the master ordered 2 shackles walked back on both anchor cables. Shortly after, Marine Rescue asked the master to prepare the ship's towing equipment forward and, if possible, aft.

By 0846, Svitzer had agreed to provide *Bullara* to Pacific Basin under a 'TOWHIRE agreement'<sup>27</sup> to assist the disabled ship.

At 0848, *SL Diamantina* with 3 crew on board departed Port Botany. At 0854, Sydney VTS advised *Portland Bay's* master that the tug's ETA was in 90 minutes (about 1025) and to advise when the ship was anchored. Sydney VTS followed up with Svitzer at 0858 and was advised that *Bullara* was preparing to deploy.

At 0859, *SL Diamantina's* master established communications with the ship's master. Engage Towing advised United Salvage, with which it had partnered to provide assistance, that the tug was en route. The ship was now 1.4 miles from the rocky shore.

## Emergency anchoring off Eagle Rock

At 0901 on 4 July, the master advised the chief mate to standby to let go the anchors and, at 0905, ordered the port anchor let go. The anchor cable was secured with 9 shackles out with the engine dead slow ahead to relieve load on the cable. The starboard anchor was let

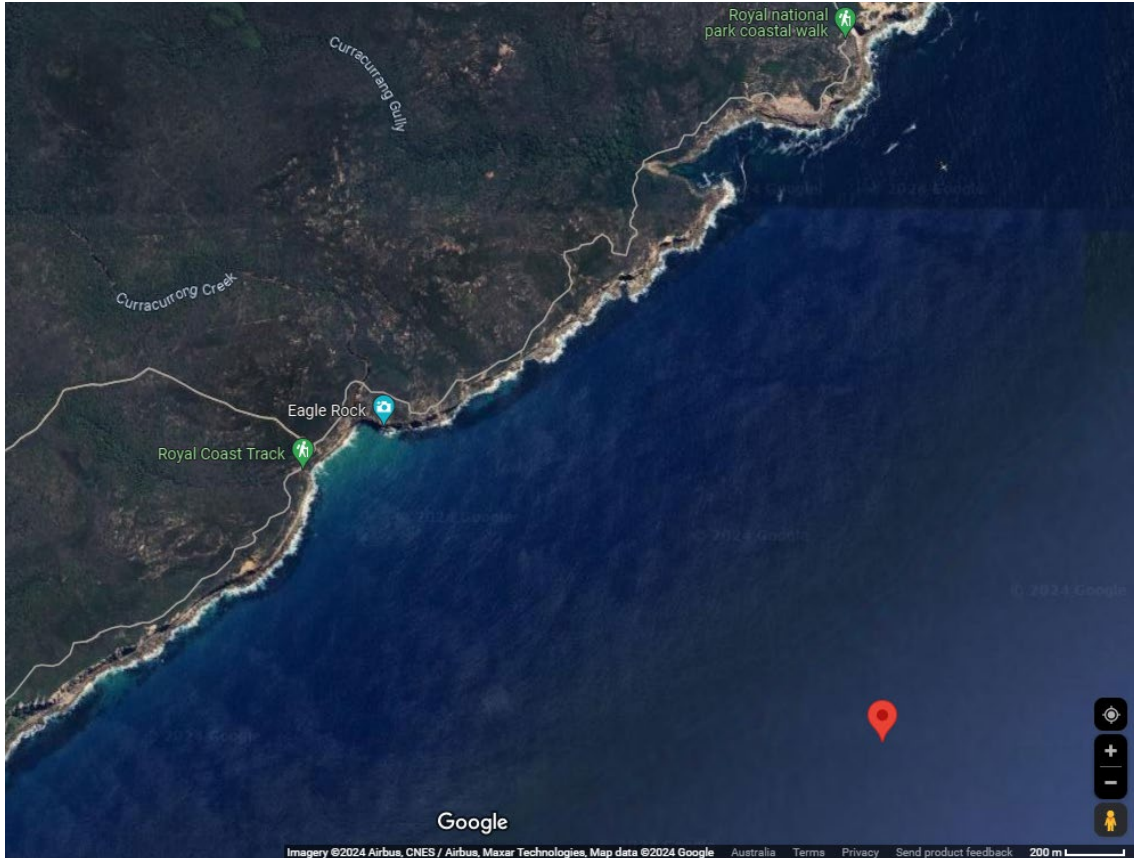
<sup>25</sup> The AMSA Response Centre (ARC) had a functional role as JRCC Australia (JRCC), which operated within the ARC.

<sup>26</sup> The AMSA incident controller is referred to hereafter as the incident coordinator to avoid confusion with the Port Authority's incident controller.

<sup>27</sup> The Baltic and International Maritime Council (BIMCO) TOWHIRE 2021 was an ocean towing agreement on a daily hire basis (not intended for port towing).

go at 0909 and, by 0915, its cable had been secured with 7 shackles out. Soon afterwards, the engine was stopped. The ship was anchored in depths of 45 m with a sandy seabed about one mile from the shore (Figure 5).

**Figure 5: Ship’s anchor position (red marker) off Eagle Rock**



Source: Google Maps, annotated by the ATSB

While anchoring, the master provided Port Kembla VTS various information requested, including electrical power and engine status, distance to the shore and helicopter winching information. By the time the ship was anchored, one of the 3 rescue helicopters was in its immediate vicinity and had established communications. The other 2 helicopters arrived on scene a short time later.

Meanwhile, at about 0915, United Salvage and Engage Towage began preparing to deploy *SL Martinique*. The tug was in White Bay, Sydney, but in addition to food, water and stores, it needed to be provided with suitable towing and salvage equipment before deploying.

At 0925, Marine Rescue advised the master to evacuate all but the essential crew required on board for a towing operation. The master discussed the evacuation with Pacific Basin and advised that the tug’s ETA was in one hour and suggested retaining 8 crew for a towing operation.

At 0926, the Westpac Lifesaver Rescue helicopter crew informed AMSA that a fourth helicopter, which was not expected, was in the area. It was soon identified as the RFS helicopter and AMSA instructed its pilot to return to base to avoid conflict with the other 3 rescue helicopters in the area.

At 0930, United Salvage briefed *SL Diamantina*'s master (via telephone) about the Lloyds Open Form (LOF) salvage agreement to be made with the ship's master verbally (see the section titled *Law of salvage* under *Salvage*). United Salvage advised the tug master that the tug would need to push on the ship's stern or midships to assist the ship and keep it away from the shore.

At 0937, the ADF advised AMSA that ADV *Reliant* was en route but the only assistance that this vessel could provide would be to launch its boats.<sup>28</sup>

Meanwhile on the ship's bridge, at 0937, the third mate informed the master that the distance to the shore had reduced to 9 'cables'<sup>29</sup> (Figure 6). The master was still discussing the situation with Pacific Basin and suggested evacuating all non-essential crew, including the 2 trainees on board.

**Figure 6: The shore seen from the ship's bridge**



Source: *Portland Bay*'s master

From about 0945, a meeting involving officers from various responding agencies, including the Port Authority, NSW Maritime and AMSA was held (with most attending virtually). The main aim of this multi-agency meeting was exchanging information and coordinating their respective roles and responsibilities, including the control agency leading the response.

At 0946, after 3 unsuccessful winching attempts due to the ship rolling and pitching heavily and unpredictably, and the master confirming the anchors were holding, the high-risk evacuation was abandoned and AMSA instructed the 3 helicopters to return to base. The Challenger aeroplane tasked arrived in the area later but remained at high altitude and assisted with ship-shore communication.

At about 0950, *SL Diamantina*'s master read out the LOF salvage agreement to which *Portland Bay*'s master agreed. At 0958, Svitzer advised AMSA that *Bullara* was available as Monson had advised that the tug was not required. About 10 minutes later, Monson

<sup>28</sup> The Royal Australian Navy's support vessel ADV *Reliant* was a 103 m offshore support vessel that could be used for maritime support, including aid and disaster relief, and search and rescue activities.

<sup>29</sup> One cable equals one tenth of a nautical mile or 185.2 m.

confirmed to AMSA that it had released *Bullara* from a commercial perspective (the hire contract).

At 1008, Engage Towage emailed the master, Pacific Basin, AMSA, Monson and others confirming that, together with United Salvage, a LOF salvage agreement was in place and its tug, *SL Martinique*, was also deploying. Subsequently, when Pacific Basin informed the insurance underwriter that a salvage agreement was in place, the efforts to seek tugs from international salvors was discontinued.

At 1010, *SL Diamantina* arrived near the ship, which was rolling heavily. Over the next 15 minutes, the tug master assessed the situation, estimating that the south-east swell was 9 m with waves rising to 12 m in the south-easterly winds gusting to 45 knots. Rain squalls were reducing the visibility to 150 m.

At about 1020, the multi-agency meeting concluded with the Port Authority assuming the ‘combat agency’<sup>30</sup> role as per the ‘NSW Coastal Waters Marine Pollution Plan’<sup>31</sup> (see the section titled *Legislation and plans* under *State level*). The Port Authority then established an incident management team (IMT) that would meet at 2-hourly intervals and appointed its chief operating officer as the incident controller (IC). An AMSA liaison officer was assigned to this IMT. The NSW Maritime manager responsible was assigned to be a liaison officer for New South Wales and attended JRCC from just before midday.

Meanwhile, the AMSA IMT established earlier in Canberra was not formally dissolved and its team members continued in their roles to support the combat agency (the Port Authority and its IMT). At 1020, AMSA decided to deploy *Bullara* in case it was required and advised Svitzer that it would task the tug under their contract (see the section titled *Emergency towage services contract* under *Svitzer Australia*).

At 1028, after *SL Diamantina*’s master and the ship’s master agreed that the tug would push on its starboard side to relieve the load on the anchor cables, the tug began pushing along the midships area. However, after colliding with the shipside several times due to the heavy swell, these efforts were abandoned at 1033 to avoid serious damage.

At 1040, the tug master advised the intention to connect the tug’s towline (a synthetic fibre rope) through the ship’s centre fairlead to its mooring lines. Fifteen minutes later, the towline was connected to 2 synthetic fibre mooring ropes using a towing shackle and the tug master took some weight on the towline.

Meanwhile, both *Bullara* and *SL Martinique* had nearly completed their deployment preparations. At 1051, a few minutes after Engage Towage had informed AMSA about the salvage agreement in place, AMSA issued Svitzer a tasking direction for *Bullara*. Two minutes later, AMSA advised that the tug was to proceed to the scene and standby. *Bullara* left its berth at 1054. Shortly after, at 1058, *SL Martinique* with 6 crew on board left its berth under the instructions of United Salvage.

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<sup>30</sup> The combat agency was responsible for controlling the emergency response and defined as the ‘control agency’ by the National Plan for Maritime Environmental Emergencies, 2020 (National Plan).

<sup>31</sup> The ‘NSW Coastal Waters Marine Pollution Plan, December 2021’ (endorsed by the State Emergency Management Committee on 2 December 2021), New South Wales Government.

After *SL Diamantina*'s towline was secured, the ship's engineers started work to repair auxiliary blower number 2. By 1100, they had removed the blower's impeller and fitted a blank on the blower trunk (to allow the other blower to be used when operating the engine).

At 1140, AMSA became aware that United Salvage intended to replace *SL Diamantina* with *SL Martinique*, and AMSA then calculated the pulling power required to hold the ship and to tow it.

At 1158, the ship's mooring ropes connected to *SL Diamantina*'s towline parted. After some difficulty, 2 mooring wires were connected to the towline at 1220. However, 10 minutes later, the wires also parted and efforts began to reconnect the towline.

At 1230, AMSA contacted United Salvage and was advised that it intended 'to only use *SL Martinique* to tow' and that there was 'no requirement for *Bullara*'.

Meanwhile, the second meeting of the Port Authority's IMT was held from about 1230. At this meeting, the IC asked the AMSA liaison officer for *Svitzer Glenrock* to be activated in case it was required for the response.

By 1244, *SL Diamantina*'s towline had been reconnected. About 20 minutes later, however, it parted again. A few minutes later, the ship's master asked that no further attempts be made to connect the towline.

At 1324, AMSA released the Challenger aircraft that had remained above the ship's location and it returned to base.

By 1400, the engineers had fitted a new impeller in the blower. Their attempts to fit a new electric motor had not been successful due to difficulties removing the existing motor's pulley and the repairs were suspended.

At 1402, *SL Martinique* arrived near the ship and, shortly after, began connecting its aft towing wire to the ship's port bow. A few minutes later, *Bullara* arrived at the scene and, at 1410, AMSA advised *Svitzer* that it had the option to make *Bullara* available to United Salvage under the LOF agreement or the AMSA contract (see the section titled *Emergency towage services contract under Svitzer Australia*). At 1413, AMSA also advised United Salvage that *Bullara* was available to assist the ship.

The ship's anchors had continued dragging slowly and it was now about 7 cables from the shore. At 1425, United Salvage requested AMSA for the use of *Bullara*, which it approved with the same advice about contractual terms provided earlier to *Svitzer*.

At 1430, Pacific Basin advised AMSA that the ship's engine could be operated at limited rpm (up to half ahead). By 1433, *SL Martinique*'s towline had been secured. Shortly after, *Bullara* began connecting its main aft towline (wire) to the ship's starboard bow and, by 1455, it was secured. By this time, the IC had decided that the ship would be towed 20 miles from the coast under United Salvage's direction (ports in and near Sydney were closed due to the bad weather).

### Attempted tow to sea

At 1505 on 4 July, *Portland Bay*'s master began weighing the anchors. The main engine was used to assist and, by 1538, both anchors were home. At 1540, *SL Martinique* and *Bullara* started the tow with *SL Diamantina* following the ship (Figure 4). The engine was at

slow ahead to assist, however, it was stopped at 1547 due to high temperatures caused by 'scavenge space fires'<sup>32</sup>.

With the ship under tow, AMSA released ADV *Reliant* from tasking at 1553. About 20 minutes later, AMSA also released the 2 water police vessels at the scene from SAR tasking.

At 1828, United Salvage asked the IC to open Port Botany for the ship to take shelter there (refuge) as, in the prevailing weather, the tow had progressed parallel to the coast (towards Sydney) rather than away from the coast. Minutes later, at 1835, *Bullara's* towline parted at its inboard (tug) end and the wire fell into the water (its other end remained connected to the ship's bow). *SL Martinique* was not able to tow the ship on its own but remained connected with little or no weight on the towline. The tug's master had earlier injured their left shoulder but was able to continue working.

At 1839, United Salvage advised Svitzer and Engage Towage that *Bullara's* towline had parted (it had no spare towing wire) and the ship's engine could not be used. United Salvage then called AMSA and asked it to activate the ETV, *Svitzer Glenrock*, or to have Port Botany opened (see the section titled *Incident management*). At 1850, while considering the ETV request, AMSA convened a meeting with Svitzer and United Salvage to discuss whether ocean-going towing equipment was available in the general area for use by harbour tugs.

Meanwhile, *Portland Bay* with *SL Martinique's* towline connected, was drifting towards Bate Bay (Figure 4). The master decided to anchor again when water depths reduced sufficiently and prepared to deploy both anchors.

At 1901, United Salvage advised Svitzer that a request for refuge in Port Botany had been made and asked if the ETV could be 'mobilised'. Svitzer advised that if AMSA did not activate it, the tug could be hired under a TOWHIRE agreement (see the section titled *Incident management*).

Shortly after, the IC called AMSA's Maritime Emergency Response Commander – MERCOM (see the section titled *Response commander* under *Pollution prevention*) to follow up the request for the ETV made that afternoon via the AMSA liaison officer. The MERCOM was unaware of the request but agreed to activate the ETV. The MERCOM also offered to issue a 'direction'<sup>33</sup> to facilitate the ship to be towed into Port Botany (see the section titled *Place of refuge* under *Pollution prevention*). The IC advised that the port was closed due to the weather so the ship could not be towed into port until the weather improved.

At 1945, United Salvage submitted a formal 'place of refuge' request via email to the MERCOM to allow the ship to be moved to Port Botany.

At 1957, AMSA issued a tasking direction for *Svitzer Glenrock*. Svitzer immediately instructed the ETV's Newcastle-based crew to prepare to deploy for the nearly 90-mile passage to the ship's location off Bate Bay.

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<sup>32</sup> A scavenge space fire occurs when flammable mixture (cylinder oil, unburnt fuel and carbon) collects in the engine's scavenge space ignites. The fire can be extinguished by steam, water mist or CO<sub>2</sub>.

<sup>33</sup> The Protection of the Sea (Powers of Intervention) Act 1981 provides AMSA powers to take measures and issue directions to prevent or respond to pollution of the sea by oil or other substances.

At 2010, United Salvage stood down *SL Diamantina* as it was low on fuel and it returned to Port Botany. Other than its towing lines, the tug had no reported damage. The tug's chief engineer had injured a knee and shoulder during the deployment but had been able to continue working.

The Port Authority's IMT considered options to evacuate the ship's crew if it became necessary due to the risk of stranding and Sydney VTS checked if any other tugs or vessels were available. No tugs were available in Sydney and a naval vessel there would take at least 4 hours to mobilise. By 2015, it was concluded that helicopter rescue operations would not be possible in darkness.

At 2030, *Svitzer Glenrock's* crew boarded and began pre-departure and towing gear checks.

### Emergency anchoring off Bate Bay

At 2035 on 4 July, *Portland Bay's* port anchor was let go in 40 m water depths where the seabed was sandy and 9 shackles were paid out. Five minutes later, the starboard anchor was let go and 6 shackles were paid out. By 2045, both anchors had been secured with the ship 1.4 miles from the coast. The south-easterly swell off Sydney recorded at the time was 5.03 m (average) and 8.63 m (maximum).

The IMT continued monitoring the situation through Sydney VTS with a Sydney harbour pilot attending the VTS. *SL Martinique* maintained a static tow and increased weight on its towline when required to prevent the ship dragging its anchors. *Bullara* remained near the ship. The 2 tugs were the only surface assets available for a rescue operation if it became necessary.

In Newcastle, *Svitzer Glenrock* left its berth at 2227. At sea, the ETV's master reported that in the 40-knot south-south-east winds with 8 m waves and poor visibility, it could only make good a speed of about 5 knots. Meanwhile, AMSA's search for ocean-going towing gear had identified that *Coral Knight*, the level 1 ETV in Queensland, had such equipment.

At 0121 on 5 July, the rate at which the ship was dragging its anchors increased and the pilot asked for the weight on *SL Martinique's* towline to be increased slightly to reduce the dragging.

Meanwhile, *Svitzer Glenrock* continued its passage with an ETA off Bate Bay of about noon.

During the night, AMSA continued monitoring the ETV's ETA and the position of the ship, which was dragging its anchors at a rate of about 100 m per hour. At 0546, the MERCOT acknowledged United Salvage's place of refuge request and advised that the ETV was due on scene at about midday with plans underway to move the ship to Port Botany, noting that it had not yet grounded. At 0717, following a request by AMSA Operations for the 'need to evaluate the port of refuge', the subject was discussed by its incident management team.

At 0848, the incident was upgraded to level 5 (severe) in accordance with AMSA's procedures (see the section titled *Maritime Assistance Services procedures under National level*) noting 'machinery failure and immediate tasking of ETV'. The ARC duty manager continued coordinating AMSA's response to the incident with the MERCOT continuing to oversight response activities.

At 0900, the Port Authority IC asked the MERCOT to issue directions to facilitate the ship to be towed into Port Botany in daylight the following day (see the section titled *Incident*

*management*). At 1145, the IC convened a meeting with United Salvage, Engage Towage and Sydney Pilots to plan the towage operation.

At 1257, AMSA held a meeting where the MERCOM advised the IC that *Svitzer Glenrock* would remain in AMSA control for the towage operation. Collectively, they decided that the Port Authority would continue managing the incident as the combat (control) agency until the ship was safely berthed. They agreed that AMSA would then exercise its regulatory functions as the safety authority.

At 1300, when *Svitzer Glenrock* arrived off Bate Bay, United Salvage asked for *Bullara's* parted towline to be recovered. The wind had moderated to 30 knots, but the 8 m swell that remained made recovering the 200 m towing wire difficult.

By 1415 *Bullara* had recovered its towline and *Svitzer Glenrock* began connecting its towline. By 1515, the towline had been secured through the ship's forward centre lead. Shortly after, *Bullara* was dismissed to return to port (other than its parted towline and minor damage on deck, the tug was not damaged). *Svitzer Glenrock* and *SL Martinique* remained with the ship and maintained a static tow.

At about 1605, AMSA emailed MERCOM's directions to *Portland Bay's* master, Pacific Basin, United Salvage and the Port Authority, requiring the ship to be towed to a suitable berth in Port Botany (see the section titled *Incident management*).

Later that afternoon, United Salvage presented the towage plan prepared using the ship's emergency towing procedure (see the section titled *Incident management*). The plan involved the use of *Svitzer Glenrock* and 3 Engage Towage tugs (*SL Martinique*, *SL Fitzroy* and *SL Diamantina*). At about 1800, after discussing the plan with the MERCOM, the IC approved it subject to suitable weather conditions (maximum swell 4 m) and daylight hours. They agreed that the operation could start at about 0800 on the following day, 6 July.

## Refuge in Port Botany

At 0722 on 6 July, *SL Fitzroy* arrived off *Portland Bay* in preparation for the tow. At 0845, a pilot vessel arrived with a United Salvage representative, a service engineer (representing the ship's main engine manufacturer) and 2 Sydney harbour pilots on board.

By 0936, *SL Fitzroy's* towline had been secured through the ship's aft centre lead. The pilots, salvor's representative and service engineer had boarded the ship by 0954 and, at 1000, the master began weighing the anchors.

At 1051, both anchors were home and secured and, soon after, the ship was under tow with 3 tugs connected (*Svitzer Glenrock*, *SL Martinique* and *SL Fitzroy*). The main engine was used at dead slow ahead to assist the tow.

At 1228, the ship entered the port limits of Port Botany. *SL Diamantina* had arrived to assist with berthing and, at 1312, connected a towline to the ship aft.

At about 1409, the ship was alongside Hayes Dock berth 3. By 1454, all its mooring lines had been secured and all 4 tugs had been cast off and dismissed.

Shortly after, AMSA officers attended *Portland Bay* and carried out initial inquiries and inspections. At 1650, AMSA issued the master with a notice to detain the ship.<sup>34</sup> The reason for the detention was identified as ‘main propulsion system not able to reliably provide intended propulsion service’, which effectively made the ship unseaworthy. No damage was reported to have occurred due to the ship’s anchoring and towing operations and no-one on board was injured during the incident.

By this time, various investigations into the incident, including those initiated by the ATSB, AMSA and Pacific Basin, had commenced with their investigators collecting relevant evidence on board the ship.

## Inspections and repairs

On 7 July, an AMSA Port State Control inspection identified 14 deficiencies with *Portland Bay*’s main engine and associated machinery, including:

- auxiliary blower number 2 not operational
- non-return flap in scavenge manifold stuck open
- piston rings of all main engine units stuck due to excessive carbon deposits.

Pacific Basin submitted a plan to rectify all the deficiencies over the following week while berthed in Port Botany by carrying out the following work under the supervision of the main engine manufacturer:

- overhaul of all main engine units
- overhaul of auxiliary blower number 2
- inspection and cleaning of main engine charge cooler
- checking of the condition of main engine turbocharger
- ordering spares (blower, non-return valve and piston rings)
- post-repair main engine tests and ship’s classification society surveys.

The planned repairs were carried out over the following days in accordance with the manufacturer’s recommendations (see the section titled *Post-incident inspections* under *Propulsion*).

On 13 July, the main engine was tested to the satisfaction of the ship’s classification society surveyor and engine manufacturer’s representative with an AMSA surveyor in attendance. The ship was then released from detention and, at about 1700, departed Port Botany for Gisborne, New Zealand.

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<sup>34</sup> A detention is an intervention action taken by the port State when the condition of the ship or its crew does not correspond substantially with the applicable conventions. The action is taken to ensure that the ship will not sail until it can proceed to sea without presenting a danger to the ship or persons on board, or without presenting an unreasonable threat of harm to the marine environment, whether or not such action will affect the scheduled departure of the ship.

# Context

## Portland Bay

### General details

*Portland Bay* was a geared ‘handysize’<sup>35</sup> bulk carrier designed to carry dry bulk cargoes and timber (Cover). At the time of the incident, the ship was owned by Uhland Shipping, British Virgin Islands, and operated and managed by Pacific Basin Shipping, Hong Kong<sup>36</sup> (Pacific Basin). The ship was registered in Hong Kong and classed with Nippon Kaiji Kyokai, Japan (Class NK).

The ship was built in 2004 by Imabari Ship Building Company, Japan. It had a gross tonnage<sup>37</sup> of 16,960, an overall length of 169.26 m, a breadth of 37.20 m and depth of 13.60 m. At a summer draught of 9.78 m, the ship had a deadweight carrying capacity of 28,446 tonnes.

Four cargo cranes serviced the ship’s 5 cargo holds and fixed posts to lash timber cargoes were fitted on both sides of its main deck. The ship’s flush main deck extended to the forecastle where the mooring equipment, including electro-hydraulic windlasses for the port and starboard anchors were located. Each anchor was fitted with 10 shackles<sup>38</sup> of 70 mm diameter chain cable.

*Portland Bay*’s navigation bridge (bridge) was equipped with navigational equipment in accordance with SOLAS<sup>39</sup> requirements for a ship of its size. This included 2 radars, 2 electronic chart display and information system (ECDIS) units, 2 very high frequency (VHF) radios and an automatic identification system (AIS) transceiver. A Qingdao Headway Marine model HMT-100A voyage data recorder (VDR) recorded data for the time of the incident, including bridge audio.

### Crew

At the time of the incident, the ship had a crew of 21, including the master. Thirteen of them, including the master and chief engineer, joined the ship in Port Kembla on 21 or 22 June 2022. All the crew, except for the Ukrainian master, were Filipinos.

The officers comprised the master, 3 deck officers (chief, second and third mate) and 3 engineers (chief, second and third engineer), all appropriately qualified for their positions. Others included 5 deck crew, 3 engine crew (a fitter and 2 motormen), one deck cadet and one engine cadet.

The master’s seagoing career began in 1999 with command first gained in 2004. The master had joined Pacific Basin in 2017 and completed 4 assignments as chief mate before being promoted in 2020. In 23 years at sea, the master had mostly worked on bulk carriers and some container ships as well as heavy-lift cargo ships. The master had not previously

<sup>35</sup> A smaller size bulk carrier with a deadweight carrying capacity up to 50,000 t.

<sup>36</sup> The Hong Kong Special Administrative Region of the People’s Republic of China.

<sup>37</sup> Gross tonnage is a measurement of the enclosed internal volume of a ship and its superstructure with certain spaces exempted.

<sup>38</sup> One shackle equals 90 feet or 27.43 m.

<sup>39</sup> The International Convention for the Safety of Life at Sea, 1974, as amended.

sailed on *Portland Bay* but had on similar ships. The master’s handover notes, checklist and familiarisation, completed on 21 and 22 June, indicated that the ship, its machinery and equipment were in good working condition. That assessment had been confirmed by the outgoing master and chief engineer.

The chief engineer went to sea as a rating in 1992, progressed through the ranks in 3 different companies and, in 2015, obtained chief engineer qualifications. In 2016, he joined Pacific Basin and worked on its ships as a second engineer until being promoted to chief engineer in 2021. He joined *Portland Bay* for the first time on his second assignment as chief engineer. The chief engineer’s handover checklist indicated that the only major work planned for the following month was the renewal of the exhaust valves on 2 main engine units, with no issues of ongoing concern.

## Propulsion

*Portland Bay*’s propulsion was provided by a Makita Mitsui MAN B&W 6S42MC diesel engine that could deliver 5,850 kW at 129 rpm. The main engine drove a single, fixed-pitch, four-bladed, right-handed propeller. The ship’s designed service speed at 122 rpm (that is, 85% of the engine’s maximum continuous rating) was 14 knots (laden) and 14.5 knots (in ballast).

The ship’s propulsion (single engine and propeller), power and design speed were typical for its size and type with no auxiliary propulsion or thrusters. Table 1 below shows relevant data from the ship’s manoeuvring (harbour speed) table. The indicative speeds in the table were based on full propeller immersion, which occurred when the aft draught was 5.1 m or more.

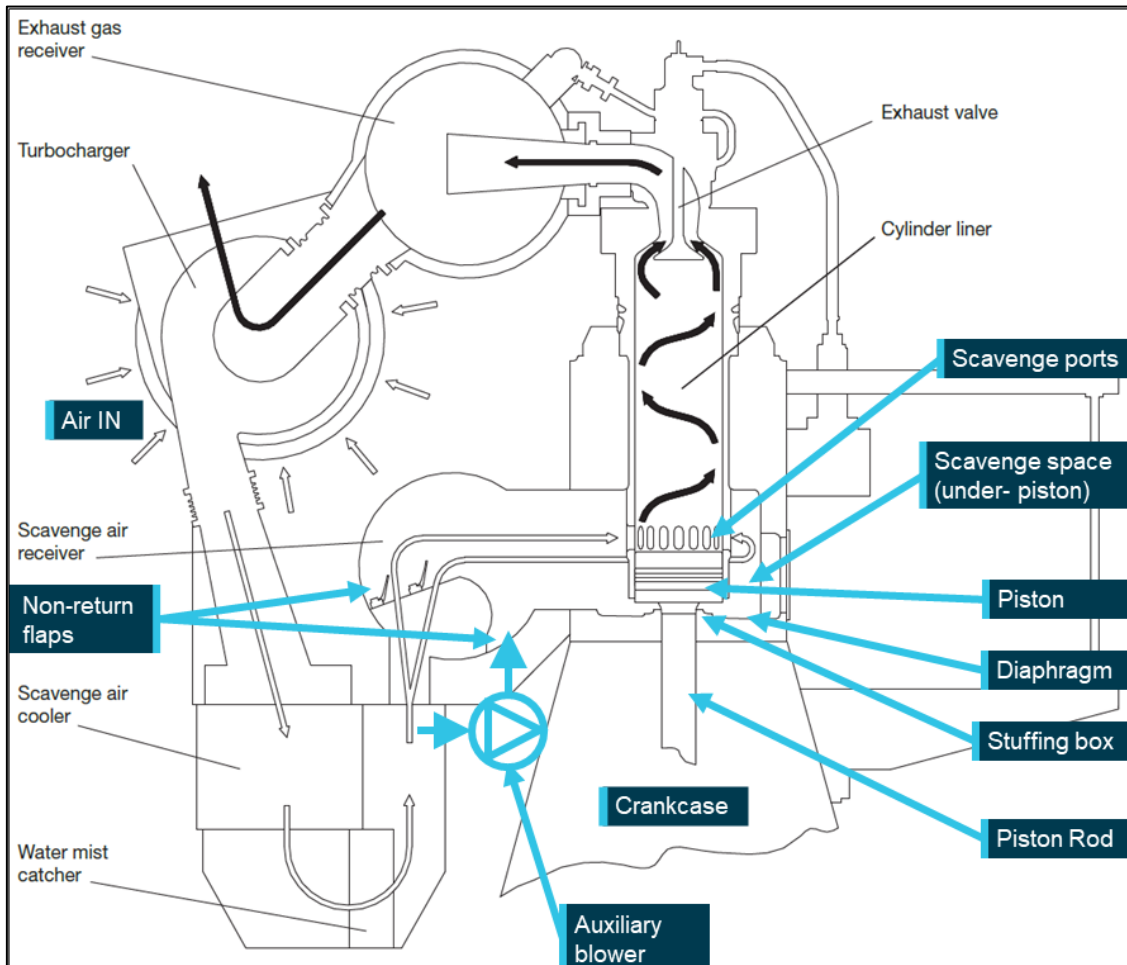
**Table 1: *Portland Bay*’s manoeuvring speed information**

Engine order	Speed (rpm)	Laden speed (knots)	Ballast speed (knots)
Dead slow ahead	42	5.1	5.3
Slow ahead	58	7.1	7.3
Half ahead	80	9.6	9.9
Full ahead	90	10.6	11.1

## Engine combustion air system

Air for fuel combustion (scavenge air) was drawn from the engine room through filters into the turbocharger compressor (Figure 7). The turbocharger compressed the air and discharged it to the scavenge air cooler, which cooled and dried the air before passing the outlet via non-return flaps.

**Figure 7: Slow speed MAN B&W diesel engine combustion air and exhaust system**



Source: MAN B&W, annotated by the ATSB

Pressurised air from the cooler went into the scavenge air receiver or trunk, which extended the entire length of the engine and was connected to each cylinder through a pipe in the under-piston scavenge space. As the piston came down, scavenge ports (cutouts) in the lower cylinder liner were exposed, allowing air into the cylinder above the piston. In combination with the now open exhaust valve at the top of the cylinder, the scavenge air cleared the cylinder of combustion gases and provided fresh air for the next combustion cycle. As the cycle continued, the piston moved up, blocking the scavenge ports, the exhaust valve closed, the air was compressed (increasing its temperature), atomised fuel was injected in and when the piston reached top dead centre, combustion occurred. Expanding gases then forced the piston down for the repeat cycle.

Combustion gases were cleared from the cylinder as the exhaust valve opened and the scavenge ports were uncovered. The combustion gases then passed into the exhaust gas receiver and to the turbocharger turbine side to drive the compressor and draw fresh air into the engine. The exhaust gases from the turbocharger discharged to atmosphere through the exhaust trunk (inside the engine room funnel).

At low engine loads (below 30–40% of maximum load), air supply was boosted by 2 electrically-driven auxiliary fans or blowers. The auxiliary blowers provided air to the engine until there was sufficient exhaust gas to drive the turbocharger and supply the required volume and pressure of air. The blowers generally operated in automatic mode

providing air at low engine load (speed) and stopped operating at higher load (speed) when the exhaust gas-driven turbocharger could meet the demand for air. The blowers drew air from the charge air cooler outlet and discharged it through non-return flaps, directly into the scavenge trunk (Figure 8). In effect, the blowers pumped air around the turbocharger non-return flaps.

**Figure 8: Air system non-return flaps**



Source: Pacific Basin, annotated by the ATSB

Complete combustion was essential for the efficient operation of the main engine. The combustion, in turn, relied entirely upon a consistent, reliable air supply. It was therefore critical for the scavenge air system to be sufficiently airtight, particularly at low engine load/speed. The following 3 running surfaces in the air system sealed the system from leakage:

- Auxiliary blower shaft seal.
- Piston rings sealing the cylinder combustion space from the under-piston scavenge space (loss of this seal could result in piston ring blow by leading to sludge accumulation in the scavenge space, loss of cylinder pressure, poor combustion and scavenge fires).
- The seal between the scavenge space and the crankcase (through the diaphragm, sealing around the piston rod), known as the stuffing box.

In addition to scavenge air loss due to leakage, the following could lead to inefficient combustion:

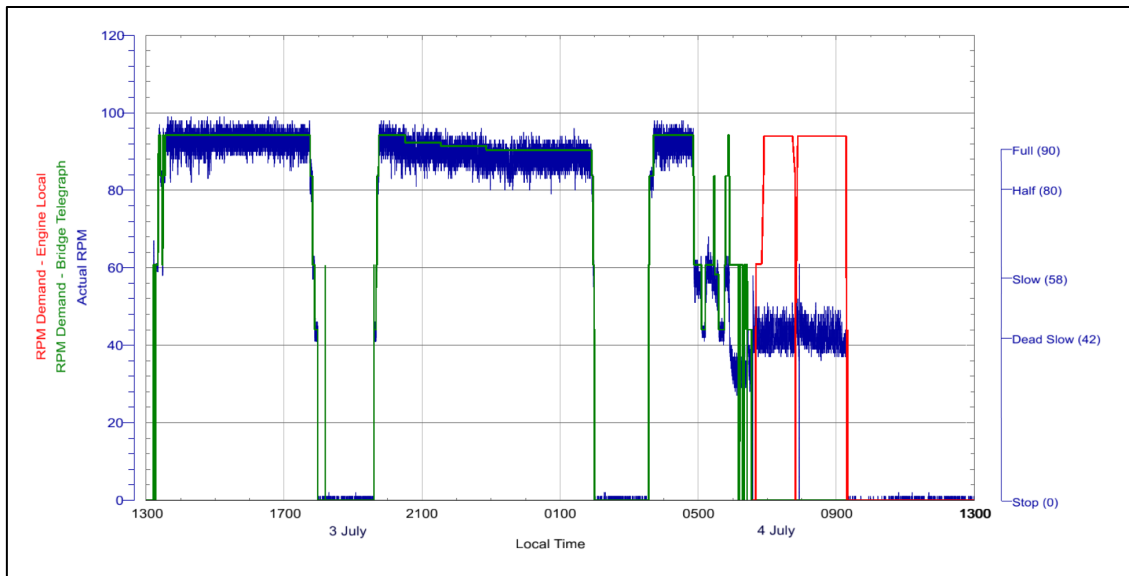
- Loss of auxiliary blower effectiveness due to air flow recirculation, such as leaking turbocharger non-return flap(s) allowing air to flow about the blower, from discharge to suction (disrupts blower throughput and reduces scavenge trunk pressure and air flow for combustion).
- Air flow restrictions from:
  - fouled scavenge ports due to accumulated deposits from piston ring blow by, stuffing box leakage or dirty air,
  - turbocharge fouling (turbine or compressor),
  - dirty turbocharger inlet filters,
  - air cooler fouling.
- Scavenge fire (ignition of combustible material accumulated in the scavenge space above the diaphragm).

A scavenge fire consumes air for combustion and can seriously damage components if not extinguished quickly. Poor atomising of fuel, excessive fuel supply (for the available air), piston ring blow by, stuffing box leakage and excessive cylinder lubrication can all produce combustible material.

### Ship’s engine performance

After *Portland Bay* left Port Kembla on 3 July and the pilot disembarked, the main engine order (demand) was set at full ahead (90 rpm). The engine rpm achieved fluctuated widely about the demand (90 rpm) as the ship (in ballast condition) rolled and pitched heavily in the prevailing weather conditions with its propeller not always fully immersed (Figure 9).

**Figure 9: Engine speed demand (green or red) and actual speed (blue) on 3 and 4 July**



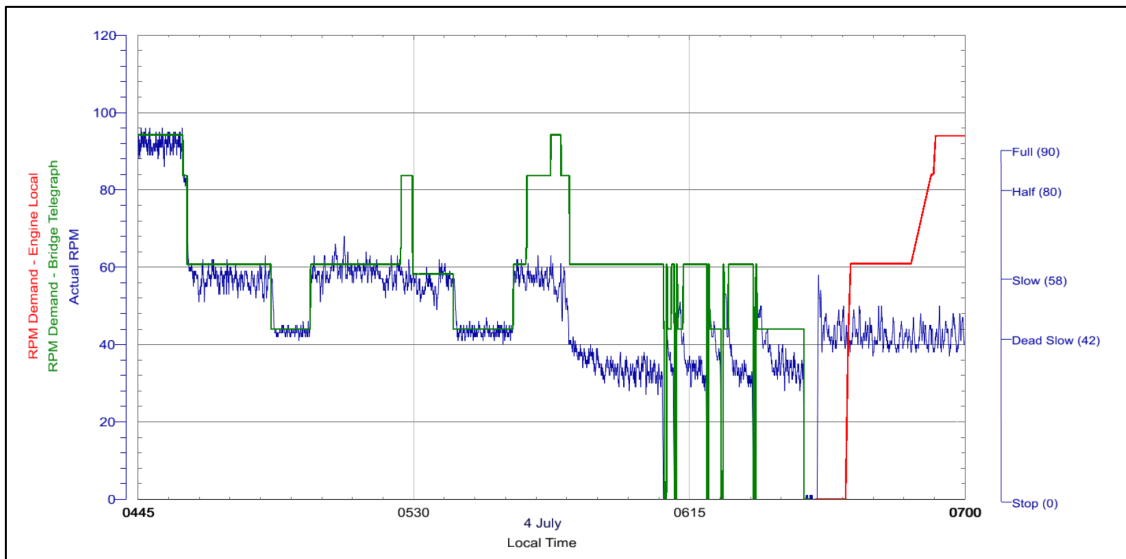
Source: *Portland Bay*'s recorded voyage data, annotated by the ATSB

Subsequently, the ship drifted and intermittently steamed slowly with both the auxiliary blowers operating. At 0450 on 4 July, when a fire alarm activated, the engineers observed smoke and a burning smell from blower number 2 and manually stopped it (the motor did not trip). Inspections later identified that the blower’s impeller bearings had failed.

After the failure of auxiliary blower number 2, the engine speed continued to follow the demand for dead slow and slow ahead. However, after about 0550, when attempts were

made to increase speed beyond slow ahead, the engine did not respond to the speed demand (Figure 10).

**Figure 10: Speed demand (green or red) and actual speed (blue) from 0445 to 0700, 4 July**



Source: *Portland Bay's* recorded voyage data, annotated by the ATSB

The varying engine load and speed led to adverse engine operating conditions, including:

- poor combustion
- turbocharger surge
- scavenge trunk pressure fluctuations
- fluctuating, and frequent, excessive and mismatched, fuel and air flow
- repetitive opening and closing of scavenge system non-return flaps
- sticky piston rings, blow by and scavenge fires.

These operating conditions eventually resulted in the main engine being unable to achieve more than about 40 rpm. Overriding normal engine operating control limits and attempting to operate the engine locally (emergency control) to manually control the fuel supplied did not improve engine performance.

### Main engine maintenance

When inspected after *Portland Bay* berthed in Port Botany on 6 July, the main engine had recorded 90,388 running hours. The ship's planned maintenance system (PMS) was consistent with and supported the Class NK continuous machinery survey (CMS) requirements for classed machinery, including the main engine. There were no outstanding engine maintenance requirements and all the engine units had less than 5,000 running hours since their last inspection.

On 3 June (one month before the incident), the scavenge spaces were inspected and cleaned as part of routine maintenance. The inspection report showed the scavenge spaces and ports and the piston crowns and rings were clean and in generally good condition.<sup>40</sup> The report indicated that the auxiliary blowers and non-return flaps were clean and intact.

<sup>40</sup> The regular inspection involved inspection of piston rings and liners, scavenge manifold, under piston space, exhaust manifold and economiser tubes, and cleaning as required (the inspection report included a photographic record).

Later in June, while en route to Port Kembla, there were difficulties maintaining full sea speed (122 rpm) due to high scavenge air and engine lubricating oil (LO) temperatures. It was therefore decided to clean the LO cooler, LO filter and charge air cooler when berthed in Port Kembla. In addition to these prioritised tasks, other tasks planned for the port stay included replacing the impeller and bearings in auxiliary blower number 2 with new spares.

### **Auxiliary blower number 2**

About 3 years before the incident, in April 2019, auxiliary blower number 2 had failed and been repaired. The blower failed again in November 2019 and was repaired and, in June 2021, its motor and impeller bearings were replaced.

In March 2022, vibration monitoring revealed abnormal vibrations from the blower. The inspection identified a cracked impeller, damaged shaft bearings and worn bearing housings. The impeller was replaced with a previously used impeller. The cracked impeller was weld repaired and about a month later, in April 2022, it was refitted in the blower without rebalancing. New bearings were fitted in the same worn bearing housings as there were no spares on board.

In late May 2022, a new impeller and bearing housings were received when the ship was in China. As the ship's operations there, and subsequently in Susaki, Japan, did not allow the new spares to be fitted, this task was postponed until the ship was in Port Kembla as noted above. The priority tasks (LO cooler, LO filter and charge air cooler) were completed from 22 to 26 June but the maintenance for auxiliary blower number 2 was outstanding when the ship left port on 3 July.

The impeller's unbalanced operation was exacerbated by the varying engine load conditions after the ship left Port Kembla, resulting in the blower's failure on 4 July. Later that day, the engineers removed the impeller and fitted the new impeller and bearings. They assumed that the electric motor was damaged (burnt out), tried removing it but found its belt drive pulley difficult to remove. The repairs were then abandoned without testing the motor with the blower deemed inoperable and remaining out of service for the duration of the incident.

Following the incident, when the ship was in Port Botany, the electric motor was removed and sent ashore for overhaul. Apart from some in-service wear and tear, the motor was found to be operational.

### **Post-incident inspections**

After the incident, the main engine manufacturer's service department, MAN PrimeServ, conducted an engine inspection and service while the ship was in Port Botany to identify reasons for the engine speed not increasing beyond 40 rpm, and carrying out necessary repairs. The inspection and service included:

- overhaul of all pistons and calibration of cylinder liners
- inspection of scavenge spaces including scavenge air receiver, non-return flaps and under piston scavenge spaces and stuffing boxes
- charge air cooler removal and clean
- overhaul of auxiliary blower number 2.

The inspection identified several issues with engine components, including:

- piston, ring and ring gap measurements close to wear limits

- sticky piston rings on all pistons
- cylinder liner measurements all well within limits
- carbon build-up in cylinder liner scavenge ports
- a leaky fuel injector
- a damaged turbocharger non-return flap
- a non-return flap for auxiliary blower number 2 stuck open
- excessive carbon build-up and unburnt fuel in the turbocharger
- excessive cylinder lubrication and piston blow-by in some cylinders
- dirty scavenge spaces with excessive sludge and carbon build up in the air receiver and around stuffing boxes.

A build-up of carbon, fuel and deposits throughout the scavenge system, pistons, turbocharger and other engine components was also evident. Figure 11 shows the condition of a piston (a), stuffing box (b), scavenge ports (c) and turbocharger turbine housing (d).

**Figure 11: Condition of some engine components**



Source: Pacific Basin and MAN PrimeServ, annotated by the ATSB

The build-up of carbon, fuel and deposits was assessed as probably being the result of:

- speed fluctuations resulting in excessive fuel injected into the engine leading to incomplete and unstable combustion
- piston blow-by due to sticky piston rings caused by poor combustion, excessive fuel injection, excessive cylinder lubrication and a leaky fuel injector
- excessive cylinder lubrication leading to excess oil in the under-piston space.

The inspection and service concluded that the principal reason that the engine was unable to increase speed beyond about 40 rpm was insufficient air for combustion.

The condition of each engine component, on its own, was within specifications and was not considered enough to disrupt the combustion air flow to the extent of preventing the engine achieving the speed demanded. However, wear and fouling of multiple engine components, together with the loss of the auxiliary blower and open scavenge system non-return flaps were considered, in combination, enough to prevent the engine from receiving enough air to increase speed past about 40 rpm, regardless of demand.

Class NK required a performance test to be conducted with a report provided to the engine manufacturer. The engine service described above was followed by an engine trial on 13 July while berthed in Port Botany with the manufacturer’s representative, Class NK surveyor and AMSA surveyor in attendance. A sea performance trial was conducted later to the engine manufacturer’s satisfaction.

### **Planned maintenance system**

The ship’s planned maintenance system (PMS) noted above incorporated Class NK machinery survey requirements and was part of the shipboard safety management system (SMS). The engine manufacturer’s instruction manuals were available for carrying out maintenance and repairs in accordance with the PMS. The procedures and guidance available on board covered necessary engineering matters, including avoiding, detecting and extinguishing scavenge fires.

In addition, Pacific Basin’s dedicated manager for the ship oversighted and supported shipboard engineering matters. As auxiliary blower number 2 had been working satisfactorily, fitting the new spares were not prioritised over other tasks by the ship’s manager and the chief engineer.

### **Safety management system**

*Portland Bay’s* safety management system (SMS) was intended to cover all shipboard operations with some procedures for navigation (bridge) and emergencies directly relevant to this incident.

### **Bridge procedures**

Navigation-related procedures were contained in the Bridge Manual of the SMS.<sup>41</sup> The procedures referenced recognised industry standards and guidance, including SOLAS, International Maritime Organization (IMO) guidelines and the Nautical Institute’s Bridge Team Management guide.

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<sup>41</sup> Pacific Basin, Bridge Manual, Chapter 2, Navigation, 01.04.21, Rev 10.

The procedures required that, in adverse weather, masters increase distance from navigational dangers to 20~50 miles, as reasonably practicable, to maintain a safety margin. The margin was required to be sufficient to ensure that adequate time would be 'available to respond to contingencies at sea such as machinery failures (main engine, steering and generators)'.

According to Pacific Basin, it did not encourage drifting to reduce fuel consumption and procedures advised masters to not hesitate adjusting course and/or speed, including 'heaving-to'<sup>42</sup>, in heavy weather to avoid damage to the ship and its machinery. If the master decided to drift, the ship was required to be about 50 miles from the nearest land or navigational danger, where practicable.

The bridge heavy weather checklist stated that anchors were designed to hold the ship in sheltered waters. It warned against anchoring in adverse weather (wind force 6 or swell higher than 1.5 m). If anchoring in depths less than 40 m, the anchor had to be walked back (veered) within 5 m of the seabed before it was let go. In depths of 40 m or more (defined as deep water), the anchor had to be walked back throughout, with the ship stationary over ground. Anchoring in depths greater than 100 m was prohibited except in an emergency and it was noted that the windlass was only designed to lift the anchor and 3 shackles (about 85 m) of cable.

In general, these SMS procedures and guidance were consistent with recognised practice. Drifting can expose a ship to risks due to bad weather, traffic, land and other hazards. When drifting in bad weather, the ship's motion cannot be controlled and it is prone to rolling, pitching or surging and consequential damage (hull, machinery or cargo). Passing traffic can pose a risk of collision unless mitigated by having the propulsion and steering in readiness. The proximity of hazards increases the risk of collision, contact or grounding.

While it may be safe to drift in calm weather, far from traffic and land, drifting generally involves risks (which increase significantly in bad weather) and it is generally not considered a prudent option. There may also be commercial considerations, for example, a ship on charter (hire) that immobilises its propulsion to drift might be deemed 'off hire'. Drifting due to a breakdown means a compromised status (not under command) and a disabled ship close to a lee shore in bad weather may have to make emergency use of its anchors as described above. The '*Peril at Sea and Salvage: A Guide for Masters*'<sup>43</sup> publication, which the procedures referred to also contained relevant guidance for emergency anchoring (see the section titled *Shipboard response* under *Response fundamentals*).

### Emergency procedures

Pacific Basin's Crisis Management Manual<sup>44</sup> contained procedures for managing shipboard emergencies. The comprehensive range of subjects in the manual included emergency types, drills (shipboard and ship-shore), crisis management teams and procedures, shipboard plans, reporting requirements, emergency contacts and guidance on towage and salvage.

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<sup>42</sup> Heaving-to refers to manoeuvring the ship to ride out heavy weather in the most comfortable position and avoid heavy rolling and pitching. Often, this will be with the weather on the bow and speed reduced to the minimum for steering.

<sup>43</sup> *Peril at Sea and Salvage: A Guide for Masters*, Sixth Edition, International Chamber of Shipping (ICS) & Oil Companies International Marine Forum (OCIMF), 2020.

<sup>44</sup> Pacific Basin, Crisis Management Manual, Issue 20 Dec 04.

The manual required monthly shipboard drills simulating different, realistic scenarios and involving relevant ship's staff. In addition, ship-shore drills involving different ships to exercise Pacific Basin's shore management were to be conducted annually. Checklists and flow charts to make the procedures user-friendly were included in the manual.

In an emergency, the master was to notify Pacific Basin management through contacts identified in the manual. The order of priority for the contacts was the ship's dedicated manager, company marine and safety manager, general manager and fleet director. The master could also contact the company's designated person ashore (DPA). If required, shore management would establish a crisis management team to support and guide the master in managing the emergency.

The master was also responsible for notifying other relevant parties, including authorities. The 'main engine/power failure' form listed several parties to be notified. These included the rescue coordination centre (RCC) and authority (including AMSA if the ship was in Australia). In addition, there was a 'main engine/power failure' checklist, which included an item for informing nearby ships and VTS/Port Authorities, as appropriate. The checklist completed for this incident indicated that this check was complied with at 0700 on 4 July (Port Kembla VTS was notified at 0657).

The manual warned that a loss of propulsion or steering, grounding or hull breach could result in pollution but emergency towing could prevent a spill or mitigate its impact. It provided general guidance about towing and that ship-specific towing arrangements were detailed in the ship's emergency towing booklet. A checklist for a disabled ship under tow was included, noting that further guidance for towing was available in the masters Guide (Peril at Sea and Salvage).

The manual specifically reiterated the master's overriding authority and responsibility with respect to safety and pollution prevention. It was further stated that this overriding authority extended to agreeing a salvage contract under 'Lloyd's Open Form'<sup>45</sup> terms if required by the situation.

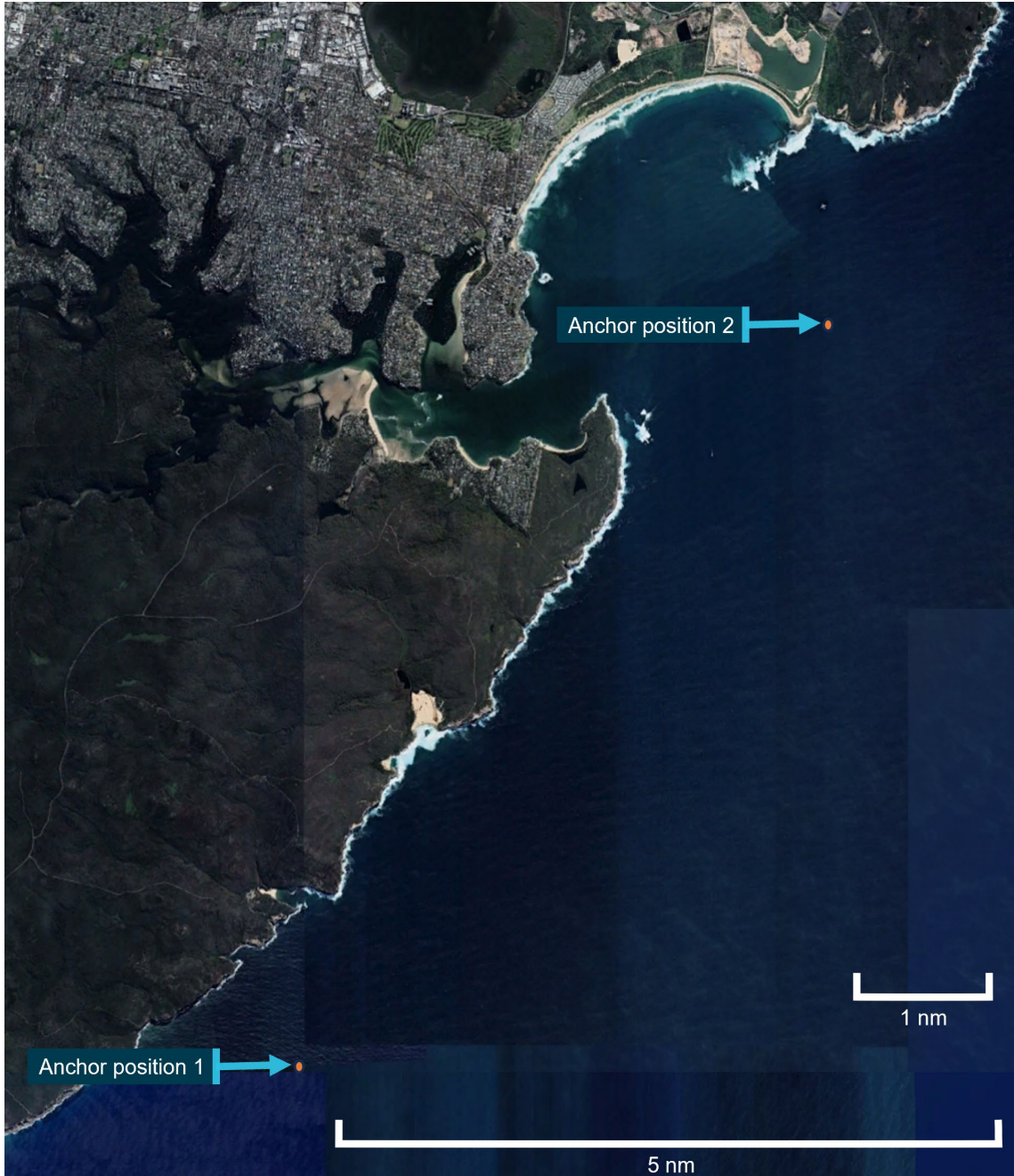
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<sup>45</sup> The most well-known and frequently used salvage contract is the Lloyd's Open Form of Salvage Agreement commonly known as Lloyd's Open Form or LOF.

## Incident location

As previously described, *Portland Bay* anchored in 2 separate locations, each off a dangerous lee shore (Figure 12).

**Figure 12: Anchor positions off Eagle Rock and Bate Bay on 4 July 2022**



Source: Google Maps, annotated by the ATSB

Anchor position 1 was about one mile from the cliffs near Eagle Rock south of Wattamolla (Figure 13). Similarly, anchor position 2 was about one mile from the nearest reef in Bate Bay. The ship dragged its anchors towards the shore in both locations. As described in the Admiralty Sailing Directions,<sup>46</sup> the coastline between Port Kembla and Sydney offers little to

<sup>46</sup> Admiralty Sailing Directions, Australia Pilot Volume 2, NP14, 12 Edition, 2013.

no shelter. Sydney (Port Botany and Port Jackson) lies about 32 miles (60 km) north-north-east of Port Kembla (Figure 1 and Figure 4).

**Figure 13: *Portland Bay* at anchor about one mile from the cliffs near Eagle Rock**



Source: Svitzer Australia

The Sailing Directions stated that the coastline from Port Kembla extends in a northerly direction for 10 miles to Bellambi Point and then runs in a north-north-easterly direction. The Directions indicated that the shore is generally low up to the vicinity of Coalcliff (19 miles south of Sydney) after which the coastline is dominated by cliff faces and rocky shores. The Directions noted that Garie Beach breaks the line of cliffs fronting the coast between Stanwell Park (near Coalcliff) and Wattamolla (11 miles south of Sydney). It was stated that, between Wattamolla and Port Hacking Point, the coast is a continuous line of cliffs broken only by Marley Beach. The proximity of the cliffs and rocky shores to anchor position 1 made it a very hazardous location (Figure 13).

The ship was anchored off Bate Bay for 2 nights. The Sailing Directions stated that Bate Bay, entered between Glaisher Point and Potter Point, is exposed and of no use as an anchorage. The Direction's further noted that Osborn Shoal lies in the middle of the entrance to the Bate Bay and the bay's shore between Glaisher Point and the southwest end of Cronulla Beach is formed by an irregular line of cliffs. It was also stated that the beach, backed by sandhills 12–14 m high, extends about 2.5 miles north-east to a rocky point, from which Merries Reef (it breaks) extends 6 cables to the south-west.

The location where the ship broke down in heavy weather exposed it to a very high risk of a catastrophic stranding on the rocky shore and cliffs near anchor position 1. During the first 5 hours that it was there, the anchors dragged about 4 cables closer to the shore. Had the ship stranded on the rocky shore and broken up, the 809 tonnes of heavy fuel oil and 133 tonnes of diesel oil on board would probably have escaped and polluted the surrounding water and shoreline. In addition, abandoning the ship in those conditions posed a very high risk of injury to the crew.

Anchor position 2 was comparatively less dangerous but the extended time over which the anchors were once again relied upon to hold the ship in bad weather exposed it to a high risk of stranding, even with a tug connected. In this position too, the anchors dragged and the ship came within a mile of the shore. Once again, a stranding in rough weather posed a risk to the safety of life, with environmental pollution likely.

## Maritime emergencies

This section provides details on salvage, towage, intervention and refuge matters, which were prominent features of the incident response.

### Peril at sea

The sea can be a harsh environment and seafarers have encountered perils there since they first began sailing across oceans and seas. While modern ships are larger and safer, from time to time they face perils at sea that result in serious casualties.

Serious casualties, such as collision and grounding, which can result in failure of the ship's hull, or propulsion or steering failures close to the coast can result in strandings. Extreme weather is often a factor in the development of an emergency at sea, complicating the emergency and the response. The number and extent of other factors associated with the emergency influence its complexity, successful resolution and/or the adverse consequences. These can include the loss of the imperilled ship, its crew and cargo, and damage to the environment.

The publication, *Peril at Sea and Salvage: A Guide for Masters*, provided ship masters essential guidance for the actions to take when confronted with an emergency at sea. The Guide defined a 'shipping emergency' as a major incident that has the potential to put at risk the safety of persons, the ship, the environment and the cargo. Many examples of emergencies were listed in the Guide, including collision, grounding or stranding, loss of propulsion, structural failure and pollution.

The Guide also provided essential information for others that interact with masters in an emergency, including ship owners and operators, salvors and maritime authorities. First published in 1979, the Guide has provided practical guidance for masters to effectively manage an emergency, including the subjects of towage and salvage, and was recognised as best practice on the subject.

### Salvage

Salvage is the act of saving property from being destroyed and, in the maritime context, it is saving a ship and/or its cargo from being lost, which are then said to have been 'salved'. The concept of salvage is ancient as ships have encountered perils at sea throughout history. The claim for salvage (the salvors reward) is an ancient right that can be traced to the laws of the ancient Greeks.

Those ancient laws and public policy with respect to salvage were based on encouraging salvors to help imperilled ships in the vast expanses of the world's oceans and seas by rewarding them for success. The reward also discouraged the temptation to piracy to some extent. This ancient right of salvage is peculiar to maritime law (that is, the right does not apply to saving property on land).

### Law of salvage

Historically, the law of salvage has been based on the 'no cure – no pay' principle (that is, no reward for failure). The value of the salved property was used to determine the reward and this is generally still the case for fixing the salvage award (remuneration in financial terms). Several other criteria are also used to fix the award.

There are 4 essential elements of a claim for salvage:

- the salvor must be a volunteer (that is, no pre-existing contractual duty or statutory duty to act)
- the salvage needs to be successful (or contribute to success)
- the subject of salvage can be a ship (any vessel capable of navigation) or other property at sea (such as a ship's cargo)
- there must be an element of danger from which the subject property is saved.

A simple example of a successful salvage is a salvage company or tug that voluntarily saves a ship and/or its cargo that was in danger of being lost. The salvaged ship's master and crew do not have a right to salvage because they have a duty to act. Salvage cannot be claimed for saving life as it has long been recognised that every seafarer must go to the assistance of another.

Environmental pollution and protection were not part of early salvage law. The increasing focus on the environment in the latter part of the twentieth century resulted in changes to the long-standing public policy in order to protect the environment through an appropriate legal framework. Although modern ships, communications and technology have somewhat diluted the basis for the original public policy, historical common law salvage concepts have been retained.

The major catalyst to change the law of salvage was the environmental disaster involving the oil tanker, *Amoco Cadiz* (Figure 14). On 16 March 1978, the ship, laden with 220,000 tonnes of crude oil, broke down in heavy weather off the coast of north-west France. The ship drifted onto the lee shore, where it grounded (stranded) and widespread pollution resulted.

**Figure 14: The stranding of *Amoco Cadiz* and resulting environmental disaster**



Source: Counterspill.org

A salvage tug had been made fast well before the ship grounded but there was a long delay before the salvage contract was agreed. While many attributed the stranding to the delay, the salvors denied that assertion. The public furore which followed this disaster resulted in the IMO commissioning a review of the 1910 Salvage Convention to ensure that modern needs and protection of the environment were addressed.

The IMO-commissioned review resulted in changes to the law of salvage through the *International Convention on Salvage, 1989* (Salvage Convention)<sup>47</sup>. The Salvage

<sup>47</sup> *International Convention on Salvage, 1989*, International Maritime Organization, London.

Convention came into force in 1996 and replaced the 1910 Convention, which had codified salvage law based on the existing case law (common law). Since then, the legal framework for salvage has in general been governed by the 1989 Convention, which included provisions to protect the environment by making ‘special compensation’ available to salvors.

Special compensation was intended to encourage salvors to go to the assistance of ships which threatened damage to the environment as salvors would at least recover their expenses. Avoiding or preventing environmental damage was also a clear benefit to owners (ship, cargo and others) and insurers (cargo, hull and others).

The right to claim salvage is not dependant on the existence of a salvage contract. Rendering a salvage service always entitled the salvor to claim salvage under common law. Where there is a salvage contract, the right is covered by statutory law and most salvage in modern times has been carried out under contract. The Lloyd’s Open Form of Salvage Agreement often known as Lloyd’s Open Form (LOF) as referred to previously is the most well-known and frequently used salvage contract.<sup>48</sup> Its 2020 version, LOF 2020, was current at the time of this incident (Appendix A).

The first LOF ‘no cure – no pay’ salvage agreement was made in 1894 and in 1908, the form was published for international use. Since then, the form has been revised several times and LOF 2020 was the twelfth revision. The LOF provides a standard contract form that is easily understood and recognised as being fair to salvors, shipowners, cargo owners and insurers. This standard form does not need to be signed to be legally binding with a verbal agreement being sufficient. This feature can be invaluable in time-critical situations.

Special compensation provisions introduced by the 1989 Salvage Convention were progressively incorporated into successive versions of the LOF. In LOF 2020 (and some previous versions), this was in the form of the Special Compensation P&I Club (SCOPIC) clause.<sup>49, 50</sup> Developed by the International Group of P&I Clubs and International Salvage Union (ISU)<sup>51</sup>, the SCOPIC clause comprised 16 sub-clauses that set out the basic scheme and contractual position between the salvage contractor and the shipowner.

The main purpose of the SCOPIC clause was to ensure fair compensation for the salvor’s efforts to prevent damage to the environment even if salvage was unsuccessful (Article 14.1 of the Salvage Convention).

In practice, the parties to a salvage agreement incorporated the SCOPIC clause by selecting the agreed option in the agreement (Yes/No option in box 7 of LOF 2020). While incorporating the clause is voluntary, it is almost always used by professional salvors when there is a threat to the environment. The *Peril at Sea and Salvage: A Guide for Masters* publication described key LOF features, including special compensation. The LOF 2020 and SCOPIC clause were reproduced in an appendix to the Guide.

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<sup>48</sup> Lloyd’s is the worlds’ leading insurance marketplace. [www.lloyds.com](http://www.lloyds.com)

<sup>49</sup> Protection and Indemnity (P&I) is a type of insurance that shipowners purchase to cover the potentially huge costs of any harm they accidentally cause to people, property and the environment. This type of insurance is separate from others, such as hull and machinery insurance and cargo insurance.

<sup>50</sup> The International Group of P&I Clubs comprised 12 clubs, which between them provided marine liability cover for approximately 90% of the world’s ocean-going tonnage.

<sup>51</sup> The International Salvage Union (ISU) has stated that it is the trusted and unified global voice of its members who facilitate world trade by providing services which save life, protect the environment, mitigate risk and reduce loss. The ISU had a membership of about 55 marine salvage companies from more than 30 countries.

In determining a salvage award, Article 13.1 of the Salvage Convention stated that the following should be considered:

- salvaged value of the vessel and other property
- skill and efforts of the salvors in preventing or minimising damage to the environment
- measure of success obtained by the salvor
- nature and degree of the danger
- skill and efforts of the salvors in salvaging the vessel, other property and life
- time taken and expenses and losses incurred by the salvors
- risk of liability and other risks by the salvors or their equipment
- promptness of the services rendered
- availability and use of vessels or other equipment intended for salvage operations
- state of readiness and efficiency of the salvors' equipment and the value thereof.

As applying these 10 criteria to the circumstances of a particular case is rarely straightforward, the remuneration for a salvage award and/or special compensation under an LOF agreement is determined by arbitration in accordance with the agreement's arbitration clauses.

### **Duties of the parties**

Article 8 of the Salvage Convention set out the duties of the salvor and the owner of the property (ship and cargo) to be salvaged and are summarised below. They are complementary and intended to ensure the success of the salvage operation and avoid damage to the environment.

The salvor owes a duty to the owner of the ship or other property in danger:

- to carry out salvage operations with due care
- exercise due care to prevent or minimise damage to the environment
- when the circumstances reasonably require, to seek assistance from other salvors
- accept the intervention of other salvors when reasonably requested by the owner or master.

Similarly, the owner and master of the ship or other property in danger owe a duty to the salvor:

- to cooperate fully during the salvage operations
- exercise due care to prevent or minimise damage to the environment
- when the ship or other property has been brought to a place of safety, accept redelivery when reasonably requested by the salvor.

## Towage

Salvage of a ship disabled at sea almost always involves towing it to a place of safety. However, salvage should not be confused with towage, with the following key differences between them, the first point being the essential difference:

- salvage requires an element of danger whereas towage does not
- successful salvage claims require ultimate success while towage often does not
- salvage gives rise to a maritime 'lien'<sup>52</sup> while towage only gives rise to a statutory lien
- a salvage claim is usually against the shipowner and cargo but towage involves the shipowner
- salvage and towage are normally carried out under different contracts and masters.

Regardless of whether a towage or salvage contract is agreed, the conduct of the towing operation will be the same. International guidelines and best practice exist to ensure that towing is safe and effective.

### Ocean towing guidelines

The IMO has developed guidelines for international ocean towing that can be used for any other towing operation.<sup>53</sup> They were developed for commercial towage operations, which were not in the nature of salvage. In Australia, the guidelines have been used for AMSA-contracted emergency towing vessels (see the section titled *Emergency towage services contract* under *Svitzer Australia*).

The guidelines specified standards and recommended requirements for towing vessels and equipment and addressed relevant subjects, including manning, planning, preparation, design environmental conditions and bollard pull (BP)<sup>54</sup> testing. In terms of overall capability, the BP was required to be sufficient to tow in weather conditions comprising wind 20 m/s (39 knots), significant wave height 5 m and current 0.5 m/s (1 knot), all acting in the same direction.

The minimum length of the main towline is particularly important. The guidelines specified that, in the absence of other established criteria, the required length should be determined using the following formula (where L is the towline's minimum length, BL its documented breaking load and BP the vessel's continuous bollard pull).

$$L = (BP/BL) \times 1800 \text{ m}$$

Using this formula, a 162 t BL towline on a 65 t BP tug needs to be at least 720 m long.

The minimum documented breaking load (MBL) of the main towline was generally required to be between 2 and 3 times of the BP. The guidelines provided formulae (based on the BP) to calculate the towline MBL (Table 2).

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<sup>52</sup> A lien is a charge against property, in most cases this is a ship. A maritime lien is a common law charge and adheres to the property from when the event giving rise to the claim happens (events that raise this lien are limited but include collision and salvage). Statutory liens against property are established by statute.

<sup>53</sup> *Guidelines for Safe Ocean Towing*, MSC/Circ.884, 21 December 1998, IMO.

<sup>54</sup> The pulling power of a tug, expressed in tonnes.

**Table 2: Main towline breaking load**

Bollard Pull	BP <40 t	BP 40-90 t	BP >90 t
Minimum Breaking Load (tonnes)	3.0 x BP	(3.8 – BP/50) x BP	2.0 x BP

Source: IMO

When applied to a 60 t BP tug, the formula provides a required MBL of 156 t. It was required that fibre rope pennants (if used) should have an MBL of not less than 2 times that of the towline’s MBL (BP<50 t), 1.5 times (BP>100 t) and linearly interpolated between 1.5 and 2 times for BP between 50 and 100 t. It was also required that the capacity of connecting links (shackles, rings etc.) should be at least 50% more than the towing arrangement’s documented MBL.

The guidelines required that a spare towline satisfying all the requirements of the main towline be carried and stowed on the towing winch if it had 2 drums. Alternatively, the spare line could be arranged to ensure transfer to the main towing drum, provided that it could be conducted safely and quickly. The guidelines recommended that, unless impractical, the vessel was to be equipped with sufficient spare equipment to completely replicate towing arrangements.

Other key towing equipment standards and requirements included that:

- the towing winch which can withstand the breaking load of the main towing wire
- there must be means to:
  - release tension on the winch drum(s) in an emergency
  - effectively spool the towline effectively on the drum(s)
  - protect tows from chafing or abrasion
- all wire ropes have the same lay (right or left hand)
- there are hard eyes for all wire rope terminators.

In addition to safety certification appropriate for the towing vessel’s size, documentation for towing equipment and continuous BP at maximum rated power was required to be carried. Towing vessels also had the following general and equipment requirements.

- a documented maintenance system for main and auxiliary machinery, steering and towing gear, and navigation and communication equipment
- fitted with radar, electronic positioning device, magnetic steering compass, echo sounder, navigational charts and publications and VHF radios
- have self-sufficient fire suppression capability and a searchlight (directed from the main steering station).

### General towing guidance

The masters Guide (Peril at Sea and Salvage) covered towage, including deep sea or ocean towage when the ship was not in imminent danger. It outlined SOLAS requirements for tankers to be fitted with emergency towing arrangements and all cargo and passenger ships to be provided with a ship-specific emergency towing procedure. The procedure was required to include drawings of towing arrangements, inventory of towing equipment, communication methods and sample procedures for emergency towing.

The Guide provided detail on both planned and emergency towage, and specifically the types of towing equipment and arrangements fitted on ships and how to connect and start a tow. If the ship was in imminent danger, the master was advised to summon immediate salvage assistance and accept LOF salvage terms. Useful guidance on the actions to take if other salvage terms were offered was also provided.

The Guide outlined the use of a dedicated towage vessel, such as an ocean-going tug. The following list of suitable towing vessels, in order of preference, was included:

- ocean-going salvage tug
- anchor-handling/supply vessels
- escort tugs
- anchor-handling tugs
- harbour tugs
- warships
- any other suitable ship.

The Guide noted that warships were not ideal towing vessels but were powerful and had other advantages, such as a relatively large crew and helicopter or rescue craft. By contrast, modern merchant ships were noted as being impractical for towing due to their large size.

## Places of refuge

Sheltered waters may be needed for salvage operations but the ship could endanger the coastal state that has jurisdiction over those waters or places of refuge. During the drafting of the Salvage Convention in the 1980s, there was much discussion about places of refuge to achieve a balance between the interests and rights of coastal States and their expected obligations. The result was Article 11 of the Convention:

A State Party shall, whenever regulating or deciding upon matters relating to salvage operations such as admittance to ports of vessels in distress or the provisions of facilities to salvors, take into account the need for co-operation between salvors, other interested parties and public authorities in order to ensure the efficient and successful performance of salvage operations for the purpose of saving life or property in danger as well as preventing damage to the environment in general.

However, international guidelines that included practical guidance about refuge for ships in danger remained elusive for nearly 2 decades. The subject came to the fore around the turn of the century because of 3 significant and high-profile environmental incidents, which occurred in relatively quick succession. The incidents involved the tankers *Erika*,<sup>55</sup> *Castor*<sup>56</sup> and *Prestige*. The sinking of *Prestige* was the final trigger for developing international standards for places of refuge and related matters.

On 13 November 2002, *Prestige*, carrying 77,000 tonnes of heavy fuel oil had a hull failure during a storm off the Spanish coast. Part of its crew were evacuated and the ship drifted within 4 miles of the coast with its cargo leaking. Spanish, French and Portuguese authorities all refused refuge to the stricken tanker, which was instead towed out to sea. On

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<sup>55</sup> In December 1999, *Erika*, laden with 31,000 tonnes of heavy fuel oil, broke in 2 while in the Bay of Biscay, spilling nearly 20,000 tonnes of oil which washed up on the French coast. All the ship's crew were rescued.

<sup>56</sup> In December 2000, *Castor*, laden with 29,500 tonnes of petrol developed a 24 m crack on its main deck while in the Mediterranean Sea. The ship's crew were evacuated and salvors towed it around for 40 days as various Mediterranean ports refused the structurally unsound tanker entry until eventually its cargo was transferred off the coast of Tunisia.

19 November, the ship broke in 2 and sank 160 miles off the Spanish coast (Figure 15). Much of its cargo spilled and most of what remained within the hull escaped into the sea over the following days and months, washing up on the coasts of Spain, France and Portugal (to date it remains Spain's worst ecological disaster).

**Figure 15: *Prestige* sinking**



Source: Cedre

In late 2003, the IMO adopted resolutions on Guidelines on Places of Refuge for Ships in Need of Assistance and Maritime Assistance Services (MAS).<sup>57, 58</sup> These guidelines were intended for use when a ship needed assistance but safety of life was not involved (the latter was covered by the Search and Rescue Convention). A coastal state's MAS were intended to improve reporting, consultation, situation monitoring, and communications, including during a salvage operation. The Guidelines on the Control of Ships in an Emergency provided coastal state governments, masters, companies, salvors and others involved in an emergency with a framework of authority in which they were expected to operate.<sup>59</sup> The masters Guide (Peril at Sea and Salvage) directed readers to the guidelines on the control of ships as well as the guidelines on places of refuge.

### **Government intervention**

The masters Guide (Peril at Sea and Salvage) advised that governments of coastal states could have legislation that allowed them to actively intervene when there was an emergency in waters under their jurisdiction. The Guide advised that masters should comply with any instructions given by the authority with jurisdiction but to question instructions which they considered inadvisable or dangerous.

Coastal states also have a right to intervene beyond their territorial waters and take measures to prevent or reduce pollution, and this was recognised by several international conventions. However, coastal states were required, if possible, to consult with other affected states, including the ship's flag state, and with the owners of the ship and its cargo.

<sup>57</sup> *Guidelines on Places of Refuge for Ships in Need of Assistance*, A 23/Res.949, 5 March 2004, IMO (this document was valid at the time of the incident but were revoked by revised guidelines. A 33/Res.1184, 17 January 2024, IMO).

<sup>58</sup> *Maritime Assistance Services (MAS)*, A 23/Res.950, 26 February 2004, IMO.

<sup>59</sup> *Guidelines on the Control of Ships in an Emergency*, MSC.1/Circ.1251, 19 October 2007, IMO.

## Response fundamentals

The information and guidance in relevant Conventions and Guidelines indicated that the effective management of emergencies relied on timely and appropriate actions. The success of an action is often reliant on when it is taken and an emergency response invariably involves time-critical actions, starting with initial notifications. Good seamanship is central to an optimal outcome.<sup>60</sup>

### Notifications

The masters Guide (Peril at Sea and Salvage) emphasised the importance of timely reporting of an emergency: ‘do not delay sending appropriate alerts and notifications’. The Guide provided a list of parties that may need to be notified, with the coastal state listed first.

Prompt notifications enable authorities and relevant parties to take necessary action. Importantly, early action improves the chances of success of the emergency response by coastal state authorities, salvors and others. It is equally important that when a master’s notification(s) is received by any station, it should be relayed to relevant coastal state authorities and agencies, and others that need to respond in accordance with the state’s emergency response plans.

### Shipboard response

The shipboard response depends on the type of emergency, but safety of the crew is always paramount. The master’s Guide provided general guidance for responding to emergencies that involve a breach of the hull, a fire or explosion or the risk of an explosion. The Guide detailed the action to take when a ship was disabled but still afloat as well as the action to take if it grounded.

The Guide included information about managing drift if the ship was disabled due to a loss of steering but still had propulsion. Different methods, depending on whether the ship had one or 2 propellers, to bring its head or stern into the weather to reduce drift were described.

In emergencies involving propulsion failure, the Guide noted that anchors could be used to good effect. If the water was too deep for anchoring, it suggested lowering the anchors to create a drogue effect to bring the ship’s head into the weather. However, a warning that the length of cable deployed must always be less than the maximum that the windlass can recover (no more than 3 shackles of cable or about 80 m) was included. It was stated that great care must be taken to retain the use of the anchors in case the ship reached water depths where it could be anchored. If there was a risk of grounding, it was recommended that the anchors be readied before they might be required.

While the use of anchors in emergencies is recommended, masters need to be aware of the inherent limitations of anchoring equipment. These are governed by the requirements of the International Association of Classification Societies (IACS).<sup>61</sup> The requirements stated that the anchoring equipment ‘is intended for the temporary mooring of a ship within a harbour or sheltered area’. It was further stated that ‘the equipment is therefore not designed to hold a ship off fully exposed coasts in rough weather or to stop a ship which is moving or drifting’.

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<sup>60</sup> Good seamanship can be described as the best practice for carrying out any operation, work or task related to a ship’s operation. It has been learned and developed over time and recognised best practice is incorporated into maritime rules, regulations, codes or guidance aimed at ensuring safety of operations.

<sup>61</sup> Requirements concerning Mooring, Anchoring and Towing, IACS Req. 2007, A1.1, Design of the anchoring equipment.

Masters also need to consider the operational condition of the anchoring equipment and the holding ground that the seabed offers. The IACS requirements stated that the equipment was designed to hold a ship in good holding ground and the holding power of anchors is significantly reduced in poor holding ground. Sand and gravel offer good holding ground whereas a rocky bottom does not. In any case, if anchored in rough weather in an emergency, the engine(s), if operational, should be used to reduce load on the cable(s).

Masters should be familiar with their ship's towing equipment, which depends on the type of ship, size and other factors. For example, large oil tankers are fitted with emergency towing equipment whereas dry cargo ships such as *Portland Bay* have standard mooring equipment as required by the relevant rules and requirements, which can be used for emergency towing. Masters can rely on the towage/salvage master's directions, the master's Guide and their own experience and seamanship when taking a tow.

### Shore-based response

The principles and objectives of shore-based emergency response by coastal state authorities, salvors and others are generally consistent with those of shipboard response. Safety of life is paramount and evacuating the crew is a key consideration where there is risk to life.

As previously discussed, pollution prevention is central to emergency response. This is achieved by stabilising the ship's situation to prevent the loss of the ship and/or its cargo. In practice, responders provide services and support, such as salvage or towage and pollution prevention or clean-up, all aimed at preventing a disaster.

## Australia's National Plan

### Overview of national arrangements

The Australian Government recognised the need for a national set of arrangements to manage oil and pollution incidents after the major oil spill from the oil tanker *Oceanic Grandeur* in 1970 in the Torres Strait.<sup>62</sup> The incident was the main catalyst for developing the *National Plan to Combat Pollution of the Sea by Oil*, which came into operation in 1973 under the management of the former Department of Transport.<sup>63</sup> In 1990, when AMSA was established, it took control of the National Plan as it is commonly known.<sup>64</sup>

In 2005, in response to the 2004 Ship Salvage Inquiry into Maritime Salvage in Australian Waters,<sup>65</sup> the Australian Government decided that an integrated national approach for the provision of emergency maritime response arrangements was required. The integrated approach would require minimum levels of emergency towage capabilities (ETC) along the Australian coastline and a regulatory framework to support a coordinated approach to emergency response issues. This led to the 2008 Inter-Governmental Agreement (IGA) on the National Maritime Emergency Response Arrangements (NMEMA).<sup>66</sup>

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<sup>62</sup> AMSA (2024) [History of the National Plan | Australian Maritime Safety Authority](#), accessed 17 January 2024.

<sup>63</sup> *ibid.*

<sup>64</sup> *ibid.*

<sup>65</sup> The 2004 House of Representatives Standing Committee on Transport and Regional Services, *Ship Salvage Inquiry into Maritime Salvage in Australian Waters (the Neville Report)*.

<sup>66</sup> Australian Transport Council, *Inter-Governmental Agreement on the National Maritime Emergency Response Arrangements*, 29 February 2008.

The objective of NEMERA was to protect the marine environment from actual or potential ship-sourced pollution by ensuring an appropriate level of ETC around the coastline and enhancing the response management framework.<sup>67</sup> Governments recognised the benefit of a single national emergency response management role to address any shipping casualties that involved potentially significant pollution and the need to strengthen the powers of intervention.<sup>68</sup> The following were the stated elements of NEMERA:

- emergency towage vessels (ETVs)
- national Maritime Emergency Response Commander (MERCOT)
- regulatory arrangements – powers of intervention.<sup>69</sup>

Key features of the IGA were:

- the Commonwealth, Northern Territory and all 6 states were parties to the agreement
- a greater role for governments to ensure a minimum level of ocean-going ETC
- salvage arrangements to remain within existing commercial arrangements
- minimising potential effects on competitive pressures on harbour towage
- primary responsibility for use of NEMERA ETC lay with the shipping industry
- ETV assets to be available to industry under commercial arrangements
- government intervention only to achieve policy outcome (objectives)
- MERCOT's final decision-making power for casualty management.

It was agreed that the Australian Government would amend its legislation to provide immunity from civil or criminal liability for the MERCOT and persons complying with a MERCOT direction issued with respect to managing an emergency. This immunity would not extend to the obligations and liabilities of shipowners under relevant international conventions and domestic laws related to pollution or other damage. Several other amendments and clarifications to legislation were also agreed.

The ETVs were to be contracted by AMSA and could be called upon by the MERCOT, port authorities, state or Northern Territory governments or the shipping industry in emergencies involving risk of significant pollution. In 2006, AMSA implemented a national emergency towage program. It also appointed the MERCOT as the single national decision-maker with appropriate statutory powers to act on behalf of the Australian Government during a shipping casualty. Five years later, in 2011, the National Plan was expanded to include maritime casualty response.<sup>70</sup>

In 2012, AMSA's review of the National Plan and NEMERA identified that the 2 would be better integrated into a single document supported by a single IGA.<sup>71</sup> Subsequently that

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<sup>67</sup> *ibid*, p 3.

<sup>68</sup> *ibid*.

<sup>69</sup> *ibid*, pp 6-7.

<sup>70</sup> AMSA (2024) [History of the National Plan | Australian Maritime Safety Authority](#), accessed 17 January 2024.

<sup>71</sup> AMSA, Report on the 2011/12 Review of the National Plan to Combat Pollution of the Sea by Oil and Other Hazardous and Noxious Substances and the National Maritime Emergency Response Arrangements, October 2012, p1.

year, the National Plan was retitled as the National Plan for Maritime Environmental Emergencies as it is currently known.<sup>72</sup>

The 2020 edition of the National Plan that was in effect at the time of the incident incorporated the 3 NMERA elements of ETC, MERCOM and powers of intervention as described in the following sections. According to AMSA, the NMERA IGA forms part of the arrangements for the National Plan.<sup>73</sup> The Plan is reviewed every 10 years and AMSA commissioned a review in 2023.<sup>74</sup>

The National Plan implements Australia’s obligations under many international Conventions related to the management of maritime environmental emergencies.<sup>75</sup> The policies, national arrangements and information detailed in the Plan can form the basis for emergency response processes and procedures. Key information derived from the Plan and AMSA’s website is summarised below.

### Purpose, principles and scope

The National Plan set out national arrangements, policies and principles for the management of maritime environmental emergencies to provide a comprehensive response regardless of how costs might be attributed or recovered.<sup>76</sup> The Plan’s principles were to:

- protect the community, environment and maritime industries
- give effect to relevant international conventions
- integrate with the Australian Emergency Management Arrangements
- provide a comprehensive management arrangement
- provide a single integrated response arrangement
- implement a risk management approach
- implement the polluter pays principle
- provide for stakeholder engagement.<sup>77</sup>

The scope of the National Plan included both potential and actual pollution or harm to the marine environment originating from, among others:

- marine casualties requiring salvage and intervention
- emergency towage
- debris from a casualty
- physical damage caused by vessels.<sup>78</sup>

The Plan’s geographical scope was the Australian Exclusive Economic Zone.<sup>79</sup> It included offshore islands and territories, and the high seas where an incident had the potential to

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<sup>72</sup> AMSA (2024) [History of the National Plan | Australian Maritime Safety Authority](#), accessed 17 January 2024.

<sup>73</sup> AMSA (2024), [Intergovernmental agreement on the National Maritime Emergency Response Arrangement | Australian Maritime Safety Authority](#), accessed 17 January 2024.

<sup>74</sup> AMSA (2024) [History of the National Plan | Australian Maritime Safety Authority](#), accessed 17 January 2024.

<sup>75</sup> National Plan for Maritime Environmental Emergencies, 2020 edition, p ii.

<sup>76</sup> *ibid*, p 2.

<sup>77</sup> *ibid*, pp 2-4.

<sup>78</sup> *ibid*, pp 5-6.

<sup>79</sup> *ibid*.

impact Australian interests. The Plan also applied to internal and coastal waters for which Australian States and the Northern Territory had responsibility.<sup>80</sup>

## Governance and management

The National Plan provided a comprehensive approach to emergency management.<sup>81</sup> The document comprised several parts that covered governance and management, and national arrangements to prevent marine pollution incidents as well as to prepare for, respond to and recover from such incidents. The Plan also set out cost recovery arrangements.

### Legal and administrative basis

The Plan gave effect to international Conventions that Australia was a party to and included the following:<sup>82</sup>

- International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990
- International Convention on Civil Liability for Oil Pollution Damage, 1992
- United Nations Convention on the Law of the Sea, 1982
- International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969.

Under the Plan, Australian governments (national and state) were responsible for preparation and response to maritime emergencies within their jurisdictions and certain government agencies had response powers under a range of national and domestic legislation, including the following:<sup>83</sup>

- *Australian Maritime Safety Authority Act 1990*
- *Protection of the Sea (Prevention of Pollution from Ships) Act 1983*
- *Protection of the Sea (Powers of Intervention) Act 1981*
- *Protection of the Sea (Civil Liability) Act 1981*
- *Maritime Powers Act 2013*.

### Plan management

The aim of National Plan governance was to ensure a coordinated, integrated and accountable system was in place to manage maritime environmental agencies.<sup>84</sup> The National Plan Strategic Coordination Committee (NPSCC), comprising senior national and state government officials, was responsible for setting the broad policy direction of the Plan, overseeing its implementation and ensuring the effectiveness of arrangements.<sup>85</sup>

The National Plan was managed by AMSA and its functions included:

- maintaining the Plan
- maintaining Commonwealth (government) contingency plans
- managing the National Response Team, including training and development

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<sup>80</sup> *ibid.*

<sup>81</sup> *ibid.*, p 7.

<sup>82</sup> *ibid.* n, pp 10-14.

<sup>83</sup> *ibid.*

<sup>84</sup> *ibid.*, p 18.

<sup>85</sup> *ibid.*, p 19.

- providing secretariat services for the Plan’s committees and technical groups
- providing a national response equipment capability
- coordinating the national training programme
- managing research and development projects
- management of trajectory modelling
- managing the national emergency towage vessel and fixed-wing aerial dispersant contracts.<sup>86</sup>

The National Plan was underpinned by policies, guidance and scientific, technical and operational advisories and the NPSCC was responsible for the review and acceptance of these documents.<sup>87</sup> The NPSCC was also responsible for ensuring the Plan remained current and effective, and AMSA was required to conduct an annual review of it for the Committee’s consideration.<sup>88</sup>

### Roles and responsibilities

Agencies with jurisdictional or legislative responsibilities for maritime environmental emergencies were required to work closely with the ‘control agency or combat agency’<sup>89</sup> to ensure an adequate response.<sup>90</sup> The control agency was assigned by legislation, administrative arrangement, or within the relevant contingency plan, to control emergency response activities, including appointing an ‘incident controller’.<sup>91</sup> Support agencies provided resources, including equipment, personnel and services to the incident management team.<sup>92</sup>

### Emergency coordination

As major emergencies may require significant strategic coordination across governments and stakeholders, nationally and internationally, the Plan provided for the coordination of stakeholders through the application of strategic leadership, coordination across Australian jurisdictions and international governments and processes for the transfer of Control Agency responsibility.<sup>93</sup> An orderly transfer of this responsibility (for example, when the response needed to be upscaled) was considered key to properly managing the emergency.

A nationally significant incident creates additional pressures on the control agency so jurisdictions were asked to support it through the appointment of a senior official to provide strategic leadership and coordination.<sup>94</sup> These officials, referred to as the State Marine Pollution Controller or Coordinator, were expected to assist with communications, situational awareness, strategic coordination and facilitating the Plan and associated emergency arrangements.<sup>95</sup>

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<sup>86</sup> *ibid*, p 20.

<sup>87</sup> *ibid*, p 21.

<sup>88</sup> *ibid*.

<sup>89</sup> *Ibid*, p ix.

<sup>90</sup> *ibid*, p 22.

<sup>91</sup> *ibid*.

<sup>92</sup> *Ibid*.

<sup>93</sup> *ibid*, p 23.

<sup>94</sup> *ibid*, p 24.

<sup>95</sup> *ibid*.

## Pollution prevention

Arrangements to prevent or minimise pollution due to a maritime casualty and emergency included assignment of responsibilities (shipowner and governments), national emergency towage arrangements, national guidance on places of refuge and an incident management system.<sup>96</sup> Part 3 of the Plan (Prevention of marine pollution incidents) included the subjects outlined below.

### Responsibilities

The ship's owner and master were responsible for taking prompt and effective action to ensure the safety of the ship and cargo, including the engagement of emergency towage, engagement of salvage contractors and effective communication with Australian government authorities on actions being taken to manage the emergency.<sup>97</sup>

Australia was obligated to provide assistance to a ship in accordance with the IMO's Guidelines on Places of Refuge for Ships in Need of Assistance and Maritime Assistance Services (MAS) previously detailed.<sup>98</sup> The contact point between the ship's master and the Australian Government for MAS was the AMSA Response Centre (ARC).<sup>99</sup> If the casualty was within the jurisdiction of the Commonwealth Government, AMSA was responsible for managing the emergency.<sup>100</sup> State governments had responsibility when the casualty was within coastal or internal waters.<sup>101</sup>

### Response commander

The MERCOM was responsible for the management of emergency intervention issues in response to maritime casualty incidents where there was an actual or potential risk of significant pollution.<sup>102</sup> The MERCOM was appointed by AMSA and was supported by statutory powers under the *Protection of the Sea (Powers of Intervention) Act 1981*.<sup>103</sup> The MERCOM was required to consider the reasonable views and positions of involved states and stakeholders and the MERCOM's decisions were to be expeditiously communicated to all relevant stakeholders and fully documented.<sup>104</sup>

### Casualty management

The incident management system for maritime casualties was based on the following principles:

- operational management rests with towage and salvage contractors
- the system was to be scalable and flexible to meet the demands of the incident
- Australian governments oversee actions of shipowner, master and towage/salvage contractors

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<sup>96</sup> *ibid*, p 28.

<sup>97</sup> *ibid*.

<sup>98</sup> *ibid*, p 29.

<sup>99</sup> *ibid*.

<sup>100</sup> *ibid*, p 30.

<sup>101</sup> *ibid*.

<sup>102</sup> *ibid*, p 29.

<sup>103</sup> *ibid*.

<sup>104</sup> *ibid*.

- the need to facilitate communication among key stakeholders in relation to appropriate action
- separation of maritime casualty and pollution response functions for significant incidents.<sup>105</sup>

A Maritime Casualty Control Unit (MCCU) was to be implemented for significant events where the MERCOP had assumed control.<sup>106</sup> This was consistent with the principles of the Australasian Inter-service Incident Management System (AIIMS), which provided for multiple incident management teams.<sup>107</sup>

### Emergency towage

The national arrangements for emergency towage capability – ETC were managed by AMSA and supported by jurisdictional arrangements to manage risks within a particular jurisdiction.<sup>108</sup> The Australian coast was strategically divided into 11 regions to deliver ETC on the following basis:

- level 1 capability – a dedicated ETV in the far north Queensland ETC region
- level 2 capability – contracted port towage within the 10 other ETC regions that was capable of open water towage operations
- level 3 capability – vessel of opportunity that could be directed or contracted at the time of the incident to assist or supplement the level 1 or 2 capability.<sup>109</sup>

At the time of the incident, the dedicated ETV (level 1 capability) *Coral Knight* was stationed in far north Queensland and each region had one or more level 2 capability contracted ETVs based in certain ports (Figure 16).<sup>110</sup> *Svitzer Glenrock*, based in Newcastle, was the sole level 2 capability ETV serving New South Wales. Only AMSA could activate its contracted ETC and activation requests were governed by its procedures (see the section titled *Maritime Assistance Services procedures under National level*).<sup>111</sup>

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<sup>105</sup> *ibid*, p 31.

<sup>106</sup> *ibid*.

<sup>107</sup> *ibid*, p 31.

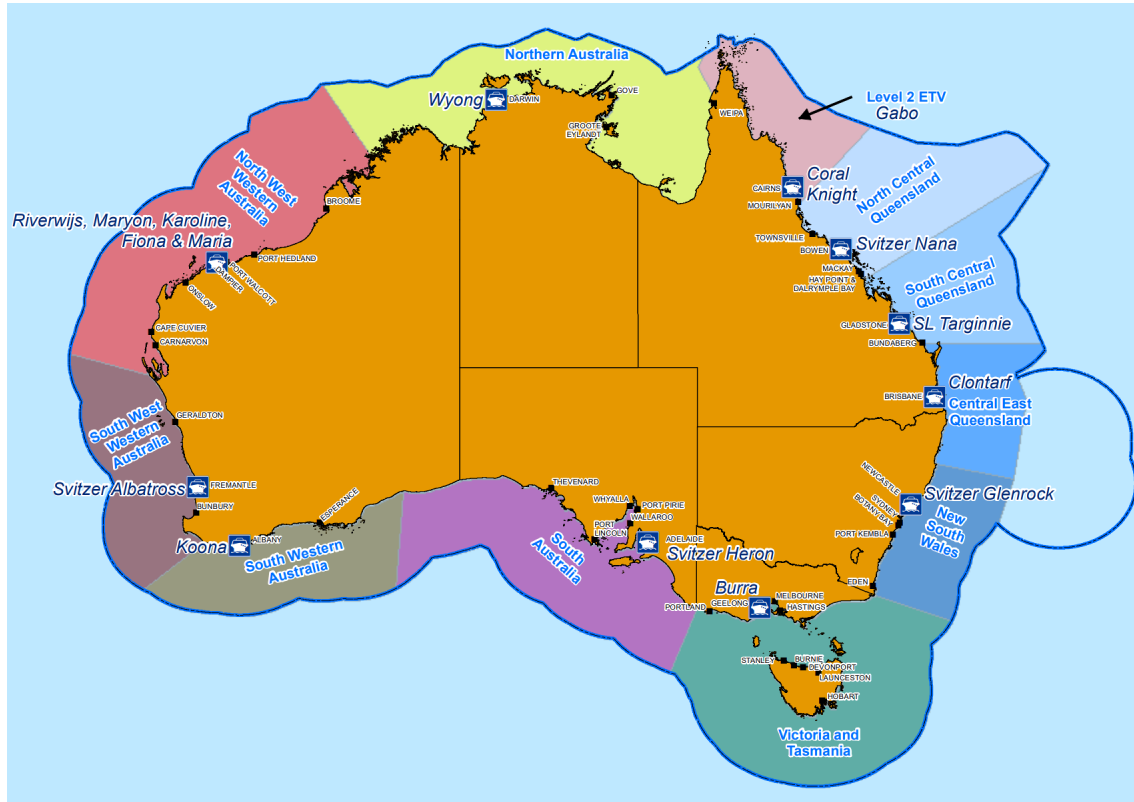
<sup>108</sup> *ibid*, p 32.

<sup>109</sup> *ibid*.

<sup>110</sup> AMSA (2024) [Maritime casualty management | Australian Maritime Safety Authority](#), accessed 17 January 2024.

<sup>111</sup> National Plan for Maritime Environmental Emergencies, 2020 edition, p 32.

Figure 16: Emergency towage capability arrangements at the time of the incident



Source: AMSA (Emergency Towage Capability arrangements as of June 2020)

### Place of refuge

The Plan defined a ‘place of refuge’ as one where action can be taken to stabilise the condition of a ship and its cargo, protect life and the environment and reduce hazards to navigation.<sup>112</sup> Agreed national guidance, although optional, advised Australian maritime agencies to provide a place of refuge when necessary and appropriate to protect:

- the safety of the ship’s crew, passengers and salvage crew
- the safety of human life in the immediate vicinity of the distressed ship
- ecological and cultural resources, and marine, coastal and terrestrial environments
- economic and socio-economic infrastructure, within the coastal zone and ports
- the safety of the ship and its cargo.<sup>113</sup>

This guidance included the subjects covered by the IMO guidelines on ‘places of refuge’ previously referred together with additional safety of life considerations.

### Preparation, planning and response

The Plan provided for the planning and preparation to respond to marine pollution incidents, with key associated activities including:

- contingency planning
- community engagement

<sup>112</sup> *ibid*, p 34.

<sup>113</sup> *ibid*.

- capability development
- training
- capacity building
- exercises
- testing and reviews
- research.<sup>114</sup>

Contingency planning at national, state and regional levels underpinned the National Plan arrangements and each jurisdiction was responsible for establishing contingency plans and ensuring they remained current and effective.<sup>115</sup> National pollution response capability included the National Response Team of qualified and trained personnel, state response teams, and response stockpiles of equipment held nationally, regionally and locally.<sup>116</sup>

### Exercises

Exercises were intended to be a core component of preparedness and each jurisdiction was responsible for an effective exercise programme.<sup>117</sup> The national response capability was to be exercised on an annual basis and exercise planning and conduct was required to include national and state level representatives.<sup>118</sup>

### Response

The Incident Management System under the Plan was consistent with AIIMS to provide for multiple incident management teams, and its fundamental principles were flexibility, functional management, management by objectives, unity of command and span of control.<sup>119</sup> The required response was generally required to be based on the following 3 incident levels:<sup>120</sup>

- Level 1 incidents – generally resolved through the application of local or initial resources only.
- Level 2 incidents – more complex in size, duration, resource management and risk and may require deployment of jurisdiction resources beyond the initial response.
- Level 3 incidents – generally characterised by a degree of complexity that requires the Incident Controller to delegate all incident management functions to focus on strategic leadership. Response coordination may be supplemented by national and international resources.

Guidance for incident classification included various general characteristics for each level to support the development of criteria for evaluating the escalation of the response and these criteria were recommended to be embedded in the relevant contingency plan.<sup>121</sup>

The Plan recognised that timely initiation of a response was critical to achieving an effective outcome. Consequently, it stated that a response should be initiated where there was a

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<sup>114</sup> *ibid*, p 36.

<sup>115</sup> *ibid*.

<sup>116</sup> *ibid*, pp 39-41.

<sup>117</sup> *ibid*, p 45.

<sup>118</sup> *ibid*.

<sup>119</sup> *ibid*, p 48.

<sup>120</sup> *ibid*, p 49.

<sup>121</sup> *ibid*, p 50.

need to monitor the incident (potential and actual) and implement measures to mitigate its impacts.<sup>122</sup> It also recognised that pre-emptive or precautionary response operations might be necessary to protect environmental and community interests where local resources might be insufficient, and the principle of over-escalation when considering the initial response (more effective to scale down than up).<sup>123</sup>

## National Plan implementation

*Portland Bay's* propulsion failure and the subsequent emergency unfolded off the coast of New South Wales, initially in waters under Commonwealth (national) jurisdiction and then state waters and involved agencies at both levels.

### National level

As AMSA managed the National Plan and controlled the national maritime emergency response arrangements, it had a central role in the response to any maritime emergency. In order to meet its responsibilities in this role, AMSA had developed many procedural and guidance documents, including standard operating procedures and related processes for emergency response and management. Its Maritime Assistance Services procedures directly applied to this incident. In addition, several AMSA guidance publications on casualty management, emergency response and related subjects were relevant and the key ones are summarised in this section.

While Search and Rescue (SAR) arrangements were not part of the National Plan, AMSA used its SAR procedures in its initial response to the incident when attempting to rescue the ship's crew. These procedures are described first for completeness and to provide the necessary context.

### Search and Rescue procedures

At the time of the incident, the SAR procedures and processes were contained in the SAR Operations Procedure Manual covering a comprehensive range of relevant subjects.<sup>124</sup> Some of the broad subject areas addressed in the over 400-page manual included:

- coordination of SAR
- tasking assets and jurisdiction
- alerts and reporting requirements
- distress alerts and procedures
- intelligence gathering
- search operations
- rescue operations
- concluding operations.

The SAR coordination procedures addressed determining the mission controller and their responsibilities, accepting coordination (including air coordination) from another SAR authority, and police coordination. Pre-emptive tasking of assets, tasking of air assets,

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<sup>122</sup> *ibid*, p 51.

<sup>123</sup> *ibid*.

<sup>124</sup> Search and Rescue Operations Procedure Manual, SOM SOP 02/2022, AMSA.

tasking assets for maritime and aviation incidents and interacting with police in various jurisdictions were detailed.

The manual detailed reporting requirements and the action required on receipt of notifications and distress alerts. Procedures to respond to and manage a distress situation were covered in detail and included flow charts.

Procedures to gather intelligence and information about the incident and situation were provided. Maritime intelligence gathering sections included potential sources such as police, VTS, other vessels and ship agents. Other sections covered interacting with State Police, Maritime Border Command, Australian Defence Force and volunteer marine rescue groups.

An entire section was devoted to operational risk management, including identification, analysis, likelihood assessment, evaluation and risk treatment. Nine broad categories of response mission risk profiles were defined. Recording, monitoring and internal reporting requirements were also provided.

Sections on SAR addressed those operations in detail based on the location and transport mode. Tasking and utilisation of aviation and maritime assets and various considerations were detailed. A section on concluding SAR operations included procedures for asset debriefing, cancellation broadcasts, notifications, final situation reports and formal debriefs.

### **Maritime Assistance Services procedures**

At the time of the incident, the Maritime Assistance Services (MAS) procedures comprised a series of inter-related procedures on a range of relevant matters and subjects.<sup>125</sup> These included subjects covered by the IMO guidelines on MAS and places of refuge for ships previously referred and the National Plan, including the NEMER elements of emergency towing vessels (ETV), powers of intervention and MERCOT. Some of the 32 broad subject areas addressed by the MAS procedures included:

- assessing the severity of incidents
- monitoring and transitioning to a complex incident
- managing incidents, including communication and jurisdiction
- jurisdictional matters under the National Plan
- response and transition to/from Incident Management Team
- command and control
- emergency towage.

When the AMSA Response Centre or ARC (JRCC operates within the ARC) was notified of an incident, the actual or potential severity level of the incident (levels 1 to 5) was to be determined in accordance with a severity matrix (Appendix B). The ARC monitored a severity level 1 (negligible) or level 2 (minor) incident to confirm that the ship's master and owner were managing it appropriately. Where there was concern that their actions would not ensure the safety of the ship, its crew and the environment, the ARC was required to escalate the incident to level 3 (moderate) and trigger a transition to establishing an incident management team (IMT).

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<sup>125</sup> Maritime Assistance Services Standard Operating Procedures, MAS SOP 01/2021, AMSA.

Severity levels 3, 4 and 5 (moderate, major and severe incidents, respectively) were defined as complex incidents and were to be managed by an IMT. The severity matrix included guidance on the proportionate and reasonable response that could be necessary based on the incident severity level. For example, a machinery failure that affected the ship's safe navigation with a low likelihood of rectification within 6 hours and moderate risk for environmental damage would be categorised as a level 3 incident. The matrix indicated that this might require warning the master on possible use of the powers of intervention, alerting the nearest ETV, potential for a place of refuge request, potential deployment of an AMSA maritime casualty officer (MCO) and the possibility of requests from the impacted state(s).

A similar incident scenario to that above, but without prospect of recovering the machinery and a major risk to the environment, was defined as a level 4 incident. The matrix indicated the response would probably include invoking the powers of intervention, tasking the nearest ETV, a place of refuge request, deployment of an MCO and a request from the impacted state(s). If there was no prospect of recovering machinery and critical systems with severe pollution, the incident would be defined as severity level 5 and necessitate all response activities, including invoking the powers of intervention and the immediate tasking of the nearest ETV.

The procedure defined a 'maritime casualty' as:

- a collision, grounding or stranding
- fire or explosion
- cargo movement or stability issues
- flooding
- other navigational incident
- other occurrence resulting in material damage (or imminent threat of damage) to a ship or cargo
- a ship-related incident causing or likely to cause, environmental damage due to the loss or potential loss of fuel, cargo or other harmful substances.

In practice, all these types of casualties would be severity level 3, 4 or 5 incidents.

The procedure stated that a maritime casualty is likely to require coordination by the MERCOM. It also stated that under the *Protection of the Sea (Powers of Intervention) Act 1981* (POI Act), the MERCOM had the power to take measures that might be necessary to prevent, mitigate or eliminate the risk of significant pollution, including the power to direct a port to release a tug or designate a place of refuge for a ship in emergency situations which presented a risk of pollution (Appendix C). The MERCOM was required to determine AMSA's preferred response based on the available information and options, which included tasking of an ETV, invoking the POI Act, assessing requests for places of refuge, deploying an MCO, establishing an IMT and tasking of an aviation asset.

Where the MERCOM designated a casualty to be significant or potentially significant requiring broader ongoing management, an IMT was to be established and an incident controller appointed with responsibility for ensuring that the incident was managed in accordance with the National Plan. An IMT would generally have included the MERCOM, ARC duty manager, MAS subject matter expert, pollution advisors, AMSA legal counsel, external salvage expert and delegates of impacted state(s).

Under the National Plan, AMSA had jurisdiction in Commonwealth waters (seaward of 3 miles, except in the Great Barrier Reef Marine Park), which extended to the high seas and as far as the continental shelf (generally up to 200 miles). If a casualty occurred in waters under its jurisdiction, AMSA was required to assume control if the ship master and owner were not discharging their responsibility to effectively manage the casualty in a timely manner and/or to protect the environment and the community. Similarly, AMSA would assume control of a casualty in state jurisdiction if requested by state authorities or if appropriate action to manage it was not being taken.

The procedure covered the subject of a disabled ship's drift in some detail, including creating drift models to manage the risk of it grounding or stranding. This information was complemented by guidance on AMSA's emergency towage arrangements, including contractors and ETV locations, the tasking of ETVs and related considerations of commercial towage and salvage arrangements.

The master or owner of a ship requiring assistance were expected to make every possible attempt to enter a commercial towage or salvage agreement to ensure safety. If an agreement was not reached on who should pay, or the cost, then the MERCOM was required not to delay tasking of an ETV. In an urgent situation, the MERCOM could use the powers of intervention to direct that the casualty took a tow line from an ETV to stabilise it and, if necessary, be towed away from danger. This was stated to be the primary operational role of an ETV until being relieved by a tug(s) deployed under a commercial arrangement. Where a tug was already in attendance, or available and time permitted, the master or owner could choose it instead of an AMSA-tasked ETV (subject to any directions issued by the MERCOM).

The procedure provided for ETV activation in 2 phases: Alert and On Task. The Alert notification provided the ETV with awareness of potential deployment and time to prepare. The On Task direction required the ETV to prepare to depart as soon as practicable within the required response time. The 2 phases were not intended to be used in sequence as an On Task direction might be the appropriate first course of action in some cases.

The procedure indicated that level 1 and level 2 ETC services were provided by Australian Maritime Systems Group (AMSG), Svitzer Australia (Svitzer), Smit Lamnalco and RiverWijs Marine under separate contracts with AMSA. The ETC level 1 service provider, AMSG, provided the dedicated level 1 ETV. Svitzer was identified as the provider of 8 of the 11 contracted level 2 ETC vessels, including one designated vessel for New South Wales based in Newcastle. The map of the ETC regions and ETVs (Figure 16) was included. The ETC level 3 assets were to be sourced from harbour towage, offshore support and anchor handling vessels as required and there was no contract for such vessels of opportunity.

The ETC level 1 and 2 assets could only be activated by AMSA as per the terms of their contracts and any requests for activation were to be made in accordance with internal AMSA procedures,<sup>126</sup> whereas NEMERA had foreshadowed in 2008 that ETVs could be called upon by MERCOM, port authorities and others (see the section titled *Overview of national arrangements*). Each ETC provider's contract included joint standard operating procedures to address the requirements for availability, command and control, operational

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<sup>126</sup> National Plan for Maritime Environmental Emergencies, 2020 edition, p 32.

role, activation procedures, first strike response and communications (see the section titled *Emergency towage services contract under Svitzer Australia*).

The MAS procedures included the following annexes and attachments containing standard forms, checklists and other useful information and guidance:

- assessment tool for decision to issue a direction to the shipowner under the POI Act
- standard form to issue a direction to the owner, master, salvor or any other person
- checklist for collecting information for a maritime casualty
- checklist for casualty information and intelligence sources
- checklist for casualty monitoring
- critical equipment systems checklist
- considerations for hazardous situations.

The various checklists included the necessary prompts to collect and record information required for emergency response and management of any casualty, including mechanical failure and stranding. Propulsion was the first item in the safety critical equipment list and the main engine and its components were listed at the top of the critical equipment list.

The table listing considerations for hazardous situations included the potential accident type, consequences, associated system failure, mitigation system and redundancy and alternate process. For example, a potential accident due to a loss of propulsion was identified as a grounding with consequential harm to the environment and human life.

### **Casualty management guidance**

The scope of AMSA’s National Maritime Casualty Management Guidance encompassed the response to a maritime casualty as defined in the National Plan.<sup>127</sup> This concise publication noted the national arrangements in place (ETC, MERCOM and powers of intervention) and its 2 main sections addressed the subjects of casualty management responsibilities and casualty response.

In terms of casualty management responsibilities, the guidance stated that the National Plan set out arrangements, policies and principles for the management of environmental emergencies, including casualties. Five key principles of casualty management were identified as:

- shipowner’s (and salvage or towage contractor) responsibility for operational management
- responsible agency to oversee shipowner, master, salvor and towage contractor actions
- scalable and flexible casualty management system to meet demands of the incident
- in significant incidents, provide separation of casualty and pollution response
- facilitating communication among key stakeholders for appropriate action.

The guidance reiterated the need for the responsible agency to assume control where the ship’s owner and/or master were not discharging their responsibilities and/or to protect the environment and community. National Plan jurisdictional responsibilities and zones were

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<sup>127</sup> National Maritime Casualty Management Guidance, 27 April 2018, AMSA.

described, including that the responsible agency could request AMSA to assist or to manage the casualty.

Casualty response guidance included the organisation of a response and the different involved roles. It was recommended that the responsible agency establish a maritime casualty incident management team (MCIMT) to coordinate and strategically manage a significant incident. A summary of the role and powers of the MERCOM and establishment and functions of a maritime casualty control unit (MCCU) was also provided.

The guidance included an overview of the response options available to prevent, mitigate or eliminate a casualty. Responsible state (or Northern Territory) agencies were asked to seek AMSA assistance when required, including where an ETV was required to assist the casualty or MERCOM powers considered necessary for a place of refuge request. An overview of the powers of intervention legislation and summary of national emergency towage capability was included. Notwithstanding the primary role of an ETV to stabilise a casualty, its capability to preserve life, prevent or mitigate pollution, assist with firefighting and provide towage to a place of refuge were reiterated. Guidance on places of refuge referred to the national guidelines on the subject (see the section titled *Place of refuge guidelines* under *National level*).

This guidance document captured all the relevant key components of the National Plan.

### **Emergency management handbook**

The Complex Maritime Emergency Management handbook published by AMSA provided useful information and guidance to manage casualties and noted that these could range from collisions to offshore spills.<sup>128</sup> The handbook stated that it should be read in conjunction with the National Plan. A complex maritime emergency was defined as a large-scale and multi-faceted event that exceeded the resources of a single jurisdiction and posed distinct threats to community safety, the economy, and the environment.

The stated purpose of the handbook was to provide planning guidance and context to users across jurisdictions towards establishing an agreed, structure and coordinated response to a complex emergency. It contained sections that provided high-level guidance on several essential subjects. These included complexities of the maritime sector, planning (principles, strategies and priorities), coordination (accountabilities, resourcing and governance) and preparedness (training, exercises and lessons management). The handbook's intended audience included casualty and pollution response control agencies, executives and managers (governments and industry), executive crisis teams and emergency planners.

Information on the complexities of the maritime sector addressed the topics of marine insurance, ship ownership and registration, salvage, legislation and legal considerations. The key principles of planning were summarised, including collaboration and knowledge sharing, addressing any stakeholder capabilities and limitations, willingness to operate in concurrent and connected domains and distributing control in ambiguous operating environments. These principles were stated to complement those for an agile and scalable, adaptable response that was timely and outcomes based. Strategic priorities, starting with protecting human life were spelt out, and the levels of planning (local, state and national) were described, including cross-sectoral and cross-jurisdictional challenges.

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<sup>128</sup> Complex Maritime Emergency Management Guidance, 3 February 2022, AMSA.

The section on coordination addressed accountabilities, resourcing and integrated response. The key concepts of integrated governance were stated to be communication, coordination, collaboration and integration, which were to be applied with flexibility including the ability to adapt and respond to evolving events and information. Integrated governance for a complex emergency across agencies was to provide for:

- transparency and information sharing
- effective issue resolution and decision-making
- defined reporting lines
- agreed notification and escalation pathways
- avenues for stakeholder engagement
- clearly defined objectives
- established workstreams / lines of effort
- standardised communications.

The handbook included examples of complex emergencies, presented in summary form as guidance. It emphasised the importance of preparedness through training, exercises and learnings and provided important principles for exercises and workshops, decision-makers and responders.

The handbook complemented the Casualty Management guidance and National Plan.

### **Place of refuge guidelines**

The National Maritime Places of Refuge Risk Assessment Guidance published by AMSA was intended to provide national and state-level agencies guidance to inform and expedite the decision-making process in the determination and allocation of a place of refuge.<sup>129</sup> This publication covered all relevant subjects, including requests for a place of refuge, decisions, management issues and powers of intervention at the national and state level.

The guidance described different maritime zones, circumstances for seeking refuge, reasons to provide a place of refuge, process for requesting refuge, granting a request and the MERCOT's overriding authority. The implications of refusing a request and the handover process between jurisdictions were also addressed. Detailed guidance about the powers of intervention, liability and indemnity was included.

The publication included useful flowcharts, checklists, forms and templates to assist with making requests, assessing risk, making decisions and issuing a directions notice under national or state-level legislation.

### **Annual exercises**

As previously noted, it was a requirement to exercise the National Plan on an annual basis. Exercises conducted during the 7 years before this incident are summarised below.

In 2015, Exercise Westwind, a 2-phase exercise to simulate a response to a level 3 (the highest level) emergency by the Australian and Western Australian governments and the offshore oil industry was conducted. Phase 1 was in Canberra on 27 and 28 May while phase 2 was in Perth and Exmouth, Western Australia, from 8 to 12 June. Objectives included exercising: National Plan arrangements in a multi-jurisdictional, cross-sectoral

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<sup>129</sup> National Maritime Places of Refuge Risk Assessment Guidance, endorsed by NPSCC November 2015, AMSA.

setting; strategic interaction operational management of a multi-agency, multi-jurisdictional and cross sectoral incident control centre, and tactical deployment of resources and response personnel.

In 2016, Exercise Nautical Twilight, was conducted in 3 phases across September in New South Wales. Phase 1 simulated the NSW IMT working with a MCCU and MERCOM to respond to a shipboard hazardous and noxious substance (HNS) incident with a request to discharge the HNS in a port in New South Wales. Establishing an MCCU, assessing its structure and fitness for purpose and applying refuge guidelines were practised. Phase 2 involved a multi-agency response to a shipboard fire in Newcastle, including establishing an incident control centre and incident action plan. The effectiveness of multi-agency functionality, NSW personnel capability and NSW HNS recovery arrangements were assessed. Phase 3 tested the national HNS response capability and fitness for purpose of the HNS reconnaissance team.

In 2017, Exercise Constant Bearing, was conducted in Adelaide, South Australia (SA), from 5 to 7 December to evaluate the state's response to an oil spill in its waters. The objectives were to strengthen understanding of a level 3 spill consequences, enable response and recovery, use the National Plan for interaction between national and state participants and enable engagement between the SA IMT, industry and state emergency arrangements.

In 2018, Exercise Torres, a multi-agency, multi-jurisdictional response to an oil spill in the Torres Strait was conducted in 2 phases. Phase 1, conducted in Cairns, Queensland, on 1 and 2 August, aimed at developing strategic consequence management, community engagement and communication arrangements and strategies of the National Plan and Queensland arrangements for a level 3 spill. Phase 2, conducted from 17 to 21 September, aimed to test spill response arrangements in the Torres Strait.

Annual exercises, AMSA advised, were not conducted in 2019, 2020 and 2021 due to the impact of the COVID-19 pandemic.<sup>130</sup> According to AMSA, an exercise conducted a few months after the incident in 2022 was planned in advance of pandemic restrictions lifting because their impact on 'national preparedness' had been recognised.

### **Staff training and experience**

Four AMSA officers were directly or closely involved with the response to this incident. Two officers from its Response Division and the MERCOM, all based in Canberra, interacted with the Port Authority incident controller (IC) and other stakeholders. An officer from AMSA's Operations Division in Sydney was its liaison officer in the New South Wales IMT and interacted directly with the IC and team members.

Both officers from the Response Division had completed training in AIIMS and emergency management. The officer that performed the role of AMSA's incident controller had undertaken such training from time to time since 2005. The officer who performed the response advisor role had completed 2 relevant courses in 2021.

The MERCOM had completed several training courses in emergency management, including AIIMS, since 1997. This training had been undertaken while employed in various

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<sup>130</sup> Coronavirus disease (COVID-19) was an infectious disease caused by a newly discovered coronavirus. The World Health Organization (WHO) first learned of this new virus on 31 December 2019. International and domestic responses to manage the pandemic included restrictions to activities and operations in the maritime industry.

senior roles with the State Emergency Services in New South Wales. Before joining AMSA as the Executive Director of the Response Division in December 2018, the MERCOM had more than 30 years of emergency management experience.

The liaison officer was a very experienced AMSA marine surveyor and former seafarer but had not completed AIIMS training before the incident.

## State level

Under the National Plan and relevant New South Wales legislation and plans, 2 separate maritime agencies were responsible for managing an emergency response in the state's coastal and inland waters.

### Maritime agencies

Transport for NSW was the state Government's lead regulatory agency responsible for strategy, planning, policy, regulation and other non-service functions for all modes of transport. Within Transport for NSW, the operational area responsible for maritime matters was NSW Maritime, which for all practical intents and purposes, was the maritime regulator.

The maritime regulator did not operate or manage the 6 principal ports in New South Wales, which had been progressively privatised. In 1995, the 3 port corporations of Newcastle, Port Kembla and Sydney took over the ownership and operation of the ports of Newcastle, Port Kembla, Sydney and Port Botany. The ports of Eden and Yamba were transferred to Sydney Ports Corporation in 2011. The landside port assets (such as wharves) of Port Botany and Port Kembla were privatised in 2013 and those of Newcastle in 2014.

In 2014, the 3 port corporations were amalgamated into the single state-owned corporation, Newcastle Port Corporation (NPC) trading as Port Authority of New South Wales (Port Authority). The state Government issued NPC a Port Safety Operating Licence (PSOL) to operate the state's 6 principal ports. Under the PSOL, the Port Authority was required to manage the navigation, security and operational safety needs of commercial shipping in these ports (see the section titled *Port Safety Operating Licence* under *State level*).

Under state legislation and various plans, Transport for NSW and the Port Authority were jointly, and separately in different roles, responsible for managing various types of emergencies, including incidents involving ships and/or pollution.

### Legislation and plans

The *State Emergency and Rescue Management Act 1989*<sup>131</sup> (SERM Act) set out the general legal and governance framework for emergency management across New South Wales. The SERM Act required a State Emergency Management Plan to ensure a coordinated response to emergencies by all the involved responsible agencies.

The New South Wales State Emergency Management Plan was in effect at the time of the incident.<sup>132</sup> The Plan's stated aim was to describe the state's approach to emergency management, the governance and coordination arrangements and the roles and

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<sup>131</sup> *State Emergency and Rescue Management Act 1989*, No 165, New South Wales.

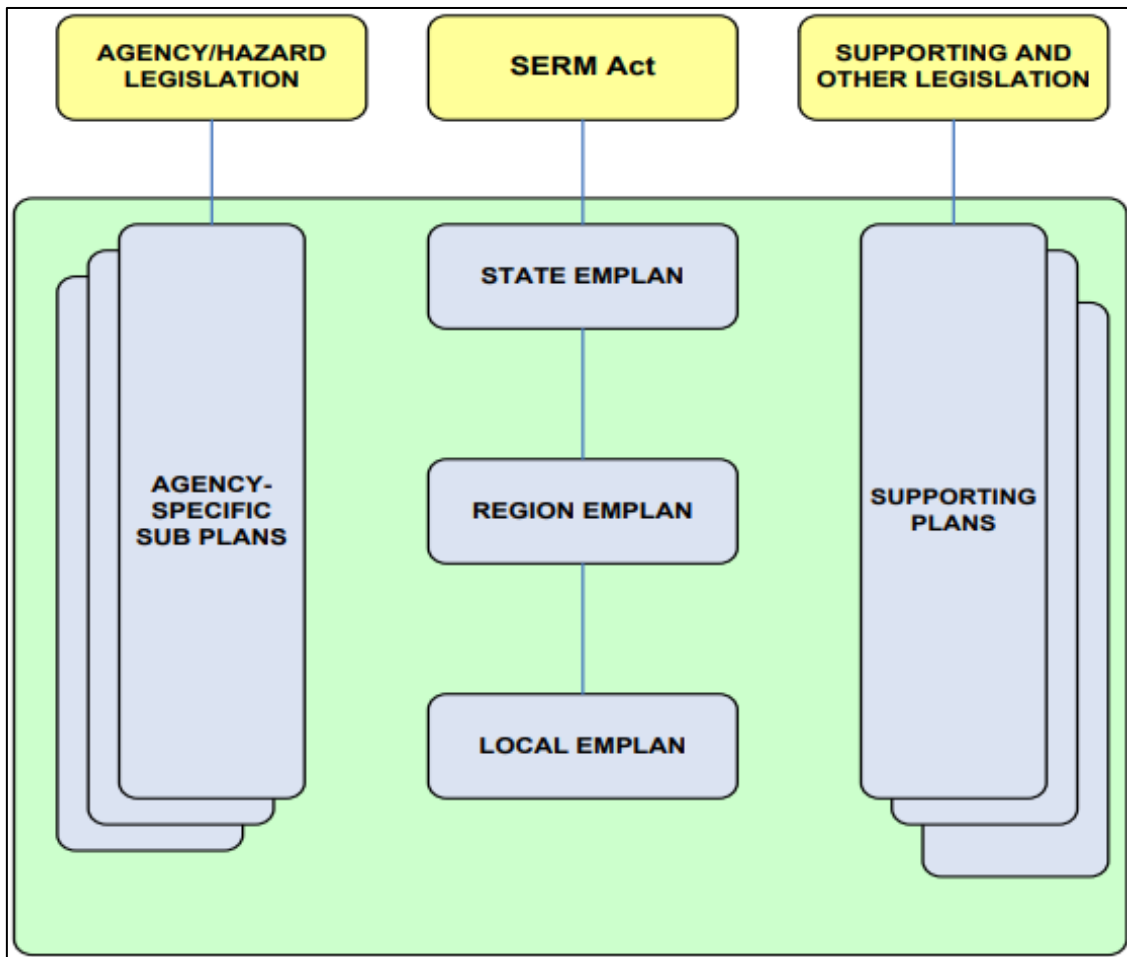
<sup>132</sup> New South Wales State Emergency Management Plan, December 2018, New South Wales Government.

responsibilities of responsible agencies. This state-level plan, also known as the state EMPLAN, had the following objectives:

- provide clarity as to command and control, roles and coordination of functions in emergency management across all levels
- emphasise risk management across the full spectrum of prevention, preparation, response and recovery
- emphasise community engagement in the development and exercise of plans as well as in their operational employment
- ensure that the capability and resourcing requirements of these responsibilities were understood.<sup>133</sup>

The state EMPLAN was supported by hazard-specific sub-plans and functional area supporting plans at state, regional or local levels (Figure 17). The supporting plans were prepared by state government agencies or functional areas. Sub-plans were prepared when arrangements to deal with a hazard, critical task or special event differed from those set out in the main or supporting plan for the area.

**Figure 17: Legislative and planning framework for emergency management**



Source: NSW EMPLAN, paragraph 305

<sup>133</sup> *ibid*, para 108.

The state EMPLAN stated that functional areas represent key sectors and support a ‘combat agency’, which was defined as the ‘agency responsible for controlling the response of a particular emergency’. A ‘lead agency’ was defined as one that ‘has overall leadership in a given situation’, which could be a combat agency, a functional area or another agency.

While the SERM Act did not reference the National Plan, the state EMPLAN acknowledged that the ‘Commonwealth is responsible for a number of national plans’. The state EMPLAN identified certain emergencies, including hazardous material incidents and emergencies in inland or state waters and marine oil and chemical spills.<sup>134</sup> Annexure 3 of the state EMPLAN identified the agencies with specific control responsibilities for each type of emergency. The ‘relevant port authority’ was responsible for hazardous material occurrences in state waters while responsibility for ‘marine oil and chemical spills’ was assigned to the Roads and Maritime Authority (the predecessor of Transport for NSW)<sup>135</sup> or the Port Authority of New South Wales. The NSW Coastal Waters Marine Pollution Plan,<sup>136</sup> a sub-plan of the state EMPLAN, detailed the specific responsibilities of both agencies for marine spills.

The NSW Coastal Waters Marine Pollution Plan (commonly known as the NSW Plan) was also a sub-plan of the National Plan. Transport for NSW (NSW Maritime) was the statutory agency for New South Wales (as defined in the National Plan) with responsibility for ensuring that the state was prepared for and could respond appropriately to an incident in New South Wales coastal waters (in accordance with the NSW Plan). The stated aim of the NSW Plan was ‘to outline the arrangements to deal with marine oil or chemical spills and maritime incidents, such as groundings, collisions, disabled vessel or fire on a vessel that could result in an oil or chemical spill into the coastal waters of NSW’. Coastal waters were defined as ‘those waters seaward for 3 nautical miles’ and included several harbours, ports and rivers listed in the NSW Plan.

An important inclusion in the scope of the NSW Plan required ‘procedures to ensure that the NSW Government’s resources were integrated with the National Plan and effectively mobilised in the event of a maritime incident in or adjacent to NSW coastal waters’. The typical sequence of responding to an incident (in summary) included:

- notification to agencies
- initial assessment of distribution of information to relevant agencies
- establishment of an incident control centre and incident management team using AIIMS
- an extensive list of actions (safety of life, pollution prevention, salvage matters etc.)
- termination of response.

A section of the NSW Plan identified necessary notifications based on AIIMS incident levels 1, 2 and 3. The list of the agencies that were to be notified included the Port Authority, NSW Maritime and AMSA. The guidance stated: ‘shipping incidents less than 20 nautical miles offshore should be treated as a potentially significant incident’ (that is, level 2 or 3). It was further stated that the initial response would depend on the location of the incident that might lead to a spill and, where the incident or emergency was in Commonwealth waters

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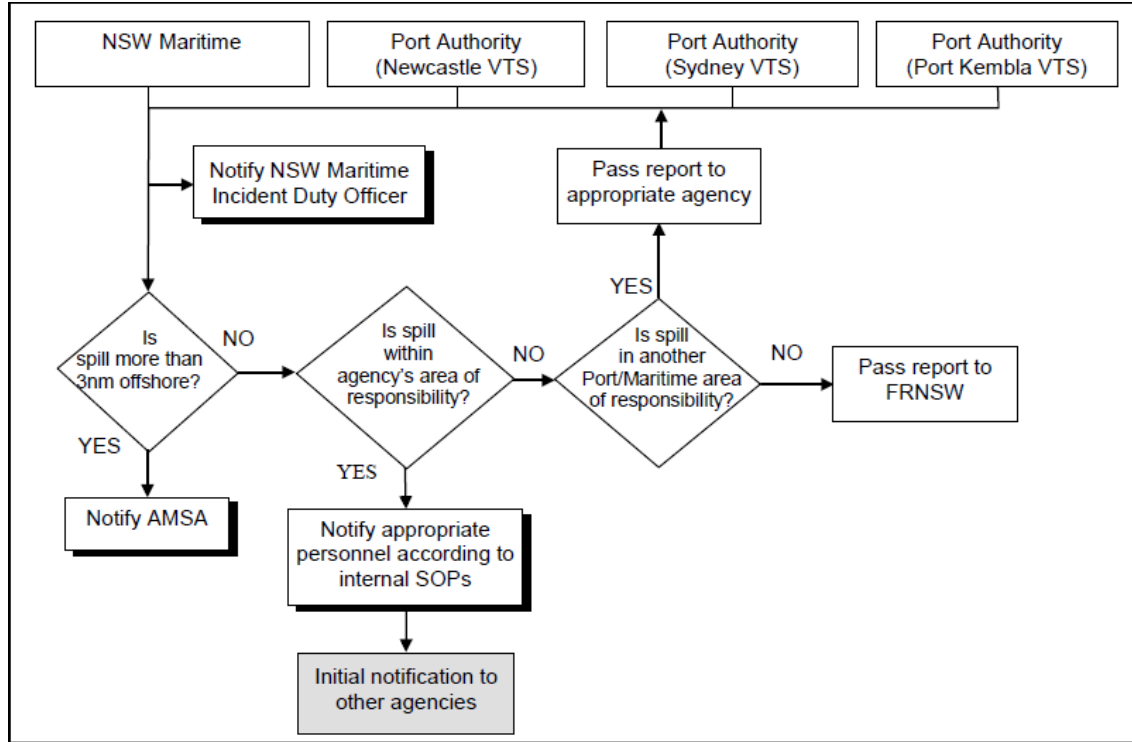
<sup>134</sup> Regional and local EMPLANS were not directly relevant to maritime emergencies in New South Wales coastal waters.

<sup>135</sup> The Roads and Maritime Authority was dissolved in 2019 after Transport for NSW took over all its functions.

<sup>136</sup> NSW Coastal Waters Marine Pollution Plan, December 2021 (endorsed by the State Emergency Management Committee on 2 December 2021), New South Wales Government.

(more than 3 miles offshore), AMSA was the initial ‘combat agency’<sup>137</sup>. A notification sequence flow chart was provided, which required AMSA to be notified if the incident or emergency was more than 3 miles offshore (Figure 18).

**Figure 18: Notification sequence for reporting a spill incident or emergency**

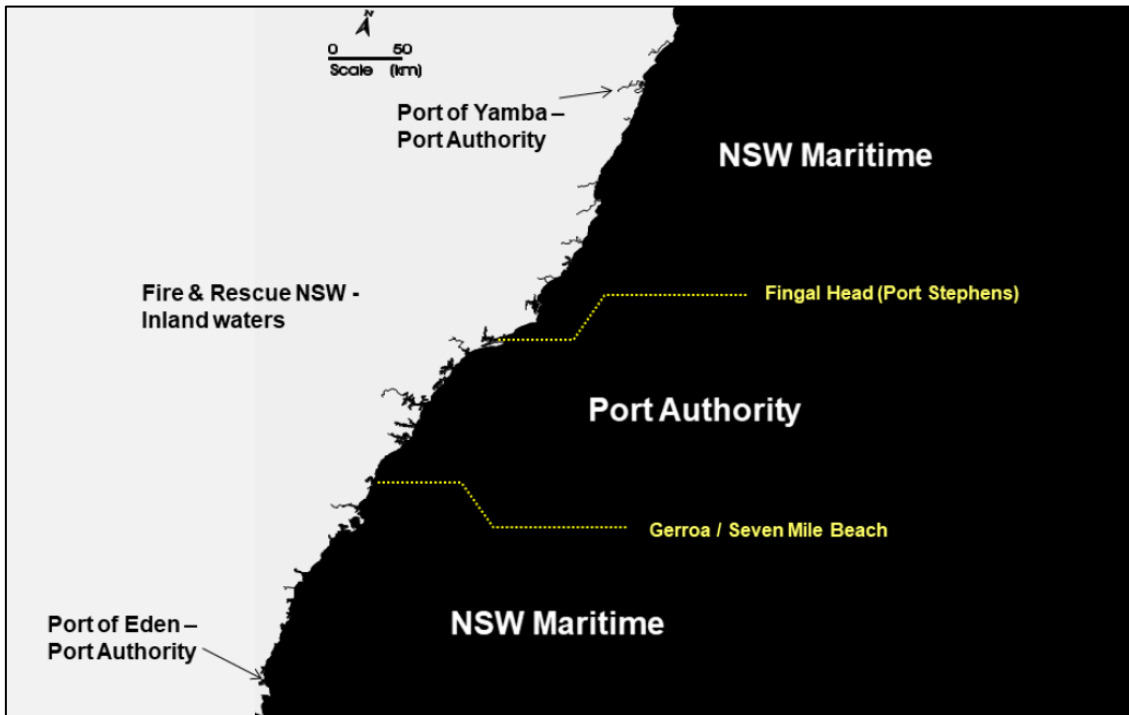


Source: NSW Coastal Waters Marine Pollution Plan, page 28

The NSW Plan stated that the aim of responding to an incident was to minimise damage to the environmental and socio-economic resources and reduce the time for recovery. It was noted that as each incident or emergency was different, the Plan must be flexible in its implementation to respond in the most effective and timely manner. A map titled ‘regions and their boundaries for the purposes of notification and response’ allocated the area between Gerroa (located south of Port Kembla) and Fingal Head (located north of Newcastle) to the Port Authority (Figure 19).

<sup>137</sup> The National Plan defined a control agency being the same as a combat agency, which is mainly used in this report, with both terms having the same meaning.

**Figure 19: Regions and their boundaries for the purposes of notification and response**



Source: NSW Coastal Waters Marine Pollution Plan, page 8

The NSW Plan stated that the *Ports and Maritime Administration Act 1995* (NSW) described the Port Authority’s ‘port safety functions’ as including ‘providing or arranging emergency environment protection services for dealing with pollution incidents in relevant waters’. It further stated that the PSOL set out emergency response requirements for the Port Authority, including responding to incidents as required by the NSW Plan or the relevant state emergency management plans in the area of operations set out in appendix 2 of the PSOL. The detail in that appendix replicated the map in Figure 19 (see the section titled *Port Safety Operating Licence under State level*).

Where an incident or emergency occurred outside the 3-mile limit, but the ship was likely to enter coastal waters, AMSA had to make a request to the state’s Marine Pollution Controller (MPC) for New South Wales to assume responsibility for the incident. The MPC (an NSW Maritime officer) would, in consultation with the Port Authority, determine which of the 2 agencies would take the combat agency role. The other agency was required to take on a support agency role. Their respective responsibilities in these roles were defined. Where NSW Maritime was the combat agency, it was required to:

- provide an incident controller
- provide trained response staff to fill AIIMS positions to control the response
- make available emergency response equipment under its control
- provide trained equipment operators
- notify the appropriate agencies and higher control within the agency
- establish an incident control centre from which the incident would be controlled.

The Port Authority's responsibilities as a combat agency were the same as those listed above. Additionally, it was required to provide additional staff if needed in smaller ports. When supporting the combat agency, the Port Authority was required to:

- provide trained emergency staff
- make available emergency response equipment under its control
- provide a liaison officer if required.

Where NSW Maritime was supporting the combat agency, its responsibilities were the same as those listed above for the Port Authority. As the state's statutory agency under the National Plan, its responsibilities included assisting the incident controller in coordinating resources from NSW Maritime, the Port Authority and AMSA (if requested), and supporting the MPC when monitoring or supporting the response to an incident or emergency.

The NSW Plan stated that as part of National Plan arrangements, all combat agencies for maritime incidents had agreed to use AIIMS to control and manage the incident/emergency response. The incident controller was generally responsible for incident activities, including the development and implementation of strategic decisions and for ordering and releasing resources. Specific responsibilities included:

- assume control
- assess the incident/emergency
- conduct initial briefing
- advise NSW Maritime, Port Authority and AMSA
- activate AIIMS elements and appoint staff
- conduct planning meetings
- implement incident action plan (IAP)
- control incident operations and review IAP, and
- authorise additional resources and release requests.

The NSW Plan contained guidance on important subjects, including the role of the MERCOM, powers of intervention, places of refuge, salvage and ETVs under NEMERA. The Plan was maintained by NSW Maritime and it was required to exercise it annually, ensure sufficient staff were trained for spill response and clean up and to provide necessary training. In addition, NSW Maritime contributed to the National Plan, including pollution response equipment located in the state. The Port Authority and NSW Maritime maintained response equipment stockpiles.

As a shipboard fire at sea or in port may involve hazardous material (pollution), the NSW Plan referred to the guidelines to respond to such incidents using a multi-agency incident control team (MAICT) approach. The Plan indicated that these guidelines complemented a memorandum of understanding (MoU) between the Port Authority, NSW Maritime and Fire and Rescue New South Wales (FRNSW) to respond to hazardous materials incidents in inland and state waters.

### **Inter-agency memorandum of understanding**

In 2010, a 5-year inter-agency MoU in relation to hazardous materials incidents in inland and state waters was agreed between the New South Wales Fire Brigades (NSWFB), the regulator (NSW Maritime) and the 3 separate port corporations of Newcastle, Sydney and

Port Kembla.<sup>138</sup> The *Fire Brigades Act 1989* (New South Wales) defined a ‘hazardous materials incident’ as ‘an actual or impending land-based spillage or other escape of hazardous materials that causes or threatens to cause injury or death or damage to property’. This definition was extended in the context of the MoU to include ‘water-based spillages’.

The MoU referred to the SERM Act and various state emergency plans, including the NSW State Waters Marine Oil and Chemical Spill Contingency Plan, as the NSW Plan discussed above was titled at that time. The MoU set out the roles of NSWFB, NSW Maritime and the port corporations for responding to a hazardous materials incident either as the combat agency or the supporting agency based on incident location (MAICT approach). It also defined their responsibilities in these roles.

In inland waters, NSWFB would be the combat agency and NSW Maritime and one of the port corporations (depending on location) would be supporting agencies. Conversely, the combat agency in state waters would be either NSW Maritime or a port corporation (again location dependent) and NSWFB would be the supporting agency. The areas of responsibility in state waters to determine the combat agency were the same as those that existed at the time of this incident (Figure 19).

The MoU was intended to define roles when responding to pollution incidents where NSWFB was, or likely to be, involved as the combat agency. The MoU did not describe a situation where either NSW Maritime or a port corporation was the combat agency and the other a supporting agency.

The ‘expiry date’ of the 2010 MoU was 5 years from its commencement, unless terminated earlier. No provision to extend it had been documented. When the MoU expired in 2015, it was not formally renewed or renegotiated. In the years since it expired, the legal teams of the 3 parties to the MoU had attempted to redraft the document and formalise the MoU.

At the time of the incident, the original 2010 version of the MoU continued to be used informally by the relevant agencies, albeit under different names, on the understanding that its terms applied in practice where appropriate.

### Port Safety Operating Licence

At the time of the incident, the Port Safety Operating Licence 2019–2024 (PSOL)<sup>139</sup> governed the Port Authority’s operations. The stated purpose of the PSOL was to detail the required port safety functions, performance standards, quality assurance and applicable terms and conditions. Key requirements of the licence included risk assessments for port safety functions specified in the legislation for all 6 ports and safety management systems. The functions that were particularly relevant to this incident included VTS, emergency response and towage services licensing.

The Port Authority was required to provide a 24/7 VTS in Port Kembla, Botany Bay, Sydney and Newcastle. A port communications service was required for the smaller ports of Eden

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<sup>138</sup> Memorandum of Understanding in Relation to Hazardous Materials Incidents on Inland and State Waters between: New South Wales Fire Brigades, Maritime Authority of New South Wales, Newcastle Port Corporation, Port Kembla Port Corporation and Sydney Ports Corporation, October 2010), New South Wales Government.

<sup>139</sup> Port Safety Operating Licence 2019–2024, Newcastle Port Corporation (Trading as Port Authority of New South Wales) issued under the Ports and Maritime administration Act 1995, 1 January 2019, commenced on 1 July 2022.

and Yamba. Appropriate procedures for these services had to be implemented and maintained.

The PSOL assigned responsibility for emergency response to port-related emergencies within port boundaries to the Port Authority. Appendix 1 of the licence included maps of the boundaries of all the ports. Botany Bay boundaries extended along a 4-mile radius centred on Henry Head at the bay's northern entrance and Sydney Harbour boundaries extended along a 4-mile radius centred on Hornby Lighthouse at the harbour's southern entrance (Appendix D).

These boundaries meant that waters within Botany Bay and Sydney Harbour and a few miles from the ports' entrances were the Port Authority's licensed areas of operation. The Port Authority's VTS, harbour master's directions and towage licence system described in the following section would have been operable or enforceable within these boundaries.

Section 11 of the licence was titled Emergency Response and listed the following requirements:

- The licensee must respond to port-related emergencies, in accordance with the licensee's role in the relevant NSW emergency management plans, within the areas of operations set out in appendix 1.
- The licensee must respond to incidents as required by the NSW Plan and the response guidelines, or the relevant NSW emergency management plans, in the area of operations set out in appendix 2.
- The licensee shall comply with the emergency response requirements set out in appendix 5.

Appendix 2 of the licence replicated the regions and boundaries map from the NSW Plan for notifications and response purposes (Figure 19) and was titled 'area of operations for out of port oil and chemical spill responses' to show the separate areas within coastal waters that were allocated to the Port Authority and NSW Maritime. Most of these waters lay outside port boundaries, where the Port Authority's towage licence system and VTS operated.

In addition, the licence referred to the National Plan, NSW Plan, Port Authority emergency response plan and other relevant plans. Appendix 5 (Emergency Response) of the licence outlined response capability, response plans and response time, assistance to other agencies and exercises.

The Port Authority was also responsible for promoting the provision of safe and efficient towage services in Port Kembla, Botany Bay, Sydney and Newcastle. This requirement was to be met by implementing a 'towage licence system' to license third party towage providers in these 4 ports.

### **Towage licence system**

The Port Authority had implemented a 'towage licence system' to license towage providers that met licensing requirements. During the emergency response to this incident, harbour tugs from Port Botany were deployed and relevant requirements from the 'Port of Botany Bay unrestricted towage licence'<sup>140</sup> are described below.

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<sup>140</sup> Towage Licence, Port of Botany Bay (unrestricted), v1.0, 22 May 2020, Newcastle Port Corporation trading as Port Authority of New South Wales.

Clause 5 of the Botany Bay unrestricted towage licence required the towage provider to provide emergency services 24 hours a day every day of the year in accordance with ‘schedule two’ of the licence. The provider was required to have at least 4 omnidirectional tugs with a bollard pull (BP) of not less than 55 tonnes. Schedule two required all tugs in a provider’s minimum tug fleet to be available to respond to an emergency within the applicable response time. The applicable time for a manned emergency tug was 15 minutes, 2 hours for any other tug and 24 hours for an ‘ocean towing’ tug.

An ‘ocean towing’ tug was defined in schedule two as one that was capable of safe ocean towing, equipped with an aft tow winch and towline suitable for emergency towage, and meeting survey standards for a Class 2B vessel.<sup>141</sup> The emergency tug specifications in the schedule defined an emergency tug as an ocean towing tug with a minimum fire-fighting capacity of not less than 600 m<sup>3</sup> per hour with a range of 80 m and a water deluge system. One tug in a provider’s minimum fleet had to meet the emergency tug specifications.

A harbour tug from Sydney Harbour (Port Jackson) was also deployed in the emergency response and, as such, requirements from the ‘Port of Sydney Harbour unrestricted towage licence’<sup>142</sup> were also relevant. In many respects, the requirements in the unrestricted towage licences for Sydney Harbour and Port Botany were the same or similar, but with some important differences.

Clause 5 of the Sydney Harbour licence and Port Botany licence was the same but schedule two of the licences were significantly different. Two omnidirectional tugs with a minimum BP of 45 t were required for Sydney Harbour and one tug had to meet the emergency tug specifications. The specifications required the emergency tug to have firefighting capability but an ‘ocean towing tug’ was not required. The response time for a manned emergency tug was 60 minutes and 2 hours for any other tug.

Annexure one of the towage licences for Port Botany and Sydney Harbour defined the boundaries of the ports by replicating the maps included in the PSOL. As such, the Port Authority could direct a towage provider’s tugs, including emergency tugs, within the port boundaries that extended about 4 miles for the port entrances.

The towage licences did not refer to the National Plan or the emergency towage vessels (ETVs) defined in the Plan. The emergency tug specifications under the licences were not the same as those for AMSA-contracted ETVs (see the section titled *Emergency towage services contract* under *Svitzer Australia*). As such, the harbour tugs in Port Botany and Sydney Harbour were ‘vessels of opportunity’ under the National Plan.

### Port Authority procedures

The safety management systems (SMSs) of Port Authority-managed ports included incident and emergency response plans and procedures to meet its obligation to comply with the NSW Plan and its PSOL. The following documents from the Port Kembla, Port Botany and Sydney SMSs were relevant and were used to respond to the incident:

- Port Kembla Marine Oil & Chemical Spill Contingency Plan, 2021<sup>143</sup>

<sup>141</sup> A Class 2 B vessel is essentially a non-passenger vessel for offshore operations (generally within 200 miles from land).

<sup>142</sup> Towage Licence, Port of Sydney Harbour (unrestricted), v1.0, 22 May 2020, Newcastle Port Corporation trading as Port Authority of New South Wales.

<sup>143</sup> Port Kembla Marine Oil & Chemical Spill Contingency Plan, A Sub-plan of the Illawarra Emergency Management Plan (Illawarra EMPLAN), Revision 12, 30 November 2021, Port Authority of New South Wales.

- Incident Management Procedure, 2021<sup>144</sup>
- Sydney Harbour and Port Botany Marine Emergency Response Plan, 2021<sup>145</sup>
- Port Kembla Emergency Response Plan, 2021<sup>146</sup>
- Pollution Response Plan Botany, 2022<sup>147</sup>
- Pollution Response Plan Sydney, 2022<sup>148</sup>
- VTS Operations Procedure, Marine Pollution, 2021<sup>149</sup>
- VTS Operations Procedure, Marine Pollution Prompt, 2021<sup>150</sup>
- Marine Pollution Emergency Checklist (VTS Operations Procedures), 2021<sup>151</sup>
- Emergency Response Checklist – First Strike Oil Spill (Sydney & Port Botany), 2020<sup>152</sup>

The Port Kembla Marine Oil & Chemical Spill Contingency Plan derived much of its content from the 2012 version of the NSW Plan. This comprehensive document stated that the Plan had been established under the authority of the IGA between the National Plan and NSW Plan (2012). The Plan referred to the National Plan, AMSA, intervention and salvage but did not describe the role of MERCOCOM. Its stated aim was to outline the response arrangements for spills and potential spills in Port Kembla’s boundaries and it specified that the Port Authority was the combat agency in state waters defined in the NSW Plan.

The stated purpose of the Incident Management Procedure was to establish a common basis for incident management. The scope referred to incidents as defined in AIIMS and the procedure was intended to cover different incident types, including those that the Authority was obliged to respond to or where its staff were called to intervene, indicating a broad scope.

The procedure referred to the 5 fundamental AIIMS principles of flexibility, management by objectives, functional management, unity of command and span of control. An outline of applying these principles was provided followed by guidance on the following subjects:

- incident notification (requirements)
- incident controller (tasks and responsibilities)
- incident management team (team functions and tasks)
- incident classification (characteristics, processes and notifications for the 3 incident levels)
- reporting to external agencies

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<sup>144</sup> Incident Management Procedure, Issued 2 November 2021, Port Authority of New South Wales.

<sup>145</sup> Sydney Harbour and Port Botany Marine Emergency Response Plan, Revision 5, 19 October 2021, Port Authority of New South Wales.

<sup>146</sup> Port Kembla Emergency Response Plan, Revision 2, 8 December 2021, Port Authority of New South Wales.

<sup>147</sup> Pollution Response Plan Botany, Version 3, 10 May 2022, Port Authority of New South Wales.

<sup>148</sup> Pollution Response Plan Sydney, Version 3, 10 May 2022, Port Authority of New South Wales.

<sup>149</sup> VTS Operations Procedure 3.2.2 – 01, Marine Pollution, Revision 1, 18 October 2021, Port Authority of New South Wales.

<sup>150</sup> VTS Operations Procedure 3.2.2 – 01, Marine Pollution, Revision 1, 19 October 2021, Port Authority of New South Wales.

<sup>151</sup> Marine Pollution Emergency Checklist, VTS Operations Procedures 5.2-09, Revision 1, 18 October 2021, Port Authority of New South Wales.

<sup>152</sup> Emergency Response Checklist – First Strike Oil Spill (Sydney & Port Botany), Revision 7, 16 January 2020, Port Authority of New South Wales.

- location for incident management (the control centre)
- incident action plan (functions of a plan and items to consider for inclusion)
- incident conclusion (the process)
- debriefing (for learnings and improvements)
- incident investigation (if considered necessary).

The Sydney Harbour and Port Botany Marine Emergency Response Plan stated that it had been developed in accordance with the EMPLAN, NSW Plan, Sydney Harbour Marine Emergency Plan and the MoU between the Port Authority, NSW Maritime and FRNSW. The Plan was developed to comply with relevant New South Wales legislation and the PSOL and its scope covered both marine incidents and port sites where the Port Authority had safety oversight. Guidance to respond to incidents and emergencies such as groundings, collisions and fires was outlined. The Plan was intended to complement various other plans and procedures, including the Incident Management Procedure above.

The Port Kembla Emergency Response Plan was similar to the plan for Sydney described above with the same key details, including references to the same legislation and higher-level state plans.

The Port Botany and Sydney pollution response plans were the same in several key respects with their respective geographical scope focused on specific sites in each port and certain pollutants handled there. Both plans referred to the higher-level state plans, legislation, PSOL and MoU referred to above.

The VTS Operations Procedures, Marine Pollution, and Marine Pollution Prompt, respectively, were complimentary documents. The procedure was intended to ensure compliance with the PSOL, NSW Plan and the related Port Kembla plan. Its stated scope was Port Kembla VTS and the related prompt was intended as an aide-mémoire for the VTS operator. The prompt covered subjects such as notifications required (including informing AMSA if the incident was outside state waters and FRNSW if in inland waters). A map with the Port Authority's area of responsibility in coastal waters was provided and guidance on information to be obtained and logging events was included.

The Marine Pollution Emergency Checklist provided an extensive checklist and guidance on immediate response actions for Sydney VTS, including required notifications. Harbour master and VTS manager actions included setting up an IMT if the incident was in the Port Authority's area of responsibility and, if outside state waters, informing AMSA. A template for an event log was included. The Emergency Response Checklist (First Strike Oil Spill) for Sydney and Port Botany referred to the NSW Plan (2016 version) and provided a list of information to be collected, checks to be completed and an event log template.

These Port Authority plans and procedures collectively contained enough information to enable compliance with the NSW Plan and National Plan.

### **Staff training and experience**

Several Port Authority officers, most based in Sydney, were part of its IMT for this incident. Key team members had completed AIIMS and emergency management training, were experienced former seafarers with shipboard senior management experience followed by significant port management experience, including as harbour masters. They had

participated in routine emergency exercises, appropriate for their day-to-day port management duties.

The Port Authority's chief operating officer (COO) was the incident controller (IC) and assisted by the harbour masters that reported to him. In addition to experience as a shipmaster, the IC had extensive experience in senior port management roles in Queensland, Western Australia and New South Wales.

## Towage and salvage providers

Tugs operated by the towage providers Svitzer Australia (Svitzer) and Engage Towage were deployed to assist *Portland Bay* over the course of the incident. In addition, Svitzer provided AMSA-contracted emergency towage capability (ETC) services under the National Plan. The salvage operation was carried out by United Salvage, using Engage Towage's Sydney-based harbour tugs.

### Svitzer Australia

Svitzer Australia (Svitzer) was the Australian subsidiary of a global company with the same name that has provided marine services, including towage, in many countries for several decades. Svitzer provided harbour towage services across Australia in several states, including New South Wales.

At the time of the incident, 7 of Svitzer's Sydney-based tugs, including *Bullara*, serviced Port Botany and Port Jackson.<sup>153</sup> Nine other tugs, including *Svitzer Glenrock*, serviced the Port of Newcastle while 3 tugs provided harbour towage in Port Kembla. The Port Authority's towage licence system requirements applied to harbour tugs in these ports, including the provision of 'emergency tugs' under that system as previously described.

In addition, Svitzer was contracted by AMSA to provide emergency towage vessels (ETVs) under the National Plan arrangements in most of the strategic regions identified in the Plan.

### Emergency towage services contract

Under the level 2 ETC services contract with AMSA, Svitzer provided services in 9 of the 11 strategic regions.<sup>154</sup> The contract identified 9 specific level 2 capability ETVs and their home ports (usual location). *Svitzer Glenrock* was identified as the nominated level 2 capability ETV for the New South Wales region with Newcastle being its home port.

The various ETVs met the level 2 capability requirements for their respective regions, which were different in terms of minimum bollard pull (BP) and fuel capacities. The minimum required BP for the ETVs ranged from 35 t to 60 t (the minimum required for the New South Wales region, serviced by *Svitzer Glenrock*, was 60 t).

Under the contract, Svitzer was required to nominate a vessel to provide 'on task services' in accordance with a contract-defined 'specification' for the provision of ETC services. Reference to 'on task' meant that AMSA had activated Svitzer in accordance with the contract at the relevant rate (hire). The activation required AMSA to issue an 'on task direction' as per the contract. The 'specification' comprised 11 subjects, including ETC

<sup>153</sup> Svitzer operated another 2 Commonwealth-owned tugs there on behalf of the Australian Defence Force (these tugs were not used or available for commercial purposes).

<sup>154</sup> Contract for Level 2 Emergency Towage Capability Services between AMSA and Svitzer Australia, 1 March 2019.

operations and services, operational performance, quality management and work, health and safety management.

The nominated ETV for a region was required to remain in the region unless directed or approved by AMSA. Svitzer could alter the nominated vessel by notifying AMSA in writing. This formal process would be used, for example, if the nominated vessel was to be taken out of service and replaced by another that could fulfil the contractual terms and conditions, which are summarised in this section.

Under the contract, Svitzer could ask AMSA to allow a vessel providing on task services to cease providing those services and be used by Svitzer for its own commercial purposes, such as to provide commercial salvage or towage services to third parties (identified as 'related services'). If AMSA consented, the vessel was considered a 'released vessel'. Importantly, on task services and related services could not be provided at the same time.

Schedules annexed to the contract provided various ETC specifications. At least one ETV in a region had to meet or exceed the survey standard for a Class 2B vessel. The nominated ETV(s) in a region had to be capable of performing (at all times) all operational roles in the region from the home port. The operational roles included providing 'first strike capabilities' in the event of a shipping incident or casualty. First strike capabilities in this context were defined as including:

- fighting fire
- preserving life
- towing a ship out of immediate danger
- stabilising a casualty to prevent further damage to the ship or the environment
- towing or escorting a casualty to a place of refuge (as opposed to a place of repair)
- protecting the marine environment from pollution
- providing related services as directed by AMSA.

The main requirements and specifications for performing the operational roles outlined above included the following:

- meet the IMO Guidelines for Safe Ocean Towing, specifically requirements in paragraph 11 of the guidelines (see the section titled *Ocean towing guidelines* under *Towage*)
- availability to respond to any incident on a 24/7 basis
- ability to respond to an on-task direction within the required timeframe (2 hours)
- equipped to facilitate emergency towage for vessels likely to be in the region
- an aft tow winch with a suitable towing line capable of safe ocean towage
- at least 2 functional towage kits, including a stretcher tow line, messenger line and shackles
- a functional aft tow winch with at least 300 m of tow wire or equivalent
- towage equipment capable of connecting from fore or aft
- classed as a 'sea going' or escort tug
- a fully laden speed exceeding 8 knots
- the minimum BP specified for each of the regions

- appropriately trained, competent and certified crew
- capability to conduct operations in excess of 7 days
- capability to operate 200 miles from shore (Class 2B Survey or equivalent), and
- a global maritime distress and safety system communication suite or Fleet One Inmarsat system for voice and data services.

The contract also included key performance indicators (KPIs) for items under the broad categories of availability, equipment and ETC training and drills.

### Standard operating procedures

A separate document containing AMSA-approved standard operating procedures (SOPs) for ETV operations was deemed to be part of the contract.<sup>155</sup> Svitzer was required to comply with these SOPs and compliance was to be audited using relevant KPIs. The procedures applied to all level 2 ETVs in the 9 strategic regions.

The SOPs covered 14 subjects, including:

- ETV availability
- positioning
- command and control
- operational role
- alerting and tasking procedure
- communications
- reporting
- training and exercises
- emergency towing procedures.

The procedures reiterated that the primary operational role of an ETV was stabilising a casualty to avoid danger until relieved by a vessel operating under a commercial arrangement, as well as the obligation of the master or owner to make such a salvage or towage arrangement. There were multiple references to MERCOM directions for ETV tasking and utilisation, which were consistent with AMSA's Maritime Assistance Services procedures. All ETV requests were to be made to the MERCOM via AMSA, which would issue an 'on task' direction if the request was approved.

### Training and drills

Training records indicated that Svitzer tug crews in the different regions had attended 2-day training courses in emergency towage. Course documentation indicated that they comprised a 1-day session in classroom learning followed by one day of practical training on board Svitzer tugs. The documentation indicated that each course was identical in relevant respects. All training courses were delivered by salvage experts from the salvage service provider, United Salvage.

The records indicated that a standard 2-day training course, attended by 11 Svitzer tug crewmembers and involving *Svitzer Glenrock* was conducted in Newcastle on 30 and

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<sup>155</sup> Standard Operating Procedures for the Contract for Level 2 Emergency Towage Services between AMSA and Svitzer Australia, 1 April 2019.

31 March 2022 (3 months before the incident). On 30 June and 1 July 2022 (3 days before the incident), the standard course was delivered to 15 attendees in Sydney and involved *Bullara* in Port Jackson.

These 2-day courses had largely been the format of training since 2019. A large number of ‘audit and drill reports’ provided by AMSA showed that, until 2016, regular audits of the KPIs under the contract were being conducted. Other records provided by AMSA largely comprised the routine fire and other drills conducted on ETVs, which were not directly relevant to emergency towage training. A substantial proportion of the records provided indicated detailed recent emergency towage training associated with AMSA’s level 1 capability ETV, *Coral Knight*, which serviced the Great Barrier Reef region in Queensland.

Records obtained from Svitzer confirmed that annual exercises under National Plan requirements were conducted after this incident in 2022 and 2023. The last annual exercise before the incident was conducted in 2018, about 4 years prior as previously described (see the section titled *Annual exercises under National level*).

### ***Svitzer Glenrock***

*Svitzer Glenrock* had a length of 32 m, beam of 12 m and enough propulsive power to provide a BP of 85 t (Figure 20). The tug was built in 2018 and began operating in Newcastle that year. In 2019, it was contracted to AMSA under the ETC level 2 services contract as the nominated ETV for the New South Wales region based in Newcastle, where it was at the time of the incident.

**Figure 20: *Svitzer Glenrock***



Source: Svitzer Australia

The modern tug met all level 2 ETC contract requirements and specifications described above. In addition to a BP about 40% more than the minimum required, it was equipped

with a 54 mm diameter, 800 m long towing wire with ‘Veethane’<sup>156</sup> sleeves and other equipment required under the contract. Table 3 lists some key items of its emergency towing equipment.

**Table 3: Svitzer Glenrock’s emergency towing equipment (key items)**

Equipment	Description	Quantity	Remarks
Main Tow Wire	Diameter 54 mm, Length 800 m	1	Veethane sleeves fitted
Towing Pennant	Diameter 64 mm, Length 40 m	2	
Towing Stretcher	Diameter 88 mm, Length 50 m	2	
Chafe Chain	Stud link (U3) 2.5-inch, Length 12.5 m	2	In store
Grommet Chain	Diameter 13 mm, Length 1 m	2	
Stopper Chain	Diameter 13 mm, Length 3 m	1	
Shackles, Slings, Ropes	Various	Various	

Source: Svitzer Australia

### ***Bullara***

*Bullara* was a 32 m tug built in 2000. In 2020, the tug’s BP was tested in both propulsion directions. A steady BP of about 51 t (ahead) and 55 t (astern) and a maximum BP of about 55 t (ahead) and 56 t (astern) was recorded and certified.

At the time of the incident on 4 July, the tug was in Port Jackson (Sydney Harbour). It was one of the harbour tugs that met the ‘emergency tug’ requirements under the Port Authority’s towage licence system as previously described.

On 4 July, *Bullara* was not equipped as an ETC level 2 tug. Table 4 below lists key items of its emergency towing equipment at the time, which included a 275 m long towing wire with no Veethane sleeves. Under the National Plan arrangements, it was a level 3 capability tug or a ‘vessel of opportunity’ that could be tasked under a suitable arrangement. On 4 July, AMSA used its existing contract with Svitzer to task the tug to assist *Portland Bay*.

**Table 4: Bullara’s emergency towing equipment (key items)**

Equipment	Description	Quantity	Remarks
Main Tow Wire	Diameter 44 mm, Length 275 m	1	No Veethane sleeves
Towing Pennant	Diameter 64 mm, Length 40 m	1	Stored on aft winch
Towing Pennant	Diameter 44 mm, Length 30 m	2	Veethane sleeves fitted
Towing Stretcher	Diameter 88 mm, Length 50 m	2	Aft winch and store
Strongline	Diameter 72 mm, Length 100 m	2	Stored on aft winch
Chafe Chain	Stud link (U3) 2.5-inch, Length 12.5 m	2	
Pennant Chain	Diameter 16 mm, Length 3.5 m	1	
Grommet Chain	Diameter 13 mm, Length 1 m	1	
Stopper Chain	Diameter 13 mm, Length 3 m	1	
Shackles, Slings, Ropes	Various	Various	

Source: Svitzer Australia

<sup>156</sup> Veethane (also known as V-Thane) polyurethane is a very hard-wearing but flexible thermoplastic. Veethane sleeves or tow wire protectors prevent abrasion and chafing of the wire against fairleads and bulwarks.

## Engage Towage

Engage Towage was a joint venture with Engage Marine, a large company that delivered various marine services, including towage, across Australia. Engage Marine owned and operated a large fleet of vessels, including tugs, in several Australian ports. Engage Towage was a smaller operation with 5 tugs, which provided harbour towage in the ports of Sydney and Geelong, Victoria.

### Tugs used

The Port Botany-based *SL Diamantina* (Figure 21) initially deployed on 4 July to assist *Portland Bay* at the request of the Port Authority. It was the first tug to arrive near the anchored ship by which time United Salvage had partnered with Engage Towage for the salvage operation and directed the tug.

**Figure 21: *SL Diamantina* off the ship on 4 July**



Source: *Portland Bay*'s master

The 2 other Engage Towage Sydney-based tugs, *SL Martinique* and *SL Fitzroy*, were also used in the salvage operation as previously described. All 3 Engage Towage tugs were of similar size with a length between 28 and 32 m. All were built in 2008, had similar capabilities in terms of BP (build design was about 65 t) and had towing lines suited for their harbour towage operations in Sydney.

The Port Authority's towage licence system requirements previously described, including the emergency deployment of tugs, were applicable to Engage Towage. When it deployed on 4 July, *SL Diamantina*'s aft towing winch was not operational, which made it unsuitable for emergency towage. Before it was deployed on 4 July, *SL Martinique* was provided with additional towing equipment, including a towing stretcher and towing shackles, in consultation with United Salvage.

*SL Martinique* connected an emergency soft towline to the ship's port shoulder (*Bullara*'s line was connected to the starboard shoulder) for the attempted tow to sea on 4 July as previously described. On 6 July, in addition to *SL Martinique*, *SL Fitzroy* connected to the ship's port quarter with a soft towline from its forward towing winch for the tow into Port

Botany as per the towage plan. When the tow was in port limits, *SL Diamantina* connected through ship's aft centre lead.

The Engage Towage tugs were used under United Salvage's LOF agreement for the salvage operation. They were not tasked as 'vessels of opportunity' (level 3 ETC) under National Plan arrangements.

## United Salvage

According to United Salvage,<sup>157</sup> its history as a salvage services provider dated back to 1938 and following ownership by the Australian companies Howard Smith and Adsteam,<sup>158</sup> it became part of Svitzer. United Salvage reported that it ceased operations in 2007 before reactivating in 2020 to continue providing salvage and emergency services.

While any towage provider could have provided salvage services or made tugs available for salvage, United Salvage was the only dedicated salvage and emergency response service provider based in Australia at the time of the incident. United Salvage was a member of the International Salvage Union (ISU) and the only such salvage company in Australia at the time. The company stated that its managing director was an executive member of the ISU and had been a professional salvor since about 2000. The company reported that it provided specialised emergency response, salvage, wreck removal, decommissioning and environment support services in Australia, New Zealand and the South Pacific.

United Salvage's head office was in Port Kembla, New South Wales, where it maintained a warehouse for salvage equipment. The company had strategically located bases in Queensland (Cairns and Mackay) and Western Australia (Dampier) that held oil spill capture and containment equipment. It provided related services to industry and towage providers, such as the 2-day training courses in emergency towage as previously described.

United Salvage did not own or operate any tugs or other vessels that could be used for emergency towage and relied on procuring these services from towage providers when required. As previously noted, United Salvage had an existing agreement with Engage Towage with which it partnered for the use of its tugs throughout the salvage operation. While United Salvage was the salvage contractor identified in the LOF agreement, Engage Towage and its tugs were the other parties included in the salvage award to be arbitrated (see the section titled *Law of salvage* under *Salvage*).

Both Svitzer tugs, *Bullara* and *Svitzer Glenrock*, which assisted with the ship's emergency towage, operated under the terms of Svitzer's ETC (level 2) contract with AMSA throughout and were not part of any salvage award. On 4 July, AMSA tasked *Bullara* but later advised Svitzer that its use should be included under the existing LOF salvage agreement (Svitzer however did not accept this). *Svitzer Glenrock* was tasked by AMSA and not released or offered under LOF terms.

## Emergency towage availability

As noted above, United Salvage relied on procuring emergency towage from a towage provider to perform salvage operations. Throughout its early history, the company had

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<sup>157</sup> United Salvage (2025) <https://unitedsalvage.com.au>, accessed 19 March 2025.

<sup>158</sup> Adsteam refers to Adsteam Marine, which was acquired by Svitzer Australia in 2007.

always had ready access to the significant towage assets of its owners and, as such, was not limited in this critical aspect for the provision of salvage services.

In 2002, when United Salvage was a wholly owned subsidiary of Adsteam Marine, the latter made a submission to the Productivity Commission following the preliminary findings of its inquiry into harbour towage.<sup>159</sup> Adsteam Marine submitted, in part, that a comprehensive privately funded ocean salvage and coastal protection capability existed across Australia at that time, but it was concerned that if port authorities were allowed to issue exclusive towage licences, the existing national and salvage and coastal protection capability could be undermined.

Adsteam Marine's submission included a paper, titled 'Adsteam Marine Limited Salvage Capability and Capacity, June 2002'. This salvage capability and capacity paper addressed various salvage matters and included important details about United Salvage's operations. At that time, United Salvage had '13 frontline salvage/harbour tugs with offshore capabilities' stationed in strategic locations across Australia. In addition, it operated a large fleet of harbour tugs, the majority of which had some ability to provide emergency support. Adsteam Marine reported that between 1 January 1999 and 27 March 2002, United Salvage had attended 27 casualties (most had required towage).

As previously described in the section titled *Overview of national arrangements*, NMEMA was based on having a minimum level of emergency towage capability (ETC) along the Australian coast and a regulatory framework to support a coordinated approach to emergency response. At the time of the incident, the AMSA-managed ETC arrangements under the National Plan were provided by 12 contracted ETVs (one ETC level 1 and 11 level 2 ETVs). 'Vessels of opportunity' (level 3 ETVs) were exactly that and would have to be sourced from available vessels with no assurance of their capability for offshore salvage operations. While anchor handling and offshore support vessels operating in some regions, such as north-west Western Australia, are inherently more capable and better equipped for towing operations as vessels of opportunity, this was not the case in other regions, including the east coast of Australia.

In practice, the emergency towage assets available at the time of the incident comprised the ETC arrangements under the National Plan. A party intending emergency use of a contracted ETV had to make such a request to AMSA, which had direct control and could either release the ETV or task it. As such, the actual emergency towage available in general was essentially the same as the minimum ETC required under the National Plan. This situation would have been fully understood by AMSA, its contracted towage providers and United Salvage.

## Emergency response

This section provides additional background and context to the actions and decisions taken in relation to significant events and matters previously detailed (see the section titled *The incident*). This additional information is based on various sources of evidence, including recorded data, documented records and recollections (interviews and statements) of key personnel that managed or were directly involved in the response.

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<sup>159</sup> Adsteam Marine, *Submission to the Productivity Commission inquiry into Harbour Towage*, 24 June 2002.

## Emergency develops

When interviewed by the ATSB, *Portland Bay*'s master stated that the decision to put to sea on the afternoon of 3 July was appropriate as the berth was close to the port's entrance and the increasing swell made it 'dangerous' to remain there. Neither the master nor the chief engineer had any concerns about putting to sea, including the maintenance on auxiliary blower number 2 that was postponed on the previous day due to the worsening weather.

The master reported that, at sea, the ship rolled and pitched heavily and slamming reduced speed to less than 3 knots with the main engine at full ahead. The ship steamed and drifted intermittently and remained 8–15 miles from the coast. According to the master, it had been 'impossible' to steam 50 miles away from the coast (as required by the ship's SMS procedures).

The master noted that some other ships were drifting in the general area and some were 4 miles from the shore. Port Kembla VTS had advised that ships drifting off the port could do so at a safe distance of 'around 12 miles'. Neither Port Kembla VTS nor Sydney VTS were monitoring *Portland Bay* or other ships outside their respective port limits or boundaries (about 3 to 4 miles from port entrances). According to the Port Authority, its VTS' were 'certified by AMSA within geographical areas (either approximately or slightly larger than the port boundaries)' and stated that it did 'not manage a coastal VTS'.

The master recalled that after the engine was restarted following the heavy rolling at 0330, the ship was put on a '110° heading' and experienced 'less rolling'. By 0450, the distance from the coast had increased to 12 miles and the ship was steaming directly away from it until auxiliary blower number 2 failed and engine speed had to be reduced. Table 5 lists significant events while the emergency was developing.

**Table 5: Events from 0400 to 0719 on 4 July**

4 July	Event	Notes and remarks
0400	<i>Portland Bay</i> steaming ~12 miles off the coast	Advice from VTS was to remain ~12 miles off coast
0450	Auxiliary blower number 2 fails, speed reduced	Blower repairs in Port Kembla were postponed
0513	Speed limited to dead slow ahead (42 rpm)	Ship effectively disabled in rough weather
0523	Unsuccessful attempts to notify Pacific Basin	Ship's dedicated manager was traveling
0533	Pacific Basin notified of ship's situation	Marine manager advises steaming away from coast
0543	Fleet manager provides engineering advice	Chief engineer actioning advice; Coast <10 miles off
0606	Master voiced concern about stranding	Efforts to increase speed have not succeeded
0624	<i>Portland Bay</i> displaying NUC signals	Ship drifting rapidly towards coast ~8 miles off
0634	Efforts start to use engine local controls	Master considering requesting tug assistance
0650	Master and fleet manager discuss calling tugs	Fleet manager asks full speed to be tried locally
0655	Master orders Marine Rescue to be called	Efforts to increase speed were unsuccessful
0657	Port Kembla VTS notified and tug(s) requested	Coast <7 miles off; Marine Rescue did not respond
0659	Port Kembla VTS informs Monson about tug(s)	VTS makes notifications within the Port Authority
0703	Marine Rescue notified and tug(s) requested	Marine Rescue advises authorities will be informed
0708	Master considering PAN or MAYDAY broadcast	Coast 6 miles (NSW waters limit extend 3 miles)
0709	Marine Rescue suggests PAN broadcast	Drifting at ~4 knots towards coast and NSW waters
0716	<i>Portland Bay</i> 's PAN broadcast on VHF radio	Ship 5.8 miles from coast, 11 miles south of Sydney
0719	Pacific Basin asks master to prepare to anchor	Sydney VTS starts monitoring ship's movement

By 0513, it became apparent that, with one operational blower, speed could not be increased past dead slow ahead (42 rpm). The master decided to inform Pacific Basin (overseas) of the engine issue that had disabled *Portland Bay* in bad weather off the lee shore (then 11 miles off). While there were some initial difficulties contacting Pacific Basin (see table 5) by 0533, it was notified.

The following 85 minutes were largely devoted to unsuccessful attempts to increase engine speed with Pacific Basin providing engineering advice. The master voiced increasing concerns from time to time as the ship drifted towards the shore at about 3 knots and tug assistance became more urgent.

At 0655, after further discussion with Pacific Basin, the master decided to notify Australian authorities. The disabled ship was less than 7 miles from the shore and potentially 2 hours from stranding. Port Kembla VTS was notified at 0657 and tug assistance requested. Two minutes later, VTS passed the request for a tug to the local agent, Monson, in Port Kembla.

At 0703, intending to notify the rescue coordination centre, the master notified Marine Rescue Port Kembla. Marine Rescue advised that relevant authorities would be notified and, a few minutes later, suggested transmitting a PAN message. At 0716, when the PAN message was broadcast, the ship was drifting relatively quickly towards the shore 5.8 miles off. Three minutes later, Pacific Basin asked the master to prepare for emergency anchoring.

### Initial response

After contacting the ship’s local agent, Monson, Port Kembla VTS made internal notifications within the Port Authority. Sydney VTS, alerted by the PAN message, identified *Portland Bay* about 11 miles from Sydney and began actively monitoring the ship’s movement. At 0725, Sydney VTS sought tugs in the port that could assist the ship (Table 6).

**Table 6: Events from 0725 to 1020 on 4 July**

4 July	Event	Notes and remarks
0725	Sydney VTS calls Svitzer for tug assistance	Svitzer is the port’s main towage provider
0740	Sydney VTS calls Engage Towage for a tug	Svitzer tug not confirmed; Engage Towage agrees
0744	Port Kembla VTS notifies AMSA	Kembla VTS advises ship could ground in 1.5 hours
0745	Sydney VTS calls AMSA to discuss tugs	Sydney VTS advises Engage Towage readying tug
0749	PAN broadcast from ship again	Broadcast states ship would ground in one hour
0751	Sydney VTS asks if emergency tug needed	Master confirms emergency tug assistance needed
0752	AMSA takes over SAR coordination for rescue	Sydney water police deploying 2 rescue vessels
0757	Sydney VTS follows up AMSA about tugs	AMSA advises the State’s ETV is in Newcastle
0758	Pacific Basin advises master agent seeking tug	Monson has asked Svitzer for a tug
0804	Monson advises master tug is being arranged	Svitzer has asked <i>Bullara</i> ’s master to deploy
0810	AMSA has sought helicopters etc. for rescue	Tugs cannot reach ship before likely stranding
0811	Master advises Pacific Basin no tug en route	Master notes PAN did not lead to tug deploying
0814	<i>Portland Bay</i> ’s MAYDAY broadcast	NSW Maritime has contacted Port Authority
0828	Three rescue helicopters en route to ship	Tasked by AMSA; Ship is <3 miles off coast
0836	Ship in readiness for emergency anchoring	With both anchors when water depths permit
0840	AMSA incident management team established	For a moderate incident (AMSA level 3)
0848	<i>SL Diamantina</i> (Engage Towage) deploys	Aft towing winch is inoperable; ETA to ship 1025

4 July	Event	Notes and remarks
0905	<i>Portland Bay</i> starts anchoring 1 mile from shore	Svitzer offered <i>Bullara</i> under a commercial contract
0915	Brought up to both anchors off Eagle Rock	United Salvage has partnered with Engage Towage
0930	United Salvage briefs <i>SL Diamantina</i> 's master	About LOF salvage agreement and pushing ship
0945~	Port Authority/ NSW Maritime/AMSA meeting	Establish lead agency and agree roles
0946	Rescue helicopters abandon rescue attempt	After 3 high-risk, unsuccessful winching attempts
0950	Master agrees to LOF salvage agreement	With United Salvage via <i>SL Diamantina</i> 's master
1010	<i>SL Diamantina</i> arrives off ship	Anchors holding ship 0.9 mile from the shore
1020	Port Authority assumes combat agency role	AMSA and NSW Maritime are support agencies

When interviewed, the responsible NSW Maritime manager (Manager Marine Pollution and Emergency Response) stated becoming aware of the incident when an officer from NSW Maritime in Port Kembla called and advised that Marine Rescue Port Kembla had 'informally advised' about *Portland Bay* drifting off the coast (Marine Rescue started informing various agencies from about 0710). Soon after, at about 0715, the NSW Maritime manager called JRCC to obtain information and reported being advised that JRCC 'was not aware of the incident'.

Port Kembla VTS notified JRCC at 0744, after which AMSA quickly initiated a rescue operation to evacuate the ship's crew before it stranded on the rocky shore (which was likely to occur by about 0915). The efforts to seek tug assistance remained with Sydney VTS and Monson. After initial confusion about the reason for master's request for a tug, Monson had sought a tug from Svitzer. Meanwhile Engage Towage had agreed to provide a tug but Sydney VTS also asked AMSA for an emergency tug and was advised that the state's ETV (*Svitzer Glenrock*) was in Newcastle.

At about 0800, Engage Towage also contacted United Salvage to assist and decided to deploy *SL Diamantina* from Port Botany as it had a crew on board. *SL Martinique* was not crewed and would therefore have taken longer to deploy. By the time United Salvage asked Svitzer for *Bullara* a short while later, the tug had already been offered for hire to the ship's managers/owners (via Monson).

At 0803, the NSW Maritime manager called JRCC again and was advised that it was 'trying to organise tugs to assist as soon as possible'. A few minutes later, the manager called the Port Authority's chief operating officer (COO) to exchange information and they decided to convene an inter-agency meeting to discuss the response by New South Wales agencies and AMSA.

At 0810, when planning for the helicopter rescue operation was well progressed, it became evident that no tug could reach the ship in time. The master had already broadcast another PAN message and, at 0814, a MAYDAY message.

At 0822, the ship was 3 miles from the coastline (moving from Commonwealth waters into New South Wales coastal waters) and all ports in the area remained closed. At that time, no tug or helicopter was en route nor had any agency formally assumed responsibility to lead the incident response. On board the ship, emergency anchoring preparations were underway to avoid a stranding.

While Monson was arranging to hire *Bullara*, Pacific Basin also asked the ship's hull and machinery insurance underwriter to seek immediately available tugs from international salvage companies.

In submission to the draft of this report, NSW Maritime stated that after contacting the Port Authority, the NSW Maritime manager had 'numerous discussions' with MERCOM and provided briefings to the NSW Marine Pollution Controller (MPC). According to NSW Maritime, once the ship entered state waters, the response would be led by New South Wales and that planning for a pollution response was undertaken in case the ship stranded or a pollution incident occurred.

At 0840, AMSA established an incident management team (IMT) for an AMSA level 3 incident (moderate) in accordance with its procedures (detailed in the section titled *Maritime Assistance Services procedures under National level*). The AMSA Response Centre (ARC) duty manager assumed the incident coordinator role and among various roles assigned to team members, the response advisor was assigned responsibility for MAS and ETV matters. This IMT mainly focused on the rescue operation with 3 helicopters en route. Before *Portland Bay* anchored at 0905, *SL Diamantina* had left Port Botany (directed by United Salvage) and 2 other tugs were being prepared. One of them (*SL Martinique*) would be directed by United Salvage while the other (*Bullara*) was to be hired from Svitzer by Pacific Basin through Monson.

The planned inter-agency meeting was held from about 0945, where the Port Authority, NSW Maritime and AMSA discussed establishing the control agency (combat agency). Before this meeting, NSW Maritime held an internal meeting where its MPC and senior leadership team were briefed. While the ship had been moving from Commonwealth waters towards and into New South Wales coastal waters, AMSA had not made the required request to the MPC for New South Wales to assume responsibility for the incident. Nevertheless, NSW Maritime advised the Port Authority that it should be leading the response as the combat agency designated by the NSW Plan and its PSOL. The Port Authority's COO, however, believed that while the ship had drifted into New South Wales waters, managing the incident was not necessarily within the Port Authority's jurisdiction or responsibility.

At 0946, the helicopter rescue was attempted but abandoned as too hazardous and the anchors seemed to be holding the ship. In addition, *SL Diamantina* was approaching and, although incapable of towing, it could provide some assistance and would be on scene if the crew abandoned the ship.

After 0950, when Pacific Basin informed the insurance underwriter that an LOF salvage agreement had been made with United Salvage, the insurer's attempts to seek tugs from international salvors was discontinued.

At about 1020, after further discussion at the inter-agency meeting, the Port Authority assumed the combat agency role. According to the COO, this decision was based on the Port Authority having better capability to perform that role than NSW Maritime and to assist the latter under the inter-agency MoU previously described. The responsible NSW Maritime manager, however, stated that the agency was equally capable of performing the combat agency role. The manager further advised that the incident was within the Port Authority's area of responsibility, which was explicitly defined in its PSOL and the NSW Plan, and the MoU was not relevant in this case.

## Incident management

### 4 July

After the Port Authority assumed the combat agency role at 1020, its COO took charge as the IC and established an IMT, which would be supported by AMSA and NSW Maritime officers. The first IMT meeting followed from about 1030 and United Salvage representatives attending provided an update of the ship's situation. The IC developed an incident action plan (IAP) with NSW Maritime. With nearby ports closed, the IAP was based on towing the ship away from the coast (the anchors were dragging slowly and it was about 0.9 of a mile from the shore at the time) and the IC directed the salvor, United Salvage, accordingly.

United Salvage intended to substitute *SL Diamantina* (with no operational aft towing winch and towing capability) with *SL Martinique* and providing it additional towing gear. Meanwhile, Svitzer had been preparing *Bullara* in anticipation of Pacific Basin hiring the tug. However, after Monson decided not to hire *Bullara*, AMSA started planning to task the tug as it had low confidence in the capability of *SL Diamantina* and considered the combined capabilities of the Engage Towage tugs were insufficient. In submission to the draft of this report, Pacific Basin advised that it had not instructed Monson not to hire *Bullara* or other Svitzer tugs.

By 1033, it had become evident that the salvor's plan for *SL Diamantina* to push on the ship's hull was not practical in the rough seas and swell and involved high risk of serious collision damage. At 1051, after the MERCOM and ARC duty manager approved it, a tasking direction for *Bullara* was issued to Svitzer with advice that it was to proceed to the scene and standby to assist. Soon after, at 1054, *Bullara* deployed followed by *SL Martinique* 4 minutes later (Table 7).

**Table 7: Events from 1033 to 2227 on 4 July**

4 July	Event	Notes and remarks
1033	<i>SL Diamantina</i> 's master abandons pushing	The tug had collided with the shipside many times
1054	<i>Bullara</i> deploys (tasked by AMSA)	Monson is not contracting the Svitzer tug
1055	<i>SL Diamantina</i> connects soft towline to ship	Attempting to reduce load on anchor cables
1058	<i>SL Martinique</i> deploys	United Salvage direction and additional towing gear
1230	Port Authority requests tasking of State's ETV	Via AMSA liaison officer in Port Authority's IMT
1305	<i>SL Diamantina</i> abandoned efforts to secure line	Towline had parted 3 times
1400	Ship engineers abandon blower repairs	Impeller replaced but motor could not be removed
1402	<i>SL Martinique</i> arrives near ship	Tug starts connecting towline to ship's port bow
1410	<i>Bullara</i> arrives near ship	AMSA advises the tug is available under LOF terms
1433	<i>SL Martinique</i> 's towline is connected	<i>Bullara</i> connecting towline to ship's starboard bow
1455	<i>Bullara</i> 's towline is connected	Port Authority incident controller directs tow to sea
1540	Tow started (after weighing anchors)	Incident controller (IC) directs tow 20 miles to sea
1828	United Salvage asks IC to open Port Botany	Tow not progressing away from land
1835	<i>Bullara</i> 's towline parts at its inboard (tug) end	The tug has no spare towing wire
1839	United Salvage asks AMSA to activate the ETV	Alternatively have Port Botany opened
1901	United Salvage calls Svitzer for mobilising ETV	Svitzer offers ETV for hire if not tasked by AMSA
1905~	IC calls MERCOM to ask if ETV tasked	MERCOM not aware of IC request that afternoon

4 July	Event	Notes and remarks
1957	AMSA issues tasking direction for ETV	Svitzer starts preparing ETV <i>Svitzer Glenrock</i>
2015	<i>Portland Bay</i> closing on Bate Bay near Sydney	Master has prepared for emergency anchoring
2035	Ship starts anchoring 1.4 mile from land	IMT has ruled out night helicopter rescue operations
2045	Brought up to both anchors off Bate Bay	Heavy swell >8 m persists
2227	<i>Svitzer Glenrock</i> deploys from Newcastle	ETA 5 July 1200 (speed 5 knots in bad weather)

An incident control centre (ICC) was established at Port Botany to hold 2-hourly IMT meetings. The Sydney-based AMSA liaison officer embedded in the IMT structure attended the meetings virtually (as did representatives from some other agencies). Meanwhile, AMSA's IMT continued operating from the JRCC in Canberra and the responsible NSW Maritime manager physically attended JRCC as the NSW liaison officer from just before midday. The AMSA liaison officer was in contact with AMSA Canberra (both its Operations and Response divisions, including JRCC). The Port Authority was thus to be supported by AMSA and NSW Maritime in overseeing the salvage operation while it managed the incident as required by the NSW Plan (and National Plan).

In submission to the draft of this report, United Salvage advised that while the tugs were en route, it had several phone discussions with various parties, including the Port Authority's IC, Svitzer, MERCOM and the responsible NSW Maritime manager. According to United Salvage, when it followed up the IC's advice that *ADV Reliant* had a BP of 120 t, it found that the vessel had no towing line and was unsuitable.

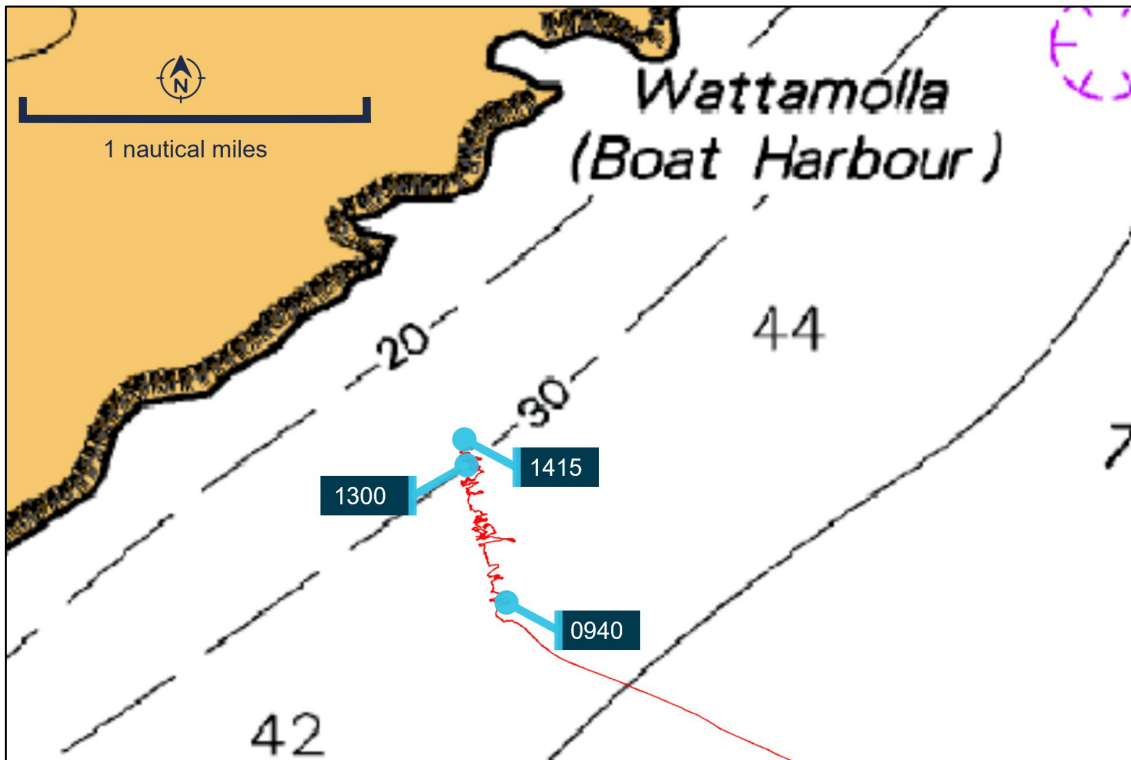
United Salvage asked Svitzer for *Bullara* and was advised that it had no objection to the tug connecting a towing line but that it should contact AMSA. United Salvage reported advising the IC, NSW Maritime manager and MERCOM of the intention to tow the ship into deeper water and, as soon as possible, seeking a place of refuge. When the IC and NSW Maritime manager indicated that they were working on plans based on the ship grounding, United Salvage reported advising them that Garie Beach was the only likely access point in case the ship started leaking fuel oil.

By 1149, after AMSA had become aware of United Salvage's intention to replace *SL Diamantina* with *SL Martinique*, it had calculated that a total BP of 120 t was needed to hold the ship and 130 t to move (tow) it. At 1230, AMSA contacted United Salvage and was advised that it intended 'to only use *SL Martinique* to tow' and that there was no requirement for *Bullara*.

At the IMT meeting held from 1230, the IC asked the AMSA liaison officer to have *Svitzer Glenrock* activated as the IC felt the state's nominated ETV might be needed and it was best to activate it early. The liaison officer reportedly passed this request on to AMSA, Canberra. By this time, *SL Diamantina* had connected a line to the ship's bow to maintain a static tow, but the line parted repeatedly and efforts to resecure it were unsuccessful, so the tug then stood by while awaiting *SL Martinique*.

The ship had continued dragging its anchors and recorded data showed that, between 0940 and 1300, the ship moved 665 m closer to the shore (Figure 22). At about 1300, *Portland Bay's* master reported adjusting the starboard anchor cable and effectively arresting the dragging of the anchors. The ship's movement then slowed and, over the next hour, it moved 70 m.

Figure 22: *Portland Bay's* movement towards the shore as its anchors dragged



Source: Australian Hydrographic Office and *Portland Bay's* recorded voyage data, annotated by the ATSB

At about 1410, after both *SL Martinique* and *Bullara* had arrived off the ship, AMSA advised Svitzer and United Salvage that *Bullara* was available to assist. It also advised Svitzer that it could opt for a commercial agreement (LOF or other terms) with United Salvage. At 1425, United Salvage requested the use of *Bullara*, which AMSA approved and repeated the earlier advice provided to Svitzer about contractual terms.

Subsequently, AMSA also discussed with Svitzer whether *Svitzer Glenrock* would need to replace *Bullara* at some stage due to the latter's limited fuel (about 40 hours of operation) and decided to revisit the subject at 0700 on the following day, 5 July.

Pacific Basin had opted out of the SCOPIC clause in the LOF salvage agreement which was documented after the master had verbally agreed to the LOF terms (see the section titled *Law of salvage* under *Salvage*). While in theory this meant that the salvor would not be entitled to greater special compensation if the salvage was unsuccessful, United Salvage believed that it could invoke the SCOPIC clause as the initial agreement had been verbal.

The NSW Maritime liaison officer attending JRCC reported that *Svitzer Glenrock* was discussed that afternoon but could not recall details about what was discussed about its activation.

By 1500, both *SL Martinique* and *Bullara* had connected a towline at the ship's port and starboard bow, respectively, to tow the ship. At 1540, when the ship was 0.7 of a mile from the shore, the tow began under United Salvage's guidance. The IC had directed that the ship be towed 20 miles from the coast to allow engine repairs to be conducted on board in a relatively safe location. The ship's engine was run at slow speed to assist the tow, but within minutes it failed.

At 1730, AMSA advised Svitzer that it considered *Bullara* to have been operating under a commercial agreement since 1400. Svitzer, however, advised that the tug had continued to operate under AMSA’s tasking direction. After further correspondence, AMSA advised that it considered the tug was operating under LOF terms from about 1500. Svitzer did not agree with that assertion and the matter remained unresolved.

Over the next couple of hours, with the ship’s engine not operational and the rough seas and heavy swell, the tow made little progress away from the coast. By 1828, it was about 2.5 miles from the coast south of Port Botany, when the salvor asked the IC to open the port so the ship could be towed there for shelter given the lack of progress to tow it to sea (at that rate, it would have taken over 28 hours to be 20 miles from the coast). However, before this request could be considered, *Bullara*’s towline parted at 1835.

*Bullara*’s towline parting triggered various actions and decisions to manage the unstable situation and the ship’s certain drift towards the shore in the prevailing weather. The towline could not be recovered, the tug had no spare towing line and the load on *SL Martinique*’s towline had to be reduced to prevent it also parting.

At about 1839, after informing Svitzer and Engage Towage about the situation, United Salvage called AMSA and asked for *Svitzer Glenrock* to be activated or have Port Botany opened. At 1901, while AMSA was considering the ETV request, United Salvage asked Svitzer via email whether it could mobilise the ETV. Svitzer replied soon afterwards, advising that AMSA would follow the ETV activation process if it required to task the ETV or it could be hired by the shipowner under a TOWHIRE agreement. According to United Salvage, the best available tugs should always be made available for salvage by their owners.

At about the same time, the Port Authority’s IC called the MERCOM to get an update on the ETV request that had been made after 1230 via the AMSA LO. The MERCOM was not aware of the request but agreed to activate the ETV and offered to issue directions to allow the ship to shelter in Port Botany. The IC, however, advised that the directions could be issued but would not be actioned until the weather had abated sufficiently for the port to reopen and the ship to be safely towed there. The MERCOM also asked if NSW legislation or harbour master directions could be used to direct the ship into port. The IC advised that the harbour master’s directions only applied inside port limits and powers available under state legislation were limited.<sup>160</sup>

At 1945, United Salvage emailed the MERCOM stating: ‘formally request permission to enter a place of refuge being Port Botany to remove this tug and casualty from their current situation’.

At 1957, after MERCOM approval, AMSA issued a tasking direction to activate *Svitzer Glenrock*. Svitzer felt that due to the preparation and travel time, the ETV could have been activated earlier. Meanwhile, the Port Authority’s IMT monitored the ship’s movement towards Bate Bay. Its engine was not operational and the only available option was emergency anchoring again, this time with *SL Martinique* connected. The bad weather

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<sup>160</sup> Under the relevant New South Wales legislation, the incident ship/master could be directed (for example to take a towline, to enter a port or to not enter state waters). However, there were no powers to direct another ship, tug or salvor to assist another ship. In addition, there was no provision in the legislation to direct the owner or lessee of a port facility or berth to accommodate a ship in need of refuge. The Port Authority did not own any such port facility or berth.

continued with waves in the south-easterly swell and seas about 5 m high on average and rising to more than 8 m at times.

At 2028, Svitzer acknowledged United Salvage’s email advising that it had asked AMSA to activate *Svitzer Glenrock* and requested Port Botany as a place of refuge. At 2037, United Salvage asked Svitzer if any of its tugs in Port Botany with an aft towing line could assist.

By 2045, *Portland Bay’s* anchors had been deployed off Bate Bay with the ship a little more than one mile from land. Stranding remained a realistic possibility with related considerations such as managing a crew evacuation in bad weather and darkness. There were no practical, safe options as helicopters were not able to conduct night-time rescues and tugs, navy ships and police rescue vessels were not readily available. Lifeboats were also considered but it was decided that it would be safer for the crew to remain on board the ship. After its master advised being low on fuel, *SL Diamantina* was allowed to return to port leaving 2 tugs to stand by the ship.

Shortly after 2200, Sydney VTS received a call from the master asking about the availability of an ‘emergency response vessel’. The ship’s engine was unable to be used to reduce dragging with *SL Martinique’s* master maintaining a low load on the towline to ensure that it did not part.

*Svitzer Glenrock* departed Newcastle at 2227, but the bad weather meant its best ETA off Bate Bay was noon on the following day. Concerned with this timeframe, AMSA started seeking any available ocean towing gear for use by other tugs in the area closer to the ship’s location.

Just before midnight, Sydney VTS received another call from the master again asking about the availability of an ‘emergency response vessel’. There were no other tugs available in Sydney.

## 5 July

Shortly after 0100 on 5 July, *Portland Bay’s* anchors started dragging at a greater rate (about 100 m per hour). In response, the IMT directed *SL Martinique’s* master to increase weight on its towline to stop the ship dragging onto the shore (Table 8). The tug remained the only available risk mitigation resource given any rescue operation in the conditions would be extremely difficult.

**Table 8: Key events on 5 July**

5 July	Event	Notes and remarks
0121	<i>Portland Bay</i> anchors drag rate increases	<i>SL Martinique</i> slightly increases load on towline
0848	AMSA upgrades incident to severe (level 5)	MERCOM takes over as AMSA’s incident controller
0900	Port Authority IC asks for MERCOM directions	For Port Botany under POI legislation
1300	<i>Svitzer Glenrock</i> arrives off Bate Bay	MERCOM directs ETV to remain AMSA-tasked
1415	<i>Bullara’s</i> towline recovered	Recovered with difficulty in rough weather
1515	<i>Svitzer Glenrock’s</i> towline fast at ship’s bow	<i>Bullara</i> dismissed; 2 tugs maintained static tow
1607	AMSA emails MERCOM POI directions	To all parties (4) for entering Port Botany
1800	Port Authority IC approves towage plan	United Salvage plan for daylight tow on 6 July

In addition to the Port Authority’s IMT, AMSA’s team continued to monitor the ship’s situation and the *Svitzer Glenrock’s* ETA, with its master advising that it was operating at its

best speed in a 9 m swell. The efforts to locate ocean towing gear in the area for use on scene were proving unsuccessful as the level 1 capability ETV in northern Queensland was the only vessel on the east coast with suitable equipment.

At about 0300, the ship's engine was successfully started and, over the next hour, the master used it intermittently to assist *SL Martinique* to reduce the dragging of the anchors. The ship had dragged to within one mile of the shore.

At 0546, the MERCOM responded to United Salvage's place of refuge request noting that events late on 4 July had taken precedence and that the ETV was due on scene at about midday with plans underway to move the ship to Port Botany. The MERCOM noted that the ship was slowly dragging its anchors but had not yet grounded.

At 0848, the level of the incident in AMSA's internal systems was upgraded from 3 (moderate) to 5 (severe) noting 'machinery failure [ship] and immediate tasking of ETV' (see the section titled *Maritime Assistance Services procedures under National level*). The ARC duty manager continued coordinating AMSA's response to the incident with the MERCOM continuing to oversight response activities.

At 0900, the Port Authority's IC called the MERCOM and requested that a direction be issued to facilitate the ship to be towed into Port Botany. They discussed whether one direction was to be issued or directions to the harbour master and others were also necessary. Shortly after, the response advisor in AMSA's IMT began drafting the direction(s).

At about 1300, when *Svitzer Glenrock* had arrived on scene, the MERCOM and IC had another meeting. The MERCOM advised that AMSA would retain control of the ETV for the duration of the incident (as opposed to offering it to United Salvage under the LOF or other commercial terms) to be utilised as required by the salvor and IC. The ETV would connect a towline once *Bullara* had recovered its line, which had not been possible earlier due to the weather. Weather conditions were moderating and expected to ease further by the next morning to allow the opening of Port Botany. The IC expected the tow could be safely undertaken in daylight. The drafting of the MERCOM's directions, with advice from AMSA's legal team, was still ongoing.

The NSW Maritime liaison officer attending JRCC recalled that drafting of the directions took a long time, much of it with AMSA's legal team. The manager also observed that streamlining of the process would be beneficial as issuing a direction can be time critical.

After 1515, when *Svitzer Glenrock's* towline was secured, AMSA released *Bullara*. By that time, United Salvage was preparing a towage plan to meet the IC's requirements using *Portland Bay's* emergency towing procedure booklet (emailed by Pacific Basin).

At about 1600, the final versions of the MERCOM directions to *Portland Bay's* master, Pacific Basin, United Salvage and the Port Authority were approved. Shortly after, the directions were emailed to all the recipients (Appendix E).

United Salvage presented and discussed the towage plan with the IC between 1600 and 1700 and agreed some refinements to it. At about 1800, the plan was distributed to the IC and relevant stakeholders. After consulting with the MERCOM, the IC approved the plan to start the tow from about 0800 on 6 July if the swell had subsided to no more than 4 m.

With the towlines of 2 tugs easing the load on the ship’s anchor cables, and the weather moderating, the risk had significantly decreased.

## 6 July

In preparation for the tow, *SL Fitzroy* arrived on scene shortly by 0730. During the next couple of hours, it had connected a towline to the ship aft and 2 harbour pilots, a salvor’s representative and a main engine service engineer had boarded the ship from a pilot vessel (Table 9). The weather and other conditions for the tow as per the towage plan had been assessed as acceptable.

**Table 9: Key events on 6 July**

6 July	Event	Notes and remarks
0954	Two Sydney harbour pilots board ship	<i>SL Fitzroy</i> has secured towline at ship’s stern
1000	<i>Portland Bay</i> starts weighing anchors	Salvor and engine maker representatives on ship
1051	Anchors home and towage started	ETV and 2 Engage Towage tugs towing
1228	<i>Portland Bay</i> enters Port Botany limits	<i>SL Diamantina</i> arrives and, at 1312, secured a line
1409	<i>Portland Bay</i> alongside Hayes Dock berth 3	Nominated berth for ship’s engine repair work
1454	<i>Portland Bay</i> secured at berth	All 4 tugs dismissed
1650	AMSA formally detains ship	On grounds of its unreliable propulsion

The master began weighing the anchors at 1000. *Svitzer Glenrock’s* had deployed 570 m of its towline and advised that it had up to 900 m available. Once the anchors had been weighed an hour later, the 3 tugs coordinated the tow as per the salvor’s towage plan. The ship’s engine was used at dead slow ahead to assist the tow.

By 1230, the tow was inside Port Botany limits and *SL Diamantina* joined the tow. The towage plan progressed uneventfully and, by 1500, the ship was secured at Hayes Dock and the tugs were dismissed. The ship was later detained by AMSA as unseaworthy and engine repairs as previously described progressed over the following week.

*Svitzer Glenrock* berthed in Port Botany overnight on 6 July so that its crew could rest. The ETV sailed at about 0630 on 7 July for Newcastle, where it arrived at 1400 that day.

## Debriefings and reviews

In the weeks and months following the incident, organisations involved in the incident and the response conducted their reviews or investigations and joint and separate debriefings. Their reports, including AMSA’s comprehensive evaluation of its response,<sup>161</sup> formed part of the evidence for this investigation. Some of the subjects discussed in these reports provided useful insights into the response.

The response agencies involved noted that the master’s delayed incident notification to VTS took away valuable time for their respective responses. In addition, NSW Maritime noted that the notification was not passed on, which initially kept it in the dark.

The Port Authority advised that it was unaware of the planned helicopter rescue, which created confusion as it had deployed tugs with the expectation of connecting towlines to the ship.

<sup>161</sup> Lessons Report for MV *Portland Bay*, NSW South Coast, 2022, AMSA, 19 October 2022.

The deployment of *Svitzer Glenrock* was a recurrent subject of discussion. According to AMSA, the ETV could have been deployed earlier if it had had oversight of the Port Authority's IAP. The Port Authority, however, stated that it had kept JRCC updated on all tug deployments. Pacific Basin noted a lack of availability of 'proper salvage tugs' until the *Svitzer Glenrock* arrived on scene. Acknowledging the differing observations, the universal conclusion among the involved parties following review of the occurrence was that the ETV should have been deployed much earlier.

There were different understandings of salvage matters and how the LOF salvage agreement worked with incident management. Other subjects of discussion included different understandings of place of refuge directions issued under national legislation, difficulties in drafting directions and the long delays in issuing them.

In general, it was acknowledged that a good measure of 'luck' helped avoid a disaster (stranding with potentially severe consequences).

Overall, these debriefings and reviews indicate inadequate coordination and confusion. None of them identified any of the safety issues identified in the *Findings* section of this report.

## Submissions to draft report

In response to the draft of this investigation report provided to directly involved parties, substantive submissions were received from several parties. Submission comments that have not been addressed in other sections of this report are described below to provide useful context.

### *Portland Bay's master*

*Portland Bay's* master advised being unaware of the previous problems with main engine auxiliary blower number 2. The master noted that because of the ship's light draught, it had been 'crucial to avoid pitching and slamming' to avoid main engine overload and, as the weather further offshore was worse, the ship had been manoeuvred accordingly with the engine at low rpm.

### Pacific Basin

Pacific Basin submitted that *Svitzer Glenrock*, the only ETV in the area arrived 18 hours after the ship first anchored. With respect to the emergency towage capability described in the report and shown in Figure 16, it stated that 'the lack of quick availability of proper salvage tugs close to Port Kembla is concerning' and proper positioning of salvage tugs should be considered.

Pacific Basin advised that following the master's request to Port Kembla VTS for tug assistance, it had followed up with the ship's agent, Monson, who had confirmed that *Svitzer* was preparing a tug (*Bullara*). It further advised that the ship's hull and machinery insurance underwriter was asked to seek tugs from international salvors but this was discontinued after the LOF salvage agreement with United Salvage. Pacific Basin pointed out that under the LOF terms, the salvor was 'obliged to take whatsoever measures feasible and reasonable under the prevailing circumstances, including mobilising whatever equipment or device or labours, to save the vessel'.

With respect to Monson instructing *Svitzer* (after the salvage agreement was made) that its tug, *Bullara*, was not required, Pacific Basin stated that it did not give such instruction to the

agent (Monson advised the ATSB that it did not intend to make a submission to the draft report).

### United Salvage

United Salvage submitted that soon after advising Engage Towage to deploy its tugs, it had contacted Svitzer for *Bullara* but was advised that a towage contract with the ship's owners was being agreed. According to United Salvage, *Bullara* was therefore not available to take on hire and it did not know why the tug was not made available to United Salvage.

In addition, United Salvage stated that it 'mobilised on speculation to render salvage assistance with the towing vessels that were immediately available' and 'took advantage of *Bullara* when AMSA made it possible'. It pointed out that 'when the owner of a tug will not make it available, salvors must move on to find other tugs'. United Salvage noted that it 'exercised our best endeavours to render maximum assistance to the casualty to tow it out of harm's way under an LOF agreement as a professional salvor'.

### Engage Marine

Engage Marine, the parent company of Engage Towage, advised that it believed the draft 'report is accurate and captures all elements that need to be highlighted and addressed'.

### Svitzer Australia

Svitzer submitted that it offered *Svitzer Glenrock* as well as other tugs to United Salvage, however this was declined as existing arrangements had been made with Engage Marine/Towage. Svitzer further clarified this by indicating that it wanted an arrangement in place (from a commercial perspective)<sup>162</sup> before deploying *Bullara* and needed to ensure the safety of the tug crew.

In addition, Svitzer confirmed that *Bullara* would need to have been appropriately equipped and prepared for it to be an alternate ETV under AMSA's ETC contract. The tug was fitted with a higher level of towing equipment after the incident (see the section titled *Safety issues and actions*).

### Australian Maritime Safety Authority

According to AMSA, the draft report included a disproportionate focus on the incident response. It felt that the responsibilities of the ship's master and owner, particularly with regard to engaging commercial towage at the earliest, should have been further considered.

In addition, AMSA stated that once the ship entered New South Wales waters, the state was responsible for managing the casualty. It noted that there was no request to AMSA to manage the casualty on behalf of New South Wales so AMSA supported the Port Authority and the salvor.

According to AMSA, *Svitzer Glenrock* could have been deployed by the Port Authority as it had daily operational control of the tug under its contract (harbour towage). It further noted that the ETV was also available to 'private industry' under commercial arrangements. *Bullara*, AMSA claimed, was the designated tug with alternate capability for the New South Wales region and that it met all the conditions of the ETC contract, including appropriate towing gear, equipment, crewing and training.

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<sup>162</sup> Documented evidence shows that Svitzer consistently offered to make its tugs available to Pacific Basin under a TOWHIRE agreement unless tasked by AMSA under its ETC contract.

With respect to the suspension of National Plan annual exercises during the pandemic, AMSA advised that the National Plan Strategic Coordination Committee (NPSCC) chaired by the Department of Infrastructure, Transport, Regional Development, Communications and the Arts had made a risk-based decision not to hold these exercises and established a reporting system to monitor the Plan’s capability and manage risks. It pointed out that the NPSCC was responsible for overseeing the Plan’s implementation and ensuring the effectiveness of its arrangements. Further, AMSA advised that it had participated in 3 desktop exercises conducted by Maritime Safety Queensland in 2020 and one exercise conducted by NSW Maritime in 2021.

In relation to emergency towage, AMSA invited the ATSB to consider whether state and Northern Territory governments were sufficiently considering emergency towage requirements through port [towage] licensing arrangements and whether this was contributing to a safety failure along the Australian coastline.

### **Transport for NSW (NSW Maritime)**

Transport for NSW (NSW Maritime) submitted that the provisions most relevant to this incident were contained in the emergency response section of the Port Authority’s Port Safety Operating License (PSOL). According to NSW Maritime, once the ship entered state waters, the response had to be led by New South Wales and noted that planning for a pollution response was undertaken in case the ship stranded or pollution occurred.

With respect to its actions after becoming aware of the incident, NSW Maritime claimed that it proactively followed up with AMSA and the Port Authority and had numerous discussions with the MERCOT. It advised that briefings were subsequently provided to internal and external stakeholders and support provided to the Port Authority’s incident management team.

Further, NSW Maritime advised that, in addition to informing the Port Authority’s chief operating officer at the inter-agency meeting at about 0945 that it was the designated combat agency under the PSOL and NSW Plan, the Executive Director of NSW Maritime who was the Marine Pollution Controller (MPC) formally reaffirmed to the chief executive officer of the Port Authority that it was the designated combat agency under the PSOL.

According to NSW Maritime, once the Port Authority assumed the combat agency role, the response was well managed but the ‘lack of salvage (tug) capability and release of the ETV was ineffective’. It advised that the liaison officers were limited in their capacities as there are always some aspects and discussions that they will not be privy to, such as internal legal advice provided to incident management or response teams. In addition, NSW Maritime questioned if a place of refuge was requested, who requested it and to whom was the request submitted.<sup>163</sup>

### **Port Authority of New South Wales**

The Port Authority claimed that as per appendix 2 of its PSOL it was required ‘to respond to oil and chemical spills, not emergencies’. It stated that the ‘area of operations’ defined by the NSW Plan (Figure 19) ‘were limited to marine pollution incidents, not maritime emergencies such as a disabled vessel’. It argued that the emergency response requirements in the PSOL for ‘port-related emergencies’ within ports should be

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<sup>163</sup> As previously described, United Salvage submitted a formal place of refuge request to the MERCOT at 1945 on 4 July.

distinguished from a response to ‘incidents’ in coastal waters as per the NSW Plan. It stated that ‘incidents’ should be interpreted as involving oil or chemical pollution and that this interpretation was supported by the text in the title of appendix 2 being: ‘Area of operations for out of port oil and chemical responses’.

According to the Port Authority, the National Plan required that ‘no agency should assume responsibility for an incident until it was determined that the master failed in their responsibility to manage the maritime casualty’. It stated that, under the National Plan, AMSA was responsible for managing a casualty that originated in Commonwealth waters but it did not transfer management or control of the incident to the Port Authority as required. The Port Authority claimed that it had only held primary obligations for pollution response, which were ultimately not required to be exercised, but had accepted an informal transfer of prevention obligations (casualty management of the disabled ship) from AMSA.

The Port Authority further argued that even if the casualty was deemed to have originated in New South Wales waters, the National Plan assigned responsibility for that to the state government through Transport for NSW (NSW Maritime). It pointed out that the state EMPLAN assigned various roles to NSW Maritime with responsibility for pollution prevention, emergency towage and refuge arrangements, and response, including incident assessment/monitoring and assessment of refuge requests, but the Port Authority was not responsible for these activities. It noted that the EMPLAN and NSW Plan assigned responsibility for emergency response to the MPC and NSW Maritime, not the Port Authority, which could be the combat agency for pollution incidents but not for emergency response.

According to the Port Authority, under the NSW Plan, its ‘obligations as a combat agency were not enlivened in respect of the *Portland Bay* as the ship did not create an oil pollution spill, nor was there a situation in which an oil pollution spill was imminent and a pollution response could be usefully assembled’. It submitted that, under the NSW Plan, intervention in relation to a disabled ship in coastal waters outside port areas was a role for the MERCOM with the MPC and NSW Maritime supporting the response to incidents and emergencies whereas the role of the Port Authority was ‘to provide marine pollution responses, if required’.

## Lessons from casualties

### Historical context

As described in the section titled *Peril at sea*, shipping casualties and disasters have occurred throughout maritime history. Although the frequency of serious casualties resulting in the loss of ships has declined since the 1800s when steel-hulled, power-driven ships were introduced, their consequences have become more severe with many disasters, including in the twentieth century. The main reasons include the increasing size of ships, the quantities and types of cargoes carried and the passenger numbers carried. At the same time, tolerance for serious casualties, particularly those involving environmental damage and/or loss of life has progressively declined.

Lessons from casualties in modern times have often resulted in safety enhancements. The 1912 sinking of *Titanic* with the loss of more than 1,500 lives led to maritime nations adopting the first international convention on safety of life at sea in 1914 to prevent a similar

catastrophe.<sup>164</sup> In 1948, when the IMO was established,<sup>165</sup> it adopted that convention, retaining its name and has since continued developing the SOLAS Convention as the main pillar to enhance maritime safety. Casualties continue to offer valuable lessons to improve standards, regulations and seamanship to help avoid disasters.

## Incidents in Australia

The waters off Australia’s coastline are not as congested as many waterways overseas such as the Mediterranean Sea, English Channel and Singapore Strait. However, Australia’s coastline is extensive, with large distances between ports with resources such as ETVs and harbour tugs few and far between. This aspect presents challenges when managing emergencies in accordance with the National Plan.

Since it was developed in 1973, the National Plan has been used to manage numerous casualties and pollution incidents. Since 1991, AMSA has managed the Plan and many incidents, including those that involved *Sanko Harvest* and *Kirki* in 1991, *Era* in 1992, *Iron Baron* in 1994, *Laura D’Amato* in 1999, *Global Peace* in 2006, *Pacific Adventurer* in 2009 and *Shen Neng 1* in 2010. The principal contributing factors to these incidents were different and included hull failure, hull damage and stranding, however all resulted in oil spills. Even relatively limited pollution in an environmentally sensitive area is significant, such as the 4 tonnes spilled from *Shen Neng 1* in the Great Barrier Reef (Figure 23).

**Figure 23: *Shen Neng 1* stranded on Douglas Shoal, Great Barrier Reef, Queensland**



Source: Maritime Safety Queensland

Many serious incidents, including groundings, strandings and near strandings, have not resulted in pollution. The more recent incidents, some of which occurred in the Great Barrier Reef region,

<sup>164</sup> On 14 April 1912, *Titanic* was on its maiden voyage from Southampton, England, to New York, United States, when it struck an iceberg in the North Atlantic Ocean and sank some hours later with the loss of more than 1,500 lives. The British passenger liner was then the largest, most modern and celebrated ship but the catastrophe transformed its name into one forever associated with disaster.

<sup>165</sup> In 1948, the United Nations established the Inter-Governmental Consultative Organization (IMCO) as a permanent international body to promote maritime safety and set international safety standards. In 1982, the name of IMCO was changed to the International Maritime Organization (IMO), which continues its work.

include those involving *Bunga Teratai Satu* in 2000, *Doric Chariot* in 2002, *Crimson Mars* in 2006, *Pasha Bulker* in 2007, *MSC Lugano*, *Atlantic Eagle* and *Iron King* in 2008, *Atlantic Blue* in 2009, *ID Integrity* in 2012, *Maersk Garonne* in 2015, *Aquadiva* in 2017, *Bulk India* in 2018, *Trinity Bay* in 2021 and *Rosco Poplar* in 2022. The ATSB investigated these incidents and some of the circumstances in the cases are comparable to those of this incident, including the application of National Plan arrangements.

In 2007, *Pasha Bulker* did not clear the coast in a storm, which drove it on to Nobbys Beach, Newcastle (Figure 24). Two other ships narrowly avoided stranding by resorting to emergency use of their anchors. The salvage operation to refloat *Pasha Bulker* was monitored by AMSA and succeeded after a couple of months. There was no pollution but the incident's location on the beach of a major city made it significant.

**Figure 24: *Pasha Bulker* stranded on Nobbys Beach, Newcastle, New South Wales**



Source: ATSB

In 2008, *MSC Lugano* lost propulsion after an engine room fire about 100 miles south-east of Esperance, Western Australia (WA). The disabled ship drifted towards the coastline and harbour tugs from Esperance were deployed by AMSA when worsening weather increased the risk of grounding. The tugs were able to prevent a grounding on shoals about 6 miles off until a salvor's tug from Fremantle, WA, took the ship in tow and safely towed it to there for repairs.

In 2012, *ID Integrity* lost propulsion due to mechanical issues with its engine in the Coral Sea and drifted towards the Great Barrier Reef. The dedicated ETV in Queensland was tasked by AMSA and the ship's managers arranged 2 tugs from nearby ports. Contingencies, including the use of anchors, were put in place while waiting for the tugs. The ETV towed the ship to Cairns for repairs with the other tugs assisting as escorts.

Each year, thousands of ships call at Australian ports (AMSA data indicates that 6,042 individual ships made 26,744 calls in 2022). A small number of these voyages involve a ship breaking down in Australian waters. Most breakdowns are rectified relatively quickly, however, at times, a ship is disabled close to a lee shore in bad weather with the risk of stranding.

An assessment of oil pollution risk in 2011 based on a data set of incidents in Australia found that the proportion of spills due to drift groundings and powered groundings were 22% and 20% of the total, respectively.<sup>166</sup> The drift groundings were typically due to loss of propulsion and/or anchors in adverse weather while the powered groundings were typically the result of navigational errors.

## Causes of strandings

Historically, the consequences of strandings have often been severe. A significant proportion of very serious casualties in modern times have also been strandings with hull damage and consequential pollution. The Nautical Institute publication, *Strandings and their Causes*,<sup>167</sup> described the various causes and includes many case studies with useful lessons. Chapter 8 of the publication (*Loss of Propulsion and Stranding*) is directly relevant to this incident:

Human error accounts for the overwhelming part of strandings, but a not insignificant number of such casualties result from steering or propulsion machinery failure. Yet even in such cases the element of human error is often dominant though usually unconnected with those responsible for the navigation of the vessel. Unfortunately, there is ordinarily little the master can do to forestall mistakes in an area in which he not only usually lacks competence but also will not have direct access to the relevant information and facts. As far as the propulsion of his ship is concerned he is little more than a passenger. It is prudent, therefore, for him to include in his planning of a passage for the possibility of a loss of steering or propulsion or both. In most cases such an eventuality will not expose the vessel to immediate hazard, as more often than not the vessel be on the open sea and the machinery will be restored to operation in good time. Where the vessel is incapacitated close to land, however, failure to take this possibility into account beforehand could mean the difference between a close call and standing.<sup>168</sup>

The following observations from this publication also offer the following insights:

- Occasionally it will happen out of a single mistake or momentary lapse of judgement, but far too often the stranding is only the climax of a chain of errors and oversights coloured, if not determined, by bad judgement.<sup>169</sup>
- With strandings, as with collisions, it is rare that a single fault or mistake is responsible. Luck will often allow a lone mistake to pass unpunished and in most cases the casualty is the end of a chain of errors.<sup>170</sup>

The learnings from casualties, albeit with the benefit of hindsight, invariably provide invaluable lessons. The lessons learned provide the knowledge and foresight to make prudent decisions not only to avoid an emergency but to effectively manage one.

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<sup>166</sup> Det Norske Veritas, *Assessment of the Risk of Pollution from marine Oil Spills in Australian Ports and Waters*, Prepared for AMSA, 14 December 2021.

<sup>167</sup> The Nautical Institute, *Strandings and their Causes*, Captain RA Cahill, Second Edition, 2002.

<sup>168</sup> *ibid*, Chapter 8, *Loss of Propulsion and Stranding*, p 65.

<sup>169</sup> *ibid*, p 157.

<sup>170</sup> *ibid*.

# Safety analysis

## Introduction

### Incident

*Portland Bay* sailed from Port Kembla, New South Wales, on 3 July 2022 as bad weather was impacting its stay in port and was expected to return there when the weather improved. The ship steamed and intermittently drifted about 12 nautical miles (miles) from the coastline.

In the early hours of 4 July, the main engine developed mechanical problems, which disabled the ship 12 miles from the lee shore. A couple of hours later, after unsuccessful attempts to resolve the engine problems, the ship's master notified Port Kembla vessel traffic service that the main engine had failed and requested tug assistance. About 2 hours later, a harbour tug from Sydney was en route but the ship had closed to one mile from the shore. The master made emergency use of both anchors to prevent stranding on the rocky shore about 12 miles south of Port Botany (Sydney).

About one hour after the ship anchored, the harbour tug arrived and attempted to assist. Some 4 hours later, 2 more harbour tugs from Sydney arrived. By late afternoon, these 2 tugs began towing the ship away from the coast but a couple of hours later in the evening, one parted its towline. The ship then drifted towards the shore and the master again anchored about one mile from the shore off Bate Bay near Sydney. Later that night, the state's nominated emergency towage vessel (ETV) deployed from Newcastle.

The ETV arrived on scene after midday on the following day, 5 July, and connected a towline that evening in preparation to tow the ship into port. On the morning of 6 July, the ETV (with harbour tugs assisting) towed the ship into Port Botany, where it was berthed in the afternoon for refuge and repairs.

### Analysis

This analysis firstly details the factors that contributed to *Portland Bay*'s propulsion failure and disabling in bad weather, which led to the emergency. A major part of the analysis necessarily examines the response to the emergency by authorities from the initial activities and events to its subsequent management over the next 2 days and identifies 7 associated safety issues.

## Development of emergency

The emergency developed over a period of about 18 hours after *Portland Bay* departed Port Kembla on 3 July. The ship's situation then progressively became more precarious.

### Coast not cleared

The master had taken command of the ship on 22 June, 2 weeks before the incident. The handover and subsequent ship operations indicated that the ship and its machinery were in operational condition. In addition, a week before the incident, the ship had left Port Kembla to clean its cargo holds and anchored or drifted off the port for a couple of days.

After the ship berthed again on 2 July, the master observed the worsening weather and complied with the harbour master's weather-related precautions. When the weather

deteriorated on 3 July, the master agreed with the Port Authority’s decision for the ship to put to sea to avoid damage to the ship and berth. Maintenance for main engine auxiliary blower number 2 was pending, but the chief engineer and the master were not concerned about this affecting the engine’s performance.

After the ship sailed on 3 July, the master noted several ships drifting in the general area off the coast. The master was aware of Port Kembla vessel traffic service’s (VTS) advice to masters to keep ‘at a safe distance (around 12 miles)’ from the coast. The ship steamed on an east-north-easterly course that slightly diverged from the coast and, when it was 12 miles off, the engine was stopped to drift (Figure 1). For the rest of that day and night, the ship drifted and steamed intermittently, remaining 8–15 miles off the coast. In submission to the draft of this report, the master advised that the weather further offshore was worse, hence the ship was manoeuvred to avoid main engine damage from sudden load fluctuations due to the propeller not being fully immersed when pitching.

However, the shipboard safety management system (SMS) procedures required that, in bad weather, masters remain 50 miles from the coast where possible, which was consistent with good practice and seamanship. While the master stated that the heavy weather had made this ‘impossible’, the evidence indicates that it had been possible to attempt to clear the coast.

When the ship had got underway again at 0330 on 4 July, it was put on a true heading (course) of about 110°. The master found that the ship experienced less rolling on this course. It also began moving directly away from the coast at about 3 knots. The reduced rolling and progress away from the coast were attributable to the weather being on the ship’s starboard bow (as opposed to nearly abeam earlier while it was steaming or drifting).

Therefore, after putting to sea, had an attempt been made to clear the coast on a 110° or similar course at the same engine speed, the ship could have been 50 miles from the coast by 0500 on 4 July. The master’s decision to drift and steam intermittently 12 miles off the coast was probably influenced by the advice from VTS, other ships drifting in the area, an expectation to return to Port Kembla and having no concerns about the engine. However, remaining there exposed the ship to the risks that the SMS procedures were intended to address. It was also not consistent with good practice and seamanship.

#### Contributing factor

After departing Port Kembla in adverse weather on 3 July 2022, *Portland Bay*’s master steamed slowly or drifted about 12 miles off the coast instead of safely clearing it in accordance with the ship’s safety management system procedures.

## Main engine problems

### Degraded engine performance

With the ship’s east-north-easterly course and the seas and swell nearly abeam, the main engine rpm achieved fluctuated widely as the ship rolled and pitched heavily (Figure 9). The fluctuating engine load would have led to turbocharger surge and repetitive opening and closing of scavenge system non-return flaps. The load fluctuations resulted in excessive fuel being injected into the engine with incomplete and unstable combustion and build-up of carbon and fuel deposits. Piston blow-by due to sticky piston rings caused by poor combustion, excessive fuel injection, excessive cylinder lubrication and a leaky fuel injector

further increased the build-up of fuel deposits and sludge. In addition, excessive cylinder lubrication resulted in excess oil in the under-piston space.

Continuous operation with these factors and conditions progressively degraded the performance of the engine.

#### **Contributing factor**

Operating the main engine at low speed while the ship was rolling and pitching heavily exacerbated engine load fluctuations due to turbocharger surge and non-return flap hammering. Engine performance was further degraded by a leaky fuel injector, poor combustion and excessive cylinder lubrication, which resulted in sludge and deposits accumulating in the engine scavenge spaces, blow by and sticky piston rings.

#### **Auxiliary blower failure**

The electric motor and impeller bearings of auxiliary blower number 2 were replaced in June 2021. In March 2022, an inspection had identified a cracked impeller, damaged shaft bearings and worn bearing housings. A previously used impeller was fitted and the cracked one was weld repaired. In April 2022, the welded impeller was refitted without rebalancing. New bearings were fitted in the same worn bearing housings because there were no spares on board at the time.

A new impeller and bearing housings were to be fitted in Port Kembla but, before this could be done, the ship put to sea on 3 July. Therefore, the blower had been operating with an unbalanced impeller and oversized bearing housing since April. Its unbalanced operation was exacerbated by the varying engine load conditions at sea and eventually resulted in the blower's failure on 4 July when the impeller bearings failed.

#### **Contributing factor**

The main engine auxiliary blower number 2 impeller bearings failed in the early hours of 4 July. This was most probably due to prolonged operation with an unbalanced impeller and oversized bearing housing, aggravated by varying engine load due to the ship's rolling and pitching.

#### **Engine speed limited**

After the ship put to sea on 3 July, a combination of:

- main engine speed fluctuations
- incomplete and unstable combustion
- excessive fuel injection
- piston blow-by
- excessive cylinder lubrication
- a leaky fuel injector

resulted in a build-up of carbon, fuel and deposits that progressively degraded engine performance. In addition, combustion airflow reduced as some air was recirculating to the

auxiliary blower through a distorted turbocharger delivery non-return flap. When auxiliary blower number 2 failed, airflow reduced to the point that the engine could not achieve a speed of more than about 42 rpm (dead slow ahead setting).

The engine manufacturer’s conclusions based on its inspection and service following the incident were consistent with the evidence and the operating conditions on 3 and 4 July. The manufacturer concluded that the main reason limiting the engine speed had been insufficient combustion air. The condition of each engine component, on its own, was not considered enough to disrupt airflow and limit engine speed. However, the combination of component wear and fouling of multiple components, limited the operation of the engine to about 42 rpm.

#### Contributing factor

The failure of auxiliary blower number 2 substantially reduced the normal airflow to the engine. In addition, some air was recirculating to the blower inlet through a distorted turbocharger delivery non-return flap. The resulting low airflow limited the engine speed to 42 rpm (dead slow ahead setting) and significantly reduced the propulsive power available.

### Ship disabled

*Portland Bay*’s significant loss of propulsive power in the rough weather conditions effectively disabled the ship. With no steerage way and the wind on its port beam, the ship began drifting towards the shore about 12 miles off (Figure 4).

The master arrived on the bridge 2 minutes after failure of the auxiliary blower. Over the next 20 minutes, it became evident that the ship was disabled in very unfavourable conditions and drifting rapidly towards the shore. The engine speed available was too low to steer the ship (which was stationary in the water) on to a course to put the weather on the bow to reduce drift and rolling or to attempt steaming away from the shore. At 0513 on 4 July, the master assessed that the ship was 3–4 hours away from drifting on to the shore about 11 miles off.

#### Contributing factor

The significant loss of *Portland Bay*’s propulsive power in the prevailing gale force winds, very rough seas and heavy swell effectively disabled the ship and resulted in it drifting towards the lee shore.

### Delayed notification

The master’s assessment that the ship was 3–4 hours from the shore if propulsion was not restored and the chief engineer’s advice that the auxiliary blower could not be quickly repaired indicated that prompt emergency notifications were necessary to obtain tug assistance in time.

About 30 minutes after the engine developed problems, the master notified the ship’s managers, Pacific Basin, about the emergency and being 10 miles from the lee shore in heavy weather. Over the following 85 minutes, its senior management, including the fleet director and the marine and safety manager largely provided engineering advice to resolve

the problem. Except for briefly asking about steaming 50 miles away from the coast, other SMS requirements such as notifying authorities as per the company’s crisis management manual, were not raised with the master.

Although the master voiced increasing concerns to those on the bridge about the ship closing the coast and the need to obtain tug assistance, those concerns were not specifically raised with Pacific Basin, which focused on providing engineering advice. While the focus on restoring usable engine power was understandable, attempting to resolve the engine issue and notifying authorities could have been done simultaneously. The emergency required prompt notification to authorities in accordance with the SMS procedures to maximise the available response time.

However, this did not occur even after Pacific Basin’s designated person ashore (DPA) was informed at 0615. The fleet director, marine and safety manager and DPA were required to be completely familiar with the company’s crisis management and SMS requirements. They were also expected to ensure critical actions, such as notifying authorities to manage the worsening emergency, were promptly taken.

At 0624, when the engine could not be restarted, the disabled ship began displaying ‘not under command’ (NUC) signals and the corresponding NUC status on the automatic identification system (AIS). However, authorities ashore were not notified and Pacific Basin continued directing efforts to start the engine. It was not until 0650, when the master again raised the subject of tug assistance with Pacific Basin, that this was properly considered. Five minutes later, Pacific Basin agreed to the master requesting tug assistance. Soon after, at 0656, Pacific Basin established a virtual team to manage the emergency and one minute later, the master notified Port Kembla VTS of the engine failure and requested tug assistance.

Had the master raised the concerns with Pacific Basin explicitly and strongly much earlier, it would have been compelled to respond appropriately. However, the master would also have reasonably expected Pacific Basin to raise the subject of notifying authorities as per its SMS emergency procedures. When the subject was not raised and only engineering advice was offered, the master probably deferred to the managers ashore on the basis that they were aware of the situation but not recommending or encouraging notifying authorities.

The delay in notifying authorities was contrary to the SMS procedures, good practice and recognised guidance. It also highlights the importance of the warning: ‘do not delay sending appropriate alerts and notifications’ in the publication ‘*Peril at Sea and Salvage: A Guide for Masters*’ (master’s Guide) previously discussed. Notifying authorities should have been a priority for both the master and Pacific Basin’s senior management.

#### **Contributing factor**

*Portland Bay’s* master notified Port Kembla vessel traffic service that the main engine had failed and requested tug assistance about 2 hours after the ship was disabled. This delay significantly reduced the time available to Australian authorities to respond and for tugs to assist the ship in time to avoid a stranding.

### Contributing factor

**Portland Bay's manager, Pacific Basin Shipping, did not provide the master advice about notifying authorities as per the ship's safety management system emergency procedures, instead focusing on the engineering matters. This probably led to the master delaying the notification and the request for tug assistance. (Safety issue)**

## Initial response

The following sections examine the response during the 3.5 hours after the master notified Port Kembla VTS. The National Plan for Maritime Environmental Emergencies (National Plan) and the NSW Coastal Waters Marine Pollution Plan (NSW Plan) are referred to extensively.

### Notifications

At about 0700 on 4 July, Port Kembla VTS informed the ship's agent in Port Kembla (Monson) that the master had requested tug assistance. It then made internal notifications within the Port Authority of New South Wales (Port Authority). However, neither the Australian Maritime Safety Authority (AMSA) nor NSW Maritime were notified as required by the VTS procedures and NSW Plan (Figure 18).

The NSW Plan assigned VTS sole responsibility for making the required notifications. It also warned that incidents less than 20 miles offshore were potentially significant (when the master notified Port Kembla VTS, the ship was less than 7 miles from the shore in Commonwealth waters). Therefore, VTS was required to promptly notify AMSA and NSW Maritime.

However, the master also notified Marine Rescue Port Kembla at 0703. Although the NSW Plan did not apply to Marine Rescue, it informed the NSW Police and NSW Maritime about the incident at about 0710. Shortly afterwards, NSW Maritime contacted AMSA, found that it was not aware of the incident but did not contact Port Kembla VTS or the Port Authority at that time (instead NSW Maritime contacted AMSA again at 0803, when it was provided available information after which it contacted the Port Authority).

At 0744, some 45 minutes after the master notified it, Port Kembla VTS reported the incident to AMSA. This delay reduced the time available to AMSA to initiate and coordinate a response. In addition, during the intervening time, the ship had drifted to within 5 miles of the coast. This also increased the jurisdictional complexity for an AMSA response under the National Plan to the emergency in Commonwealth waters, yet close to coastal waters in which New South Wales was responsible.

### Contributing factor

Port Kembla vessel traffic service delayed notifying the Australian Maritime Safety Authority (AMSA) about the incident for 45 minutes. This delay reduced the time available to AMSA to initiate and coordinate an emergency response.

## Tug assistance

The urgency message (PAN) broadcast by *Portland Bay's* crew at 0716, as suggested by Marine Rescue, was probably also intended to expedite the deployment of tugs. Soon after the PAN broadcast, Sydney VTS began monitoring the ship's movement and seeking tugs in the port. Engage Towage confirmed that it would immediately prepare a tug.

Sydney VTS contacted AMSA at 0745 to arrange an 'emergency tug' and advised that Engage Towage was preparing a tug. In response, AMSA (which had been notified by Port Kembla VTS one minute earlier) advised that the ETV, *Svitzer Glenrock*, was in Newcastle. Consequently, Sydney VTS advised that it would arrange an available tug(s) from Sydney.

Meanwhile, Monson was aware of the master's request for tug assistance, but did not know that the ship had broken down. By the time Monson followed up the tug assistance request with the master and Pacific Basin it was nearly 0800. Soon after, realising the urgency, Monson contacted Svitzer Australia (Svitzer) for a tug. Svitzer then began preparing to provide its tug, *Bullara*.

Notwithstanding their limited emergency towing capabilities, the Sydney harbour tugs were the only immediately available options as the ETV was several hours steaming away. However, at that stage no tug could have arrived in time to prevent the disabled ship drifting on to the shore. Emergency anchoring was the only means of preventing a stranding.

## Emergency anchoring

Soon after the PAN broadcast at 0716, Pacific Basin asked the master to prepare for emergency anchoring. Over the next 2 hours, it provided the master with guidance for anchoring, consistent with the safety management system (SMS) procedures.

While Marine Rescue had suggested anchoring immediately, the master had rejected the suggestion as anchoring in deep water was contrary to the SMS procedures and the master's Guide (Peril at Sea and Salvage). In deep water, the master's Guide suggested that the anchors could be lowered to reduce drift rate. However, the master did not consider this, probably due to the risk of the anchors holing the hull as the ship rolled heavily and/or to avoid fouling the anchor cables (the chains becoming entangled).

Anchoring equipment is intended to be used in a harbour or sheltered area and is not designed to hold a ship in rough weather. However, the use of anchors in emergencies is recognised and has been used as a last resort to prevent strandings.

The master's planning and preparation for anchoring, including the instructions to the chief mate and others indicated a good understanding of the SMS procedures and the inherent limitations of anchoring equipment. This resulted in the appropriate and effective deployment of the anchors shortly after 0900, consistent with good seamanship.

Most importantly, anchoring prevented a likely catastrophic stranding on the rocky shore less than one mile off.

### Other finding

*Portland Bay's* emergency anchoring prevented a catastrophic stranding on the rocky shore in heavy weather (anchoring equipment is not designed to hold a ship in rough weather).

## Crew rescue attempt

Soon after AMSA was notified at 0744, it took over search and rescue (SAR) coordination. Within minutes, AMSA determined that a stranding was probably imminent. As the consequences could include loss of life, evacuating the crew became the primary mission. By 0800, AMSA had initiated an operation to rescue the ship's crew in accordance with its SAR procedures.

Consequently, by the time the ship was anchoring, 3 AMSA-tasked rescue helicopters were en route. Some confusion ensued when they arrived on scene to find a fourth helicopter (unknowingly arranged by NSW Police) but AMSA soon resolved this by standing it down. There were no tugs or police vessels on scene at the time.

After about 0930, the helicopters attempted to winch crew off the ship's deck, but heavy rolling and pitching and the structures on deck made the operation very hazardous. Consequently, after 3 unsuccessful attempts, the rescue was abandoned as the anchors were reported to be holding at that time. In addition, surface assets, including the tug *SL Diamantina*, were due soon.

While the rescue attempt was consistent with the overriding consideration for safety of life, some matters were inadvertently overlooked. In addition to the uncoordinated arrival of the fourth helicopter, the subject of the crew that would remain on board for a towing operation was not discussed between AMSA, the Port Authority, the master and Pacific Basin. While this had no material consequences as the rescue was abandoned, it created unnecessary confusion and uncertainty about emergency towage matters.

### Other finding

The attempt to rescue *Portland Bay's* crew by helicopter in case it stranded was appropriate, as was its risk-assessed suspension after the ship's anchors reduced the risk of stranding.

## Assuming control

Soon after the Port Authority's Sydney VTS began monitoring the ship's movement at 0720, it became evident that it would enter the state's coastal waters after about one hour. The ship would then be in the region where the Port Authority was responsible for response (Figure 19). The only action taken by the Port Authority at that stage was seeking tugs and, at 0744, notifying AMSA.

In submission to the draft of this report, the Port Authority argued that, under the National Plan, neither AMSA nor the New South Wales Government were permitted to assume control of a casualty unless it was determined that the shipowner or master had failed in their responsibility to manage the casualty effectively, in a timely manner or in the interests of protecting the community and the environment. It reiterated its views about the responsibilities of governments as previously described (see the section titled *Submissions to draft report*) and pointed out that AMSA was responsible for managing the casualty, which had originated in Commonwealth waters, but did not follow the process for a change of control agency under the National Plan. The Port Authority stated that if the casualty was

found to have originated in coastal waters, then the New South Wales Government through NSW Maritime was responsible/accountable.

However, when the master notified the Port Authority's VTS at 0657 about the main engine failure and requested tug assistance with the ship less than 7 miles from the shore, it was evident that prompt action was critical to mitigate the ship's perilous situation, which was plausibly the result of the master not having managed it effectively. Despite having the necessary information to make that conclusion, the Port Authority did not notify AMSA for more than 45 minutes and never notified NSW Maritime as was required.

However, the Port Authority did seek tugs, which indicated understanding the emergency situation but an inability to follow the relevant plans and procedures to ensure that the appropriate authorities could oversee or manage the casualty and, if necessary, assume control to avoid an impending disaster. Suggesting that the National Plan did not permit any authority to assume control in that situation while, at the same time, asserting that only AMSA or NSW Maritime were responsible and accountable is disingenuous.

Shortly after about 0810, the Port Authority and NSW Maritime first discussed national and state roles and responsibilities when the ship entered state waters. No request had been received from AMSA for New South Wales to assume control nor did they know if AMSA had assumed control under the National Plan. Instead of taking decisive action to confirm the combat (control) agency, they deferred the decision to a multi-agency meeting to be convened, effectively postponing this important matter. Consequently, when the ship entered New South Wales waters at 0822, no agency had assumed the control agency role.

In submission to the draft report, AMSA argued that as the Port Authority had been arranging tugs with the ship moving towards New South Wales waters, the state had assumed control of the casualty and that this was formally confirmed at the inter-agency meeting later.

At 0840, while progressing the SAR operation, AMSA established an incident management team (IMT) for an AMSA level 3 incident (moderate severity level) but did not inform the Port Authority. As a result, there was no coordination between the 2 agencies and AMSA's IMT continued to focus entirely on rescuing the ship's crew.

Consequently, it was only after the multi-agency meeting began at about 0945, that it became clear that AMSA had only taken charge of the rescue operation, which was then abandoned. At that meeting, NSW Maritime indicated to the Port Authority that it should assume control of the incident with which AMSA agreed. This resulted in further discussions until, at about 1020, the Port Authority agreed to assume control.

According to the Port Authority, it assumed control as it was obliged to assist NSW Maritime to manage incidents in state waters under the inter-agency memorandum of understanding (MoU) previously described and considered itself more capable of managing the incident. This was not a correct interpretation of the MoU or a proper understanding of the Port Authority's area of responsibility for this incident as defined in the NSW Plan and its PSOL.

While the Port Authority had previously consistently insisted that the MoU was the basis of its decision for assuming control, its submission did not refer to the MoU. Instead, it presented the jurisdictional argument above, which serves to reiterate that the Port Authority did not, and does not, have a proper understanding of its role and responsibilities for emergency response under the NSW Plan and PSOL.

The delay in the Port Authority assuming control in large part contributed to no agency formally controlling and coordinating the response until 1020. This compounded the complexity of managing the emergency, which had continued to worsen over the previous 5 hours.

## Emergency management

After the Port Authority formally assumed control, the emergency continued for a further 2 days. The following section examines the management of the situation through to its conclusion.

### Australian Maritime Safety Authority

As previously noted, when AMSA was notified of the emergency, *Portland Bay* was in Commonwealth waters in its area of responsibility under the National Plan.

#### Relevant procedures

As described in the *National level* section, AMSA had developed a comprehensive set of procedures and guidance for an optimal emergency response under national arrangements. Its Maritime Assistance Services (MAS) procedures were directly applicable to this incident. These procedures provided detailed guidance about the proportionate and reasonable response based on a 5-level incident severity categorisation. While the levels were not consistent with the 3 levels defined by the Australasian Inter-service Incident Management System (AIIMS), the guidance was adequate to initiate an appropriate response.

The National Plan highlighted that a timely response was critical and suggested over-escalation and pre-emptive or precautionary moves in the initial response as it was more effective to scale down than up.

The MAS procedures and incident severity matrix (Appendix B) categorised a machinery failure where multiple critical systems had failed with no redundancy and no prospect of recovering them as a level 4 (major) incident. Where all critical systems had failed without prospect of recovering them (dead ship), it was to be categorised as a level 5 (severe) incident. The matrix had the following guidance for level 4 and level 5 [in brackets] incidents:

- probable tasking of nearest ETV [immediate tasking]
- probable place of refuge request [request received]
- probable request from impacted state(s) [request received]
- probable deployment of AMSA maritime casualty officer – MCO [MCO deployed, if safe]
- media coverage is expected [is occurring].

However, as previously noted, AMSA categorised the incident as level 3 (moderate severity). This meant that the ship's propulsion failure had been assessed as affecting its safe navigation with a low likelihood of rectification within 6 hours and a moderate risk for environmental damage. Given that AMSA was notified that the ship's main engine had failed and it could ground in 1.5 hours, its procedures required the incident to conservatively be assessed as level 5 but no less than level 4.

In any case, alerting and tasking the state's ETV should have been a first response while seeking the nearest, available harbour tug(s) as 'vessel(s) of opportunity'. Further, given the

casualty was in Commonwealth waters, AMSA was obliged to immediately assess the situation, take necessary action/intervene as per the National Plan and its MAS procedures and, if it decided to hand control of managing the casualty to New South Wales, make a formal request to NSW Maritime's MPC. None of these critical actions were taken, nor any preparations made to respond to a 'place of refuge request' as flagged by its procedures.

In submission to the draft of this report, AMSA stated that the failure [of the ship's master and Port Kembla VTS] to make prompt notifications resulted in AMSA being unable to respond consistent with its responsibilities for 2.9 hours, after which the casualty remained in Commonwealth waters for 'only 38 minutes'. It further stated that the response was effectively under New South Wales Government control since Port Kembla VTS was notified, the state agencies had initiated a response and were fully aware that the casualty would drift into the state's waters.

According to AMSA, New South Wales agencies not seeking to transfer control to AMSA was 'a strong indicator that they believed that continuity was important with the impending impacts upon their jurisdiction'. Once it was notified, AMSA stated that it supported the New South Wales response, including tasking and contracting assets, establishing a management team to coordinate support and intervened to direct the ship into Port Botany.

The ATSB acknowledges AMSA's position, however, as discussed previously and above, it does not consider AMSA took adequate and timely action for the optimal management of this casualty given its central role as the manager of the National Plan with direct control of the key national arrangements, including towage assets. This contributed significantly to prolonging the emergency.

### Emergency towage vessel activation

While AMSA's initial focus was the SAR operation, it did task *Bullara* after becoming aware that the tug would not be hired to assist the ship. *Bullara*'s location and earlier preparation to deploy meant that it could join other tugs deployed to assist. However, the ETV, *Svitzer Glenrock*, was not tasked or alerted.

In submission to the draft report, AMSA stated that *Bullara* was the designated tug with alternate capability for the New South Wales region and met all conditions of the ETC contract, including appropriate towing gear and equipment. However, the contract did not refer to any alternate tug or *Bullara*, which did not meet all the contractual requirements, including its towing equipment which failed. Nor had Svitzer equipped or nominated it as the ETV for the New South Wales region.

The Port Authority asked AMSA's liaison officer at 1230 on 4 July to activate the ETV but a communication breakdown within AMSA resulted in the request not being actioned. When the request was followed up more than 6 hours later, it took AMSA another hour to issue an 'on task direction' for the ETV at 1957. Since the ETV had not been alerted earlier, its crew then needed a couple of hours to prepare for deployment.

Consequently, the ETV deployed at 2230, about 15 hours after AMSA was first notified of the emergency. The passage to Bate Bay in bad weather then consumed another 15 hours. By the time it arrived on scene and connected a towline late on 5 July, it was deemed to be too late to conduct a safe tow into Port Botany that day, further prolonging the emergency.

In submission, AMSA argued that the Port Authority could have deployed *Svitzer Glenrock* under its harbour towage contract if it had deemed its deployment to be necessary. In

addition, AMSA stated that the ETV was available to ‘private industry’ under commercial arrangements. However, this assertion does not consider the relevant terms of the ETC contract and the requirement that only AMSA could activate the ETV (as documented in the National Plan and MAS procedures). It is also inconsistent with the general understanding of other parties, including the Port Authority, NSW Maritime, United Salvage and Svitzer, about the tasking or release of the ETV.

Given that the heavy weather was always going to delay *Svitzer Glenrock’s* passage from Newcastle, the delay of more than 12 hours in tasking the ETV unnecessarily prolonged the emergency. The delay was largely the result of the ineffective implementation of the MAS procedures, which was also evident in AMSA’s subsequent actions, and its understanding that the ETV was readily available to other parties.

On 5 July, some 12 hours after the ETV was activated, AMSA upgraded the incident to severity level 5 as per the MAS procedures, documenting ‘machinery failure and immediate tasking of ETV’. However, the incident’s severity level and its potential consequences had been high since the emergency developed and not significantly changed in the preceding 24 hours. At no stage, including during the attempted tow, was the risk low enough to make the tasking of the ETV unnecessary.

#### Contributing factor

**The Australian Maritime Safety Authority’s Maritime Assistance Services procedures to support the National Plan for Maritime Environmental Emergencies (National Plan) were not effectively implemented. Consequently, there was a 12-hour delay in tasking the state’s nominated emergency towage vessel, *Svitzer Glenrock*, which significantly prolonged the emergency. (Safety issue)**

#### Directions to enter Port Botany

A request for a place of refuge direction became increasingly likely as the emergency continued. Despite the planned tow away from the coast, there was no assurance that the ship’s propulsion would be restored. Given the ship’s general location, seeking refuge in Port Botany was always likely. This became almost certain at 1828 on 4 July when United Salvage asked the Port Authority’s incident controller (IC) to open the port for the ship to shelter as it was proving impossible to tow it clear of the coast. Shortly afterwards, when *Bullara’s* towline parted, United Salvage asked AMSA to have the port opened and, at 1945, submitted a formal ‘place of refuge’ request to the Maritime Emergency Response Commander (MERCOTM).

Although the MAS procedures advised a place of refuge request was to be expected, AMSA had not prepared for a request or made a related assessment. Soon after 1900, when the IC followed up the earlier ETV request with the MERCOTM, they also discussed the issue of directions under national and state legislation and concluded that the former would be required. However, the IC advised that as the port was closed, the ship could not be towed there until the weather improved. No action was taken to prepare for, or draft, directions then or after United Salvage’s request.

Consequently, when the IC requested the MERCOTM to issue necessary directions on the morning of 5 July, they first discussed which parties would need to be issued the directions.

The MAS procedures included guidance for issuing directions, including an assessment tool for decision-making and a standard form. With no prior preparation, assessment and drafting of directions, which included discussions between AMSA divisions, took many hours before their issue late that afternoon.

The directions themselves (Appendix E) were brief and relatively straightforward and appeared not to be contentious as they allowed recipients (the master, shipowner, salvor and the Port Authority) to achieve their shared objective of providing safe refuge to the ship. In this context, the 7 hours taken to issue the directions that were central to resolving the emergency was considered to be excessive and indicative of an inefficient process.

In submission, AMSA stated that ‘a direction can only be issued when the delegate is satisfied that the conditions of the *Protection of the Sea (Powers of Intervention) Act 1981* (POI Act) have been established’ and ‘whether a direction is simple or non-contentious is of no relevance’. It noted that ‘the first consideration of the delegate is to determine (in this case) is whether pollution is likely, and then to consider (amongst other things) whether a direction is necessary and proportionate’. In this regard, AMSA highlighted section 10 of the POI Act (Appendix C) and the criteria that it required a delegate to consider.

On 5 July, when the direction was being considered, AMSA stated that the weather had abated and the Port Authority was planning to reopen ports. According to AMSA, substantial analysis and legal review was therefore required to determine if the direction could be issued based on being satisfied that oil or noxious substance was likely to escape from the ship and noting that the Port Authority had the authority to allow the ship to enter the port, leading to questions whether the direction was proportional and reasonably necessary. In addition, AMSA invited the ATSB to consider whether the POI Act was ‘fit for purpose to effectively address maritime casualty situations’.

In acknowledging AMSA’s perspective, the ATSB notes that the formal place of refuge request was submitted on 4 July during the continuing emergency when the ETV had not been tasked. Therefore, the requirements of the POI Act could have been reasonably and promptly assessed using the MAS procedures, place of refuge guidelines and other relevant guidance. The argument presented by AMSA and the time taken to issue the directions following the IC’s request when the ETV was en route suggests that it was not completely satisfied that the directions were necessary or proportional. In this case, concerns should have been raised in detail with the IC, particularly as AMSA had offered to issue the directions the previous day, which had been opposed by the IC due to port closure. The salvor’s request for refuge should also have been addressed in a timely manner.

#### Other factor that increased risk

**The Australian Maritime Safety Authority’s process to issue directions was inefficient and resulted in excessive time to issue directions allowing *Portland Bay* to enter Port Botany as a place of refuge. While this delay did not further prolong the emergency, such delays increase risk in time-critical situations.**

(Safety issue)

## National Plan management

The National Plan's principles included:

- a single integrated response
- comprehensive management
- use of a risk-managed approach
- effective stakeholder engagement
- integration of Australasian emergency management systems.

The first 2 of these principles underpinned optimal management of incidents through effective coordination of salvage, emergency towage and intervention matters. As AMSA has managed the National Plan since 1990, it has been central to managing any incident (either as the control agency or in a supporting role depending on incident location), particularly as it has had direct control of the key national arrangements comprising emergency towage capabilities (ETC), MERCOM and powers of intervention. Its responsibilities also included maintaining national contingency plans, managing the national response team, coordinating training and providing response equipment.

The scope of the plan included potential and actual pollution, environmental harm, casualties and salvage. As such, the MERCOM was expected to assume control of significant incidents and, if necessary, establish a casualty control unit to work with the IMT. In addition, the plan required a comprehensive response to any incident, regardless of how costs were attributed or recovered.

As previously detailed, there was delay in activating the ETV and using intervention powers under national legislation, which provided broad powers with effective mechanisms to take necessary action, including to prevent actual or potential pollution (Appendix C).

A key reason for the ineffective implementation of AMSA's procedures and guidelines was probably because annual exercises had not been conducted. As emergencies are rare, these exercises, drills and training were intended to provide AMSA and state-level agencies with regular opportunities to confirm that their respective response plans and procedures were effectively implemented. In addition, these exercises provided opportunities to practice effective coordination between jurisdictions and different parties and to adequately prepare for an emergency.

However, the last annual exercise before the incident was conducted in 2018 and AMSA advised that the COVID-19 pandemic had prevented exercises during those 4 years. Notwithstanding this, desktop exercises during that time could have been used to achieve most objectives, other than physically exercising oil or chemical spill containment.

In submission to the draft report, AMSA advised that the National Plan Strategic Coordination Committee (NPSCC) made a risk-based decision to not hold the annual exercises and established a reporting system to monitor National Plan capability and manage risks. It further stated that the NPSCC was responsible for overseeing the plan's implementation and ensuring the effectiveness of its arrangements. In addition, AMSA noted its participation in 4 desktop exercises conducted by states in 2020 and 2021.

In acknowledging AMSA's submission, the ATSB reiterates that, as the manager of the National Plan, AMSA was central to its ongoing management and the effectiveness of key arrangements by carrying out its many important functions. On the other hand, the NPSCC

set the broad policy direction of the plan, oversaw its implementation and the effectiveness of its arrangements. In this oversight role, the NPSCC was reliant on AMSA effectively managing the plan, including conducting annual reviews on its behalf to inform it about the plan's effectiveness. This was directly related to the management of the plan and key AMSA-controlled arrangements, such as ETC, over a long period, which was clearly linked to the MAS procedures and their implementation that could only have benefited from suitable exercises. In this regard, participation in the state-run desktop exercises, including with NSW Maritime, did not result in appropriate action and coordination during the response to this incident.

It should also be noted that a feature of the annual exercises before their suspension in 2019 was a focus on the response to pollution instead of its prevention through the effective management of a casualty, such as a disabled ship. Two of the 4 exercises conducted from 2015 to 2018 focused on pollution response and both exercises conducted after the incident had a similar focus.

Other drill and training records indicated that AMSA had not conducted any ETC contract compliance audits after 2016. However, since 2019, Svitzer tug crews had undertaken the 2-day emergency towage training. The only detailed emergency towage training was associated with the level 1 capability ETV based in Queensland.

The AMSA staff directly involved with this incident, except the liaison officer, had relevant emergency management training. However, the liaison officer was a very experienced AMSA surveyor and former seafarer. It was not possible to determine whether relevant training for the liaison officer would have ensured the early activation of the ETV as other factors influenced its late activation and response coordination. Nevertheless, all AMSA staff with key roles and responsibilities should have been provided the required training.

Adequate management of the National Plan, including appropriate and regular exercises, would have better enabled the effective implementation of the MAS procedures.

#### Contributing factor

**The Australian Maritime Safety Authority had not adequately managed the National Plan and annual exercises required to prepare for such incidents had not been conducted for 4 years before the incident. This probably resulted in the ineffective implementation of its Maritime Assistance Services procedures, the inefficient process for issuing directions and inadequate coordination of the incident with state authorities. (Safety issue)**

### Port Authority of New South Wales

The Port Authority's involvement began before it assumed the combat agency role, including the period before and during the development of the emergency. As was the case for AMSA, a comprehensive set of plans, procedures, licenses and guidance covered the Port Authority's responsibilities. Its incident controller had several specific responsibilities, including:

- assuming control
- assessing the emergency

- conducting an initial briefing
- advising NSW Maritime and AMSA
- planning, implementing and reviewing the incident action plan.

While the Port Authority had assessed that it was safer for *Portland Bay* to put to sea due to the bad weather with advice that the ship remain ‘at safe distance (around 12 miles)’ from the coast, this was not complemented by VTS monitoring its position and status in the area adjacent to the port limits and VTS area limits. Effectively, it was relying solely on the master keeping clear of the coast and reporting any difficulties in doing so, including a breakdown.

As the master did not report when the ship broke down, it closed the coast unnoticed by VTS for 2 hours. Therefore, when the master did report, it was imperative for VTS to promptly notify AMSA and NSW Maritime. Instead, AMSA was notified after 45 minutes and NSW Maritime was not notified. Some internal notifications were made but this did not result in required external notifications as the Port Authority’s procedures were not effectively implemented.

Significantly, there was also extensive and unnecessary delay in the Port Authority assuming the combat agency role at 1020, about 2 hours after the ship entered New South Wales waters, towards which it had been drifting. Therefore, in the 3.5 hours following the master’s notification, no agency had assumed control of the response with little coordination between agencies. This compounded the impact of the master’s late reporting and opportunities to effectively mitigate risks in the first 5 hours after the ship became disabled were lost.

The NSW Plan, Port Safety Operating Licence (PSOL) and various procedures documented the requirements for the Port Authority to assume the combat agency role given the location and movement of *Portland Bay*. The basis provided by the Port Authority for not assuming control initially, mainly the inter-agency MoU previously described, was incorrect. This fundamental misunderstanding of its documented responsibilities indicated that its procedures, plans and processes to comply with these responsibilities were not effectively implemented.

In submission to the draft report, the Port Authority argued that its roles and responsibilities under the state EMPLAN, NSW Plan and PSOL were essentially limited to responding to a spill, that this did not occur nor did a situation where a spill was imminent. Therefore, it claimed that its role as a combat agency under the NSW Plan was ‘not enlivened’ whereas the MERCOM, MPC and NSW Maritime had roles related to intervention and incident or emergency response. The Port Authority stated that it had no prevention obligations (pollution) under the National Plan and that ‘incidents’ in the emergency response requirements of the PSOL referred only to spills and was distinct from ‘emergencies’.

However, these claims are not an accurate or reasonable interpretation of the Port Authority’s roles and responsibilities under the PSOL, state EMPLAN and NSW Plan as previously detailed in this report. Further, the NSW Plan was a sub-plan of both the state EMPLAN and the National Plan and suggesting that the Port Authority had little or no role under the National Plan indicates a poor understanding of the national emergency framework for maritime emergencies. Similarly, its interpretation of the purpose of the areas of responsibility assigned to either the Port Authority or NSW Maritime under the PSOL and NSW Plan (Figure 19) was incorrect. Further, its submission made no mention of the inter-agency MoU that its incident controller had insisted was the basis of decisions at the time.

As the combat agency, the effectiveness of the Port Authority’s response depended on the success of the salvage operation, which completely relied on effective towage. Therefore, it was necessary to deploy the most capable tugs, including the ETV, in a timely manner. However, it did not adequately coordinate the response with the salvor, AMSA and NSW Maritime. The harbour tugs on scene or en route were not adequately equipped and the ETV was not activated by AMSA. Although the Port Authority requested its activation a couple of hours after assuming control, it only followed up on the request more than 6 hours later, most probably because the attempted tow had failed.

The late activation of the ETV, discussions related to directions for the ship to enter Port Botany, including its closure and reopening with AMSA, and the generally inadequate coordination indicate that the Port Authority had not effectively implemented its procedures to comply with the NSW Plan and PSOL with respect to incident and emergency response. The resultant sub-optimal response prolonged the emergency.

#### **Contributing factor**

**Port Authority of New South Wales procedures to comply with its Port Safety Operating Licence and the NSW Coastal Waters Marine Pollution Plan were not effectively implemented. This resulted in delays to the required notifications and incident response, which contributed to prolonging the emergency.** (Safety issue)

### **Prolonged emergency**

Factors, additional to those discussed above, that prolonged the emergency are discussed below.

#### **Long exposure to stranding risk**

The emergency unfolded over an extensive offshore area south of Sydney. However, it was the gale force onshore winds, rough seas and heavy swell that prevailed in the area which were the dominant factors in making the hazardous lee shore more dangerous. The longer the ship remained anchored in heavy weather, the greater the risks and the exposure to them.

Had the anchors not reduced *Portland Bay’s* rapid movement about one mile from the rocky lee shore (Figure 12, anchor position 1), it would have stranded there and almost certainly broken up resulting in the likely loss of life and oil pollution from the 950 tonnes of fuel oil and diesel oil on board. For most of the time when it was anchored in that location, a tug that could effectively relieve the load on the anchor cables was not secured to the ship. The anchors dragged slowly and the ship closed to within 0.7 of a mile of the shore before it could be towed away.

The attempt to address the risk of stranding by towing the ship 20 miles from the coast failed after 3 hours when the ship was 2.5 miles from the coast. Once again, the master resorted to deploying the anchors about one mile off the shore. Although there was a comparatively less dangerous lee shore near anchor position 2, the ship remained there for an extended period, including 2 nights. The risk of stranding, even with a tug connected, was high on the first night due to the weather and the ship dragged its anchors to less than one mile off the shore. Securing the ETV for the second night at anchor there reduced the risk.

However, the disabled ship was still in an exposed location with no certainty that the weather would continue improving or that the anchors and/or their cables would not fail.

Abandoning the ship in rough weather presented high risks to the crew. These risks were higher at night because a rescue in darkness is much more difficult, with restrictions on available resources and rescue methods. Essentially, the risks were not reduced to an acceptable level until the ship was sheltered in Port Botany.

#### **Contributing factor**

*Portland Bay* was exposed to a high risk of stranding, with its anchors deployed for prolonged periods about one mile from a dangerous lee shore in 2 separate locations.

#### **Unsuccessful blower repairs**

As previously discussed, the failure of auxiliary blower number 2 significantly reduced normal airflow to the main engine for fuel combustion, which was the principal cause of the substantial reduction in propulsive power. Therefore, repairing the blower was the immediate priority for the ship's engineers after the ship was anchored on the morning of 4 July.

The engineers believed that the blower's electric motor had also failed due to a burning smell and the smoke observed. In repairing the blower, they also tried removing the suspect electric motor but were unable to as its belt drive pulley was difficult to remove. Consequently, the engineers abandoned the repairs without testing the motor and deemed the blower to be inoperable.

The blower remained out of service for the duration of the incident and the propulsion issues continued to manifest over the next 2 days with the engine either operating at low speeds for short periods or not starting. The unreliable engine was a significant factor that prolonged the emergency because a tow was almost completely reliant on the capability of the tugs.

However, when the electric motor was subsequently overhauled ashore in Port Botany, it was found to be operational. Therefore, had the motor been tested on board, the effectively 'dead ship' situation over the 2-day emergency could have been avoided. Had this been done and engine performance improved, it would have mitigated some risks and thus reduced the duration and seriousness of the emergency.

#### **Contributing factor**

Having assessed that the failed blower's electric motor was also unserviceable, the ship's engineers were unable to remove it and abandoned the repairs without testing it. Had the motor been tested, it would have been found operational and the blower returned to service to improve engine performance and reduce the seriousness and duration of the emergency.

#### **Tug capabilities**

During the initial response, the tugs *SL Diamantina*, *SL Martinique* and *Bullara* deployed from Sydney. Despite the best efforts of their crew, the assistance provided by the tugs had limited success in the prevailing weather conditions due to their limited ocean towing capability.

As previously described, the capability and towing equipment of these tugs was generally similar and appropriate for the harbour towage services that they routinely provided. However, on 4 July, the particular circumstances applicable to each tug and the operating conditions resulted in different capabilities to perform the required tasks.

*SL Diamantina's* aft towing winch was not operational, making it unsuitable for emergency towage. Its attempts to push on the ship's hull, as suggested by United Salvage, led to significant collisions and had to be abandoned. Multiple attempts to secure the soft towline from its forward winch then failed. Consequently, the tug was not able to provide any useful assistance.

In submission to the draft of this report, United Salvage acknowledged that *SL Diamantina's* towing limitation was known but pointed out that it was a towing asset that could push. However, the salvor also noted that *Portland Bay's* pitching resulted in the attempted pushing not remaining an option and claimed that connecting the towline successfully stopped its movement towards the shore.

On the other hand, *Portland Bay's* master submitted that, in addition to the tug's efforts being 'completely ineffective', it was pushing near the midships area where there were no designated tug pushing marks and repeatedly colliding with the ship's hull. The master, therefore, reported ordering those 'improper and potentially dangerous actions' to be stopped. The master stated that adjusting the starboard anchor cable at about 1300 stopped the anchors dragging, which had continued to drag after anchoring at 0905 (including when the towline was connected) and provided recorded data in support (Figure 22).

In submission, Pacific Basin stated that the master had advised that the tug master should have permitted securing the towline to a bollard instead of requiring it connected to the ship's mooring lines, which was not an effective arrangement. It acknowledged, however, that the tug's aft winch being unavailable may have been the reason why its master required that arrangement.

*SL Martinique* arrived on scene subsequently with additional towing equipment, including a towing stretcher. *Bullara* had similar capability and towing equipment. Both tugs then attempted to tow the dead ship clear of the coast under United Salvage guidance but were unsuccessful as this was beyond their combined capabilities in the weather conditions with the towing lines deployed.

*Bullara* and *SL Martinique* each had an effective bollard pull (BP) of about 55 tonnes. Together, this could provide a BP of about 110 t, which was 85% of the AMSA-calculated 130 t required to tow the dead ship (approximately 15,500 tonnes). In addition to the BP, the length of a towline significantly affects towing capability. A sufficiently long towline that has a normal towing load forms a distinct catenary, which allows it to absorb shock loads. Based on formulae provided in the IMO ocean towing guidelines, these 55 t BP tugs required approximately 670 m towlines. However, *Bullara's* 275 m towing wire with a 50 m towing stretcher provided a 325 m towline, which was about 50% of the minimum required.

Essentially, towing the dead ship into the rough weather exceeded the combined towing capabilities of *Bullara* and *SL Martinique* with the towlines deployed. Consequently, the tow made little progress away from the coast and *Bullara's* relatively short towline, with no Veethane protective sleeves to prevent chafing, parted.

In comparison, *Svitzer Glenrock* with its 85 t BP and effectively 900 m towline with Veethane protective sleeves was far better suited for the tow with the assistance of one or more other tugs. The ETV was a superior tug that met or exceeded level 2 ETC requirements.

In conclusion, *SL Diamantina*, *SL Martinique* and *Bullara* performed to their respective capabilities and limitations (including towing equipment) as ‘vessels of opportunity’. The latter 2 tugs, with their temporary towing equipment and lines, were capable of relieving load on the ship’s anchor cables. However, effectively towing the ship in the heavy weather with the towing lines that they deployed was not a realistic or achievable expectation. Therefore, as previously discussed, timely deployment of the ETV was needed to manage the emergency optimally and effectively.

#### Contributing factor

*SL Diamantina*, the harbour tug that arrived about one hour after the ship anchored, was not capable of providing any useful assistance in the rough weather. About 6 hours later, *SL Martinique* and *Bullara*, harbour tugs temporarily equipped with additional towing equipment, began an attempt to tow the ship clear of the coast, but this was beyond their combined capabilities in the weather conditions with the towing lines deployed.

#### Salvage operation

Under the Salvage Convention, United Salvage was dutybound to Pacific Basin. Its duties as a salvor included carrying out the salvage operation with due care, preventing and/or minimising pollution, seeking assistance from other salvors if required and accepting their intervention (if requested by Pacific Basin or the master).

In submission to the draft of this report, United Salvage advised that it mobilised with the intent of providing its ‘best endeavours to assist the casualty with available assets’ and ‘continued these endeavours in mobilising any asset available either under the LOF agreement or AMSA tasking’. United Salvage also reported that when it requested *Svitzer* for *Bullara* while mobilising Engage Towage tugs, *Svitzer* did not make it available. It pointed out that *Bullara* was utilised later until its towline parted, after which United Salvage requested mobilisation of the ETV, *Svitzer Glenrock*, and asked if any other *Svitzer* tugs in Port Botany could assist.

While United Salvage’s submission captures events during the salvage operation in general, the evidence indicates that it could and should have flagged crucial matters that it was aware of with involved parties to avoid unnecessary difficulties and confusion. This included the limitations of *SL Diamantina* previously discussed and also that it was critical that at least one other tug (*Bullara*) be mobilised to supplement *SL Martinique*.

Soon after *Portland Bay*’s master agreed to the LOF salvage agreement, the ship’s agent, Monson, decided (without Pacific Basin’s authorisation) that it was not necessary to hire *Bullara*. However, as AMSA had determined that *SL Martinique* would not be able to hold the ship (without its anchors deployed), it tasked *Bullara*. Meanwhile, Pacific Basin was expecting United Salvage to take whatever measures feasible and reasonable in the prevailing circumstances, including mobilising whatever equipment or device or labours, to

salve the vessel. Therefore, it reasonably believed that suitable and capable tugs (potentially including the ETV) would be deployed. If this was not the case, then it was reasonable that the ship's master and Pacific Basin were informed accordingly.

It is of note that while *Bullara* was en route at 1230 on 4 July, AMSA reported being advised by United Salvage that it intended to only use *SL Martinique* to tow and that there was no requirement for *Bullara*. However, at 1410, when *Bullara* had arrived on scene, AMSA offered its use to United Salvage, which it accepted.

Subsequently, AMSA deemed *Bullara* to be operating under the LOF salvage agreement but Svitzer did not accept this proposition. It should be noted that Svitzer remained prepared to offer its tugs to Pacific Basin under a towage contract or to AMSA under the ETC contract, and this was its prerogative. Given that *Bullara* was initially to be hired by Pacific Basin, it was reasonable for it to expect being made aware of the option of securing a Svitzer tug(s) to assist the salvage. Pacific Basin's sole interest was the salvaging of the ship and its crew with no or minimal damage to the ship and environment. Notwithstanding the 'no cure – no pay' principle of salvage, any shipowner or manager justifiably will expect a high degree of assurance for the 'cure' aspect and the degree of success from a dedicated salvage provider offering professional services under LOF terms.

Importantly, while both Engage Towage (with United Salvage) and Svitzer provided tugs, only the former were part of the salvage agreement and award, if successful. As noted, Svitzer wanted the security (commercial) of an arrangement in place before deploying its tug(s) and also assuring the safety of the tug crew before deployment. Svitzer's sizable tug fleet in New South Wales, including the state's ETV, meant that it was well-equipped from a towage capability perspective.

On the other hand, United Salvage did not own, operate or directly control any towage vessels and was reliant on procuring these from their operators if and when they made them available (including AMSA-contracted or tasked vessels). This severely limited United Salvage's ability to provide/perform salvage services, particularly as the emergency towage available was essentially the same as the minimum ETC under the National Plan (detailed in the section titled *Emergency towage availability*). While United Salvage advised providing its best endeavours to assist with 'available assets' either under LOF terms or AMSA tasking, this qualification (available assets) was critical.<sup>171</sup>

Had United Salvage clearly flagged its limitation with the master, Pacific Basin and involved agencies, they could have made their own assessments, although AMSA, in particular, should have known about this limitation. These assessments could have informed everyone involved if the intended tow of the ship to sea was realistic in those weather conditions. It was only after the tow proved difficult and the ship was approaching Sydney that shelter there was requested. Soon after, when *Bullara*'s towline parted, the significant risk of not tasking *Svitzer Glenrock* was realised.

The success of the salvage operation would determine whether the incident management team achieved its objectives but the operation also had to be consistent with the team's plan. However, the salvor's actions were not the only factors which influenced the incident's management and, on balance, by themselves probably did not further prolong the emergency. It is also recognised that salvage inherently involves risk in a dynamic

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<sup>171</sup> United Salvage did not indicate if commercial towage arrangements or contracts were acceptable or considered.

environment. While taking calculated risks are part of a salvage operation, unnecessary risks must be avoided. Careful and continuous monitoring of the operation with ongoing risk assessments and re-evaluation, particularly by the salvor and incident controller, is crucial.

Notwithstanding United Salvage's inherent limitations that put certain matters beyond its control, providing the master, Pacific Basin and the incident controller explicit clarity about the limitations would have assisted in better managing the incident and salvage operation. In any case, these limitations made it very difficult to fully and properly carry out a salvor's duties and obligations under the salvage agreement and Salvage Convention.

#### **Other factor that increased risk**

**United Salvage was severely limited in its ability to provide the required salvage services as it did not own, operate or directly control any towage vessels for which it relied on towage providers. This limitation was not made clearly known to *Portland Bay's* master, owners or managers or involved authorities to allow them to properly assess whether the most suitable towage vessels, including the emergency towage vessel, had also been promptly deployed for salvage and emergency response. (Safety issue)**

#### **Response coordination**

The National Plan required single, integrated and comprehensive response arrangements regardless of how costs were attributed. Effective coordination was central to an optimal response, including the application of the National Maritime Emergency Response Arrangements (NEMERA) elements of ETC, powers of intervention and MERCOM.

Notwithstanding the master's late notification, there were comprehensive plans, procedures and guidance to enable the Port Authority, NSW Maritime and AMSA to manage the response and its coordination. Had these largely been followed, the Port Authority should have promptly notified AMSA (by about 0700 on 4 July) which should then have followed its MAS procedures (including alerting/tasking the ETV, expecting a refuge request and engaging with NSW Maritime). Given the very serious emergency, it was crucial that a control agency take charge as soon as possible and coordinate the required response. While AMSA initiated the rescue attempt, it did not inform NSW Maritime or the Port Authority that this was its only focus (this created confusion about emergency towage planning).

However, instead of a quick response to manage the casualty, there were unnecessary delays until the Port Authority assumed control at 1020. This resulted in sub-optimal coordination of the critical elements of emergency towage, salvage and refuge despite the AMSA liaison officer in the incident management team and the NSW Maritime liaison officer in the AMSA Response Centre (ARC). The most significant impact was the late activation of the ETV. The NSW Maritime liaison officer recalled discussions in the ARC about the ETV but not their details. The liaison officer also recalled that the issue of directions took a long time with AMSA's legal team but did not know if a place of refuge request was in fact submitted (the salvor submitted it at 1945 on 4 July).

As previously discussed, inadequate coordination was an underlying feature of the response that prolonged the emergency for more than 2 days, specifically including:

- the late emergency notification to AMSA delayed its rescue effort and probably resulted in the lack of coordination of the rescue effort with the Port Authority's response and the late establishment of AMSA's incident management team with unclear objectives
- when informally advised of the incident, NSW Maritime contacted AMSA for information and found it was not aware but did not follow up information until some 45 minutes later
- the delay in the Port Authority assuming control meant that no agency was coordinating the response in the first 3.5 hours
- late activation of the ETV, resulting in it deploying more than 15 hours after the master reported the emergency, which significantly impacted the salvage operation
- delays in issuing of directions to allow the ship to enter Port Botany for shelter.

In addition to the actions of the Port Authority, NSW Maritime and AMSA in their respective roles as the combat (control) agency and support agencies as previously described, their submissions to the draft of this report detailed their understanding of their roles and responsibilities. However, none showed a proper understanding of their responsibilities or an adequate understanding of the responsibilities of the others. The evidence indicates the following issues:

- The Port Authority had a poor and incorrect understanding of its responsibilities for emergency response, casualty management and combat (control) agency role as required by its Port Safety Operating Licence and the NSW Plan, including as a sub-plan of the National Plan.
- NSW Maritime, as the statutory agency responsible for ensuring that New South Wales was prepared to respond to an incident in accordance with the NSW Plan, had not effectively met this obligation.
- As the manager of the National Plan with control of the key elements of NEMERA, AMSA did not have the required understanding of its central role in any emergency response, regardless of location.

Collectively, these underlying issues significantly contributed to the inadequate coordination of the critical emergency response elements comprising emergency towage, salvage and refuge required for a single, integrated and comprehensive response.

#### **Contributing factor**

**The Port Authority of New South Wales did not have a proper and correct understanding of its responsibilities for emergency response under its operating licence and relevant state plans. This contributed to the inadequate coordination of emergency towage, salvage and refuge, which were critical for the single, integrated and comprehensive response required and significantly prolonged the emergency. (Safety issue)**

**Contributing factor**

**Transport for NSW (NSW Maritime), as the statutory agency responsible for ensuring that New South Wales was prepared to respond to an incident in accordance with the state’s plan that it maintained, had not effectively met this obligation. This resulted in the long delay in New South Wales assuming control of the incident and contributed to the inadequate coordination of the emergency response required for a single, integrated and comprehensive response and significantly prolonged the emergency. (Safety issue)**

**Contributing factor**

**The Australian Maritime Safety Authority, with direct control of key national emergency response arrangements, did not have the required understanding of its central role in any response, regardless of location. Consequently, its support to, and coordination with, the control agency in relation to emergency towage, salvage and refuge was inadequate, inconsistent with National Plan principles of a single, integrated and comprehensive response and significantly prolonged the emergency. (Safety issue)**

## Findings

ATSB investigation report findings focus on safety factors (that is, events and conditions that increase risk). Safety factors include ‘contributing factors’ and ‘other factors that increased risk’ (that is, factors that did not meet the definition of a contributing factor for this occurrence but were still considered important to include in the report for the purpose of increasing awareness and enhancing safety). In addition, ‘other findings’ may be included to provide important information about topics other than safety factors.

**Safety issues are highlighted in bold to emphasise their importance.** A safety issue is a safety factor that (a) can reasonably be regarded as having the potential to adversely affect the safety of future operations, and (b) is a characteristic of an organisation or a system, rather than a characteristic of a specific individual, or characteristic of an operating environment at a specific point in time.

These findings should not be read as apportioning blame or liability to any particular organisation or individual.

From the evidence available, the following findings are made with respect to the propulsion failure and near stranding of *Portland Bay* on the coast 22 km south of Port Botany (Sydney), New South Wales, on 4 July 2022.

### Contributing factors

- After departing Port Kembla in adverse weather on 3 July 2022, *Portland Bay*'s master steamed slowly or drifted about 12 miles off the coast instead of safely clearing it in accordance with the ship's safety management system procedures.
- Operating the main engine at low speed while the ship was rolling and pitching heavily exacerbated engine load fluctuations due to turbocharger surge and non-return flap hammering. Engine performance was further degraded by a leaky fuel injector, poor combustion and excessive cylinder lubrication, which resulted in sludge and deposits accumulating in the engine scavenge spaces, blow by and sticky piston rings.
- The main engine auxiliary blower number 2 impeller bearings failed in the early hours of 4 July. This was most probably due to prolonged operation with an unbalanced impeller and oversized bearing housing, aggravated by varying engine load due to the ship's rolling and pitching.
- The failure of auxiliary blower number 2 substantially reduced the normal airflow to the engine. In addition, some air was recirculating to the blower inlet through a distorted turbocharger delivery non-return flap. The resulting low airflow limited the engine speed to 42 rpm (dead slow ahead setting) and significantly reduced the propulsive power available.
- The significant loss of *Portland Bay*'s propulsive power in the prevailing gale force winds, very rough seas and heavy swell effectively disabled the ship and resulted in it drifting towards the lee shore.
- ***Portland Bay*'s manager, Pacific Basin Shipping, did not provide the master advice about notifying authorities as per the ship's safety management system emergency procedures, instead focusing on the engineering matters. This**

**probably led to the master delaying the notification and the request for tug assistance.** (Safety issue)

- *Portland Bay's* master notified Port Kembla vessel traffic service that the main engine had failed and requested tug assistance about 2 hours after the ship was disabled. This delay significantly reduced the time available to Australian authorities to respond and for tugs to assist the ship in time to avoid a stranding.
- Port Kembla vessel traffic service delayed notifying the Australian Maritime Safety Authority (AMSA) about the incident for 45 minutes. This delay reduced the time available to AMSA to initiate and coordinate an emergency response.
- *SL Diamantina*, the harbour tug that arrived about one hour after the ship anchored, was not capable of providing any useful assistance in the rough weather. About 6 hours later, *SL Martinique* and *Bullara*, harbour tugs temporarily equipped with additional towing equipment, began an attempt to tow the ship clear of the coast, but this was beyond their combined capabilities in the weather conditions with the towing lines deployed.
- **The Australian Maritime Safety Authority's Maritime Assistance Services procedures to support the National Plan for Maritime Environmental Emergencies (National Plan) were not effectively implemented. Consequently, there was a 12-hour delay in tasking the state's nominated emergency towage vessel, *Svitzer Glenrock*, which significantly prolonged the emergency.** (Safety issue)
- *Portland Bay* was exposed to a high risk of stranding, with its anchors deployed for prolonged periods about one mile from a dangerous lee shore in 2 separate locations.
- Having assessed that the failed blower's electric motor was also unserviceable, the ship's engineers were unable to remove it and abandoned the repairs without testing it. Had the motor been tested, it would have been found operational and the blower returned to service to improve engine performance and reduce the seriousness and duration of the emergency.
- **Port Authority of New South Wales procedures to comply with its Port Safety Operating Licence and the NSW Coastal Waters Marine Pollution Plan were not effectively implemented. This resulted in delays to the required notifications and incident response, which contributed to prolonging the emergency.** (Safety issue)
- **The Port Authority of New South Wales did not have a proper and correct understanding of its responsibilities for emergency response under its operating licence and relevant state plans. This contributed to the inadequate coordination of emergency towage, salvage and refuge, which were critical for the single, integrated and comprehensive response required and significantly prolonged the emergency.** (Safety issue)
- **Transport for NSW (NSW Maritime), as the statutory agency responsible for ensuring that New South Wales was prepared to respond to an incident in accordance with the state's plan that it maintained, had not effectively met this obligation. This resulted in the long delay in New South Wales assuming control of the incident and contributed to the inadequate coordination of the emergency response required for a single, integrated and comprehensive response and significantly prolonged the emergency.** (Safety issue)
- **The Australian Maritime Safety Authority, with direct control of key national emergency response arrangements, did not have the required understanding of its**

central role in any response, regardless of location. Consequently, its support to, and coordination with, the control agency in relation to emergency towage, salvage and refuge was inadequate, inconsistent with National Plan principles of a single, integrated and comprehensive response and significantly prolonged the emergency. (Safety issue)

- The Australian Maritime Safety Authority had not adequately managed the National Plan and annual exercises required to prepare for such incidents had not been conducted for 4 years before the incident. This probably resulted in the ineffective implementation of its Maritime Assistance Services procedures, the inefficient process for issuing directions and inadequate coordination of the incident with state authorities. (Safety issue)

## Other factors that increased risk

- United Salvage was severely limited in its ability to provide the required salvage services as it did not own, operate or directly control any towage vessels for which it relied on towage providers. This limitation was not made clearly known to *Portland Bay's* master, owners or managers or involved authorities to allow them to properly assess whether the most suitable towage vessels, including the emergency towage vessel, had also been promptly deployed for salvage and emergency response. (Safety issue)
- The Australian Maritime Safety Authority's process to issue directions was inefficient and resulted in excessive time to issue directions allowing *Portland Bay* to enter Port Botany as a place of refuge. While this delay did not further prolong the emergency, such delays increase risk in time-critical situations. (Safety issue)

## Other findings

- *Portland Bay's* emergency anchoring prevented a catastrophic stranding on the rocky shore in heavy weather (anchoring equipment is not designed to hold a ship in rough weather).
- The attempt to rescue *Portland Bay's* crew by helicopter in case it stranded was appropriate, as was its risk-assessed suspension after the ship's anchors reduced the risk of stranding.

# Safety issues and actions

Central to the ATSB’s investigation of transport safety matters is the early identification of safety issues. The ATSB expects relevant organisations will address all safety issues an investigation identifies.

Depending on the level of risk of a safety issue, the extent of corrective action taken by the relevant organisation(s), or the desirability of directing a broad safety message to the marine industry, the ATSB may issue a formal safety recommendation or safety advisory notice as part of the final report.

All of the directly involved parties are invited to provide submissions to this draft report. As part of that process, each organisation is asked to communicate what safety actions, if any, they have carried out or are planning to carry out in relation to each safety issue relevant to their organisation.

The initial public version of these safety issues and actions will be provided separately on the ATSB website on release of the final investigation report, to facilitate monitoring by interested parties. Where relevant, the safety issues and actions will be updated on the ATSB website after the release of the final report as further information about safety action comes to hand.

## Ship’s emergency procedures

### Safety issue description

*Portland Bay’s* manager, Pacific Basin Shipping, did not provide the master advice about notifying authorities as per the ship’s safety management system emergency procedures, instead focusing on the engineering matters. This probably led to the master delaying the notification and the request for tug assistance.

Issue number:	MO-2022-006-SI-01
Issue owner:	Pacific Basin Shipping
Transport function:	Marine: Shore-based operations
Current issue status:	Closed – Adequately addressed
Issue status justification:	The proactive safety action taken by Pacific Basin includes revised emergency procedures, emergency drills outside of office hours, a fleetwide circular disseminating lessons learned from this incident across the company and a training video based on this incident as a case study that, among other subjects, highlights the importance of early notifications. Collectively, the actions taken are assessed as having adequately addressed this safety issue.

### Proactive safety action taken by Pacific Basin Shipping

Action number:	MO-2022-006-PSA-01
Action organisation:	Pacific Basin Shipping
Action status:	Closed

Pacific Basin Shipping (Pacific Basin) advised the ATSB that the following safety action has been taken to address this safety issue to ensure better compliance with company safety management system procedures by its shipboard and shore personnel:

- On 1 June 2023, the company’s crisis management manual was revised to include a requirement to conduct at least one drill per annum outside of office hours. One such drill was conducted in 2023 and another one in 2024 to meet this requirement.
- On 28 February 2025, a circular emphasising the importance of early reporting to port authorities, vessel traffic services and others in the event of a similar incident was disseminated for the attention of ship and shore teams across the company’s fleet.
- On 23 April 2025, the company produced a training video using the incident as a case study for seafarer training to enhance the emergency response as per its procedures with an emphasis on the importance of early reporting to port authorities, vessel traffic services and others in the event of such an incident. The office-based crisis management team will be familiarised with the case study video, which also covers other relevant subjects such as machinery maintenance and keeping well clear of land and dangers in heavy weather.

## Maritime Assistance Services procedures

### Safety issue description

The Australian Maritime Safety Authority’s Maritime Assistance Services procedures to support the National Plan for Maritime Environmental Emergencies (National Plan) were not effectively implemented. Consequently, there was a 12-hour delay in tasking the state’s nominated emergency towage vessel, *Svitzer Glenrock*, which significantly prolonged the emergency.

Issue number:	MO-2022-006-SI-02
Issue owner:	Australian Maritime Safety Authority
Transport function:	Marine: Shore-based operations
Current issue status:	Open – Safety action pending
Issue status justification:	To be advised

### Proactive safety action taken by AMSA

Action number:	MO-2022-006-PSA-02
Action organisation:	Australian Maritime Safety Authority
Action status:	Monitor

The Australian Maritime Safety Authority (AMSA) advised the ATSB that it did not agree that the Maritime Assistance Services (MAS) procedures were ‘inadequately implemented’.

However, AMSA advised that since the *Portland Bay* incident it had undertaken a range of work relevant to the management of the MAS procedures, including implementation of the outcomes of its evaluation report into the incident, which has included:

- Conducted annual reviews of the MAS procedures as required in 2022, 2023 and 2024.
- Evaluations of MAS incidents following the *Portland Bay* incident, including:

- establishing a ‘lessons board’ and ‘actions allocation working group’, which respectively oversee its lessons management process and ensure identified lessons are addressed,
  - prompt and regular assessment of significant MAS incidents by an external service provider or AMSA lessons management staff (with 9 formal lessons reports containing 135 lessons and findings finalised to date),
  - collection and analysis of incident responder observations for minor incidents, where full evaluation processes are not conducted,
  - reviewing its lessons management doctrine for the lessons management program.
- Since mid-2024, conducted fortnightly tabletop ‘triage and escalation’ exercises to simulate events involving search and rescue, MAS and pollution with frontline staff participating to practice decision-making and incident management to build knowledge, expertise and capacity with exercise evaluations identifying lessons. The inclusion of external agencies and organisations in the exercises was being considered.
  - In 2024, conducted a review of the national emergency towage capability (ETC) with future ETC specifications finalised that are a significant increase on existing ones. The final contracted ETC, AMSA noted, would depend on availability in the Australian market.

### ATSB comment

The ATSB notes with concern that AMSA does not agree with the finding that its MAS procedures had not been effectively implemented. However, the ATSB welcomes the safety action that AMSA has taken, which could adequately address the safety issue when implemented in conjunction with action to address the 3 other safety issues addressed to AMSA. Therefore, the ATSB has issued the following safety recommendation to AMSA.

### Safety recommendation to AMSA

The ATSB makes a formal safety recommendation, either during or at the end of an investigation, based on the level of risk associated with a safety issue and the extent of corrective action already undertaken. Rather than being prescriptive about the form of corrective action to be taken, the recommendation focuses on the safety issue of concern. It is a matter for the responsible organisation to assess the costs and benefits of any particular method of addressing a safety issue.

Recommendation number:	MO-2022-006-SR-01
Responsible organisation:	Australian Maritime Safety Authority
Recommendation status:	Released

The Australian Transport Safety Bureau recommends that the Australian Maritime Safety Authority (AMSA) takes further safety action to address this safety issue in conjunction with action to address the other safety issues addressed to AMSA in this report.

## Port Authority emergency procedures

### Safety issue description

Port Authority of New South Wales procedures to comply with its Port Safety Operating Licence and the NSW Coastal Waters Marine Pollution Plan were not effectively implemented. This resulted in delays to the required notifications and incident response, which contributed to prolonging the emergency.

Issue number:	MO-2022-006-SI-03
Issue owner:	Port Authority of New South Wales
Transport function:	Marine: Shore-based operations
Current issue status:	Open – Safety action pending.
Issue status justification:	To be advised

### Response by Port Authority of New South Wales

The Port Authority of New South Wales (Port Authority) did not advise the ATSB that it had taken or proposed to take any safety action to address this safety issue. The Port Authority advised the ATSB that its roles and responsibilities under relevant state plans and its operating licence were limited to responding to spills (pollution) and because that did not occur during this incident, its role as a combat agency under the NSW Coastal Waters Marine Pollution Plan was not ‘enlivened’.

### ATSB comment

The ATSB has significant concerns that the Port Authority has not taken safety action to address this safety issue, and its interpretation of its roles and responsibilities under the state’s plans and its operating licence. The ATSB considers the ongoing risk due to this issue is unacceptably high with potentially severe consequences in the event of a similar incident and has, therefore, issued the following safety recommendation to the Port Authority.

### Safety recommendation to Port Authority of New South Wales

The ATSB makes a formal safety recommendation, either during or at the end of an investigation, based on the level of risk associated with a safety issue and the extent of corrective action already undertaken. Rather than being prescriptive about the form of corrective action to be taken, the recommendation focuses on the safety issue of concern. It is a matter for the responsible organisation to assess the costs and benefits of any particular method of addressing a safety issue.

Recommendation number:	MO-2022-006-SR-02
Responsible organisation:	Port Authority of New South Wales
Recommendation status:	Released

The Australian Transport Safety Bureau recommends that the Port Authority of New South Wales takes safety action to adequately address this safety issue.

## Emergency response coordination (Port Authority of NSW)

### Safety issue description

The Port Authority of New South Wales did not have a proper and correct understanding of its responsibilities for emergency response under its operating licence and relevant state plans. This contributed to the inadequate coordination of emergency towage, salvage and refuge, which were critical for the single, integrated and comprehensive response required and significantly prolonged the emergency.

Issue number:	MO-2022-006-SI-04
Issue owner:	Port Authority of New South Wales
Transport function:	Marine: Shore-based operations
Current issue status:	Open – Safety action pending
Issue status justification:	To be advised

### Response by Port Authority of New South Wales

The Port Authority of New South Wales (Port Authority) did not advise the ATSB that it had taken or proposed to take any safety action to address this safety issue. The Port Authority advised the ATSB that its roles and responsibilities under relevant state plans and its operating licence were limited to responding to spills (pollution) and because that did not occur during this incident, its role as a combat agency under the NSW Coastal Waters Marine Pollution Plan was not ‘enlivened’.

### ATSB comment

The ATSB has significant concerns that the Port Authority has not taken safety action to address this safety issue, and its interpretation of its roles and responsibilities under the state’s plans and its operating licence. The ATSB considers the ongoing risk due to this issue is unacceptably high with potentially severe consequences in the event of a similar incident and has, therefore, issued the following safety recommendation to the Port Authority.

### Safety recommendation to Port Authority of New South Wales

The ATSB makes a formal safety recommendation, either during or at the end of an investigation, based on the level of risk associated with a safety issue and the extent of corrective action already undertaken. Rather than being prescriptive about the form of corrective action to be taken, the recommendation focuses on the safety issue of concern. It is a matter for the responsible organisation to assess the costs and benefits of any particular method of addressing a safety issue.

Recommendation number:	MO-2022-006-SR-03
Responsible organisation:	Port Authority of New South Wales
Recommendation status:	Released

The Australian Transport Safety Bureau recommends that the Port Authority of New South Wales takes safety action to adequately address this safety issue.

## Emergency response coordination (NSW Maritime)

### Safety issue description

Transport for NSW (NSW Maritime), as the statutory agency responsible for ensuring that New South Wales was prepared to respond to an incident in accordance with the state’s plan that it maintained, had not effectively met this obligation. This resulted in the long delay in New South Wales assuming control of the incident and contributed to the inadequate coordination of the emergency response required for a single, integrated and comprehensive response and significantly prolonged the emergency.

Issue number:	MO-2022-006-SI-05
Issue owner:	Transport for NSW (NSW Maritime)
Transport function:	Marine: Shore-based operations
Current issue status:	Open – Safety action pending
Issue status justification:	To be advised

### Proactive safety action taken by NSW Maritime

Action number:	MO-2022-006-PSA-03
Action organisation:	Transport for NSW (NSW Maritime)
Action status:	Monitor

Transport for NSW (NSW Maritime) advised the ATSB that it did not agree with the conclusions and contributing factors detailed in the investigation report with respect to its role and response to the *Portland Bay* incident.

However, NSW Maritime advised that since the incident it had taken the following action:

- The draft inter-agency memorandum of understanding in relation to hazardous materials in inland and state waters between NSW Fire and Rescue, NSW Maritime and the Port Authority of New South Wales (Port Authority) had been finalised.
- In relation to a separate incident, NSW Maritime held discussions with the Port Authority about incident response outside ports but within the area of operations defined by its Port Safety Operating Licence (PSOL).
- When the Port Authority’s PSOL was reissued, NSW Maritime discussed incident response with the Port Authority, including the intention to update response enforcement guidelines.
- Conducted annual response exercises, including a combined exercise with the Australian Maritime Safety Authority in 2022 and a National Plan exercise in 2024, which included Port Authority participation to improve cooperation.
- A state exercise in 2023 in which NSW Maritime and Port Authority participated included a pollution response involving a disabled ship and a place of refuge assessment.

### ATSB comment

The ATSB notes with concern that NSW Maritime does not agree with the investigation’s findings with respect to its role and response to the incident. Of particular concern is the preparedness of the state to respond to an incident in accordance with the NSW Coastal

Waters Marine Pollution Plan. This is heightened by the response of the Port Authority of New South Wales to the incident and the investigation’s findings, the lack of any safety action by the Port Authority and its interpretation that its role as the combat agency was not ‘enlivened’ during the incident.

The ATSB acknowledges the safety action taken by NSW Maritime, but further action is necessary to adequately address this safety issue to ensure that New South Wales is prepared to respond to an incident in the future, including effective response coordination with national and state agencies. Therefore, the ATSB has issued the following safety recommendation to NSW Maritime.

### Safety recommendation to NSW Maritime

The ATSB makes a formal safety recommendation, either during or at the end of an investigation, based on the level of risk associated with a safety issue and the extent of corrective action already undertaken. Rather than being prescriptive about the form of corrective action to be taken, the recommendation focuses on the safety issue of concern. It is a matter for the responsible organisation to assess the costs and benefits of any particular method of addressing a safety issue.

Recommendation number:	MO-2022-006-SR-04
Responsible organisation:	Transport for NSW (NSW Maritime)
Recommendation status:	Released

The Australian Transport Safety Bureau recommends that Transport for NSW (NSW Maritime) takes safety action to adequately address this safety issue and ensure that New South Wales is prepared to effectively respond to an incident in accordance with the state’s plan.

## Emergency response coordination (AMSA)

### Safety issue description

The Australian Maritime Safety Authority, with direct control of key national emergency response arrangements, did not have the required understanding of its central role in any response, regardless of location. Consequently, its support to, and coordination with, the control agency in relation to emergency towage, salvage and refuge was inadequate, inconsistent with National Plan principles of a single, integrated and comprehensive response and significantly prolonged the emergency.

Issue number:	MO-2022-006-SI-08
Issue owner:	Australian Maritime Safety Authority
Transport function:	Marine: Shore-based operations
Current issue status:	Open – Safety action pending
Issue status justification:	To be advised

## Proactive safety action taken by AMSA

Action number:	MO-2022-006-PSA-06
Action organisation:	Australian Maritime Safety Authority
Action status:	Monitor

The Australian Maritime Safety Authority (AMSA) advised the ATSB that it generally agreed that there were communication and coordination failures both within and across the agencies responding to the incident. Consequently, it has taken the following safety action:

- Conducted a review of its emergency response coordination arrangements and initiated a program to give effect to the changes recommended by the review for the future operating model to improve the capacity to manage complex incidents, particularly in the AMSA Response Centre.
- Since mid-2024, conducted fortnightly tabletop ‘triage and escalation’ exercises to simulate events involving search and rescue, Maritime Assistance Services (MAS) and pollution, with frontline AMSA staff participating to practice decision-making and incident management to build knowledge, expertise and capacity with exercise evaluations to identify lessons. The inclusion of external agencies and organisations in the exercises was being considered.
- Increased resourcing of its Response Division to improve preparedness and planning arrangements for major incidents with 9 roles created since 2021.
- Increased staff training with 136 completions of accredited incident management training programs since July 2021, including 101 staff completing Australasian Inter-service Incident Management System (AIIMS) training, across a range of different courses.
- Evaluations of MAS incidents following the *Portland Bay* incident, including:
  - establishing a ‘lessons board’ and ‘actions allocation working group’, which respectively oversee its lessons management process and ensure identified lessons are addressed,
  - prompt and regular assessment of significant MAS incidents by an external service provider or AMSA lessons management staff (with 9 formal lessons reports containing 135 lessons and findings finalised to date),
  - collection and analysis of incident responder observations for minor incidents, where full evaluation processes are not conducted,
  - reviewing its lessons management doctrine for the lessons management program.

### ATSB comment

The ATSB notes that AMSA partially agrees with this safety issue and finding and welcomes the safety action it has taken to address this issue. This action and the proposed future operating model for the emergency response coordination arrangements could adequately address the issue when implemented in conjunction with action to address the 3 other safety issues addressed to AMSA. Therefore, the ATSB will monitor the safety issue and action and has issued the following safety recommendation to AMSA.

## Safety recommendation to AMSA

The ATSB makes a formal safety recommendation, either during or at the end of an investigation, based on the level of risk associated with a safety issue and the extent of corrective action already undertaken. Rather than being prescriptive about the form of corrective action to be taken, the recommendation focuses on the safety issue of concern. It is a matter for the responsible organisation to assess the costs and benefits of any particular method of addressing a safety issue.

Recommendation number:	MO-2022-006-SR-05
Responsible organisation:	Australian Maritime Safety Authority
Recommendation status:	Released

The Australian Transport Safety Bureau recommends that the Australian Maritime Safety Authority (AMSA) completes the safety action proposed to address this safety issue in conjunction with action to address the other safety issues addressed to AMSA in this report.

## National Plan management

### Safety issue description

The Australian Maritime Safety Authority had not adequately managed the National Plan and annual exercises required to prepare for such incidents had not been conducted for 4 years before the incident. This probably resulted in the ineffective implementation of its Maritime Assistance Services procedures, the inefficient process for issuing directions and inadequate coordination of the incident with state authorities.

Issue number:	MO-2022-006-SI-07
Issue owner:	Australian Maritime Safety Authority
Transport function:	Marine: Shore-based operations
Current issue status:	Open – Safety action pending
Issue status justification:	To be advised

### Proactive safety action taken by AMSA

Action number:	MO-2022-006-PSA-05
Action organisation:	Australian Maritime Safety Authority
Action status:	Monitor

The Australian Maritime Safety Authority (AMSA) advised the ATSB that it did not agree with the finding that the National Plan had not been adequately managed.

However, AMSA advised that a range of national capability programs have been delivered under the oversight of the National Plan Strategic Coordination Committee (NPSCC), including:

- A comprehensive review of the National Plan was conducted by the NPSCC with advice from the National Plan Strategic Industry Forum (NPSIAF), which included the following recommendations:

- reaffirming constitutional arrangements, that the state and Northern Territory governments are responsible for the management of maritime incidents within the bounds of their jurisdiction,
  - the need to review the intergovernmental agreements, including the National Maritime Emergency Response Arrangements (NEMERA),
  - the need to review legislation supporting the National Plan arrangements, including the *Protection of the Sea (Powers of Intervention) Act 1981* to ensure that it is fit for purpose.
- Evaluation reports were prepared for National Plan annual exercises conducted in 2022, 2023 and 2024 that identified areas for improvement with several recommendations, which will be considered when planning exercises.
  - The National Plan learning and development program has delivered various programs, including 49 training courses and 11 online professional development programs across several subject areas.
  - Three Environment Science and Technology (ES&T) workshops have been conducted since the *Portland Bay* incident with 40–50 participants from each jurisdiction, including from state, territory and federal agencies, from industry, New Zealand and South Pacific nations. The ES&T workshops were held in Canberra (2022), Glenelg (2023) and Darwin (2024). These workshops provided an opportunity for the ES&T network to discuss environmental and technological issues and advancements in the maritime response space with a mock tabletop exercise of a maritime spill incident at each workshop.

#### **ATSB comment**

The ATSB is concerned that AMSA does not agree with the investigation's finding that it had not effectively managed the National Plan. However, the ATSB welcomes the safety action that it has taken, which could adequately address the safety issue when implemented in conjunction with action to address the 3 other safety issues addressed to AMSA. In this regard, the ATSB notes the recommendations of the National Plan review, which require further reviews of its key elements. Therefore, the ATSB will monitor the safety issue and action and has issued the following safety recommendation to AMSA.

## Safety recommendation to AMSA

The ATSB makes a formal safety recommendation, either during or at the end of an investigation, based on the level of risk associated with a safety issue and the extent of corrective action already undertaken. Rather than being prescriptive about the form of corrective action to be taken, the recommendation focuses on the safety issue of concern. It is a matter for the responsible organisation to assess the costs and benefits of any particular method of addressing a safety issue.

Recommendation number:	MO-2022-006-SR-06
Responsible organisation:	Australian Maritime Safety Authority
Recommendation status:	Released

The Australian Transport Safety Bureau recommends that the Australian Maritime Safety Authority (AMSA) progresses safety action to address this safety issue in conjunction with action to address the other safety issues addressed to AMSA in this report.

## Salvage operation

### Safety issue description

United Salvage was severely limited in its ability to provide the required salvage services as it did not own, operate or directly control any towage vessels for which it relied on towage providers. This limitation was not made clearly known to *Portland Bay*'s master, owners or managers or involved authorities to allow them to properly assess whether the most suitable towage vessels, including the emergency towage vessel, had also been promptly deployed for salvage and emergency response.

Issue number:	MO-2022-006-SI-09
Issue owner:	United Salvage
Transport function:	Marine: Shore-based operations
Current issue status:	Open – Safety action pending
Issue status justification:	To be advised

### Response by United Salvage

United Salvage advised the ATSB that it had mobilised with the intent of providing its best endeavours to assist *Portland Bay* with 'available' towage assets and continued these endeavours with any asset 'available' either under the Lloyds Open Form (LOF) salvage agreement or tasked by the Australian Maritime Safety Authority. United Salvage did not provide advice on safety action.

### ATSB comment

The ATSB acknowledges that United Salvage used the towage assets made available to it and recognises the limitations with respect to the assets at its disposal. However, the ATSB considers that a salvage company offering to provide professional salvage services, including under an LOF salvage agreement, should afford the master, owners and managers of the ship to be salvaged the opportunity to consider the salvor's capabilities and limitations. This would allow them to make informed decisions about whether other salvage or towage providers should supplement the salvor's services. A professional salvor should

ensure that suitable towage assets are readily available at its disposal to provide the salvage services required and expected.

Therefore, the ATSB considers that United Salvage should have clearly informed *Portland Bay's* master, owners and managers as well as response agencies about its limitations. As such, the ATSB has issued the following safety recommendation to United Salvage.

### Safety recommendation to United Salvage

The ATSB makes a formal safety recommendation, either during or at the end of an investigation, based on the level of risk associated with a safety issue and the extent of corrective action already undertaken. Rather than being prescriptive about the form of corrective action to be taken, the recommendation focuses on the safety issue of concern. It is a matter for the responsible organisation to assess the costs and benefits of any particular method of addressing a safety issue.

Recommendation number:	MO-2022-006-SR-07
Responsible organisation:	United Salvage
Recommendation status:	Released

The Australian Transport Safety Bureau recommends that United Salvage takes safety action to address this safety issue by ensuring that its capabilities and limitations to provide professional salvage services are made clearly known to the master, owners and managers of the ship to be salvaged under a salvage agreement.

## Process for issuing directions

### Safety issue description

The Australian Maritime Safety Authority's process to issue directions was inefficient and resulted in excessive time to issue directions allowing *Portland Bay* to enter Port Botany as a place of refuge. While this delay did not further prolong the emergency, such delays increase risk in time-critical situations.

Issue number:	MO-2022-006-SI-06
Issue owner:	Australian Maritime Safety Authority
Transport function:	Marine: Shore-based operations
Current issue status:	Open – Safety action pending
Issue status justification:	To be advised

### Proactive safety action taken by AMSA

Action number:	MO-2022-006-PSA-04
Action organisation:	Australian Maritime Safety Authority
Action status:	Monitor

The Australian Maritime Safety Authority (AMSA) advised the ATSB that it did not agree with this safety issue finding and that there were challenges with the issuing of directions in the incident involving *Portland Bay*. It advised that the following action has been taken since the incident:

- A review of the National Plan made recommendations, accepted by the Infrastructure and Transport Senior Officials Committee, that legislation supporting emergency response arrangements be reviewed to ensure that it enables effective response to current and future incident types. This includes a review of the *Protection of the Sea (Powers of Intervention) Act 1981* (POI Act).
- The conduct of incident escalation exercises on a fortnightly basis. The exercises include AMSA Legal as a standing participant to address lessons identified by AMSA’s evaluation of the *Portland Bay* incident that early engagement was essential for consideration of directions being made under the POI Act.

**ATSB comment**

The ATSB notes with concern that AMSA does not agree with the investigation’s finding that its process for issuing directions was inefficient. Notwithstanding this, the ATSB welcomes the safety action that it has taken, which could adequately address the safety issue when implemented in conjunction with action to address the 3 other safety issues addressed to AMSA. In this regard, the ATSB notes the National Plan review recommendation for a review of the *Protection of the Sea (Powers of Intervention) Act 1981* (POI Act).

However, the ATSB considers that the issue of directions in emergencies involving casualties with potentially severe consequences under the existing framework, which include the POI Act and AMSA’s procedures, can and should be completed in a timely manner to mitigate actual and potential consequences. Therefore, the ATSB has issued the following safety recommendation to AMSA.

**Safety recommendation to AMSA**

The ATSB makes a formal safety recommendation, either during or at the end of an investigation, based on the level of risk associated with a safety issue and the extent of corrective action already undertaken. Rather than being prescriptive about the form of corrective action to be taken, the recommendation focuses on the safety issue of concern. It is a matter for the responsible organisation to assess the costs and benefits of any particular method of addressing a safety issue.

Recommendation number:	MO-2022-006-SR-08
Responsible organisation:	Australian Maritime Safety Authority
Recommendation status:	Released

The Australian Transport Safety Bureau recommends that the Australian Maritime Safety Authority (AMSA) takes safety action to adequately address this safety issue.

## Safety action not associated with an identified safety issue

Whether or not the ATSB identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. The ATSB has been advised of the following proactive safety action in response to this occurrence.

### Additional safety action by Svitzer Australia

Svitzer Australia (Svitzer) identified that the shorter length of the towing wire of its tug *Bullara* while towing *Portland Bay* on 4 July 2022 contributed to the wire's failure. *Bullara* was a sister vessel of Svitzer's Queensland-based emergency towage vessels, *Beltana* and *Clontarf*, which had different towing arrangements (specifically, longer length and diameter of the towing wire on the aft towing winch). Therefore, as proactive safety action, Svitzer has fitted *Bullara* with new towing equipment that is aligned to the tug's bollard pull and is similar to its sister vessels.

# General details

## Occurrence details

Date and time:	4 July 2022 – 0450 Eastern Standard Time	
Occurrence class:	Serious incident	
Occurrence categories:	Machinery failure and Other (Near stranding)	
Location:	22 km south of Port Botany (Near stranding)	
	Latitude: 34.1563° S	Longitude: 151.1161° E

## Ship details

Name:	<i>Portland Bay</i>	
IMO number:	9276200	
Call sign:	VRHR2	
Flag:	Hong Kong	
Classification society:	Nippon Kaiji Kyokai	
Departure:	Port Kembla	
Destination:	Port Kembla (Port Botany for refuge)	
Ship type:	Bulk/Lumber Carrier	
Builder:	Imabari Shipbuilding Company, Japan	
Year built:	2004	
Owner(s):	Uhland Shipping, British Virgin Islands	
Manager:	Pacific Basin Shipping, Hong Kong	
Gross tonnage:	16,960	
Deadweight (summer):	28,446 t	
Summer draught:	9.778 m	
Length overall:	169.26 m	
Moulded breadth:	27.20 m	
Moulded depth:	13.60 m	
Main engine(s):	Makita Mitsui MAN-B&W 6S42MC (Mark VI)	
Total power:	5,850 kW	
Speed:	14 knots	
Injuries:	Crew – 0	Passengers – 0
Damage:	None	

# Glossary

ADF	Australian Defence Force
ADV	Australian defence vessel
AIIMS	Australasian Inter-service Incident Management System
AIS	Automatic Identification System
AMSA	Australian Maritime Safety Authority
AMSG	Australian Maritime Services Group
ARC	Australian Maritime Safety Authority Response Centre
BIMCO	Baltic and International Maritime Council
BL	Breaking load
BoM	Australian Bureau of Meteorology
BP	Bollard pull
Class NK	Nippon Kaiji Kyokai
COLREGs	The International Regulations for Preventing Collisions at Sea, 1972, as amended
COO	Chief Operating Officer
DPA	Designated person ashore
ECDIS	Electronic chart display and information system
EMPLAN	New South Wales State Emergency Management Plan
ETA	Estimated time of arrival
ETC	Emergency towage capability
ETV	Emergency towage vessel
FRNSW	Fire and Rescue New South Wales
GMDSS	Global Maritime Distress and Safety System
HNS	Hazardous and noxious substance
IACS	International Association of Classification Societies
IAP	Incident action plan
IC	Incident controller
ICS	International Chamber of Shipping
IGA	Inter-Governmental Agreement on the National Maritime Emergency Response Arrangements
IMO	International Maritime Organization
IMT	Incident management team

ISM	International Management Code for the Safe Operation of Ships and for Pollution Prevention, 1995, as amended
ISU	International Salvage Union
JRCC	Joint Rescue Coordination Centre
LO	Lubricating oil
LOF	Lloyd's open form of salvage agreement
MAC	New South Wales Police Marine Area Command
MAICT	Multi-agency incident control team
MAS	Maritime Assistance Services
MBL	Minimum breaking load
MCCU	Maritime casualty control unit
MCIMT	Maritime casualty incident management team
MCO	Maritime casualty officer
MERCOM	Maritime emergency response commander
MPC	Marine Pollution Controller
National Plan	National Plan for Maritime Environmental Emergencies
NMERA	National Maritime Emergency Response Arrangements
NPSCC	The National Plan Strategic Coordination Committee
NSWFB	New South Wales Fire Brigades
NUC	Not under command
OCIMF	Oil Companies International Marine Forum
P&I	Protection and indemnity
Port Authority	Port Authority of New South Wales
PMS	Planned maintenance system
PSOL	Port safety operating licence
RCC	Rescue Coordination Centre
RFS	New South Wales Rural Fire Service
RPM	Revolutions per minute
SAR	Search and rescue
SCOPIIC	Special Compensation P&I Club
SERM Act	<i>State Emergency and Rescue Management Act 1989</i> (NSW)
SMS	Safety management system
SOLAS	The International Convention for the Safety of Life at Sea, 1974, as amended

TOWHIRE	The BIMCO TOWHIRE 2021 ocean towage agreement
UMS	Unattended machinery spaces
VDR	Voyage data recorder
VHF	Very high frequency (radio)
VTS	Vessel traffic service
WHO	World Health Organization

# Sources and submissions

## Sources of information

The sources of information during the investigation included:

- *Portland Bay's* master and chief engineer
- Pacific Basin Shipping, Hong Kong (*Portland Bay's* manager)
- recorded data from the ship's voyage data recorder
- MAN PrimeServ, the ship's main engine manufacturer's service department
- Monson Agencies Australia, the ship's local agent
- Australian Maritime Safety Authority
- Transport for NSW (NSW Maritime)
- Port Authority of New South Wales
- United Salvage
- Engage Marine, the parent company of Engage Towage
- Svitzer Australia
- Nippon Kaiji Kyokai (Class NK)
- Bureau of Meteorology.

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## Submissions

Under section 26 of the *Transport Safety Investigation Act 2003*, the ATSB may provide a draft report, on a confidential basis, to any person whom the ATSB considers appropriate. That section allows a person receiving a draft report to make submissions to the ATSB about the draft report.

A draft of this report was provided to the following directly involved parties:

- *Portland Bay's* master and chief engineer
- Pacific Basin Shipping, Hong Kong
- the ship's flag State administration, Hong Kong
- Australian Maritime Safety Authority
- Transport for NSW (NSW Maritime)
- Port Authority of New South Wales
- United Salvage
- Engage Marine, the parent company of Engage Towage
- Svitzer Australia
- MAN PrimeServ
- Monson Agencies Australia
- Nippon Kaiji Kyokai (Class NK).

Submissions were received from:

- Pacific Basin Shipping, Hong Kong
- the ship's flag State administration, Hong Kong
- Australian Maritime Safety Authority
- Transport for NSW (NSW Maritime)
- Port Authority of New South Wales
- United Salvage
- Engage Marine (Engage Towage)
- Svitzer Australia
- MAN Energy Solutions on behalf of MAN PrimeServ and MAN B&W
- Monson Agencies Australia
- Nippon Kaiji Kyokai (Class NK)

The submissions were reviewed and, where considered appropriate, the text of the report was amended accordingly.

# Appendices

## Appendix A – Lloyd’s standard salvage agreement

The standard LOF 2020 form below was used for the salvage agreement in this incident.

<b>LOF 2020</b>	
	
<b>LLOYD'S STANDARD FORM OF SALVAGE AGREEMENT</b> (Approved and Published by the Council of Lloyd's)	
<b>NO CURE - NO PAY</b>	
1. Name of the salvage Contractors:  (referred to in this agreement as "the Contractors")	2. Property to be salvaged: The vessel: her cargo freight bunkers stores and any other property thereon but excluding the personal effects or baggage of passengers master or crew (referred to in this agreement as "the property")
3. Agreed place of safety:	4. Agreed currency of any arbitral award and security (if other than United States dollars)
5. Date of this agreement	6. Place of agreement
7. Is the Scopic Clause incorporated into this agreement? State alternative: Yes/No	
8. Person signing for and on behalf of the Contractors  Signature:	9. Captain or other person signing for and on behalf of the property  Signature:
<p><b>A Contractors' basic obligation:</b> The Contractors identified in Box 1 hereby agree to use their best endeavours to salvage the property specified in Box 2 and to take the property to the place stated in Box 3 or to such other place as may hereafter be agreed. If no place is inserted in Box 3 and in the absence of any subsequent agreement as to the place where the property is to be taken the Contractors shall take the property to a place of safety.</p> <p><b>B Environmental protection:</b> While performing the salvage services the Contractors shall also use their best endeavours to prevent or minimise damage to the environment.</p> <p><b>C Scopic Clause:</b> Unless the word "No" in Box 7 has been deleted this agreement shall be deemed to have been made on the basis that the Scopic Clause is not incorporated and forms no part of this agreement. If the word "No" is deleted in Box 7 this shall not of itself be construed as a notice invoking the Scopic Clause within the meaning of sub-clause 2 thereof.</p>	

- D Effect of other remedies:** Subject to the provisions of the International Convention on Salvage 1989 as incorporated into English law ("the Convention") relating to special compensation and to the Scopic Clause if incorporated the Contractors services shall be rendered and accepted as salvage services upon the principle of "no cure - no pay" and any salvage remuneration to which the Contractors become entitled shall not be diminished by reason of the exception to the principle of "no cure - no pay" in the form of special compensation or remuneration payable to the Contractors under a Scopic Clause.
- E Prior services:** Any salvage services rendered by the Contractors to the property before and up to the date of this agreement shall be deemed to be covered by this agreement.
- F Duties of property owners:** Each of the owners of the property shall cooperate fully with the Contractors. In particular:
- (i) the Contractors may make reasonable use of the vessel's machinery gear and equipment free of expense provided that the Contractors shall not unnecessarily damage abandon or sacrifice any property on board;
  - (ii) the Contractors shall be entitled to all such information as they may reasonably require relating to the vessel or the remainder of the property provided such information is relevant to the performance of the services and is capable of being provided without undue difficulty or delay;
  - (iii) the owners of the property shall co-operate fully with the Contractors in obtaining entry to the place of safety stated in Box 3 or agreed or determined in accordance with Clause A.
- G Rights of termination:** When there is no longer any reasonable prospect of a useful result leading to a salvage reward in accordance with Convention Articles 12 and/or 13 either the owners of the vessel or the Contractors shall be entitled to terminate the services hereunder by giving reasonable prior written notice to the other.
- H Deemed performance:** The Contractors' services shall be deemed to have been performed when the property is in a safe condition in the place of safety stated in Box 3 or agreed or determined in accordance with clause A. For the purpose of this provision the property shall be regarded as being in safe condition even though that property (or part thereof) is damaged or in need of maintenance provided that (i) the Contractors are not obliged to remain in attendance to satisfy the requirements of any port or harbour authority, governmental agency or similar authority and (ii) the continuation of skilled salvage services from the Contractors or other salvors is no longer necessary to avoid the property becoming lost or significantly further damaged or delayed.
- I Arbitration and the LSA Clauses:** The Contractors' remuneration and/or special compensation shall be determined by arbitration in London in the manner prescribed by Lloyd's Salvage Arbitration Clauses ("the LSAC") in force at the date of this agreement. The provisions of the said LSAC are deemed to be incorporated in this agreement and form an integral part hereof. Any other difference arising out of this agreement or the operations hereunder shall be referred to arbitration in the same way.
- J Governing law:** This agreement and any arbitration hereunder shall be governed by English law.
- K Scope of authority:** The Master or other person signing this agreement on behalf of the property identified in Box 2 enters into this agreement as agent for the respective owners thereof and binds each (but not the one for the other or himself personally) to the due performance thereof.
- L Inducements prohibited:** No person signing this agreement or any party on whose behalf it is signed shall at any time or in any manner whatsoever offer provide make give or promise to provide or demand or take any form of inducement for entering into this agreement.

**IMPORTANT NOTICES**

- 1 Salvage security.** As soon as possible the owners of the vessel should notify the owners of other property on board that this agreement has been made. If the Contractors are successful the owners of such property should note that it will become necessary to provide the Contractors with salvage security promptly in accordance with Clause 4 of the LSAC referred to in Clause I. The provision of General Average security does not relieve the salvaged interests of their separate obligation to provide salvage security to the Contractors.
- 2 Incorporated provisions.** Copies of the applicable Scopic Clause and LSAC in force at the date of this agreement may be obtained from (i) the Contractors or (ii) the Salvage Arbitration Branch at Lloyd's, One Lime Street, London EC3M 7HA.
- 3 Awards.** The Council of Lloyd's is entitled to make available the Award, Appeal Award and Reasons on [www.lloydsagency.com](http://www.lloydsagency.com) (the website) subject to the conditions set out in Clause 13 of the LSAC.
- 4 Notification to Lloyd's.** The Contractors shall within 14 days of their engagement to render services under this Agreement notify the Council of Lloyd's of their engagement and forward the signed agreement or a true copy thereof to the Council as soon as possible. A copy of any other agreement that amends or varies the provisions or terms of this Agreement must also be provided to the Council as soon as possible. The Council will not charge for such notification.

Tel.No. + 44(0)20 7327 5408/5407  
 Fax No. +44(0)20 7327 6827  
 E-mail: [lloyds-salvage@lloyds.com](mailto:lloyds-salvage@lloyds.com)  
[www.lloyds.com/agency](http://www.lloyds.com/agency)

15.1.08 3.12.24 13.10.26 12.4.50 10.6.53 20.12.67 23.2.72  
 21.5.80 5.9.90 1.1.95 1.9.2000 6.5.2011 1.1.2020

## Appendix B – Incident severity matrix (AMSA)

Maritime incident severity matrix (version 17 November 2021) appended to the Maritime Assistance Services procedure, 01/2021, at the time of incident.

		Incident Type					Guide to proportionate and reasonable incident response				
Event Severity Level	Severity Level	Machinery failure	Grounding, collision, fire or flooding	Risk to cause significant pollution or damage to the environment	AMSA's Powers of Intervention	ETV Activation	Place of Refuge request	Deployment of Maritime Casualty Officer	State/NT request/ Another Coastal State impact	Political/ reputational impact	
Negligible	1	Failure of non-critical machinery which does not impact on the safety, seaworthiness, or ability to navigate the vessel	Superficial damage which has been contained and poses no risk to safety or seaworthiness of the vessel	Negligible risk that the incident will lead to significant pollution or damage to the environment	Remote possibility that AMSA's Powers of Intervention will be invoked	Unlikely to require Alert, or Tasking of ETV	Remote possibility that AMSA will receive a Place of Refuge request	Remote possibility that AMSA's MCO would be deployed	Remote possibility that State/NT will request assistance or other Coastal State is/ will be impacted	No media coverage expected	
Minor	2	Failure of a primary critical system. However, the vessel is fitted with a secondary or redundant system which is operational and does not impact on its ability to safely navigate to its next port	Damage has been sustained, but is contained, and poses no immediate risk, nor is likely to pose a risk to the ongoing safety and seaworthiness of the vessel	Minor risk that the incident will lead to significant pollution or damage to the environment	Unlikely AMSA's Powers of Intervention will be invoked	Possible Alerting of nearest ETV. Unlikely to issue Tasking notice	It is unlikely that AMSA will receive a Place of Refuge request	Unlikely that AMSA's MCO would be deployed	Unlikely State/NT request has been received, or other Coastal State is being impacted	No media coverage expected	
Moderate	3	Single, critical system is inoperable, with no redundancy, which affects the vessel's ongoing safe navigation, and a low likelihood of rectification within 0 hours	Substantive damage which may negatively affect the safety and seaworthiness of the vessel	Moderate risk for the incident to lead to significant pollution and/or damage to the environment	Cautionary warning to the vessel Master advising of the potential use of AMSA's Powers of Intervention	Alert nearest ETV. Possible Tasking	Potential that AMSA may receive a Place of Refuge request	Potential for AMSA's MCO to be deployed if safe to do so	Possible State/NT request has been received, or other Coastal State is being impacted	Media coverage is possible	
Major	4	Multiple critical systems have failed with no redundancy, without prospect to recover them	Substantial structural damage which has critically affected the safety and seaworthiness of the vessel	Major risk that the incident may lead to significant pollution and/or damage to the environment	Probable requirement for the Powers of Intervention to be invoked	Probable Tasking	Probable that AMSA will receive a Place of Refuge request	Probable that AMSA's MCO would be deployed, if safe to do so	Probable State/NT request has been received, or other Coastal State is being impacted	Media coverage is expected	
Severe	5	Complete dead ship. All critical systems have failed without prospect to recover them	Catastrophic damage leading to the vessel being unseaworthy	Incident is causing severe pollution and damage to the environment	Powers of Intervention invoked	Immediate Tasking of nearest ETV	AMSA has received a Place of Refuge request	AMSA's MCO to be deployed if safe to do so	State/NT request has been received, or other Coastal State is being impacted	Media coverage is occurring	

## **Appendix C – Protection of the Sea (Powers of Intervention) Act 1981**

### **Sections of the *Protection of the Sea (Powers of Intervention) Act 1981* (No. 33, 1981, Compilation No. 13, 1 July 2019)**

#### **8 Taking of measures to prevent pollution of sea by oil—maritime casualty on the high seas**

- (1) Where the Authority is satisfied that, following upon a maritime casualty on the high seas or acts related to such a casualty, 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 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.
- (2) Without limiting the generality of subsection (1), the measures that the Authority may take under this section in relation to the ship, or any of the ships, involved in the maritime casualty include:
  - a) the taking of action, whether or not directions have been issued under paragraph (b) in relation to the ship:
    - i. to move the ship or part of the ship to another place;
    - ii. to remove cargo from the ship;
    - iii. to salvage the ship, part of the ship or any of the ship's cargo;
    - iv. to sink or destroy the ship or part of the ship;
    - v. to sink, destroy or discharge into the sea any of the ship's cargo; or
    - vi. to take over control of the ship or part of the ship; or
  - b) the issuing of directions of the kind authorized by section 11:
    - i. to the owner of the ship;
    - ii. to the master of the ship; or
    - iii. to any salvor in possession of the ship; or
    - iv. to any other person.

#### **10 Taking of measures to prevent pollution of sea by oil or noxious substances—general powers**

- (1) This section (other than subsections (3B) and (3C)) applies in relation to:
  - a) any ship in internal waters, where...
  - b) any ship in the Australian coastal sea; and
  - ba) any ship in the exclusive economic zone of Australia; and
  - c) any Australian ship on the high seas
- (2) Where oil or a noxious substance is escaping, or has escaped, from a ship in relation to which this section applies, or the Authority is satisfied that oil or a noxious substance is likely to escape from such a ship, the Authority may, subject to subsection (4), take such measures as it considers necessary:

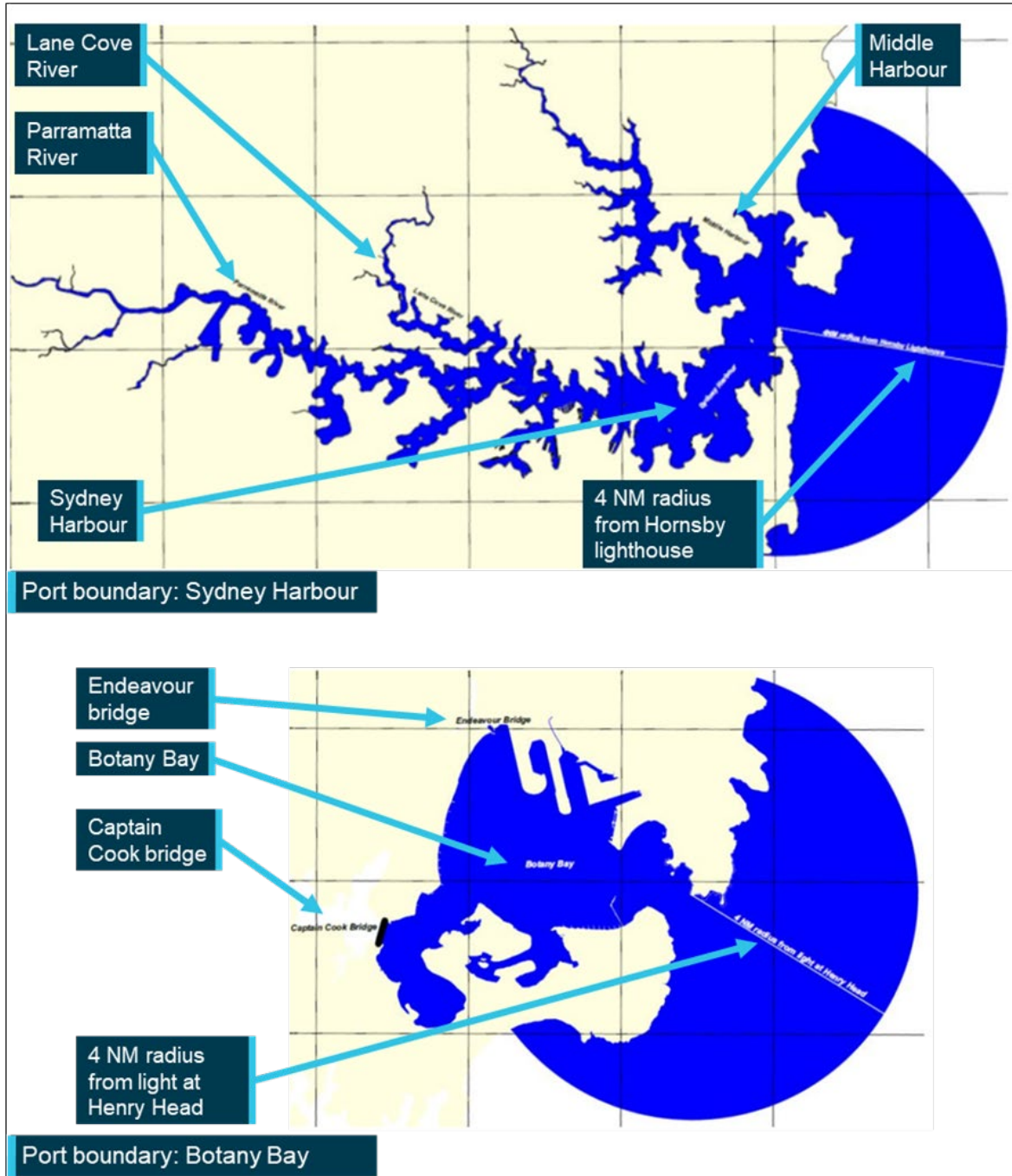
- a) to prevent, or reduce the extent of, the pollution or likely pollution, by the oil or noxious substance, of any Australian waters, any part of the Australian coast or any Australian reef;
  - b) to prevent damage, or reduce the extent, or likely extent, of damage, to any of the related interests of Australia by reason of the pollution, or likely pollution, of the sea by the oil or noxious substance;
  - c) to protect any Australian waters, any part of the Australian coast or any Australian reef from pollution or likely pollution by the oil or noxious substance;
  - d) to protect any other related interests of Australia from damage by reason of the pollution, or likely pollution, of the sea by the oil or noxious substance; or
  - e) in a case where the oil or noxious substance has escaped—to remove or reduce the effects, or likely effects, of pollution or likely pollution, by the oil or noxious substance, on any Australian waters, any part of the Australian coast, any Australian reef or any of the related interests of Australia.
- (3) Without limiting the generality of subsection (2), the measures that the Authority may take under this section in relation to the ship include:
- a) the taking of action, whether or not directions have been issued under paragraph (b) in relation to the ship:
    - i. to move the ship or part of the ship to another place;
    - ii. to remove cargo from the ship;
    - iii. to salvage the ship, part of the ship or any of the ship’s cargo;
    - iv. to sink or destroy the ship or part of the ship;
    - v. to sink, destroy or discharge into the sea any of the ship’s cargo; or
    - vi. to take over control of the ship or part of the ship; or
  - b) the issuing of directions of the kind authorized by section 11...
- (4) The Minister and the Authority shall, in the exercise of powers under this section, act in accordance with the following principles:
- a) measures taken under this section shall be in proportion to the damage, whether actual or threatened, in relation to which the measures are taken;
  - b) in determining whether measures are in proportion to the damage in relation to which the measures are taken, regard shall be had to:
    - i. the extent and probability of imminent damage if the measures are not taken move the ship or part of the ship to another place;
    - ii. the likelihood of those measures being effective; and remove cargo from the ship;
    - iii. the extent of the damage which may be caused by the measures;
  - c) measures taken under this section shall not exceed those reasonably necessary to achieve the end sought to be achieved by the measures and shall cease as soon as that end has been achieved;
  - d) measures taken under this section shall not unnecessarily interfere with the rights and interests of other countries, and of any persons, likely to be affected by the measures;

- e) in taking measures under this section, any risk to human life shall, as far as possible, be avoided.

## Appendix D – Port boundaries

### Sydney Harbour and Botany Bay boundaries

Port boundary maps appended to the Port Safety Operating Licence (2019–2024) issued to the Port Authority of New South Wales, annotated by the ATSB.



## Appendix E – Direction for *Portland Bay*

### Direction – *Protection of the Sea (Powers of Intervention) Act 1981*

Redacted copy of direction issued to the owner and master of *Portland Bay* on 5 July 2022.



Australian Government  
Australian Maritime Safety Authority

#### **Direction – *Protection of the Sea (Powers of Intervention) Act 1981***

I, [REDACTED] Executive Director Response, as delegate of the Australian Maritime Safety Authority (the **Authority**) for the purposes of s 10(2) of the *Protection of the Sea (Powers of Intervention) Act 1981* (the **Intervention Act**), hereby direct the **owner and master** the *Portland Bay* IMO 9276200 (the **Vessel**) to:

1. By 1730 AEST 05 July 2022, acknowledge receipt of this Direction via email to [rccaus@amsa.gov.au](mailto:rccaus@amsa.gov.au)
2. Take tow line(s) as directed by the salvor in possession and engage in operations to relocate the Vessel to a suitable berth in Port Botany in order for the vessel to conduct repairs of the main engine.
3. Comply with the directions of the harbour master of the Port Botany and ensure berthing is completed by no later than 1900 AEDT 06 July 2022.
4. Promptly advise the Authority if the owner or master become aware that compliance with any of the above directions will or may be delayed for any reason, of:
  - a. the cause and nature of the delay
  - b. the anticipated duration of the delay
  - c. the steps being taking and will take to minimise the delay.

*Note: Contravention of a Direction issued under the Intervention Act is an offence that carries a maximum penalty in excess of AUD2,000,000 for a corporate owner.*

Dated this 5<sup>th</sup> day of July 2022 at 1600hrs (AEST).

[REDACTED]

[REDACTED]  
Executive Director  
Response

## About the ATSB

The **Australian Transport Safety Bureau** is the national transport safety investigator. Established by the *Transport Safety Investigation Act 2003* (TSI Act), the ATSB is an independent statutory agency of the Australian Government and is governed by a Commission. The ATSB is entirely separate from transport regulators, policy makers and service providers.

The ATSB's function is to improve transport safety in aviation, rail and shipping through:

- the independent investigation of transport accidents and other safety occurrences
- safety data recording, analysis, and research
- influencing safety action.

The ATSB prioritises investigations that have the potential to deliver the greatest public benefit through improvements to transport safety.

The ATSB performs its functions in accordance with the provisions of the Transport Safety Investigation Act 2003 and Regulations and, where applicable, international agreements. Purpose of safety investigations.

## Purpose of safety investigations

The objective of a safety investigation is to enhance transport safety. This is done through:

- identifying safety issues and facilitating safety action to address those issues
- providing information about occurrences and their associated safety factors to facilitate learning within the transport industry.

It is not a function of the ATSB to apportion blame or provide a means for determining liability. At the same time, an investigation report must include factual material of sufficient weight to support the analysis and findings.

At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

The ATSB does not investigate for the purpose of taking administrative, regulatory or criminal action.

## About ATSB reports

ATSB investigation final reports are organised with regard to international standards or instruments, as applicable, and with ATSB procedures and guidelines.

Reports must include factual material of sufficient weight to support the analysis and findings. At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner

An explanation of ATSB terminology used in this report is available on the [ATSB website](#).