Departmental investigation into the collision between the Australian fishing vessel TERESA and the Cypriot bulk carrier ATLANTIS TWO

off Termination Island, WA on 28 September 1997

MIIU

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Contents

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investigation into the collision between the Australian fishing vessel TERESA and the Cypriot bulk carrier ATLANTIS TWO

off Termination Island, WA on 28 September 1997

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The Investigation into marine casualties occurring within the Commonwealth's jurisdiction are conducted under the provisions of the Navigation (Marine Casualty) Regulations, made pursuant to sub section 425 (1) (ea) and 425 1 (AAA) of the Navigation Act 1912. The Regulations provide discretionary powers to the Inspector to investigate incidents as defined by the regulations. Where an investigation is undertaken the Inspector must submit a report to the Secretary of the Department.

It is Departmental policy to publish such reports in full as an educational tool to increase awareness of the causes of marine incidents so as to improve safety at sea and enhance the protection of the marine enviroment.

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Summary

Late in the evening of 28 September 1997, the Australian fishing vessel *Teresa* was lying at anchor about 8 miles south-west of Termination Island, south of Esperance. The Skipper and Deckhand, who had both been engaged in drop-line fishing during most of the day, had gone to bed shortly before 2200.

At about 2245, both men were woken by a loud bang and violent movement and they realised they must have been hit by another vessel. Climbing into the wheelhouse, they were unable to see anything through the windows, so they went out on deck and the Skipper opened the engine room hatch to check for flooding. Both men then looked upwards and saw, close on the port quarter, the accommodation lights of a vessel. The vessel passed close by to port and moved off towards the east without stopping or making radio contact.

Teresa was found to have sustained considerable damage to the bulwark at the bow. As the anchor rope had snagged the timber on the port bow, the rope was buoyed and cut loose and the Skipper decided to return to Esperance.

The partly laden, 26,066 tonnes deadweight, Cypriot flag bulk carrier *Atlantis Two* sailed from Esperance Roads anchorage at 1736 on 28 September 1997, bound for Thevenard, South Australia. After clearing the approach channel, the Master kept the vessel to seaward of the outlying banks of the Recherche Archipelago. No other vessels were sighted during the evening and, at 2345 when 13 miles south by east of Termination Island, course was altered from 122° to 090°.

Late on 29 September the Master received a telex message from the vessel's operators, informing him that *Atlantis Two* was suspected of being the vessel that had collided with the fishing vessel *Teresa* at 2250 in the vicinity of Termination Island. The Master asked the Third Mate if there had been a collision, or if he had seen the fishing vessel and the Third Mate responded in the negative to both questions.

When *Atlantis Two* berthed at Thevenard on the morning of 1 October 1997, the vessel bore a recent contact mark on the hull, low down on the starboard bow. Under scientific examination, particles of red paint taken from this contact mark matched the hull paint of *Teresa* and particles of paint deposited on the damaged bow of *Teresa* matched the boot-topping paint of *Atlantis Two*.

Sources of Information

Skipper and Deckhand of fishing vessel *Teresa*

Master and Third Mate, MV *Atlantis Two*

Bureau of Meteorology, Perth.

Harbour Master, Esperance.

RCC Australia, Canberra.

Acknowledgement

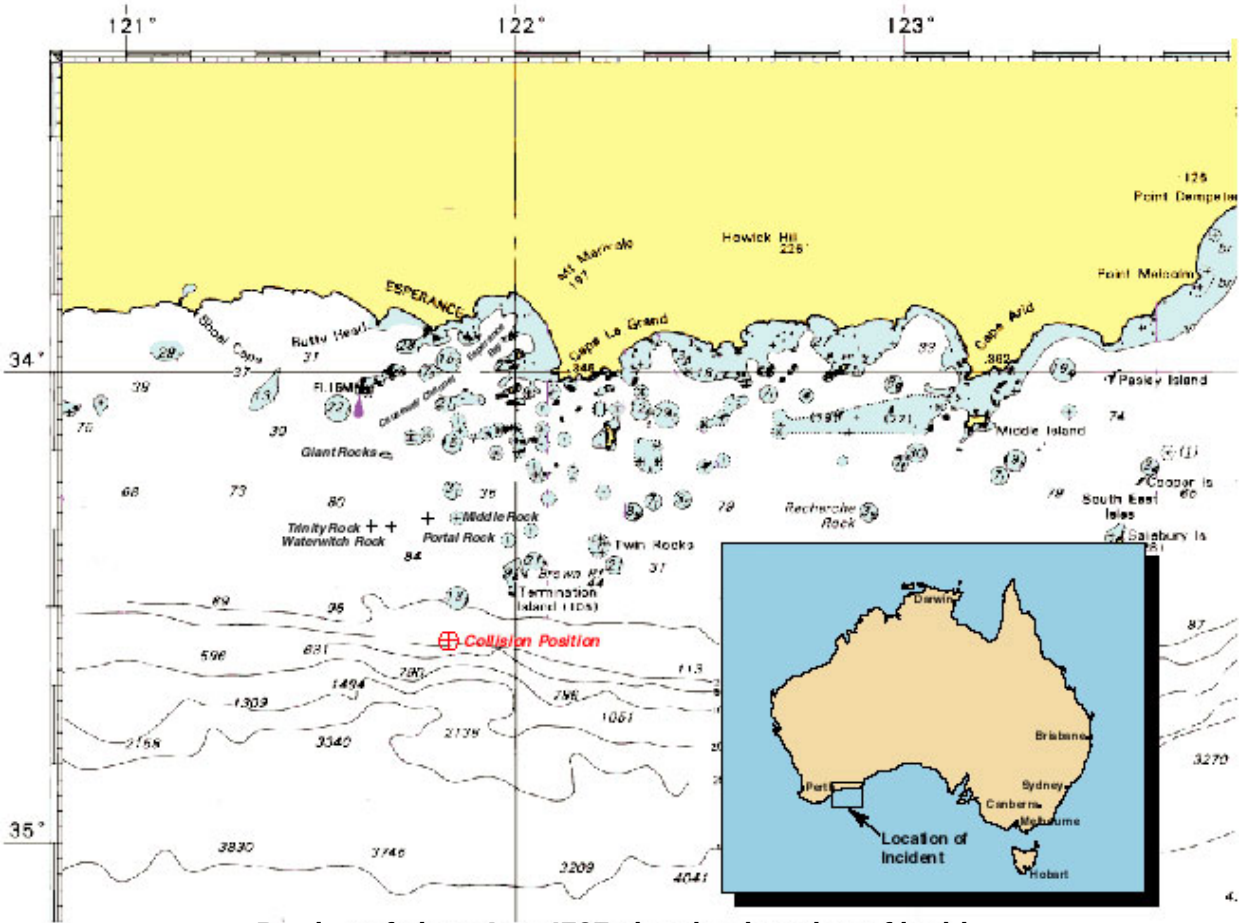
Examination of the paint samples from *Teresa* and *Atlantis Two* was carried out by the Australian Federal Police Scientific Branch, Canberra.

Portion of chart Aus 4727 reproduced by permission of the Hydrographic Office, RAN.

Narrative

Teresa

Teresa is a wooden hulled, 15 m crayfish vessel built in 1961, operating out of Esperance, Western Australia with a crew of two, a skipper and one deckhand. The deckhouse, containing a combined wheelhouse and messroom, is located well forward, with crew sleeping accommodation situated directly beneath, access being via a hatchway and short vertical ladder located on the port side of the wheelhouse. The hull is painted red, with a black bulwark capping, and the deckhouse white.



Portion of chart Aus 4727 showing location of incident

During the off-season, the vessel engages in wet, or drop-lining for Blue-eye Trevally and Hapuka. These are deep water fish and weighted lines are used, each 330 fathoms (600 m) long, with hooks attached to the bottom 20 fathoms (36 m). Drop-lining is a daylight operation, the crew working from dawn to dusk and anchoring at night in order to sleep. The catch is stowed in large ice boxes, so the vessel normally returns to Esperance after

two or three days of fishing.

When engaged in catching crayfish, the catch is stored live in a brine pool, therefore a refrigeration plant is not required. However, the vessel is equipped with a small, 3-cylinder Perkins auxiliary generator, providing power for lighting, the domestic fridge and the stove. The anchor light, however, located on a short signal mast atop the forward end of the deckhouse, is powered by a battery, charged by the main engine.

Teresa sailed from Esperance at 2130 on Saturday 27 September 1997, bound for a fishing area south-east of Esperance. As soon as the vessel had cleared the river, the Deckhand went to bed, to get some sleep before relieving the Skipper at the wheel at about 0200.

The Skipper and Deckhand started setting the lines at daylight, at about 0530, setting four lines and starting to retrieve them after one hour. The day was fine, with just a light wind, virtually a calm sea and a very low swell, and they worked the same area until about 1500. They then moved a few miles westward, set and retrieved one more line, then decided to move still further to the west, to a position south-west of Termination Island.

Teresa arrived in a position nine miles south-west of Termination Island at 2130. The anchor was let go, 150 fathoms (275 m) of rope being paid out in 60 fathoms (110 m) of water, the steaming lights were switched off and the anchor light switched on. Following his normal practice, the Skipper also switched on the 500W deck floodlight, to make the vessel more visible and to provide light for himself and the Deckhand, should they need to visit the lavatory during the night. With the wind from the north-east at 10 knots and the tide running from the west, *Teresa* settled on a northerly heading, riding easily in the half to one metre waves.

The Skipper and Deckhand had a quick bite to eat, after which they switched off the radios and other electrical equipment, before climbing down into the sleeping cabin. The Deckhand, following behind the skipper, switched off the wheelhouse lights and was aware of the illumination from the floodlight through the after window. They were in their bunks by 2200 and went to sleep quickly, after their long day.

Both men were woken by a loud bang and the sudden, heavy pitching motion of the vessel. The Deckhand's first waking thought was that the Skipper had run them onto rocks, which was quickly followed by the realisation that *Teresa* had been struck by another vessel. Calling out to the Skipper, the Deckhand jumped from his bunk and climbed into the wheelhouse, closely followed by the Skipper, who initially found his way blocked by the

Deckhand.

Nothing was visible through the wheelhouse front windows, so the two men went out to the aft deck. At first, they could not see anything, because of the glare of the deck light and the Skipper lifted the hatch to the engine space, and switched on the lights to check for water ingress. At about this time the Deckhand looked upwards and saw, close by on the port quarter, the accommodation lights of a vessel, the Skipper seeing the lights very shortly afterwards. The vessel was passing close to port and did not appear to be under full power, but the two men were concerned that it would snag the anchor rope, which they saw was lying snaked on the surface, and pull *Teresa* into its side. However, the vessel passed clear without further contact.

The skipper grabbed a torch from the wheelhouse, then worked forward, looking overside for signs of damage to the hull. Forward of the wheelhouse he found a large portion of the bulwark at the bow was missing and, as *Teresa* drifted back on the wind, the anchor rope snagged on the damaged bulwark on the port bow. The Skipper collected a fishing float from aft, attached it to the anchor rope, then cut the rope. At this point he checked the time and saw that it was 2250, by which time the other vessel had moved well clear. He also looked up to check the anchor light and saw that it was still lit.

The Skipper's immediate concern was for their safety and with the Deckhand he set about checking to see if *Teresa* was taking water. He did not think of trying to contact the other vessel by radio. Several splits were found in the bow planking and on either side of the stem post, but fortunately water ingress was only slight. They kept an eye on the situation for a while, then decided to head back to Esperance at slow speed, and got under way at about 2320.

The Skipper tried calling Perth radio on 6507 kHz and 6215 kHz, but received no response. He then put out a call on the fishermen's working channel, just in case there were other fishermen out working in the area, but again there was no response. He put out one call on 2182 kHz, but this too elicited no response.

At about midnight, the Skipper used his mobile telephone to call another fisherman, who was at home, and told him about what had happened. He also requested him to stand by, just in case *Teresa* ran into difficulties and required assistance. However, the run in was uneventful and *Teresa* arrived safely back in Esperance at about 0700.

An officer of the Western Australian Police took samples of paint from the damaged area of *Teresa's* bow and also of a "foreign" red-brown paint believed to have come from the vessel that had caused the damage.

Atlantis Two

Atlantis Two is a Cypriot flagged, five hold, 26,066 tonnes deadweight, geared bulk carrier, built at the Companhia Comercio e Navegacao's Maua Shipyard at Niteroi, Brazil. Launched in 1981 as the *Cape Arnhem*, the vessel has a length overall of 173.16 m, a beam of 26.6 m and a depth of 13.5 m. The four pedestal cargo cranes are positioned on the centre line, so that persons on the bridge do not have an uninterrupted view forward and need to move around when keeping a look-out. Purchased by Expedient Maritime Company Ltd, Cyprus in 1988, the vessel is managed by Kassos Maritime Enterprises Ltd of Athens, operated by Off Shore Oil Services (UK) Ltd of London and manned by a crew of 26 Indian nationals.

After discharging a cargo of steel billets and pipes at Surabaya, Indonesia, *Atlantis Two* was fixed for a voyage charter to load a cargo of bulk oats at Esperance, Thevenard and Port Lincoln, for Mexican Pacific Coast ports. On the ballast passage south, the deck crew, comprised of a bosun, four ABs and an Ordinary Seaman, carried out hold cleaning, in preparation for loading the grain cargo.

The vessel called at Fremantle, to replenish bunkers, on 17 September and arrived at the anchorage off Esperance on 19 September and berthed on
22 September. Loading of 3300 tonnes of oats took until 26 September, when the vessel returned to the anchorage to undergo classification society surveys, following a detention order after deficiencies had been found during a Port State Control inspection.

Atlantis Two sailed from the Esperance anchorage at 1736 on 28 September, at a draught of 4.74 m forward and 6.5 m aft. Full Away on Passage was rung at 1830 and course set on 241°, to take the vessel down the middle of Causeway Channel. Due to the inoperative state of the engine room alarm system, the engine room remained manned. The Master left the bridge at 1840, to have dinner, then returned at 1900, to be on the bridge during the period the Third Mate was providing a meal relief for the Mate.

The Chinese bulk carrier *Ya Zhou Hai* had sailed from Esperance shortly before *Atlantis Two*, disembarking the pilot at 1720. After clearing Causeway Channel, *Ya Zhou Hai* proceeded to the west, to round Cape Leeuwin.

The Third Mate relieved the Mate, for his watch, at 2000, at which time the vessel was at the seaward end of Causeway Channel. At 2010, when in position 5.1 miles, 300° from Giant Rocks, course was altered to 180°.

When planning the passage and laying off the courses, the Second Mate had routed the vessel directly from Giant Rocks to south of Termination Island, passing to the north and east of Waterwitch Rocks, between Waterwitch Rocks and Portal Rock. However, the Master prefered to keep to seaward of all the various dangers in the area and so changed the courses to take the vessel to the west and south of Trinity Rock and Waterwitch Rocks. Once clear of Causeway Channel, the vessel was in open waters, therefore, the Master stood down the rating watchkeeper, so as to maximise the daywork force for maintenance work.

The Master spent the evening engaged in paperwork in his cabin, but made occasional visits to the bridge, to check that the correct track was being maintained and that the course had been altered at the appropriate positions. After 2130, he did not go to the bridge again until 0015, when he made a quick visit to the chartroom, to check that the necessary course alteration had been made shortly before midnight. He did not go through to the wheelhouse, or speak to the watch officer, at that time.

Although he had been a seafarer for 22 years, the Third Mate had only been sailing as a watchkeeping officer for two years. He had first gone to sea as an Ordinary Seaman and had sailed as a Rating until 1993, when he went to college in Bombay, where he studied for and obtained a certificate of competency as Navigation Watchkeeping Officer. He had joined *Atlantis Two* on 9 February 1997.

Apart from the two to three minute periods needed to plot the vessel's position, the Third Mate spent his watch walking to and fro between the starboard radar, located to starboard of the steering console, and the starboard bridge wing, keeping a look-out. The starboard radar was running and he would check the screen for targets about every fifteen minutes, and occasionally moved to the steering console to compare the gyro and magnetic compass headings. The VHF was switched to channel 16 and the volume adjusted so that any calls would be heard.

At 2115, *Atlantis Two* had arrived at the altered course position 7¾ miles to the southwest of Waterwitch Rocks and the Third Mate brought the vessel around to the next course of 122°. At 2200, he made himself a cup of tea, which he drank in the wheelhouse. Otherwise, his watch progressed uneventfully; after the Chinese bulk carrier had been lost to sight, no other vessels' lights were seen and no targets, other than those of Termination and Little

Islands, appeared on the radar screen. Throughout the watch, the wind blew steadily from the east at force 5 to 6 and the visibility was good. The sea condition was creating some clutter on the radar screen, out to between two and three miles range.

The next course alteration point, at the position 13 miles, 163° from Termination Island, was reached at 2345, and the Third Mate duly brought the vessel around to the new, 090°, course. At the end of his watch, the Third Mate handed over to the Second Mate, informing him of the position and the course, and that all was quiet, with no other shipping around. After writing up the deck log, the Third Mate left the bridge and went to bed.

Late on the evening of 29 September, the Master received a radio message from the vessel's operator, Off Shore Oil Services (UK) Ltd (0S0S), informing him that OSOS had been advised by the Esperance Harbour Master that *Atlantis Two* "struck fishing boat *Teresa* at 2250 on 28th near Termination Island about 50NM east of Esperance". The Master immediately went and asked the Third Mate what he knew of the collision and the Third Mate had replied that there had been no problems, that he had neither seen nor heard anything.

Atlantis Two anchored off Thevenard, South Australia, at 0012 on 1 October and the Pilot boarded at 0640. As the vessel moored alongside the grain berth, a fresh contact mark was clearly visible on the anti-fouling and boot-topping, about 15 m aft of the stem, on the starboard bow. Close examination of this contact mark revealed some "foreign" brighter red paint in the lower portion. Samples of this brighter red paint and of the boot-topping paint were removed for analysis and comparison purposes.

Comment and Analysis

Identification

Examination of *Atlantis Two's* chart indicated that the vessel passed within two cables of *Teresa's* position at approximately 2247 on 28 September. No other vessel's were identified as having been in the area at the time of the incident, the Chinese vessel *Ya Zhou Hai* having proceeded westward after sailing from Esperance and, on the evidence of the Third Mate, there were no other vessels in the area.

The paint samples obtained from both *Teresa* and *Atlantis Two* were examined by the Scientific Branch (Canberra) of the Australian Federal Police. Using infra- red spectroscopy, the scientist found that the red paint removed from *Atlantis Two* showed no significant differences from *Teresa's* hull paint, and the red-brown paint removed from *Teresa* showed no significant differences from *Atlantis Two's* boot-topping paint. He concluded that a two way transfer of paint had occurred, compelling evidence that the two vessels had collided.

From the above evidence, it is concluded that *Atlantis Two* was the vessel that collided with *Teresa* south-west of Termination Island on 28 September 1997.

With *Atlantis Two* travelling at 12.8 knots (6.5 m/sec) *Teresa* would have been abreast the mid-length of the vessel 11 seconds after impact and abreast the propeller 23 seconds after impact.

Teresa. Damage to bow.

Atlantis Two. Contact mark, starboard bow area.

Consideration of evidence

As so often is the case when there are two vessels involved in an incident, there are discrepancies in the accounts of events. The Skipper and Deckhand were adamant that *Teresa* was showing its anchor light and that the deck floodlight was also switched on, while the Third Mate was adamant that he was keeping a proper lookout on the bridge of *Atlantis Two* and that he did not see any lights at all.

If *Teresa* was showing lights and the Third Mate was keeping a proper look-out, it is difficult to envisage how the Third Mate could fail to see *Teresa* and for *Atlantis Two* to collide with the fishing vessel without him being aware of the fact.

According to the Skipper, after the collision and immediately after he had cut the anchor rope, he had looked up to check the anchor light and the light was on. The Deckhand said that he was aware of the light from the deck floodlight when he switched off the wheelhouse lights when they went to bed. Also, the Skipper and the Deckhand said they did not see the lights of *Atlantis Two* when they first went out on deck because of the glare of the floodlight above their heads. This would indicate that the two lights were in fact switched on.

However, it is surprising that *Atlantis Two's* side plating was not illuminated by the floodlight. The Skipper's impression was that *Atlantis Two* passed at a distance of between 50 m and 200 m, while the Deckhand's was that he could have almost touched the hull. Although the force of the impact was considerable, it is unlikely that *Teresa* would have been propelled much more than one boat's length from *Atlantic Two's* side and interaction would have tended to draw the smaller vessel in again near the stern. To arrive at a distance of just 15 m from the ship's side, at mid length, would require a transfer of momentum causing a velocity of more than 2½ knots, while a distance of 50 m would require a velocity of 8.8 knots. Therefore, it is considered reasonable to expect that *Atlantis Two's* side plating would have been illuminated, to some extent, by *Teresa's* deck floodlight and thus almost immediately obvious to the Skipper and Deckhand. As this was not the case throws some doubt on whether the deck floodlight was in fact lit.

While *Teresa* was forward of *Atlantis Two's* bridge, the only lights that would have been visible to the Skipper and Deckhand would have been the green starboard sidelight and the mainmast light. The only deck lights around the accommodation likely to have been switched on are the lights over the access doors at the various deck levels,

across the after end, and so not visible until *Atlantis Two* had just about passed. However, under the circumstances under which the two men found themselves, especially as the time frame was quite short, later recollection of the sequence of events, of just what they saw when, may not have been strictly accurate.

Under the International Regulations for Preventing Collisions at Sea (the Colregs), *Teresa's* anchor light is required to be visible at a minimum distance of two miles. *Atlantis Two* was making good a speed of 12.8 knots, therefore *Teresa's* anchor light should have been visible to the Third Mate for a minimum of 9½ minutes before the collision occurred. Although, with *Teresa* lying headed in a northerly direction the floodlight would have been directed away from *Atlantis Two*, the pool of light generated by the 500 watt floodlight, illuminating the stern area, should have made the fishing vessel even more visible.

The Third Mate stated that he was keeping a proper look-out all the time, that he did not engage himself in any paperwork and only went into the chartroom to periodically plot the vessel's position and to make a cup of tea at 2200. He also stated that he kept to the starboard side of the wheelhouse and bridge and did not, at any time, sit down on either the pilot's chair, positioned on the port side of the wheelhouse, or on the settee, positioned on the starboard side of the wheelhouse. It would therefore be reasonable to expect him to have seen any light, or lights, shown by *Teresa*, which would have been virtually right ahead.

At the time of the incident, the Skipper gained the impression that the other vessel was moving only slowly, almost coming to a stop, before moving off. The Deckhand's impression was that the vessel was not under full power and he was not aware of any propeller disturbance, but the vessel had moved clear by the time the Skipper had reclosed the engine space hatch. However, he also stated that the vessel then "appeared to hang fairly close for quite a while".

It is unlikely that speed would have been reduced very many minutes before the collision, because there would then have been time to take avoiding action by altering course. If there was a reduction in engine speed, it is more likely to have occurred just before, or immediately after the collision and any such reduction would tend to indicate an awareness of the collision.

From the recorded GPS positions, between 2200 and 2300, *Atlantis Two* made good a speed of 12.8 knots and would have been at the collision position at 2247. The speed over the previous hour, 2100 to 2200, had been

12.75 knots, while the speed between 2300 and 2345 was 11.33 knots and between 2345 and 0100, 12.4 knots. Although it would appear there may have been a reduction in speed at some point close to 2300, only one mile is involved, which would be accounted for by slight variation in the timing of the positions.

There is no record on board of any engine movements at that time and the main engine RPM were reasonably constant throughout the period 2000 on 28 to 1200 on 29 September (107.6, 106.6, 107 and 107.7 for the four watches). The Duty Engineer stated there were no engine movements during his watch and the Master stated that had there been any engine movements, he would have heard the telegraph operating from where he was working in his cabin. Based on the contemporary records on board *Atlantis Two*, it is concluded that the vessel did not reduce engine speed late on the evening of 28 September.

From the evidence available, it is not possible for the investigation to determine categorically what lights were in fact being exhibited by *Teresa*, and whether or not the Third Mate aboard *Atlantis Two* was keeping a proper look-out in the minutes before the collision.

Look-outs

The Colregs apply to all vessels upon the high seas and every vessel is required to maintain a proper look-out at all times, by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions, so as to make a full appraisal of the situation and of the risk of collision.

Teresa

Teresa is manned to Western Australian regulatory and USL Code requirements. The Skipper and Deckhand had worked a long, quite labour-intensive day and, after anchoring, had both gone to bed for the night. No look-out was being maintained. However, in doing what they did, they were following the practice followed by the crews of many other small fishing vessels around the Australian Coast. Under the work regime and with only two crewmembers, it is virtually impossible for a 24-hour look-out to be maintained on board such vessels, but in not keeping a look-out and relying solely on the efficiency of the look-outs aboard other vessels, the fishermen are engaging in a form of Russian Roulette.

The majority of ships calling at the port of Esperance arrive from, and proceed to, the west. Only about 10%, amounting to one or two ships a month, use the eastern route close south of the Recherche Archipelago, thus local fishermen may be lulled into a false sense of security.

On the night of 28 September 1997, *Teresa* was anchored in a sealane, albeit one that was infrequently used. The reason for the choice of the anchorage was that it was the location of the next day's fishing. However, it would have been far more prudent for the Skipper to select a safer anchorage position, away from other possible traffic. Such a position was available only some seven miles to the north-east, in the lee of Termination Island.

Atlantis Two

In considering the matter of "Look-out", the STCW Code, in section A-VIII, Part 3 – Watchkeeping at Sea, states "The officer in charge of the navigational watch may be the sole look-out in daylight..." provided it is safe to do so. By implication, the officer in charge of the navigational watch shall not be the sole look-out during hours of darkness.

A number of overseas owners are trialling "One Man Bridge Operation" on vessels specifically designed and equipped for such operations, but such operations have not yet been agreed upon internationally. Under the IMO provisions governing such trials, States objecting to such trials being conducted in their territorial waters could lodge an objection through IMO. Australia lodged such an objection, which was published as an IMO circular dated 15 September 1993.

In order to meet the vessel's maintenance requirements, the Master of *Atlantis Two* had elected to take the seamen away from watchkeeping duties, leaving the officer of the watch as sole look-out, both by day and night. Although the Master had every confidence in his officers, *Atlantis Two* was neither designed nor equipped for "One Man Bridge Operation". On the night of 28 September 1997, the bridge of *Atlantis Two* was not properly manned, a factor which contributed to the incident.

Although the Master had considerable command experience, he allowed his decision not to post a seaman look-out to be governed by operational maintenance, rather than safety, requirements. During the investigation it was ascertained that the Master did not have a Company Operating Manual, detailing the Company policies on safety

and bridge manning issues, to guide him in his decision making processes.

A later master of *Atlantis Two*, providing comments on the report to the vessel's operator, included the comment:

"The Atlantis Two did not have an extra lookout at that time as required by the Colregs, but the Master's decision considering operational/maintenance requirements ***though wrong is often taken to maximise output,..."*** *(Inspector's emphasis)*

Not only is this comment worrying from the point of view that some masters are obviously regularly running their ships without a dedicated lookout at night, thereby compromising safety, but the fact that they consider this to be necessary and consciously violate maritime law and safe practice, in order to get routine work done, indicates those ships are inadequately manned.

Teresa as a radar target

The Skipper and Deckhand were aware that being relatively small and of timber construction, *Teresa* was not a good radar target, but felt that the aluminium dinghy, upturned on top of the wheelhouse, would act as a good radar reflector. However, although the dinghy would enhance radar wave return to some extent, because of its shape, particularly at the bow, the majority of the radar waves would be scattered. Thus *Teresa* would probably only appear on another vessel's radar as a small, possibly intermittent target and at not too great a range.

As *Teresa* must have been virtually right ahead of *Atlantis Two*, any target echo on *Atlantis Two's* radar would not only have been small, but also close to, or on, the heading marker and so possibly not readily discernable. With no other vessels' lights visible, the Third Officer's scrutiny of the radar screen at the 15-minute intervals may not have been very close and also directed more to the periphery of the radar screen.

Weather

There was quite a discrepancy in the strength of the wind and state of the sea as described by the two vessels. Information provided by the Bureau of Meteorology (Perth) was that the wind would probably have been north-easterly at less than 10 knots, with a sea of about one metre, similar to that described by *Teresa's* Skipper and Deckhand.

It is apparent that the watchkeeping officers aboard *Atlantis Two* were recording relative wind speed and direction, with sea conditions to match.

The anchor rope

When the Skipper and Deckhand went to bed, *Teresa* was lying heading in a northerly direction, with the anchor rope leading down at a steep angle. When the Skipper and Deckhand went out on deck immediately after the collision they noticed the anchor rope lying snaked on the surface.

The force of the impact was quite heavy, shearing two coach bolts in the fishing vessel's stem post, almost as if *Teresa* had been driven into the ship's side. It is possible the anchor rope caught for a while on the lower portion of *Atlantis Two's* bulbous bow, causing the fishing vessel to move forward. Then, after *Teresa* had bounced off and clear, the scope, or slack of the anchor rope was pulled up by *Atlantis Two's* bow before the rope pulled clear. This could account for the rope lying slack on the surface.

Conclusions

These conclusions identify, where possible, the factors that contributed to the incident and should not be read as apportioning blame or liability to any particular organisation or individual.

The identification of a two-way transfer of paint between *Atlantis Two* and *Teresa* confirmed that *Atlantis Two* was the vessel that collided with *Teresa*.

From the evidence available, it was not possible to determine categorically what lights were exhibited by *Teresa*, or whether the Third Mate aboard *Atlantis Two* was keeping a proper look-out. However, the following factors are considered to have contributed to the incident:

- The bridge of *Atlantis Two* was not properly manned and was operating contrary to normal safe practice, in that no seaman was assigned to look-out duties, the officer being on watch on his own.
- The Master's decision to release the seamen from lookout duties, in order to maximise their time on maintenance work.
- The absence on board *Atlantis Two* of a Company Operating Manual, detailing Company policies on safety and bridge manning issues.
- No look-out was being maintained aboard *Teresa*.
- *Teresa* was anchored in a sealane, albeit an infrequently used one, when there was a relatively much safer anchorage area seven miles to the north-east.
- The regulatory minimum manning requirements for a vessel the size of *Teresa*, engaged in the fishing industry, virtually preclude the keeping of a look-out while the vessel is anchored for the night.
- There are no instructions or guidelines to fishermen on choice of anchoring positions.

Submissions

Under sub-regulation 16(3) of the Navigation (Marine Casualty) Regulations, if a report, or part of a report, relates to a person's affairs to a material extent, the Inspector must, if it is reasonable to do so, give that person a copy of the report or the relevant part of the report. Sub-regulation 16(4) provides that such a person may provide written comments or information relating to the report.

The final draft of the report was sent to the following:

Master and Third Mate, *Atlantis Two*

Skipper and Deckhand, *Teresa*

Relevant parts of the draft were sent to:

Kassos Maritime Enterprises Ltd. Limassol

Off Shore Oil Services (UK) Ltd, London

Written submissions were received from Off Shore Oil Services (UK) Ltd, in the form of a later master's opinion based on the draft report of the incident, and from the Third Mate.

The Third Mate submitted, in part:

"Since I was keeping a proper look-out during the watch hours, it is just not possible that strong glow of 500W light and anchor light could go unnoticed. In my opinion the crew of the fishing vessel Teresa not switched on the lights and that is the reason for the vessel not being sighted.

During my watch (2000-2400) on 28 Sept 97, our vessel has not reduced speed or any engine movement, contrary to what the fishing vessel crew been said.

If the 500W deck light was on, it is obvious that our vessel's shipside would have been illuminated by this light, but the fishing vessel Teresa's crew has said that they did not see the vessel just after impact.

Even though the Master decided to keep the vessel clear of all dangers and well clear of coast, I was keeping a proper lookout, keeping in mind the possibility of any other vessel and fully aware that I am alone on bridge to safe navigation. During my watch I used to keep look-out, not only from starboard side radar to starboard side wing, but also from starboard side wing to to port wing."

Details of Atlantis Two

Previous names	Cape Arnhem, Acacia 1
IMO No.	7933000
Flag	Cyprus
Classification Society	Lloyd's Register of Shipping
Ship type	Geared bulk carrier
Owner	Expedient Maritime Co. Ltd.
Manager	Kassos Maritime Enterprises Ltd, Limassol
Operator	Off Shore Oil Services (UK) Ltd. London
Year of build	1981
Builder	Companhia Comercio e Navegacao (CCN), Maua Shipyard – Niteroi, Brazil
Gross tonnage	16,250
Net tonnage	9,116
Summer deadweight	26,066 tonnes
Length overall	173,16 m
Beam	26.6 m
Draught (summer)	9.75 m
Engine	7 cylinder MAN diesel
Engine power	9782kW
Crew	26 Indian

Details of Teresa

Registration number	LFBE57
Type	Crayfishing vessel
Construction	Timber, double planked
Year of build	1961
Length	15 m
Owner	S R & M L Daniels, Esperance
Crew	2