Marine Safety Investigation Report No. 185

Loss of the NSW registered vessel *Tamara* – 1 September 2002

ISSN: 1447-087X
ISBN: 1 877071 43 9

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November 2003

Tamara: Lost at sea

On 14 September 2002, two men were found drifting in a liferaft 30 miles east of Moreton Island, Queensland. The two men had been in the liferaft since their vessel, *Tamara*, had sunk some 14 days previously.

Tamara

Tamara (figure 1), was a 12.4 m steel vessel built in Gippsland, Victoria in 1980. The vessel had a beam of 4 m and a depth of 1.2 m. Originally used for commercial fishing off the Victorian coast, *Tamara* was purchased in late 2000 by a group intending to use it for commercial fishing in Western Samoa. Their plan was to refit the vessel and sail it to Western Samoa via Noumea and Fiji.

Structurally *Tamara* was similar to many Australian commercial fishing vessels of its size. The wheelhouse was located at the forward end of the vessel with a large work deck immediately aft of it. Crew sleeping quarters were below the wheelhouse in the vessel's bow. The engine room, an ice room and the steering compartment were located below the work deck with access provided by hatches mounted on the centre line of the deck. A single Perkins diesel engine of 96.4 kW gave *Tamara* a maximum speed of about 8 knots.

FIGURE 1:
***Tamara* at Hastings**

At the time of the incident *Tamara*'s crew consisted of the skipper and a deckhand. The skipper had a coxswain's certificate of competency issued in Western Australia and had some experience at sea including two years in the Royal Australian Navy in the early 1980s and several years commercial fishing on the coasts of Australia and Samoa. The deckhand, registered as the owner of the vessel, had almost no seagoing experience, having only fished occasionally in the past from small boats.

Lead up events

Tamara was extensively refitted and modified in preparation for long-line fishing in Western Samoa. Most of the work was performed at a slipway in Hastings, Victoria over the 14 months or so following its purchase in late 2000. The modifications included structural changes to the wheelhouse, work deck bulwarks, freeing ports and hatches (figure 2), the fitment of three large ice boxes on the work deck and a new bulbous bow. A rebuilt engine was also installed and the engine's exhaust was re-routed through to the vessel's transom.

In March 2002, *Tamara* was sailed to Sydney where it was slipped, painted and various fishing equipment was fitted. The vessel was then sailed to Queensland. During the trip north the crew had some problems with the engine cooling system which were rectified at Coffs Harbour. *Tamara* eventually arrived at Runaway Bay marina in Southport Queensland, where the crew stored the vessel and waited for finance to be made available for the voyage to Western Samoa.

FIGURE 2:
Modification work proceeding on *Tamara*'s hatches

For the trip to Western Samoa, *Tamara* was fitted with navigation aids including a chart plotter, British Admiralty charts and a magnetic compass. Radio equipment included conventional VHF and HF sets and a 121.5 MHz EPIRB[1] mounted on the bulkhead in the wheelhouse. A 4-man 'coastal' liferaft fitted with an hydrostatic release was stowed on the wheelhouse roof.

On 2 August, *Tamara* departed from Southport to start the passage to Noumea. However, the propeller shaft stern gland developed a leak and the bilge pump was found to be defective so the skipper decided to return to Southport. During the next three weeks the skipper had the stern gland and mechanical bilge pump repaired, two additional electric bilge pumps fitted and the magnetic compass adjusted.

The incident

At about 1500 on Saturday 31 August 2002, *Tamara* again left Southport bound for Noumea, a voyage of some 750 miles. The trip was planned to take about eight days at a speed of between four and eight knots. The vessel had been stored with 'plenty of everything' and 2 100 litres of fuel. The skipper calculated that the fuel was sufficient for about nine days of motoring and had provided a friend in Australia with his proposed passage plan. He arranged to call his friend when *Tamara* arrived in Noumea. However, he did not arrange scheduled radio contact with any individual or organisation, while *Tamara* was en-route.

Once *Tamara* had cleared Southport, the skipper set a north-easterly course. The autopilot was not functioning so he shared the steering duties with the deckhand during the course of the afternoon and evening. Late in the evening, the skipper went below to rest leaving the deckhand alone to navigate *Tamara*.

Around 0630 on Sunday 1 September, the skipper relieved the deckhand at the wheel. The deckhand then went below to rest. *Tamara* was making headway at between 5 and 8 knots.

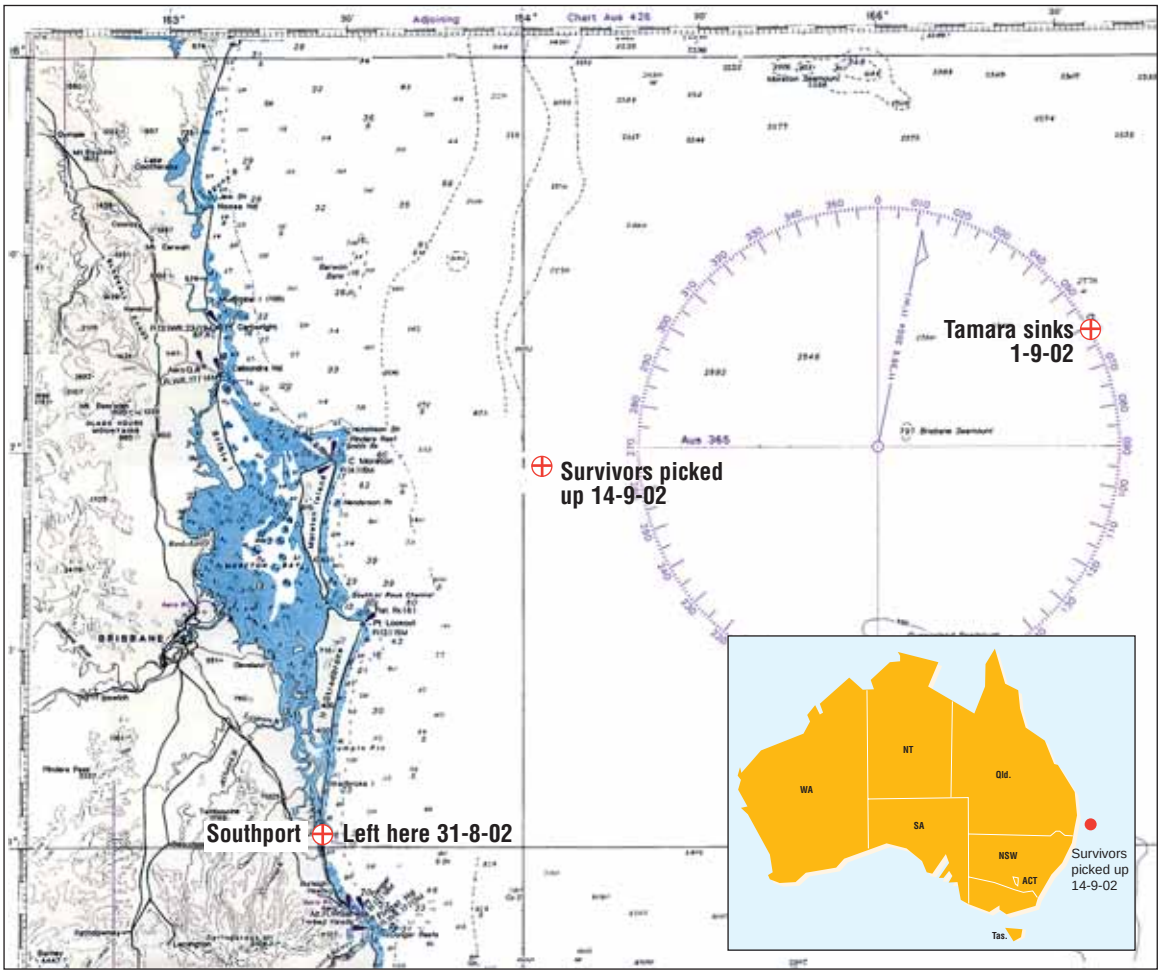
By the afternoon, the skipper noted that the weather was westerly winds of 20–25 knots with *Tamara* in a 'fairly big following sea' of between 4 and 6 m.

At about 1600 the skipper noticed that the engine was losing power. He saw black smoke coming from the hatches on the work deck and went to investigate. When he opened the engine room hatch he could not see a fire so he moved on to inspect the ice room and steering compartments.

After checking the steering compartment, the skipper returned to the wheelhouse as he had decided to turn *Tamara's* head to the sea. As the vessel turned, a wave washed over the stern and a large amount of water was trapped inside the bulwarks on the work deck. Water flowed quickly into the open steering hatch and through into the ice room and engine room. The skipper turned on the mechanical and electric bilge pumps but he realised that the bilge pumps could not keep up with the rapid inflow of water. As water filled the after compartments, *Tamara*'s stern sank lower in the water and the work deck became awash. By this time the deckhand had come up from the accommodation, which had also started to fill with water. Both men were now on deck and realised that *Tamara* was sinking fast.

1 Emergency Position Indicating Radio Beacon.

FIGURE 3:
Chart showing *Tamara*'s approximate last position and the position where the survivors were picked up



The skipper remembered the EPIRB in the wheelhouse and attempted to retrieve it through the wheelhouse window but his clothing fouled on an obstruction and he abandoned the attempt. Both men made their way to the bow and then dived into the sea. There were some fish boxes floating nearby which they retrieved for flotation.

From the water the men watched *Tamara* sink rapidly, stern first.

Shortly afterwards, the liferaft stowed on the wheelhouse popped up nearby and the two men climbed into it. The liferaft held a survival pack which contained among other things; three flares, dry biscuits, four litres of drinking water, space blankets, a torch, knife, fishing gear, pump and sponges and plastic bags but no radio or EPIRB.

The men were now lost at sea approximately 138 miles east of the Queensland coast with nobody aware of their predicament and no one to raise the alarm until they became overdue at Noumea.

On the morning of 7 September, six days after *Tamara* had sunk, the two men saw a ship with deck cranes about a mile away from their raft. The skipper let off an orange smoke flare, followed by a red hand-held night flare but the ship turned away, apparently unaware of the liferaft. That night the men saw another ship and the skipper used the last red flare to try to attract its attention but it too turned away. A

second ship came soon after the first and again the skipper tried to attract its attention using the torch without success. By this time the men had consumed all of the drinking water in the raft.

On 9 September, the skipper's friend made contact with AusSAR[2] to report that *Tamara* was overdue at Noumea. After checking with other maritime authorities to see if they were aware of *Tamara*'s whereabouts, AusSAR issued a broadcast to shipping to be on the alert for the fishing vessel. Other authorities were also provided with details, including Coastwatch and the marine rescue coordination centres in Noumea, Suva, Western Samoa and New Zealand. No search was initiated as there was no indication that the vessel was in distress and the large search area made it impracticable.

On the evening of 9 September, the men saw an aircraft and a surface vessel. The vessel was in their area for several hours, but again the men failed to attract its attention. Later in the evening they saw another fishing vessel with search lights which were 'flashing all around'. The skipper used the torch to attract the crew's attention and the vessel apparently came over to investigate. The skipper recalled that the vessel stopped between 50 and 100 m from the raft for several minutes but, despite their calls for help, it too moved away.

On 10 September it rained and the men managed to collect some rain water using the liferaft's canopy, but still had a quantity of biscuits left. By now they were having to top up the liferaft with air each day. They saw no other vessels in their area for the next four days.

On 14 September the men were found drifting in the liferaft 30 miles east of Moreton Island by the fishing vessel *Devocean*. The fishing vessel took them aboard and contacted the authorities. The men were subsequently airlifted to Brisbane's Princess Alexandra Hospital where they were treated for sunburn, exposure, dehydration and infected lesions on their legs and buttocks.

Contributing factors

The skipper and deckhand were extremely lucky to survive their attempt to navigate *Tamara* to Noumea. The voyage was ill-conceived and poorly planned in a vessel which was unseaworthy. In addition, neither man was sufficiently qualified, or experienced, to navigate any vessel on such a long voyage in open sea.

Tamara

All commercial vessels operating within Australia and trading overseas must comply with comprehensive statutory requirements regarding construction, equipment, operation and manning. In Australia, commercial vessels registered in the states are required to comply with the provisions contained in the Uniform Shipping Laws Code (USL Code). These rules are designed primarily to protect the safety of the vessel and crew. Periodic surveys and approval for modifications ensure such vessels continue to comply with these requirements.

Until the time that it changed owners in late 2000, *Tamara* should have been maintained in survey in Victoria as a commercial fishing vessel. For the voyage to Western Samoa, despite the intention to use the vessel for commercial purposes, *Tamara* had been re-registered in New South Wales as a pleasure vessel. As such, the new owners had circumvented the mandatory safety requirements for commercial vessels and the expense associated with survey compliance. Neither of the responsible state marine authorities had any provisions to allow for the inspection of the vessel, scrutiny of its stated purpose, crew qualifications, or the intentions of the new owners, during the change of registration process. *Tamara* sank on 1 September 2002 as a direct result of the unsurveyed modifications carried out since the change of registration status.

None of the structural modifications made to *Tamara* prior to the voyage were subject to expert assessment, nor were they approved by any competent authority. The skipper actually stated that the modifications were performed

2 Australian Search and Rescue.

by ‘people who didn’t know what they were doing’.

There were no drawings of the vessel available and no drawings were made of the modifications. The evidence (from statements and photographs) is that the original hatch coamings for the engine room, ice room and steering compartment on the work deck were reduced from approximately 300 mm to 75 mm in height. The bulwarks around the work deck were raised by approximately 500 mm and the freeing ports for the work deck area were modified. The skipper stated that they ‘had been welded up partially’. The watertight bulkheads between the accommodation, engine room, ice room and steering compartment had also been penetrated. Each of these modifications compromised the seaworthiness of the vessel.

The higher bulwarks, lower freeing capacity and reduced hatch coaming height resulted in *Tamara* being very susceptible to flooding. The higher bulwarks would have ‘trapped’ a much greater volume of water on the work deck with relatively slow run-away through the partially welded-up freeing ports. The reduction in coaming height meant that water on the work deck higher than 75 mm would now run into any space where the hatch was not absolutely secure. The penetration of the watertight bulkheads beneath the work deck meant that there was no reserve buoyancy in the event of one compartment becoming flooded, with the water free to flow through the length of the vessel. In combination, these modifications virtually guaranteed *Tamara* would founder if a large enough wave or series of waves were taken over the stern. Given its relatively low freeboard, it is not surprising that *Tamara* sank so quickly when the wave washed over the stern on the afternoon of 1 September 2002.

The cause of the smoke or fire the skipper went to investigate just before *Tamara* sank will never be positively identified. The engine exhaust had been re-routed through to the transom via the engine room, ice room and steering compartment. One possible cause of the smoke/fire is that the new exhaust pipe may have ignited something combustible in one of these compartments. The siting of hot exhaust pipes in small vessels is critical with such pipe work requiring adequate insulation and segregation from sources of fuel. It is unclear who performed this modification work on *Tamara* and whether or not these risks had been considered.

The crew

The crew’s lack of experience and qualifications directly contributed to the loss of *Tamara*. The skipper held a coxswain’s certificate which qualified him to skipper commercial vessels less than 12 m in length operating in inshore waters (not more than 15 miles from the coast). The deckhand by his own admission had no qualifications, almost no seagoing experience and was not conversant with the operation of some of *Tamara*’s critical safety equipment, including the radios.

Notwithstanding his lack of formal qualifications, the skipper had spent some time in the navy and had considerable commercial fishing experience, however he had never planned a voyage as ambitious as *Tamara*’s trip to Western Samoa. The first leg of the journey to Noumea involved navigating the vessel some 750 miles in open sea. Given *Tamara*’s lack of a functional autopilot, the uncertain weather conditions, limited fuel and the skipper’s uncertainty regarding *Tamara*’s ‘speed made good’ during the passage, the navigation alone represented a very significant challenge and risk.

There is evidence that the skipper had attended to some of the formalities of the voyage as he had organised customs and immigration clearance prior to sailing from Southport. He stated that he had also made enquires about radio contact schedules while *Tamara* was en-route to Noumea. After calling various authorities and the local volunteer marine rescue organisation he ‘couldn’t get a straight answer on who to contact each day of the trip’ and so gave up trying to organise this crucial safety measure.

The skipper's failure to organise the radio schedule could well have cost both men's lives as nobody was aware of the possible loss of *Tamara* until 9 of September, when his friend in Australia made contact with AusSAR. Ultimately, the decision by AusSAR not to mount an active search and rescue operation was also based on the fact that they had no indication that *Tamara* was in distress and could not narrow the search down to an area of reasonable size.

Like many smaller craft, *Tamara* had only a conventional HF radio set for long range communication. Since the closure of the Australian Coast Radio Network on 1 July 2002, conventional HF radio services have been limited in respect of position reporting. While the radio stations in the Australian State and Territory Marine HF Radio Network still maintain a 24 hour watch for distress calls on the designated emergency channels, they do not provide the crucial reporting facility. As such, non GMDSS[3] equipped Australian vessels proceeding on long distance or overseas voyages must make provision to fit additional communication equipment or organise radio contact with private organisations or individuals. These are very limited options for vessels which by their very nature are the craft most at risk on the high seas.

Time adrift

When *Tamara*'s crew took to the liferaft on 1 September they did not have any method of signalling their distress to the wider world. The raft was not equipped with an EPIRB, and *Tamara*'s EPIRB was fixed to the bulkhead inside the wheelhouse. Had the skipper managed to retrieve and operate it, a search and rescue operation would have been mounted very quickly. This emphasizes the need to make EPIRBs float-free or at least more readily accessible on small vessels in the event of an emergency.

It is of considerable concern that, while they were drifting, the two men saw vessels on several occasions that either did not see the liferaft, or did not stop to render assistance. One possibility is that the liferaft would have been only intermittently visible from another vessel in sea conditions over about 2 m, given its height. The flares used by the skipper on 7 September should have been visible from the ships if the watchkeepers had been vigilant. However, given their position so far off shore, and the fact that there had been no alert to shipping issued at the time, it is possible that the watchkeepers were not actively looking out. A parachute flare used at night would have been considerably more effective in attracting the attention of other vessels. Why the fishing vessel on the night of 9 September did not stop and help the men is a source of conjecture.

Considering the time spent in the liferaft with very limited clothing and provisions, both men were in remarkably good health when rescued. Expert tests showed that the marine growth on the raft was consistent with the men's account of spending 14 days adrift. Weather observations for the period indicate that the sea conditions were relatively benign and water temperatures were 20–22ºC. The relatively warm sea water temperatures, reasonable weather and the periodic rain were all factors which allowed the men to survive such a protracted time in the liferaft.

3 In general, internationally registered trading vessels over 500 gross registered tons must comply with the Global Maritime Distress and Safety System (GMDSS) requirements contained in the International Maritime Organization's Safety of Life at Sea Convention (SOLAS).

Conclusions

The following factors are considered to have contributed to the incident:

- The structural modifications made to *Tamara*'s aft compartments, work deck hatches, freeing ports and bulwarks, resulted in the vessel foundering in heavy seas on 1 September 2002.
- The modifications were carried out without sufficient knowledge of their effect on *Tamara*'s seaworthiness.
- *Tamara*'s 'pleasure vessel' registration status meant that the modifications were performed without the approval of a competent survey authority.
- *Tamara*'s crew were not sufficiently qualified or experienced to undertake the voyage to Noumea.
- *Tamara*'s crew could not make scheduled position reports during voyage as the vessel was not equipped with GMDSS communication equipment and they had not subscribed to a private conventional HF reporting service.
- The skipper's inability to organise scheduled radio contact with any individual or organisation meant *Tamara*'s predicament went unreported for 8 days.
- The siting of *Tamara*'s EPIRB inside the wheelhouse unnecessarily endangered the lives of the crew.
- AusSAR's decision not to prosecute an active search for *Tamara* was justified in light of the little information available to them at the time regarding the vessel's proposed passage.
- It is likely that most of the vessels seen by *Tamara*'s crew, during the 14 days they spent adrift, did not see their liferaft.
- Parachute flares, with their much greater range of visibility, would have been far more effective in signalling the men's distress than the hand-held flares contained in their 'coastal' liferaft.
- The weather conditions and sea temperatures experienced by *Tamara*'s crew during their time adrift in the liferaft were conducive to their ultimate survival.

Recommendations

MR20030041

State and Northern Territory marine authorities should review their practices relating to the scrutiny of commercial vessels changing registration status.

MR20030042

State and Northern Territory marine authorities should ensure that there is clear guidance available regarding position reporting arrangements for non-SOLAS vessels proceeding on long coastal or overseas voyages.

MR20030043

State and Northern Territory marine authorities, through the forum of the National Marine Safety Committee, should review the service provided by the Marine HF Radio Network to non-SOLAS vessels to determine the practicality of including a regular position reporting system.

MR20030044

VesFsel owners, operators and responsible marine authorities should seriously consider the issue of EPIRB siting to ensure that EPIRBs are readily available in an emergency and give consideration to the fitment of float-free EPIRBs on commercial vessels.

MR20030045

Consideration should be given by State and Northern Territory marine authorities as to whether 'coastal' liferafts should be required to carry parachute flares.

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