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Australian Transport Safety Bureau

ATSB TRANSPORT SAFETY REPORT
Marine Occurrence Supplementary Investigation No. 222
MO-2009-007
Final

Second supplement to the independent investigation into the loss of the Department of Immigration and Multicultural and Indigenous Affairs vessel

Malu Sara

in Torres Strait, Queensland

15 October 2005

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Postal address: PO Box 967, Civic Square ACT 2608
Office location: 62 Northbourne Avenue, Canberra City, Australian Capital Territory, 2601
Telephone: 1800 020 616; from overseas + 61 2 6257 4150
Accident and serious incident notification: 1800 011 034 (24 hours)
Facsimile: 02 6274 3117; from overseas + 61 2 6274 3117
E-mail: atsbinfo@atsb.gov.au
Internet: www.atsb.gov.au

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Australian Transport Safety Bureau
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www.atsb.gov.au

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Abstract

This supplementary report replaces Section 4.7 (Lost) and some conclusions and safety actions recorded in the ATSB Transport Safety Investigation Report No. 222: *Independent investigation into the loss of the Department of Immigration and Multicultural and Indigenous Affairs vessel, Malu Sara, in Torres Strait, Queensland, Australia, 15 October 2005*, which was released on 19 May 2006.

This supplementary report has been published following the release, and subsequent analysis, of significant new information that was provider to the Coroner during the coronial inquest into the loss of *Malu Sara* and its five occupants on 15 October 2005 and which related to the initial search and rescue response.

This supplementary report should be read in conjunction with the original ATSB report which can be found at: http://www.atsb.gov.au/publications/investigation_reports/2005/MAIR/mair222.aspx

This report may contain times that differ from those associated with the same occurrence in the original ATSB report. This is the result of the evidence provided to the coronial inquest.

This report identifies the following safety issues: the lack of follow-up and reporting procedures for immigration response vessels which were not engaged on patrol activities in the Torres Strait; the lack of procedures dealing with an immigration vessel which was overdue at its destination or reported being lost; the absence of training for immigration staff in the reporting and follow-up procedures and general search and rescue overview training; search and rescue coordination responsibility for small Commonwealth vessels; and post search and rescue incident analysis practices.

This report acknowledges the actions taken by the Department of Immigration and Citizenship and the Australian Maritime Safety Authority to address the identified safety issues.

THE AUSTRALIAN TRANSPORT SAFETY BUREAU

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory Agency. The Bureau is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to fare-paying passenger operations.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

Purpose of safety investigations

The object of a safety investigation is to enhance safety. To reduce safety-related risk, ATSB investigations determine and communicate the safety factors related to the transport safety matter being investigated.

It is not a function of the ATSB to apportion blame or determine liability. However, 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.

Developing safety action

Central to the ATSB's investigation of transport safety matters is the early identification of safety issues in the transport environment. The ATSB prefers to encourage the relevant organisation(s) to proactively initiate safety action rather than release formal recommendations. However, depending on the level of risk associated with a safety issue and the extent of corrective action undertaken by the relevant organisation, a recommendation may be issued either during or at the end of an investigation.

When safety recommendations are issued, they will focus on clearly describing the safety issue of concern, rather than providing instructions or opinions on the method of corrective action. As with equivalent overseas organisations, the ATSB has no power to implement its recommendations. It is a matter for the body to which an ATSB recommendation is directed to assess the costs and benefits of any particular means of addressing a safety issue.

When the ATSB issues a safety recommendation, the person, organisation or agency must provide a written response within 90 days. That response must indicate whether the person, organisation or agency accepts the recommendation, any reasons for not accepting part or all of the recommendation, and details of any proposed safety action to give effect to the recommendation.

TERMINOLOGY USED IN THIS REPORT

Occurrence: accident or incident.

Safety factor: an event or condition that increases safety risk. In other words, it is something that, if it occurred in the future, would increase the likelihood of an occurrence, and/or the severity of the adverse consequences associated with an occurrence. Safety factors include the occurrence events (e.g. engine failure, signal passed at danger, grounding), individual actions (e.g. errors and violations), local conditions, risk controls and organisational influences.

Contributing safety factor: a safety factor that, if it had not occurred or existed at the relevant time, then either: (a) the occurrence would probably not have occurred; or (b) the adverse consequences associated with the occurrence would probably not have occurred or have been as serious, or (c) another contributing safety factor would probably not have occurred or existed.

Other safety factor: a safety factor identified during an occurrence investigation which did not meet the definition of contributing safety factor but was still considered to be important to communicate in an investigation report.

Other key finding: any finding, other than that associated with safety factors, considered important to include in an investigation report. Such findings may resolve ambiguity or controversy, describe possible scenarios or safety factors when firm safety factor findings were not able to be made, or note events or conditions which 'saved the day' or played an important role in reducing the risk associated with an occurrence.

Safety issue: 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 operational environment at a specific point in time.

Safety issues can broadly be classified in terms of their level of risk as follows:

- Critical safety issue: associated with an intolerable level of risk.
- Significant safety issue: associated with a risk level regarded as acceptable only if it is kept as low as reasonably practicable.
- Minor safety issue: associated with a broadly acceptable level of risk.

BACKGROUND

The incident

On the afternoon of 14 October 2005, the skipper of the then Department of Immigration and Multicultural and Indigenous Affairs (DIMIA) vessel *Malu Sara* reported being lost in sea fog. At the time, the vessel was on a voyage from Saibai Island, at the northern extremity of the Torres Strait, Queensland, to Badu Island, a passage of about 58 miles[1], sometimes through open seas. On board the 6.65 m aluminium vessel were two DIMIA crew, two female adults and a 4 year old girl.

During the voyage, *Malu Sara*'s skipper was in sporadic contact with the DIMIA duty officer on Thursday Island by satellite telephone. Having told the duty officer that the small vessel was lost, during the initial stages of the incident, the skipper did not portray any sign of panic or that the small vessel was experiencing any sort of difficulties. However, with the onset of darkness, and still not having made landfall, the skipper activated the vessel's 121.5/243 MHz emergency position indicating radio beacon (EPIRB) so that search and rescue authorities could determine *Malu Sara*'s approximate location and to allow the skipper to be given directions to Badu Island. At 1940, the Queensland water police on Thursday Island took over the responsibility for the incident and shortly afterwards contacted the Rescue Coordination Centre (RCC) in Canberra, telling the duty officers there that a small vessel was lost and that its EPIRB had been activated in an attempt to locate it.

As the evening progressed, *Malu Sara* did not make landfall and the situation surrounding it deteriorated in the prevailing sea and weather conditions. At about 0220 on 15 October, *Malu Sara*'s skipper told the DIMIA duty officer that the vessel was taking water fast and sinking. That was the last satellite telephone contact made with the skipper. This information was immediately passed to the water police 'SAR mission coordinator' (SMC), who was in charge of the incident's management.

The Queensland Police Service maintained overall coordination of the search activities for *Malu Sara* during the night of 14 October. At 1154 on 15 October, the RCC took overall coordination of the search from the police. Despite an extensive aerial and surface search over the next 6 days, which involved the Queensland Police Service and the RCC, no trace of *Malu Sara* or its occupants was found. The body of one of the females on board was recovered from the sea by Indonesian fishermen near Deelder Reef, about 50 miles west of *Malu Sara*'s last known position, and was subsequently repatriated to Australia for burial.

The 2005-06 ATSB investigation

The Australian Transport Safety Bureau (ATSB) initiated a safety investigation into the loss of *Malu Sara*. The final investigation report was released on 19 May 2006 (Marine Occurrence Investigation No. 222). The report covered key aspects of the tragedy including the tender and acceptance process for the six DIMIA immigration

1 A nautical mile of 1852 m.

response vessels (IRVs), of which *Malu Sara* was one; the overall management of the IRV operation in the Torres Strait; the seaworthiness of the vessels; the equipment they carried; the training of their crews; fatigue and decision making by *Malu Sara*'s skipper; and regulatory oversight of the IRVs. It also briefly covered the initial search and rescue action undertaken by the Queensland Police Service and the Australian Maritime Safety Authority's RCC.

Reopening the ATSB investigation

In the second half of 2007, a coronial inquest into the deaths of the five persons on board *Malu Sara* was held on Thursday Island. The findings of the inquest were handed down by the Queensland coroner on 12 February 2009.

During the inquest, the SMC provided evidence to the coroner which showed that the actions of, and the communications between, the two search and rescue agencies involved in the search response during the night of 14 October, were not as effective as they should have been. The evidence concerned crucial information regarding the state of *Malu Sara* at 0220 on 15 October not being passed on, the mistaken assumption regarding the availability of a well equipped helicopter in the Torres Strait region early in the incident, and the apparent reluctance to source and dispatch a search aircraft.

These actions and communications deficiencies consequently had a significant impact on the final outcome of the incident.

This significant evidence was not provided to the ATSB during the initial safety investigation in 2005-06. For the purpose of correcting the public record which was contained in the initial safety investigation report, the ATSB reopened the investigation in the latter part of 2008.

This supplementary report is the result of the reopened investigation and examines the evidence surrounding the initial search and rescue response, as provided to the coronial inquest. It replaces Section 4.7 (Lost) and some conclusions and safety actions recorded in the ATSB Transport Safety Report No. 222.

The on-line version of the initial report has been modified to reflect the subsequent changes.

4 ANALYSIS

4.7 Search and Rescue in Australia

The responsibility for search and rescue (SAR) in Australia is shared by SAR authorities at both the Federal and state/territory levels. It is the combination of Federal and state/territory action that determines the overall effectiveness of a SAR operation in a country as large as Australia.

In 1999, Australian SAR authorities formed the National Search and Rescue Council, a body whose role is to formulate, discuss and ratify national SAR policies and procedures within the Australian search and rescue region.

In June 2004, an Inter-Governmental Agreement on National Search and Rescue Response Arrangements (SAR IGA) was signed by the relevant Commonwealth and state/territory ministers. The SAR IGA puts in place arrangements between the Commonwealth and state/territory SAR authorities on the coordination of search and rescue in the Australian region. The arrangements address the responsibilities for aviation, maritime and land search and rescue; the authority and scope of the National Search and Rescue Council; the maintenance of the National Search and Rescue Manual (NATSARMAN); and other search and rescue matters.

The NATSARMAN is the standard reference document used by all Australian SAR authorities and it promulgates the agreed methods of coordination through which SAR operations are conducted and the methods and techniques used to actually undertake a SAR operation.

Under these arrangements, the SAR authorities in each state and territory are the local police. Clause 12 of the SAR IGA states that the state/territory SAR authorities are primarily responsible for coordinating maritime SAR in respect of persons and vessels on inland waterways and in waters within the limits of the ports of the relevant state or territory, and for fishing vessels and pleasure craft within port limits or at sea.

Volunteer organisations work in close liaison with state and territory police services and the police retain overall coordination of those organisations within their jurisdiction.

The Commonwealth Government, through the Australian Maritime Safety Authority (AMSA), discharges Australia's obligations for providing maritime search and rescue over an internationally agreed maritime search and rescue region of almost 53 million square kilometres, or one tenth of the earth's surface, in accordance with SOLAS[2] and the International Convention on Maritime Search and Rescue 1979[3].

Under the SAR IGA (clause 10), AMSA accepts primary responsibility for the coordination of maritime SAR for persons on or from a ship in distress at sea, other

2 The International Convention for the Safety of Life at Sea, 1974, as amended.

3 An international Convention aimed at developing an international SAR plan, so that, no matter where an accident occurs, the rescue of persons in distress at sea will be coordinated by a SAR organisation and, when necessary, by cooperation between neighbouring SAR organisations.

than fishing vessels and pleasure craft for which state/territory police have primary responsibility.

The Australian Defence Force is responsible for the provision of search and rescue for all military vessels and visiting military forces' vessels.

AMSA's responsibilities are exercised through the RCC, located in Canberra. The RCC is also responsible for monitoring the COSPAS-SARSAT distress satellite system[4] and for coordinating responses to distress beacon alerts, whether they occur over land or sea. The RCC operates on a 24-hour/7-day basis and is staffed by officers with extensive maritime or aviation backgrounds. These officers work 12-hour shifts, which usually begin at 0700 and 1900.

At the time of the loss of *Malu Sara*, section 1.3 of the NATSARMAN[5] detailed SAR responsibility and coordination obligations between SAR agencies. According to this section, the RCC can provide assistance to the police in the form of subject matter expertise and SAR planning, drift prediction and management tools. The RCC is also able to provide EPIRB position information and when requested, its officers can source, task[6], brief and coordinate search aircraft.

The NATSARMAN envisages five levels of possible interaction between the RCC and state/territory police in response to a marine incident:

1. The first level involves the police coordinating the response to an incident without any RCC involvement. Thousands of incidents are handled each year by state/territory police in this way.
2. The second level involves the police coordinating the response to an incident while keeping the RCC informed of their actions.
3. The third level involves the police coordinating the response to an incident while seeking RCC input to their operations. This could include the RCC providing drift plans, advice on satellite detections of distress beacon signals, putting out broadcasts to shipping, and making survivability estimates.
4. The fourth level involves police retaining overall coordination of the response while seeking the RCC assistance with arranging an air search, which is conducted under police direction.
5. The fifth level involves the police transferring overall coordination responsibility for the entire response to the RCC, by mutual agreement. The police still may provide assistance, including with on-scene activities such as intelligence interviews and participation in the surface search.

4.7.1 Search and rescue activity in the Torres Strait

Instances of small vessels asking for assistance in the Torres Strait are not unusual. According to the RCC, between 1 January 2000 and 31 December 2004, there were 243 small craft incidents reported. After discounting hoax calls, inadvertent alerts

4 A satellite system designed to provide distress alert and location data to assist SAR operations, using spacecraft and ground facilities to detect and locate the signals of distress beacons.

5 In the 2008 amendments to this document, this information is contained in section 1.2.

6 To assign to a mission.

and other alerts that were not related to distress, 206 incidents were recorded over the 5 years, or about one per week.

In that same 5-year period, there were 146 EPIRB activations by small craft in the region. While the exact number is not known, a significant percentage of the alerts were initiated because a small vessel had run out of fuel.

These figures relate only to the SAR incidents which involved the RCC. They do not include search and rescue alerts which the Thursday Island water police have completed without reference to the RCC.

This number of SAR incidents illustrates the level of risk[7] posed by small vessel operations in the Torres Strait. The rate of nearly one SAR incident each week indicates a high level of risk.

4.8 Lost

At about 1557 on October 14, when *Malu Sara*'s skipper reported being lost, the DIMIA duty officer (duty officer) was faced with a problem which had not been encountered before. As a result, it is likely that he did not fully appreciate the potential seriousness of the situation when he was dealing with the immigration response vessel (IRV) during the afternoon of 14 October.

At the time of the incident, there were operational procedures in place which provided guidance on reporting and follow-up actions while an IRV was on patrol. The procedures stipulated that a vessel, when on patrol, was required to report by satellite telephone at hourly intervals its position, the well-being of the crew and its progress. If an IRV failed to make contact within 15 minutes of its scheduled call, the duty officer was required to attempt to establish contact. If after 1 hour the officer was unsuccessful, the Thursday Island police were to be contacted so that SAR action could be initiated. However, there were no procedures in relation to a vessel becoming lost but remaining in contact, and furthermore, the duty officer had not received any relevant SAR training nor had there ever been any emergency exercises conducted to cover such a contingency.

The passage from Saibai Island to Badu Island was not classified as a 'DIMIA patrol' in so much as the vessel and its occupants were returning from a training exercise. However, there were no procedures in place to be followed during such a voyage with regard to reporting and any follow-up action, and neither the DIMIA regional manager (regional manager), the duty officer nor *Malu Sara*'s skipper, thought to apply the guidance provided to the passage on 14 October with regard to reporting and follow-up procedures for patrols.

Having been informed that *Malu Sara* was lost in sea fog, the duty officer on this occasion decided to attempt to guide the lost vessel towards Mabuiag Island. He considered that this was the appropriate action at the time because the skipper had indicated the vessel had plenty of fuel and that its occupants were well.

Given the number of reefs and islands in the area, and the local knowledge of the skipper, it was reasonable for the duty officer to expect that, having been given clear directions as to a course to steer, *Malu Sara*'s skipper would find some point

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7 The Australian Standard (AS/NZ 4360:2004) refers to measuring risk in terms of likelihood and consequence.

of reference, if only a reef fringe to follow south. He had also told the skipper to 'keep in touch'.

Unknown to both the skipper and the duty officer was a feature of the Globalstar satellite network, and the telephone carried by *Malu Sara*, which enabled the telephone's current position coordinates to be downloaded during a telephone call. The coordinates were derived by using the known positions of the satellites in the 'visible' constellation to triangulate the telephone's position with information on the accuracy of the position also provided.

Had this been known by the skipper or duty officer, and later the police, *Malu Sara*'s position could have been determined with a known degree of confidence and plotted on the chart in the DIMIA office during an early stage of the incident. The duty officer could then have advised the skipper of an accurate course to steer and additional positions could have been used to track the vessel's progress towards Badu Island, its intended destination.

The duty officer's knowledge of the distress satellite system led him to believe, correctly, that an activated 121.5/243 MHz EPIRB would give a relatively accurate position. This information could then be used to determine *Malu Sara*'s position and hence a course to steer to bring the vessel back to the safety of sheltered water. Given the duty officer's understanding of the situation at the time, activating the EPIRB was a reasonable course of action to follow and led to his advice to the skipper at 1822 on 14 October to head back towards the island he had sighted and to activate the EPIRB if he couldn't locate it. The activation of the EPIRB also meant that the skipper and duty officer could no longer resolve the situation without the assistance of local and commonwealth SAR authorities. This may have led to some reluctance on the part of the skipper to activate it initially.

DIMIA had no procedures in place to cover the situation in which one of its small vessels was lost but in contact during operations in the Torres Strait. Furthermore DIMIA staff had received no relevant training nor exercised search and rescue scenarios based on those circumstances. While the duty officer provided reasonable advice to the skipper under the circumstances and maintained a rough log of events, the absence of wider procedures and no training to fall back on, became an increasing problem as the situation remained unresolved.

4.9 Search and rescue

4.9.1 Responsible authority

The Queensland Police Service on Thursday Island was notified by the duty officer of the overdue *Malu Sara* at 1915 on 14 October. The constable on duty in turn contacted the sergeant of water police who arrived at the police station and assumed the role of SMC at 1940.

The SMC telephoned the duty officer and confirmed the details of the incident, some vessel details, the vessel's satellite telephone number and that the EPIRB had been activated. At about 2000, he telephoned the RCC and advised that an immigration vessel was overdue somewhere between Saibai and Badu Islands after being caught in sea mist and having lost its way. The SMC advised that he had contact with the vessel via satellite telephone. The vessel's skipper had activated its EPIRB so that the RCC's satellite detection system could provide an approximation

of the vessel's position. He was told by the RCC officer that the skipper should be advised to leave the EPIRB activated as it could take 'some time' to determine its position. The RCC officer told the SMC that the next satellite pass over the Torres Strait would be at 2137 local time, unless an overflying transiting aircraft reported the signal beforehand.

At no stage during the night of 14 October did the SMC, his senior officers or the RCC officers, question whether the Thursday Island water police should have had the primary responsibility to coordinate the search and rescue operation for *Malu Sara*. It was not until 1154 on 15 October, that the RCC, at the request of the police, formally assumed responsibility for the coordination of the aerial search. This was over 8 hours after the water police were told that *Malu Sara* was sinking and in need of assistance. The RCC eventually assumed overall coordination of the search at 1930 on 15 October, again at the request of the police, some 24 hours after the Thursday Island water police first became involved.

The limited interaction between the RCC officers and the SMC during the night of 14 October indicates that the RCC officers considered it was appropriate to allow the water police to maintain coordination of the incident and to manage any initial aerial and surface response. This was probably because most of the EPIRB activations in the Torres Strait involve a small recreational vessel, referred to locally as a 'tinny', travelling between the islands. In these cases, the water police normally coordinate any associated SAR action, in line with the NATSARMAN, Appendix B (Search and rescue functions and responsibilities).

Given that each SAR incident is in some way unique, the operational conduct of a SAR incident could be considered an 'inexact science'. However, the agreed division and allocation of responsibilities between Commonwealth and state/territory search and rescue agencies for the overall coordination of a SAR incident is relatively clear and is laid down in the SAR IGA and in the NATSARMAN.

Recital B(iv) of the SAR IGA states:

> The Parties are agreed that this agreement should formally recognise the administrative and funding arrangements underpinning the operation of the National Search and Rescue Response Arrangements to ensure that:
>
> (iv) The division of responsibility between the Parties is clear in responding to particular types of search and rescue incidents involving persons, vehicles, vessels and aircraft on land and at sea, in accordance with the National Search and Rescue Manual.

Clause 14 of the SAR IGA, *Cooperative Arrangements*, states that:

> The search and rescue authority first becoming aware of a search and rescue incident shall take all necessary action until responsibility can be handed over to the relevant search and rescue authority under clauses 10 and 12 of this agreement.

At the outset, the Queensland Police Service had the initial responsibility to react to the incident, in accordance with clause 14 of the IGA and the NATSARMAN, as it was the first SAR agency notified.

Even though *Malu Sara* was a small vessel, it was not a pleasure craft or a fishing vessel or a military ship. It was not on a voyage within the limits of a port nor was

it missing in inland waters[8]. Therefore, by exception, the Queensland Police Service did not have the overall primary SAR responsibility for the management of a SAR incident relating to *Malu Sara*[9].

Malu Sara was, by definition, a 'Commonwealth ship'[10]. It was owned, operated, crewed and under the same regulatory jurisdiction as any other Commonwealth government department or authority vessel. It was also undertaking a voyage of about 58 miles sometimes through open seas.

However, AMSA contends that the RCC officers did not need to consider the issue of responsibility for coordination of search and rescue in the initial stages of the incident based on the information provided by the SMC, as *Malu Sara* was not advised to be in distress or in need of search and rescue assistance.

The intention behind the SAR IGA is to guide, rather than direct, SAR agencies as to their primary responsibilities in relation to search and rescue operations[11]. However, section 1.3.4 of the NATSARMAN, *Determination of Responsible RCC*, states:

> In practice, the first agency to become aware of a distress situation is obliged to respond until the appropriate SAR authority with overall coordination responsibility is in a position to assume that responsibility. It is imperative that the appropriate SAR authority is notified as soon as possible.

The RCC is manned continuously with highly qualified staff and has specialist SAR resources and equipment on hand. As such, the RCC was in a position to assume overall coordination responsibility for the incident during its early stages.

AMSA was the 'Responsible SAR Authority' and the RCC should have offered to take overall coordination of the incident, by mutual agreement with the water police, at some time during the first night, when *Malu Sara* was lost and after the EPIRB had been activated, in accordance with the NATSARMAN. The Thursday Island water police could have retained coordination of the surface craft, under the overall coordination of the RCC, and the RCC could have moved ahead, issuing a broadcast to shipping, if that was considered appropriate, and potentially sourcing and tasking aircraft and other SAR assets as the situation developed that night.

4.9.2 Critical information not passed to the RCC

The SMC did not advise the RCC that the vessel was sinking at any time during the night of 14 October. As a result, the lack of this critical information affected the RCC's assessment of the appropriate response to the incident, which from 0222 on 15 October when *Malu Sara*'s skipper told the duty officer that the vessel was taking water fast and sinking, required a search and rescue response.

When the SMC contacted the RCC at 0226 on 15 October, he said that *Malu Sara* was taking on 'a bit of water' and that it was being bailed out. He said to the RCC officer that they might have to consider sending a helicopter to try and look for the

8 Waters that are not subjected to tidal influence, such as dams and rivers.

9 NATSARMAN, Appendix B.

10 *Navigation Act 1912*.

11 SAR IGA, clause 3 – Scope.

EPIRB[12], but crucially he did not tell the RCC officers that the vessel was sinking and in need of assistance.

Neither did he mention it during an 0338 conversation he had with the RCC.

It was not until the SMC next contacted the RCC at about 0600 that the word 'sinking' was used. However, due to the context and the way in which the comment was made, the RCC officer did not comprehend the significance of the SMC's remark and did not query the SMC regarding it.

The tone and content of the telephone conversations between the SMC and the RCC during the early morning of 15 October, shows that the SMC, and as the night progressed, the RCC officers, did not fully appreciate the gravity of the situation that faced those on board *Malu Sara*. Consequently, the SMC did not convey any feeling to the RCC officers that there was any distress situation involving the IRV or its occupants.

This attitude could partially be attributed to the number of EPIRB activations in the Torres Strait each year that are the result of people being inconvenienced and not in distress. The SMC in particular, had a great deal of experience in the Torres Strait and had been involved in many SAR operations which turned out not to be an actual SAR incident.

Regardless of the number of false alerts and non-distress situations experienced in the Torres Strait region, each incident should be treated on its merits at the time. The overarching principle is to implement early and effective action.

By 0700 on 15 October, the SMC had been awake and working for 24 hours. It is probable that the decisions he made during the night of 14 October were, to some degree, impaired by his lack of sleep. His failure to pass on relevant critical information to the RCC meant that he did not receive the assistance in managing the SAR operation that the unfolding circumstances of the incident demanded.

4.9.3 Actual or potential distress

There is little doubt that the SMC had difficulty in establishing effective communications with *Malu Sara. Malu Sara*'s skipper did not attempt (or did not know the phone number) to contact the SMC at any time. In all, the SMC made 58 attempts to contact *Malu Sara* by satellite telephone, of which only 13 calls were successful.

Despite the fact that communications with *Malu Sara* were only intermittent and could not be relied on to provide an accurate picture of the situation, the SMC did not appear to be unduly concerned about the vessel's safety. At about 0222 on 15 October, *Malu Sara*'s skipper told the duty officer that the vessel was taking water fast and sinking. However, from the time the vessel was reported lost in sea mist at about 1600 the day before, there was the potential for the situation surrounding *Malu Sara* to deteriorate.

Throughout the NATSARMAN, reference is made to actual or potential distress/emergency situations and the actions that should be followed by SAR agencies to manage these. Section 3.1.1 states:

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12 At the coronial inquest, the SMC indicated that his comment at this stage about a helicopter was part of a process of thinking aloud and not a formal request.

> When the SAR system first becomes aware of an actual or potential emergency, the information collected and the initial action taken are often critical to successful SAR operations. It must be assumed that in each incident there are survivors who will need assistance and whose chances of survival are reduced by the passage of time. The success of a SAR operation depends on the speed with which the operation is planned and carried out. Information must be gathered and evaluated to determine the nature of the distress, the appropriate emergency phase, and what action should be taken. Prompt receipt of all available information by the RCC (of any SAR authority) is necessary for thorough evaluation, immediate decision on the best course of action and a timely activation of SAR assets to make it possible to:
>
> > a. locate, support and rescue persons in distress in the shortest possible time; and
> >
> > b. use any contribution survivors may still be able to make towards their own rescue while they are still capable of doing so.

Section 3.3 of the manual lists a number of conditions which indicate that a maritime SAR incident is considered to be imminent or actual. These include:

- a surface vessel or craft is reported to be sinking or to have sunk;
- reports indicate that the operating efficiency of the craft is so impaired that the craft may sink or the crew may be forced to abandon;
- the surface vessel or craft is overdue or unreported; and
- an emergency beacon has been activated.

While the operational aspects of the NATSARMAN are not mandatory, with respect to the conduct a SAR incident, they should be followed as closely as possible. In addition, standard operating procedures developed by individual SAR authorities should be written in accordance with the NATSARMAN.

One of the key requirements in a proper SAR response, either for a potential or an actual incident, is the gathering of information which enables those involved to accurately build a picture of what the situation is and how it might be resolved. The gathering of information also enables issues which have the potential to cause the incident to deteriorate, to be identified and plans to be put in place to formulate potential corrective action.

The evidence indicates that during the night of 14 October, too much emphasis was placed on the use of the EPIRB as a means of monitoring the location of *Malu Sara*. This precluded the EPIRB being used for its primary purpose, a means of allowing the occupants of the small craft to signal an actual distress situation when *Malu Sara* was taking on water fast and sinking.

Regardless of whether a verbal distress is declared, it is the responsibility of search and rescue professionals to put together various pieces of information, which becomes available to them at various times during an actual or potential SAR incident, or to use whatever resources are available to them to gather additional information, so that they can properly assess the situation that they are managing to enable an effective response.

During the night, the SMC did not take sufficient steps to gather information to build a complete picture and understanding of what was happening on board *Malu Sara*. This included the fact that, prior to 0222, no one asked *Malu Sara*'s skipper

detailed, relevant questions to gain a better appreciation of what was actually happening on the vessel, or to directly ask him if he wanted or needed assistance.

The SMC developed his response based entirely on what he had been told by others. When communications were lost with the vessel, he continued to believe that he was dealing with on overdue craft. However, he should have assumed the worst and taken early and decisive action, including eliciting the assistance of the well resourced RCC.

The DIMIA regional manager was aware that *Malu Sara* had encountered problems in the preceding days at Saibai Island when it took in water while at anchor. However, when the SMC advised the regional manager that *Malu Sara* was taking water during the voyage, the SMC did not ask the regional manager, nor was he informed by the regional manager, about any aspect of the small vessel's operational performance since the six IRVs were commissioned.

Had the SMC known about this serious issue, his level of alertness regarding the situation may have been heightened. This heightened alertness may have resulted in the SMC implementing processes to establish the exact situation earlier than 0230 when he tasked the Thursday Island volunteer marine rescue (VMR) vessel and after he told the RCC officer that the vessel was taking on 'a bit of water' and was bailing it out.

There were no discussions during the night between the SMC and the RCC about the weather in the area, *Malu Sara*'s departure time, vessel details – including its name and the exact nature of the safety and navigation equipment it had on board, or how long it had been lost; information which should have been exchanged as it was directly relevant to a potential search and rescue response.

Apart from passing on satellite-derived positions and providing advice about the satellite detection system, the RCC staff did not offer the SMC assistance throughout the night. AMSA contends that the RCC officers considered that the SMC was responding appropriately to a non-distress incident involving a vessel that had lost its way. Therefore, the RCC had no reason to ask the SMC about emergency equipment carried on board, ages and gender of the occupants, knowledge and experience of the skipper or whether the SMC sought a broadcast to shipping in the area to be issued (a function of the RCC).

There is little doubt that if the RCC had been advised about *Malu Sara*'s real situation at some time after 0230, or if the RCC officers had been more proactive in asking the SMC why the situation had not been resolved in a reasonable time after the EPIRB had been activated, the RCC officers could have provided support to the SMC. This support could have been in the form of raising relevant issues associated with the conduct of a potential SAR incident and putting forward suggestions, based on their knowledge and experience, on how the incident may have been resolved in the shortest possible time. The offer of support could also have included a search undertaken to see what other assets, aerial or surface, were available in the region that could be used if the situation developed from a potential search and rescue incident to an actual one.

It was not until about 1000 on 15 October that an RCC officer asked the SMC questions appropriate to the search and rescue situation then apparent to the RCC.

In submission, AMSA stated that:

> AMSA considers that the RCC officers were as proactive in interrogating the SMC about the resolution of the incident as could reasonably be expected based on the

SMC's advice about the situation with *Malu Sara*. The SMC was the local search and rescue expert and acted on behalf of a search and rescue authority of equal standing to AMSA under the extant Inter-Governmental Agreement. He was well qualified in search and rescue, having undertaken a number of search and rescue courses and had worked in the Torres Strait region for several years. The RCC could reasonably expect that he would exercise a certain level of professional skill without them continuously questioning his decisions or the information that he provided about the boat's situation.

The SMC did not follow the guidance provided in the NATSARMAN concerning the early action to be taken to ensure that all available information was received or gathered concerning an actual or potential emergency. This impeded a thorough evaluation of the situation, the use of the appropriate emergency phases and the best course of action to be followed to bring about a timely resolution to the incident.

The SMC did not actively solicit the support of the RCC officers to help him manage the incident effectively. Equally, the RCC officers did not read the developing context of the incident as requiring their active intervention during what turned out to be the crucial period.

4.9.4 SAR emergency phases

According to the NATSARMAN[13], recognised emergency phases should be used in all communications about a SAR incident as a means of informing all interested parties of the current level of concern for the safety of persons or craft which may be in need of assistance. As the circumstances change during a SAR incident, the SMC may reclassify an emergency phase.

Upon initial notification, the notified SAR authority should classify a SAR incident as being in one of the three emergency phase categories[14]:

- Uncertainty
- Alert
- Distress.

Uncertainty phase

An uncertainty phase is said to exist when there is knowledge of a situation that may need to be monitored, or to have more information gathered, but does not require the dispatch of resources. This phase should be assigned any time doubt exists as to the safety of a craft or person because of knowledge of possible difficulties, or because of a lack of information concerning progress or position.[15]

Section 3.4.6 of the manual states that for ships or other craft or missing persons, an uncertainty phase should be declared where the craft or persons have:

- been reported overdue at the intended destination;

13 NATSARMAN Section 3.4.2.

14 NATSARMAN Section 3.4.1.

15 NATSARMAN Sections 3.4.4 and 3.4.5.

- failed to make an expected position safety report; or
- there has been no immediate request for assistance received but the possibility exists that a situation could escalate.

Initially, the *Malu Sara* incident could have been designated an uncertainty phase as doubt existed as to the vessel's safety, although the duty officer and the SMC were in contact via the satellite telephone and therefore knew that there was no distress situation involving the vessel or its occupants.

There was no verbal request for assistance. While SAR authorities finally established *Malu Sara*'s approximate position through the satellite detection system in relation to its EPIRB signal at about 2137 on 14 October, and continued to monitor the vessel's location throughout the night, there was certainly a lack of clear information about its position for almost 5 hours prior to this. There was also some continuing doubt about its safety until it could be confirmed that the vessel and its occupants had safely reached landfall.

Alert phase

An alert phase exists when a ship, other craft or persons are having some difficulty and may need assistance but are not in immediate danger. The alert phase should be assigned at any time apprehension exists for the safety of a craft or person because of definite information that serious difficulty exists which does not amount to a distress or because of a continued lack of information concerning progress or position.[16]

The key word in the allocation of this phase is 'apprehension', but there is no known threat requiring immediate action. Search and rescue units may be dispatched or other SAR assets diverted to provide assistance or information if it is believed that conditions might worsen or that SAR assets might not be available or able to provide assistance if conditions did worsen at a later time. For overdue craft, this phase is considered when there is a continued lack of information concerning the progress or position of a craft.[17]

Throughout the evening, there was a lack of information about *Malu Sara*'s progress towards Mabuiag Island, communications were difficult and, although the SMC was not aware of it, there was a serious issue regarding water entry into the vessel when it was at anchor or not moving through the water.

Therefore, the incident could have been declared an alert phase at 0133 on 15 October, when the skipper reported that the vessel was stopped because he thought its motors were low on lubricating oil and may need assistance. The ongoing issue of unreliable communications should also have alerted the SMC that things might not be right and raised his level of apprehension over the incident's progress. Consequently, he should have begun to make arrangements regarding the provision of assistance to *Malu Sara* or to gain more information about its circumstances prior to 0133.

16 NATSARMAN sections 3.4.7 and 3.4.8.

17 NATSARMAN section 3.4.8.

Distress phase

The distress phase is assigned whenever immediate assistance is required by a craft or person threatened by grave or imminent danger or because of continued lack of information concerning progress or position. This phase exists when there is reasonable certainty that an aircraft, ship, craft or persons are in imminent danger and require immediate assistance.[18]

Importantly, section 3.4.10 of the NATSARMAN states that if there is sufficient concern for the safety of a craft and the persons aboard to justify search operations, the incident should be classified as being in the distress phase.

At some time between 0133 and 0215 on 15 October, the incident should have moved into a distress phase, any time from when the skipper reported that he had anchored as a result of a problem with the outboard motor oil supply to when the critical information was received that *Malu Sara* was sinking and required immediate assistance.

Therefore, the SMC should have reacted accordingly by initiating a full scale SAR response. At the same time, he should have communicated this information clearly and decisively to the RCC and elicited their assistance in escalating the incident response.

It was not until 1044 on 15 October that the incident was finally categorised as a distress phase when the SMC advised the RCC that the EPIRB had been located floating in the water and that there was no sign of *Malu Sara* or its occupants.

While these emergency phases were used extensively in the Australian aviation SAR environment at the time of the incident, neither the Queensland Police Service nor the maritime section of the RCC used them in maritime SAR operations.

During the night of 14 October, communications between the SMC and the RCC officers were not as effective as they should have been. Emergency phases, as contained in the NATSARMAN, should have been used so that all SAR authorities involved were aware of the level of concern that either did exist, or should have existed, regarding the circumstances which surrounded *Malu Sara* and the people aboard.

4.9.5 Interaction between the police and DIMIA

At about 1800 on 14 October, the DIMIA duty officer visited the Thursday Island police station over another matter and mentioned to the police officer on duty that one of the IRVs had reported that it was lost but that there was no requirement for the police to do anything at this stage. By this time, *Malu Sara* was about 90 minutes overdue to arrive at Badu Island. By 1915, when the police were formally advised by the DIMIA regional manager that *Malu Sara* was overdue, almost 3 hours had passed since the vessel was due to arrive at Badu Island.

By not formally reporting the overdue vessel before this time and requesting the police to take over the response to the overdue vessel, as per DIMIA procedures, the police were not given the option of initiating any early SAR actions or preparations before nightfall on 14 October. In addition, had the police officer on

18 NATSARMAN sections 3.4.9 and 3.4.10.

duty at 1800 treated the initial mention of the overdue vessel as a report and asked the appropriate questions of the duty officer, he might have realised that there was a possibility that the incident could turn into a SAR situation.

Throughout the night of 14 October, the SMC, the DIMIA duty officer and the regional manager were operating in different locations on Thursday Island. Each of the three men had, at some stage, communicated with *Malu Sara*'s skipper and, in the case of the DIMIA officials, had then passed information to the SMC.

It would have been prudent for the SMC to ask the DIMIA officials to join him at the police station. If this had been done, the SMC would have been privy to all communications with the skipper and heard exactly what was being said. This would have removed any chance of information or context being lost or changed during the information relay process. Given the problems experienced with establishing communications with the small vessel, the SMC would have had more opportunity to talk directly with the skipper and therefore probably had a better understanding of the situation as events unfolded that night.

4.9.6 The SAR response

Having assumed the responsibility for the incident, the SMC initially told the RCC at 2008 on 14 October 2005 that a small immigration vessel was overdue and that it had a compass and 'everything on board'. This was incorrect as *Malu Sara* only had a magnetic compass on board and no other navigation equipment. The SMC asked whether the satellite system may be able to detect the EPIRB which had been activated to obtain the vessel's position so they could navigate to landfall.

The RCC officer advised the SMC of the time of the next satellite pass over the Torres Strait, which was due at 2137, an hour and half later but some 5 hours after *Malu Sara* was due at Badu Island. The SMC was not specifically told that it would take until 2315 for an accurately resolved[19] satellite position to be obtained. The RCC did advise the SMC that the vessel needed to be told to leave the EPIRB activated as it would 'take some time' (for the satellite system to resolve the EPIRB's position) unless a transiting aircraft picked up the EPIRB signal, but the RCC advised that this would not be as accurate as the satellite system.

The SMC appeared to be content to wait until the next satellite pass rather than explore what other options were available to him to be able to locate the activated EPIRB and the vessel. These options included the identification of appropriate SAR assets which could be used if the situation deteriorated, the actual tasking of an aerial asset, capable of homing on the EPIRB's signal, to find out more information, or the early activation of a surface response craft to proceed to the EPIRB location and provide what assistance was necessary.

Following the 0222 phone call from the duty officer, the SMC's level of concern was raised sufficiently for him to immediately task the Thursday Island VMR unit. He also made telephone calls to the VMR unit based at St. Pauls, a small community on Moa Island (about 8 miles east of Badu Island), a call to the DIMIA duty officer to get the Mabuiag Island IRV to go to sea, and a call to the police

19 EPIRB detection works on the 'Doppler' principle. An initial signal will provide two possible positions. These two positions are assigned a percentage probability. In this case, the probabilities were 51 percent and 49 per cent. A second satellite pass is required to 'resolve' this ambiguity.

communications centre in Cairns, a little later at 0234. Critically, although the SMC told the police communications centre officer that *Malu Sara* was sinking, he did not pass this information to the Thursday Island VMR when he tasked the unit, nor the RCC.

Given the information that was available during the course of the previous evening, an aircraft should have been sourced and tasked as it could have provided information on the weather in the area, and had the cloud cover permitted, whether the vessel was still afloat and/or if there were people in the water. This valuable information would then have assisted SAR agencies to determine the urgency of the situation and indicated which other SAR assets needed to be tasked.

At the very least, an aircraft should have been tasked to be at the EPIRB's location at first light, about 0545 on 15 October, one hour before the first surface vessel arrived at the location. If this aircraft had been a helicopter, which was winch equipped and had the weather conditions allowed, it would have been in a position to undertake a winch rescue if *Malu Sara*'s occupants had been located before the arrival of the surface vessels. If, on arrival, the aircraft could not locate the missing IRV or its occupants, it could have provided aerial support for the small surface vessels when they arrived.

As it was, the first fixed wing aircraft, which was tasked by the RCC as an 'aircraft of opportunity', originally on a flight from Saibai to Badu Islands, arrived in the area at 0914. The first helicopter, which was tasked by the SMC, arrived in the area at 1029, more than 5 hours after first light and 8 hours after the duty officer told the SMC that *Malu Sara* was sinking.

The SMC's response to the unfolding situation with respect to *Malu Sara* was reactive rather than proactive. He did not actively seek information which would have given him a better understanding of the vessel's situation and his options with respect to search and rescue assets.

The delay in tasking assets

On 14 October, sunset was at about 1820 and by the time the police assumed SAR responsibilities, it was dark. Initiating any type of search after sunset limits the type of response that is available to be put into place quickly to resolve an actual or potential SAR situation. Rescue equipment cannot be dropped from aircraft at night and the helicopters operating in the Torres Strait region at the time could not conduct winching operations at night. In addition, the area in which *Malu Sara* was lost is not very well charted and this restricted the type of surface craft which could be used at night.

At the time of the incident, one of the primary SAR assets in the Torres Strait region was a Bell 412 twin engine helicopter, operated by Australian Helicopters and chartered at the time by the Australian Customs Service (ACS)[20]. The helicopter could fly in almost all weather conditions and was equipped with a forward looking infrared (FLIR) unit[21] which was capable of detecting targets at night and in the water. It was also fitted with radio direction finding equipment,

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20 Now known as the Australian Customs and Boarder Protection Service.

21 Video camera specially designed to detect and record infrared energy (heat) instead of visible light. Most FLIR units can detect temperature differences of as low as 0.2° C.

which could locate an activated EPIRB, and a heavy duty search light, a 'night sun'.

During the day of 14 October, the SMC had heard that this helicopter was out of service, which led him to mistakenly believe that this resource was not available to be used at any time during that night. Furthermore, during his initial conversation with the RCC, the SMC said that he had heard the 412 helicopter was 'down'.

This comment was made while the RCC officer was talking about the possibility that the EPIRB signal may be detected by overflying aircraft. The RCC officer did not actually comment on the availability of the helicopter and, given the context in which the RCC officer was talking, it is possible that the RCC officer did not assimilate the SMC's remark.

Therefore, at no time during the night was contact made with the helicopter base on Horn Island, or the ACS directly, to enquire about the availability of the helicopter, and if it was out of service, when it would be available for tasking. Had this been done, it would have been known that the helicopter was operational and available.

The SMC also believed that the cloud cover in the area at the time would have prevented an aircraft from locating *Malu Sara*. This was despite the fact that he was not in the best position to make this assumption. Had an aircraft been tasked and, if the aircraft and the crew qualifications suited, it could have been flown to the location of the EPIRB for the pilot to assess the local weather conditions to determine whether or not the aircraft could descend to get more information about the situation.

Consequently, during the night of 14 October, only small vessels were tasked from Thursday and Mabuiag Islands to search for *Malu Sara*. No aerial support, back up or alternative rescue platform was deployed and those that were considered were not followed up.

No attempt was made to find any aircraft, including from the SAR trained operators in Cairns, which might have been able to be used as the situation developed during the night. A FLIR equipped aircraft could have been used to locate the small craft or any persons in the water during the hours of darkness, if the cloud cover allowed. In addition, if the aircraft was equipped with a form of search light, this could have been used to illuminate the sea area and provide a degree of 'morale boosting' for the people on board *Malu Sara*, if the weather conditions permitted.

Requests for aerial assistance

In all, there were six satellite passes over the Torres Strait that detected *Malu Sara*'s EPIRB before 0700 on 15 October. This number of detections should have indicated to the RCC officers that the situation had not been resolved. However, at that time the continuing activation of the EPIRB did not raise the level of concern within the RCC sufficiently to question why it had been transmitting for such a protracted period (over 11 hours). The RCC officers continued to think that the EPIRB was still transmitting to assist the SMC in responding to the IRV, but that it was not signalling a distress or the need for a search and rescue response.

At 0226 on 15 October, the SMC advised the RCC that he had received a telephone call from the duty officer who had said that *Malu Sara* was starting to take a bit of water in and they (the occupants) were bailing it out. The SMC then said[22]:

> ... so **might have to look at** sending in a helo [helicopter] to try and look for this EPIRB and try and wait for the immigration officer on Mabuiag to go out and have a look as well. [ATSB emphasis - parts of this conversation are not clearly able to be heard]

He also asked if the EPIRB was still activated and the RCC officer gave him the latest position data, which had been received 25 minutes earlier, and advised the SMC that the next satellite pass would be 40 minutes later.

AMSA maintain that the RCC officer did not react to the SMC's comment about sending in a helicopter as the RCC officer had not been advised of any distress situation and the SMC, thinking aloud, was considering his proposed response actions.

The SMC did not task a helicopter to act as either a rescue or search platform because he subsequently decided that, given the fact that it was dark and the weather was poor, a helicopter would not be a suitable rescue platform; a surface response using the Thursday Island VMR vessel or the Mabuiag Island IRV was a more appropriate response action.

There was no further discussion between the SMC and the RCC about any form of aviation response in the SMC's two successive telephone calls to the RCC (at 0338 and at 0600). The subject was not raised again until about 0726 when the SMC advised that the VMR vessel was at the location given by the EPIRB signal, but was unable to locate the vessel or the EPIRB and was about to do an expanding square search of the area.

At that time, the SMC asked the RCC officer if there was a possibility of an aircraft being sent up to attempt to track the EPIRB signal if the VMR's search in the next hour and half was not successful in locating the vessel.

In reply, the RCC officer told the SMC that the RCC would review tasking an aircraft after the surface vessel had undertaken its search of the area and did not locate the EPIRB or the vessel. The RCC also advised that there would be an ACS aircraft in the area in about 4 hours time and that the RCC would wait to see if the VMR vessel located anything in the 1½ hours it was conducting its search.

Therefore, no dedicated aircraft was tasked in reply to the SMC's request. This effectively meant that, if the ACS aircraft was the only aircraft to be used, there would be no aircraft in the area for 2½ hours after the SMC originally planned.

While not tasking an aircraft at that time, the RCC did assist the SMC by undertaking drift planning to establish a potential position of the vessel and establishing the times for first light/last light, sunrise and sunset times for the Torres Strait. This information was passed to the SMC.

The RCC officers also contacted Brisbane Air Traffic Services to establish whether there were any aircraft already operating in the area that may be able to detect the EPIRB and sight the missing vessel. The RCC was advised there were two aircraft

22 RCC telephone conversation recording.

due in the area, one flying from Saibai Island to Badu Island in 20 minutes time and another having just departed Horn Island bound for Coconut Island.

The RCC requested Brisbane Air Traffic Services pass on the information concerning *Malu Sara* to the aircraft about to leave Saibai Island with the aim of getting the aircraft to attempt to sight the vessel and direct the VMR vessel to its location.

At about 0850, the SMC told the RCC officer that the VMR vessel was having difficulty maintaining the signal from the EPIRB and had picked nothing up on the radar in relation to the vessel. At that time, the SMC requested aerial support in the form of the RCC initiating a single aircraft aerial search. During this conversation, the RCC officers stated that they would task an aircraft of opportunity already in the area to see if its pilot could hear the EPIRB, and suggested that the SMC should task a helicopter.

The content of the 0850 telephone conversation indicates that the RCC officer did not see it as his role to source and task a helicopter which, as the RCC officer stated during the conversation, would have been the 'better' asset to use in those particular circumstances. The RCC officer appeared to prefer to let the SMC task a helicopter and to wait to see whether the aircraft of opportunity in the area might be able to detect the transmitting EPIRB. Even if the aircraft could detect the EPIRB's signal, there would have been very little it could do except confirm that the EPIRB was transmitting and possibly descend to a safe altitude where it might be able to 'loiter around the area to see if he [the pilot] can sight this immigration vessel'[23].

By 0850, the EPIRB had been active in that particular position in the Torres Strait for almost 13½ hours and the incident had not been resolved. The incident had clearly progressed beyond the stage of using an aircraft of opportunity, a process which would normally only be employed during the investigation of an initial EPIRB activation. However, AMSA contend that because the RCC officers had still not been told that *Malu Sara* was sinking, they considered the proposal of using an aircraft of opportunity provided the most immediate solution to the SMC's advice; that the VMR vessel was having difficulty in maintaining the EPIRB signal and could not detect the vessel by radar. Consequentially, the SMC's request for a dedicated aircraft to be tasked to the EPIRB location was not acted upon by the RCC.

In its submission, AMSA stated further that:

> The RCC officers would have acted on his requests in accordance with the provisions of the NATSARMAN if they had known of the boat being in distress and needing a search and rescue response, rather than the SMC's continued portrayal of the boat needing to be located using its EPIRB signal so it could be resupplied with oil for its motors.
>
> In the event, the SMC's requests or suggestions were treated on each occasion (0226, 0726 and 0850) in accordance with the information which was known to the RCC at the time.

There is little doubt that if the SMC had told the RCC that *Malu Sara* was sinking at 0226, the RCC's response to his requests or suggestions regarding dedicated

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23 RCC/SMC telephone record for 0849 15 October 2005.

aerial assistance on the three occasions on the morning of 15 October, would have been different.

However, given the length of time the EPIRB had been active without the situation being resolved, the RCC officers could have offered the SMC assistance in the sourcing and tasking of aircraft which would have enabled him to concentrate on his overall management of the incident.

On three occasions on the morning of 15 October, the SMC raised the issue of aerial support, in the form of sourcing and tasking dedicated aircraft, with the RCC. However, his suggestions did not receive the response required in a distress situation. Consequently, the RCC officers relied on the SMC undertaking response actions in line with the Queensland Police Service having coordination of the incident.

4.9.7 Sighting a survivor

On the afternoon of 16 October, during the RCC coordinated search for *Malu Sara* and its occupants, three people in a fixed wing search aircraft reported sighting a person in the water.

The aircraft was flying at about 500 feet (152.5 m) and the sightings, by two observers and the pilot, were described as involving a couple of minutes by one of the observers to a few seconds in the case of the other observer and the pilot. The sighting was reported to be a man wearing a yellow personal floatation device in the water and looking as though he was waving his arms or perhaps his arms were flailing in the sea.

The pilot of the aircraft asked another observer to record the global positioning system (GPS) coordinates of the sighting and he radioed them to the communications aircraft overhead. A helicopter, an AMSA Dornier dedicated search and rescue aircraft and rigid inflatable vessels from an ACS vessel were immediately sent to the area.

The search aircraft remained circling the area until shortly after the helicopter arrived on scene, which was estimated to be between 10 and 20 minutes after the initial sighting. None of the aircraft occupants were able to locate a possible person in the water at the location of the initial sighting although the observers in the aircraft later sighted the vessels that had also been sent to the location to check the sighting.

After the search aircraft returned to base on Horn Island, a senior Queensland police officer interviewed the pilot and the two observers about the sighting of the person in the water. The helicopter, AMSA aircraft and the ACS rigid inflatable vessels continued to search the area up until last light (about 1½ hours of searching) or until their fuel reserves allowed, but they were unable to locate the source of the sighting. The sighting was subsequently recorded as being ‘unconfirmed’.

As the sighting was within the determined search area, subsequent searches undertaken over the ensuing days, as defined by AMSA drift modelling and actual datum buoy drift observations, also covered the sighting drift position.

After the search for *Malu Sara* and its occupants, debriefings were held by SAR authorities on 9 November 2005. The unconfirmed sighting was not reviewed to question whether a person was seen in the water. It was assumed that because the

sighting was recorded as being unconfirmed, nothing was to be learnt from further consideration of the issue and the minutes of the debriefing actually recorded that there were 'no sightings'[24].

While the use of the words 'unconfirmed sightings' might be considered to have been used in accordance with usual search and rescue practices, in this case, their use did not 'encourage insightful reflective practice' and did not allow the SAR authorities the opportunity to constructively critique their practices[25].

Post incident analysis of SAR practices after the search for *Malu Sara* did not specifically include a review of the processes by which sighting reports were assessed and classified during the search. Consequently, it is possible that improvement opportunities in the SAR system were missed.

24 Findings of the inquest into the loss of the *Malu Sara*, Queensland Coronial Court, 12 February, 2009, p 85.

25 Findings of the inquest into the loss of the *Malu Sara*, Queensland Coronial Court, 12 February, 2009, p 85 and 87.

5 FINDINGS

5.1 Context

This supplementary report replaces Section 4.7 (Lost) and some conclusions and safety actions recorded in the ATSB Transport Safety Investigation Report, Marine Occurrence Investigation No. 222, which was released on 19 May 2006.

This supplementary report has been published following the release, and subsequent analysis, of significant new information in relation to the initial search and rescue response during the coronial inquest into the loss of *Malu Sara* and its five occupants on 15 October 2005.

From the evidence available, the following findings are made with respect to the initial response actions undertaken on the night of 14/15 October 2005 and should not be read as apportioning blame or liability to any particular organisation or individual.

5.2 Contributing safety factors

- The then Department of Immigration and Multicultural and Indigenous Affairs (DIMIA) had no reporting and follow-up procedures in place for immigration response vessels transiting between islands in the Torres Strait when not on a DIMIA patrol. *[Safety issue]*
- DIMIA had no procedures in place to cover the situation in which one of their small vessels was lost, or reported overdue, during operations in the Torres Strait. *[Safety issue]*
- Neither the DIMIA regional manager (regional manager), the duty officer nor *Malu Sara*'s skipper applied the guidance provided with regard to reporting and follow-up procedures for DIMIA patrols to the passage from Saibai Island to Badu Island on 14 October.
- The DIMIA duty officer had received no relevant training in search and rescue (SAR) management, or in the DIMIA procedures which were in place at the time of the incident. *[Safety issue]*
- The DIMIA regional manager, the duty officer and the Queensland Police Search and Rescue Mission Coordinator (SMC) were not aware of the ability of the satellite telephone carried on board *Malu Sara* to provide position coordinates on the handset. Consequently, DIMIA and search and rescue agencies relied on other methods of position estimation to provide the skipper with courses to steer to bring the vessel to safer waters.
- As a result of possible ambiguities in the NATSARMAN regarding coordination arrangements for small vessels, the Australian Maritime Safety Authority, as the 'Responsible SAR Authority' for Commonwealth vessels, did not take overall coordination of the incident, by mutual agreement with the Queensland Police, during the first night, when *Malu Sara* was lost and after the EPRIB had been activated. *[Safety issue]*

- The SMC did not follow the guidance provided in the NATSARMAN concerning the early action to be taken to ensure that all available information was received or gathered concerning an actual or potential emergency. This impeded a thorough evaluation of the situation, the use of the appropriate emergency phases and the best course of action to be followed to bring about a timely resolution to the incident.
- The SMC did not actively solicit the support of the RCC officers to help him manage the incident more effectively.
- Partly as a result of the initial assumption that the incident was a Queensland responsibility, the RCC officers did not read the developing context of the incident as requiring their active intervention during what turned out to be the crucial period.
- The SAR operation was reactive, rather than proactive. The SMC did not attempt to gather additional information which could have helped him build a better understanding of what was happening on board *Malu Sara*.
- The DIMIA regional manager was aware that *Malu Sara* had encountered problems in the preceding days at Saibai Island when it took in water while at anchor. However, neither this critical information, nor any other relevant information about the IRV, was passed to the SMC.
- The SMC and the DIMIA officers were operating in different locations on Thursday Island. Consequentially the SMC was not privy to all communications with the skipper and the most accurate content of those conversations.
- The SMC did not tell the RCC at any time on the night of 14/15 October that *Malu Sara*'s skipper had reported that the IRV was sinking and that they were in need of assistance.
- Search assets were not identified and prepared early enough in the course of the incident to ensure that appropriate assets could be sent to the last known EPIRB position of *Malu Sara* as soon as the vessel was known to be disabled. When SAR assets were tasked, once the SMC had been told the vessel was sinking, they were only small surface vessels. No aerial asset to search, support, back up or as an alternative rescue platform was deployed prior to 0914 on 15 October, when the first aircraft arrived in the area.
- On three occasions on the morning of 15 October, the SMC raised the issue of aerial support, in the form of sourcing and tasking dedicated aircraft, with the RCC. However, his suggestions did not receive the response required in a distress situation. Consequently, the RCC officers relied on the SMC undertaking response actions in line with the Queensland Police Service having coordination of the incident.

5.3 Other safety factors

- Emergency phases, as contained in the NATSARMAN, were not used during the night of 14 October. Consequently, all the SAR authorities involved were not aware of the level of concern that either did exist, or should have existed, regarding the circumstances which surrounded *Malu Sara* and its occupants.

- Post incident analysis of SAR practices after the search for *Malu Sara* did not specifically include a review of the processes by which sighting reports were assessed and classified during the search. Consequently, it is possible that improvement opportunities in the SAR system were missed *[Safety issue]*

6 SAFETY ACTION

The safety issues identified during this investigation are listed in the Findings and Safety Actions sections of this report. The Australian Transport Safety Bureau (ATSB) expects that all safety issues identified by the investigation should be addressed by the relevant organisation(s). In addressing those issues, the ATSB prefers to encourage relevant organisation(s) to proactively initiate safety action, rather than to issue formal safety recommendations or safety advisory notices.

All of the responsible organisations for the safety issues identified during this investigation were given a draft report and invited to provide submissions. As part of that process, each organisation was asked to communicate what safety actions, if any, they had carried out or were planning to carry out in relation to each safety issue relevant to their organisation.

6.1 The Department of Immigration and Citizenship

6.1.1 Overdue or lost IRV procedures

Safety issue

The then Department of Immigration and Multicultural and Indigenous Affairs (DIMIA) had no reporting and follow-up procedures in place for immigration response vessels transiting between islands in the Torres Strait when not on a DIMIA patrol.

Safety issue

DIMIA had no procedures in place to cover the situation in which one of their small vessels was lost, or reported overdue, during operations in the Torres Strait.

Response from the Department of Immigration and Citizenship – MO-2009-007-NSA-003 & MO-2009-007-NSA-004

Following the loss of *Malu Sara*, the department immediately withdrew her sister immigration response vessels from service and has not utilised the vessels since. The department is not presently intending to own marine assets or engage Movement Monitoring Officers (MMO's) in marine patrols.

The department's current view is that it does not require marine vessels to acquit its responsibilities, and can more practicably and efficiently utilise resources and expertise of other agencies operating in the region. The Australian Customs and Border Protection Service (Customs) now has a significant presence in the Torres Strait and regularly undertake marine patrols.

The department also has a Memorandum of Understanding (MOU) in place with Customs, the Department of Foreign Affairs and Trade (DFAT) and the Australian Quarantine and Inspection Service (AQIS) in respect of the operation and sharing of marine assets. This MOU sets out more stringent standards for the operation of small vessels than previously existed. The MOU provides for the carriage of departmental staff on other agency vessels and details the survey requirements,

safety standards, qualifications of crew and standard operating procedures to be applied including when carrying other agency personnel.

Should the department ever return to marine operations in the Torres Strait, the ATSB's recommendations in its report of 19 May 2006 and this supplementary report in respect of training, standard operating procedures and appropriate resources will be fully employed. The department will also implement the recommendations made by the Queensland State Coroner in regard to these matters.

ATSB assessment of response/action

The Australian Transport Safety Bureau acknowledges the actions taken by the Department of Immigration and Citizenship to address this safety issue.

6.1.2 Training of staff in the management of a situation where an IRV is reported overdue or lost

Safety issue

The DIMIA duty officer had received no relevant training in SAR management, or in the DIMIA procedures which were in place at the time of the incident.

Response from the Department of Immigration and Citizenship
MO-2009-007-NSA-005

As a result of a departmental review of the communications needs of the MMOs, in 2009 the department deployed an extensive Ultra High Frequency (UHF) radio communication network throughout the Torres Strait in collaboration with Customs. It provides our MMOs and Thursday Island staff with a secure 24-hour means of communication and is a key platform for an emergency response plan.

The Thursday Island office has commenced consultations with AQIS in respect of developing an emergency response plan, and proposes further engagement with other agencies operating in this environment. The plan will be reviewed and endorsed by an appropriate departmental governance committee and is expected to be operational by 30 June 2009. Relevant staff will be fully trained in its operation.

ATSB assessment of response/action

The Australian Transport Safety Bureau acknowledges the actions taken by the Department of Immigration and Citizenship to address this safety issue.

6.2 The Australian Maritime Safety Authority

6.2.1 Coordination of incidents concerning vessels which fall under AMSA's responsibility

Safety issue

As a result of possible ambiguities in the NATSARAMN regarding coordination arrangements for small vessels, the Australian Maritime Safety Authority, as the

'Responsible SAR Authority' for Commonwealth vessels, did not take overall coordination of the incident, by mutual agreement with the Queensland Police, during the first night, when *Malu Sara* was lost and after the EPRIB had been activated.

Response from the Australian Maritime Safety Authority
MO-2009-007-NSA-002

The Australian Maritime Safety Authority (AMSA) has taken action to clarify the provisions in the NATSARMAN concerning coordination arrangements between AMSA and the police services to address the ambiguity identified in the NATSARMAN during the Coronial inquest compared to the guidance provided in the Inter-Governmental Agreement on National Search and Rescue Arrangements.

In November 2008, the National Search and Rescue Council approved revisions to the NATSARMAN, at AMSA's instigation, to address these coordination issues and clarify provisions covering coordination of incidents between AMSA and the police services, including the removal of ambiguities between different sections of the manual. The NATSARMAN now allows for the continued overall coordination of a maritime incident by the search and rescue agency first advised of the incident, where that agency is best placed to respond, irrespective of the type of vessel involved.

AMSA's established program of an annual workshop with each state/territory police service continues to allow for discussion of these coordination and response issues. In August 2008, AMSA and the Queensland Police convened a special workshop for senior police officers in North Queensland as refresher training on coordination arrangements and discharge of responsibilities to supervise and support specialist search and rescue officers during maritime incidents.

ATSB assessment of response/action

The Australian Transport Safety Bureau acknowledges the actions taken by the Australian Maritime Safety Authority to address this safety issue.

6.2.2 Analysis of 'unconfirmed' sighting

Safety issue

Post incident analysis of SAR practices after the search for *Malu Sara* did not specifically include a review of the processes by which sighting reports were assessed and classified during the search. Consequently, it is possible that improvement opportunities in the SAR system were missed.

Response from the Australian Maritime Safety Authority
MO-2009-007-NSA-001

AMSA has taken action to develop a revised sighting assessment procedure to expand upon the existing guidance in the *International Aeronautical and Maritime Search and Rescue Manual* about the evaluation and analysis of information gathered during a search operation. This is to be submitted to the next meeting of the National Search and Rescue Council with the aim of being accepted into

Australian usage. Then AMSA intends seeking to have the revised procedure recognised internationally.

Guidance in the NATSARMAN about the conduct of debriefing sessions following a search operation is to be considered by the National Search and Rescue Council, with a view to including a checklist of items to be discussed at a post incident debriefing, including sighting assessment reports.

In the interim before any relevant amendments to the NATSARMAN are finalised by the Council, any post incident debriefing conducted by AMSA will include a review of the assessment of sighting reports to identify any opportunities for improvement in search and rescue practices.

ATSB assessment of response/action

The Australian Transport Safety Bureau acknowledges the actions taken by the Australian Maritime Safety Authority to address this safety issue.

APPENDIX A: SOURCES AND SUBMISSIONS

Sources of information

ATSB Transport Safety Investigation Report, Marine Occurrence Investigation No. 222

Malu Sara Coronial inquest findings, 12 February 2009

Malu Sara Coronial inquest transcripts

Various documents and statements submitted during the Coronial inquest, including those from the Australian Maritime Safety Authority, the Queensland Police Service, the officers of the then Department of Immigration and Multicultural and Indigenous Affairs and the Department of Immigration and Citizenship

References

Australian Standard (AS/NZ 4360:2004)

Inter-Governmental Agreement on National Search and Rescue Response Arrangements, National SAR Council website, 2009

National Search and Rescue Manual, AMSA, 2006

Navigation Act, 1912

Submissions

Under Part 4, Division 2 (Investigation Reports), 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. Section 26 (1) (a) of the Act 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 Search and Rescue Mission Coordinator, the Australian Maritime Safety Authority, the DIMIA duty officer and regional manager, the Department of Immigration and Citizenship and the Queensland State Coroner.

Submissions were received from the Department of Immigration and Citizenship, the DIMIA regional manager, the Australian Maritime Safety Authority, the Queensland State Coroner, the DIMIA duty officer and the Search and Rescue Mission Coordinator. The submissions were reviewed and where considered appropriate, the text of the report was amended accordingly.

Second supplement to the independent investigation into the loss of the Department of Immigration and Multicultural and Indigenous Affairs vessel *Malu Sara* in Torres Strait, Queensland, on 15 October 2005.