SEARCH AND RESCUE PROGRAM

OUTPUT 2.1: A CAPABILITY TO DETECT, LOCATE AND RESCUE PERSONS IN MARITME AND AVIATION DISTRESS SITUATIONS

- Sub-Output 2.1.1: Rescue Coordination Centre
- Sub-Output 2.1.2: Distress and safety communications services
- Sub-Output 2.1.3: Search and rescue assets
- Sub-Output 2.1.4: Strategic relationships and public awareness
- Sub-Output 2.1.5: Response to search and rescue incidents
OUTPUT 2.1: MARITIME AND AVIATION SEARCH AND RESCUE

Output 2.1: Search and rescue coordination.
This output covers AMSA’s maintenance of safety communications services and provision of a 24-hour search and rescue coordination service over the internationally agreed Australian Search and Rescue Region.

Sub-Output 2.1.1: Provision of a 24 hour Rescue Coordination Centre.
AMSA’s provision of the infrastructure and trained search and rescue personnel for Australia’s national Rescue Coordination Centre (RCC) with the capability of receiving and responding to notification of distress incidents, coordinating searches for persons in maritime and aviation distress incidents, and administering the AUSREP ship reporting service.

Sub-Output 2.1.2: Provision of distress and safety communications services.
AMSA’s provision of maritime distress and safety communications services that meet the requirements of the Global Maritime Distress and Safety System under the Safety of Life at Sea Convention and also can be used by suitably equipped non-SOLAS vessels for the rapid alerting of search and rescue authorities to a distress situation at sea.

Sub-Output 2.1.3: Provision of trained and equipped search and rescue assets.
AMSA’s provision of training and specialist search and rescue equipment to the dedicated aircraft operator and general aviation operators designated as Search and Rescue Units around Australia, which can be tasked by AMSA’s RCC to undertake search and rescue operations.

Sub-Output 2.1.4: Maintain and enhance strategic relationships and public awareness of safety issues.
AMSA’s contribution to significant international and national issues concerning maritime and aviation search and rescue, liaison with other agencies to strengthen cooperation and coordination of search and rescue services, and conduct of education campaigns on maritime safety and aviation search and rescue issues, particularly general aviation and recreational boating.

Sub-Output 2.1.5: Provision of effective response to search and rescue incidents.
AMSA’s use of the preparedness measures provided under Sub-outputs 2.1.1 (Rescue Coordination Centre), 2.1.2 (distress communications) and 2.1.3. (search and rescue assets) to provide an effective response to people in distress situations.
OUTPUT 2.1: MARITIME AND AVIATION SEARCH AND RESCUE

AMSA’s Emergency Response Business Unit delivers this output by:

- Providing a 24 hour Rescue Coordination Centre servicing the internationally agreed Australian Search and Rescue Region for the aviation and maritime sectors to fulfil Australia’s obligations under international conventions.

- Assuming coordination of maritime and aviation distress incidents.

- Maintaining maritime distress and safety communications services that meet the requirements of the Safety of Life at Sea (SOLAS) Convention and also can be used by suitably equipped non-SOLAS vessels.

- Providing satellite detection of distress beacons through provision of the Australian Cospas-Sarsat ground segment.

- Maintaining a ship reporting system (AUSREP) that meets the requirement of the SOLAS Convention and the International Convention on Maritime Search and Rescue.

- Providing training and specialist search and rescue equipment to selected general aviation operators designated as Search and Rescue Units (SRUs) around Australia.

- Contributing to international and national issues of significance concerning maritime and aviation search and rescue, maintaining and enhancing strategic relationships and increasing public awareness of maritime safety and aviation search and rescue issues.
OPERATING ENVIRONMENT

During 2005-2006, AMSA’s delivery of Output 2.1 in relation to maritime and aviation search and rescue was influenced by the following external factors:

- International decision to cease satellite processing of 121.5 MHz distress beacon alerts from 2009;
- Increased uptake of 406 MHz distress beacons requiring management of a larger registration data base;
- Impact of changes in the aviation environment on search and rescue operations, including aviation regulatory reform and airspace management;
- Potential demand for search and rescue response at the extent of Australia’s search and rescue region with increased Antarctic flights and voyages and adventurers travelling to more remote locations;
- Increased demand for vessel location information and its integration with other information for purposes of security and safety and development of ship monitoring/communication technologies;
- Community demand to maintain effective coordination between search and rescue agencies;
- Stakeholder demand for improved efficiency in providing search and rescue resources and incorporation of developing technologies into the search and rescue system;
- Availability of aircraft positional data from external sources to improve delivery of search and rescue services.
- Continued need to improve safety awareness for fishing vessels and small craft to reduce search and rescue demand from these sectors.
AMSA’S RESPONSE TO THE OPERATING ENVIRONMENT

In response to the external factors in the operating environment, AMSA identified the following portfolio objectives underpinning responses and priority actions to focus AMSA’s work during 2005-2006 on achievement of the portfolio outcome of fostering an efficient, sustainable, competitive, safe and secure transport system.

Sub-Output 2.1.1: Provision of a 24 hour Rescue Coordination Centre

Portfolio Objective: Fostering an efficient, sustainable, competitive, safe and secure transport system by Australia providing an effective search and rescue service over the Australian search and rescue region in accordance with its international convention obligations.

AMSA’s response: AMSA to ensure its accommodation, systems and communications technology provide optimal support for its search and rescue and other emergency response functions.

Priority actions in 2005-2006

Maintain the Australian Rescue Coordination Centre.

Background: AMSA provides a 24 hour Emergency Response Centre with the Australian Rescue Coordination Centre (RCC) at its hub servicing the internationally agreed Australian Search and Rescue Region for the aviation and maritime sectors to fulfil Australia’s obligations under international conventions. Australia is responsible for an internationally agreed search and rescue region of almost 53 million square kilometres, or about one tenth of the earth’s surface, and comprising parts of the east Indian, south-west Pacific and Southern Oceans. The boundaries of the aviation and maritime search and rescue regions generally coincide.

Update: During 2005-2006, AMSA’s RCC processed 11,088 incidents, with 4,685 of these incidents involving distress beacons. There were 559 incidents that required the RCC to coordinate search activity. Overall, a total of 281 people were rescued, which represented a success rate of 96.2 per cent of lives assessed as being at risk. (A person is defined as being at risk if the person has a chance of surviving the initial incident.) While AMSA’s target is to rescue 100 per cent of people whose lives are assessed as being at risk from the initial incident, there were situations where the potential to survive the distress incident was marginal and/or survival time would have been limited in the circumstances.
Develop a new Emergency Response Centre to upgrade the Rescue Coordination Centre’s capabilities, with improved accommodation, systems and communications technology to enhance capability in search and rescue and other multi-disciplinary emergency response operations.

**Background:** In the 2004 Federal Budget, AMSA received $18.9 million additional funding to strengthen its search and rescue capability. This included funding for the upgrade of the existing RCC to improve communications and search coordination systems to enhance interaction of strategic information with aircraft and other search and rescue agencies, particularly State and Territory Police services. The layout and equipment of the existing RCC is to be replaced with greater use of interactive information technology.

The new facility will also perform as a multi-disciplinary Emergency Response Centre (ERC) to provide coordinated responses involving search and rescue, pollution response and emergency towage requirements in the case of a maritime transport emergency.

**Update:** The ERC development has included relocation of AMSA’s Disaster Recovery Facility (DRF). During 2005-2006, AMSA reviewed the capability of its existing DRF located at Belconnen in Canberra, which was shared with another agency. The review identified a gap between AMSA’s business systems recovery requirements and the existing capability of the Belconnen facility. It was decided to relocate the DRF to a new building leased at Mitchell in Canberra affording a much greater capability and being dedicated to AMSA’s use.

Following a competitive tender process in late 2005, a contractor was chosen in April 2006 to undertake the DRF fit out, which was completed by mid July 2006. During July and August 2006, the existing DRF systems were migrated to the new facility and tested. After a period of operational familiarisation and exercises to prepare the RCC staff, the new DRF will serve as a transitional RCC while the remodelling of the office in AMSA’s head office in Canberra City is completed. The Mitchell facility then will become AMSA’s permanent DRF and provide business continuity capability for the whole of AMSA, not just for the RCC.

Specifications for the redevelopment of the current RCC and related general office space in AMSA’s head office building in Canberra City, including an upgrade of AMSA’s computer room facilities, were finalised in early 2006. After a competitive tender process, a contractor was engaged in September 2006 to carry out the fit out work, which is expected to be completed by the end of 2006.

**Enhance staff skills and knowledge and strengthen internal administrative and operational procedures.**

**Background:** AMSA maintains and enhances its staff skills in this area through recruitment and on the job training and external courses. An important part of maintaining AMSA’s quality management system is having in place a system for continuous improvement through
audit and review of administrative and operational procedures. Additionally, succession planning arrangements for specialist staff in the RCC have improved the resilience of the centre to deal with peak workloads, unplanned absences and other factors that affect staff numbers from time to time. These include mentoring arrangements for newly promoted senior officers and an enhanced program of pre-qualification for senior positions before the positions become vacant.

**Update:** During 2005-2006, AMSA continued to adopt recruitment, training and maintenance strategies to support an enhanced staff skill base. In particular, the secondment of senior RCC officers to deal with the Emergency Response Centre and AeroRescue projects has offered opportunities for qualified staff to act in those positions for an extended period, strengthening succession planning arrangements.

**Promote operational procedures and protocols describing the means of coordinating multiple participants in search and rescue activities.**

**Background:** The 2004 Inter-Governmental Agreement on National Search and Rescue Response Arrangements formalised and strengthened existing coordination arrangements between search and rescue agencies in the provision of aviation and maritime search and rescue services. It confirmed the primary responsibility of States/Territories for land-based search and rescue services for people on foot or in vehicles. It formally recognised the role of the National Search and Rescue Council as the principal coordinating body between search and rescue agencies and recognised the primacy of the National Search and Rescue Manual detailing the agreed search and rescue response procedures and coordination arrangements in Australia.

**Update:** The National Search and Rescue Council meeting in November 2005 authorised amendments to update the National Search and Rescue Manual. It also endorsed the incorporation of the Land Search and Rescue Operations Manual into the National Search and Rescue Manual to produce a comprehensive reference text covering all civil search and rescue procedures and protocols. This involved State Emergency Services representatives being included on the National Search and Rescue Manual Amendments Sub-Committee to contribute to the updating of the combined manual.

The Council decided that a working group should be established comprising experts in land search and rescue, including State Emergency Services representatives to update the Land Search and Rescue Operations Manual with a view to ensuring it is compatible with the National Search and Rescue Manual. The working group also would recommend the best means of incorporating the information in the Land Search and Rescue Operations Manual into the National Search and Rescue Manual. The working group commenced its work in January 2006.
Conduct regular meetings, workshops and exercises aimed at improving coordination between participating agencies in search and rescue operations, and examine measures to automate data exchanges to support coordination.

**Background:** AMSA chairs the National Search and Rescue Council, which is the national coordinating forum for search and rescue operations in Australia’s internationally recognised search and rescue region. In addition to AMSA, it comprises the Australian Defence Force and the Police service of each State and Territory (usually the search and rescue division), including the Australian Federal Police. The Council oversees search and rescue arrangements, ensures ongoing effectiveness of cooperative arrangements between Australia’s search and rescue agencies, and sponsors the National Search and Rescue Manual as the national standard reference for search and rescue operations. The Council’s functions, membership and administrative arrangements are formally recognised in the Inter-Governmental Agreement on National Search and Rescue Response Arrangements.

AMSA holds biannual meetings of the Australian Search and Rescue Consultative Forum to enhance dialogue between AMSA and its clients in the maritime and aviation industries and other government authorities. Participants include: Aircraft Owners and Pilots Association, Australian Air Transport Association, Australian fishing industry representatives, Recreational Aviation Association, Yachting Australia, Maritime New Zealand, Helicopter Association of Australia, Australian Air Transport Association, Australian Shipowners Association, Regional Aviation Association of Australia, Air Safety Australia, Shipping Australia and Royal Federation of Aero Clubs of Australia.

AMSA conducts a program of workshops, exercises and meetings with other search and rescue agencies in each State/Territory to improve coordination and promote cooperation in the delivery of search and rescue services. Search and rescue workshops involving senior police commanders and other relevant State/Territory agencies are valuable in providing a mutual exchange of briefings about current search and rescue issues and testing coordination of responses by multiple agencies through the use of hypothetical scenarios. AMSA also promotes international cooperation in improved delivery of search and rescue services.

**Update:** During 2005-2006, the annual meeting of the National Search and Rescue Council was held in Brisbane in November 2005. It was attended by representatives of all participant bodies and examined a range of search and rescue policy and national training issues.

The Australian Search and Rescue Consultative Forum meetings were held in August 2005 and February 2006. Topics discussed included AMSA’s contracting of the five dedicated search and rescue turboprop aircraft, upgrading of the RCC to an Emergency Response Centre, significant search and rescue incidents, and a range of national and international activities.

AMSA continued its rolling visits program, with planned visits to each State/Territory every second year. Workshops were held with a number of Police Services during 2005-2006.
including the Central Queensland region held at Mackay, Queensland, in August 2005 and at Darwin, Northern Territory, in August 2005, which included two representatives from East Timor along with local Northern Territory authorities.

A hypothetical exercise was conducted by AMSA search and rescue staff and the Western Australian Police Service and other emergency personnel in Broome, Western Australia, in October 2005. A SAR workshop was held in Karratha, Western Australia, in May 2006 along with an opportunity to discuss medical evacuations from ships (MEDEVACs) with the Dampier Port Authority and to contribute to the Western Australian Police Service search and rescue course held in Carnarvon.

A search and rescue workshop was held in South Australia during August 2006. Additionally, AMSA officers attended meetings of the Queensland and Tasmania State Search and Rescue Coordinating Committees. Other events attended by RCC staff included the Surf Life Saving National Conference on the Gold Coast and the Snowy Hydro Emergency Response Field day at Jindabyne, New South Wales.

Search and Rescue Coordination meetings between AMSA and the Australian Defence Force were held in July and December 2005 and May 2006.

AMSA’s National Search and Rescue School assists with the conduct of the annual National Police Search and Rescue Managers Course, which brings together AMSA and State and Territory Police Service search and rescue experts. A course was held in August-September 2005 in Canberra, with the next course held in August 2006. These courses allow for sharing of views with police officers training to be future search and rescue coordinators and builds working relations between course participants.

AMSA’s National Search and Rescue School provides search and rescue coordination training for Australian Defence Force officers designated to perform such functions. Two courses were conducted in Canberra in September-October 2005 and March 2006. AMSA has assisted with search and rescue coordination training sessions for Navy Warfare Officer and Navigation Courses in Sydney, and the Royal Australian Air Force Navigator Course at east Sale in Victoria.

The School regularly provides instruction and assistance with State and Territory based police search and rescue training courses and staff were provided to the South West Pacific Patrol Boat course held at Launceston in October 2005. AMSA delivered theoretical and practical search and rescue training for the Vietnam Maritime Rescue Coordination Centre in Vietnam in November and December 2005.

In relation to international search and rescue cooperation, AMSA assisted the IMO in its organisation of a regional seminar and workshop on maritime search and rescue in Manila, Philippines, in October 2005. This was held for the IMO member states in the East Indian Ocean region, including Bangladesh, Brunei, Cambodia, Indonesia, Malaysia, Myanmar,
Papua New Guinea, Philippines, Thailand and Vietnam. AMSA provided an experienced senior search and rescue officer to give presentations on current issues in maritime search and rescue, including support from maritime radio communications.

The regular search and rescue exercise between Australia and Indonesia *AusIndo 2005* was conducted in November 2005. The head of Indonesia’s search and rescue authority, Badan Search and Rescue Nasional (BASARNAS), Admiral Riyanto, attended the RCC at AMSA to observe the exercise.

**Address data base management issues from increased 406 MHz beacon usage.**

**Background:** AMSA maintains the database of registered 406 MHz beacon owners, which is vital to improving the effectiveness of its search and rescue services. The 406 MHz distress beacon emits a digital signal carrying a code that can be cross-referenced with the owner registered on the database. This provides search and rescue authorities with an indication of the potential type of distress situation (eg type of vessel or aircraft) so a response can be tailored to the particular emergency. AMSA established the 406 MHz database and register for all Australian coded beacons to meet national needs and to comply with international requirements.

The AMSA register includes all types of 406MHz beacons, including Emergency Locator Transmitters (ELT) designed for use in aircraft, Emergency Position Indicating Radio Beacons (EPIRB) used in maritime applications, and Personal Locator Beacons (PLB) used by bush walkers, off-road vehicles and land-based adventurers. It is estimated there are about 170,000 121.5 MHz beacon users who will need to transition to 406 MHz beacons by 2009, when satellite processing of signals from the 121.5 MHz beacons will cease. AMSA anticipates the rate of annual registration of 30,000 to 40,000 for the years leading up to 2009.

**Update:** An enhanced database capability is being introduced by AMSA in stages. The first stage provided for AMSA’s internal use and the second stage for electronic storage of correspondence. The next stage currently being progressed provides for proof-of-registration stickers. The final stage planned for 2007 will introduce functions for beacon owners to maintain their own details via a web-based entry system. During 2005-2006, there was a dramatic increase in the registration of 406MHz distress beacons with the AMSA database, mainly from increased sales of relatively low cost 406MHz beacons by the major manufacturers. A monthly average of around 300 new beacon registrations was recorded.

**Contribute to the introduction of ship monitoring and communications technologies, including satellite polling.**

**Background:** AMSA operates the AUSREP ship reporting system approved by the IMO under the SOLAS and SAR Conventions. It is given effect in Australia under Division 14, Part IV, *Reports of Movements of Ships*, of the *Navigation Act 1912*. Certain ships are required to provide position reports every 24 hours to allow monitoring of their location and to confirm ship and
crew safety. If a ship fails to report, checks are made with the ship, its owners, agents and charterers, and broadcasts can be made to other shipping. If these checks are unsuccessful, a search may be commenced. Instead of sending message reports, shipmasters can choose to be polled by AMSA using the Inmarsat C satellite communications network. Most ships are fitted with an Inmarsat C system as part of the Global Maritime Distress and Safety System (GMDSS) and this equipment can be polled by AMSA to provide ship position reports.

In March 2005, the Australian Government established the Border Protection Command (BPC), which is responsible for the implementation, coordination and management of off-shore maritime security. It brings together the Australian Defence Force responsibility for offshore counter terrorism, interdiction and response capabilities with the Australian Customs Service’s civil maritime surveillance and regulatory roles. The Government also announced the establishment of the Australian Maritime Identification System (AMIS), which is to provide comprehensive awareness of Australia’s maritime domain by consolidating collection of information from multiple sources. The BPC also has given consideration to international developments on the Long-Range Identification and Tracking (LRIT) of ships and potential integration into the AMIS project.

Update: During 2005-2006, AMSA processed 300,746 AUSREP reports. By June 2006, around 45 per cent of position reports were being automatically polled through the Inmarsat C satellite system, reducing the workload on ships’ officers to comply with reporting requirements.

The Maritime Legislation Amendment Act 2006 was enacted in March 2006, which included amendments to the Navigation Act 1912 repealing certain sections in Division 14 and adding sections providing for expanded objects for this Division and for the making of regulations covering the reporting requirements for ships. AMSA is making a new part to its Marine Orders, Marine Orders Part 63, AUSREP, to cover the matters in the repealed sections and other requirements to promote the objects of the Division, which is to come into operation on 6 October 2006.

AMSA participated in meetings organised by the BPC to examine ship identification and tracking issues in the AMIS and integration of existing data sources. BPC is examining stakeholder requirements in relation to AMIS, including data requirements, system functionality and agency contributions to AMIS.

AMSA also has been involved in the development of performance standards and functional requirements for the LRIT, particularly as these relate to providing LRIT data for search and rescue purposes. AMSA was represented at the IMO Sub-Committee on Radiocommunications and Search and Rescue meeting in March 2006 where agreement was reached on several important issues. This led to new regulations being agreed at the IMO in May 2006 on LRIT under Chapter V, Safety of Navigation, in the SOLAS Convention. These regulations establish an agreement for sharing LRIT information for security and search
and rescue purposes between parties to the SOLAS Convention. Ships will be required to transmit LRIT information, including their identity, location, date and time of position. Coastal States are entitled to receive this information about ships navigating off their coast to a distance of 1,000 nautical miles. It is intended that the LRIT system would become operational by 31 December 2008.

Provide operational and technical advice to CASA and Airservices Australia regarding search and rescue aspects of their development projects, particularly AeroBank and ADS-B.

Background: In late 2004, Airservices Australia began developing its Aerobank project, now titled the Integrated Data Exchange (InDeX) project, which is designed to deliver an information exchange to air traffic management stakeholders, such as airlines, airports, the Australian Government Department of Defence, the Bureau of Meteorology and Airservices Australia. AMSA has a potential interest in aircraft positional data provided by such a system.

Airservices Australia also is extending its Automatic Dependent Surveillance Broadcast (ADS-B) system, which allows air traffic controllers to precisely track aircraft fitted with suitable avionics equipment without the need for conventional radar. By June 2006, four ADS-B ground stations had been installed, with plans to deploy a total of 28 ADS-B ground stations across Australia during the next 12 to 18 months to provide high altitude surveillance capability over the entire continent.

Update: AMSA attended regular meetings of the Airservices Australia Steering Group and with its consultant regarding AMSA’s future requirements for aviation data under its Aerobank (InDeX) project.

Examine potential of new equipment (eg Self Locating Search and Rescue Marker Buoys, electronic/optical search systems and specialised distress beacon direction finding equipment), to enhance search and rescue.

Background: New equipment relying on satellite and remote communications technology advancements has the potential to significantly enhance the effectiveness of search and rescue services. Self-locating datum marker buoys are dropped into the sea to assist in predicting the drift of objects, including survivors or vessels in distress situations. These buoys can transmit their readings directly to the RCC by satellite, compared to earlier models of buoys that must be overflown by an aircraft to collect data.

Update: During 2005-2006, AMSA used the additional funding provided in the 2005 Federal Budget to upgrade communications and other search and rescue equipment used by the existing fleet of search and rescue aircraft. In May 2006, AMSA signed a contract with Seimac Limited for the provision of 180 self locating datum marker buoys, after a competitive tender process.
OUTPUT 2.1: MARITIME AND AVIATION SEARCH AND RESCUE

Sub-Output 2.1.2: Provide distress and safety communications services

Portfolio Objective: Fostering an efficient, sustainable, competitive, safe and secure transport system by Australia providing distress and safety communications services meeting its international convention obligations for rapid alerting of distress situations at sea.

AMSAs response: AMSA to deliver distress and safety communications services in line with international standards.

Priority actions in 2005-2006

Manage contracts with external providers to ensure maximum availability of distress and safety communication services in line with international standards.

Background: The GMDSS uses terrestrial and satellite technology and shipboard radio-systems to ensure rapid, automated, alerting of shore based communication and rescue authorities, in addition to ships in the immediate vicinity, in the event of a maritime distress. GMDSS telecommunications also can be used for safety reports as well as distress communications (for instance, ships can use the equipment to make reports under the AUSREP system using the Inmarsat C system).

Update: During 2005-2006, AMSA continued to discharge Australia’s responsibility for providing maritime distress and safety communications services, in line with the SOLAS Convention, through management of two contracts with providers of terrestrial and satellite services, respectively.

The terrestrial services contract with THL (Australia) Pty Limited and the Inmarsat satellite services contract with Xantic Sales BV were provided with only minor disruptions to service during 2005-2006 and achieved the high target levels of availability. SingTel, the operator of the Singapore Land Earth Station, has a separate arrangement with AMSA for backup services in case of an outage at the Land Earth Station Perth operated by Xantic Sales BV.

As NAVAREA X Coordinator, AMSA provides Australian coastal navigation warnings to the network of State/Northern Territory Limited Coast Radio Stations operated to provide HF and VHF voice radio services for small craft.

Satellite beacon distress alerting is provided by the Cospas-Sarsat system with the Australian ground segment maintained through a contract with EMS Pacific. During 2005-2006, the target system availability of 99.5 per cent was achieved.
Review developing technologies and international developments impacting on future provision of distress and safety communications services.

Background: AMSA aims to monitor technological developments which may have potential to improve search and rescue effectiveness.

Update: AMSA is closely following developments with the medium altitude earth orbiting (MEO) satellite systems planned to be used with the Cospas-Sarsat system used to detect distress beacons. A MEO search and rescue system may be suitable to replace the current Australian ground segment used to track low earth orbiting (LEO) satellites.
OUTPUT 2.1: MARITIME AND AVIATION SEARCH AND RESCUE

Sub-Output 2.1.3: Provide trained and equipped search and rescue assets

Portfolio Objective: Fostering an efficient, sustainable, competitive, safe and secure transport system by Australia maintaining appropriate level of search and rescue assets to respond effectively to maritime and aviation distress situations within Australia’s search and rescue region.

AMSAs’s response: AMSA to continue addressing issues and improving its delivery of search and rescue services.

Priority actions in 2005-2006

Respond to search and rescue issues arising from changes to the aviation environment, including regulatory reform and airspace management changes.

Background: AMSA attends the quarterly meetings of the CASA Standards Consultative Committee, which brings together CASA staff and representatives from a diverse range of aviation community organisations to work jointly during the development phase of regulatory material. The Committee examines proposed regulatory changes to determine if they are worth pursuing and assists CASA in the allocation of priorities to those projects.


Administer Search and Rescue Unit (SRU) Program providing different levels of responsiveness and capability including resourcing dedicated fixed-wing units.

Background: AMSA does not operate any search and rescue assets, but under its SRU program contracts general aviation operators to have aircraft, both fixed wing and rescue helicopters, available for tasking in search and rescue operations. AMSA provides specialist equipment for fitting to the aircraft and training for aircraft crews.

Update: During 2005-2006, AMSA maintained 61 SRUs, which were provided with specialist equipment and training as appropriate. During the year, 86 training sessions were provided to AMSA SRUs, involving training for 325 pilots and aircrew. Training also was facilitated for a further 208 air search observers.
Establish dedicated search and rescue twin turbine-engine aircraft services, with one aircraft operating in Darwin by October 2005 and the four additional aircraft in other locations around Australia operating after mid 2006.

**Background:** The 2004 and 2005 Federal Budgets provided additional funding to AMSA to contract a fleet of five turboprop aircraft dedicated to search and rescue operations. The aircraft are to be capable of day and night search, on-scene coordination, homing to distress beacons and deploying emergency supplies to people in distress. They will substantially upgrade Australia’s national search and rescue capability in terms of range, night search and all weather capacity.

**Update:** Following a competitive tender process, the first fixed wing turbine twin-engine aircraft was contracted by AMSA with AeroRescue Pty Ltd, a subsidiary of the Paspaley Group. It was officially commissioned in Darwin, Northern Territory, by the former Minister for Transport and Regional Services the Hon. Warren Truss MP, in October 2005.
A second contract was awarded in December 2005 to AeroRescue Pty Ltd after a competitive tender process for provision of a further four turbine engine aircraft. The first of these aircraft was commissioned in August 2006 at its base in Perth, Western Australia. The other three aircraft are to be introduced progressively at Cairns, Queensland, in October 2006, in Melbourne, Victoria, in December 2006 and at Brisbane, Queensland, in February 2007.

Spare capacity in relation to these aircraft is available for utilisation by other relevant Government agencies. After consultations with AMSA, the Australian Customs Service commenced flights with the Darwin aircraft as part of the Coastwatch civil maritime surveillance and response program in August 2006. The arrangements with Coastwatch recognize that the turbine engine aircrafts’ primary role is for search and rescue operations and AMSA can divert aircraft from surveillance to a search and rescue task at short notice.

**Support development and manufacture of drop system for deploying from pressurised twin turbine-engine aircraft.**

**Background:** The 2004 Federal Budget provided AMSA with an additional $18.9 million for initiatives to strengthen its search and rescue capability including funding to support AMSA’s development of a drop capability system to deploy emergency supplies from pressurised aircraft. Existing drop systems were only designed for use in unpressurised aircraft.

**Update:** During 2005-2006, AMSA progressed the development of a system capable of delivering a range of search and rescue equipment from pressurised aircraft. A review of existing and conceptual systems was undertaken and a system type selected. It has been developed into a prototype for testing, certification and ultimately manufacture. The new system has been implemented on the Darwin and Perth Dornier aircraft and will be implemented on each remaining Dornier as it commences service.

**Assist SRU operators to meet increased regulatory requirements of the Civil Aviation Safety Authority (CASA) for search and rescue operations.**

**Background:** The 2004 Budget provided AMSA with an additional $18.9 million for initiatives to strengthen its search and rescue capability, including funding to assist AMSA’s existing contracted search and rescue aviation operators to address new aviation regulatory requirements introduced by CASA in 2005.

**Update:** During 2005-2006, AMSA assisted existing contracted search and rescue aviation operators to meet the new aviation regulatory requirements. Delays to the implementation of the majority of new aviation regulatory measures will result in further support measures being addressed in forthcoming years.
OUTPUT 2.1: MARITIME AND AVIATION SEARCH AND RESCUE

Sub-Output 2.1.4: Maintain and enhance strategic relationships and increase public awareness of safety issues.

Portfolio Objective: Fostering an efficient, sustainable, competitive, safe and secure transport system by Australia having an effectively coordinated search and rescue service between Australian agencies and promoting safety awareness to reduce the incidence of people in maritime and aviation distress situations requiring search and rescue services.

AMSA’s response: AMSA to continuously improve its search and rescue coordination with other agencies and promote safety awareness on specific issues relevant to reducing the number of search and rescue incidents.

Priority actions in 2005-2006

Work with the Australian Antarctic Division (AAD), Civil Aviation Safety Authority (CASA), Airservices Australia and the Australian Defence Force (ADF) to ensure continued effectiveness of search and rescue in remote areas.

Background: Australia’s international search and rescue region covers almost 53 million square kilometres and includes parts of the Southern Ocean extending to the Antarctic region. The remoteness of parts of the region and the lack of ready response resources continue to challenge the search and rescue system. In collaboration with other Australian Government agencies, AMSA seeks to ensure an effective search and rescue alerting and response system is in place. It works with AAD regarding search and rescue response coordination in the Antarctic Region.

Update: During 2005-2006, AMSA continued to actively engage with AAD, CASA, Airservices Australia, and the ADF in various forums regarding cooperation in providing an effective national search and rescue system in remote locations. In July 2006, AMSA joined AAD officers in attending the combined meetings of the Scientific Committee on Antarctic Research (SCAR) and the Council of Managers of National Antarctic Programmes (COMNAP) in Hobart, Tasmania. These are the major international forums of the Antarctic scientific research and logistic support communities. AMSA participants attended workshops on air and ship operations in the Antarctic.
AMSA issued a Marine Notice in January 2006 to the shipping industry that discussed the dangers and risks to vessels operating in the Antarctic and Sub-Antarctic waters and the limited rescue facilities and problems involved with responding to a marine incident. It provided guidance on communications requirements and additional safety and pollution prevention measures recommended for vessels proceeding into the Antarctic Treaty Area. (Marine Notices are available on AMSA’s Internet site).

**Progress staged public education campaign for phasing out of satellite processing of 121.5 MHz distress beacons and promoting 406 MHz beacons.**

**Background:** AMSA is addressing issues flowing from the decision of the international council controlling the Cospas-Sarsat satellite system to cease processing 121.5 MHz analogue distress beacon signals on 1 February 2009, when only 406 MHz beacons will be detected by satellite. The decision aimed at reducing the high false alarm rate from analogue distress beacons, with up to 97 per cent being false alarms. An extended public awareness campaign is underway to alert all relevant agencies and the public about the forthcoming changes.

**Update:** During 2005-2006, AMSA continued to raise in the Australian Transport Council forums with State and Territory administrations the need to review carriage requirements in relevant legislation to prescribe 406 MHz distress beacons. AMSA has worked with the Cospas-Sarsat organization and Australian beacon manufacturers promoting development of a lower cost (Australian Class 3) 406 MHz distress beacon for use by smaller vessels (less than 300 gross tonnage) and recreational users.

AMSA continued its public awareness campaign on the cessation of satellite processing for 121.5 MHz distress beacon alerts from 2009 and the promotion of their replacement by more effective 406 MHz beacons by July 2008. This has involved considerable cooperation from CASA, State and Territory marine administrations, distress beacon retailers and other associated stakeholders. From an aviation perspective, advertisements of the change have been placed in professional journals and the CASA published Flight Safety Australia magazine distributed to all pilot licence holders.

Work in the maritime sector included the distribution of brochures advising of the change, including direct mailing to more than 700,000 registered boat owners and advertisements in boating magazines. AMSA maintained its special web site (http://beacons.amsa.gov.au/) dedicated to distress beacons information, which promotes the benefits of 406 MHz beacons. AMSA continued to attend Australia’s major boat and air shows promoting 406 MHz beacons and the cessation date for satellite monitoring of 121.5 MHz beacons.
Contribute to maritime and aviation safety awareness and education campaigns including working with CASA on aviation safety initiatives.

**Background:** Apart from promoting the benefits of carrying a distress beacon, AMSA also undertakes public awareness campaigns encouraging the general aviation sector, recreational boating community and fishing industry to take greater responsibility for their own safety.

**Update:** During 2005-2006, AMSA continued to promote in conjunction with State and Northern Territory marine administrations the distribution of a free 90 minute DVD, *Safer Recreational Boating*, which covers all aspects of small vessel handling and safety, including segments on the benefits of carrying a 406 MHz beacons. AMSA also assisted the CASA Safety Promotion Unit in a number of its educational initiatives from an aviation search and rescue perspective. AMSA participated in CASA’s Pilot Safety Workshops that were held around Australia from October 2005 including Canberra in October and Melbourne in November 2005 and ten other locations across Australia in 2006.
OUTPUT 2.1: MARITIME AND AVIATION SEARCH AND RESCUE

Sub-Output 2.1.5: Provide an effective response to search and rescue incidents

Portfolio Objective: *Fostering an efficient, sustainable, competitive, safe and secure transport system* by Australia having a search and rescue service available to respond effectively to people in maritime and aviation distress situations.

| AMSA’s response: | AMSA to ensure its resources and systems provide optimal support to the effectiveness of its search and rescue response. |

**Priority actions in 2005-2006**

Maintain a program of post-incident review and feedback to support continuous improvement in performance of search and rescue operations.

Background: AMSA has achieved third party certification that its quality, environmental and occupational health and safety management systems fully comply with AS/NZS ISO9001:2000, AS/NZS ISO14001:2004 and AS/NZS 4801:2001 international standards, respectively. AMSA is committed to the quality management concept and fosters its continuous improvement approach.

Upgrade: During 2005-2006, AMSA continued to conduct post-incident reviews to provide feedback on its conduct of specific search and rescue operations. AMSA staff continue to attend, and occasionally organise, operational debriefs after significant incidents, or incidents where there are potential lessons to be learned in strengthening search and rescue operations with other agencies.

During 2005-2006, debriefs were attended at Badu Island in the Torres Strait in October 2005 and Cairns, Queensland, in November 2005 after the loss of the vessel *Malu Sara* operated by the Department of Immigration and Multicultural Affairs in Torres Strait. Debriefs were also attended in Tully and Cairns, in Queensland, in March 2006, and in Mount Isa, Queensland, in April 2006. Additionally, AMSA attended an operational debrief in Honiara, Solomon Islands, in August 2005.
OUTPUT 2.1: MARITIME AND AVIATION SEARCH AND RESCUE

PERFORMANCE REVIEW 2005-2006

Portfolio Outcome: Fostering an efficient, sustainable, competitive, safe and secure transport system

AMSA Outcome 2: Maximising the number of people saved from maritime and aviation incidents

Output Group 2: Search and Rescue Program

Output 2.1: A capability to detect, locate and rescue persons in maritime and aviation distress situations. AMSA maintains a safety communications services and provides a 24-hour search and rescue coordination service over the internationally agreed Australian Search and Rescue Region.

Sub-Output 2.1.1: Provide a 24 hour Emergency Response Centre (ERC).

<table>
<thead>
<tr>
<th>Measure</th>
<th>Performance 2005-2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of the RCC. (Quality)</td>
<td>During 2005-2006, the following availabilities were maintained: Cospas/Sarsat: 99.94% Terrestrial Radio: 99.85% Inmarsat: 99.94%</td>
</tr>
<tr>
<td>Target: 100%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measure</th>
<th>Performance 2005-2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>An RCC established that can handle a number of incidents, searches and AUSREP reports distributed evenly over the year. (Quantity)</td>
<td>During 2005-2006, the RCC handled: 11,088 incidents, 559 searches, 300,746 AUSREP reports</td>
</tr>
<tr>
<td>Target: 15,000 incidents, 500 searches, 240,000 AUSREP reports</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measure</th>
<th>Performance 2005-2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of the strategy. (Price)</td>
<td>During 2005-2006, the cost was $9.671 million</td>
</tr>
<tr>
<td>Target: 2005–2006 estimates: $8.8 million</td>
<td></td>
</tr>
</tbody>
</table>
### Output 2.1: Maritime and Aviation Search and Rescue

**Sub-Output 2.1.2: Provide a distress and safety communications network**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Performance 2005-2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of each system. (Quality)</td>
<td>During 2005-2006, the RCC was 100% available.</td>
</tr>
<tr>
<td><strong>Target:</strong> 99.5%</td>
<td></td>
</tr>
<tr>
<td>Number of COSPAS/SARSAT ground segments and Mission Control Centre. (MCC)</td>
<td>During 2005-2006, two ground stations and one MCC were maintained.</td>
</tr>
<tr>
<td><strong>Target:</strong> Two ground receive stations and one MCC</td>
<td></td>
</tr>
<tr>
<td>Number of Maritime Communications terrestrial and satellite stations. (Quantity)</td>
<td>During 2005-2006, two terrestrial stations at Wiluna, Western Australia, and Charleville, Queensland, and one satellite station at Perth, Western Australia, were maintained</td>
</tr>
<tr>
<td><strong>Target:</strong> Two terrestrial stations and one satellite station</td>
<td></td>
</tr>
<tr>
<td>Cost of the strategy. (Price)</td>
<td>During 2005-2006, the cost was $5.086 million</td>
</tr>
<tr>
<td><strong>Target:</strong> 2005-2006 estimates: $5.4 million</td>
<td></td>
</tr>
</tbody>
</table>

**Sub-Output 2.1.3: Provide trained and equipped search and rescue response assets**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Performance 2005-2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of Search and Rescue Units. (SRUs) (Quality)</td>
<td>During 2005-2006, four dedicated SRUs and 57 opportunity-based SRUs were available.</td>
</tr>
<tr>
<td><strong>Target:</strong> Four dedicated 58 on an opportunity basis</td>
<td></td>
</tr>
<tr>
<td>Number capable of deploying equipment, searching, rescuing. (Quality)</td>
<td>During 2005-2006, there were 13 SRUs to deploy equipment, 61 SRUs to search, and 28 SRUs to rescue.</td>
</tr>
<tr>
<td><strong>Target:</strong> 13 to deploy equipment, 62 to search, and 21 to rescue.</td>
<td></td>
</tr>
<tr>
<td>Number of trained SRUs. (Quantity)</td>
<td>During 2005-2006, there were 61 trained SRUs</td>
</tr>
<tr>
<td><strong>Target:</strong> 62</td>
<td></td>
</tr>
<tr>
<td>Number of trained pilots and crew. (Quantity)</td>
<td>During 2005-2006, a total of 325 pilots and crew were trained.</td>
</tr>
<tr>
<td><strong>Target:</strong> 346</td>
<td></td>
</tr>
<tr>
<td>Cost of the strategy. (Price)</td>
<td>During 2005-2006, the cost was $10.16 million.</td>
</tr>
<tr>
<td><strong>Target:</strong> 2005-2006 estimates: $11.6 million</td>
<td></td>
</tr>
</tbody>
</table>
**OUTPUT 2.1: MARITIME AND AVIATION SEARCH AND RESCUE**

**Sub-Output 2.1.4:** Maintain and enhance strategic relationships and increase public awareness of maritime safety issues.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Performance 2005-2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of issues/problems identified in agreements or programs. (Quality)</td>
<td>During 2005-2006, no new issues or problems were identified.</td>
</tr>
<tr>
<td><strong>Target:</strong> 0</td>
<td></td>
</tr>
<tr>
<td>Number of agreements developed or varied satisfactorily. (Quantity)</td>
<td>During 2005-2006, three agreements were developed or reviewed.</td>
</tr>
<tr>
<td><strong>Target:</strong> Four</td>
<td></td>
</tr>
<tr>
<td>In conjunction with States and Territories, number of education programs supported. (Quantity)</td>
<td>During 2005-2006, there were seven education programs supported.</td>
</tr>
<tr>
<td><strong>Target:</strong> Five</td>
<td></td>
</tr>
<tr>
<td>Cost of the strategy. (Price)</td>
<td>During 2005-2006, the cost is estimated to be $1.261 million.</td>
</tr>
<tr>
<td><strong>Target:</strong> 2005-2006 estimates: $1.3 million</td>
<td></td>
</tr>
</tbody>
</table>

**Sub-Output 2.1.5:** Provide an effective response to search and rescue incidents

<table>
<thead>
<tr>
<th>Measure</th>
<th>Performance 2005-2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median time for ERC to initiate response. (Quality)</td>
<td>During 2005-2006, the median time was 30 minutes.</td>
</tr>
<tr>
<td><strong>Target:</strong> 30 minutes</td>
<td></td>
</tr>
<tr>
<td>Median time for first unit to commence response action. (Quality)</td>
<td>During 2005-2006, the median time was 25 minutes.</td>
</tr>
<tr>
<td><strong>Target:</strong> 30 minutes</td>
<td></td>
</tr>
<tr>
<td>Median time until asset on scene. (Quality)</td>
<td>During 2005-2006, median times were:</td>
</tr>
<tr>
<td><strong>Targets:</strong> Incident within</td>
<td></td>
</tr>
<tr>
<td>• 50 nautical miles of search base: 30 minutes</td>
<td>• 50 nautical miles: 7 minutes</td>
</tr>
<tr>
<td>• 50-200 nautical miles of search base: 60 minutes</td>
<td>• 50-200 nautical miles: 41 minutes</td>
</tr>
<tr>
<td>• 200-500 nautical miles of search base: 90 minutes</td>
<td>• 200-500 nautical miles: 89 minutes</td>
</tr>
<tr>
<td>A capability to respond to incidents. (Quantity)</td>
<td>During 2005-2006, the above capability was maintained.</td>
</tr>
<tr>
<td><strong>Target:</strong> Maintain above capability</td>
<td></td>
</tr>
<tr>
<td>Median cost per search. (Price)</td>
<td>During 2005-2006, the median cost per search was $4,600</td>
</tr>
<tr>
<td><strong>Target:</strong> $3,700</td>
<td></td>
</tr>
</tbody>
</table>