

Amendment Schedule

Manual Reference	Reason for Amendment	New Wording
All	Document tracking and improved identification of manual versions readily identifiable by year and version number within years where required. To also align with the IAMSAR Manual document identification format. Manual identified by format: YEAR EDITION Version Number. Allows for new versions within a year from more frequent amendments between annual National SAR Council meetings.	National Search and Rescue Manual 2013 EDITION Version 1
All	General reformatting, correction of minor typos and renumbering as required.	
Amendment Schedule	Addition of new section to record amendments to new Editions and provide easier method for users to identify changes between new Editions.	Table of 11 pages noting amendments.
Foreword	IGA 2012. Updated to reflect new IGA, 2012.	All SAR authorities in Australia: Australian Maritime Safety Authority, Australian Defence Force and State, Territory and Federal Police must be able to act cooperatively.
Foreword	IGA 2012. Updated to reflect new IGA, 2012.	In 2012, the Commonwealth, State and Territory Ministers responsible for search and rescue response in Australia updated the Intergovernmental Agreement (IGA) on National Search and Rescue Response Arrangements. The IGA (Appendix C of this Manual) confirmed the National Search and Rescue Council's role as the national coordinating body for search and rescue procedures with a function, among others, of sponsoring this National Search and Rescue Manual.
Introduction	First reference to SRR.	SAR Region (SRR)
Introduction and throughout manual	Correct Title	National Land Search Operations Manual
Introduction	Reformatting of remarks re version control and highlighting re internet version is latest version.	The National SAR Manual is promulgated online for the use of all search and rescue practitioners. The Internet version is the controlled document and is the latest version of this manual. The online version should always be referred to as it contains the most up to date information. Suggestions and questions regarding this Manual should be forwarded to: The Secretary of the National SAR Council Australian Maritime Safety Authority GPO Box 2181 Canberra ACT 2601

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Table of Contents	Expanded with inclusion of lower hierarchy topic headings for easier referencing.	
Abbreviations and Acronyms	Updated.	Various
Glossary	Updated.	Various
JRCC Australia throughout manual	Change in term to reflect the internationally accepted naming of a joint aeronautical and maritime RCC, as per AMSA's facility in Australia.	JRCC Australia (formerly RCC Australia).
RA-Aus throughout manual	Change of Recreational Aviation Australia organisation acronym.	RA-Aus
MASTREP and throughout manual	Change to reflect change from AUSREP to MASTREP system	MASTREP (Modernised Australian Ship Tracking and Reporting System)
Chapter 1	IGA 2012	Various. Generally updated to include Inter-Governmental Agreement on Search and Rescue Responsibilities 2012.
1.1.1	Update per IAMSAR Manual Vol 2, 1.1.1	...wherever people may be in danger, in the air or at sea, SAR services, as referenced in the International Aeronautical and Maritime Search and Rescue Manual, will be available if needed.
1.1.2	To include aeronautical SAR in definition of SAR services and medical evacuations, and to comply with IAMSAR Vol 1 Glossary definition.	Search and rescue services are defined as the performance of distress monitoring, communication, coordination and search and rescue functions, including provision of medical advice, initial medical assistance, or medical evacuation, through the use of public and private resources, including cooperating aircraft, vessels and other craft and installations.
1.1.8 – 1.1.11	IGA 2012	Various
1.1.14 and 1.1.15 b)	IGA 2012	Various to reflect AMSA responsibilities per IGA and change from AUSREP to MASTREP.
1.1.17	IGA 2012	Various to reflect State/Territory responsibilities per IGA.
Para 1.1.19 – 1.1.21 and 1.2.60 and 1.5.4 c).	NATSAR34	Re-ordered and amended the wording that describes ADF responsibilities and naming protocols.
1.1.41	Better terminology include community groups and organisations.	...other community groups and organisations.
1.2.14	IGA 2012	...is maintained until such time as the SAR Authority best placed to coordinate the incident has been determined under this plan or the incident concludes.
1.2.29 a) and e) examples	IGA 2012	To better reflect IGA.
1.2.58	Expansion of HQJOC abbreviation	Headquarters Joint Operations Command (HQJOC)
1.2.60	Reflect current practice for military request messages.	Removal of DISCON precedence to allow for email and/or other methods.
1.3.23 and	Better describe Rescue Planning and	Addition of pre-hospital medical needs of

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1.4.17	preparation role.	survivors.
1.3.27	Delineate between FFB and FCP roles.	Addition of new para.
1.3.28	Better describe the functions of a FFB.	Addition of additional content.
1.5.13 c) and 1.5.18	Better reflect ending of a search effort to include suspension with termination.	Add suspension.
2.5.17	Changed tense.	...from 1 February 2010, it became illegal to operate the older analogue distress beacon transmitting on 121.5 MHz or 243MHz.
2.6.1 and new 2.6.2	Expansion of information re SPOT satellite messengers, MOU and coordination arrangements. Coincides with removal of AMSA/IERCC MOU from NATSAR Manual Appendix P	<p>SPOT Personal Satellite Messenger device (SPOT). The SPOT device and its associated service originate from a USA company called SPOT LLC. SPOT is primarily a tracking device which can also send preformatted messages indicating that a person is safe or that they require non-emergency assistance. In addition the user is able to alert an Alerting Post that they are in distress. SPOT LLC has contracted for the provision of 24-hour emergency monitoring and response to SPOT users through the International Emergency Response Coordination Centre (IERCC), an Alerting Post located in the United States of America.</p> <p>Note A Memorandum of Understanding has been reached between AMSA and the IERCC regarding the handling of SPOT-initiated distress alerts. The IERCC will notify JRCC Australia of any distress alerts within the Australian SRR. JRCC Australia will then coordinate any SAR response required or transfer coordination to another Australian SAR authority where appropriate.</p>
2.6.6 to 2.6.8	Include reference to Thuraya satellite distress alerts.	New section – Thuraya Satellite devices and coordination of distress alerts for Australian SRR.
2.7	Correction to heading.	SAR RADAR Transponder (SART)
2.7.1	Indicate where Resolution came from, i.e. IMO.	IMO Resolution
2.9.2	Inclusion of Table 2-1 label	
2.9.4	Inclusion of Table 2-2 label	
3.1.1	Editorial amendment.	...to make it possible to achieve the following:
3.3.3 i)	Allow the possibility of additional distress beacons.	A distress beacon has been activated.
3.3.4 a)	To complete the sentence in context.	Aircraft that comply with full reporting procedures where a continuous communications SAR watch is maintained fails to report at the next scheduled time.
3.3.5 b) and c)	Separate 2 examples inadvertently within 1 sentence and add better definition re SAR phases.	<p>b) An aircraft fails to report arrival or if it has failed to report position,</p> <p>c) ATS declare a SAR phase (INCERFA, ALERFA or DETRESFA),</p>
3.3.5 h)	Allow the possibility of additional distress beacons.	h) A distress beacon is reported to be transmitting. (Aircraft required to carry a distress beacon normally have an ELT and/or PLB but may

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		also carry EPIRBs, for example in life rafts).
3.3.6 d)	Allow the possibility of additional distress beacons.	a distress beacon...
3.4.3	Better description.	...emergency phases should be used internally among maritime SAR authorities to indicate the level of concern and as criteria for escalating a SAR action.
3.4.5	grammar	...craft or people
3.4.15	Wider description	ships, other craft or people
3.4.15 a)	Grammar	...craft or people
3.5.7		The following are typical examples:
3.6.2		the RCC should take the following action:
3.6.4	Inclusion of missing craft.	the aircraft, ship or other craft and its occupants
3.6.7	Expansion of description	...completed; if apprehension regarding the safety of the aircraft and its occupants continues, or...
3.6.8 j)	Better describe who to notify	j) Notify JRCC Australia, ADF, State or Territory Police, Maritime Authorities, ATSB and/or CASA, Media as appropriate.
3.8.1 through 3.8.33	Amend text from only aircraft to craft to include other craft generically.	craft
3.8.5	Specify type of broadcast	for media broadcasts...
3.8.6	Addition of sentence	Having available a dedicated intelligence telephone number is recommended.
3.8.7	Addition to police facility description	...the police headquarters or operations centre...
3.8.8	More directed wording.	The SMC should be very specific about the area to be covered...
3.8.8	To cater for technological progress	Copies of all broadcasts are to be provided to the relevant police centre.
3.8.9	Amend PR to include Media.	Media/PR officer
3.8.11-12	Reformatting and rewording to improve explanation of Sighting and Hearing Report process and to expand description beyond just aircraft reports.	3.8.11 RCC staff should be prepared to receive a large number of reports in the period immediately following a broadcast. A Sighting and Hearing Report should be completed for each call taken. Each report should be immediately entered in the Sighting and Hearing Log and the position and details plotted on the relevant map or chart. 3.8.12 Sighting or Hearing Report Forms should always be used to record reports of craft being seen or heard to ensure that vital information is not omitted. All sighting and hearing reports are to be assessed by an experienced SAR officer. Guidance on sighting and hearing reports is at Appendix H.
3.8.14	Amend text to account for vessels	flying/sailing flight/voyage
3.8.22 through 3.8.26	Amendment to text to reflect advances in technology for recorded communications, ie deletion of tapes specifically to allow for digital recordings also.	
3.8.27	Addition to heading to specify aircraft	

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3.8.30 through 3.8.33	Amendments to include terminology related to vessels/mariners in addition to aircraft/pilots	
3.8.60	Proposed by AMSA based on current practice.	3.8.60 SMC's should seek advice from medical specialists, preferably experienced in search and rescue and cold water survival, to assist in determining a time-frame-for-survival of individuals subject of a search and rescue operation.
3.8.61 to 3.8.76	Information regarding hypothermia updated to reflect the information contained within IAMSAR Vol 2, Chapter 3 and some other minor additions.	
3.8.71	IAMSAR Vol.2 Chapter 3.8.6. Appendix N, Figure N-14	Inclusion of Figure 3.1 on cold water survival time and amended paragraph replacing previous Table A-1 and associated description. Suggested change to be posted online for NATSAR Council feedback prior to updating.
3.8.77	Table A-1 renamed to Figure 3-2	
3.8.80	Expansion of Survivor Stress Factors description.	Two basic assumptions are to be made concerning survivors of a distress incident: a) there are always survivors who require emergency medical care therefore every search and rescue mission is a medical emergency until survivors have been located and their medical needs have been assessed by an appropriately qualified person, and b) survivors are under a condition of great stress and experiencing psychological shock.
3.8.83-84	Describe type of shock	Psychological shock
4.6.15	Relabelled table	Table 4-3
4.7.7	Corrected heading	Possibility Area
4.7.11	Corrected heading	Probability Area
4.7.19	Corrected formula. Removal of brackets.	
4.7.26	Minor edit for meaning	This displacement is a function of:
4.7.27	More accurate description	The deployment of electronic SAR Datum Buoys should be considered as a means of measuring the movement (direction and speed) of the total water column in which the search target is believed to be immersed.
4.7.29	Terminology correction	Last Known Position (LKP) And Drift Error (De).
4.7.30	Update terminology to include other than net water movement program	computer drift modelling software

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4.7.48	Terminology	exposed flat-plane area
4.7.49	Inclusion of Appendix reference (Appendix I Table I-1 and Table I-2)	
4.7.51	Better description	and divergence angle for specific target types
4.7.52	Updated Leeway Calculation example	<p>A search is being conducted for a missing scuba diver. The winds are blowing from 270⁰ True at 15 knots.</p> <p>Leeway Speed = Multiplier (Table I-1 or I-2) x Wind Speed (knots) + Modifier Leeway Speed = (0.007 x 15 knots) + 0.08 Leeway Speed = 0.185 knots Leeway Drift distance (NM) = Leeway Speed (knots) x hours of drift</p> <p>Vector length (NM) @ Divergence Right (270⁰ - 180⁰) + 30⁰ = 120⁰ T Vector length (NM) @ Divergence Left (270⁰ - 180⁰ DEG) - 30⁰ = 060⁰ T</p>
4.7.54	Reference change	Appendix I reference
4.7.58	Inclusion of symbol	Total Probable Error (E)
4.7.59	Updated methodology	appropriate Chart.
4.7.60	Better descriptor. Removal of brackets in formula	"vector [Distance Left-Right (LR)]"
4.8.6	Corrected formula	$E = \sqrt{25+1}$
4.8.12	Insertion of missing diagram Figure 4-15, correction to Figure 4-16 and addition of explanatory text.	
4.8.16	Update of text	When recomputing a datum that was initially established using the coastal model the drift error (d_e) of the target must be calculated. As with the case in oceanic search planning, drift error rate estimates usually fall between 1/8 and 1/3 of the total distance drifted. The search planner, depending on the confidence or lack thereof in the relevant drift data, would use a value between 1/8 and 1/3, increasing in size as the confidence in the data decreases. The higher the confidence in the data the smaller the value used to estimate drift error. The search planner may also use values outside this range.
Table 5-3	Correction to table column 1 RADIUS (NM) typo between 17 and 19 should read 18	18
Figure 5.5	Change of terminology	Last Known Position, Splash Point or Datum
5.3.21	Indicate where Resolutions came from, i.e. IMO.	IMO Resolutions
5.7.8	Reflect the wider availability of 406MHz distress beacon homers in more aircraft.	AMSA Dornier aircraft and several civil SAR aircraft can home...
5.7.41	Correction of terminology	Forward Looking Infrared
5.8.25	Inclusion of CASRs.	...Civil Aviation Regulations (CARs) and Civil

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		Aviation Safety Regulations (CASRs).
5.9.5	Inclusion of CASRs.	CARs, CASRs and CAOs...
5.9.8	Correction to formula in example and better formula example.	
5.9.31	Correction to Worksheet Number reference	Worksheets 2, 3 and 8.
6.4.3	Inclusion of Department of Defence plus direction to handbook on NATSAR Council website and hyperlink.	Instructions for police officers and emergency services personnel can be found in the ATSB and Department of Defence handbook: Civil and Military Aircraft Accident Procedures for Police Officers and Emergency Personnel. (This publication is available on the National Search and Rescue Council website).
6.4.5	As for 6.4.3 amendment	Some points made in the ATSB/Department of Defence handbook are in Appendix L. Personnel should refer to the ATSB/Department of Defence handbook for more detailed procedures and precautions to be taken (see 6.4.3).
6.7.9 b)	Removal of note regarding SLDMBs to reflect old COBHAM model removal from inventory	
8.2.3	Better description of AMSA RTO status.	AMSA is a Registered Training Organisation (RTO). The National SAR School, a part of AMSA, is the training arm of JRCC Australia.
8.3.5	Updated EMA details.	Emergency Management Australia (EMA) has developed a handbook, "Managing Exercises" that is Manual 42 of the Australian Emergency Management Handbook and Manual Series. This manual should be used as a guide and to assist SAR personnel designing and conducting search and rescue exercises. This Handbook and other EMA publications can be found on the Emergency Management Institute Publications page of their website www.em.gov.au .
9.1.1 e)	Reflects change of JRCC Australia operations change AUSREP to MASTREP	
Appendix A	New map added to better depict Australian SRR with JRCC Australia added. Additional map for Antarctic added.	New SRR map and additional map of Antarctic region inserted
Appendix B	IGA 2012	Updated to reflect changes per the IGA 2012
Appendix C	New IGA 2012	Copy of IGA 2012 replaces previous IGA
Appendix D	Reformat of forms D1, D2 and D3. To provide more user friendly forms.	
Appendix H	Instructions for Completing Sighting and Hearing Reports. Minor amendment to include other craft besides aircraft.	Craft
Appendix H	Return of Sighting and Hearing Log	
Appendix I	More accurate descriptor for labels for Sweep Width Tables highlighting tables with uncorrected sweep width	Tables I-4, I-5 (1), I-5 (2), I-6 (1), I-6 (2) and I-9 now all prefixed as "Uncorrected"

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	figures. Also brings into alignment with Chapter 5 content and Worksheets.	
Appendix K	Renaming of Worksheet 3 to align with Worksheet 2 title.	Land Search by Aircraft
Appendix K	Correction to Worksheet No.3 - missing Vegetation Factor less than 15%	Vegetation: Less than 15% 15-60% 60-85% +85%
Appendix K	Correction to Worksheet 6 TSL should read Hours A=TAS should read A=TVS	TSL Hours Mins A=TVS
Appendix K	Reformat of worksheets for better presentation and understanding	
Appendix M	Updated SRU details	Updated information regarding SRU locations, AMSA Dornier 328 capabilities and Multi-User List.
Removed	MOUs between AMSA and commercial companies inappropriate in the NATSAR Manual.	Removed.

