Foreword

Search and Rescue (SAR) is the search for and provision of lifesaving assistance to people in distress and imminent danger of loss of life. Australian SAR arrangements are intended to complement other emergency services (police, fire, ambulance) in circumstances where those services are unable to operate effectively. Such circumstances could include, for example, remote area operations, rescues at sea, and the need for specialist SAR facilities not normally available to emergency services.

Depending upon the extent and complexity of the incident and on the available staff and facilities, SAR may take many forms in response to a distress situation. Unless the action is indivisible from that of safeguarding life, a SAR operation does not, however, include salvage or the saving of property.

The Australian search and rescue region covers the Australian continent and large areas of the Indian, Pacific and Southern Oceans as well the Australian Antarctic territories. This is an area of about 52.8 million square kilometres, or about one tenth of the earth’s surface. Dedicated SAR assets are limited in Australia and other government, private and commercial assets may be diverted from their primary function by charter, arrangement and request.

In practice, many SAR operations are conducted jointly by Commonwealth and State / Territory authorities. It is, therefore, essential that the available resources and operational techniques are standardised and coordinated across the Australian region.

All SAR authorities in Australia: Australian Maritime Safety Authority, Australian Defence Force and State, Territory and Federal Police must be able to act cooperatively.

In 2017, 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 A 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.

Documenting standardised techniques and procedures, the National Search and Rescue manual enables SAR authorities to cooperate and coordinate to best effect. By establishing and standardising procedures, the manual seeks to promote effective saving of lives.

Toby Stone
Chairman
National Search and Rescue Council
Introduction

This National Search and Rescue Manual is the result of the recent merger of the aviation, maritime and land search and rescue (SAR) manuals and is the standard reference document for use by all Australian SAR authorities. It is promulgated by the National SAR Council operating under direction from relevant Commonwealth, State and Territory Ministers. The Manual promulgates SAR coordination procedures for SAR operations conducted within Australia and the Australian SAR Region (SRR).

The manual is consistent with the relevant International Conventions to which Australia is a party and is supplemented by various legal, informative and instructional documents used within, and between, organisations concerned with search and rescue. It has been developed with due regard to the International Aviation and Maritime Search and Rescue Manual (IAMSAR).

The National SAR Manual meets the requirements of international conventions for an Australian Search and Rescue Plan, and includes material covering:

a) Abbreviations, terminology and definitions relevant to SAR practitioners
b) The elements and functions of the Australian SAR system
c) Details of communications, assets and procedures for coordination
d) SAR planning and techniques including worksheets

In providing a search and rescue response, nothing in the content of the manual precludes properly qualified officers from using their initiative in providing a SAR response in circumstances not covered by these procedures. In short, the Manual is a body of guidance rather than an operational straitjacket. In so doing, however, officers’ actions should conform as closely as possible to the instructions contained in the manual that are most closely pertinent to the circumstances, and keep all other involved parties informed. Officers should be prepared to justify their actions if necessary.

When developing Standard Operating Procedures (SOP) at the organisational level, care should be taken to ensure that procedures are written consistent with the National SAR Manual. Should an SOP be identified that may be of benefit to the wider SAR community, it is recommended that the issue be raised with the National SAR Council so that inclusion of the procedure into the National SAR Manual can be considered.

This manual is under continual review and will be updated as necessary. 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 Secretariat of the National SAR Council

Australian Maritime Safety Authority
GPO Box 2181
Canberra ACT 2601
Defence Letter of Promulgation

UNCLASSIFIED

CHIEF OF JOINT OPERATIONS
Headquarters Joint Operations Command

AM3290753

Mr Toby Stone
Chairman, National Search and Rescue Council
Australian Maritime Safety Authority

Dear Mr Stone,

ADF ENDORSEMENT OF THE NATIONAL SEARCH AND RESCUE MANUAL

The Australian Defence Force (ADF) has a long and proud history of conducting Search and Rescue (SAR) operations in support of the civil community. Through our long-running involvement with the National SAR Council, we are fortunate to have developed highly effective relationships with both the Australian Maritime Safety Authority, and the State and Territory police forces. As a previous Commander of [then] Border Protection Command, I have witnessed first-hand the expertise and dedication of Australian SAR professionals under the most challenging circumstances.

The SAR mission is one of utmost importance to the Soldiers, Sailors and Airmen of the ADF. As their Operational Commander I remain committed to the provision of military support if and when it is required. I commend you on the continued success of the National SAR Council and on the proficient realisation of the National SAR Plan. Further, I recognise the high quality of the National SAR (NATSAR) Manual and the important role it plays in coordinating inter-departmental operations. The NATSAR Manual is an authoritative instruction on SAR best practice, and as such I have directed that it be accepted by the ADF as the standard procedural guide for the conduct of ADF SAR operations.

Yours sincerely,

[Signature]

DL Johnston, AM
Vice Admiral, RAN
Chief of Joint Operations

B1-1-J001
Department of Defence
PO BOX 7928
CANBERRA ACT 2610
(02) 6128 4000, fax (02) 6128 4020

21 December 2017
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<th>Meaning</th>
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</thead>
<tbody>
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<td>Area or search area</td>
</tr>
<tr>
<td>ACMA</td>
<td>Australian Communications and Media Authority</td>
</tr>
<tr>
<td>ACFT</td>
<td>Aircraft</td>
</tr>
<tr>
<td>AFTN</td>
<td>Aeronautical fixed telecommunications network</td>
</tr>
<tr>
<td>ADF</td>
<td>Australian Defence Force</td>
</tr>
<tr>
<td>ADFLO</td>
<td>Australian Defence Force Liaison Officer</td>
</tr>
<tr>
<td>AGL</td>
<td>Above Ground Level</td>
</tr>
<tr>
<td>AIP</td>
<td>Aeronautical Information Publication</td>
</tr>
<tr>
<td>ALRS</td>
<td>Admiralty List of Radio Signals</td>
</tr>
<tr>
<td>AIS</td>
<td>Automatic Identification System</td>
</tr>
<tr>
<td>AIS-SART</td>
<td>AIS Search and Rescue Transmitter</td>
</tr>
<tr>
<td>AM</td>
<td>Amplitude modulation</td>
</tr>
<tr>
<td>AMVER</td>
<td>Automated Mutual-assistance Vessel Rescue</td>
</tr>
<tr>
<td>AMSA</td>
<td>Australian Maritime Safety Authority</td>
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<tr>
<td>AMSL</td>
<td>Above Mean Sea Level</td>
</tr>
<tr>
<td>A/SMC</td>
<td>Assistant Search and Rescue Mission Coordinator</td>
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<tr>
<td>ASH</td>
<td>Actual Search Hours</td>
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<tr>
<td>ASRK</td>
<td>Air Sea Rescue Kit (RAAF)</td>
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<tr>
<td>ATA</td>
<td>Actual time of arrival</td>
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<tr>
<td>ATC</td>
<td>Air Traffic Control</td>
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<td>ATD</td>
<td>actual time of departure</td>
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<td>ATS</td>
<td>Air Traffic Services</td>
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<tr>
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<td>AU LUTE</td>
<td>Australian Local User Terminal East</td>
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<tr>
<td>AU LUTW</td>
<td>Australian Local User Terminal West</td>
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<td>C</td>
<td>Coverage Factor</td>
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<tr>
<td>CAO</td>
<td>Civil Aviation Order</td>
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<td>CAR</td>
<td>Civil Aviation Regulations</td>
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<tr>
<td>CASR</td>
<td>Civil Aviation Safety Regulations</td>
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<tr>
<td>C/C</td>
<td>Cabin cruiser</td>
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<tr>
<td>CES</td>
<td>Coast Earth Station (Inmarsat) see also LES</td>
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<td>Coast radio station</td>
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<td>CSP</td>
<td>Commence Search Point</td>
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<td>CSS</td>
<td>Coordinator surface search (maritime)</td>
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<td>Meaning</td>
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<tr>
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<td>D</td>
<td>Datum</td>
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<td>Diameter</td>
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<td>Defence Aid to the Civil Community</td>
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<td>De</td>
<td>Total drift error</td>
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<td>DCIOPS</td>
<td>Deputy Chief Joint Operations</td>
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<td>DF</td>
<td>Direction finding</td>
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<td>Dead-reckoning</td>
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<td>Differential GPS</td>
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<td>Digital selective calling</td>
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<td>Dead weight tonnes</td>
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<td>Total probable error of position</td>
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<td>ELR</td>
<td>Extra-long range aircraft</td>
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<td>Emergency locator transmitter</td>
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<td>Emergency Management Australia</td>
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<td>Emergency position indicating radio beacon</td>
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<td>En Route Supplement Australia</td>
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<td>Forward Command Post</td>
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<td>Forward Field Base</td>
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<td>F/V</td>
<td>Fishing vessel</td>
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<td>Figure</td>
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<td>FIR</td>
<td>Flight information region</td>
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<td>FLIR</td>
<td>Forward looking infrared</td>
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<td>FM</td>
<td>Frequency modulation</td>
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<td>Field Search Headquarters</td>
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<td>Fatigue Factor</td>
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<td>Hectopascals</td>
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<td>HEL-H</td>
<td>Heavy helicopter</td>
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<tr>
<td>HEL-L</td>
<td>Light helicopter</td>
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<td>HEL-M</td>
<td>Medium helicopter</td>
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<tr>
<td>HF</td>
<td>High frequency</td>
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<tr>
<td>HQAC</td>
<td>Headquarters Air Command (Air Force)</td>
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<td>HQJOC</td>
<td>Headquarters Joint Operations Command</td>
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<td>I/B</td>
<td>Inboard motor</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
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<tr>
<td>IFR</td>
<td>Instrument Flight Rules</td>
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<tr>
<td>IGA</td>
<td>The Inter-Governmental Agreement (IGA) on National Search and Rescue Response Arrangements</td>
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<tr>
<td>IMO</td>
<td>International Maritime Organization</td>
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<tr>
<td>Inmarsat Ltd</td>
<td>International Maritime Satellite Organisation – formally the international Maritime Satellite Organisation</td>
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<tr>
<td>INS</td>
<td>Inertial Navigation System</td>
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<tr>
<td>INTERCO</td>
<td>International Code of SIGNALS</td>
</tr>
<tr>
<td>IPP</td>
<td>Initial Planning Point</td>
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<tr>
<td>JCC</td>
<td>Joint Control Centre (ADF)</td>
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<tr>
<td>JRCC</td>
<td>Joint (aeronautical and maritime) Rescue Coordination Centre</td>
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<tr>
<td>JOSS</td>
<td>Joint Operations Support Staff</td>
</tr>
<tr>
<td>KHz</td>
<td>Kilohertz</td>
</tr>
<tr>
<td>Km</td>
<td>Kilometre (1000 metres)</td>
</tr>
<tr>
<td>Kph</td>
<td>Kilometres per hour</td>
</tr>
<tr>
<td>kt</td>
<td>knot (nautical mile per hour)</td>
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<tr>
<td>L or l</td>
<td>Length</td>
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<tr>
<td>LCRS</td>
<td>Limited Coast Radio Station</td>
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<td>LES</td>
<td>Land Earth Station (Inmarsat) synonymous with CES</td>
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<td>LHQ</td>
<td>Land Headquarters (Army)</td>
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<tr>
<td>LKP</td>
<td>Last Known Position</td>
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<tr>
<td>LPB</td>
<td>Lost Person Behaviour</td>
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<td>LRG</td>
<td>Long range</td>
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<tr>
<td>LO</td>
<td>Liaison officer</td>
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<tr>
<td>LUT</td>
<td>Local user terminal</td>
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<td>LW</td>
<td>Leeway</td>
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<td>Acronym/ Abbreviation</td>
<td>Meaning</td>
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<tr>
<td>m</td>
<td>Metres</td>
</tr>
<tr>
<td>M</td>
<td>Degrees magnetic</td>
</tr>
<tr>
<td>MAREC</td>
<td>Maritime SAR recognition code</td>
</tr>
<tr>
<td>MASTREP</td>
<td>Modernised Australian Ship Tracking and Reporting System</td>
</tr>
<tr>
<td>MAYDAY</td>
<td>When repeated three times, this forms the distress call. Any subsequent messages including self-identification, position, nature of distress and other useful information, forms the distress message.</td>
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<tr>
<td>MAX</td>
<td>Maximum</td>
</tr>
<tr>
<td>MBC</td>
<td>Maritime Border Command</td>
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<td>MCC</td>
<td>Mission Control Centre</td>
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<tr>
<td>MCS</td>
<td>Maritime Communications Station</td>
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<td>MEDEVAC</td>
<td>Medical evacuation</td>
</tr>
<tr>
<td>MF</td>
<td>Medium frequency</td>
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<tr>
<td>MIN</td>
<td>Minimum</td>
</tr>
<tr>
<td>MHQ</td>
<td>Maritime Headquarters (Navy)</td>
</tr>
<tr>
<td>MHz</td>
<td>Mega Hertz</td>
</tr>
<tr>
<td>MMSI</td>
<td>Maritime mobile service identity</td>
</tr>
<tr>
<td>MPD</td>
<td>Miles per day</td>
</tr>
<tr>
<td>MP</td>
<td>Missing Person</td>
</tr>
<tr>
<td>MPP</td>
<td>Most probable position</td>
</tr>
<tr>
<td>MRG</td>
<td>Medium range</td>
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<tr>
<td>MSC</td>
<td>Marine supply container (RAAF)</td>
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<tr>
<td>MSI</td>
<td>Maritime safety information</td>
</tr>
<tr>
<td>M/V</td>
<td>Motor Vessel</td>
</tr>
<tr>
<td>MTS</td>
<td>Mean track spacing (sector search)</td>
</tr>
<tr>
<td>n</td>
<td>Number of required track spacings</td>
</tr>
<tr>
<td>N</td>
<td>North Latitude</td>
</tr>
<tr>
<td>N</td>
<td>Number of searchers</td>
</tr>
<tr>
<td>NAVAREA X</td>
<td>Navigational warning area X(ten)</td>
</tr>
<tr>
<td>NAVTEX</td>
<td>Is not provided in Australia</td>
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<tr>
<td>NBDP</td>
<td>Narrow-Band Direct Printing</td>
</tr>
<tr>
<td>NM</td>
<td>Nautical mile</td>
</tr>
<tr>
<td>NOTAM</td>
<td>Notice to airmen</td>
</tr>
<tr>
<td>NOK</td>
<td>Next of Kin</td>
</tr>
<tr>
<td>NVG</td>
<td>Night vision goggles</td>
</tr>
<tr>
<td>O/B</td>
<td>Outboard motor</td>
</tr>
<tr>
<td>OSC</td>
<td>On-scene coordinator</td>
</tr>
<tr>
<td>Acronym/ Abbreviation</td>
<td>Meaning</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>P</td>
<td>Pacing (Land Search speed)</td>
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<td>PAW</td>
<td>Police Air Wing</td>
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<td>P/C</td>
<td>Pleasure craft</td>
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<td>PIW</td>
<td>Person in water</td>
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<tr>
<td>PLB</td>
<td>Personal locator beacon</td>
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<tr>
<td>PLS</td>
<td>Position Last Seen</td>
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<tr>
<td>POA</td>
<td>Probability of Area</td>
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<td>POB</td>
<td>Persons on board</td>
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<td>POD</td>
<td>Probability of detection</td>
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<td>POM</td>
<td>Period of Mobility</td>
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<td>PPE</td>
<td>Personal Protective Equipment</td>
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<td>PR</td>
<td>Public relations</td>
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<td>R</td>
<td>Radius</td>
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<tr>
<td>RAAF</td>
<td>Royal Australian Air Force</td>
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<tr>
<td>RADAR</td>
<td>Radio detection and ranging</td>
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<tr>
<td>RAN</td>
<td>Royal Australian Navy</td>
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<tr>
<td>RA-Aus</td>
<td>Recreational Aviation Australia</td>
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<tr>
<td>RB</td>
<td>Rescue boat</td>
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<tr>
<td>RC</td>
<td>River current</td>
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<tr>
<td>RCC</td>
<td>Rescue Coordination Centre</td>
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<tr>
<td>RFDS</td>
<td>Royal Flying Doctor Service</td>
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<tr>
<td>ROW</td>
<td>Rest of the World</td>
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<tr>
<td>RV</td>
<td>Rescue Vessel</td>
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<td>Track spacing</td>
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<td>South latitude</td>
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<td>SART</td>
<td>Search and Rescue Radar Transponder. Also known as ‘Survival Craft Radar Transponder’ or ‘Radar Transponder’</td>
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<tr>
<td>SF</td>
<td>Signal Fade</td>
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<td>SH</td>
<td>Signal Heard</td>
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<td>S/V</td>
<td>Sailing vessel</td>
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<td>SafetyNET</td>
<td>Communications service provided via Inmarsat-C for promulgation of maritime safety information, including shore-to-shop relays of distress alerts and communications for search and rescue coordination</td>
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<tr>
<td>SAR</td>
<td>Search and rescue</td>
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<td>SAREX</td>
<td>Search and Rescue Exercise</td>
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<tr>
<td>SART</td>
<td>Search and Rescue Radar Transponder. Also known as a survival craft radar transponder or radar transponder</td>
</tr>
<tr>
<td>SC</td>
<td>Sea current</td>
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<tr>
<td>Acronym/Abbreviation</td>
<td>Meaning</td>
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<tr>
<td>SDB</td>
<td>SAR Datum Buoys</td>
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<tr>
<td>SECURITE</td>
<td>The safety signal ‘SECURITÉ’ indicates that the station is about to transmit a message concerning the safety of navigation or providing an important meteorological warning. The safety message is preceded by the word ‘SECURITÉ’ spoken three times.</td>
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<tr>
<td>SES</td>
<td>State Emergency Service</td>
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<tr>
<td>SH</td>
<td>Search Headquarters</td>
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<tr>
<td>SITREP</td>
<td>Situation report</td>
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<tr>
<td>SMC</td>
<td>Search and rescue mission coordinator</td>
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<tr>
<td>SOLAS</td>
<td>International Convention for the Safety of Life at Sea</td>
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<tr>
<td>SOPs</td>
<td>Standard Operating Procedures</td>
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<td>SOS</td>
<td>Internationally recognized signal of distress, made by any method of signalling</td>
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<tr>
<td>SP</td>
<td>Splash point</td>
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<tr>
<td>SPOC</td>
<td>Search and rescue point of contact</td>
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<tr>
<td>SRG</td>
<td>Short range</td>
</tr>
<tr>
<td>SRR</td>
<td>Search and rescue region</td>
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<td>SRS</td>
<td>Single raft system</td>
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<tr>
<td>SRU</td>
<td>Search and Rescue Unit (Aircraft, vessel, search team)</td>
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<tr>
<td>STOL</td>
<td>Short Takeoff and Landing</td>
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<tr>
<td>SURPIC</td>
<td>Surface picture</td>
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<tr>
<td>T</td>
<td>Time</td>
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<tr>
<td>T</td>
<td>Degrees True</td>
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<tr>
<td>T</td>
<td>Search time available</td>
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<tr>
<td>TAS</td>
<td>True air speed</td>
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<tr>
<td>TC</td>
<td>Tidal current</td>
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<tr>
<td>TCA</td>
<td>Time of closest approach</td>
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<tr>
<td>TELEX</td>
<td>Teletype</td>
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<td>TFFS</td>
<td>Time Frame for Survival</td>
</tr>
<tr>
<td>TL</td>
<td>Team Leader</td>
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<tr>
<td>TWC</td>
<td>Total water current</td>
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<tr>
<td>u</td>
<td>Wind speed</td>
</tr>
<tr>
<td>UHF</td>
<td>Ultra-high frequency</td>
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<tr>
<td>ULR</td>
<td>Ultra-long range</td>
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<tr>
<td>USAR</td>
<td>Urban Search and Rescue (Collapsed Buildings)</td>
</tr>
<tr>
<td>UTC</td>
<td>Coordinated universal time</td>
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<tr>
<td>v</td>
<td>Speed of search object</td>
</tr>
<tr>
<td>V</td>
<td>SAR unit ground speed or aircraft true air speed</td>
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<tr>
<td>Acronym/ Abbreviation</td>
<td>Meaning</td>
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<td>-----------------------</td>
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<td>V</td>
<td>Velocity</td>
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<td>Vegetation Correction Factor</td>
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<td>VFR</td>
<td>Visual flight rules</td>
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<td>VHF</td>
<td>Very high frequency</td>
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<tr>
<td>VLR</td>
<td>Very long range</td>
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<td>VMC</td>
<td>Visual meteorological conditions</td>
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<td>Width</td>
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<td>Corrected Sweep Width</td>
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<td>West longitude</td>
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<td>Wind current</td>
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<td>W/V</td>
<td>Wind velocity</td>
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<td>Uncorrected sweep width</td>
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<td>Weather Factor</td>
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<tr>
<td>X</td>
<td>Search target position error</td>
</tr>
<tr>
<td>Y</td>
<td>Search unit position error</td>
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# Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Aircraft Coordinator (ACO)</td>
<td>A person who coordinates the involvement of multiple aircraft in SAR operations.</td>
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<tr>
<td>Aeronautical drift (Da)</td>
<td>Drift caused by bailout trajectory or aircraft gliding distance.</td>
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<tr>
<td>Aeronautical position</td>
<td>Initial position of a distressed aircraft at the time of re-entry, engine failure, aircrew ejection or bailout.</td>
</tr>
<tr>
<td>Aircraft glide</td>
<td>Maximum ground distance an aircraft could cover during descent.</td>
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<tr>
<td>Alert Phase</td>
<td>A situation wherein apprehension exists as to the safety of an aircraft or marine vessel, and of the persons on board.</td>
</tr>
<tr>
<td>Alerting Post</td>
<td>Any facility intended to serve as an intermediary between a person reporting an emergency and a rescue coordination centre or rescue sub-centre.</td>
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<tr>
<td>ARGOS</td>
<td>A satellite-based location and data collection system.</td>
</tr>
<tr>
<td>AusSAR</td>
<td>Australian Search and Rescue: a functional description of the Australian Maritime Safety Authority’s role in maritime and aviation SAR coordination, communications, and the provision of SAR units. AusSAR does not exist as a discrete entity inside AMSA. Whilst the description “AusSAR” is readily understood by other participants in SAR, the term JRCC Australia is preferred.</td>
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<tr>
<td>Awareness Range</td>
<td>Distance at which a search scanner can first detect something different from its surroundings but not yet recognise it.</td>
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<tr>
<td>Awareness Stage</td>
<td>A period during which the SAR system becomes aware of an actual or potential incident.</td>
</tr>
<tr>
<td>Captain</td>
<td>Master of a ship or pilot-in-command of an aircraft, commanding officer of a warship or an operator of any other vessel.</td>
</tr>
<tr>
<td>Checksum Digit</td>
<td>A digit that is appended to a numeric data element and used to verify its accuracy. Checksum digits are computed by adding the digits of the data element.</td>
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<tr>
<td>Coast Earth Station (CES)</td>
<td>Maritime name for an Inmarsat shore-based station linking ship earth stations with terrestrial communications networks.</td>
</tr>
<tr>
<td>Conclusion Stage</td>
<td>A period during a SAR incident when SAR facilities return to their regular location and prepare for another mission.</td>
</tr>
<tr>
<td>Coordination</td>
<td>The bringing together of organisations and elements to ensure effective search and rescue response.</td>
</tr>
<tr>
<td>Coordinated Search Pattern</td>
<td>Multi-unit pattern using vessel(s) and aircraft.</td>
</tr>
<tr>
<td>Coordinated Universal Time (UTC)</td>
<td>International term for time at the prime meridian.</td>
</tr>
<tr>
<td>Cospas-Sarsat System</td>
<td>An international satellite system designed to provide distress alert and location data from 406MHz distress beacon signals.</td>
</tr>
<tr>
<td>Course</td>
<td>The intended horizontal direction of travel of a craft.</td>
</tr>
<tr>
<td>Coverage Factor (C)</td>
<td>For parallel sweep searches, Coverage Factor (C) is computed as the ratio of sweep width (W) to track spacing (S). C = W/S.</td>
</tr>
<tr>
<td>Craft</td>
<td>Any air or sea-surface vehicle, or submersible of any kind or size.</td>
</tr>
<tr>
<td>Datum</td>
<td>A geographic point, line, or area used as a reference in search planning.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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</tr>
<tr>
<td>Datum Area</td>
<td>Area where it is estimated that the search object is most likely to be located.</td>
</tr>
<tr>
<td>Datum Line</td>
<td>A line, such as the distressed craft's intended track line or a line of bearing, which defines the centre of the area where it is estimated that the search object is most likely to be located.</td>
</tr>
<tr>
<td>Datum Point</td>
<td>A point, such as a reported or estimated position, at the centre of the area where it is estimated that the search object is most likely to be located.</td>
</tr>
<tr>
<td>Dead Reckoning (DR)</td>
<td>Determination of position of a craft by adding to the last fix the craft's course and speed for a given time.</td>
</tr>
<tr>
<td>Digital Selective Calling (DSC)</td>
<td>A technique using digital codes which enables a radio station to establish contact with, and transfer information to, another station or group of stations.</td>
</tr>
<tr>
<td>Direction of Current</td>
<td>Direction toward which a current is flowing. Also called set.</td>
</tr>
<tr>
<td>Direction of Waves, Well or Seas</td>
<td>Direction from which the waves, swells, or seas are moving.</td>
</tr>
<tr>
<td>Direction of Wind</td>
<td>Direction from which the wind is blowing.</td>
</tr>
<tr>
<td>Distress Phase</td>
<td>A situation wherein there is reasonable certainty that a vessel or other craft, including an aircraft or a person, is threatened by grave and imminent danger and requires immediate assistance.</td>
</tr>
<tr>
<td>Ditching</td>
<td>The forced landing of an aircraft on water.</td>
</tr>
<tr>
<td>Drift</td>
<td>The movement of a search object caused by environmental forces.</td>
</tr>
<tr>
<td>Drift Error (De)</td>
<td>See Total drift error.</td>
</tr>
<tr>
<td>Emergency Phase</td>
<td>Emergency phases are based on the level of concern for the safety of persons or craft that may be in danger. The three levels of emergency are classified as Uncertainty, Alert, and Distress.</td>
</tr>
<tr>
<td>False Alarm</td>
<td>Distress alert initiated for other than an appropriate test, by communications equipment intended for alerting, when no distress situation actually exists.</td>
</tr>
<tr>
<td>False Alert</td>
<td>Distress alert received from any source, including communications equipment intended for alerting, when no distress situation actually exists, and a notification of distress should not have resulted.</td>
</tr>
<tr>
<td>Fetch</td>
<td>The distance over which the wind blows in a constant direction, without obstruction.</td>
</tr>
<tr>
<td>Field Search Coordinator</td>
<td>Term for SMC who coordinates land searches only.</td>
</tr>
<tr>
<td>Field Search Headquarters</td>
<td>Land equivalent of a RCC</td>
</tr>
<tr>
<td>First RCC</td>
<td>RCC affiliated with the shore station that first acknowledges a distress alert, and which will accept responsibility for all subsequent SAR coordination unless and until coordination is transferred to another RCC.</td>
</tr>
<tr>
<td>Fix</td>
<td>A geographical position determined by visual reference to the surface, referencing to one or more radio navigation aids, celestial plotting, or other navigation device.</td>
</tr>
<tr>
<td>Forward Looking Infrared (FLIR)</td>
<td>An imaging system, mounted on board surface vessels or aircraft, designed to detect thermal energy (heat) emitted by targets and convert it into a visual display.</td>
</tr>
<tr>
<td>General Communications</td>
<td>Operational and public correspondence traffic other than distress, urgency and safety messages, transmitted or received by radio.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Global Maritime Distress and Safety System (GMDSS)</td>
<td>A global communications service based upon automated systems, both satellite-based and terrestrial, to provide distress alerting and promulgation of maritime safety information for mariners.</td>
</tr>
<tr>
<td>Global Navigation Satellite System (GNSS)</td>
<td>Worldwide position and time determination system that includes one or more satellite constellations and receivers.</td>
</tr>
<tr>
<td>Great Circle Route</td>
<td>The shortest course between two points on the surface of a sphere. It lies in a plane that intersects the sphere's centre.</td>
</tr>
<tr>
<td>Ground Speed (GS)</td>
<td>The speed an aircraft is making relative to the earth's surface.</td>
</tr>
<tr>
<td>Heading</td>
<td>The horizontal direction in degrees magnetic in which a craft is pointed.</td>
</tr>
<tr>
<td>Hypothermia</td>
<td>Abnormal lowering of internal body temperature (heat loss) from exposure to cold air, wind or water.</td>
</tr>
<tr>
<td>Indicated Air Speed (IAS)</td>
<td>The aircraft speed shown on the air speed indicator gauge. IAS corrected for instrument error and atmospheric density equals true air speed.</td>
</tr>
<tr>
<td>Initial Position Error (X)</td>
<td>The estimated probable error of the initially reported position of a SAR incident.</td>
</tr>
<tr>
<td>Inmarsat Ltd</td>
<td>Formally the International Maritime Satellite Organisation</td>
</tr>
<tr>
<td>International Maritime Satellite Organisation (Inmarsat)</td>
<td>A system of geostationary satellites for worldwide mobile communications services, and which support the Global Maritime Distress and Safety System and other emergency communications systems.</td>
</tr>
<tr>
<td>Instrument Flight Rules (IFR)</td>
<td>Rules governing the procedures for conducting instrument flight. Also a term used by pilots and controllers to indicate type of flight plan.</td>
</tr>
<tr>
<td>Instrument Meteorological Conditions (IMC)</td>
<td>Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling less than the minima specified for visual meteorological conditions.</td>
</tr>
<tr>
<td>Joint Rescue Coordination Centre (JRCC)</td>
<td>A rescue coordination centre responsible for both aeronautical and maritime search and rescue incidents.</td>
</tr>
<tr>
<td>Knot (kt)</td>
<td>A unit of speed equal to one nautical mile per hour.</td>
</tr>
<tr>
<td>Last known Position (LKP)</td>
<td>Last witnessed, reported, or computed DR position of a distressed craft.</td>
</tr>
<tr>
<td>Leeway (LW)</td>
<td>The movement of a search object through water caused by winds blowing against exposed surfaces.</td>
</tr>
<tr>
<td>Land Earth Station (LES)</td>
<td>Land Earth Station (Inmarsat) – synonymous with CES</td>
</tr>
<tr>
<td>Local User Terminal (LUT)</td>
<td>An earth receiving station that receives beacon signals relayed by Cospas-Sarsat satellites, processes them to determine the location of the beacons, and forwards the signals.</td>
</tr>
<tr>
<td>MAYDAY</td>
<td>When repeated three times, this forms the distress call. Any subsequent messages including self-identification, position, nature of distress and other useful information, forms the distress message.</td>
</tr>
<tr>
<td>MEDEVAC</td>
<td>Evacuation of a person for medical reasons.</td>
</tr>
<tr>
<td>Meteorological Visibility</td>
<td>The maximum range at which a large object, such as landmasses or mountains, can be seen. Also referred to as Meteorological Range.</td>
</tr>
<tr>
<td>Mission Control Centre (MCC)</td>
<td>Part of the Cospas-Sarsat system that accepts alert messages from the local user terminal(s) and other mission control centres to distribute to the appropriate rescue coordination centres or other search and rescue points of contact.</td>
</tr>
<tr>
<td>Narrow-Band Direct Printing (NBDP)</td>
<td>Automated telegraphy, as used by the NAVTEX system and telex-over-radio.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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<tr>
<td>NAVAREA</td>
<td>One of 16 areas into which the International Maritime Organization divides the world’s oceans for dissemination of navigation and meteorological warnings.</td>
</tr>
<tr>
<td>NAVTEX</td>
<td>Telegraphy system for transmission of maritime safety information, navigation and meteorological warnings and urgent information to ships. NAVTEX is not provided in Australia - see SafetyNet.</td>
</tr>
<tr>
<td>On-scene</td>
<td>The search area or the actual distress site.</td>
</tr>
<tr>
<td>On-scene Coordinator (OSC)</td>
<td>A person designated to coordinate search and rescue operations within a specified area.</td>
</tr>
<tr>
<td>On-scene Endurance</td>
<td>The amount of time a facility may spend at the scene engaged in search and rescue activities.</td>
</tr>
<tr>
<td>Overall Coordination</td>
<td>The responsibility of the SAR authority to prosecute a SAR operation for a given target in accordance with Volume 1, Chapter 1, section 1.2, Appendix B or the SAR authority best placed to coordinate efforts of the response agencies that may become involved in a SAR action.</td>
</tr>
<tr>
<td>Overdue</td>
<td>A situation where a craft has failed to arrive at its intended destination when expected and remains missing.</td>
</tr>
<tr>
<td>PAN-PAN</td>
<td>The international radiotelephony urgency signal. When repeated three times, indicates uncertainty or alert, followed by nature of urgency.</td>
</tr>
<tr>
<td>Personal Locator Beacon (PLB)</td>
<td>Personal radio distress beacon for alerting and transmitting homing signals.</td>
</tr>
<tr>
<td>Pilot-in-command</td>
<td>The pilot responsible for the operation and safety of the aircraft during flight time.</td>
</tr>
<tr>
<td>Planning Stage</td>
<td>A period during a SAR incident when an effective plan of operations is developed.</td>
</tr>
<tr>
<td>Position</td>
<td>A geographical location normally expressed in degrees and minutes of latitude and longitude.</td>
</tr>
<tr>
<td>Positioning</td>
<td>Process of determining a position that can serve as a geographical reference for conducting a search.</td>
</tr>
<tr>
<td>Possibility Area</td>
<td>(1) The smallest area containing all possible survivor or search object locations. (2) For a scenario, the possibility area is the smallest area containing all possible survivor or search object locations that are consistent with the facts and assumptions used to form the scenario.</td>
</tr>
<tr>
<td>Primary Swell</td>
<td>The swell system having the greatest height from trough to crest.</td>
</tr>
<tr>
<td>Probability Area</td>
<td>The area in which a missing craft and/or survivors are most likely to be found taking into account possible errors in the navigation of the missing craft and of the search craft.</td>
</tr>
<tr>
<td>Probability of Detection (POD)</td>
<td>The probability of the search object being detected, assuming it was in the areas that were searched. POD is a function of coverage factor, sensor, search conditions and the accuracy with which the search facility navigates its assigned search pattern. Measures sensor effectiveness under the prevailing search conditions.</td>
</tr>
<tr>
<td>Rescue</td>
<td>An operation to retrieve persons in distress, provide for their initial medical or other needs, and deliver them to a place of safety.</td>
</tr>
<tr>
<td>Rescue Coordination Centre (RCC)</td>
<td>The centre from which a SAR incident is controlled and coordinated. The Centre is known by various terms such as the Rescue Coordination Centre, Major Incident Room, Operations Room or Base Station. For the purposes of this manual these centres will be known generically as the Rescue Coordination Centre or RCC.</td>
</tr>
<tr>
<td>Term</td>
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</tr>
<tr>
<td>Rhumb Line</td>
<td>A line of constant bearing that cuts meridians at the same angle. It is a straight line between two points on a Mercator projection chart.</td>
</tr>
<tr>
<td>SafetyNET</td>
<td>Communications service provided via Inmarsat-C for promulgation of maritime safety information, including shore-to-shop relays of distress alerts and communications for search and rescue coordination.</td>
</tr>
<tr>
<td>SAR Datum Buoy</td>
<td>Droppable floating beacon used to determine actual sea current, or to serve as a location reference.</td>
</tr>
<tr>
<td>Scenario</td>
<td>A consistent set of known facts and assumptions describing what may have happened to the survivors and/or craft.</td>
</tr>
<tr>
<td>Sea</td>
<td>Condition of the surface resulting from waves and swells.</td>
</tr>
<tr>
<td>Sea Current (SC)</td>
<td>The residual current when currents caused by tides and local winds are subtracted from local current. It is the main, large-scale flow of ocean waters.</td>
</tr>
<tr>
<td>Search</td>
<td>An operation, normally coordinated by a rescue coordination centre, using available personnel and facilities to locate persons in distress.</td>
</tr>
<tr>
<td>Search and Rescue Authority</td>
<td>The authority within an Administration with overall responsibility for establishing and providing SAR services and ensuring that planning for those services is properly coordinated. The national SAR authority in Australia is the Australian Maritime Safety Authority with each of the States and Territories Polices services and the Department of Defence being the SAR Authorities within their jurisdictions. In Australia, the SAR Authority takes on the roles of the SAR Coordinator as described in the IAMSAR Manual.</td>
</tr>
<tr>
<td>Search Action Plan</td>
<td>Message, normally developed by the SMC, for passing instructions to SAR facilities and agencies participating in a SAR mission.</td>
</tr>
<tr>
<td>Search and Rescue Briefing Officer</td>
<td>An officer appointed, usually by the SMC, to brief departing SAR facilities and debrief returning SAR facilities.</td>
</tr>
<tr>
<td>Search and Rescue Case</td>
<td>Any potential or actual distress about which a facility opens a documentary file, whether or not SAR resources are dispatched.</td>
</tr>
<tr>
<td>Search and Rescue Coordinating Communications</td>
<td>Communications necessary for the coordination of facilities participating in a search and rescue operation.</td>
</tr>
<tr>
<td>Search and Rescue Facility</td>
<td>Any mobile resource, including designated search and rescue units, used to conduct search and rescue operations. The terms unit and asset maybe interchangeable with facility.</td>
</tr>
<tr>
<td>Search and Rescue Incident</td>
<td>Any situation requiring notification and alerting of the SAR system and which may require SAR operations.</td>
</tr>
<tr>
<td>Search and Rescue Liaison Officer</td>
<td>An officer assigned to promote coordination during a SAR mission.</td>
</tr>
<tr>
<td>Search and Rescue Mission Coordinator (SMC)</td>
<td>The suitably trained or qualified official temporarily assigned to coordinate a response to an actual or apparent distress situation. In Australia, the acronym SARMc is also used in some jurisdictions. Throughout this manual, the terms SMC and SARMc are synonymous. Some jurisdictions also use the term A/SARMc to describe the SMC's assistants.</td>
</tr>
<tr>
<td>Search and Rescue Plan</td>
<td>A general term used to describe documents which exist at all levels of the national and international search and rescue structure to describe goals, arrangements, and procedures which support the provision of search and rescue services.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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</tr>
<tr>
<td>Search and Rescue Point of Contact (SPOC)</td>
<td>Rescue coordination centres and other established and recognised national points of contact that can accept responsibility to receive Cospas-Sarsat alert data to enable the rescue of persons in distress.</td>
</tr>
<tr>
<td>Search and Rescue Region (SRR)</td>
<td>An area of defined dimensions, associated with the national rescue coordination centre (JRCC Australia), within which search and rescue services are provided.</td>
</tr>
<tr>
<td>Search and Rescue Service</td>
<td>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.</td>
</tr>
<tr>
<td>Search and Rescue Stage</td>
<td>Typical steps in the orderly progression of SAR missions. These are normally Awareness, Initial Action, Planning, Operations, and Mission Conclusion.</td>
</tr>
<tr>
<td>Search and Rescue Unit (SRU)</td>
<td>An aircraft, vessel of search team with equipment suitable for the expeditious conduct of search and rescue operations.</td>
</tr>
<tr>
<td>Search Area</td>
<td>The area determined by the search planner to be searched. This area may be subdivided into search sub-areas for the purpose of assigning specific responsibilities to the available search facilities.</td>
</tr>
<tr>
<td>Search Endurance (T)</td>
<td>The amount of &quot;productive&quot; search time available at the scene also known as Available Search Hours (ASH). This figure is usually taken to be 85% of the on-scene endurance, leaving a 15% allowance for investigating sightings and navigating turns at the ends of search legs.</td>
</tr>
<tr>
<td>Search Facility Position Error (Y)</td>
<td>Probable error in a search craft's position, based on its navigational capabilities.</td>
</tr>
<tr>
<td>Search Object</td>
<td>A ship, aircraft, or other craft missing or in distress or survivors or related search objects or evidence for which a search is being conducted.</td>
</tr>
<tr>
<td>Search Pattern</td>
<td>A procedure assigned to an SRU for searching a specified area.</td>
</tr>
<tr>
<td>Search Radius</td>
<td>The actual search radius used to plan the search and to assign search facilities. It is usually based on adjustments to the optimal search radius that are needed for operational reasons.</td>
</tr>
<tr>
<td>Secondary Swells</td>
<td>Swell systems of less height than the primary swell.</td>
</tr>
<tr>
<td>SECURITE</td>
<td>The safety signal &quot;SECURITE&quot; indicates that the station is about to transmit a message concerning the safety of navigation or providing an important meteorological warning. The safety message is preceded by the word “SECURITE” spoken three times.</td>
</tr>
<tr>
<td>Sensors</td>
<td>Human senses (sight, hearing, touch, etc.), those of specially trained animals (such as dogs), or electronic devices used to detect the object of a search.</td>
</tr>
<tr>
<td>Set</td>
<td>Direction towards which a current flows</td>
</tr>
<tr>
<td>Situation Report (SITREP)</td>
<td>Reports, from the OSC to the SMC or the SMC to interested agencies, to keep them informed of on-scene conditions and mission progress.</td>
</tr>
<tr>
<td>Splash Point</td>
<td>See Last known position</td>
</tr>
<tr>
<td>SOS</td>
<td>Internationally recognised signal of distress, made by any method of signalling.</td>
</tr>
<tr>
<td>Surface Drift</td>
<td>Vector sum of total water current and leeway. Sometimes called Total Drift.</td>
</tr>
<tr>
<td>Surface Picture (SURPIC)</td>
<td>A list or graphic display from a ship reporting system of information about vessels in the vicinity of a distress situation that may be called upon to render assistance.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
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</tr>
<tr>
<td>Surface Position</td>
<td>The position of the search object on the earth's surface at the time of initial distress, or its first contact with the earth's surface.</td>
</tr>
<tr>
<td>Sweep Width (W)</td>
<td>A measure of the effectiveness with which a particular sensor can detect a particular object under specific environmental conditions.</td>
</tr>
<tr>
<td>Swell</td>
<td>Condition of the surface caused by a distant wind system. The individual swell appears to be regular and smooth with considerable distance between rounded crests.</td>
</tr>
<tr>
<td>Swell Direction</td>
<td>The direction from which a swell is moving. The direction toward which a swell is moving is called the down swell direction.</td>
</tr>
<tr>
<td>Swell Face</td>
<td>The side of the swell toward the observer. The backside is the side away from the observer. These definitions apply regardless of the direction of swell movement.</td>
</tr>
<tr>
<td>Swell Velocity</td>
<td>Velocity with which the swells advance with relation to a fixed reference point, measured in knots.</td>
</tr>
<tr>
<td>Time of Closest Approach (TCA)</td>
<td>Time during a satellite pass when the satellite is closest to a signal source.</td>
</tr>
<tr>
<td>Total Drift Error (De)</td>
<td>Sum of the individual drift errors from the time of the incident until datum. Used when determining Total Probable Error (E).</td>
</tr>
<tr>
<td>Total Probable Error (E)</td>
<td>The estimated error in the datum position. It is the square root of the sum of the squares of the total drift error, initial position error, and search facility position error.</td>
</tr>
<tr>
<td>Total Water Current (TWC)</td>
<td>The vector sum of currents affecting search objects.</td>
</tr>
<tr>
<td>Track Spacing (S)</td>
<td>The distance between adjacent parallel search tracks.</td>
</tr>
<tr>
<td>Triage</td>
<td>The process of sorting survivors according to medical condition and assigning them priorities for emergency care, treatment, and evacuation.</td>
</tr>
<tr>
<td>True Air Speed (TAS)</td>
<td>The speed an aircraft is travelling through the air mass. TAS corrected for wind equals ground speed.</td>
</tr>
<tr>
<td>Uncertainty Phase</td>
<td>A situation wherein doubt exists as to the safety of an aircraft or a marine vessel, and of the persons on board.</td>
</tr>
<tr>
<td>Unreported</td>
<td>A situation where a craft has failed to report its location or status when expected and remains missing.</td>
</tr>
<tr>
<td>Vector</td>
<td>A graphic representation of a physical quantity or measurement, such as wind velocity, having both magnitude and direction.</td>
</tr>
<tr>
<td>Visual Flight Rules (VFR)</td>
<td>Rules governing procedures for conducting flight under visual meteorological conditions. In addition, used by pilots and controllers to indicate type of flight plan.</td>
</tr>
<tr>
<td>Visual Meteorological Conditions (VMC)</td>
<td>Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling equal to or better than specified minima.</td>
</tr>
<tr>
<td>Wave (or Chop)</td>
<td>The condition of the surface caused by local wind and characterised by irregularity, short distance between crests, whitecaps, and breaking motion.</td>
</tr>
<tr>
<td>Wind-Corrected Heading</td>
<td>The actual heading an aircraft is required to fly to make good an intended course.</td>
</tr>
<tr>
<td>Wind Current (WC)</td>
<td>The water current generated by wind acting upon the surface of water over a period of time.</td>
</tr>
</tbody>
</table>