

GEN 3.6 SEARCH AND RESCUE**1 RESPONSIBLE SERVICE(S)**

1.1 The search and rescue service in Singapore is provided by the Civil Aviation Authority of Singapore, in collaboration with the Ministry of Defence, Meteorological Service and Maritime and Port Authority of Singapore, which have the responsibility for making the necessary facilities available. The postal and telegraphic addresses of the Civil Aviation Authority of Singapore are given on page GEN 1.1-1.

Post: RESCUE COORDINATION CENTRE (RCC),
60 Biggin Hill Road,
Singapore 509950.
Tel: (65) 65425024 - Singapore RCC
(65) 65412668 or (65) 65412672 - Singapore ACC
Fax: (65) 65422548
AFS: WSJCZQZX

1.2 The service is provided in accordance with the provisions contained in the following ICAO documents and local procedures:

Annex 12 – Search and Rescue
Annex 13 – Aircraft Accident and Incident Investigation
Doc 7030 – Regional Supplementary Procedures for Alerting and SAR services applicable in the SEA Region.
Doc 9731 – International Aeronautical and Maritime Search and Rescue Manuals Volume 1, 2 and 3 Singapore local procedures

2 AREA OF RESPONSIBILITY

2.1 The search and rescue service in Singapore is responsible for SAR operations within Singapore SRR.

2.2 For the following airspace within Jakarta FIR, search and rescue services (SAR) will be jointly provided by Indonesia and Singapore:

The area bounded by 031727N 1052959E 012450N 1061648E 001030N 1045656E 000000N 1050340E 000000N 1044330E thence around the arc of a circle radius 90 NM centred on 011324N 1035124E to 013430N 1022353E 011300N 1033000E 011408N 1033142E 011200N 1033900E 011046N 1034015E 010800N 1034500E 011500N 1040000E 011800N 1043000E 012921N 1043441E 011947N 1044606E 021838N 1052205E 023641N 1051311E 024348N 1050854E 025010N 1051210E 031453N 1052619E 031727N 1052959E excluding the Tanjungpinang Terminal Control Area (TMA) and Control Zone (CTR).

Vertical limit: SFC to FL370

3 TYPES OF SERVICES

3.1 Details of the rescue coordination centre and related supporting rescue units are given in the table on page GEN 3.6-3 titled - Search and Rescue Units. In addition, various elements of the Singapore Police Force, Maritime and Port Authority of Singapore and the Merchant Marine are available for search and rescue missions, when required. The aeronautical, maritime and public telecommunication services are available to the search and rescue organisation.

3.2 All search aircraft are land planes and carry survival equipment, capable of being dropped, consisting of inflatable rubber dinghies equipped with general purpose first aid supplies, emergency rations and survival radio equipment. Aircraft are equipped to communicate on 121.5MHz, 123.1MHz, 243.0MHz, 282.8MHz, 2182KHz, 3023KHz and 5680KHz and are also equipped with VHF/UHF direction finder. Marine craft are equipped to communicate on 123.1MHz, 282.8MHz, 2182KHz, 3023KHz and 5680KHz and are equipped with radar.

3.3 The Singapore RCC provides distress alert detection of Emergency Locator Transmitters (ELTs), Emergency Position Indicator Radio Beacons (EPIRBs) and Personal Locator Beacons (PLBs) using the Cospas-Sarsat Satellite Aided Tracking System. This system is able to detect 406.0MHz beacons globally and the information is shared with the other users of the system. A database of the Singapore registered aviation beacons is kept at the RCC and the Maritime beacons are in the Maritime and Port Authority database.

3.4 Users of 406.0MHz beacons that are coupled with the 121.5MHz frequency will be able to use the 121.5MHz for homing purposes only by search units.

4 SAR AGREEMENTS

4.1 SAR agreements have been concluded between Civil Aviation Authority of Singapore and the SAR authorities or agencies of Indonesia, Malaysia, Philippines, Thailand and Vietnam. These agreements provide for mutual assistance in the conduct of SAR operations within each others' SAR Regions (SRR) and approval for entry of SAR aircraft, vessels and personnel of one

State into the SRR of another State, with prior permission, for the purpose of conducting SAR operations or rendering SAR assistance and for direct communications between the SAR authorities or agencies on all common SAR matters.

4.2 Requests for the entry of aircraft, equipment and personnel from other States to engage in search for aircraft in distress or to rescue survivors of aircraft accidents should be transmitted to the Rescue Coordination Centre. Instructions as to the control which will be exercised on entry of such aircraft and/ or personnel will be given by the Rescue Coordination Centre in accordance with the standing plan for the conduct of search and rescue in the area.

4.3 Civil Aviation Authority of Singapore has also concluded an SAR agreement with the SAR Coordinator Pacific RCC, United States Air Force (USAF). The agreement provides for all possible assistance to assist RCC Singapore in its response to United States (US) military SAR incidents within the Singapore SRR. It will also provide US assistance to RCC Singapore in its prosecution of civil SAR incidents when requested.

5 CONDITIONS OF AVAILABILITY

5.1 The SAR service and facilities in Singapore are available without charge to neighbouring states on opportunity basis and upon request to the Rescue Coordination Centre Singapore or the Singapore Air Traffic Control Centre. All facilities are specialised in SAR techniques and functions.

6 PROCEDURES AND SIGNALS USED

6.1 Procedures and signals used by aircraft

6.1.1 Procedures for pilots-in-command observing an accident or intercepting a distress call and/or message are outlined in ICAO Annex 12, Chapter 5.

6.2 Communications

6.2.1 Transmission and reception of distress messages within the Singapore Search and Rescue Region are handled in accordance with ICAO Annex 10, Volume II, Chapter 5, para 5.3.

6.2.2 For communications during search and rescue operations, the codes and abbreviations published in *ICAO Abbreviations and Codes (Doc 8400)* are used.

6.2.3 Information concerning positions, callsigns, frequencies and hours of operation of Singapore aeronautical stations is published in sections AD 2 and ENR 2.

6.2.4 The frequency 121.5MHz is guarded continuously by the Control Tower, Singapore Changi Airport, the Singapore Air Traffic Control Centre and Control Tower, Seletar Aerodrome. The Coast Radio Station in Singapore guards the international distress frequencies.

6.2.5 Search and Rescue aircraft conducting Search and Rescue Operations will use the following callsigns:

- a) Fixed Wing 'Rescue (plus number 61 to 85)'
- b) Rotary Wing 'Rescue (plus number 10 to 19)'

6.2.6 Rescue vessels / boats conducting Search and Rescue Operations will use the following callsigns:

- a) 'Rescue Vessel (plus number 21 to 31)'
- b) 'Rescue Boat (plus number or callsign)'

6.3 Search and Rescue Signals

6.3.1 The search and rescue signals to be used are those prescribed in ICAO Annex 12, Chapter 5, paragraph 5.8.

6.3.2 Ground/Air Visual Signal Codes for use by Survivors

GROUND/AIR VISUAL SIGNAL CODES FOR USE BY SURVIVORS			
<i>Nr.</i>	<i>Message</i>	<i>Code symbol</i>	<i>Instructions for use</i>
1	Require assistance	V	a) Make signals not less than 8ft(2.5m). b) Take care to layout signals exactly as shown. Provide as much colour contrast as possible c) between signals and background. Make every effort to attract attention by other d) means such as radio, flares, smoke, reflected light.
2	Require medical assistance	X	
3	No or Negative	N	
4	Yes or Affirmative	Y	
5	Proceeding in this direction	↑	

6.4 Search and Rescue Units

SEARCH AND RESCUE UNITS			
<i>Name</i>	<i>Location</i>	<i>Facilities</i>	<i>Remarks</i>
MINDEF	Singapore	LRG	One search and locate aircraft.
		VLR	One search and locate aircraft.
		Hel-M	One search and rescue aircraft.
		Hel-H	One search and rescue aircraft.
		RV	Two search and rescue ship.
CHANGI AIRPORT EMERG SERVICE	Singapore Changi Airport	RB	Additional maritime cover is provided by vessels of the Police Coast Guard and the Maritime and Port Authority of Singapore.
USAF PACIFIC RCC	Hickham Airforce Base	LRG	On opportunity basis. Singapore in coordination with USAF Pacific RCC.

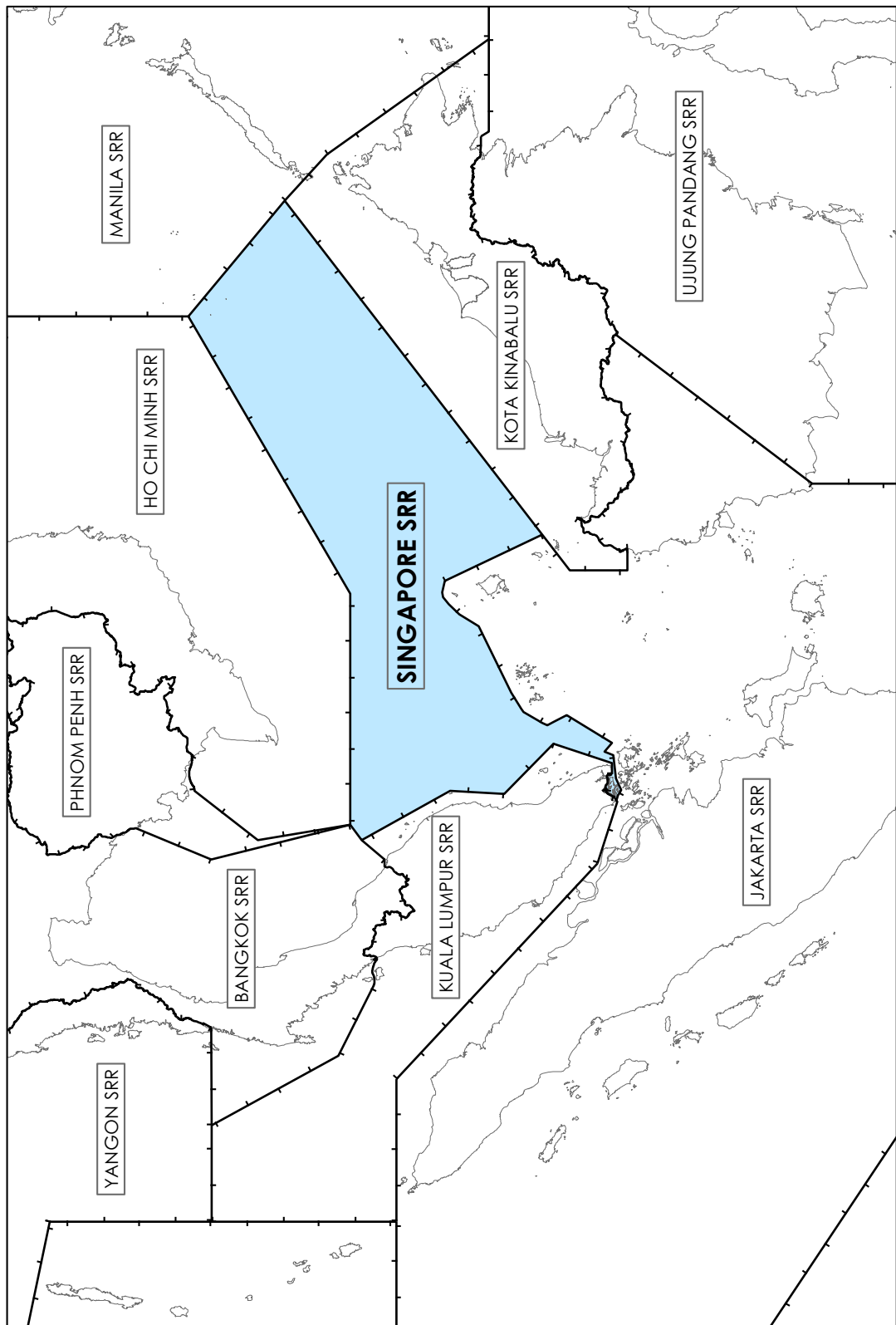
6.5 Search and Rescue Frequencies

SEARCH AND RESCUE FREQUENCIES			
<i>Purpose</i>	<i>Frequency</i>	<i>Period</i>	<i>Watch Kept By</i>
International Distress Frequencies	121.5 MHz	24 hours watch	RSAF (SATCC) RCC Singapore
	243.0 MHz	24 hours watch	RSAF (SATCC)
	156.8 MHz (Channel 16)	24 hours watch	Maritime and Port Authority Ships at sea.
	156.525 MHz (DSC Channel 70)	24 hours watch	Maritime and Port Authority Ships at sea.
Scene of Search	2 182 KHz	As required	RCC Singapore
	282.8 MHz	As required	Search Aircraft RCC Singapore
	123.1 MHz	As required	RCC Singapore Merchant Shipping (if equipped)
	3 023 KHz	As required	RCC Singapore
	5 680 KHz	As required	RCC Singapore

Note:

Speech circuits exist between all ATS Units in Peninsular Malaysia and Singapore. Speech circuits also exist between Singapore ATS Unit and Kota Kinabalu ATS Unit in Sabah. Direct speech communications circuits exist between Singapore ATS Unit and Jakarta, Manila and Ho Chi Minh ATS Units and are available for relay of messages between Singapore RCC and the respective RCCs but may be subject to delays.

SINGAPORE SEARCH AND RESCUE REGION (SRR)



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