

WSAT TENGAH

Note: The following sections in this chapter are intentionally left blank:
AD 2.9, AD 2.11, AD 2.16, AD 2.21, AD 2.22, AD 2.23

WSAT AD 2.1 AERODROME LOCATION INDICATOR AND NAME

WSAT - TENGAH

WSAT AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	ARP coordinates and site at AD	012315.40N 1034229.80E
2	Direction and distance from (city)	-
3	Elevation/Reference temperature	15.24 (50ft) / 31.5 ⁰ C
4	MAG VAR	0 ⁰ 23'(2020)
5	AD Administration, address, telephone, telefax, telex, AFS	RSAF TENGAH AIRBASE CHOA CHU KANG ROAD SINGAPORE669638 Telephone: (65)67612222 AFS: WSATYWYX
6	Types of traffic permitted	IFR
7	Remarks	Emergency Diversion Aerodrome for Singapore Changi Airport (see page WSAT AD 2-7)

WSAT AD 2.3 OPERATIONAL HOURS

1	Aerodrome Administration	2300-1100 SUN/MON to THU/FRI. Public holidays and outside the above stipulated operating hours, prior permission required from RSAF Headquarters via Tengah Operations. For EMERG diversions AD AVBL at 2 hours notice. Only Aerodrome Control Service provided. No radar service AVBL outside aerodrome OPR hours.
2	Customs and Immigration	by prior arrangement
3	Health and Sanitation	by prior arrangement
4	AIS Briefing Office	-
5	ATS Reporting Office	-
6	MET Briefing Office	-
7	Air Traffic Services	-
8	Remarks	-

WSAT AD 2.4 HANDLING SERVICES AND FACILITIES

1	Cargo Handling Facilities	-
2	Fuel / Oil Types	JET A1, F3
3	Fuelling Facilities / Capacity	2300-1100 SUN/MON to THU/FRI; Public holidays & outside OPR HR PPR from RSAF HQ via Tengah Operations.
4	Hangar space for visiting aircraft	-
5	Repair facilities for visiting aircraft	-
6	Remarks	Nil

WSAT AD 2.5 PASSENGER FACILITIES

1	Hotels	-
2	Restaurants	-

3	Transportation	-
4	Medical Facilities	-
5	Bank and Post Office	-
6	Tourist Office	-
7	Remarks	Nil

WSAT AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	AD category for fire fighting	CAT8
2	Rescue equipment	Adequately provided as recommended by ICAO
3	Capability for removal of disabled aircraft	Sufficient salvage equipment provided by Airfield Ground Services section at Military bases.
4	Remarks	All Airport Emergency Services personnel are trained in rescue and fire-fighting as well as medical first-aid.

WSAT AD 2.7 SEASONAL AVAILABILITY - CLEARING

The aerodrome is available throughout the year.

WSAT AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS/POSITIONS DATA

1	Apron surface and strength	-
2	Taxiway width, surface and strength	Strength: LCN80 (Taxiway E) Surface: ASPH
3	Remarks	Nil

WSAT AD 2.10 AERODROME OBSTACLES

In approach / TKOF areas	In circling area and at aerodrome
<p><u>RWY 18/36 APCH / TKOF Areas</u></p> <p>ILS LLZ co-located with LLZ antenna, HGT 21m AGL, 004 degrees MAG 260m from THR RWY 18</p> <p>ILS LLZ co-located with LLZ antenna, HGT 15m AGL, 184 degrees MAG 290m from THR RWY 36</p>	<p>2 masts, HGT 6m, located on eastern shoulders of RWY 36, 233m from THR, 100m from RWY centreline and RWY 18, 273m from THR, 100m from RWY centreline. Masts LGTD at NGT.</p> <p>PAR hut co-located with GP antenna mast, HGT 16m AGL, 074 degrees MAG, 100m from WSAT ARP.</p> <p>ILS GP huts co-located with GP antenna mast, HGT 19m AGL, at 029 degrees MAG, 322m from THR RWY 36 and 123 degrees MAG, 303m from THR RWY 18.</p> <p>1 Monopole located at 012432N 1034035E, HGT 117.5m AMSL, 304 degrees MAG, 4255m from WSAT ARP.</p> <p>1 Lightning rod located at 012135N 1034425E, HGT 64.04m AMSL, 131 degrees MAG, 4719m from WSAT ARP.</p> <p>1 Lightning rod located at 012133N 1034426E, HGT 64.17m AMSL, 131 degrees MAG, 4783m from WSAT ARP.</p> <p>2 Lightning rod located at 012051N 1034419E, HGT 60.23m AMSL, 142 degrees MAG, 5591m from WSAT ARP.</p>

WSAT AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designation RWY NR	TRUE & MAG BRG	Dimensions of RWY (m)	Strength (PCN) and surface of RWY and SWY	THR coordinates	THR elevation and highest elevation of TDZ of precision APCH RWY
1	2	3	4	5	6
18	184.5	2743 x 46	PCN 100 F/A/W/T	-	50 FT

Designation RWY NR	TRUE & MAG BRG	Dimensions of RWY (m)	Strength (PCN) and surface of RWY and SWY	THR coordinates	THR elevation and highest elevation of TDZ of precision APCH RWY
1	2	3	4	5	6
36	004.5	2743 x 46	PCN 100 F/A/W/T	-	50 FT

12	Remarks	<p>a) Intensive fixed wing flying operation east of runway.</p> <p>b) Helizone adjacent east of runway up to 800ft QNH.</p> <p>c) Arrestor Barrier both ends of runway.</p> <p>d) Hookwire cable installed 366m inwards from each end of runway.</p> <p>e) Intense bird activity after rain, and up to 2 hour after dusk and dawn.</p>
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WSAT AD 2.13 DECLARED DISTANCES

RWY Designator	TORA (m)	TODA (m)	ASDA (m)	LDA (m)	Remarks
1	2	3	4	5	6
18	2743	3115	2743	2743	Nil
36	2743	3030	2743	2743	Nil

WSAT AD 2.14 APPROACH AND RUNWAY LIGHTING

RWY	APCH LGT Type, LEN INTST	THR LGT colour WBAR	VASIS (MEHT) PAPI	TDZ LGT LEN	RCL LGT, LEN, spacing, colour, INTST	RWY edge LGT, LEN, spacing, colour, INTST	RWY End LGT, colour WBAR	SWY LGT, LEN colour	Remarks
1	2	3	4	5	6	7	8	9	10
18	High INTST white centreline and two bars, PAPI, Sequenced flashing lights	GREEN	4 units PAPI on each side of RWY at 3 Glide Slope	Nil	Nil	High INTST omni-directional white variable INTST	RED	Nil	Distance to run markers illuminated
36	High INTST white centreline and five bars, PAPI, Sequenced flashing lights	GREEN	4 units PAPI on each side of RWY at 3 Glide Slope	Nil	Nil	High INTST omni-directional white variable INTST	RED	Nil	Distance to run markers illuminated

WSAT AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

TWY Lighting	blue edge lights
IBN	012400.00N 1034254.00E 012400.00N 1034254.00E, FLG R 'TN', operating hours HN and IMC.
Remarks	WDI lighted. Dispersal area floodlights

WSAT AD 2.17 ATS AIRSPACE

1	Designation and Lateral Limits	TENGAH ATZ 010842N 1034336E thence clockwise around the arc of radius 14 NM centred on 012242N 1034203E to 011351N 1033117E thence east along the Singapore - Kuala Lumpur FIR boundary to 012728N 1034302E 012620N 1034544E 012150N 1034524E 011845N 1034414E 010842N 1034336E.
2	Vertical Limits	SFC to 3000 FT ALT

3	<i>Airspace Classification</i>	D
4	<i>ATS Unit Callsign Language(s)</i>	TENGAH APPROACH English
5	<i>Transition altitude</i>	11000 FT (3,350m)
6	<i>Remarks</i>	Controlling Authority: Tengah Approach <u>During Aerodrome operating hours:</u> Contact Tengah APP on 130.0 MHz, 263.4 MHz or 122.0 MHz <u>Outside Aerodrome operating hours:</u> Contact SATCC (RSAF element) on 123.4MHz or 288.2MHz

WSAT AD 2.18 ATS COMMUNICATION FACILITIES

<i>Service designation</i>	<i>Call sign</i>	<i>Frequency P - Primary S - Secondary</i>	<i>Hours of operation</i>	<i>Remarks</i>
APP	TENGAH APPROACH	P130.0 MHz P263.4 MHz S122.0 MHz	BTN 2300-1100 SUN/ MON to THU/FRI; and On SUN, Public holidays and outside the above times, PPR from RSAF HQ via Tengah Ops.	Nil
TWR	TENGAH TOWER	P122.0 MHz P282.5 MHz S263.4 MHz		
	TENGAH GROUND	122.0 Mhz 337.8 MHz		
	TENGAH TALKDOWN	130.0 MHz 290.8 Mhz 328.5 MHz		
Flight Information Service	SINGAPORE RADAR	119.1 MHz	H24	Nil
APP	SINGAPORE APPROACH	P124.05 MHz S124.6 MHz S126.3 MHz	H24	TAR – flow control service provided for ARR/DEP ACFT. Intermediate approach to Singapore Changi AP and other airports in Singapore. DEP from all airports in Singapore.

WSAT AD 2.19 RADIO NAVIGATION AND LANDING AIDS

RADIO NAVIGATION AND LANDING AIDS					
<i>Type of Aid</i>	<i>IDENT</i>	<i>FREQ</i>	<i>OPR Hour</i>	<i>Coordinates</i>	<i>Remarks</i>
TACAN	TNG	CH86X	2300-1100 from SUN/ MON to THU/FRI; SUN, Public holidays and outside the above times prior permission required from RSAF HQ via Tengah Operations.	012336.00N 1034242.00E	043° MAG 0.55km from ARP Maint Period: 0001-0900 second SAT of EV month
SINJON DVOR/DME	SJ	113.5 MHz CH82X	H24	011321.34N 1035115.22E 011321.34N 1035115.22E	201° MAG 14.5km from THR RWY 02 (Paya Lebar) Antenna HGT: 190ft AMSL. Coverage 200NM Maint Period: 0200-0600 third THU of EV month

RADIO NAVIGATION AND LANDING AIDS					
ILS LLZ RWY 36	ITN	108.1 MHz	H24	012408.43N 1034234.34E	Located 260m from THR RWY 18 along centreline of RWY. Course width 3°
ILS GP RWY 36	-	334.7 MHz	H24	012240.84N 1034231.01E	GP antenna 3°
ILS DME RWY 36	ITN	CH18X	H24	012241.02N 1034226.67E	DME co-located with GP

WSAT AD 2.20 LOCAL AERODROME REGULATIONS

1 INTRODUCTION

1.1 RSAF Tengah Air Base is nominated as the emergency diversionary aerodrome for Singapore Changi Airport. The arrangement outlined below is applicable for the handling of any civil aircraft movement that is diverted to RSAF Tengah Air Base.

1.2 It is emphasised that RSAF Tengah Air Base **is not an ICAO designated alternate aerodrome for Singapore Changi Airport** and therefore should not be flight planned as such. Its use by civil aircraft is permitted for emergency purposes only when Singapore Changi Airport runway is obstructed.

2 MANNING OF TENGAH AIR BASE

2.1 Tengah Air Base is open from 2300-1100 SUN/MON to THU/FRI. It is closed on SAT, SUN and public holidays. Outside the above stipulated operating hours, Tengah Air Base can be opened on 2 hours' prior notice. This arrangement, if necessary, will be undertaken by the Duty Tower Controller or SATCC Watch Manager of Singapore Changi Airport who will inform RSAF Headquarters via Tengah Ops.

2.2 Airline operators are requested to inform the Airport Manager and the Duty Tower Controller or SATCC Watch Manager at Singapore Changi Airport as soon as it is known that their service will require the use of Tengah Air Base. Revised ETAs/ETDs are to be notified as soon as known.

3 OPERATIONAL SERVICES

3.1 The layout of Tengah Airbase with the aircraft parking apron which is available for the use of civil aircraft (except B747 aircraft types) in the event of an emergency diversion from Singapore Changi Airport, is indicated in page WSAT AD 2-11. It is to be noted that only a limited number of civil aircraft can be accommodated at any one time.

3.2 Air-ground-air communication maintained by RSAF Tengah Tower/APP for AD Control Services is VHF 122.0MHz.

4 PASSENGER CLEARANCE

4.1 Once the aircraft has shutdown, only the Captain of the aircraft will be allowed out of the aircraft. All other passengers will remain in the aircraft due to space constraints and to avoid possible immigration problems.

4.2 Arrangements will be made to transport all the passengers back to Singapore Changi Airport for immigration processing.

4.3 The Airport Manager or his representative will be present at the Passenger Terminal to provide assistance when aircraft are required to land at Tengah Air Base.

4.4 No refreshment facilities are available.

5 SECURITY

5.1 All Airline personnel who are required to proceed to Tengah Air Base must wear their Singapore Changi Airport Passes at a prominent position and they will be escorted to the respective areas. All personnel not in possession of the laminated pass except Customs and Government Officers in uniform will be denied entry into Tengah Air Base by the RSAF Security Guard. Entry into the Air Base by both the airline personnel and service equipment is via the main gate. The Airline Engineering Coordinator shall be responsible for the proper positioning of the ground servicing equipment and vehicles in the Apron Area where arriving aircraft are to be parked.

5.2 No equipment, vehicles, stores, cargo or mail shall be left overnight at Tengah Air Base.

5.3 The security of civil aircraft parked in the Apron is the responsibility of the aircraft owner and any security service obtained shall first be cleared with the Tengah Air Base Security Authorities.

6 AIRCRAFT STAND ALLOCATION

6.1 Aircraft parking positions will be issued by the RSAF Tower Controller. A "follow-me" vehicle will be waiting at the accesses to guide the aircraft to the allocated parking stands.

7 COMMUNICATIONS

7.1 No VHF RTF surface movement frequency is available at Tengah Tower. Communication with the Tower will be by telephone, the nearest of which is in the Fire Station Building in front of the aircraft parking apron.

8 FUEL

8.1 Fuel available JET A1 F3X.

9 AIRCRAFT SERVICES

9.1 Airlines will have to provide their own services. Limited aircraft services can be obtained from the Aircraft Maintenance Unit by prior arrangement only.

9.2 Where essential facilities and services are not available at Tengah Air Base, such as the disposal of toilet waste or refuse, the resources available at Singapore Changi Airport shall be used.

10 RESCUE AND FIRE FIGHTING FACILITIES

10.1 The rescue and fire fighting facilities available at Tengah Airbase is up to ICAO CAT 8.

11 FULL EMERGENCY/CRASH PROCEDURE

11.1 In the event of a Full Emergency being declared on a civil aircraft diverted to Tengah Air Base, Full Emergency/Crash Procedures applicable to Singapore Changi Airport will equally apply to Tengah Air Base.

11.2 Alerting of all outside organisations such as the Singapore Civil Defence Force, Police, MINDEF and ambulance services shall be carried out by the Singapore Changi Airport Tower Controller.

11.3 The assembly point for all units attending to the Full Emergency incident will be at the Fire Station. No casualty clearance station is available at Tengah Air Base and in the event of an aircraft crash occurring, casualties if any, will be transported directly from the scene of crash to the Singapore General Hospital.

12 ATC SERVICE OUTSIDE OPERATING HOURS

12.1 Normal radar service will be provided by Singapore Radar (Civil). All aircraft diverting to Tengah will be vectored by Approach Control to SJ or to an agreed transfer control point before they are handed over to Tengah Tower. No radar service will be provided by Tengah.

WSAT AD 2.24 CHARTS RELATED TO AN AERODROME

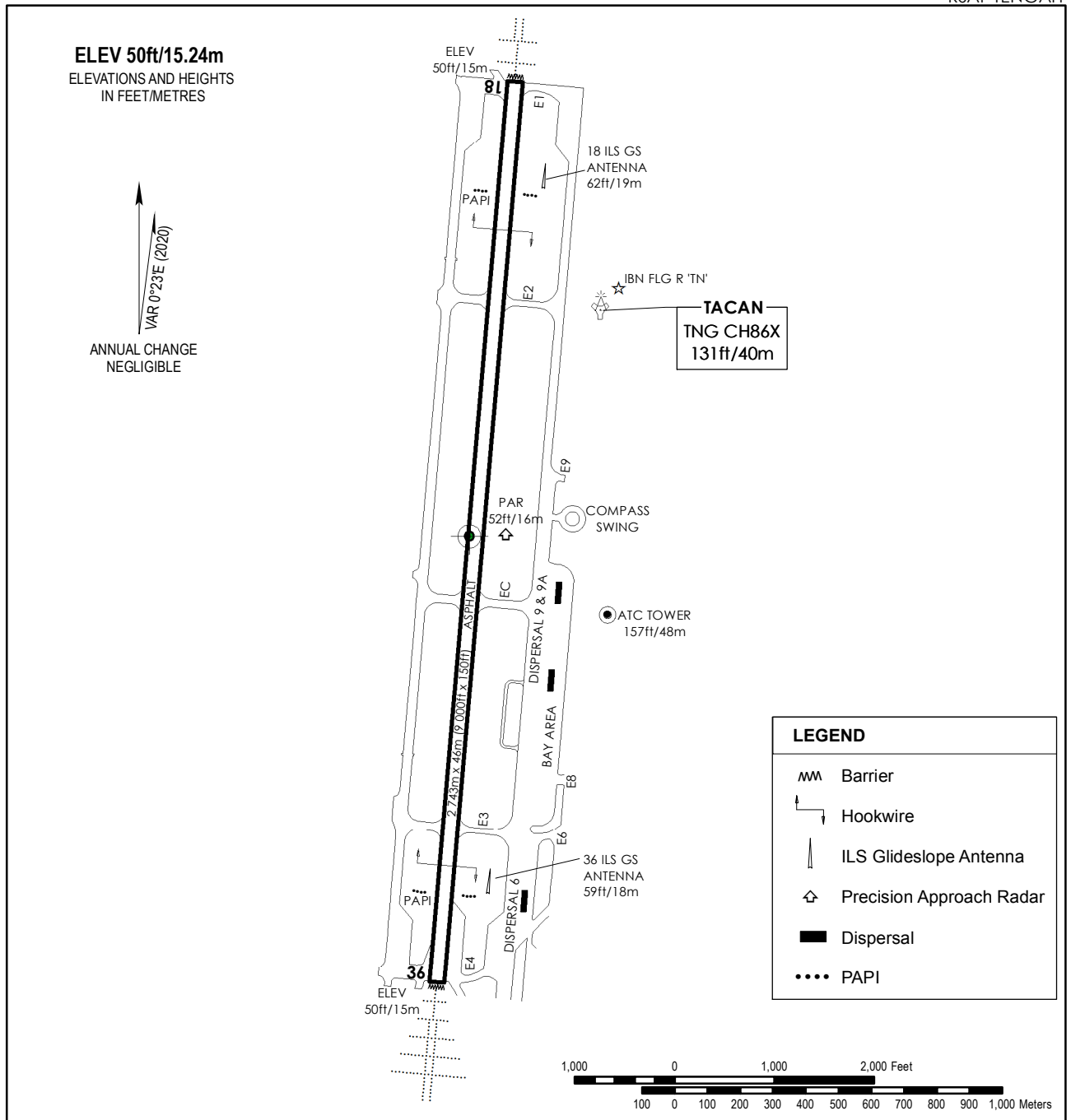
AERODROME CHART - TENGAH

AD-2-WSAT-ADC-1

AERODROME CHART - TENGAH

01°23'15.40"N 103°42'29.80"E

RSAF TENGAH



AERODROME LIGHTING	
APPROACH LIGHTING :	
Approach RWY 18	High intensity white centre line and 2 bars.
Approach RWY 36	High intensity white centre line and 5 bars.
RWY 18/36	Sequenced flashing lights.
RUNWAY LIGHTING :	
RWY 18/36	High intensity omni-directional white edge lights. Green THR lights. Red RWY end lights.
Ident Beacon	TN coding in RED.
Taxiway	Blue edge lights. Green centreline lights.
Dispersal	Blue edge lights. Floodlights
Illuminated distance to run marker boards.	

CAUTION
1) RWY lights 0.3m out from RWY edge.
2) All circuits east of aerodrome within 3NM up to 1 500ft (457m).
3) RWY 36 - Right hand circuit.
4) Two masts, height 6m, located on the eastern shoulders :
a) Runway 36 - 233m from threshold, 100m from runway centre line.
b) Runway 18 - 273m from threshold, 100m from runway centre line.
Obstacles lit at night. Helicopters operating in Helizone are to exercise extreme caution.

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