

**WSSL
XSP**

**SELETAR
SINGAPORE**

GENERAL

OPERATING HOURS

- Restricted Hours of Operations: per Singapore AIC 01/2019, non-training flights are NOT permitted during the following daily periods: 0930 to 1030 LT; 1200 to 1300 LT; 1500 to 1600 LT; and 1700 to 1800 LT (check latest NOTAMS and AIC for any updates).
- To alleviate the problem of noise, no flights are permitted at night between 1400-2300z (2200-0700L), other than MEDEVAC and emergency flights.
- UTC +8

<u>RWY ID</u>	Length (ft)	Width (ft)
• RW03	06024	151
• RW21	06024	151

HANDLING REQUIREMENTS

- Airport of Entry (CIQ available)
- No Slots required

CONTACT INFORMATION

	Airport Frequency:	Phone:
• TOWER	118.45 /130.2	+65 6481 2893
• AIRPORT ADMIN		+65 6481 0017
• AIRPORT OPS		+65 6481 3632
• AIRSIDE OPS		+65 6481 5077
• AIS		+65 6481 2909
• Ground Control	121.6	
• MET		+65 6481 5978
• Approach Control		+65 6422 7001

AIRPORT

ELEVATION: 46ft AMSL

- WSSL airport is a secondary airport for Singapore, located 15KM to the North East of the Singapore CBD area. The airport is used predominately by general aviation aircraft. Due to the proximity of the Sembawang ATZ (WSAG) and Paya Lebar (WSAP), and noise sensitive areas, the airport is surrounded by other Class D (military towered) airports, training areas, prohibited, and restricted airspace; there is also no available instrument approach on either Runway 03 or 21, requiring visual circuits to be flown onto both runways, during both day and night. The runway is also relatively short at 6024 feet long.
- Terrain is insignificant however MSA is 3500ft due to radio towers in the vicinity.

WEATHER

- Tropical Rainforest climate - almost no distinct seasons, average daily temperature around 27° C throughout the year. Extensive cloud cover and heavy rainfall prevent temperatures from rising much over 33° C. Rainfall is heavy and is usually convectonal and in the afternoon.

CAUTIONS

- Sembawang Airbase (WSAG) airspace is 1.5NM to the west with similar runway alignment; thus, as Rwy 21 departure clearance is usually a climbing right turn to 030° and 3,000', if at max speed of 150 knots, for example, that would yield a turn diameter of 1.3nm at 27° bank (which is standard if in HDG mode and following the FD); however, a max speed 170 knot 27° bank turn, for example, would yield 1.7 nm turn diameter causing you to infringe the Sembawang Airbase ATZ D airspace 1.5 nm to the west during your turn. A turn diameter calculator might be helpful at:
<http://www.csgnetwork.com/aircraftturninfocalc.html> (see Rwy 21 Departure section below for more info)
- Paya Lebar Airport 4NM to SE with similar runway alignment.
- Jepp 30-9 says Rwy 21 is not available when ships are in the channel with mast heights above 98' BUT that's an error: they mean Rwy 3 (as the ships are to the north, not south. Confirmed by Tower via phone call). Jeppesen have been asked to fix this error. Jepp said the 26 JUL 19 revision will read like the Singapore AIP which says: "At night ATC shall not permit landing on Rwy 21 when vessels of mast height 30m are reported" (i.e., takeoff from Rwy 21 is ok).
- Runway 21 right-hand circuits.
- APG says (at the time of this port page briefing): "For runway 21, unfortunately you are limited by close in obstacles that we are unable to avoid with a turn. The procedure for runway 21 would be to fly a straight out departure in the event of an engine failure."
- For Rwy 3, the published APG DP (at the time of this port page briefing) says "Maintain runway heading until crossing PU VOR R-269 (within 0.1 nm of departure end of runway). Turn right heading 113 degrees. Do not exceed 140 KIAS until established on heading 113 degrees. Note: Non-RNAV procedure. All fixes are fly-over fixes unless otherwise noted. All turns are climbing 15 degrees of bank unless otherwise noted."
- Birds in the vicinity so pulse lights recommended for takeoff and landing (except night ops below 400')
- If landing on Runway 03, expect a turn off at the end at either W1 or E1 (depending on which handler you use). If W1 then will usually be W1 to WC1 to WA...do not confuse left on WP with WA as W1 changes into WC1.
- Multiple Hot Spots on airport taxi chart.
- To prevent an intercept by the Indonesian Air Force within the Singapore FIR, be sure to check that your route does NOT use LUSMO (as in LUSMO - L625, N884, M767, M758, or B348) which would fall within the 12-mile range for Indonesian airspace territory. If LUSMO is in your route, you first require an Indonesian overflight permit! Note: there is no NOTAM that states when inside the WSJC FIR an Indonesia overflight permit is required for certain airways when overflight Natuna/Matak Islands. There is a NOTAM that was issued by Indonesian authority in Oct 2018 that states the flight clearance / overflight permit number be included on FPL item 18 RMK.
- If Wet numbers you might not have sufficient runway depending on your weight so plan ahead!
- • Ensure your TODA and TORA are accurate by cross-checking 30-9 Jepp (6,024') with APG and OEM perf app numbers. Previously Honeywell FMS has been reported to show a glitch where it did not show 6,024' avail whereas APG and Jepp 30-9 did and adjusting the FMS threshold and clearway fixed the glitch. This could be due partly to before the runway was lengthened to 6,024' available. Note: Gulfstream 650 perf app shows: TORA 6024', TODA 60221', ASDA 6024', Clearway 197', Stopway 0', and Threshold 197' for Runway 3/21.

NOTES

- The ILS 21 has been decommissioned due to geopolitical pressure.
- Can request the Joining Procedure for Rwy 03 at night. There are no night restrictions other than the curfew restrictions.
- MVA to the south and north is 1,500'. Expect to be descended to 1,500' after PONJO if coming in from the south.
- Expect to descend below 1500' once with Tower and on PAPI in VMC etc.
- At 1500' for Rwy 03 with a 3.0° glidepath means you should expect to descend on the PAPI at 4.7 miles out (formula: $1500\text{ft}/\tan(3.0^\circ) = 4.71 \text{ n.m.}$)
- At 1500' for Rwy 21 with a 3.5° glidepath means you should expect to descend on the PAPI at 4.0 miles out (formula: $1500\text{ft}/\tan(3.5^\circ) = 4.04 \text{ n.m.}$)
- If landing Rwy 03 you might be able to request the Joining Procedure via SJ to the south for a more comfortable straight-in procedure to Rwy 03. Not guaranteed but ask and you might get it.

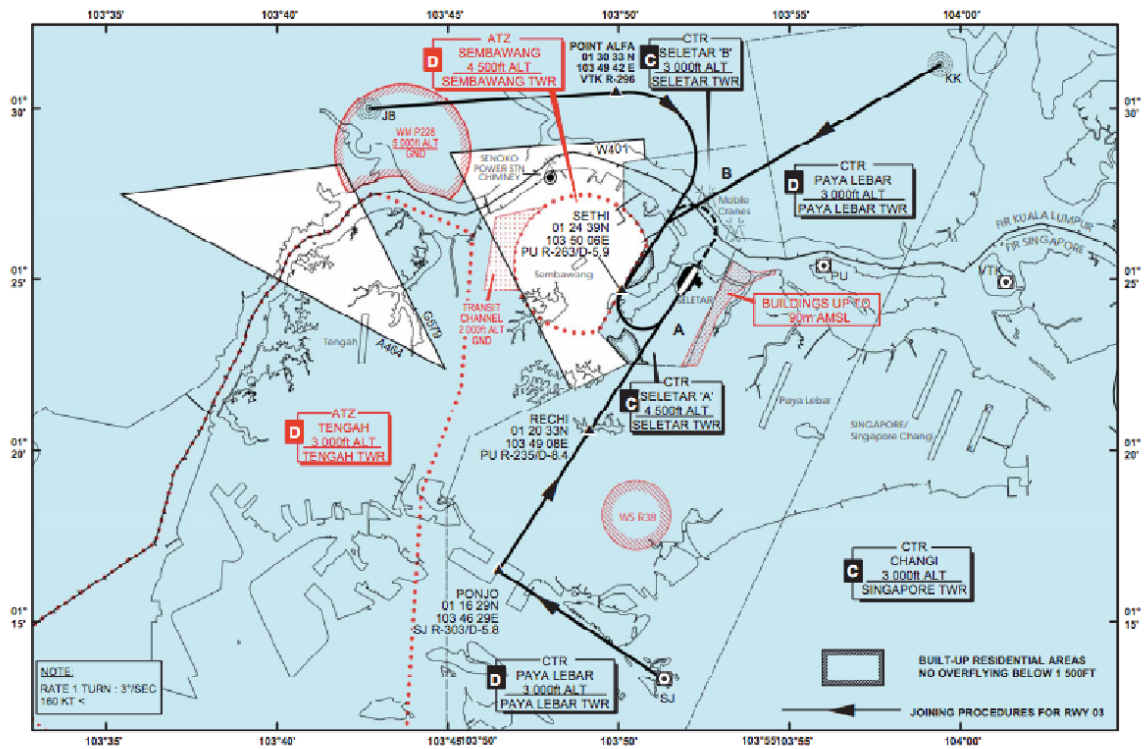
ARRIVAL

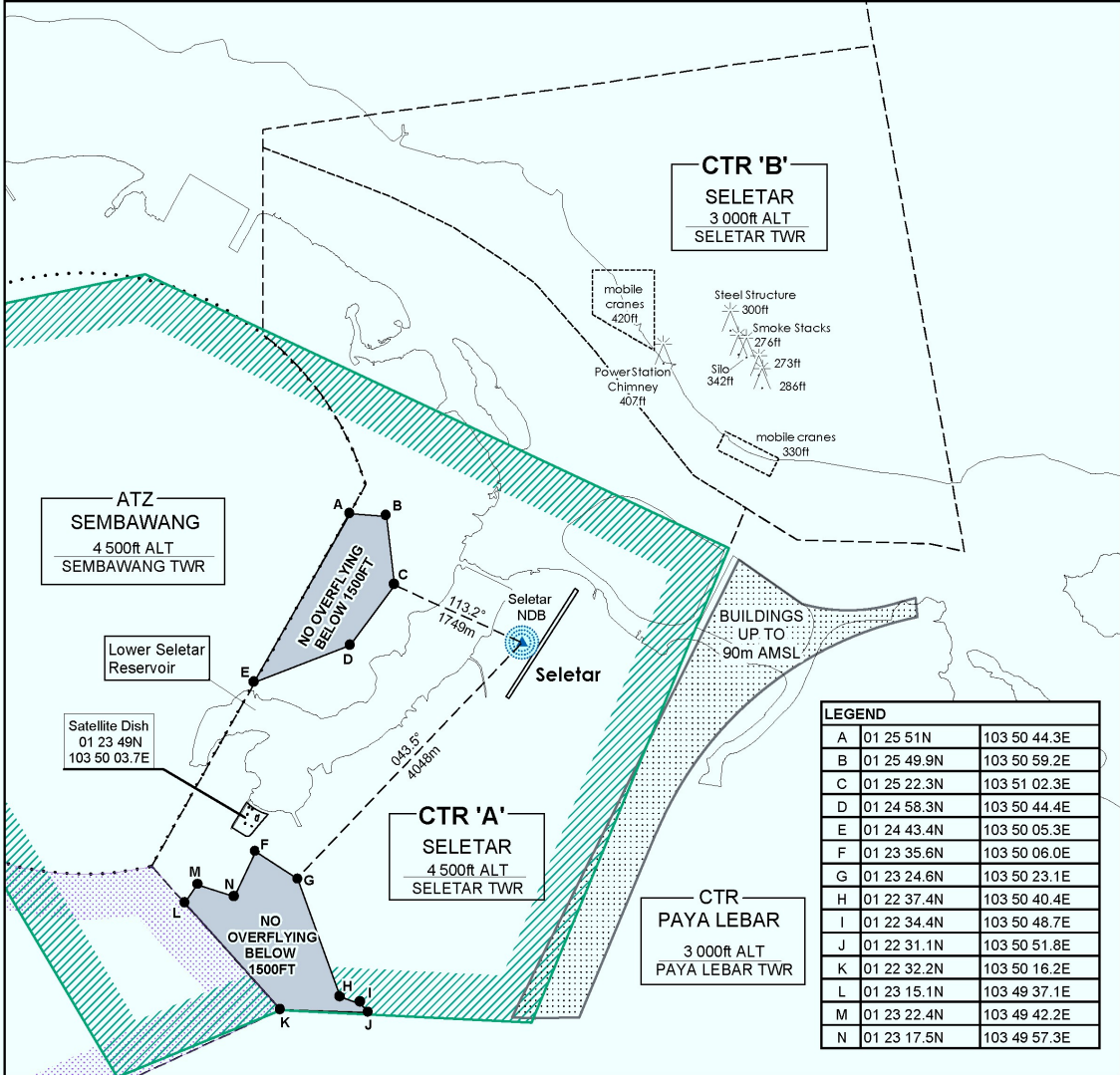
Singapore AIP

A new Singapore AIP SUP 062/19 concerning the implementation of joining procedures for IFR flights from SINJON (SJ) has been added by Singapore. Jeppesen charts will be updated during the 12 JUL 19 airway manual revision and carry an effective date of 18 JUL 2019. See <https://ops.group/dashboard/wp-content/uploads/2019/06/WSSL-AIP-SUP-2019-62.pdf> for more info.

CHART 1

SELETAR AERODROME JOINING PROCEDURE (IFR FLIGHTS) FROM JB, KK AND SJ - RUNWAY 03





ARRIVAL

Singapore AIP Overlay Google Earth



ARRIVAL

Rockwell Collins published arrival RWY03



RWY 03 Left Downwind:

- N01 25.22 E103 51.02
- N01 24.58 E103 50.44
- N01 24.21 E103 50.09

RWY 03 Left Base:

- N01 23.47 E103 50.10 **CAUTION:** This could encroach on the restricted airspace.
- N01 23.38 E103 50.44

RWY 03 Final:

- N01 23.52 E103 51.17

NOTES:

	APPROX DIST	HDG
	(nm)	
POINT D - LATE DOWNWIND	1.0	225
LATE DOWNWIND - BASE 1	0.7	180
BASE1 - BASE 2	0.3	100
BASE 2 - FINAL	0.7	080
FINAL - TOUCHDOWN	<u>1.4</u>	030
	<u>4.1</u>	

ARRIVAL

Arrival RWY03



RWY 03 Left Downwind: (ENTRY)

- N01 27.54 E103 51.91

RWY 03 Left Base: (BASE)

- N01 24.19 E103 49.73

RWY 03 Final: (FINAL)

- N01 23.37 E103 50.98

NOTES:

	APPROX DIST	HDG
	(nm)	
POINT E - BASE	0.6	210
BASE - FINAL	1.5	120
FINAL - TOUCHDOWN	<u>1.6</u>	030
	<u>3.7</u>	

MISSED APPROACH

RWY 03 and 21

Can expect climb back to circuit height of 1500', requirement to remain within Seletar control zone and expect to position for another downwind for the respective runway.

DEPARTURE

RWY 03 Departure

Departures require a climb to 3000' (was 6000' for a while so be prepared for that also possibly) and remaining within the Seletar Airspace before departing on track due to Malaysian airspace to the north and Changi Airport (WSSS) to the south.

AIP Singapore

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3 JAN 2019

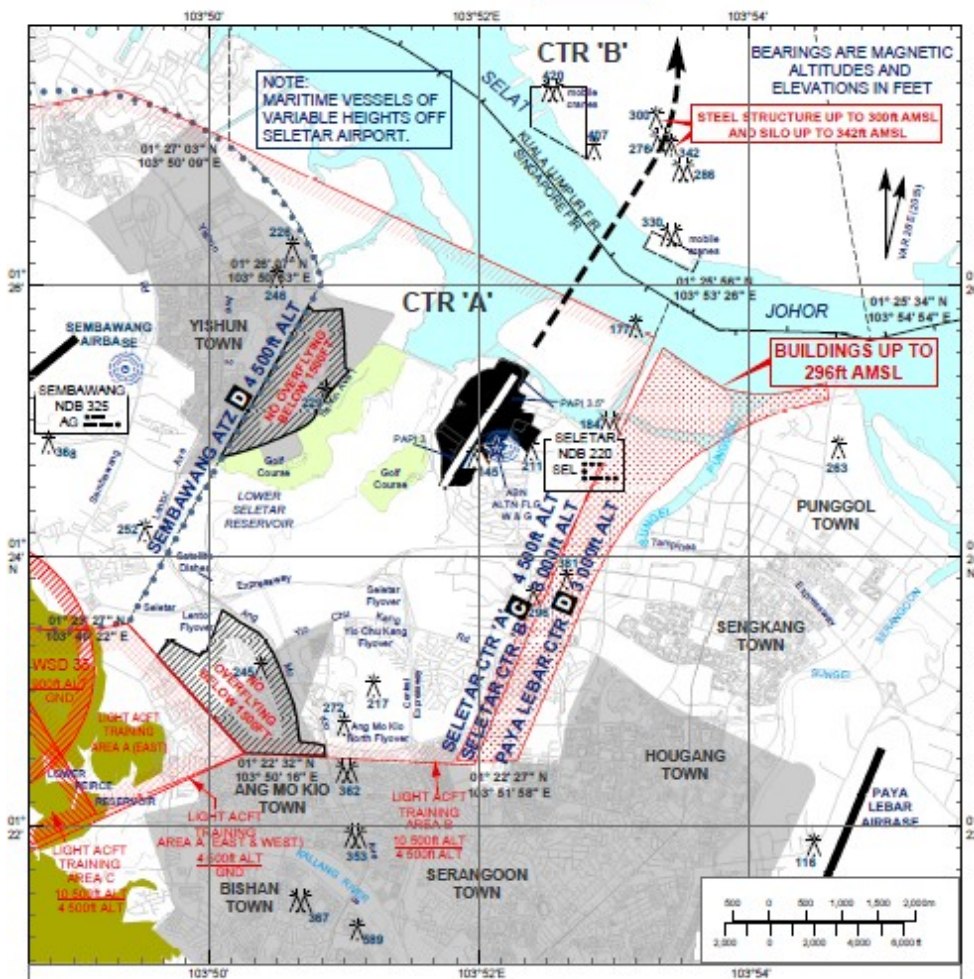
VISUAL DEPARTURE CHART

AD ELEV 46 ft

APP	120.3
TWR	118.45
	270.4

SINGAPORE/SELETAR

RWY 03



ADVISORY DEPARTURE PROCEDURE FOR RUNWAY 03

On departure, pilots of both fixed-wing and rotary-wing aircraft should climb ahead to an altitude cleared by ATC. Pilots can expect a radar heading to leave Seletar CTR. Where a radar heading is not given, pilots shall navigate to the next waypoint in accordance with their clearance.

CAUTION

- a) Pilots are required to keep clear of Sembawang ATZ and Paya Lebar CTR. Turns should therefore be kept within Seletar CTR.
- b) Pilots should not fly to the east of the runway. This is to keep clear of tall buildings up to 296ft AMSL there. Pilots should have all relevant obstructions in sight, including the steel structure 300ft AMSL and the Silo 342ft AMSL 2nm north of the airfield.
- c) Built-up residential areas - No overflying below 1 500ft. Aircraft types which are unable to safely manoeuvre clear of the restricted areas are not allowed to operate at Seletar Airport.

DEPARTURE

RWY 21 Departure

Departures require a climb to 3000' (use to be 6000' for a while so be ready for that also) and remaining within the Seletar Airspace before departing on track due to Malaysian airspace to the north and Paya Lebar (WSAP) to the south. Expect clearance of climbing right turn to 3000' Direct to KK then VMR etc. Will not get altitude clearance until on the runway before departure. G650 aircraft not permitted to taxi out from Delta ramp parking (D50-56) area under own power as must get tow out to EP or push back to EN (but can taxi into parking stand) on East side of airport. G650 pilots reminded of the caution of "Limit bank angle to 15 degrees while the flaps are retracting until reaching a speed greater than the takeoff $V_2 + 20$ knots" limitation. This takeoff requires 30 to 45 degrees of right bank turn to not infringe upon Sembawang (WSAG) airspace which approximately 1.5 NM to the West. For situational awareness recommend putting a 2 NM circle around WSSL (as 1.5 NM not available) via FMS waypoints page to help stay outside of WSAG airspace. Also, as some aircraft (such as G650) do not have airports in the database with runways less than 6,070', you might find that WSSL is not in your onboard electronic charts database. Avionics engineers can individually add it to your database if sufficient time before departure from HK. Otherwise you will not have electronic charts on MFD, only on your iPad. Another recommendation is to bring up the ILS for Paya Lebar (WSAP) to the East as your aircraft will show up on that chart which also depicts Seltar (WSSL) for additional situational awareness if desired.

Code7700 website has an excellent Turn Performance article and a specific G650 FMS example about turn radius showing a tip on how to input it into the FMS before departure to confirm it remains within the required turn diameter on a sample published SID (see link). Seletar does not yet have a published SID, however but some of the article's tips might be useful and the article concludes by saying: "With or without this technology, being able to estimate your turn radius tells you that this departure cannot be flown on a normal speed schedule. With the G650 you can further reduce your speed and see graphically at what speed you will be okay. Without this technology, I would elect to fly the procedure at takeoff flap setting and V_2+10 , just to be sure." http://code7700.com/aero_turn_performance.htm

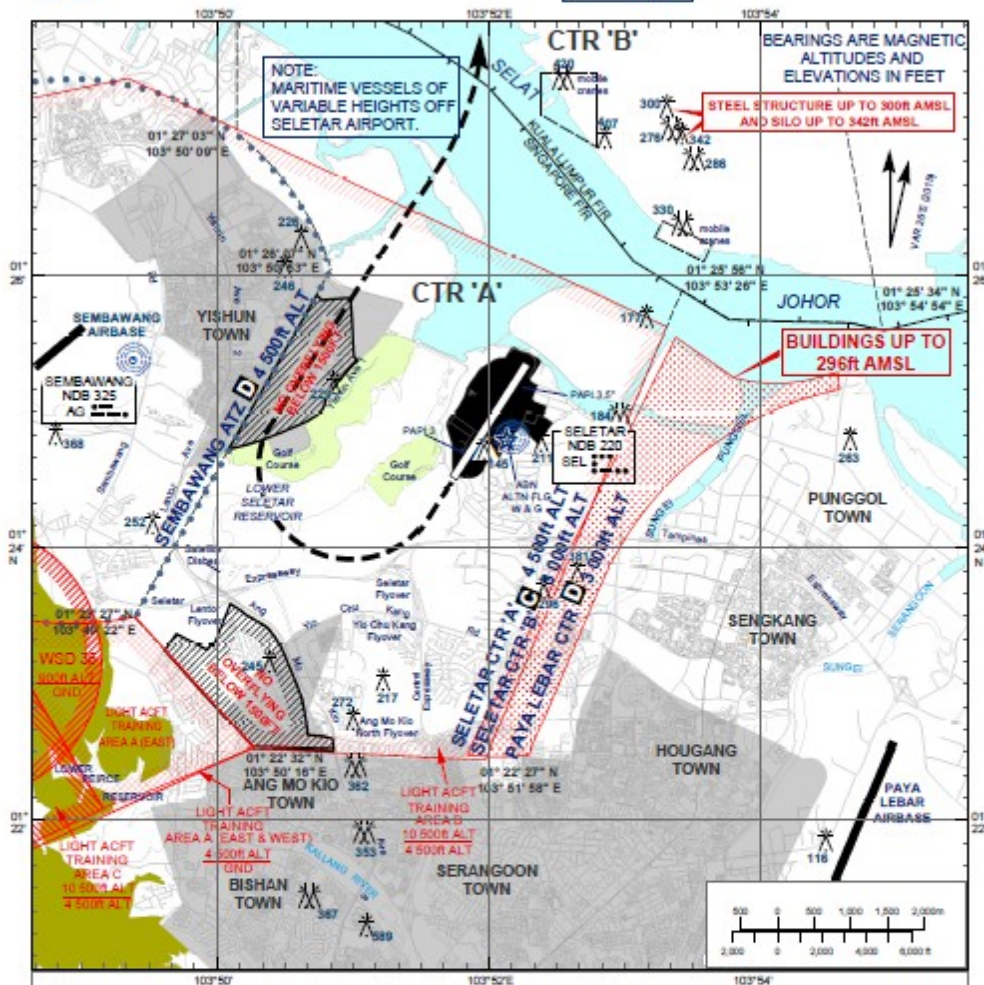


VISUAL DEPARTURE CHART

AD ELEV 46 ft

APP	120.3
TWR	118.45
	270.4

SINGAPORE/SELETAR RWY 21



ADVISORY DEPARTURE PROCEDURES FOR RUNWAY 21
 On departure, pilots can expect climb to an initial altitude cleared by ATC. Pilots of fixed-wing aircraft can expect to turn right to join the circuit pattern till end of downwind and then expect a radar heading to leave Seletar CTR. Where a radar heading is not given, pilots shall navigate to the next waypoint in accordance with their ATC clearance.
 Pilots of rotary-wing aircraft can expect to turn left after departure to join the helicopter circuit pattern till end of downwind. Thereafter, they can expect further en-route clearance.

CAUTION

a) Pilots are required to keep clear of Sembawang ATZ and Paya Lebar CTR. Turns should therefore be kept within Seletar CTR.

b) Pilots should not fly to the east of the runway. This is to keep clear of tail buildings up to 296ft AMSL there. Pilots should have all relevant obstructions in sight, including the steel structure 300ft AMSL and the Silo 342ft AMSL 2nm north of the airfield.

c) Built-up residential areas - No overflying below 1 500ft. Aircraft types which are unable to safely manoeuvre clear of the restricted areas are not allowed to operate at Seletar Airport.