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Revision Letter For Cycle 11-2024

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General Information

Location: SINGAPORE SGP
ICAO/IATA: WSSS / SIN
Lat/Long: N01° 21.55', E103° 59.36'
Elevation: 22 ft

Airport Use: Public
Daylight Savings: Not Observed
UTC Conversion: -8:00 = UTC
Magnetic Variation: 0.0° E

Fuel Types: Jet A-1
Repair Types: Major Airframe, Major Engine
Customs: Yes
Airport Type: IFR
Landing Fee: Yes
Control Tower: Yes
Jet Start Unit: No
LLWS Alert: Yes
Beacon: Yes

Sunrise: 2256 Z
Sunset: 1108 Z

Runway Information

Runway: 02C
Length x Width: 13123 ft x 197 ft
Surface Type: asphalt
TDZ-Elev: 16 ft
Lighting: Edge, ALS, Centerline, REIL, TDZ
Stopway: 197 ft

Runway: 02L
Length x Width: 13123 ft x 197 ft
Surface Type: bitu
TDZ-Elev: 22 ft
Lighting: Edge, ALS, Centerline, REIL, TDZ
Stopway: 197 ft

Runway: 02R
Length x Width: 13123 ft x 197 ft
Surface Type: bitu
TDZ-Elev: 16 ft
Lighting: Edge, ALS, Centerline, REIL, TDZ
Stopway: 197 ft

Runway: 20C
Length x Width: 13123 ft x 197 ft
Surface Type: asphalt
TDZ-Elev: 16 ft

Lighting: Edge, ALS, Centerline, REIL, TDZ
Stopway: 197 ft

Runway: 20L
Length x Width: 13123 ft x 197 ft
Surface Type: bitu
TDZ-Elev: 16 ft
Lighting: Edge, ALS, Centerline, REIL, TDZ
Stopway: 197 ft

Runway: 20R
Length x Width: 13123 ft x 197 ft
Surface Type: bitu
TDZ-Elev: 14 ft
Lighting: Edge, ALS, Centerline, REIL
Displaced Threshold: 2428 ft
Stopway: 197 ft

Communication Information

ATIS: 128.600 Departure Service
ATIS: 128.025 Arrival Service
Singapore Tower: 131.400
Singapore Tower: 118.600
Singapore Tower: 118.250
Singapore Ground: 120.950
Singapore Ground: 121.000
Singapore Ground: 121.725
Singapore Ground: 121.850
Singapore Ground: 122.550
Singapore Ground: 124.300
Singapore Ground: 125.650
Singapore Ground: 127.275
Changi Ramp/Taxi: 121.900
Changi Ramp/Taxi: 119.675
Singapore Clearance Delivery: 121.650
Singapore Clearance Delivery: 119.600
Singapore Approach: 126.300 Secondary
Singapore Approach: 124.600 Secondary
Singapore Approach: 124.050
Singapore Arrival: 119.550 Secondary
Singapore Arrival: 119.400 Secondary
Singapore Arrival: 119.300
Singapore Departure: 120.300
Singapore Departure: 132.150 Secondary
Singapore Radar: 133.250 Remote Communications Air-Ground
Singapore Radar: 133.800 Remote Communications Air-Ground
Singapore Radar: 134.200 Remote Communications Air-Ground
Singapore Radar: 134.400 Remote Communications Air-Ground

FLIGHT AND GROUND PROCEDURES

1. LOW VISIBILITY PROCEDURES (LVP) FOR CATEGORY II ILS OPERATIONS**1.1 INTRODUCTION**

- 1.1.1 Category II ILS approaches will be made available at Singapore Changi Airport to authorized flights during prolonged periods of low visibility, except during thunderstorms. RVR minima for Cat II ILS operations is limited to 1148' (350m) due to Rwy and Twy light spacing requirements on the airfield.

1.2 AUTHORIZATION FOR CATEGORY II ILS APPROACHES

- 1.2.1 Operators who wish to conduct Category II ILS operations at Singapore Changi Airport must have obtained operational approval from the relevant State of Operator and be authorized by the Civil Aviation Authority of Singapore.

1.3 CATEGORY II ILS RUNWAYS

- 1.3.1 At Singapore Changi Airport, Category II ILS approaches are available only on RWY 02L and RWY 20C, which are also equipped with precision approach Category II lighting system. When required, pilots making Category II ILS approaches to Singapore Changi Airport should refer to the procedures in the Instrument Approach Charts and the Precision Approach Terrain Charts for RWY 02L and RWY 20C.

1.4 INITIATION OF CATEGORY II ILS OPERATIONS

- 1.4.1 Preparations will be made to implement LVP for Category II ILS operations at Singapore Changi Airport during prolonged period of low visibility, except during thunderstorms, when the RVR drops below 2625' (800m).
- 1.4.2 Availability of the Category II ILS approaches will be made known through NOTAM and ATIS broadcasts as well as air traffic control radio communications.
- 1.4.3 During LVP operations, aircraft will not be cleared for Category II ILS approach if any of the ILS or approach/runway lights fall below Category II requirements. Aircraft will not be cleared for landing if the Touchdown Zone RVR is unserviceable.

1.5 ILS SENSITIVE AREAS

- 1.5.1 Upon landing, pilots shall report to Changi Tower once the aircraft has cleared the runway and has passed the ILS sensitive areas demarcated by alternate yellow and green lights along the centerlines of Rapid Exit Taxiways and Cross Taxiways.

1.6 TERMINATION OF LVP FOR CATEGORY II ILS OPERATIONS

- 1.6.1 LVP for Category II ILS operations will be terminated when RVR has improved above 2625' (800m). Termination of LVP for Category II ILS operations will be made known through NOTAM and ATIS broadcasts as well as air traffic control radio communications.

1.7 OPERATIONS OF FLIGHTS NOT AUTHORIZED FOR CATEGORY II ILS OPERATIONS


- 1.7.1 During Category II ILS operations, if the RVR is 1804' (550m) or above, flights not authorized for Category II ILS operations may continue to make approaches and land. Airlines planning to operate flights not authorized for Category II ILS operations into Changi shall monitor the METAR to ascertain the RVR values when launching their flights and be prepared to divert if the RVR is below 1804' (550m).

2. RUNWAY UTILIZATION**2.1 RUNWAY-IN-USE**

- 2.1.1 The runway-in-use (Departure/Arrival) is selected by Aerodrome Control as the optimum for general purposes and to maximize runway utilization. If the assigned runway is unsuitable for a particular operation, the pilot can obtain permission from ATC to use another runway but should anticipate delay.

2.2 DEPARTURES

- 2.2.1 Pilots should arrange their taxi such that they are ready to depart without delay on reaching the runway holding point. As standard ICAO wake turbulence separation is being applied, pilots are to advise ATC early if more time is needed for the aircraft to be ready for departure. When informed, ATC will be able to make changes in the departure sequence, if necessary, to minimize delays to other succeeding departures.

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2.2.2 Pilots should complete cockpit checks prior to line-up for departure and keep any checks on the runway to a minimum.

2.2.3 Conditional line-up clearance may be used by ATC to facilitate an expeditious flow of traffic. On receipt of line-up clearance, pilots should taxi into position promptly without delay. Unless given instruction to line-up and wait, pilots should be ready and prepared to depart without stopping. On receipt of take-off clearance, pilots to commence take-off roll without delay.

2.3 CLEARANCE FOR IMMEDIATE TAKE-OFF

2.3.1 A pilot receiving the ATC instruction 'cleared for immediate take-off' is required to act as follows:

- if waiting clear of the runway, taxi immediately on to it and begin take-off run immediately without stopping the aircraft;
- if already lined-up on the runway, take-off without delay;
- if unable to comply with the instruction, inform ATC immediately.

2.4 ARRIVALS - MINIMUM RUNWAY OCCUPANCY TIME

2.4.1 Arriving aircraft upon landing are reminded that it is imperative to vacate the runway as quickly as practicable to enable ATC to apply minimum spacing on final approach and minimize the occurrence of "go-arounds".

2.4.2 To ensure minimum Runway Occupancy Time (ROT) and reduce missed approaches due to occupied runway, pilots should vacate the runway via the first available exit taxiway corresponding to operational requirements, or as instructed by ATC. If an exit taxiway other than the first available exit taxiway is required, pilots shall advise the Tower Controller on first contact.

2.4.3 To enhance planning, pilots can make reference to the Landing Exit Distance (LED), information below which is measured from threshold to tangent point where the exit taxiway centerline starts to curve away from the runway centerline:

RWY	TWY Exits	LED
20R	①② W6, ①② W7, W8	5423' 1655m, 6965' 2123m, 10,043' 3061m
20C	①② T7, ①② T8, ①② D8 ①② D9, ② D10	6312' 1924m, 7792' 2375m, 5741' 1750m 7300' 2225m, 8858' 2700m
20L	①② A7, ①② A8, ② A9	5741' 1750m, 7300' 2225m, 8858' 2700m
02R	①② A6, ①② A5, ② A4	6234' 1900m, 7792' 2375m, 9350' 2850m
02L	①② W5, ①② W4, ② W3	6450' 1966m, 8173' 2491m, 9436' 2876m
02C	①② T6, ①② T5, ② T4 ①② D7, ①② D6, ② D5	6693' 2040m, 8350' 2545m, 10,646' 3245m 6234' 1900m, 7792' 2375m, 9350' 2850m

① Recommended exit taxiways. ② Rapid Exit Taxiway (RET) and maximum design ground speed for the exit taxiway is 50 KT.

2.4.4 Pilots can expect initial taxi instructions from the Runway Controller before clearing the exit taxiway. Aircraft vacating the runway-in-use should not stop on the exit taxiway until the entire aircraft has passed the runway holding point.

2.4.5 Between 0830 - 1030 UTC daily estimated delays of 15 minutes can be expected for arrivals into Changi Airport.

2.5 REDUCED RUNWAY SEPARATION MINIMA

2.5.1 Reduced Runway Separation Minima may be applied between a departing aircraft and a succeeding landing aircraft or between two successive landing aircraft on the same runway provided the following conditions exist:

- during the hours of daylight from 30 minutes after local sunrise to 30 minutes before local sunset;
- visibility of at least 5km;
- cloud ceiling shall not be lower than 1,000ft;
- tailwind component shall not exceed 5 knots;
- the second aircraft will be able to see the first aircraft clearly and continuously until the first aircraft is clear of the runway;
- traffic information shall be provided to the flight crew of the succeeding aircraft concerned;
- the braking action shall not be adversely affected by runway contaminants such as water;

- (h) wake turbulence separation minima shall be applied; and
- (i) responsibility for ensuring adequate separation between the two aircraft rests with the pilot of the second aircraft.

2.5.2 When reduced Runway Separation Minima is applied, the successive landing aircraft may be given a clearance to land before the first aircraft has cleared the runway-in-use after landing or crossed the runway end on departure provided there is reasonable assurance that the following separation distances will exist when the landing aircraft crosses the runway threshold:

	Landing following Landing	Landing following Departure
RWY 02L/20R	The preceding aircraft has landed and has passed a point at least 8202' (2500m) from the threshold of runway (abeam TWY W4 for RWY 02L or TWY V8 for RWY 20R), is in motion and will vacate the runway without backtracking.	The departing aircraft is/will be airborne and has passed a point at least 8202' (2500m) from the threshold of the runway (abeam TWY W4 for RWY 02L or TWY V8 for RWY 20R).
RWY 02C/20C	The preceding aircraft has landed and has passed a point at least 8202' (2500m) from the threshold of the runway (abeam TWY T5 for RWY 02C or TWY T8 for RWY 20C), is in motion and will vacate the runway without backtracking.	The departing aircraft is/will be airborne and has passed a point at least 8202' (2500m) from the threshold of the runway (abeam TWY T5 for RWY 02C or TWY T8 for RWY 20C).
RWY 02R/20L	The preceding aircraft has landed and has passed a point at least 8202' (2500m) from the threshold of the runway (abeam TWY A5 for RWY 02R or TWY A8 for RWY 20L), is in motion and will vacate the runway without backtracking.	The departing aircraft is/will be airborne and has passed a point at least 8202' (2500m) from the threshold of the runway (abeam TWY A5 for RWY 02R or TWY A8 for RWY 20L).

2.6 PHRASEOLOGY

2.6.1 When issuing a landing clearance following the application of these procedures, ATC will issue the second aircraft with the following instructions:

"... (call sign)... after the landing/departing... (Aircraft Type) Runway... (Designator) cleared to land".

3. TOTAL RADIO FAILURE - SPECIAL PROCEDURES - SINGAPORE CHANGI AIRPORT - ARRIVALS

3.1 In VMC during daylight hours, if total radio communication failure occurs to an aircraft bound for Singapore Changi Airport, the pilot shall maintain VMC to land at the most suitable airfield and report to the appropriate air traffic control unit by the most expeditious means.

3.2 For IFR flights to Singapore Changi Airport, aircraft experiencing radio failure shall:

3.2.1 Proceed according to the last acknowledged clearance received from Singapore ATC, or

3.2.2 If no specific instructions or clearance has been received from Singapore ATC:

- a) Maintain the last assigned altitude or flight level and proceed via planned ATS Routes thereafter the appropriate STAR for Rwy 02L/02C/02R to SAMKO Holding Area (SHA). If SHA is not part of the STAR, flight shall proceed to SHA after the last waypoint on the STAR.
- b) Commence descent from SHA at or as close as possible to the ETA as indicated on the flight plan.
- c) Carry out the appropriate instrument approach procedure from SHA to land on Rwy 02L/02C/02R.

3.2.3 If radio failure occurs while flight is on assigned heading from an ATC issued instruction which takes the aircraft off the STAR, the pilot shall rejoin the last assigned STAR by resuming own navigation to the next ensuing waypoint on STAR.

3.2.4 If unable to effect a landing on:**a) Rwy 02L**

Carry out missed approach procedure to AKOMA (PU R-356/20DME) (N01 45.4 E103 54.7). Leave AKOMA at 4,000' to NYLON Holding Area (NHA) and execute the appropriate instrument procedure from NHA to land on Rwy 20L, Rwy 20C or Rwy 20R, as appropriate.

b) Rwy 02C

Carry out missed approach procedure to NYLON Holding Area (NHA) and execute the appropriate instrument procedure from NHA to land on Rwy 20L, 20C or Rwy 20R, as appropriate.

c) Rwy 02R

Carry out missed approach procedure to HOSBA (VTK R-103/24DME) (N01 19.8 E104 24.3) Holding Area (HHA). Leave HHA at 7,000' to NHA via ATS route W401 and VTK DVOR. Execute the appropriate instrument procedure from NHA to land on Rwy 20L, Rwy 20C or Rwy 20R.

d) Rwy 20R

Carry out missed approach procedure to SAMKO Holding Area (SHA) and execute the appropriate instrument procedure from SHA to land on Rwy 02L, Rwy 02C or Rwy 02R, as appropriate.

e) Rwy 20C

Carry out missed approach procedure to EXOMO (VTK R-158/22DME). (N01 04.4 E104 09.6). Leave EXOMO at 4,000' to SAMKO Holding Area (SHA) and execute the appropriate instrument procedure from SHA to land on Rwy 02L, Rwy 02C or Rwy 02R, as appropriate.

f) Rwy 20L

Carry out missed approach procedure to HOSBA (SJ R-079/34DME) (N01 19.8 E104 24.3) Holding Area (HHA). Leave HHA at 7,000' to SHA via ATS route G580 and SJ DVOR. Execute the appropriate instrument procedure from SHA to land on Rwy 02L, Rwy 02C or Rwy 02R.

4. IDENTIFICATION OF RUNWAY-IN-USE

4.1 ATC will switch on the appropriate approach lights and the ILS serving the runway-in-use to assist the pilot in its identification. If the approach lights for the runway-in-use are sighted but the ILS frequency is not received, the pilot shall assume that the ILS is inoperative and shall proceed to land on the runway on which the approach lights have been sighted.

4.2 If unable to land within 30 minutes of EAT or ETA, if no EAT has been received and acknowledged, proceed to cross SAMKO Holding Area (SHA) at 4,000' then via A457 at FL200 if Kuala Lumpur is the nominated alternate or via B470 at FL 290 if Soekarno-Hatta is the nominated alternate or otherwise proceed at the planned flight level to other nominated alternate.

5. TOTAL RADIO FAILURE - SPECIAL PROCEDURES - SINGAPORE CHANGI AIRPORT - DEPARTURES

5.1 When an aircraft which has been cleared by ATC to an intermediate level experiences total radio communication failure immediately after departure from Singapore Changi Airport and it is deemed unsafe for it to continue to its destination, the pilot will set the aircraft transponder to Mode A/C Code 7600 and adhere to the procedures below.

5.2 When radio communication failure occurs immediately after the aircraft has departed on Rwy 02L/02C/02R, the pilot shall proceed according to the following procedures:

- a) Proceed straight ahead to NYLON Holding Area (NHA) climbing to the last assigned altitude. At NHA, climb/descend to maintain 7,000'.
- b) Hold at NHA for 4 minutes and leave NHA on track 203°. At 10 DME north of VTK, turn left for HOSBA Holding Area (HHA) to jettison fuel, maintaining 7,000'.
- c) After fuel jettison, proceed to SAMKO Holding Area (SHA) via AWY G580 and SINJON DVOR. Maintain 7,000'. At SHA descend for an instrument approach on Rwy 02L/02C/02R. Identify the runway-in-use in accordance with paragraph 4.

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- 5.3 When radio communication failure occurs immediately after the aircraft has departed on Rwy 20R/20C/20L, the pilot shall proceed according to the following procedures:
- Proceed straight ahead to SAMKO Holding Area (SHA) climbing to the last assigned altitude. At SHA climb/descend to maintain 7,000'.
 - Hold at SHA for 4 minutes. Leave SHA for HOSBA Holding Area (HHA) via SJ DVOR and Airway G580 to jettison fuel, maintaining 7,000'.
 - After fuel jettison, proceed to NHA via Airway W401. Maintain 7,000'. On crossing VTK 042R turn right to intercept VTK 023R. At NHA descend to carry out an instrument approach on Rwy 20R/20C/20L.
- 5.4 ATC action is based on the assumption that the aircraft will take a minimum of 10 min to jettison fuel. An aircraft therefore should not leave earlier than 10 min after arrival at HOSBA Holding Area even if fuel jettison is completed at a shorter time or if jettisoning is not necessary or possible unless circumstances require an immediate return.
- 5.5 Alternatively, aircraft may jettison fuel between HOSBA and point 80 NM from VTK DVOR/DME on airway G580.

6. SID/STAR OPERATIONS

- 6.1 The SIDs and STARs for Singapore Changi Airport require aircraft to be GNSS-equipped and approved with navigation systems that meet the ICAO RNAV-1 navigation specification in accordance to the ICAO Performance Based Navigation Manual (Doc 9613).

**7. AIRPORT COLLABORATIVE DECISION MAKING (A-CDM) - SINGAPORE
CHANGI AIRPORT**

7.1 Introduction

Definition of commonly used terms in A-CDM

7.1.1 Target Off Block Time (TOBT) - The time an aircraft operator (AO) or ground handling agent (GHA) estimates that an aircraft will be ready, all doors closed, boarding bridge removed, pushback vehicle available and ready to start-up/pushback immediately upon receipt of clearance from ATC.

7.1.2 Target Start Up Approval Time (TSAT) - The time provided by ATC that an aircraft can expect start-up/pushback approval.

7.2 A-CDM start-up procedures

7.2.1 Pilot shall ensure aircraft is ready for pushback at TOBT.

7.2.2 Pilot to maintain communication with the AO/GHA as they are responsible for updating the TOBT. Notify the AO/GHA to update the TOBT if it is expected to differ by 5 minutes or more.

7.2.3 Pilot utilising the DCL service on selected routes shall request for ATC clearance through Request for Departure Clearance Downlink (RCD) message no earlier than 20 minutes before TOBT.

7.2.4 Pilot using voice request to contact Clearance Delivery and request for ATC clearance within 5 minutes of TOBT using following phraseology:

- Callsign
- Destination
- Proposed flight level and alternate level if any
- Parking position

7.2.4.1 Pilot shall only request for ATC clearance provided aircraft is ready to pushback at TOBT.

7.2.5 Regardless of clearance through voice or datalink, all departing aircraft must report to Clearance Delivery when ready for push within 5 minutes of TOBT.

7.2.6 ATC will advise the pilot whether the proposed or other alternate flight level is available and an ATC clearance will be issued accordingly. If pre-departure coordination with an adjacent unit or centre is required the pilot will be instructed to standby.

7.2.7 ATC will update TSAT changes if any, during issuance of ATC clearances. Note that TSAT displayed on ADGS may not be final and can be revised due to en-route clearance restrictions, ground congestion or flow measures.

7.2.8 Pilot shall request for pushback from Ground Movement Control within 5 minutes of TSAT after obtaining ATC clearance, or as directed by ATC.

7.2.8.1 ATC may swap pushback sequence based on real-time readiness of aircrafts to maximise apron and runway capacity and reduce the overall delay to traffic as and when required.

7.2.8.2 At the end of pushback the departing aircraft must be ready to taxi immediately unless otherwise instructed by ATC.

Note: The first aircraft to taxi may not necessarily be the first aircraft to take-off as distances between aircraft stands and the departure rwy vary.

7.2.9 If a flight is unable to pushback by TSAT + 5 minutes due to the aircraft being unready, ATC clearance and TSAT will be cancelled. Pilot must notify the AO/GHA to update the TOBT for a new TSAT before requesting for a new ATC clearance. This also applies to aircraft returning back to blocks after pushback.

7.2.9.1 ATC will inform the aircraft when a clearance is cancelled using the phraseology: '(Callsign of acft) your ATC clearance and TSAT is cancelled (reason). Update TOBT before requesting for new clearance'.

7.2.9.2 Flight may also have its ATC clearance cancelled if it develops a technical problem after pushback and is unable to taxi for prolonged duration.

7.2.10 Non-compliance of initial TSAT may result in an aircraft losing its existing position in the pre-departure sequence. Delay can be expected as a result of re-sequencing based on new TOBT input.

7.2.11 If delay in pushback is due to ground traffic movement or ATC clearance restrictions, the ATC clearance will remain valid even if it exceeds TSAT + 5 minutes. TOBT need not be updated for such situations.

7.2.12 In the event that A-CDM mode of operations need to be cancelled due to any reason, the termination will be communicated to relevant parties through email by the airport operator and a NOTAM will be issued by ATC. Pilot shall follow the non-CDM procedure (see 7.5).

7.3 Quick overview of WSSS start-up for pilots

7.3.1 TOBT and TSAT requirements

7.3.1.1 Irrespective of the TSAT, the aircraft must be ready for departure at the TOBT +/- 5 minutes as the TSAT may be revised forward at short notice.

7.3.1.2 Any time the TOBT or TSAT cannot be met, or an earlier departure is required, the TOBT must be updated expeditiously by the aircraft operator or ground handler.

7.3.2 ATC Clearance

7.3.2.1 ATC Clearance on selected ATS routes can be requested via Data Link Departure Clearance (DCL) at TOBT- 20 minutes.

7.3.2.2 If DCL is not available, ATC Clearance should be requested via Clearance Delivery at TOBT +/-5 minutes.

7.3.3 Start-up / Pushback Clearance

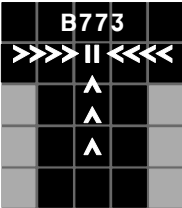
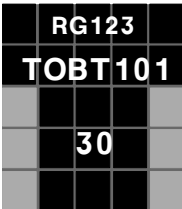
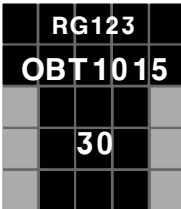
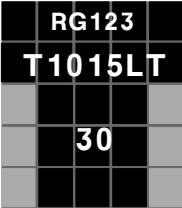
7.3.3.1 Pilots must be ready for start-up / pushback at TOBT +/- 5 minutes.

7.3.3.2 Pilots should request start-up / pushback clearance at TSAT +/- 5 minutes.

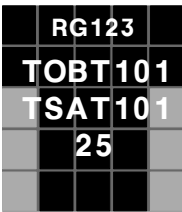

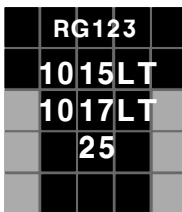
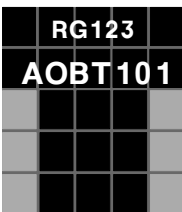
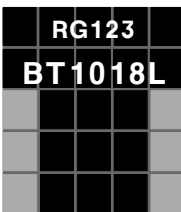
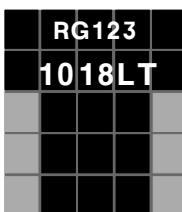
7.4 A-CDM information via Aircraft Docking Guidance System (ADGS)

7.4.1 All contact stands in Singapore Changi Airport will have ADGS. The fundamental operation and usage of ADGS still remain the same for flight crew. Additional information which includes TOBT, TSAT and TOBT count-down timer will be displayed in local times as part of the improvements to support A-CDM operations.

AIRCRAFT DOCKING GUIDANCE SYSTEM (ADGS)

Description	Display on ADGS
<p>Aircraft arrival to stand</p> <ul style="list-style-type: none"> No change in existing functionality and display. 	
<p>40 minutes prior to TOBT</p> <ul style="list-style-type: none"> ADGS will display TOBT submitted by AO/GHA and a count down timer (2 digits) to TOBT in minutes. As ADGS can only display up to 7 characters per line, the displayed message will be scrolling. Timing displayed will be in Local Time (LT). TOBT timings will change instantly if there is an update done by AO/GHA. 	<p>Snapshot 1 Snapshot 2</p>   <p>Snapshot 3</p> 

AIRCRAFT DOCKING GUIDANCE SYSTEM (ADGS)

Description	Display on ADGS
<p>25 minutes prior to TOBT</p> <ul style="list-style-type: none"> ADGS will display TSAT derived by PDS. As ADGS can only display up to 7 characters per line, the displayed message will be scrolling. TSAT timings may change as the PDS is continuously optimising push back times based on real time traffic conditions. 	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Snapshot 1</p>  </div> <div style="text-align: center;"> <p>Snapshot 2</p>  </div> </div> <div style="text-align: center; margin-top: 20px;"> <p>Snapshot 3</p>  </div>
<p>Aircraft departure from stand</p> <ul style="list-style-type: none"> ADGS will display the actual off-block time (AOBT). As ADGS can only display up to 7 characters per line, the displayed message will be scrolling. TOBT, TSAT and TOBT countdown timer will be removed. AOBT display will be removed 3 minutes after AOBT. 	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Snapshot 1</p>  </div> <div style="text-align: center;"> <p>Snapshot 2</p>  </div> </div> <div style="text-align: center; margin-top: 20px;"> <p>Snapshot 3</p>  </div>

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16 FEB 24 (10-1P8)

SINGAPORE, SINGAPORE

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SIMULTANEOUS INDEPENDENT PARALLEL APPROACHES

1. Introduction

- 1.1 Simultaneous independent parallel approaches will be implemented daily between 0000UTC and 1500UTC to optimize runway utilization and enhance air traffic efficiency.

2. Procedures for simultaneous independent parallel approaches

- 2.1 To ensure safe operations between aircraft on parallel approaches, Normal Operating Zones (NOZs) are established for each extended runway centerline and a No Transgression Zone (NTZ) is established between the NOZs.
- 2.2 ATC will vector arriving flights into Singapore Changi Airport from the final waypoint of the respective STARs to the respective NOZs.
- 2.3 Within the NOZ, ATC shall provide a minimum vertical separation of 1000' or 3NM surveillance separation between pairs of aircraft until both aircraft are established on the ILS Localizer course.
- 2.4 ATC is not required to provide separation between aircraft on adjacent ILS Localizers and will monitor aircraft for deviation from the approach path.
- 2.5 Aircraft can expect to maintain altitude 2500' till Glide Path Interception for Runway 20R / 02L and 3500' till Glide Path Interception for Runway 20C / 02C. This is to ensure the necessary vertical separation prior to establishing on the respective ILS Localizer course.
- 2.6 Aircraft can expect the following radiotelephony phraseology to intercept the Localizer before clearing for ILS:

"TURN LEFT (RIGHT) HEADING (three digits) MAINTAIN (altitude) REPORT ESTABLISHED ON THE LOCALIZER RUNWAY (number) LEFT (CENTER / RIGHT)"

followed by ...

"MAINTAIN (altitude), CLEARED FOR ILS APPROACH RUNWAY (number) LEFT (CENTER / RIGHT)"

- 2.7 Aircraft can expect to maintain speed 180KT at base turn or earlier till 8NM from touchdown.

3. Break-out maneuver

- 3.1 When an aircraft is observed to have not established on the appropriate Localizer course or deviated from its course towards the NTZ, ATC will instruct the aircraft to return immediately to the correct Localizer course with the following radiotelephony phraseology:

"YOU HAVE CROSSED THE LOCALIZER, TURN LEFT (or RIGHT) IMMEDIATELY AND RETURN TO THE LOCALIZER"

or

"TURN LEFT (or RIGHT) TO RETURN TO LOCALIZER COURSE"

- 3.2 When ATC observed aircraft to be penetrating or will penetrate the NTZ, ATC will instruct the aircraft on the adjacent Localizer course to alter course to avoid the deviating aircraft with the following radiotelephony phraseology:

"TRAFFIC ALERT, TURN LEFT (or RIGHT) IMMEDIATELY HEADING (degrees), CLIMB AND MAINTAIN (altitude)"

4. Pilot notification and conditions for operations

- 4.1 Simultaneous approaches to parallel runways operation will be broadcasted on ATIS during the active period.
- 4.2 Simultaneous approaches to the parallel runways will be suspended in the event of adverse weather or any other conditions that may affect the safe conduct of such approaches to the parallel runways.

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AIRPORT BRIEFING

DEPARTURE CLEARANCE (DCL) VIA DATALINK PROCEDURES

1. Acft need to be equipped with Aircraft Communications Addressing and Reporting System (ACARS) to support DCL application.
2. The logon ID of the ground system for the provision of DCL service is WSSS.
3. DCL service is only applicable for flights departing from WSSS to the following routes / destinations:
 - a. Destinations in Peninsular Malaysia via ATS Routes A457 and B466
 - b. Destinations in Thailand via ATS Routes B466 and B469 / M751
 - c. Destinations in Indonesia via ATS Route A457, R469 and B470
 - d. Destinations in Australia and New Zealand via ATS Route B470
 - e. Flights with allocated Calculated Take-Off Time (CTOT) under Bay of Bengal Cooperative Air Traffic Flow Management (BOBCAT)
4. Pilot utilising the DCL service on selected routes shall request for ATC clearance through RCD message no earlier than 20 minutes before TOBT.
 - a. For flights with allocated CTOT under BOBCAT, to input "CTOT HHMMz" under the free text field in RCD message.
 - b. For flights routed via ANITO B470, to input "ANITO FLxxx"(ANITO crossing level) under the free text field in RCD message.
 - c. Pilot shall contact Clearance Delivery or the next assigned frequency in Departure Clearance Uplink (CLD) message within 5 minutes of TOBT using the following phraseology:
 - **"Callsign"...With P-D-C, fully ready**
 - Provide requested flight level if it differs from PFL filed in flight plan
 - Provide CTOT or ANITO crossing if not previously given in RCD message
5. DCL message format does not include the requested cruising level and final cruising level.
 - a. The planned flight level (PFL) filed in flight plan field 15b will be used as requested level unless otherwise specified by pilot.
 - b. Final cruising level will be assigned by Singapore ATC after airborne and it is subjected to traffic disposition. No on-ground level negotiations or reservations are allowed.
6. DCL service does not provide clearance revision. Any revision to the clearance issued via datalink will be made by ATC through voice communications.
7. Clearance request through VHF using the existing voice procedures is still available for applicable flights under the DCL service.
8. ATC will reject the DCL request and send a "revert to voice procedures" message to the pilot if the following occurs:
 - a. Flight's routes / destinations is not stated in paragraph 3
 - b. RCD message does not comply with ED-85A or have inaccurate flight data, e.g. different Callsign / ADES from flight plan
 - c. Invalid TOBT
 - d. When required by ATC due to flow restrictions
9. Upon receipt of any "revert to voice procedures" message, pilot shall cancel any clearance received previously (if any) and follow the existing voice procedures for clearance request, i.e. contact Clearance Delivery within 5 minutes of TOBT.

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12 APR 24 (10-1P10)

SINGAPORE, SINGAPORE
AIRPORT BRIEFING

10. Pilot shall monitor the clearance delivery frequency once the DCL process is initiated. In the event of any issues encountered, ATC will revert to voice procedures.

11. ATC will revert with CLD message within 5 minutes of receipt of the RCD message. If no CLD message is received, pilot is to call on delivery frequency to verify request.

12. Pilot shall respond with CDA message within 5 minutes of receipt of CLD message. Failure to comply may result in a "revert to voice procedures" message being sent.

Note: The DCL process is only complete and clearance confirmed when CDA message is received and processed successfully.

A "CDA received - clearance confirmed" message will be sent to the pilot.

13. Acft operator / ground handling agent shall continue to update TOBT to reflect any changes in readiness time in accordance to A-CDM startup procedures.

14. ATC will check for TOBT compliance and update pilot of any revisions in departure clearance and flow restrictions before handing the flight over to Ground frequency for start-up and pushback.

15. ATC will cancel the clearance issued and send a "revert to voice procedures" message if pilot does not report ready for push within 5 minutes of TSAT.

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12 APR 24 (10-1P11)
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AIRPORT BRIEFING**SCHEDULED CLOSURE OF RWY 02L/20R, 02C/20C, 02R/20L****1) Scheduled Closure of Rwy 02L/20R**

- a. Between 1700-2200UTC on every Sunday and Wednesday of the month (resurfacing and preventive maintenance work). In the event of emergency, runway will be re-opened within 2 hours.
- b. A 5-minute inspection conducted within the periods between 0100-0359UTC, 0500-0759UTC, 0800-1059UTC daily.

2) Scheduled Closure of Rwy 02C/20C

- a. Between 1800-2200UTC on every Tuesday and Friday of the month (preventive maintenance work). In the event of emergency, runway will be re-opened within 30 minutes.
- b. A 5-minute inspection conducted within the periods between 0100-0359UTC, 0500-0759UTC, 0800-1059UTC daily.

3) Scheduled Closure of Rwy 02R/20L

- a. Between 1800-2200UTC on every Monday of the month (preventive maintenance work). In the event of emergency, runway will be re-opened within 30 minutes.
- b. A 5-minute inspection conducted within the periods between 0100-0359UTC, 0500-0759UTC, 0800-1059UTC daily.

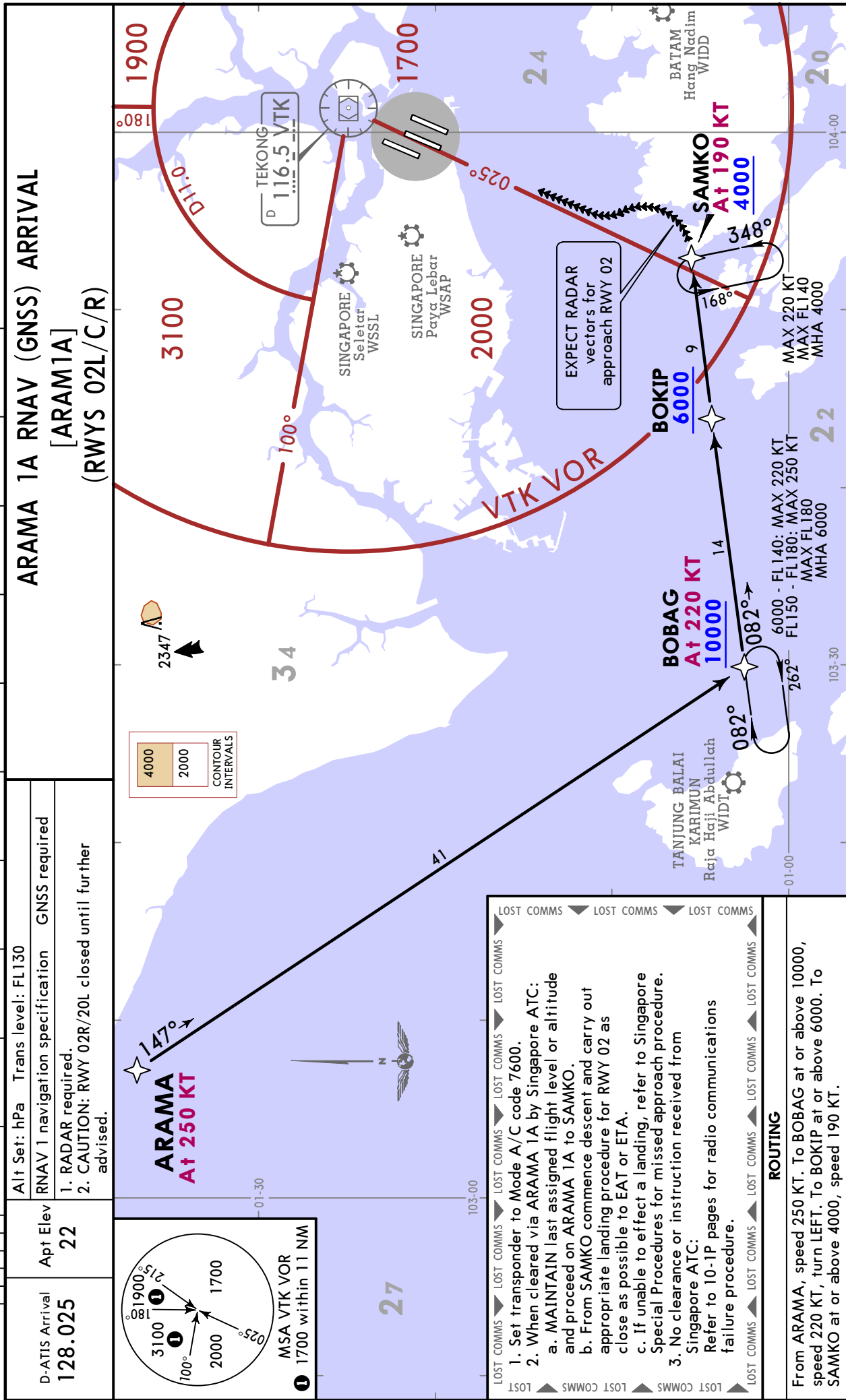
4) Additional Inspection and Maintenance Closures

- a. On days when there is a scheduled runway closure between 1700-2200UTC or 1800-2200UTC
 - 10-minute inspection conducted within the period between 1500-1610UTC on the other operational runway(s);
 - 15-minute inspection conducted within the period between 2300-2359UTC on the other operational runway(s);
 - 5-minute inspection conducted within period between 2300-2359UTC on the re-opened runway.
- b. On days when there is no scheduled runway closure between 1700-2200UTC or 1800-2200UTC
 - Rwy 02L/20R;
 - 5-minute inspection conducted between 2300-2305UTC
 - 30-minute maintenance will be conducted between 1830-1900UTC
 - Rwy 02C/20C;
 - 5-minute inspection conducted between 2315-2320UTC
 - 30-minute maintenance will be conducted between 1930-2000UTC
 - Rwy 02R/20L
 - 5-minute inspection conducted between 2330-2335UTC
 - 30-minute maintenance will be conducted between 2030-2100UTC

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12 APR 24 10-2

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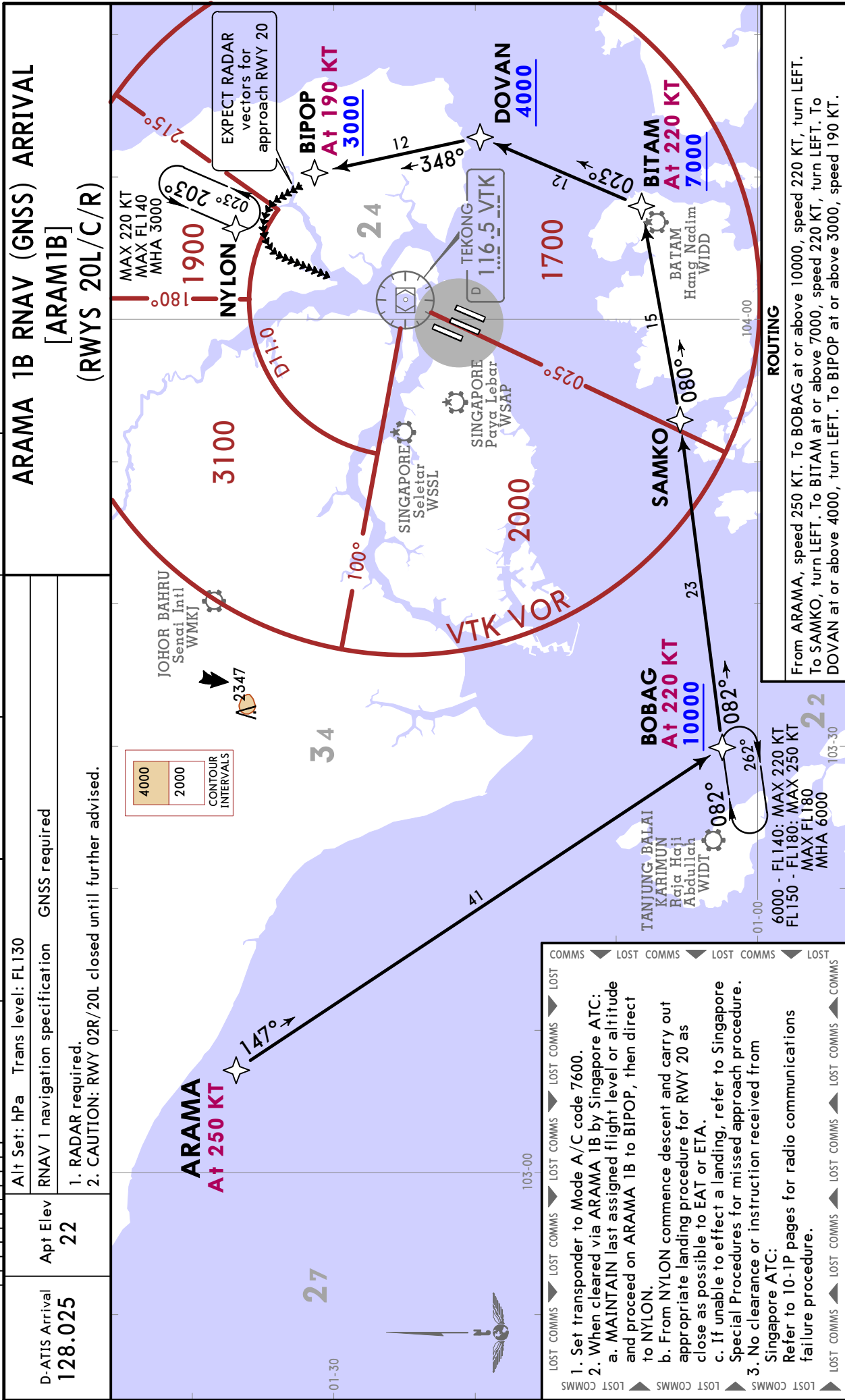


CHANGES: Caution note added, vector track note revised.

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12 APR 24 10-2A

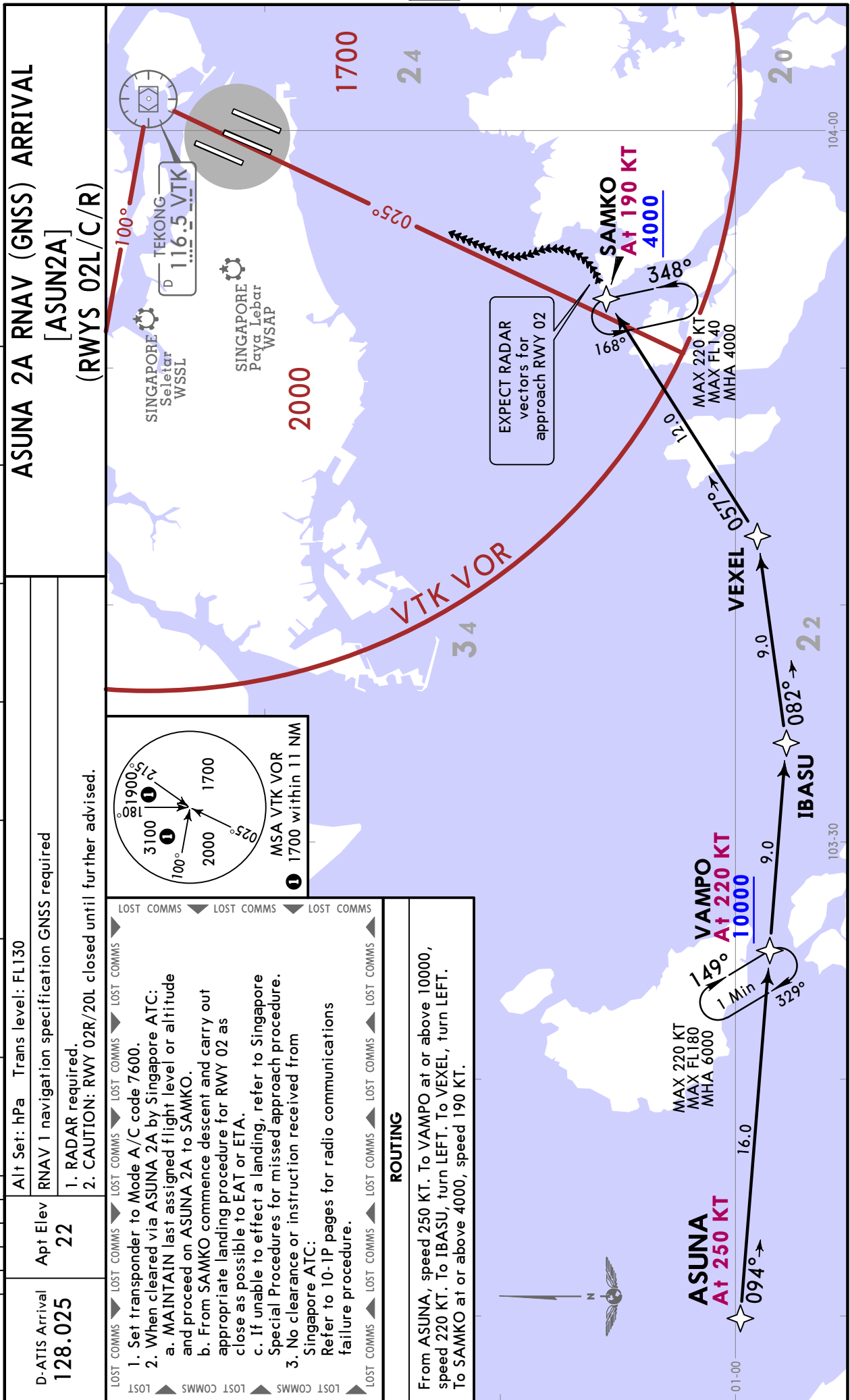
SINGAPORE, SINGAPORE
RNAV STAR



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JEPPESSEN
12 APR 24 10-2B

SINGAPORE, SINGAPORE
RNAV STAR



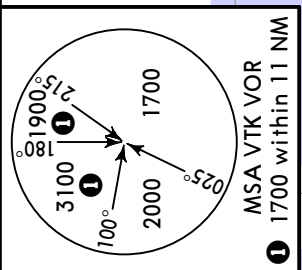
ASUNA 2A RNAV (GNSS) ARRIVAL
[ASUN2A]
(RWYS 02L/C/R)

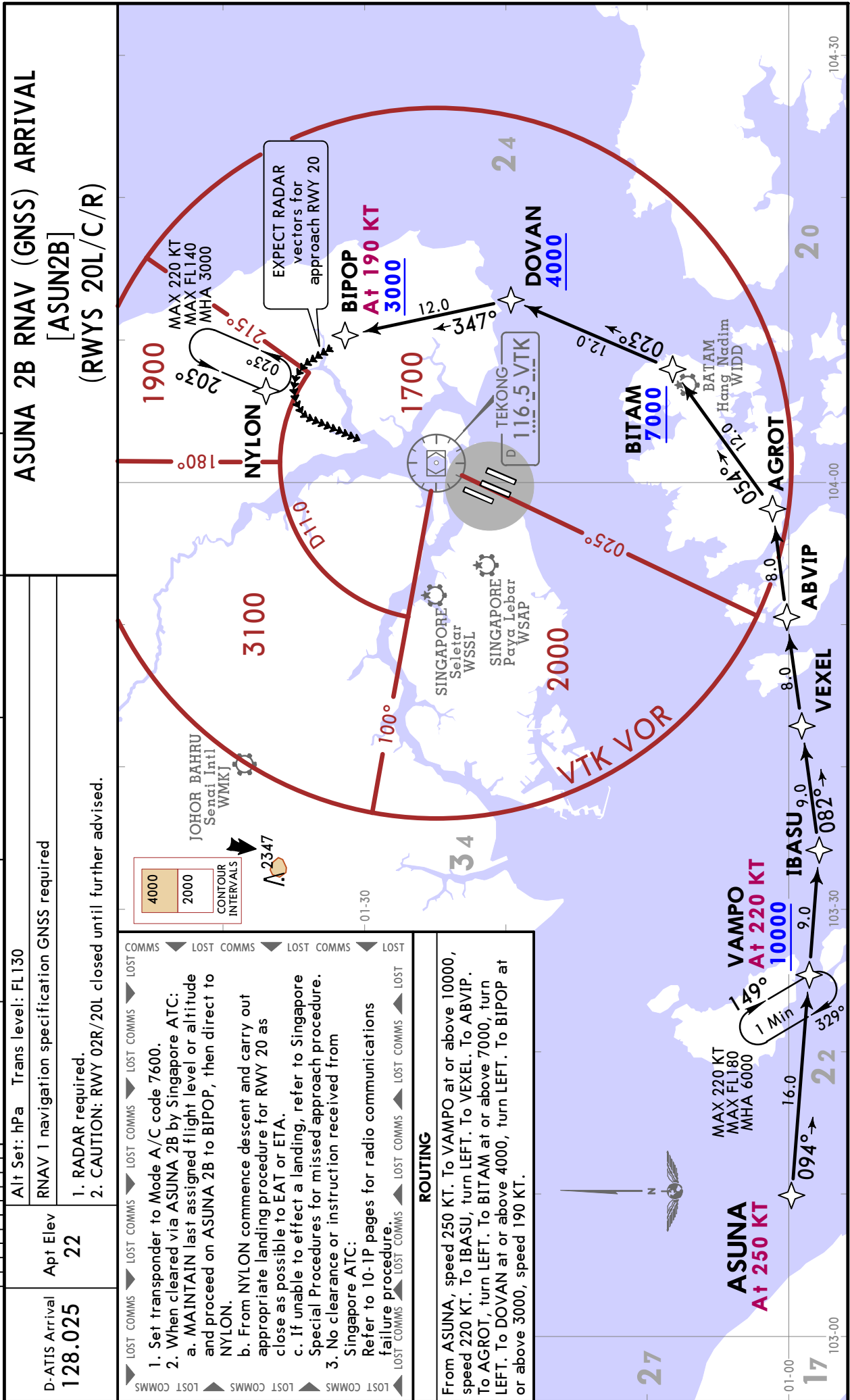
Alt Set: hPa Trans level: FL130
RNAV 1 navigation specification GNSS required
1. RADAR required.
2. CAUTION: RWY 02R/20L closed until further advised.

D-ATIS Arrival 128.025
Apt Elev 22

- 1. Set transponder to Mode A/C code 7600.
- 2. When cleared via ASUNA 2A by Singapore ATC:
 - a. MAINTAIN last assigned flight level or altitude and proceed on ASUNA 2A to SAMKO.
 - b. From SAMKO commence descent and carry out appropriate landing procedure for RWY 02 as close as possible to EAT or ETA.
 - c. If unable to effect a landing, refer to Singapore Special Procedures for missed approach procedure. Singapore ATC: Refer to 10-IP pages for radio communications failure procedure.

ROUTING
From ASUNA, speed 250 KT. To VAMPO at or above 10000, speed 220 KT. To IBASU, turn LEFT. To VEXEL, turn LEFT. To SAMKO at or above 4000, speed 190 KT.





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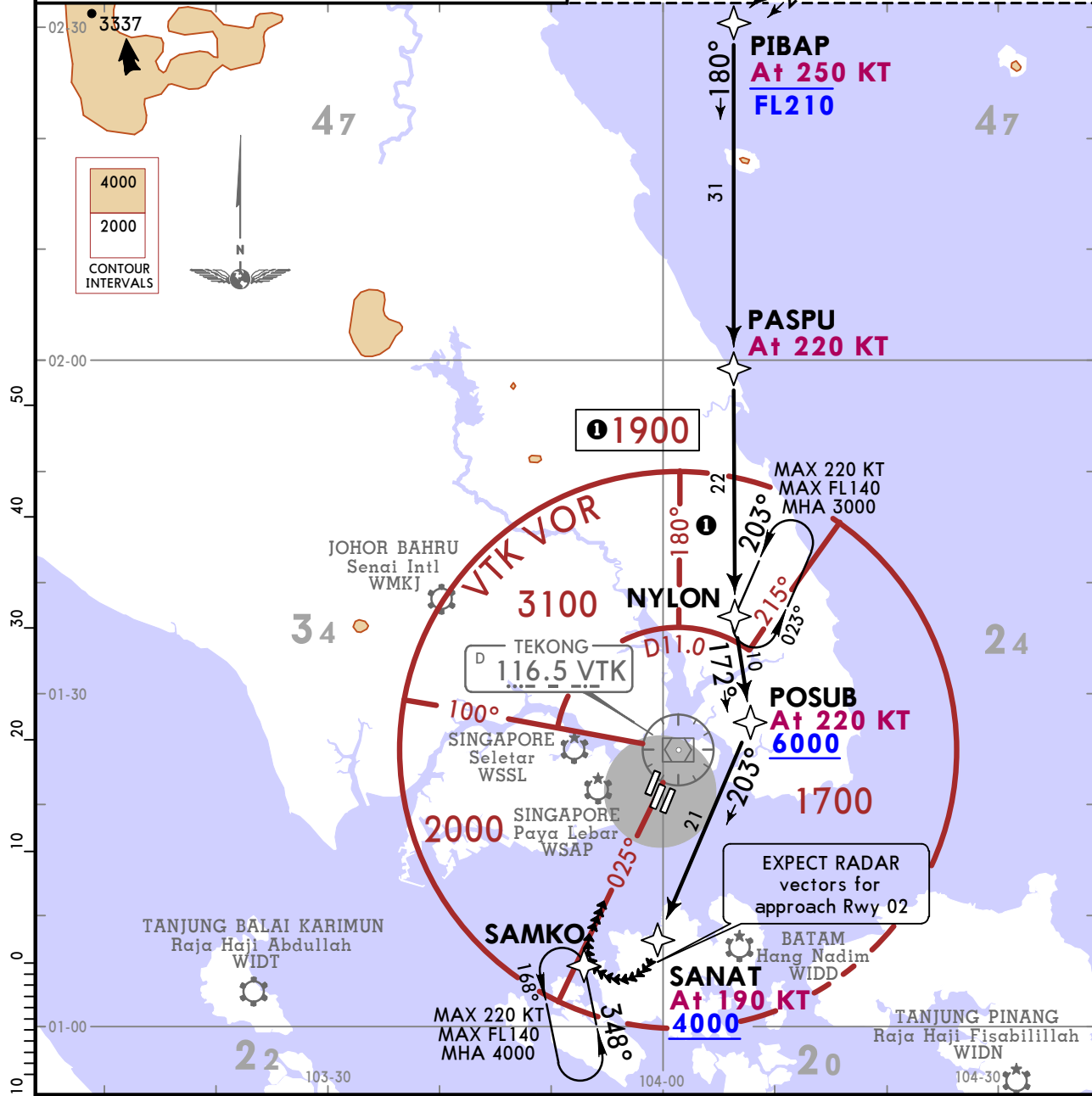
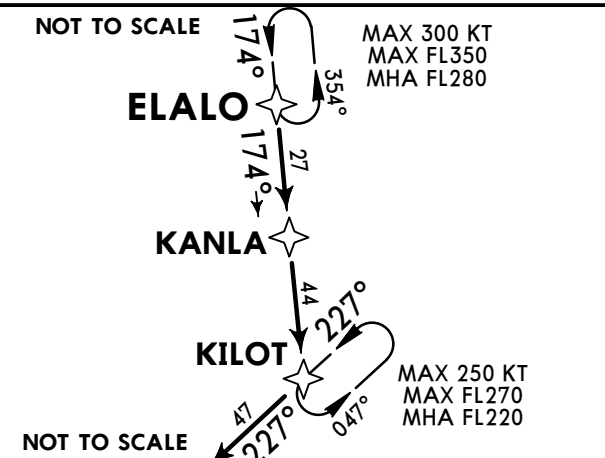
JEPPESSEN
12 APR 24 **10-2D**

SINGAPORE, SINGAPORE
RNAV STAR

D-ATIS Arrival 128.025	Apt Elev 22	RNAV 1 navigation specification GNSS required	Alt Set: hPa Trans level: FL130
1. RADAR required. 2. CAUTION: RWY 02R/20L closed until further advised.			

ELALO 1A RNAV (GNSS) ARRIVAL [ELAL1A]
(RWYS 02L/C/R)

- LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼
1. Set transponder to Mode A/C code 7600.
 2. When cleared via ELALO 1A by Singapore ATC:
 - a. MAINTAIN last assigned flight level or altitude and proceed on ELALO 1A to SANAT, then direct to SAMKO.
 - b. From SAMKO commence descent and carry out appropriate landing procedure for Rwy 02 as close as possible to EAT or ETA.
 - c. If unable to effect a landing, refer to Singapore Special Procedures for missed approach procedure.
 3. No clearance or instruction received from Singapore ATC:
Refer to 10-1P pages for radio communications failure procedure.
- LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲



ROUTING

From ELALO. To KANLA. To KILOT, turn RIGHT. To PIBAP at or below FL210, speed 250 KT, turn LEFT. To PASPU speed 220 KT. To NYLON, turn LEFT. To POSUB at or above 6000, speed 220 KT, turn RIGHT. To SANAT at or above 4000, speed 190 KT.

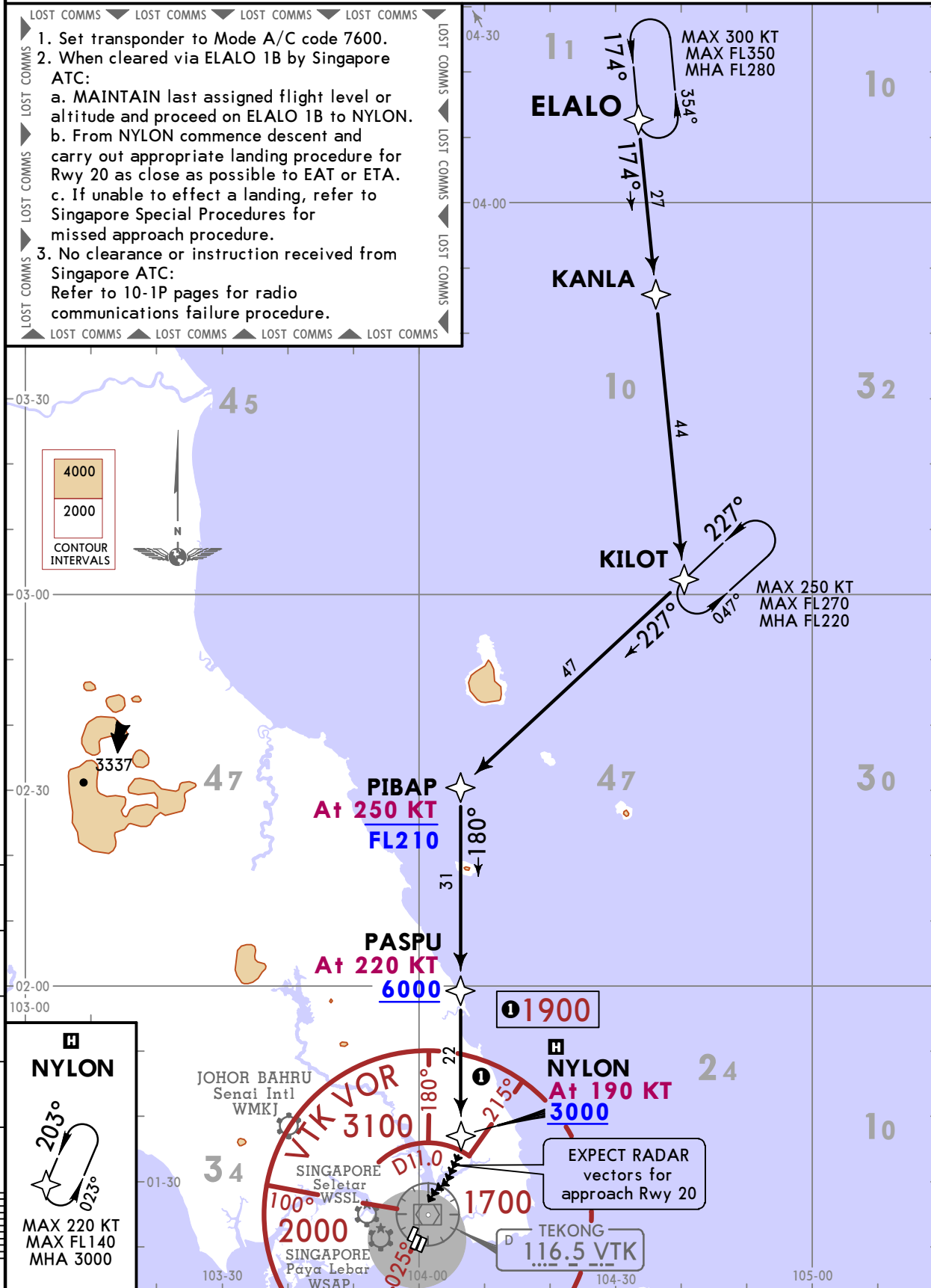
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12 APR 24 (10-2E)

SINGAPORE, SINGAPORE
RNAV STAR

D-ATIS Arrival 128.025	Apt Elev 22	RNAV 1 navigation specification GNSS required 1. RADAR required. 2. CAUTION: RWY 02R/20L closed until further advised.	Alt Set: hPa Trans level: FL130
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ELALO 1B RNAV (GNSS) ARRIVAL
[ELAL1B]
(RWYS 20L/C/R)



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SINGAPORE, SINGAPORE RNAV STAR

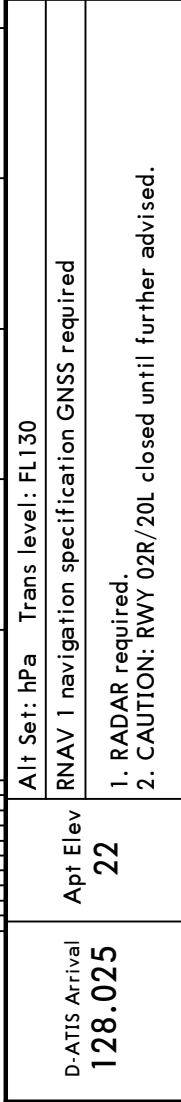
KARTO 2A RNAV (GNSS) ARRIVAL
[KART2A]
(RWYS 02L/C/R)

Alt Set: hPa Trans level: FL130
RNAV 1 navigation specification GNSS required

1. RADAR required.
2. CAUTION: RWY 02R/20L closed until further advised.

D-ATIS Arrival
128.025

Apt Elev
22

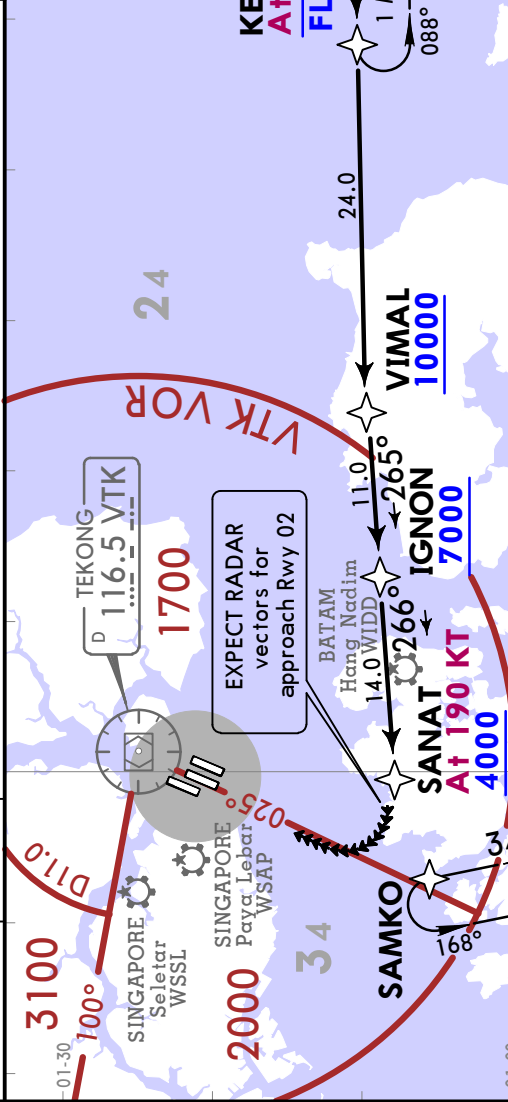


LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS

1. Set transponder to Mode A/C code 7600.
2. When cleared via KARTO 2A by Singapore ATC:
a. MAINTAIN last assigned flight level or altitude and proceed on KARTO 2A to SANAT, then direct to SAMKO.
b. From SAMKO commence descent and carry out appropriate landing procedure for Rwy 02 as close as possible to EAT or ETA.
c. If unable to effect a landing, refer to Singapore Special Procedures for missed approach procedure.
3. No clearance or instruction received from Singapore ATC:
Refer to 10-IP pages for radio communications failure procedure.

ROUTING

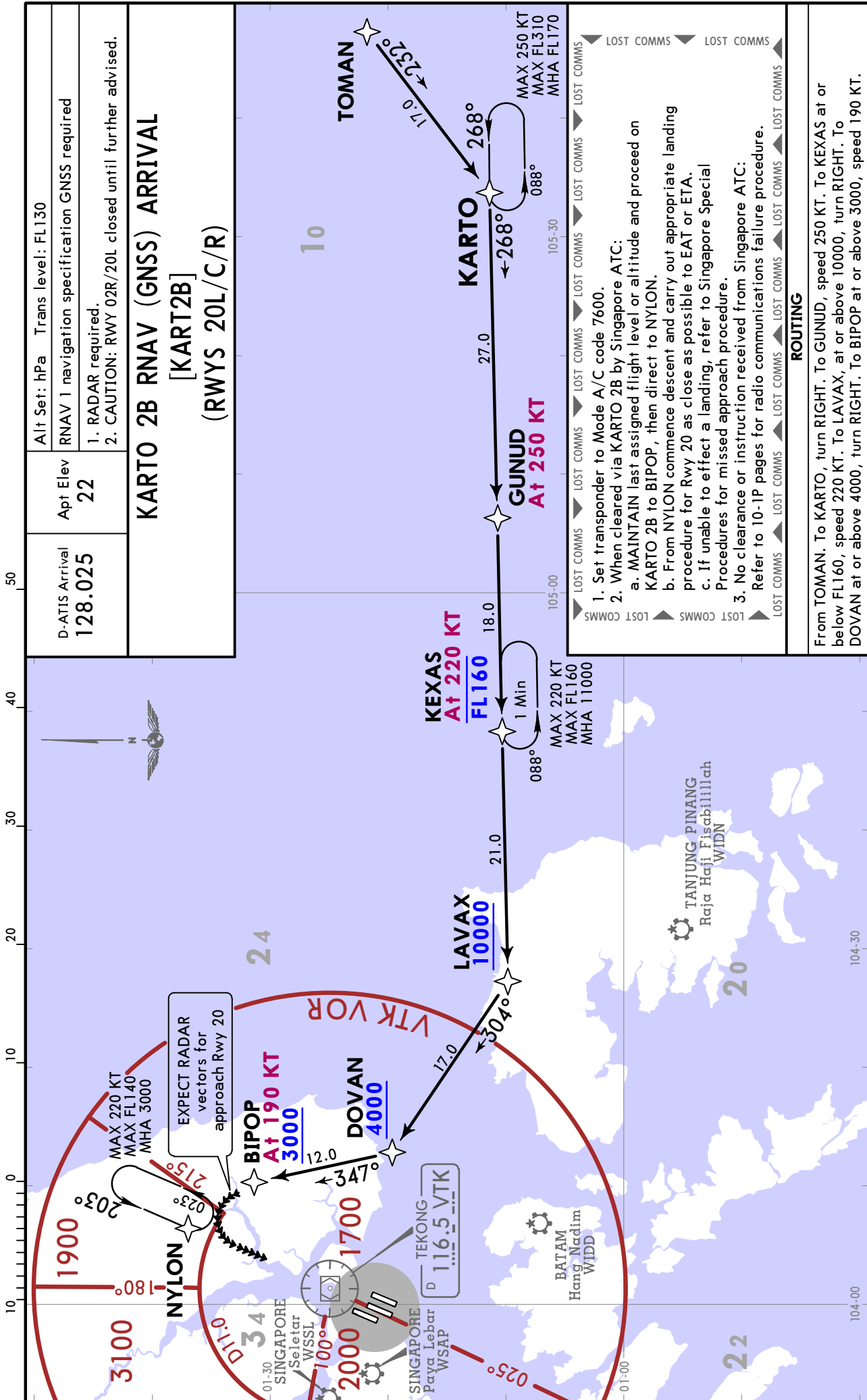
From TOMAN. To KARTO, turn RIGHT. To GUNUD, speed 250 KT. To KEXAS at or below FL160, speed 220 KT. To VIMAL, at or above 10000, turn LEFT. To IGNON at or above 7000, turn RIGHT. To SANAT at or above 4000, speed 190 KT.



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12 APR 24 10-2G

SINGAPORE, SINGAPORE
RNAV STAR



CHANGES: Lost communications note.

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12 APR 24 10-2H

RNAV STAR

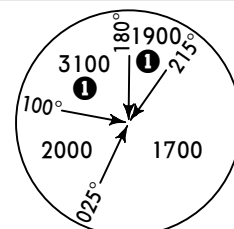
D-ATIS Arrival
128.025

Apt Elev
22

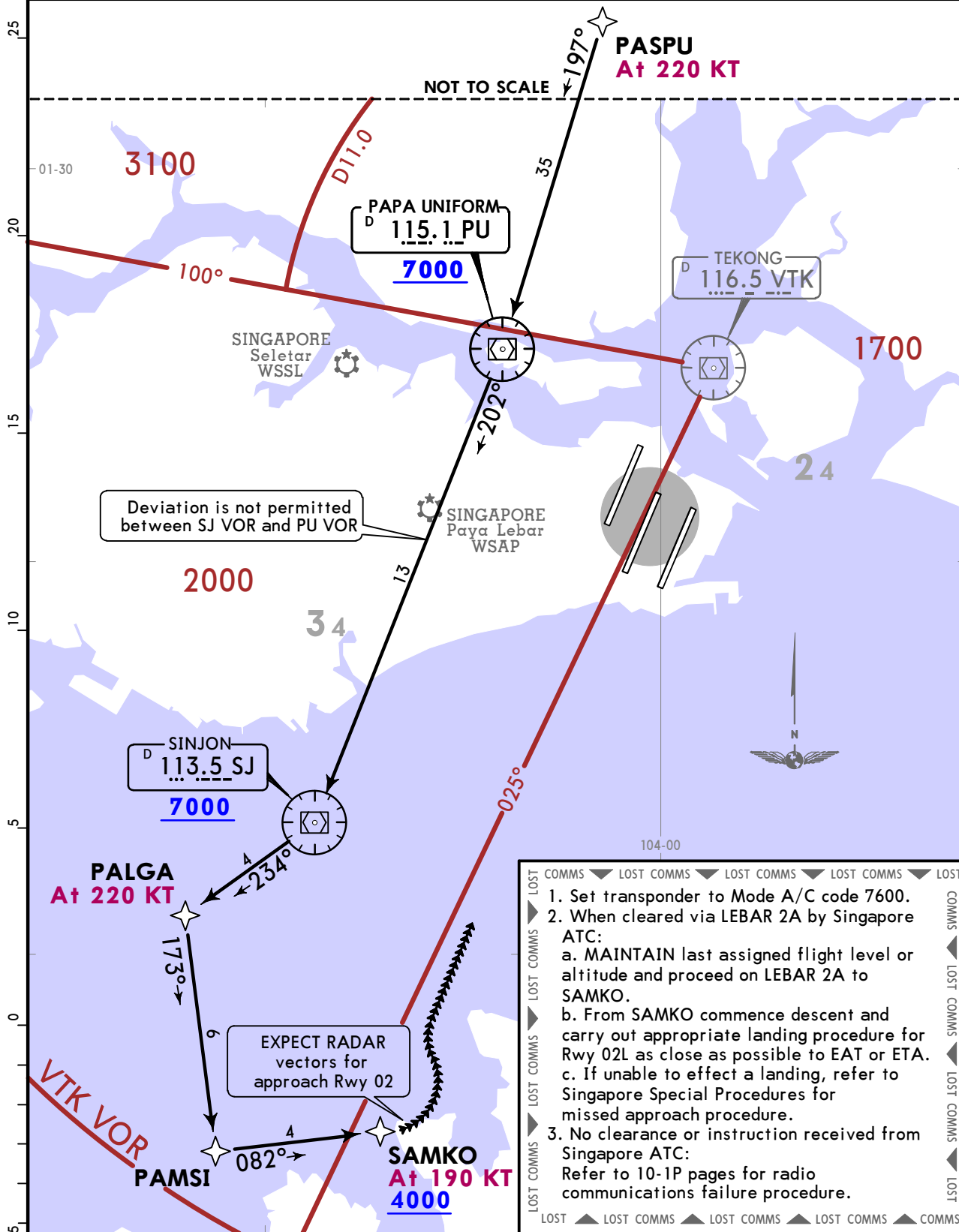
Alt Set: hPa Trans level: FL130

RNAV 1 navigation specification GNSS required

- 1. RADAR required.
- 2. CAUTION: RWY 02R/20L closed until further advised.



LEBAR 2A RNAV (GNSS) ARRIVAL
[LEBA2A]
(RWYS 02L/C/R)



- 1. Set transponder to Mode A/C code 7600.
- 2. When cleared via LEBAR 2A by Singapore ATC:
 - a. MAINTAIN last assigned flight level or altitude and proceed on LEBAR 2A to SAMKO.
 - b. From SAMKO commence descent and carry out appropriate landing procedure for Rwy 02L as close as possible to EAT or ETA.
 - c. If unable to effect a landing, refer to Singapore Special Procedures for missed approach procedure.
- 3. No clearance or instruction received from Singapore ATC:
Refer to 10-1P pages for radio communications failure procedure.

ROUTING

From PASPU, speed 220 KT. To PU VOR at or above 7000, turn RIGHT. To SJ VOR at or above 7000, turn RIGHT. To PALGA, speed 220 KT, turn LEFT. To PAMSI, turn LEFT. To SAMKO at or above 4000, speed 190 KT.

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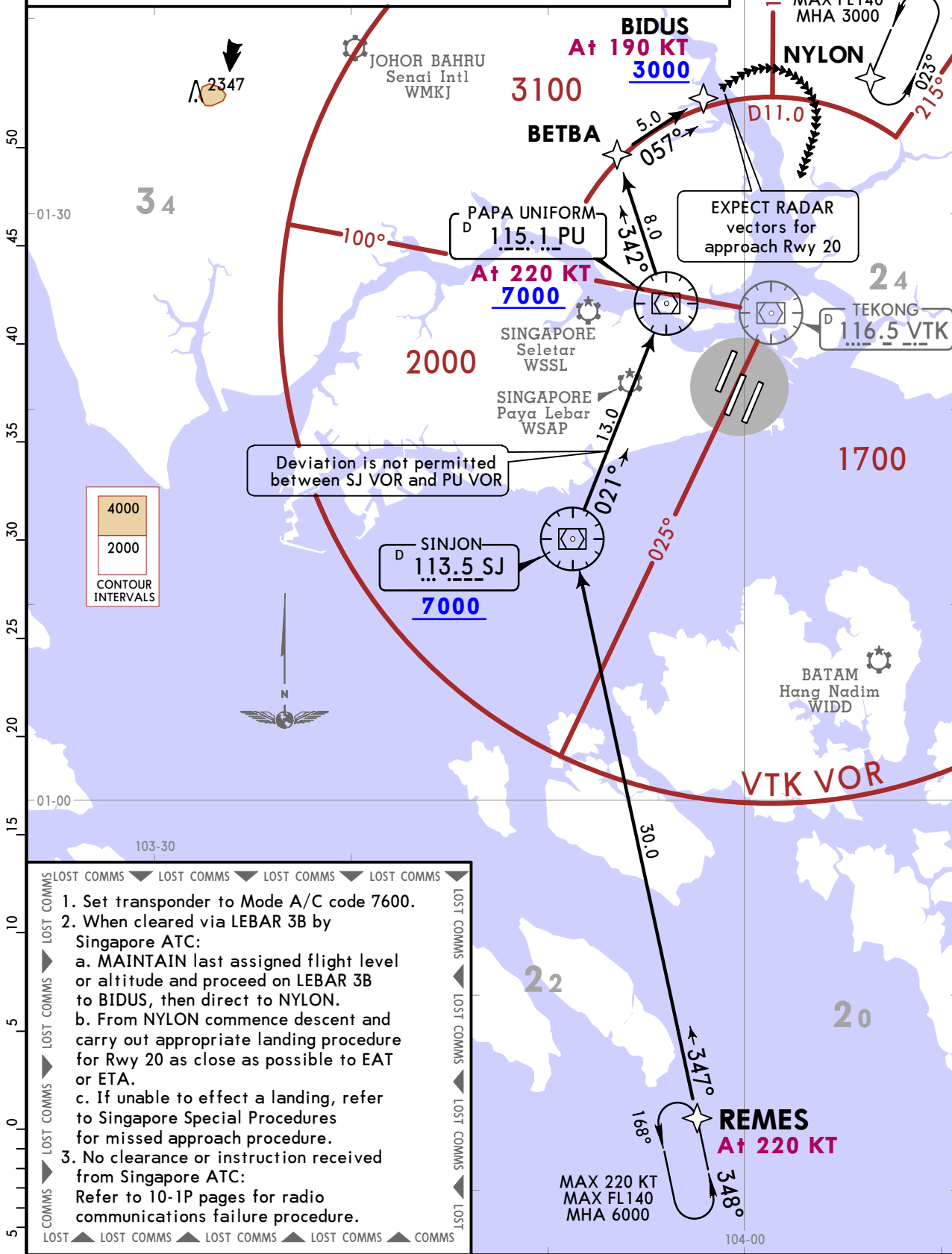
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12 APR 24 (10-2J)

RNAV STAR

D-ATIS Arrival 128.025	Apt Elev 22	Alt Set: hPa Trans level: FL130
		RNAV 1 navigation specification GNSS required 1. RADAR required. 2. CAUTION: RWY 02R/20L closed until further advised.

LEBAR 3B RNAV (GNSS) ARRIVAL
[LEBA3B]
(RWYS 20L/C/R)



- LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS
1. Set transponder to Mode A/C code 7600.
 2. When cleared via LEBAR 3B by Singapore ATC:
 - a. MAINTAIN last assigned flight level or altitude and proceed on LEBAR 3B to BIDUS, then direct to NYLON.
 - b. From NYLON commence descent and carry out appropriate landing procedure for Rwy 20 as close as possible to EAT or ETA.
 - c. If unable to effect a landing, refer to Singapore Special Procedures for missed approach procedure.
 3. No clearance or instruction received from Singapore ATC: Refer to 10-1P pages for radio communications failure procedure.
- COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ COMMS

ROUTING

From REMES, speed 220 KT. To SJ VOR at or above 7000, turn RIGHT. To PU VOR at or above 7000, speed 220 KT, turn LEFT. To BETBA, turn RIGHT. To BIDUS at or above 3000, speed 190 KT.

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12 APR 24 10-2K

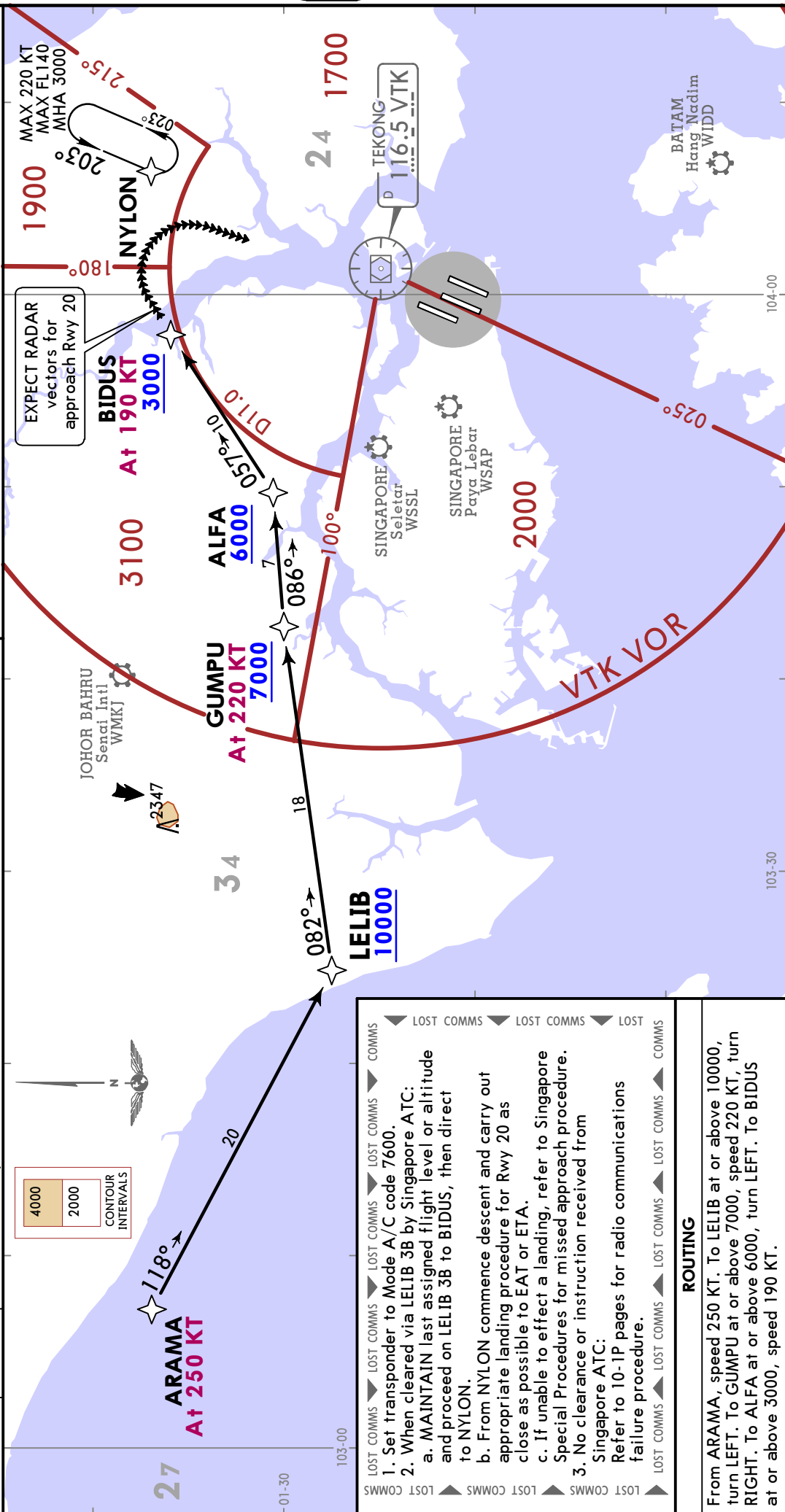
SINGAPORE, SINGAPORE
RNAV STAR

LELIB 3B RNAV (GNSS) ARRIVAL

[LELI3B]
(RWYS 20L/C/R)

D-ATIS Arrival 128.025	Apt Elev 22	Alt Set: hPa Trans level: FL130 RNAV 1 navigation specification GNSS required
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1. RADAR required.
2. CAUTION: RWY 02R/20L closed until further advised.
3. TEBUN 1B shall be the default STAR for RWY 20. ATC will offer LELIB 3B when traffic permits.



ROUTING

From ARAMA, speed 250 KT. To LELIB at or above 10000, turn LEFT. To GUMPU at or above 7000, speed 220 KT, turn RIGHT. To ALFA at or above 6000, turn LEFT. To BIDUS at or above 3000, speed 190 KT.

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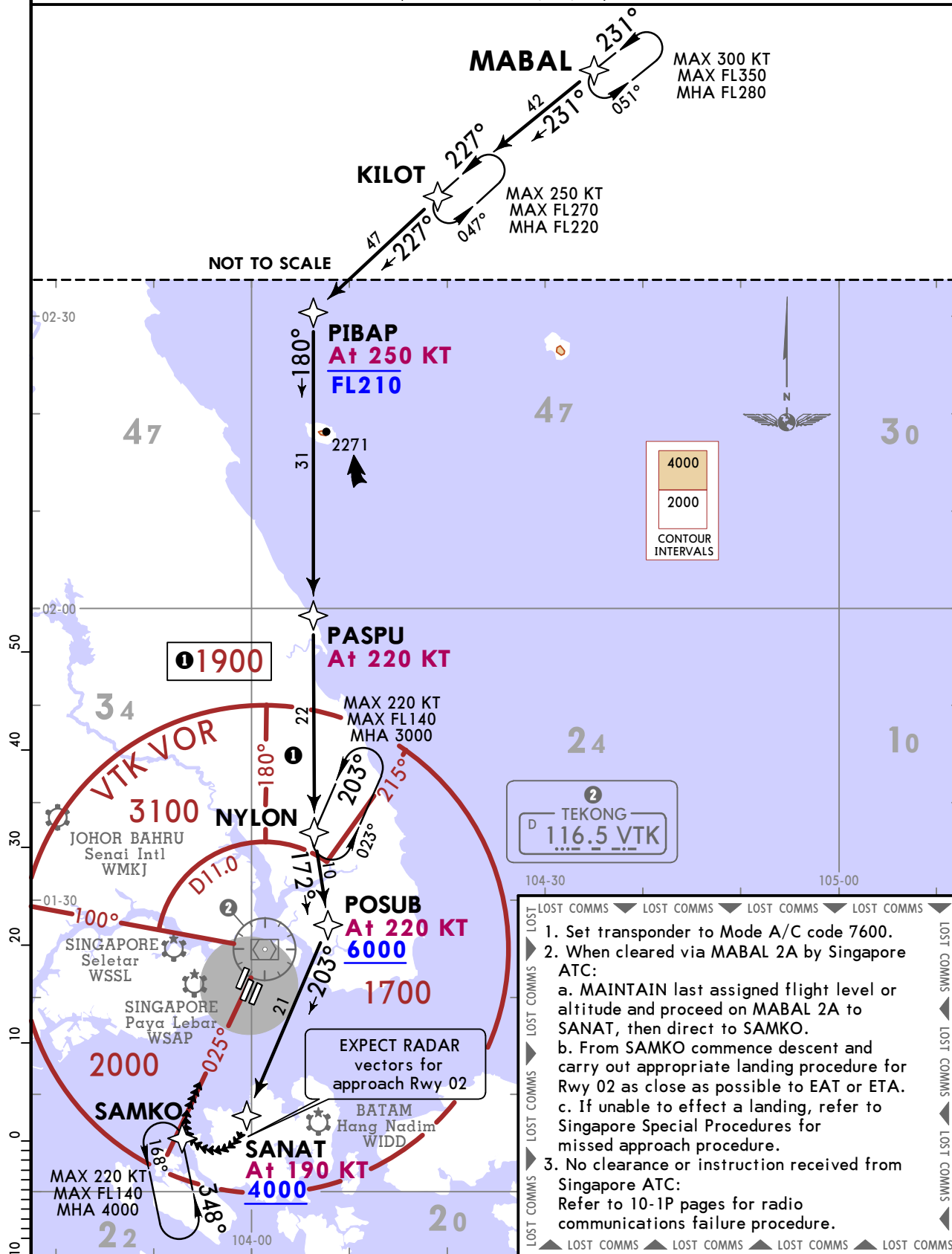
JEPPESEN
12 APR 24 10-2L

SINGAPORE, SINGAPORE
RNAV STAR

D-ATIS Arrival 128.025	Apt Elev 22	Alt Set: hPa Trans level: FL130
		RNAV 1 navigation specification GNSS required

1. RADAR required.
2. CAUTION: RWY 02R/20L closed until further advised.

MABAL 2A RNAV (GNSS) ARRIVAL
[MABA2A]
(RWYS 02L/C/R)



ROUTING

From MABAL. To KILLOT, turn LEFT. To PIBAP at or below FL210, speed 250 KT, turn LEFT. To PASPU, speed 220 KT. To NYLON, turn LEFT. To POSUB at or above 6000, speed 220 KT, turn RIGHT. To SANAT at or above 4000, speed 190 KT.

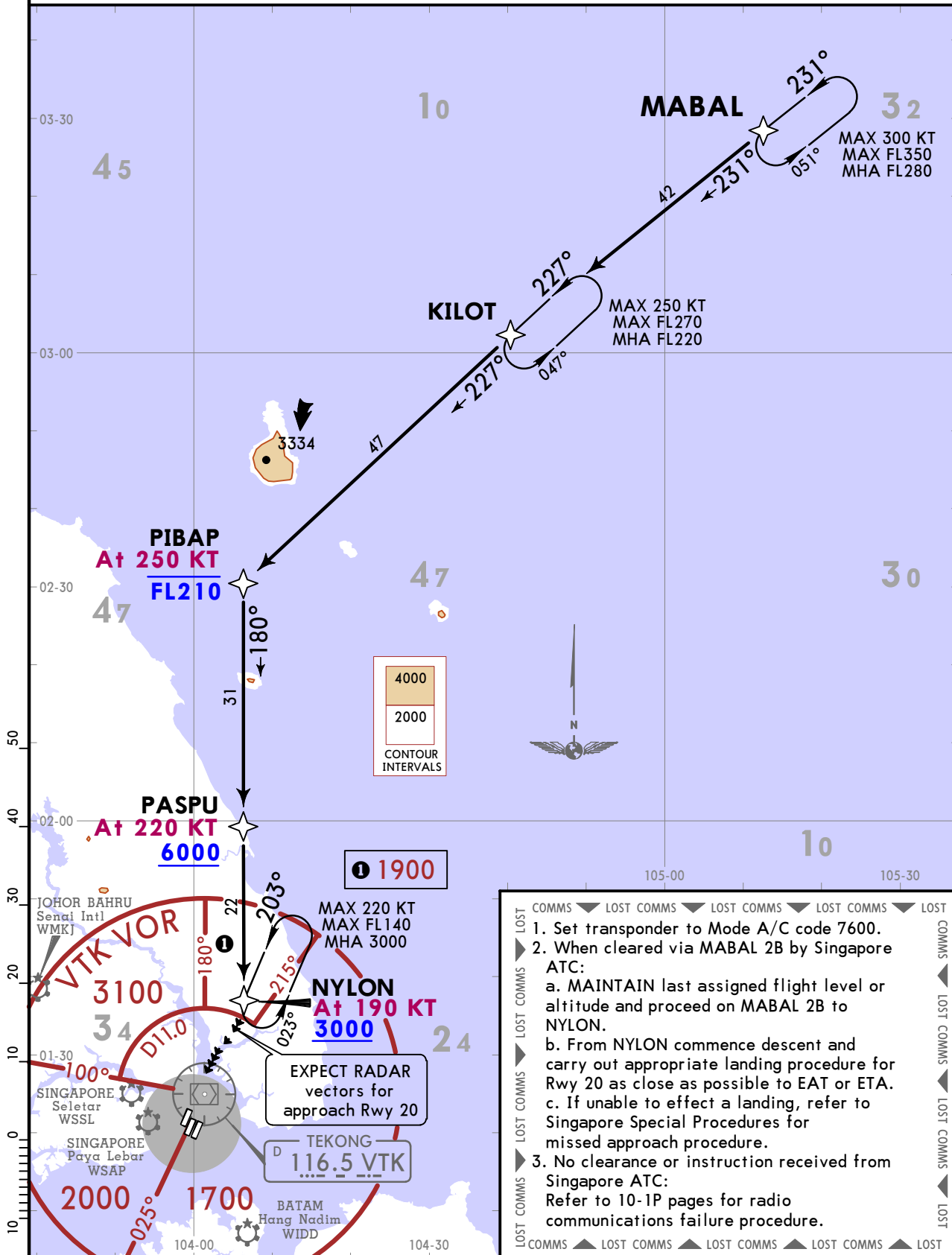
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12 APR 24 (10-2M)

SINGAPORE, SINGAPORE
RNAV STAR

D-ATIS Arrival 128.025	Apt Elev 22	RNAV 1 navigation specification GNSS required	Alt Set: hPa Trans level: FL130
1. RADAR required. 2. CAUTION: RWY 02R/20L closed until further advised.			

MABAL 2B RNAV (GNSS) ARRIVAL
[MABA2B]
(RWYS 20L/C/R)



- LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼
- Set transponder to Mode A/C code 7600.
 - When cleared via MABAL 2B by Singapore ATC:
 - MAINTAIN last assigned flight level or altitude and proceed on MABAL 2B to NYLON.
 - From NYLON commence descent and carry out appropriate landing procedure for Rwy 20 as close as possible to EAT or ETA.
 - If unable to effect a landing, refer to Singapore Special Procedures for missed approach procedure.
 - No clearance or instruction received from Singapore ATC:
Refer to 10-1P pages for radio communications failure procedure.
- LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲

ROUTING
From MABAL. To KILOT, turn LEFT. To PIBAP at or below FL210, speed 250 KT, turn LEFT. To PASPU, at or above 6000, speed 220 KT. To NYLON at or above 3000, speed 190 KT.

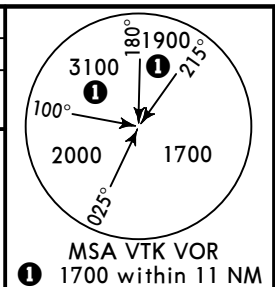
CHANGES: Caution note added, vector track note revised.

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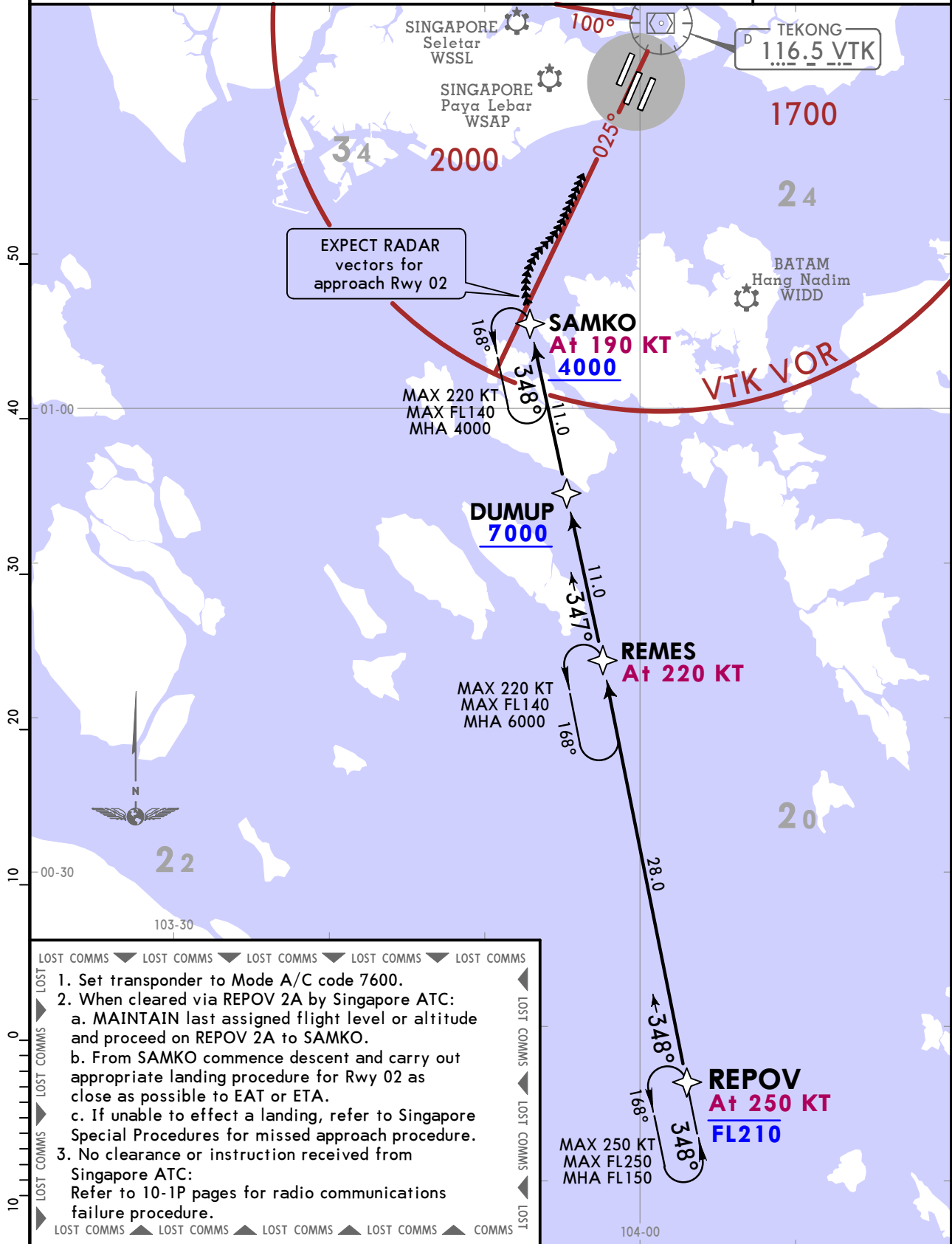
JEPPESSEN
12 APR 24 **(10-2N)**

SINGAPORE, SINGAPORE
RNAV STAR

D-ATIS Arrival 128.025	Apt Elev 22	Alt Set: hPa Trans level: FL130
		RNAV 1 navigation specification GNSS required
1. RADAR required.		
2. CAUTION: RWY 02R/20L closed until further advised.		



REPOV 2A RNAV (GNSS) ARRIVAL
[REPO2A]
(RWYS 02L/C/R)



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LOST

1. Set transponder to Mode A/C code 7600.

2. When cleared via REPOV 2A by Singapore ATC:

- a. MAINTAIN last assigned flight level or altitude and proceed on REPOV 2A to SAMKO.
- b. From SAMKO commence descent and carry out appropriate landing procedure for Rwy 02 as close as possible to EAT or ETA.
- c. If unable to effect a landing, refer to Singapore Special Procedures for missed approach procedure.

3. No clearance or instruction received from Singapore ATC:
Refer to 10-1P pages for radio communications failure procedure.

LOST

LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ COMMS

ROUTING

From REPOV at or below FL210, speed 250 KT. To REMES, speed 220 KT, turn LEFT. To DUMUP at or above 7000. To SAMKO at or above 4000, speed 190 KT.

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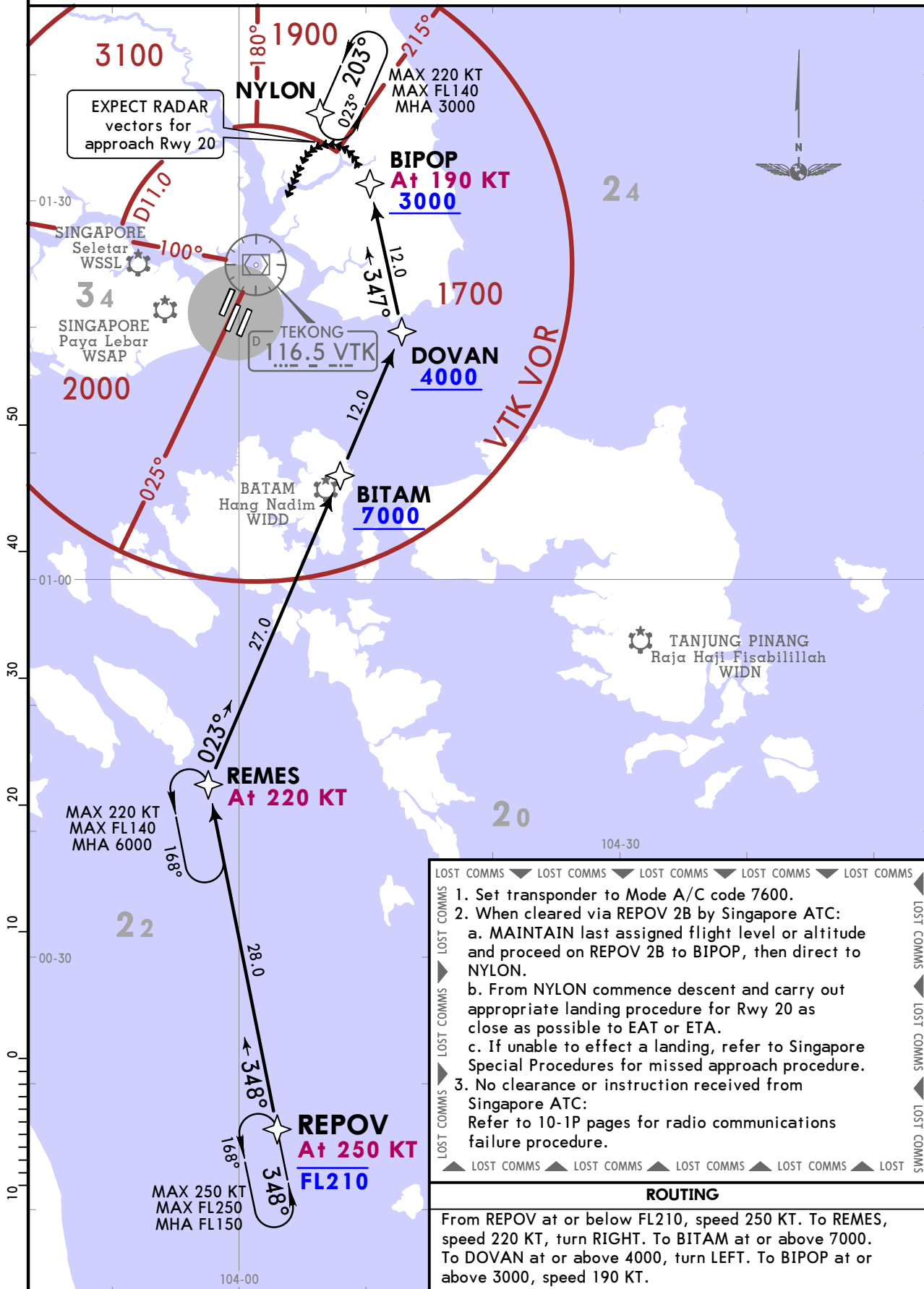
JEPPESEN SINGAPORE, SINGAPORE

12 APR 24 10-2P

RNAV STAR

D-ATIS Arrival 128.025	Apt Elev 22	Alt Set: hPa Trans level: FL130
		RNAV 1 navigation specification GNSS required
1. RADAR required. 2. CAUTION: RWY 02R/20L closed until further advised.		

REPOV 2B RNAV (GNSS) ARRIVAL
[REPO2B]
(RWYS 20L/C/R)



- LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS
- Set transponder to Mode A/C code 7600.
 - When cleared via REPOV 2B by Singapore ATC:
 - MAINTAIN last assigned flight level or altitude and proceed on REPOV 2B to BIPOP, then direct to NYLON.
 - From NYLON commence descent and carry out appropriate landing procedure for Rwy 20 as close as possible to EAT or ETA.
 - If unable to effect a landing, refer to Singapore Special Procedures for missed approach procedure.
 - No clearance or instruction received from Singapore ATC: Refer to 10-1P pages for radio communications failure procedure.
- LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS

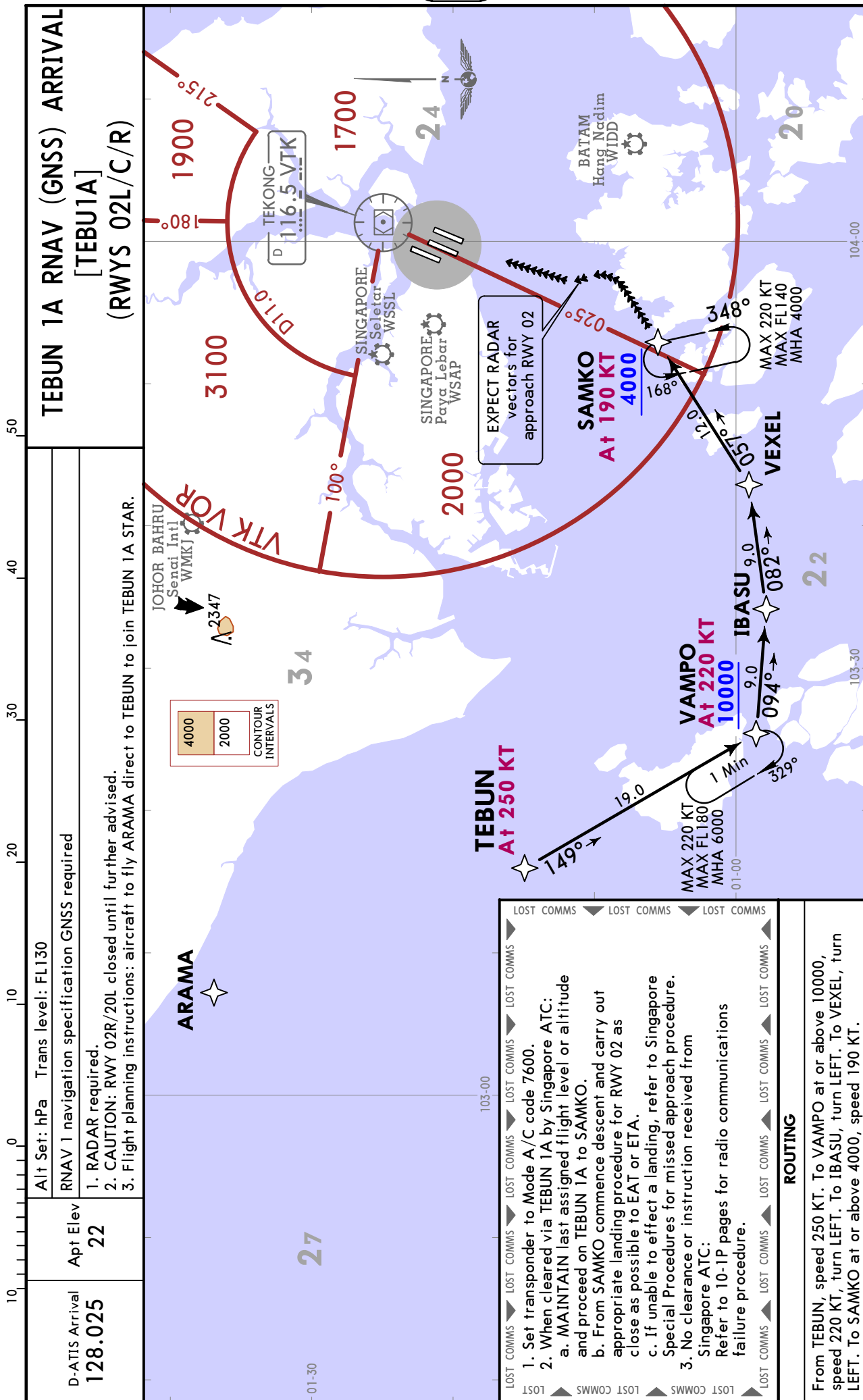
ROUTING

From REPOV at or below FL210, speed 250 KT. To REMES, speed 220 KT, turn RIGHT. To BITAM at or above 7000. To DOVAN at or above 4000, turn LEFT. To BIPOP at or above 3000, speed 190 KT.

WSSS/SIN
CHANGI

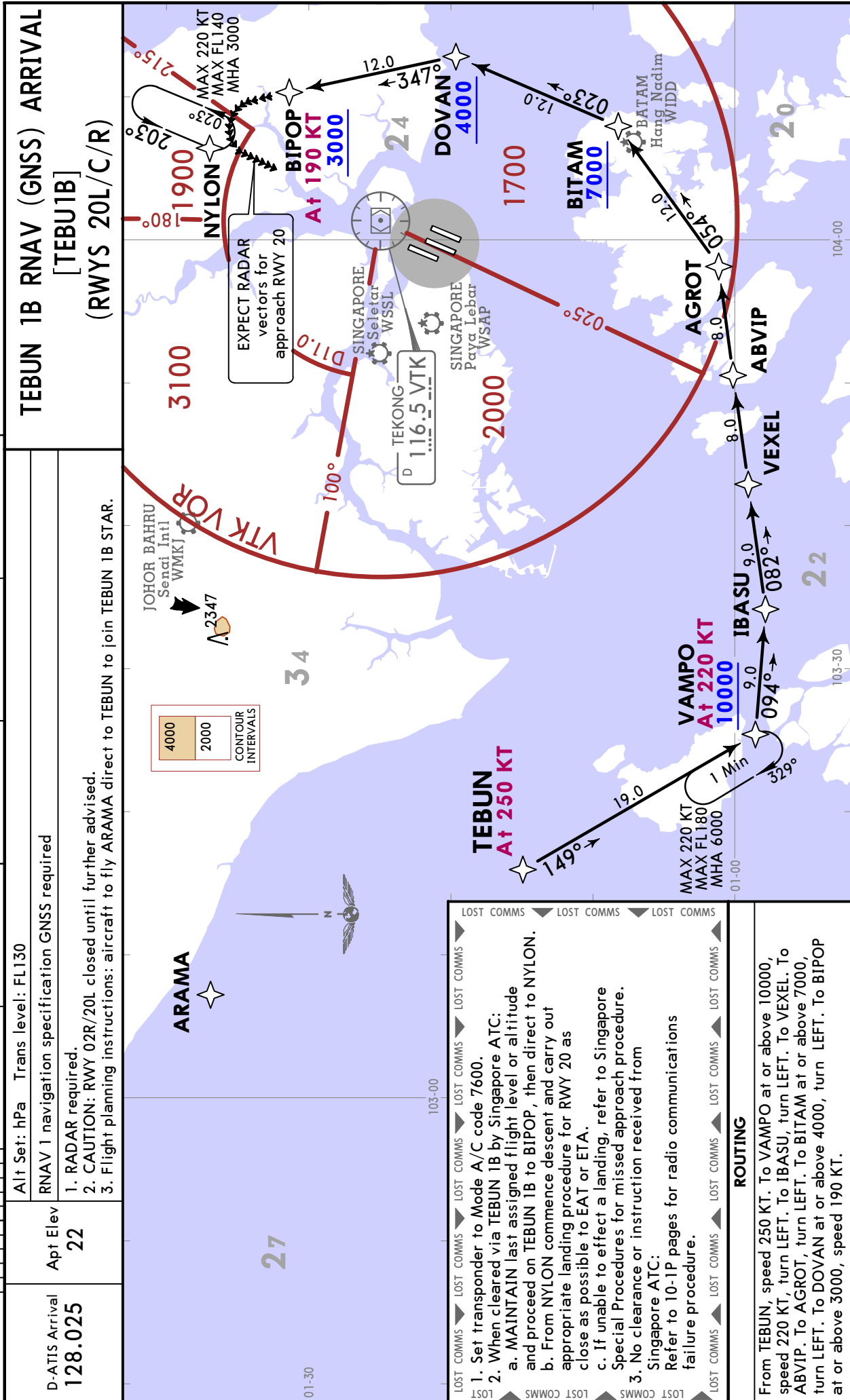
JEPPESEN
12 APR 24 10-2Q

SINGAPORE, SINGAPORE
RNAV STAR



CHANGES: None.

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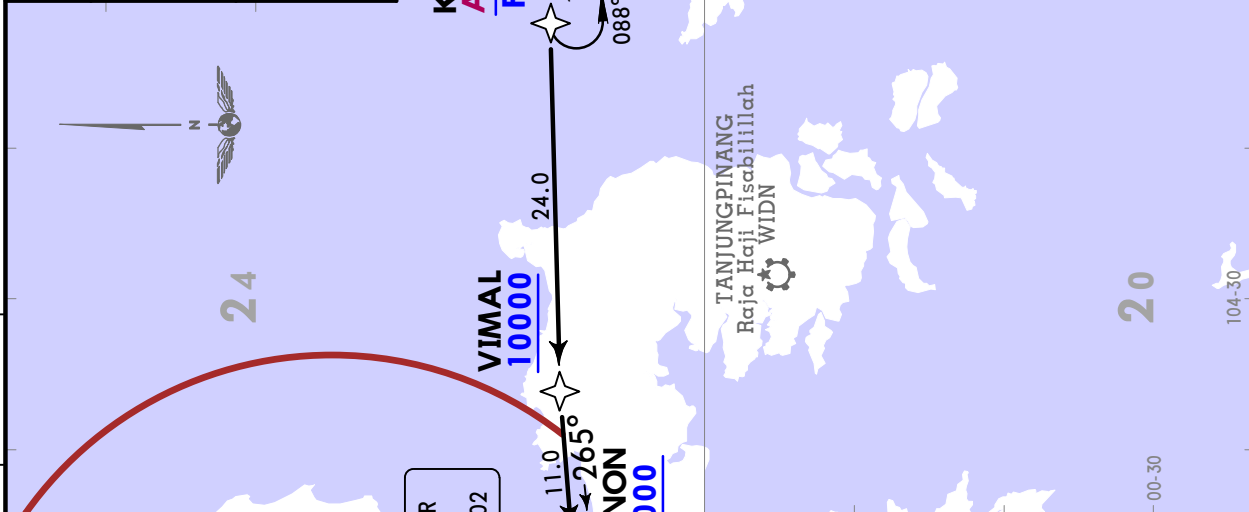
CHANGES: Lost communications note.

WSSS/SIN
CHANGI

JEPPESSEN
12 APR 24 10-2T

SINGAPORE, SINGAPORE
RNAV STAR

D-ATIS Arrival 128.025	Apt Elev 22
Alt Set: hPa Trans level: FL130	
RNAV 1 navigation specification GNSS required	
1. RADAR required. 2. CAUTION: RWY 02R/20L closed until further advised.	
UGEBO 1A RNAV (GNSS) ARRIVAL [UGEBO 1A] (RWYS 02L/C/R)	



JOHOR BAHRU Senai Intl WMKJ 2347	TEKONG 116.5 VTK	SINGAPORE Seletar WSSS	SINGAPORE Paya Lebar WSAP	BATAM Hang Nardim 14.0 WIDD	TANJUNGPINANG Raja Haji Fisabilillah WIDN
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EXPECT RADAR vectors for approach Rwy 02

Contours: 4000, 2000, 1700, 1900, 2150, 3100, 3400

Contours Intervals: 4000, 2000

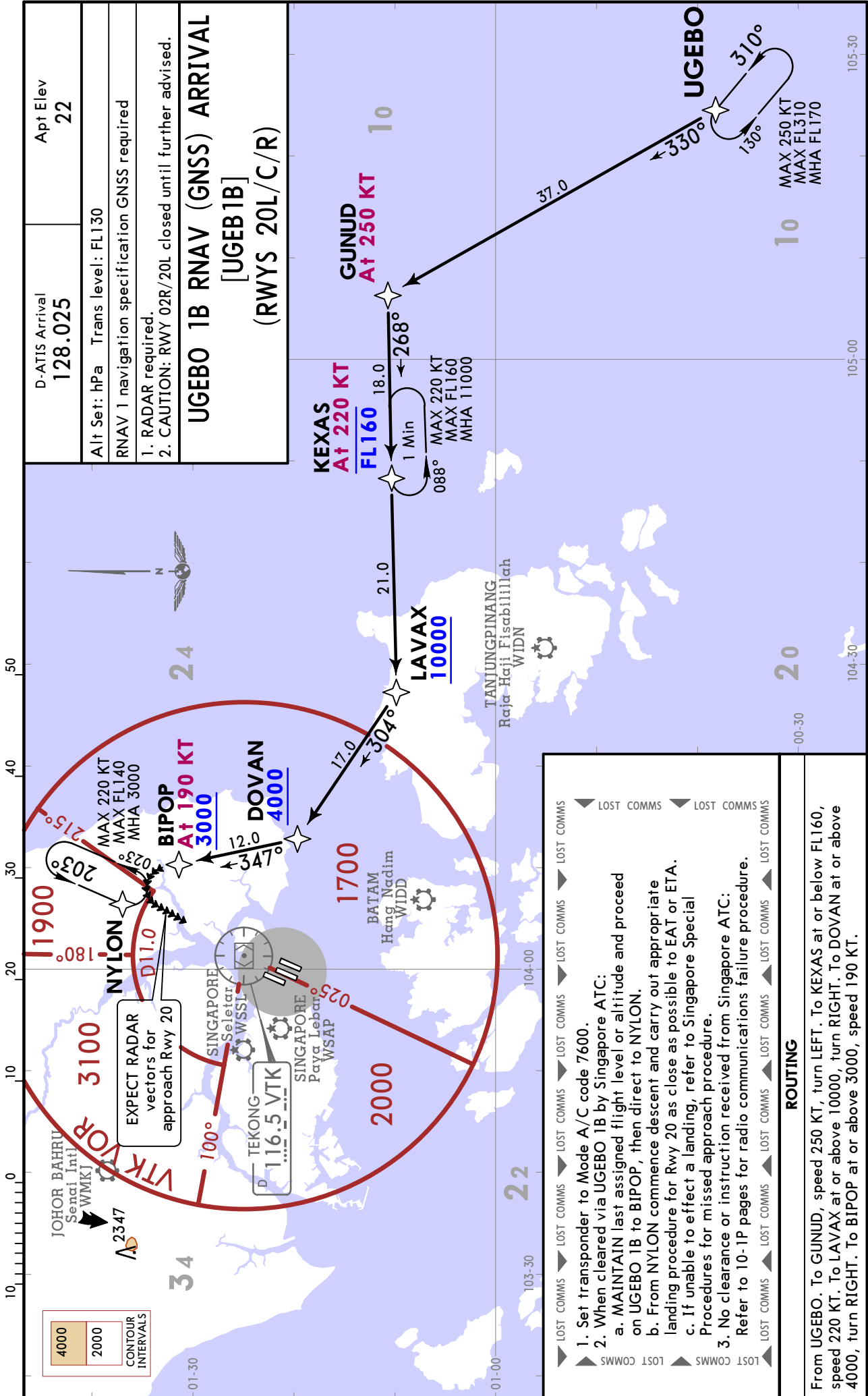
<p>1. Set transponder to Mode A/C code 7600.</p> <p>2. When cleared via UGEBO 1A by Singapore ATC:</p> <ul style="list-style-type: none"> a. MAINTAIN last assigned flight level or altitude and proceed on UGEBO 1A to SANAT, then direct to SAMKO. b. From SAMKO commence descent and carry out appropriate landing procedure for Rwy 02 as close as possible to EAT or ETA. c. If unable to effect a landing, refer to Singapore Special Procedures for missed approach procedure. <p>3. No clearance or instruction received from Singapore ATC: Refer to 10-1P pages for radio communications failure procedure.</p>	<p>ROUTING</p> <p>From UGEBO. To GUNUD, speed 250 KT, turn LEFT. To KEXAS at or below FL160, speed 220 KT. To VIMAL, at or above 10000, turn LEFT. To IGNON at or above 7000, turn RIGHT. To SANAT at or above 4000, speed 190 KT.</p>
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WSSS/SIN
CHANGI

JEPPESSEN
12 APR 24 (10-2U)

SINGAPORE, SINGAPORE
RNAV STAR

D-ATIS Arrival	128.025	Apt Elev	22
Alt Set: hPa	Trans level: FL130		
RNAV 1 navigation specification GNSS required	1. RADAR required.		
	2. CAUTION: RWY 02R/20L closed until further advised.		
UGEBO 1B RNAV (GNSS) ARRIVAL			
[UGEBO1B]			
(RWYS 20L/C/R)			



- ROUTING**
- Set transponder to Mode A/C code 7600.
 - When cleared via UGEBO 1B by Singapore ATC:
 - MAINTAIN last assigned flight level or altitude and proceed on UGEBO 1B to BIPOP, then direct to NYLON.
 - From NYLON commence descent and carry out appropriate landing procedure for Rwy 20 as close as possible to EAT or ETA.
 - If unable to effect a landing, refer to Singapore Special Procedures for missed approach procedure.
 - No clearance or instruction received from Singapore ATC:
Refer to 10-1P pages for radio communications failure procedure.

ROUTING

From UGEBO. To GUNUD, speed 250 KT, turn LEFT. To KEXAS at or below FL160, speed 220 KT. To LAVAX at or above 10000, turn RIGHT. To DOVAN at or above 4000, turn RIGHT. To BIPOP at or above 3000, speed 190 KT.

MINIMUM CLIMB GRADIENT CRITERIA

The Instrument Departure Procedures are only applicable for aircraft with all engines operating. It remains the responsibility of the operator to develop contingency procedures for the individual type of aircraft and to conduct the necessary examination of obstacles throughout the areas concerned in relation to the certificated performance of the individual aircraft type. It is also the responsibility of the operator to ensure that contingency procedures comply fully with the airplane performance requirements of Annex 6.

The specific routes to be followed are depicted in SID Charts pages. Altitude restrictions at fixes and/or DME specify ATC/airspace requirements.

Minimum climb gradient specifies obstacle clearance requirements.

In the event that the minimum climb gradient cannot be achieved, pilots shall inform ATC. ATC shall hold departures if pilots indicate that they are unable to meet the required climb gradient.

RUNWAY 02L

When there are no reports of vessel movement along the northern shipping channel or where the reported vessel height is 55m (180 ft) AMSL and below, all aircraft departures on Runway 02L, regardless of on SID or vectors, shall be on a minimum climb gradient of 5% until reaching or passing 2500 ft. Thereafter, the minimum climb gradient shall be 3.3%.

When the reported vessel height is above 55m (180 ft) AMSL, ATC shall advise departing pilots of the vessel height. Pilots on receipt of this information shall apply the minimum climb gradient in accordance with DETERMINATION OF CLIMB GRADIENT BY OPERATORS. After the aircraft has reached or passed the minimum crossing altitude over vessel, the minimum climb gradient shall be 3.3%.

The minimum climb gradient restriction stated above for Runway 02L is for the purpose of air traffic management. If the climb gradient restriction cannot be complied with, the pilot-in-command of an aircraft departure shall inform ATC during the time when the aircraft commences taxiing to the holding point for departure. Delays can be expected as coordination is required.

RUNWAY 02C

When there are no reports of vessel movement along the northern shipping channel or where the reported vessel height is 115m (377 ft) AMSL and below, all aircraft departures on Runway 02C, regardless of on SID or vectors, shall be on a minimum climb gradient of 5% until reaching or passing 2500 ft. Thereafter, the minimum climb gradient shall be 3.3%.

Where the reported vessel height is above 115m (377 ft) AMSL, ATC shall advise departing pilots of the vessel height. Pilots on receipt of this information shall apply the minimum climb gradient in accordance with DETERMINATION OF CLIMB GRADIENT BY OPERATORS. After the aircraft has reached or passed the minimum crossing altitude over vessel, the minimum climb gradient shall be 3.3%.

The minimum climb gradient restriction stated above for Runway 02C is for the purpose of air traffic management. If the climb gradient restriction cannot be complied with, the pilot-in-command of an aircraft departure shall inform ATC during the time when the aircraft commences taxiing to the holding point for departure. Delays can be expected as coordination is required.

RUNWAYS 20L, 20C AND 20R

All aircraft departures on Runway 20C, regardless of on SID or vectors, shall be on a minimum climb gradient of 7% until reaching or passing 2500 ft. Thereafter, the minimum climb gradient shall be 3.3%.

All aircraft departures on Runway 20R, regardless of on SID or vectors, shall be on a minimum climb gradient of 6% until reaching or passing 2500 ft. Thereafter, the minimum climb gradient shall be 3.3%.

All aircraft departures on Runway 20L, regardless of on SID or vectors, shall be on a minimum climb gradient of 9% until reaching or passing 2500 ft. Thereafter, the minimum climb gradient shall be 3.3%.

The minimum climb gradient restrictions stated above for Runway 20C/20R/20L are for the purpose of air traffic management. If the climb gradient restriction cannot be complied with, the pilot-in-command of an aircraft departure shall inform ATC during the time when the aircraft commences taxiing to the holding point for departure. Delays can be expected as coordination is required.

Refer to Standard Instrument Departures for Runways 20L, 20C and 20R.

MINIMUM CLIMB GRADIENT CRITERIA

RUNWAY 02R

When there are no reports of vessel movement along the northern shipping channel or where the reported vessel height is 95m (312 ft) AMSL and below, all aircraft departures on Runway 02R, regardless of on SID or vectors, shall be on a minimum climb gradient of 5% until reaching or passing 2500ft. Thereafter, the minimum climb gradient shall be 3.3%.

Where the reported vessel height is above 95m (312 ft) AMSL, ATC shall advise departing pilots of the vessel height. Pilots on receipt of this information shall apply the minimum climb gradient in accordance with DETERMINATION OF CLIMB GRADIENT BY OPERATORS. After the aircraft has reached or passed the minimum crossing altitude over vessel, the minimum climb gradient shall be 3.3%.

The minimum climb gradient restriction stated above for Runway 02R is for the purpose of air traffic management. If the climb gradient restriction cannot be complied with, the pilot-in-command of an aircraft departure shall inform ATC during the time when the aircraft commences taxiing to the holding point for departure. Delays can be expected as coordination is required.

DETERMINATION OF CLIMB GRADIENT BY OPERATORS

Aircraft operators shall calculate their own climb gradients based on actual lift off point to ensure enough clearance with the vessels crossing the northern shipping channel. The calculation will have to ensure the following:

- The most penalizing obstacle is taken into account under both all-engines operating procedures as well as one-engine-out procedures; and
- The required minimum obstacle clearance (MOC) is met under all engines operating procedures.

Note: The calculated climb gradient shall not be lower than the procedure climb gradient for departures.

For the above calculations, operators shall use the distance information for the various departure runways as follows:

Departure Runway	Distance (d)
02L	1100m
02C	2590m
02R	2130m

Note: The distances for departure Runways 02L, 02C and 02R are measured from the DER to the shipping channel north of Changi.

CHANGES: Bearing between VASTI and VIRET, Initial climb text.

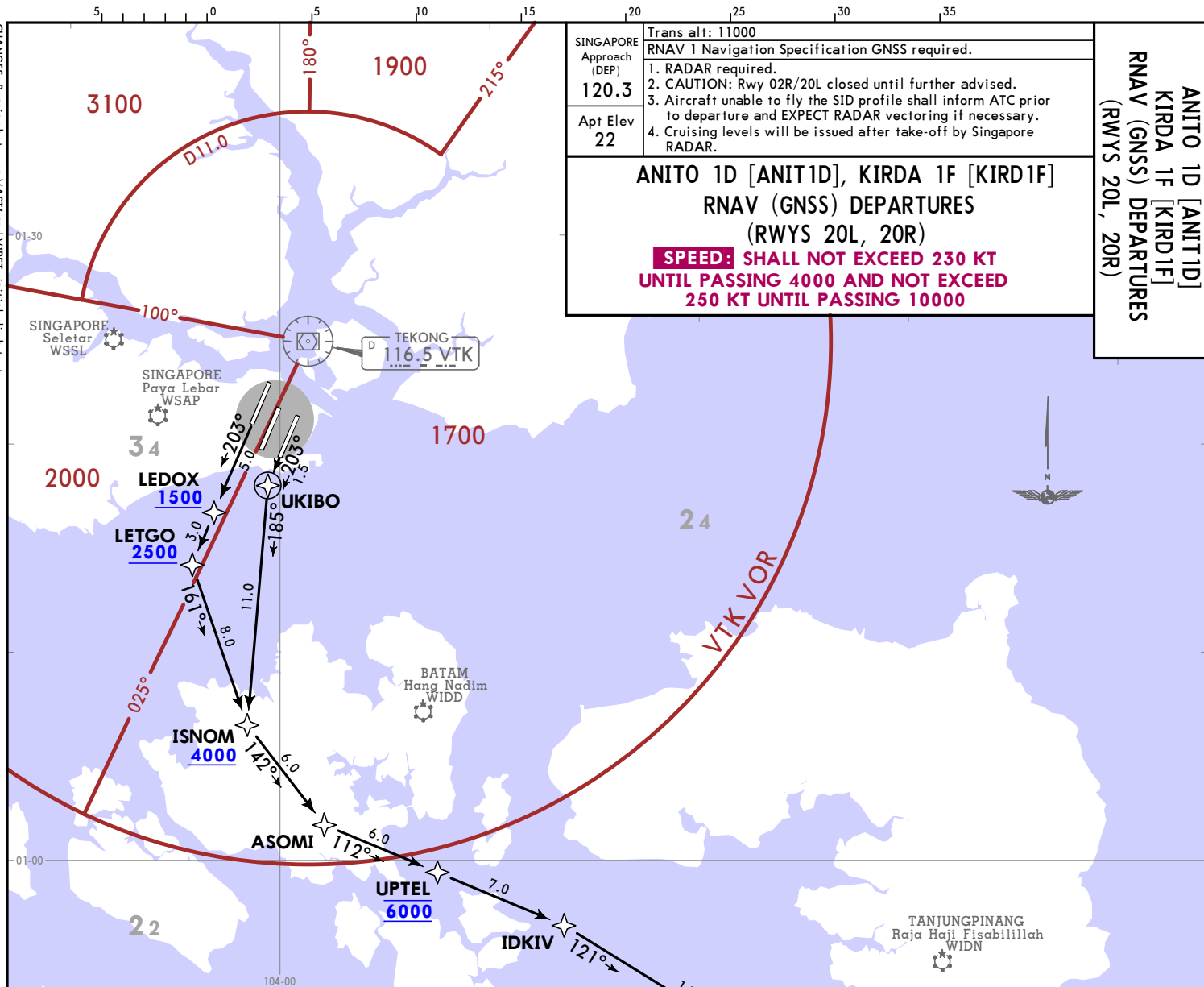
WSSS/SIN
CHANGI 12 APR 24 (10-3B)
JEPPERSEN

SINGAPORE Approach (DEP) 120.3	Trans alt: 11000
	RNAV 1 Navigation Specification GNSS required.
Apt Elev 22	1. RADAR required.
	2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.	
4. Cruising levels will be issued after take-off by Singapore RADAR.	

**ANITO 1D [ANIT1D], KIRDA 1F [KIRD1F]
RNAV (GNSS) DEPARTURES
(RWYS 20L, 20R)**

**SPEED: SHALL NOT EXCEED 230 KT
UNTIL PASSING 4000 AND NOT EXCEED
250 KT UNTIL PASSING 10000**

ANITO 1D [ANIT1D]
KIRDA 1F [KIRD1F]
RNAV (GNSS) DEPARTURES
(RWYS 20L, 20R)



LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼

1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure: Proceed direct to SAMKO Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲

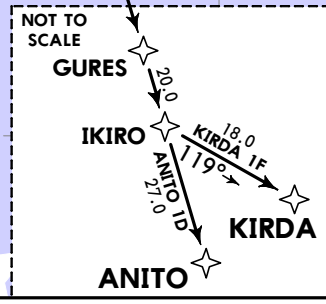
Minimum climb gradient criteria, when taken off the SIDs, as instructed by ATC: See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
ANITO 1D: 9.0% until reaching or passing 2500, thereafter 3.3%.
KIRDA 1F: 6.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
6.0% V/V (fpm)	456	608	911	1215	1519	1823
9.0% V/V (fpm)	684	911	1367	1823	2279	2734

Initial climb clearance 3000

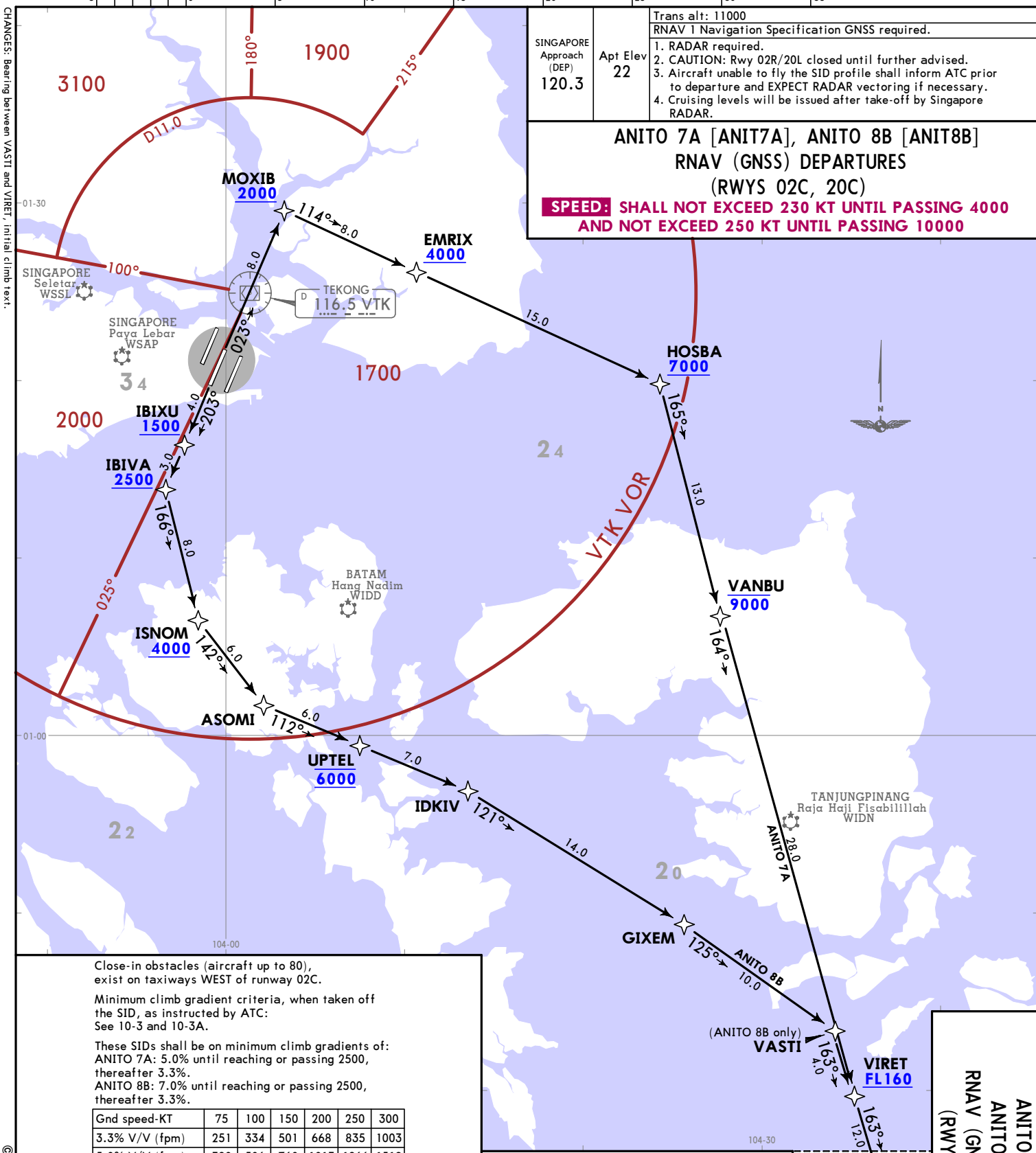
SID	RWY	INITIAL CLIMB
ANITO 1D	20L	To UKIBO on course 203°, turn LEFT. To ISNOM at or above 4000, turn LEFT. To ASOMI, turn LEFT. To UPTTEL, at 6000. To IDKIV, turn RIGHT. To GIXEM, turn RIGHT. To VASTI, turn RIGHT. To VIRET at or above FL160. To GURES. To IKIRO. To ANITO.
KIRDA 1F	20R	To LEDOX on course 203° at or above 1500. To LETGO at or above 2500, turn LEFT. To ISNOM at or above 4000, turn LEFT. To ASOMI, turn LEFT. To UPTTEL, at 6000. To IDKIV, turn RIGHT. To GIXEM, turn RIGHT. To VASTI, turn RIGHT. To VIRET at or above FL160. To GURES. To IKIRO, turn LEFT. To KIRDA.



SINGAPORE, SINGAPORE
RNAV SID

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CHANGES: Bearing between VASTI and VIRET, Initial climb text.



SINGAPORE Approach (DEP) 120.3	Apt Elev 22	Trans alt: 11000
		RNAV 1 Navigation Specification GNSS required.
1. RADAR required. 2. CAUTION: Rwy 02R/20L closed until further advised. 3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary. 4. Cruising levels will be issued after take-off by Singapore RADAR.		

**ANITO 7A [ANIT7A], ANITO 8B [ANIT8B]
RNAV (GNSS) DEPARTURES
(RWYS 02C, 20C)**

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

Close-in obstacles (aircraft up to 80), exist on taxiways WEST of runway 02C.

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
 ANITO 7A: 5.0% until reaching or passing 2500, thereafter 3.3%.
 ANITO 8B: 7.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
7.0% V/V (fpm)	532	709	1063	1418	1772	2127

Initial climb clearance 3000

SID	RWY	INITIAL CLIMB
ANITO 7A	02C	To MOXIB on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000. To HOSBA at or above 7000, turn RIGHT. To VANBU at or below 9000, turn LEFT. To VIRET at or above FL160, turn LEFT. To GURES. To IKIRO. To ANITO.
ANITO 8B	20C	To IBIXU on course 203° at or above 1500, to IBIVA at or above 2500, turn LEFT. To ISNOM at or above 4000, turn LEFT. To ASOMI, turn LEFT. To UPTTEL at 6000. To IDKIV, turn RIGHT. To GIXEM, turn RIGHT. To VASTI, turn RIGHT. To VIRET at or above FL160. To GURES. To IKIRO. To ANITO.

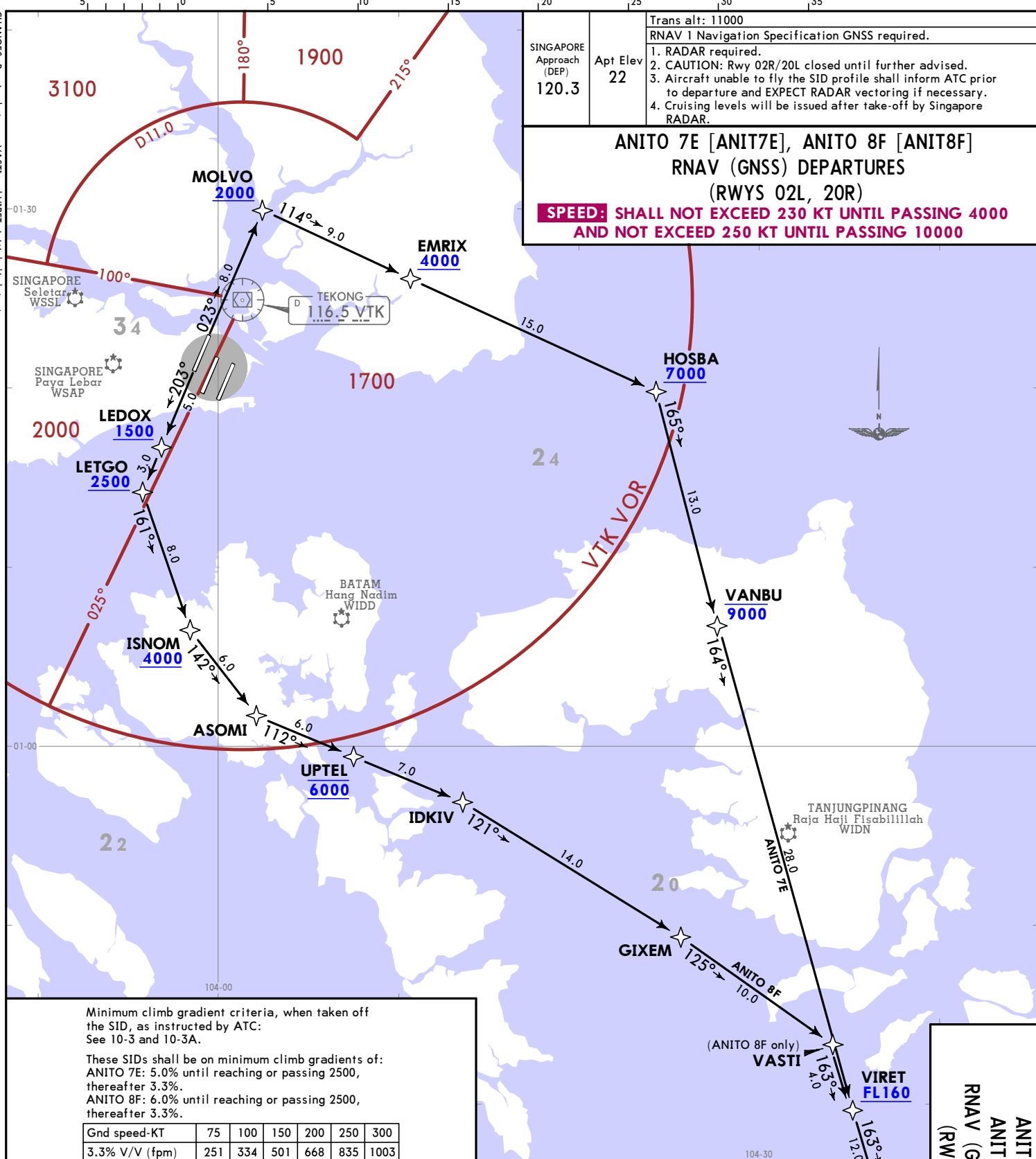
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- Set transponder to Mode A/C code 7600.
- Communications failure occurs immediately after departure:
 Rwy 02C: Proceed direct to NYLON Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 Rwy 20C: Proceed direct to SAMKO Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

NOT TO SCALE

GURES 20.0
IKIRO 21.0
ANITO

CHANGES: Bearing between VASTI and VIRET, Initial climb text.



SINGAPORE Approach (DEP) 120.3	Apt Elev 22	Trans alt: 11000
		RNAV 1 Navigation Specification GNSS required.
1. RADAR required. 2. CAUTION: Rwy 02R/20L closed until further advised. 3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary. 4. Cruising levels will be issued after take-off by Singapore RADAR.		
ANITO 7E [ANIT7E], ANITO 8F [ANIT8F] RNAV (GNSS) DEPARTURES (RWYS 02L, 20R)		
SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000		

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
ANITO 7E: 5.0% until reaching or passing 2500, thereafter 3.3%.
ANITO 8F: 6.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
6.0% V/V (fpm)	456	608	911	1215	1519	1823

Initial climb clearance 3000

SID	RWY	INITIAL CLIMB
ANITO 7E	02L	To MOLVO on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000. To HOSBA at or above 7000, turn RIGHT. To VANBU at or below 9000, turn LEFT. To VIRET at or above FL160, turn LEFT. To GURES. To IKIRO. To ANITO.
ANITO 8F	20R	To LEDOX on course 203° at or above 1500. To LETGO at or above 2500, turn LEFT. To ISNOM at or above 4000, turn LEFT. To ASOMI, turn LEFT. To UPTTEL, at 6000. To IDKIV, turn RIGHT. To GIXEM, turn RIGHT. To VASTI, turn RIGHT. To VIRET at or above FL160. To GURES. To IKIRO. To ANITO.

1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure:

Rwy 02L: Proceed direct to NYLON Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
Rwy 20R: Proceed direct to SAMKO Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

NOT TO SCALE

GURES
IKIRO
ANITO

**ANITO 7E [ANIT7E]
ANITO 8F [ANIT8F]
RNAV (GNSS) DEPARTURES
(RWYS 02L, 20R)**

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CHANGES: None

SINGAPORE Approach (DEP) 120.3

Apt Elev 22

Trans alt: 11000

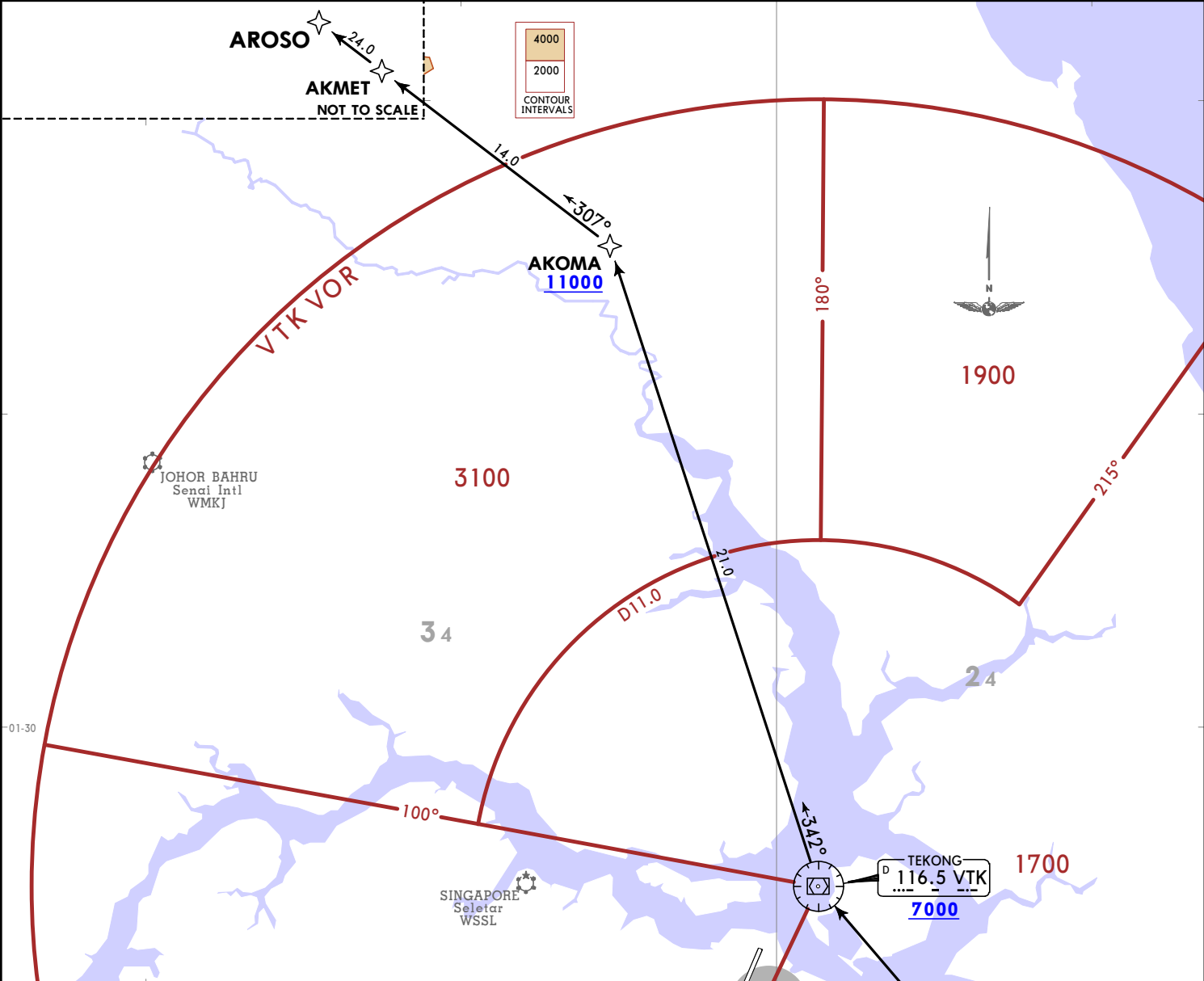
RNAV 1 Navigation Specification GNSS required.

1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.

AROSO 1D RNAV (GNSS) DEPARTURE

[AROS1D]
(RWY 20L)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000



LOST COMMS

1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure: Proceed direct to SAMKO Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

LOST COMMS

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.

This SID shall be on minimum climb gradients of: 9.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
9.0% V/V (fpm)	684	911	1367	1823	2279	2734

Initial climb clearance **3000**

INITIAL CLIMB

To UKIBO on course 203°, turn LEFT. To POVEB at or above 2500, turn LEFT. To ADPON at or above 4000, turn LEFT. To SALRU, turn LEFT. To VTK VOR at or above 7000, turn RIGHT. To AKOMA at or above 11000, turn LEFT. To AKMET. To AROSO.

WSSS/SIN CHANGI

JEPPESSEN 12 Apr 24 (10-3E)

SINGAPORE, SINGAPORE RNAV SID

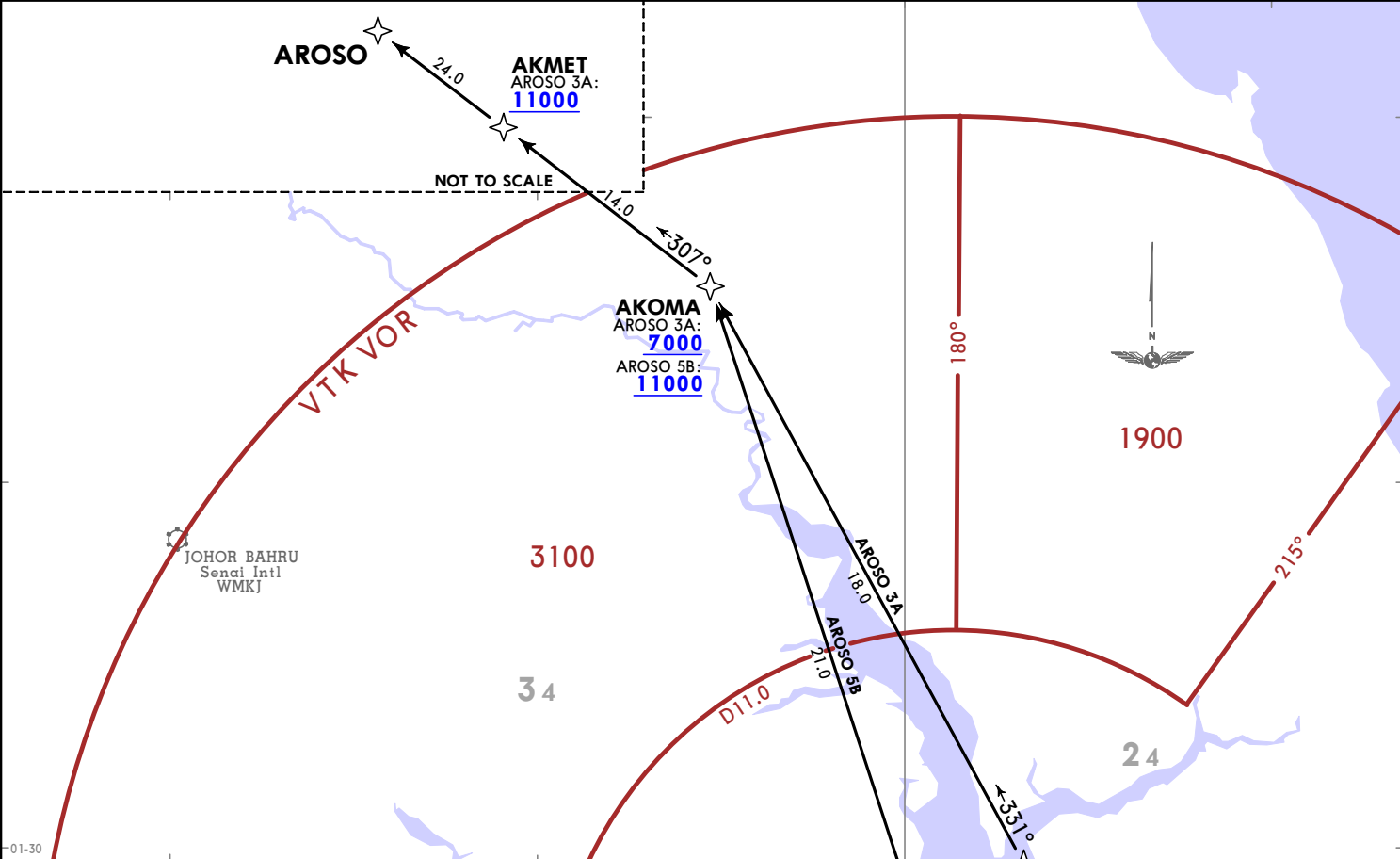
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CHANGES: Procedures renumbered and revised.

SINGAPORE Approach (DEP) 120.3	Apt Elev 22	Trans alt: 11000
		RNAV 1 Navigation Specification GNSS required.
<ol style="list-style-type: none"> 1. RADAR required. 2. CAUTION: Rwy 02R/20L closed until further advised. 3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary. 4. Cruising levels will be issued after take-off by Singapore RADAR. 		

AROSO 3A [AROSA3A], AROSO 5B [AROSA5B]
RNAV (GNSS) DEPARTURES
(RWYS 02C, 20C)
SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000
AND NOT EXCEED 250 KT UNTIL PASSING 10000

WSSS/SIN
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 15 MAR 24
 10-3F
 EFF 21 Mar
 JEPPESEN



COMMS LOST COMMS LOST COMMS LOST COMMS LOST COMMS LOST COMMS

1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure:
 Rwy 02C: Proceed direct to Nylon Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 Rwy 20C: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

Close-in obstacles (aircraft up to 80), exist on taxiways WEST of runway 02C.

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
 See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
 AROSO 3A: 5.0% until reaching or passing 2500, thereafter 3.3%.
 AROSO 5B: 7.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
7.0% V/V (fpm)	532	709	1063	1418	1772	2127

Initial climb clearance 3000

SID	RWY	INITIAL CLIMB
AROSO 3A	02C	To MOXIB on course 023° at or above 2000, turn LEFT. To AKOMA at or above 7000, turn LEFT. To AKMET at or above 11000. To AROSO.
AROSO 5B	20C	To IBIXU on course 203° at or above 1500. To IBIVA at or above 2500, turn LEFT. To DUBOT at or above 4000, turn LEFT. To ADPON, turn LEFT. To SALRU, turn LEFT. To VTK VOR at or above 7000, turn RIGHT. To AKOMA at or above 11000, turn LEFT. To AKMET. To AROSO.

AROSO 3A [AROSA3A]
 AROSO 5B [AROSA5B]
 RNAV (GNSS) DEPARTURES
 (RWYS 02C, 20C)
 RNAV SID

SINGAPORE, SINGAPORE

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CHANGES: Procedures renumbered and revised.

SINGAPORE Approach (DEP) 120.3

Apt Elev 22

Trans alt: 11000

RNAV 1 Navigation Specification GNSS required.

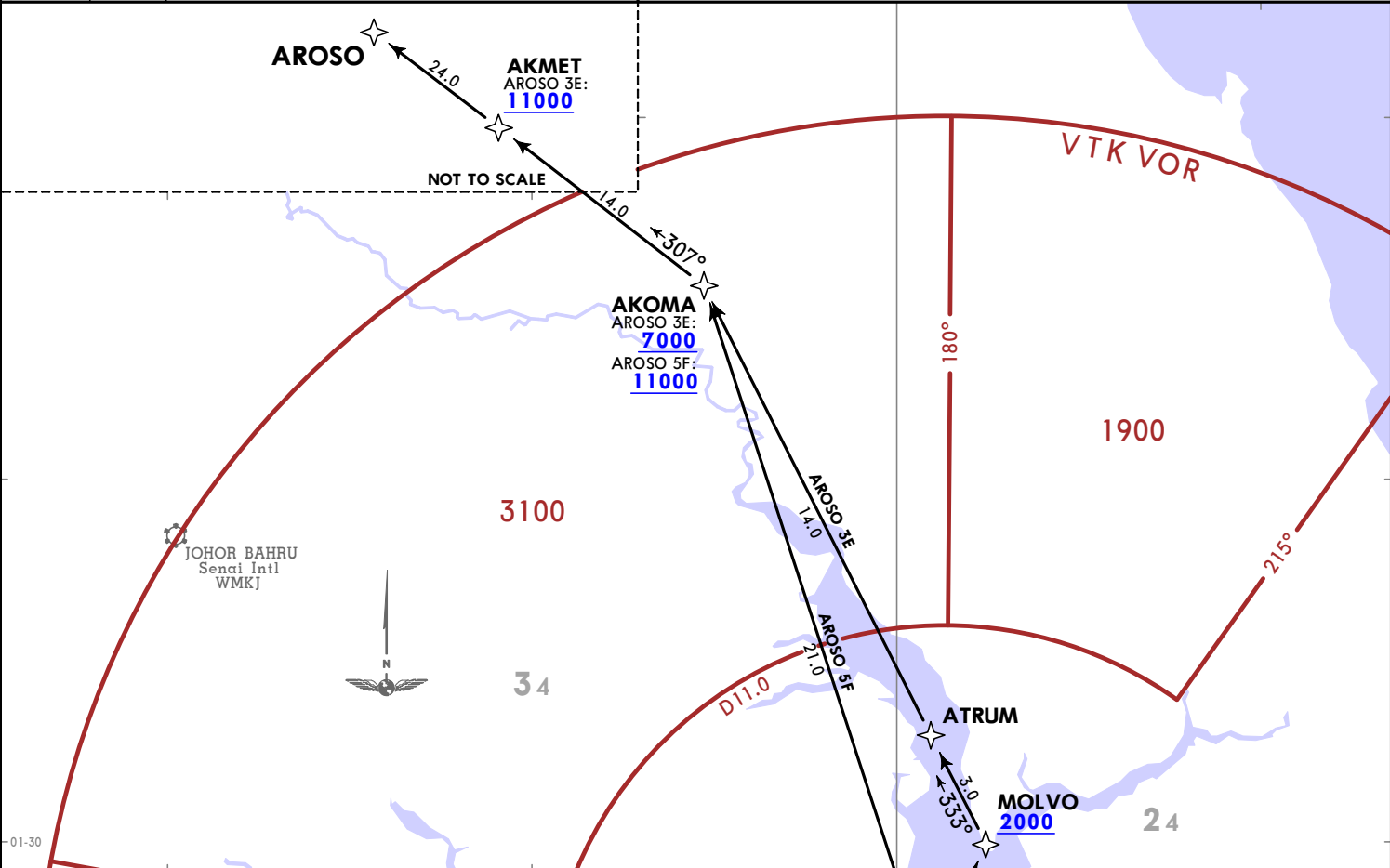
1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.

AROSO 3E [AROS3E], AROSO 5F [AROS5F]

RNAV (GNSS) DEPARTURES

(RWYS 02L, 20R)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000



LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼

1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure:
 Rwy 02L: Proceed direct to Nylon Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 Rwy 20R: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲

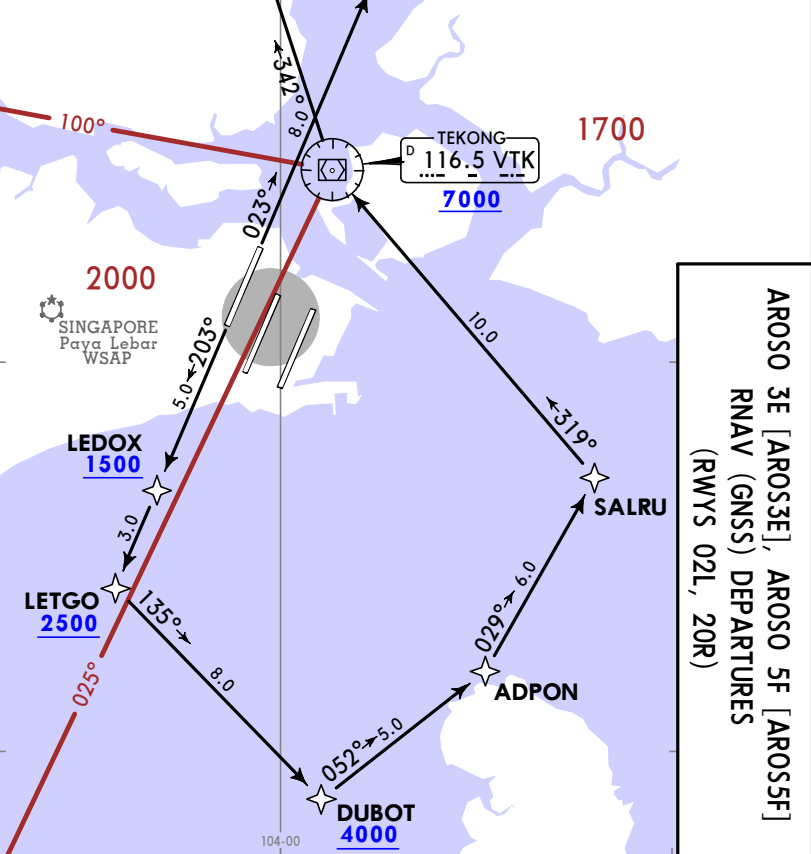
Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
 AROSO 3E: 5.0% until reaching or passing 2500, thereafter 3.3%.
 AROSO 5F: 6.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
6.0% V/V (fpm)	456	608	911	1215	1519	1823

Initial climb clearance 3000

SID	RWY	INITIAL CLIMB
AROSO 3E	02L	To MOLVO on course 023° at or above 2000, turn LEFT. To ATRUM. To AKOMA at or above 7000, turn LEFT. To AKMET at or above 11000. To AROS.
AROSO 5F	20R	To LEDOX on course 203° at or above 1500. To LETGO at or above 2500, turn LEFT. To DUBOT at or above 4000, turn LEFT. To ADPON, turn LEFT. To SALRU, turn LEFT. To VTK VOR at or above 7000, turn RIGHT. To AKOMA at or above 11000, turn LEFT. To AKMET. To AROS.



AROSO 3E [AROS3E], AROSO 5F [AROS5F]

RNAV (GNSS) DEPARTURES

(RWYS 02L, 20R)

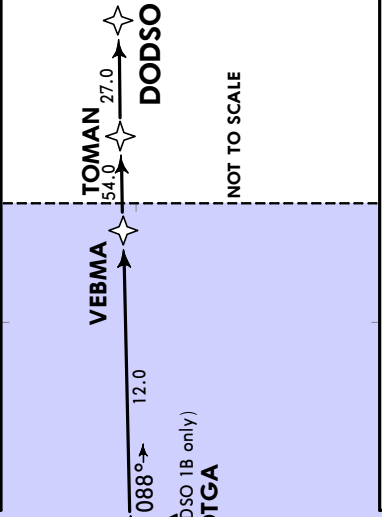
WSSS/SIN
 CHANGI
 15 MAR 24 (10-3G) EFF 21 MAR
 JEPPISEN SINGAPORE, SINGAPORE
 RNAV SID

SINGAPORE, SINGAPORE

RNAV SID

Trans alt: 11000
 SINGAPORE Approach (DEP) **120.3**
 RNAV 1 Navigation Specification GNSS required.
 1. RADAR required.
 2. CAUTION: Rwy 02R/20L closed until further advised.
 3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXCEPT RADAR vectoring if necessary.
 4. Cruising levels will be issued after take-off by Singapore RADAR.

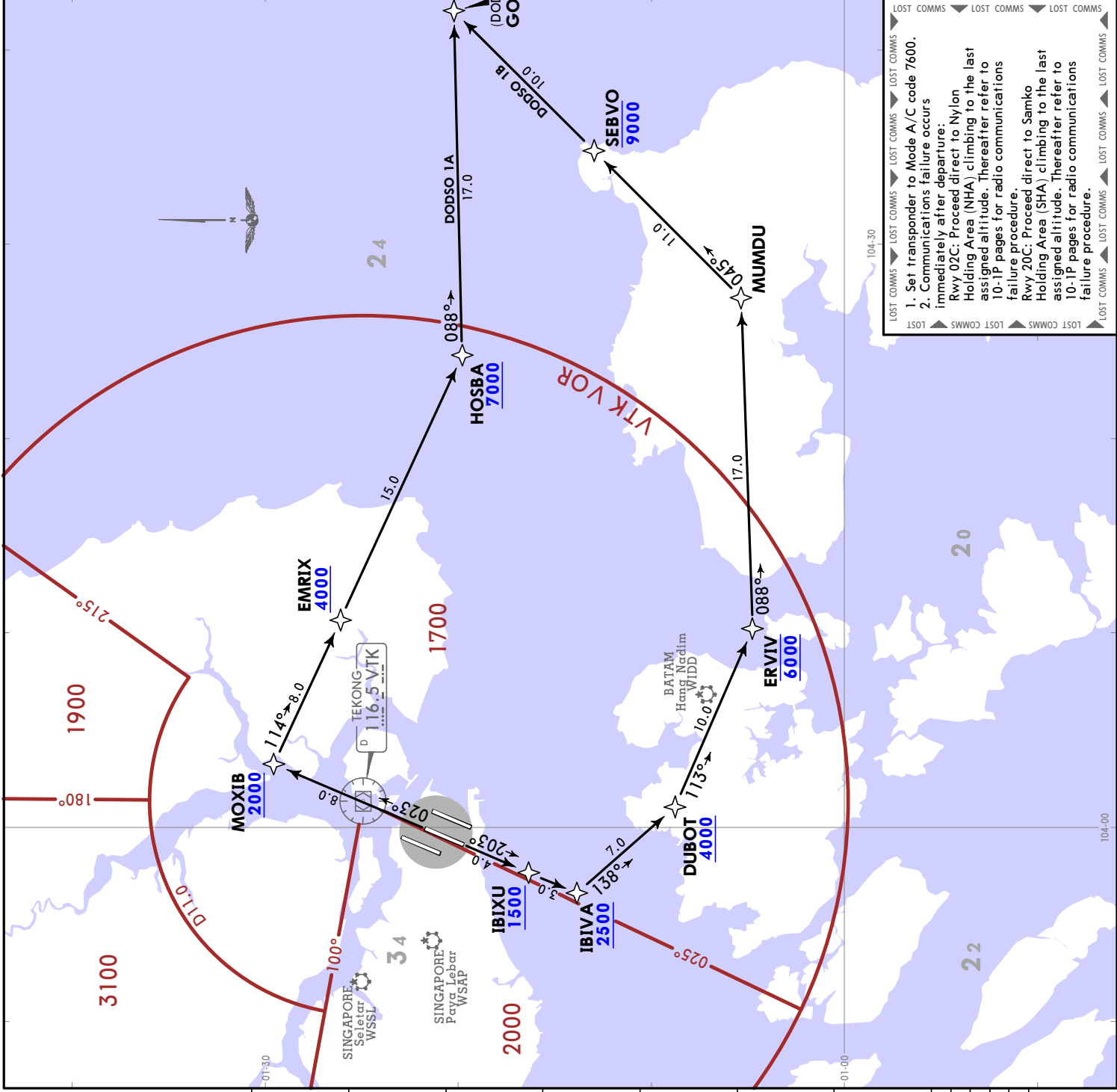
DODSO 1A [DODS1A]
DODSO 1B [DODS1B]
RNAV (GNSS) DEPARTURES (RWYS 02C, 20C)
SPEED SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000



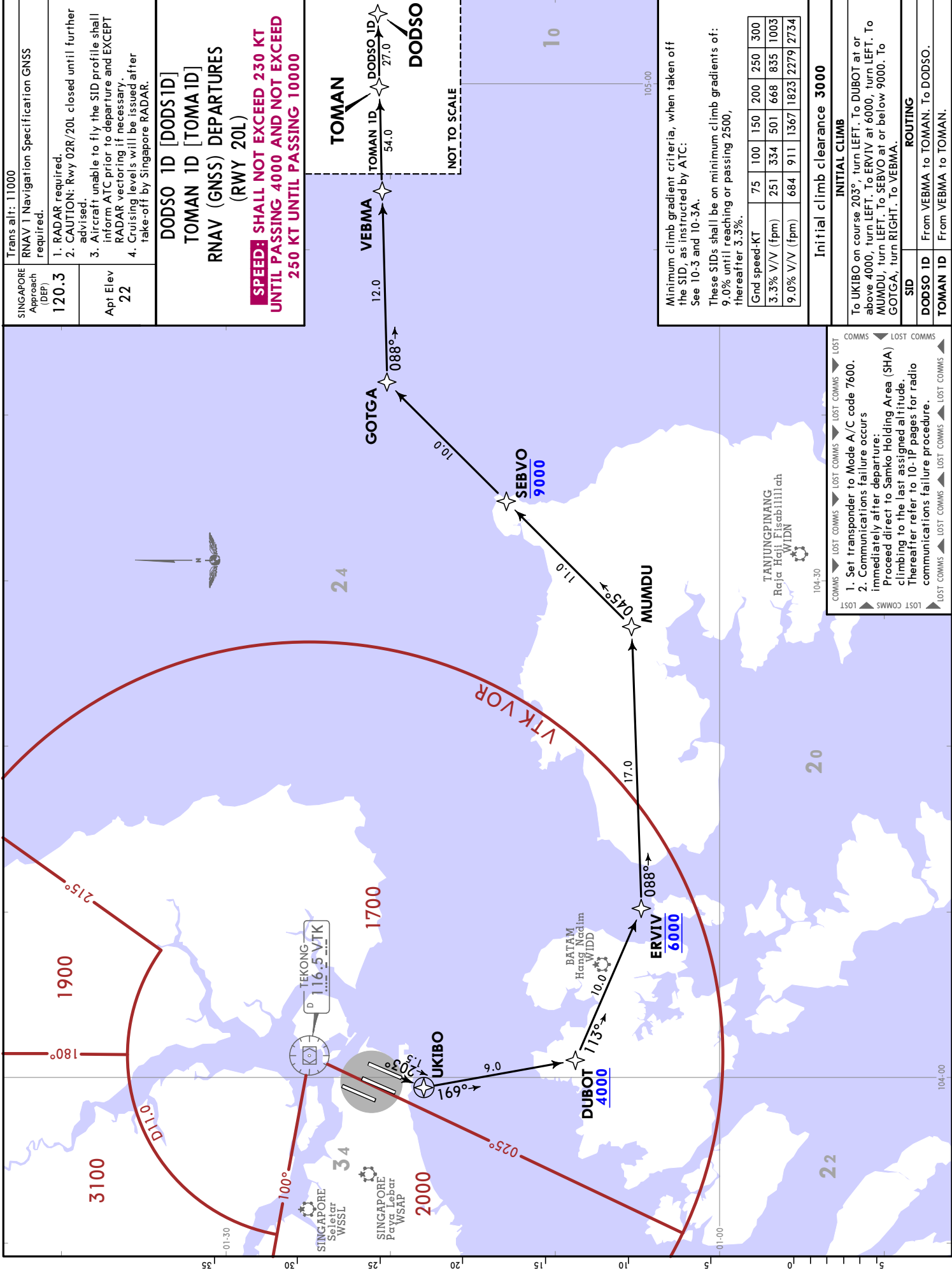
Close-in obstacles (aircraft up to 80), exist on taxiways WEST of runway 02C.
 Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
 See 10-3 and 10-3A.
 These SIDs shall be on minimum climb gradients of:
 DODSO 1A: 5.0% until reaching or passing 2500, thereafter 3.3%.
 DODSO 1B: 7.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
7.0% V/V (fpm)	532	709	1063	1418	1772	2127

SID	RWY	Initial climb clearance
DODSO 1A	02C	To MOXIB on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000. To VEBMA at or above 7000, turn LEFT. To TOMAN. To DODSO.
DODSO 1B	20C	To IBIXU on course 203° at or above 1500. To IBIVA at or above 2500, turn LEFT. To DUBOT at or above 4000, turn LEFT. To ERVIV at 6000, turn LEFT. To MUMDU, turn LEFT. To SEBVO at or below 9000. To GOTGA, turn RIGHT. To VEBMA. To TOMAN. To DODSO.



LOST COMMS
 1. Set transponder to Mode A/C code 7600.
 2. Communications failure occurs immediately after departure:
 Rwy 02C: Proceed direct to Nylon Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 Rwy 20C: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.



SINGAPORE, SINGAPORE

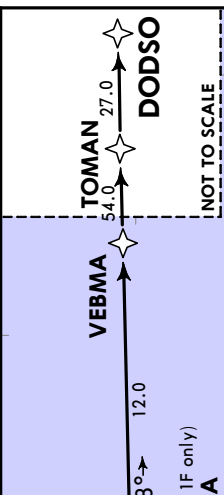
RNAV SID

Trans alt: 11000
 SINGAPORE Approach (DEP) **120.3**
 Apt Elev **22**

RNAV 1 Navigation Specification GNSS required.

- RADAR required.
- CAUTION: Rwy 02R/20L closed until further advised.
- Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXCEPT RADAR vectoring if necessary.
- Cruising levels will be issued after take-off by Singapore RADAR.

DODSO 1E [DODS1E]
DODSO 1F [DODS1F]
RNAV (GNSS) DEPARTURES (RWYS 02L, 20R)
SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000



Initial climb clearance	3000					
SID	INITIAL CLIMB					
RWY	To MOLVO on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000, turn RIGHT. To HOSBA at or above 7000, turn LEFT. To VEBMA. To TOMAN. To DODSO.					
DODSO 1E	To LEDOX on course 203° at or above 1500. To LETGO at or above 2500, turn LEFT. To DUBOT at or above 4000, turn LEFT. To ERVIV at 6000, turn LEFT. To MUMDU, turn LEFT. To SEBVO at or below 9000. To GOTGA, turn RIGHT. To VEBMA. To TOMAN. To DODSO.					
DODSO 20R						

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
 See 10-3 and 10-3A.

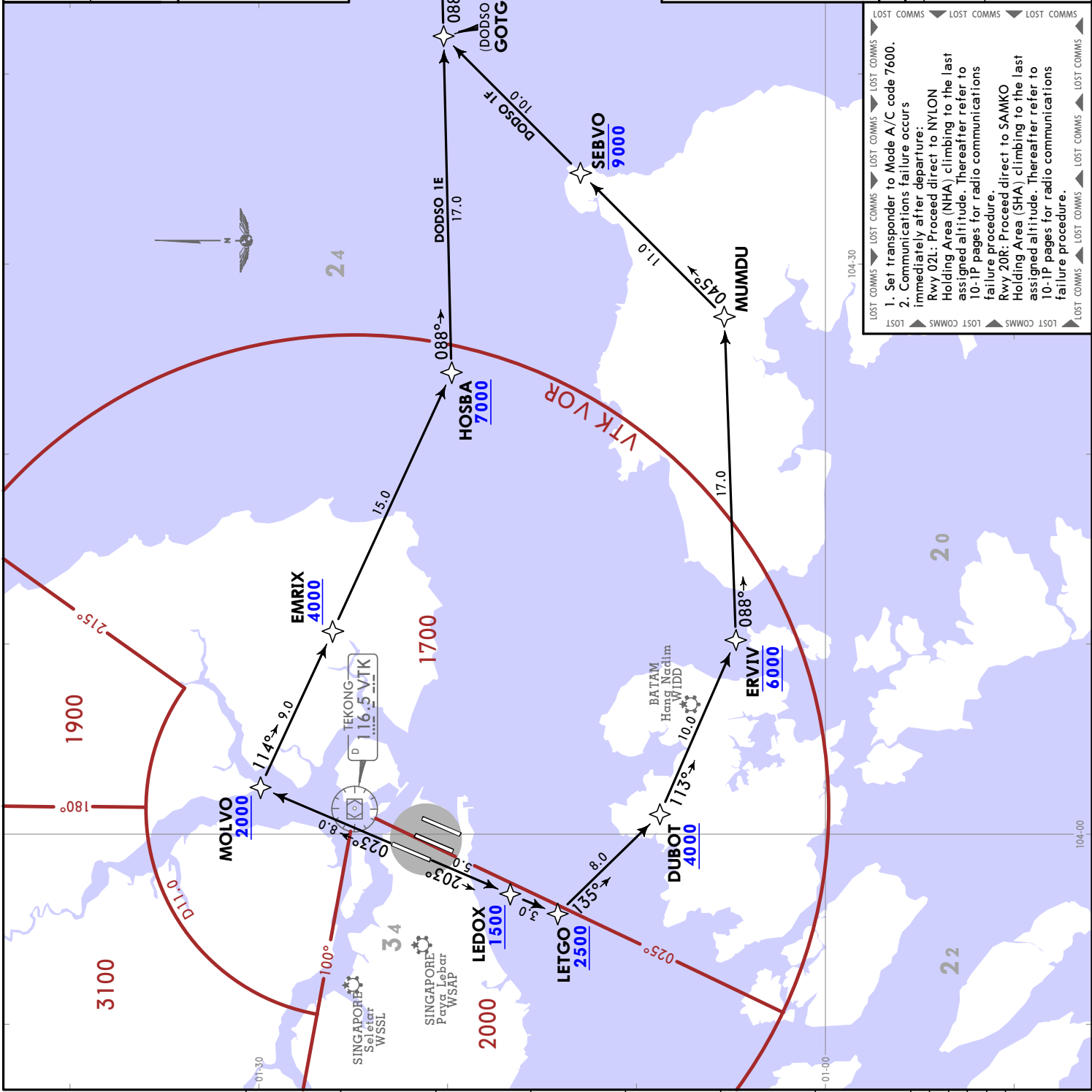
These SIDs shall be on minimum climb gradients of:
 DODSO 1E: 5.0% until reaching or passing 2500, thereafter 3.3%.
 DODSO 1F: 6.0% until reaching or passing 2500, thereafter 3.3%.

Grd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
6.0% V/V (fpm)	456	608	911	1215	1519	1823

WSSS/SIN



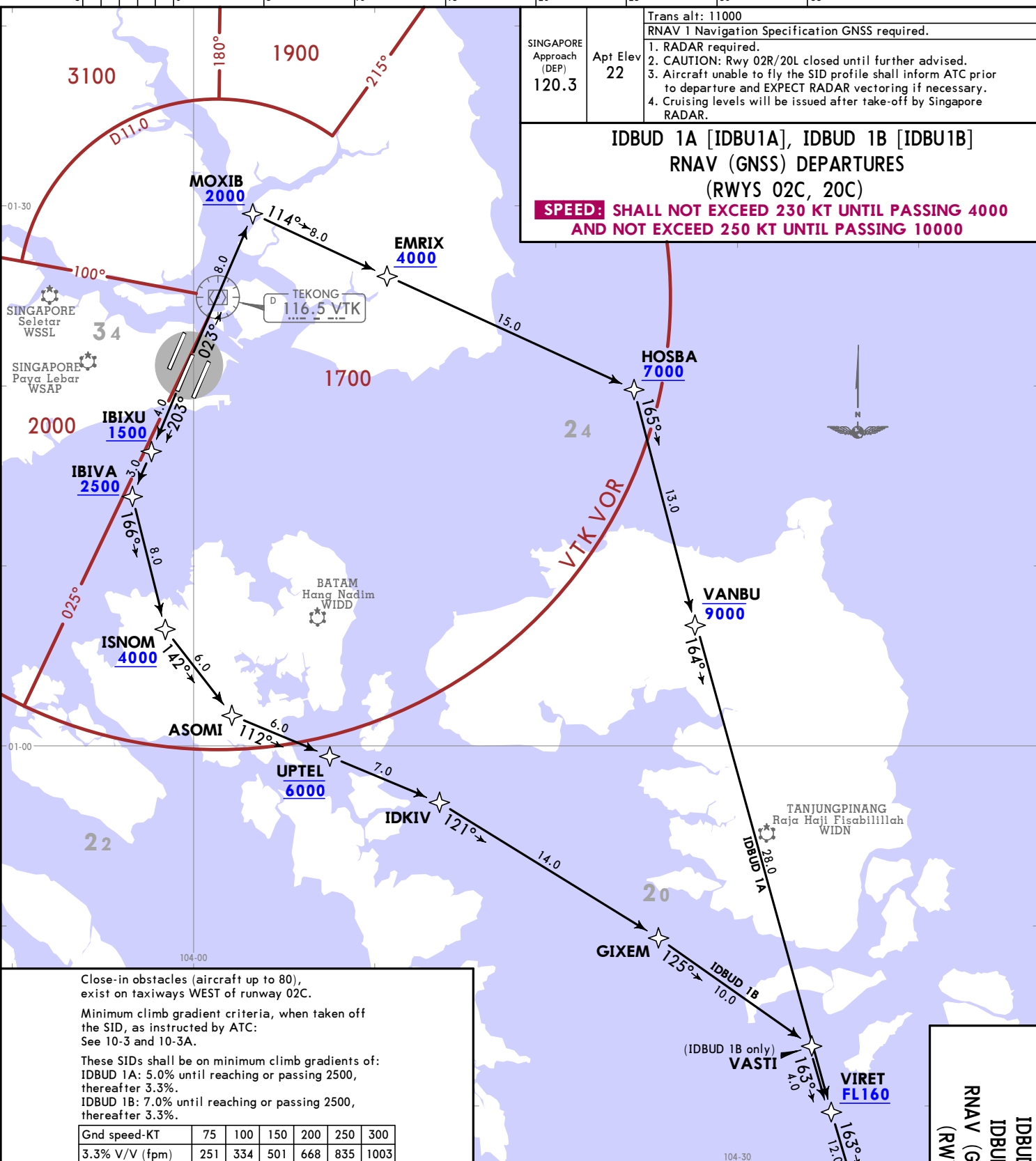
CHANGI 12 APR 24 (10-3J1)



LOST COMMS

- Set transponder to Mode A/C code 7600.
- Communications failure occurs immediately after departure:
 Rwy 02L: Proceed direct to NYLON Holding Area (NHA), climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 Rwy 20R: Proceed direct to SAMKO Holding Area (SHA), climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

CHANGES: Bearing between VASTI and VIRET, Initial climb text.



SINGAPORE Approach (DEP) 120.3
 Apt Elev 22
 Trans alt: 11000
 RNAV 1 Navigation Specification GNSS required.
 1. RADAR required.
 2. CAUTION: Rwy 02R/20L closed until further advised.
 3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
 4. Cruising levels will be issued after take-off by Singapore RADAR.

**IDBUD 1A [IDBU1A], IDBUD 1B [IDBU1B]
 RNAV (GNSS) DEPARTURES
 (RWYS 02C, 20C)**
**SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000
 AND NOT EXCEED 250 KT UNTIL PASSING 10000**

Close-in obstacles (aircraft up to 80), exist on taxiways WEST of runway 02C.
 Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.
 These SIDs shall be on minimum climb gradients of:
 IDBUD 1A: 5.0% until reaching or passing 2500, thereafter 3.3%.
 IDBUD 1B: 7.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
7.0% V/V (fpm)	532	709	1063	1418	1772	2127

Initial climb clearance 3000

SID	RWY	INITIAL CLIMB
IDBUD 1A	02C	To MOXIB on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000. To HOSBA at or above 7000, turn RIGHT. To VANBU at or below 9000, turn LEFT. To VIRET at or above FL160, turn LEFT. To GURES, turn LEFT. To IDBUD.
IDBUD 1B	20C	To IBIXU on course 203° at or above 1500. To IBIVA at or above 2500, turn LEFT. To ISNOM at or above 4000, turn LEFT. To ASOMI, turn LEFT. To UPTTEL, at 6000. To IDKIV, turn RIGHT. To GIXEM, turn RIGHT. To VASTI, turn RIGHT. To VIRET at or above FL160. To GURES, turn LEFT. To IDBUD.

COMMS LOST COMMS LOST COMMS LOST COMMS LOST COMMS LOST
 1. Set transponder to Mode A/C code 7600.
 2. Communications failure occurs immediately after departure:
 Rwy 02C: Proceed direct to NYLON Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 Rwy 20C: Proceed direct to SAMKO Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

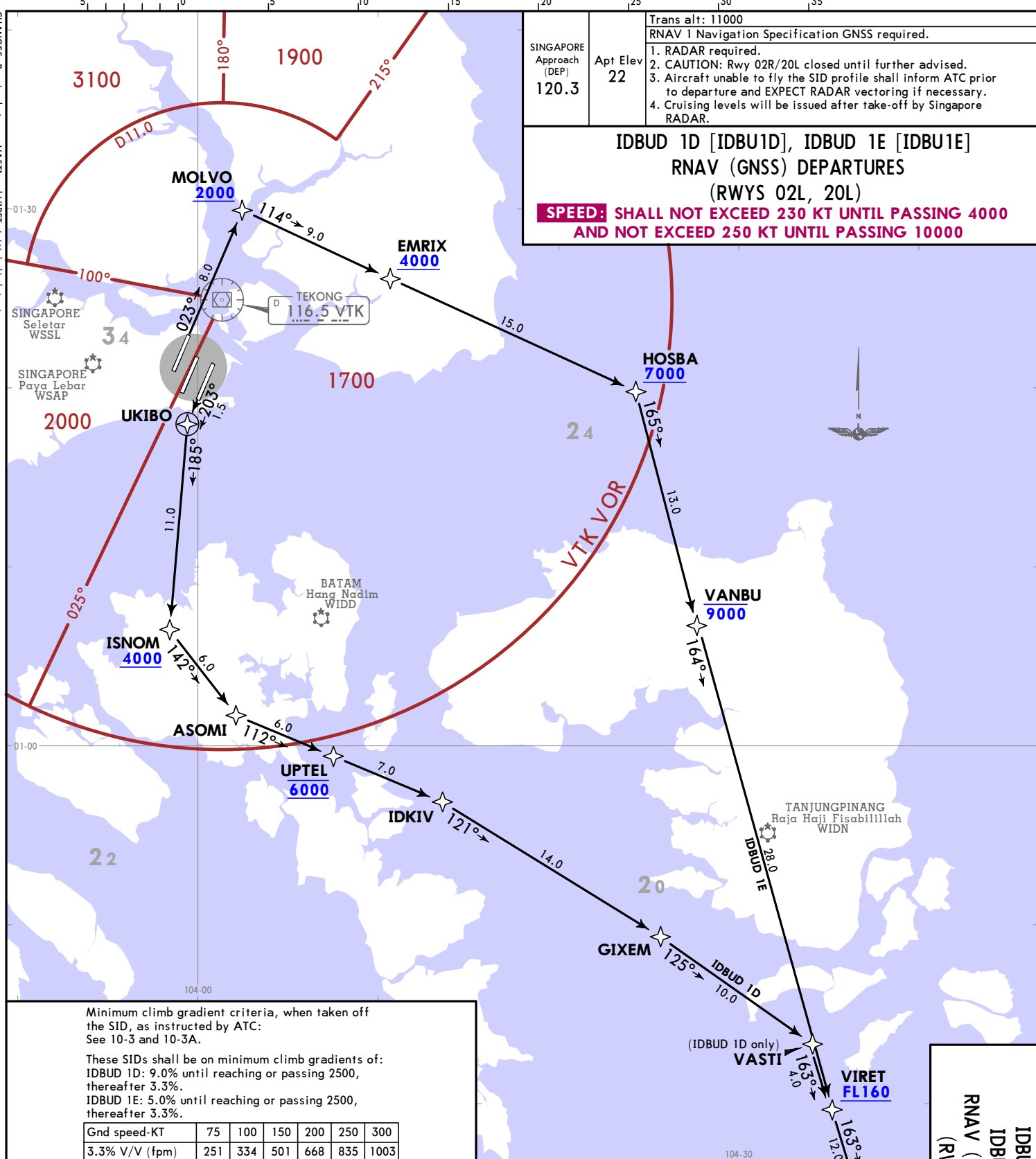
NOT TO SCALE
 GURES
 IDBUD

**IDBUD 1A [IDBU1A]
 IDBUD 1B [IDBU1B]
 RNAV (GNSS) DEPARTURES
 (RWYS 02C, 20C)**

WSSS/SIN
 CHANGI
 12 APR 24 10-312
 JEPPESEN
 SINGAPORE, SINGAPORE
 RNAV SID

CHANGES: Bearing between VASTI and VIRET, Initial climb text.

WSSS/SIN
SINGAPORE
CHANGI
12 APR 24
10-313
JEPPERSEN



SINGAPORE Approach (DEP) 120.3
Apt Elev 22
Trans alt: 11000
RNAV 1 Navigation Specification GNSS required.
1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.

**IDBUD 1D [IDBU1D], IDBUD 1E [IDBU1E]
RNAV (GNSS) DEPARTURES
(RWYS 02L, 20L)**
**SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000
AND NOT EXCEED 250 KT UNTIL PASSING 10000**

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.
These SIDs shall be on minimum climb gradients of:
IDBUD 1D: 9.0% until reaching or passing 2500, thereafter 3.3%.
IDBUD 1E: 5.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
9.0% V/V (fpm)	684	911	1367	1823	2279	2734

Initial climb clearance 3000

SID	RWY	INITIAL CLIMB
IDBUD 1D	20L	To UKIBO on course 203°, turn LEFT. To ISNOM at or above 4000, turn LEFT. To ASOMI, turn LEFT. To UPTTEL at 6000. To IDKIV, turn RIGHT. To GIXEM, turn RIGHT. To VASTI, turn RIGHT. To VIRET at or above FL160, turn LEFT. To GURES, turn LEFT. To IDBUD.
IDBUD 1E	02L	To MOLVO on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000. To HOSBA at or above 7000, turn RIGHT. To VANBU at or below 9000, turn LEFT. To VIRET at or above FL160. To GURES, turn LEFT. To IDBUD.

1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure:
Rwy 02L: Proceed direct to NYLON Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
Rwy 20L: Proceed direct to SAMKO Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

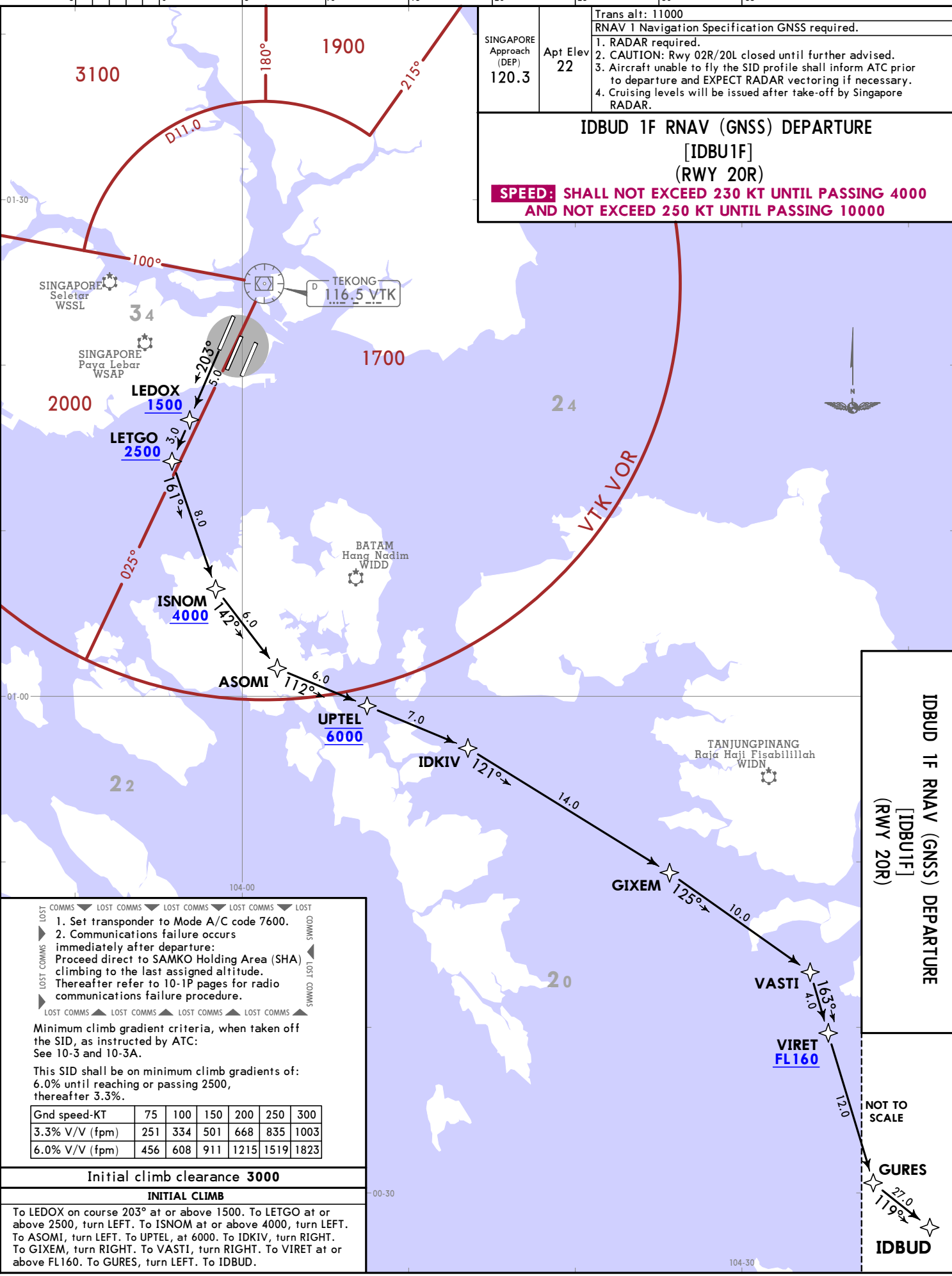
NOT TO SCALE
GURES
IDBUD

**IDBUD 1D [IDBU1D]
IDBUD 1E [IDBU1E]
RNAV (GNSS) DEPARTURES
(RWYS 02L, 20L)**

SINGAPORE, SINGAPORE
RNAV SID

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CHANGES: Bearing between VASTI and VIRET, Initial climb text.



SINGAPORE Approach (DEP) 120.3	Apt Elev 22	Trans alt: 11000
		RNAV 1 Navigation Specification GNSS required.
1. RADAR required. 2. CAUTION: Rwy 02R/20L closed until further advised. 3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary. 4. Cruising levels will be issued after take-off by Singapore RADAR.		

IDBUD 1F RNAV (GNSS) DEPARTURE
[IDBU1F]
(RWY 20R)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼

▶ 1. Set transponder to Mode A/C code 7600.
 ▶ 2. Communications failure occurs immediately after departure: Proceed direct to SAMKO Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.

This SID shall be on minimum climb gradients of: 6.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
6.0% V/V (fpm)	456	608	911	1215	1519	1823

Initial climb clearance 3000

INITIAL CLIMB

To LEDUX on course 203° at or above 1500. To LETGO at or above 2500, turn LEFT. To ISNOM at or above 4000, turn LEFT. To ASOMI, turn LEFT. To UPTTEL, at 6000. To IDKIV, turn RIGHT. To GIXEM, turn RIGHT. To VASTI, turn RIGHT. To VIRET at or above FL160. To GURES, turn LEFT. To IDBUD.

WSSS/SIN
 CHANGI
 12 APR 24
 10-314
 JEPPESEN
 SINGAPORE, SINGAPORE
 RNAV SID

IDBUD 1F RNAV (GNSS) DEPARTURE
[IDBU1F]
(RWY 20R)

NOT TO SCALE

GURES
 27.0
 119°
 IDBUD

SINGAPORE, SINGAPORE

RNAV SID

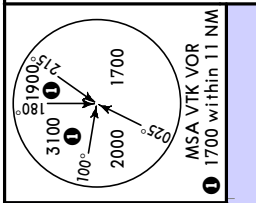
Trans alt: 11000

RNAV 1 Navigation Specification GNSS required.

1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.

Apt Elev 22

SINGAPORE Approach (DEP) 120.3



KIRDA 1A [KIRD1A] KIRDA 1B [KIRD1B] RNAV (GNSS) DEPARTURES (RWYS 02C, 20C)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

LOST COMMS

1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure on:
 - Rwy 02C: Proceed direct to NYLON Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 - Rwy 20C: Proceed direct to SAMKO Holding Area (SHA), climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

Close-in obstacles (aircraft up to 80) exist on taxiways WEST of runway 02C.

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
 KIRDA 1A: 5.0% until reaching or passing 2500, thereafter 3.3%.
 KIRDA 1B: 7.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
7.0% V/V (fpm)	552	709	1063	1418	1772	2127



Initial climb clearance 3000	
SID	RWY
KIRDA 1A	02C
KIRDA 1B	20C

INITIAL CLIMB

To MOXB on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000. To HOSBA at or above 7000, turn RIGHT. To VANBU at or below 9000, turn LEFT. To VIRET at or above FL160, turn LEFT. To GURES. To IKIRO, turn LEFT. To KIRDA.

To IBIXU on course 203° at or above 1500. To IBIVA at or above 2500, turn LEFT. To ISNOM at or above 4000, turn LEFT. To ASOMI, turn LEFT. To UPTEL at 6000. To IDKIV, turn RIGHT. To GIXEM, turn RIGHT. To VASTI, turn RIGHT. To VIRET at or above FL160. To GURES. To IKIRO, turn LEFT. To KIRDA.

WSSS/SIN CHANGI

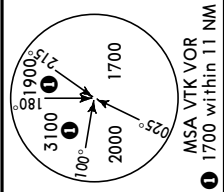
12 APR 24 (10-3K)



12 APR 24 10-3L

WSS/SIN
CHANGI

JEPPesen
SINGAPORE, SINGAPORE, SINGAPORE
RNAV SID



SINGAPORE Approach (DEP) 120.3
Apt Elev 22

Trans alt: 11000
RNAV 1 Navigation Specification GNSS required.

1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.

**KIRDA 1D [KIRD1D]
KIRDA 1E [KIRD1E]
RNAV (GNSS) DEPARTURES
(RWYS 02L, 20L)**

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

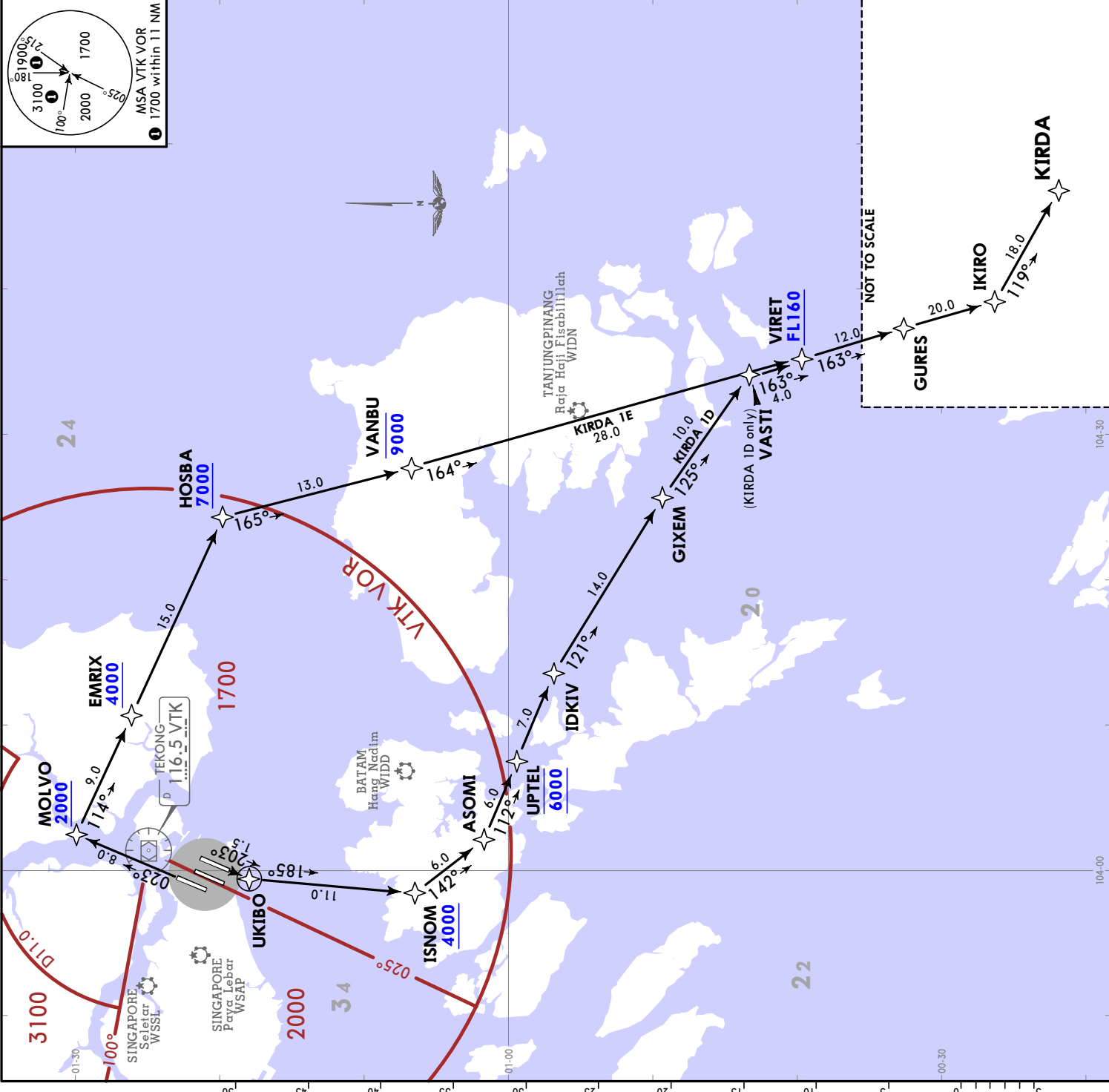
LOST COMMS
1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure on:
Rwy 02L: Proceed direct to NYLON Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
Rwy 20L: Proceed direct to SAMKO Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

LOST COMMS
1. Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.
These SIDs shall be on minimum climb gradients of:
KIRDA 1D: 9.0% until reaching or passing 2500, thereafter 3.3%.
KIRDA 1E: 5.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
9.0% V/V (fpm)	684	911	1367	1823	2279	2734

Initial climb clearance **3000**

INITIAL CLIMB
To UKIBO on course 023°, turn LEFT. To ISNOM at or above 4000, turn LEFT. To ASOMI, turn LEFT. To UPTTEL at 6000. To IDKIV, turn RIGHT. To GIXEM, turn RIGHT. To VASTI, turn RIGHT. To VIRET at or above FL160. To GURES. To IKIRO, turn LEFT. To KIRDA.
To MOLVO on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000. To HOSBA at or above 7000, turn RIGHT. To VANBU at or below 9000, turn LEFT. To VIRET at or above FL160, turn LEFT. To GURES. To IKIRO, turn LEFT. To KIRDA.



NOT TO SCALE

CHANGES: New procedures at this airport.

WSSS/SIN
CHANGI
15 MAR 24 10-3M
JEPPESSEN
EFF 21 Mar

SINGAPORE Approach (DEP) 120.3

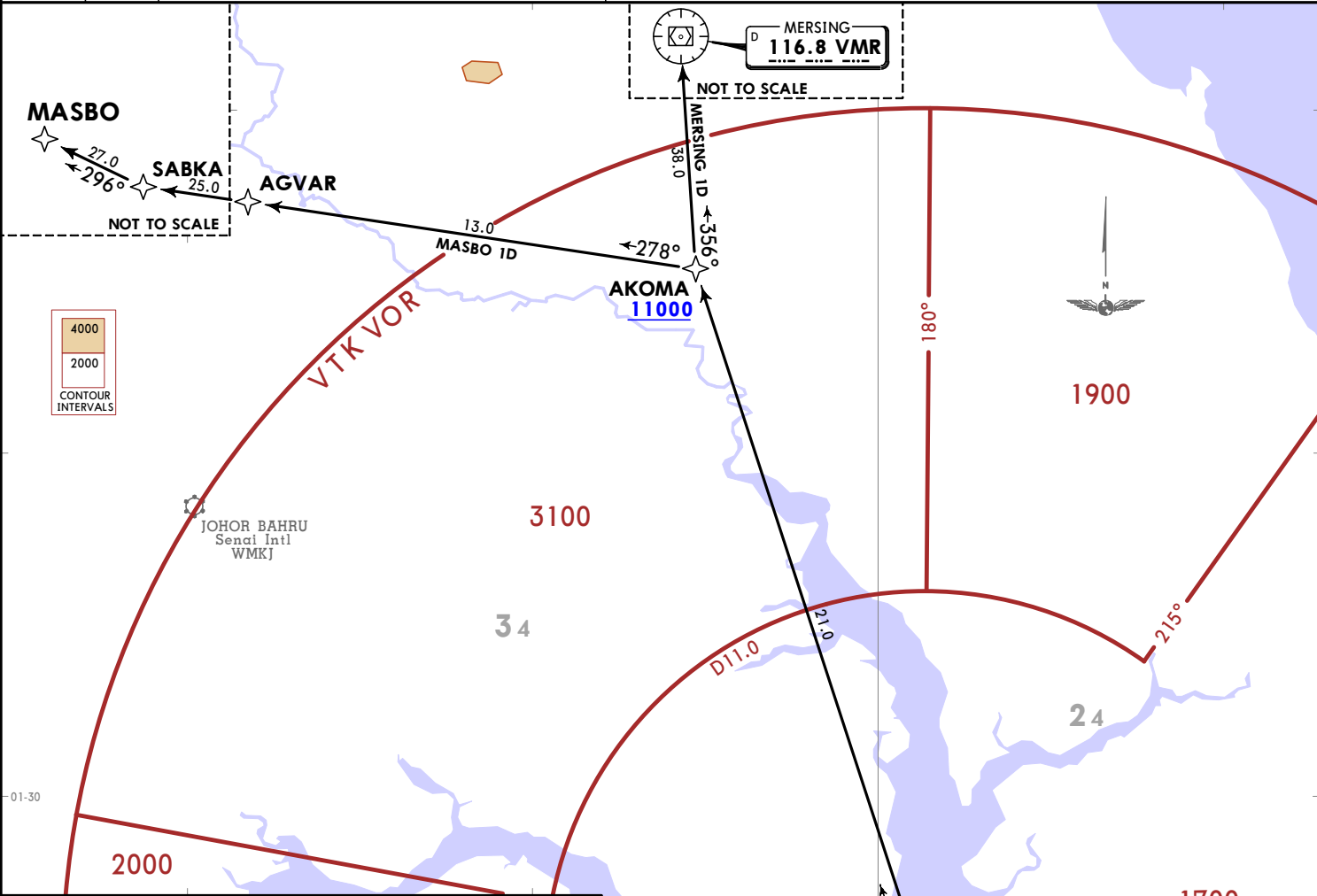
Apt Elev 22

Trans alt: 11000
RNAV 1 Navigation Specification GNSS required.

1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.

MASBO 1D [MASB1D], MERSING 1D (VMR 1D)
RNAV (GNSS) DEPARTURES (RWY 20L)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000



LOST COMMS

1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure on: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

LOST COMMS

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
9.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
9.0% V/V (fpm)	684	911	1367	1823	2279	2734

Initial climb clearance 3000

INITIAL CLIMB

To UKIBO on course 203°, turn LEFT. To POVEB at or above 2500, turn LEFT.
To ADPON at or above 4000, turn LEFT. To SALRU, turn LEFT. To VTK VOR at or above 7000, turn RIGHT.

SID	ROUTING
MASBO 1D	To AKOMA at or above 11000, turn LEFT. To AGVAR. To SABKA, turn RIGHT. To MASBO.
MERSING 1D	To AKOMA at or above 11000, turn RIGHT. To VMR VOR.

TEKONG 116.5 VTK 7000

UKIBO 2500

POVEB 2500

SALRU 4000

ADPON 4000

SINGAPORE Seletar WSSL

SINGAPORE Paya Lebar WSAP

JOHOR BAHRU Senai Intl WMKJ

104-00

MASBO 1D [MASB1D]
MERSING 1D (VMR 1D)
RNAV (GNSS) DEPARTURES (RWY 20L)

SINGAPORE, SINGAPORE
RNAV SID

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CHANGES: Procedures renumbered and revised, chart reindexed.

SINGAPORE Approach (DEP) 120.3

Apt Elev 22

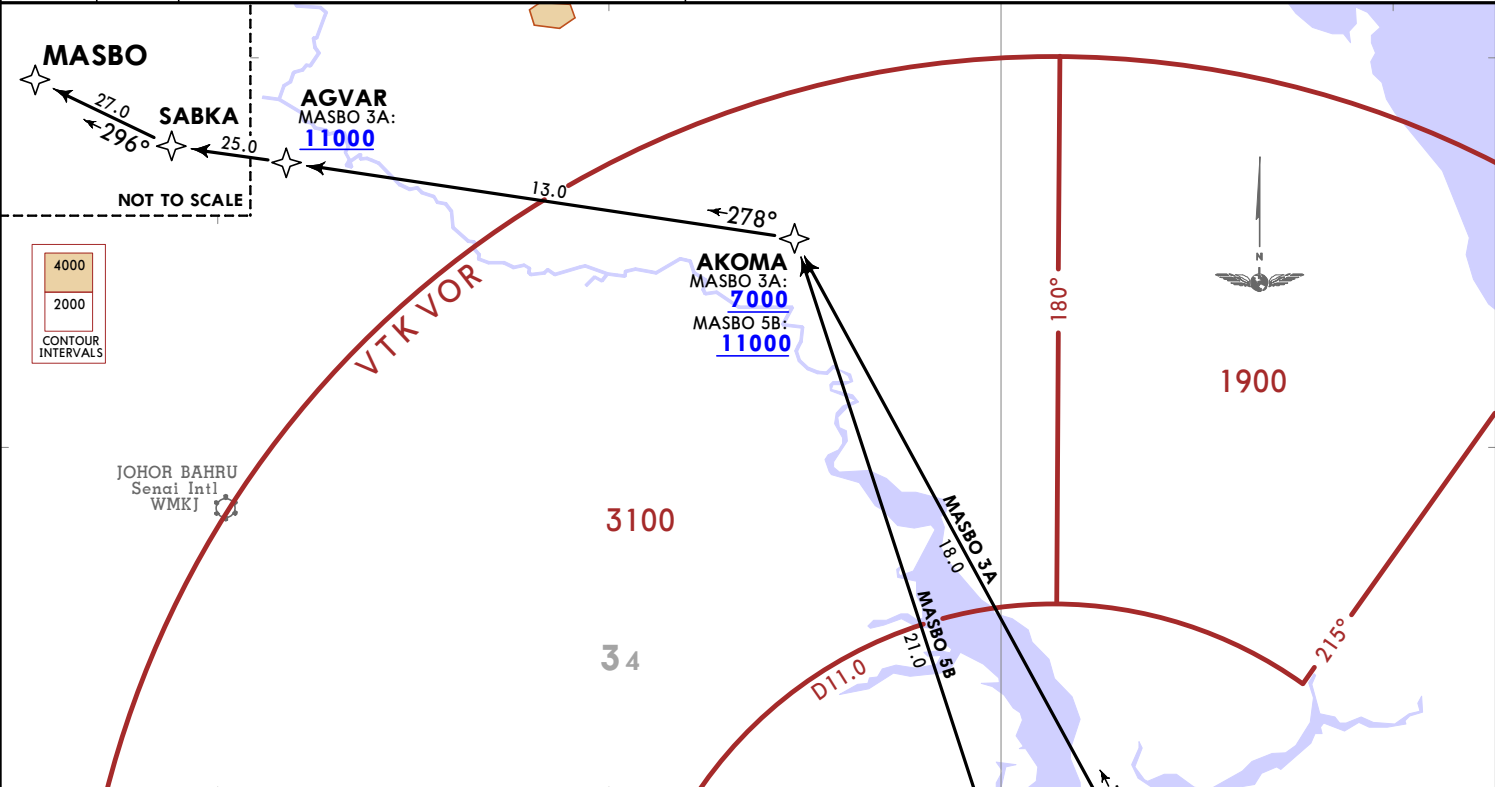
Trans alt: 11000

RNAV 1 Navigation Specification GNSS required.

1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.
5. MASBO 3A: All SIDs include noise preferential routes.

MASBO 3A [MASB3A]
MASBO 5B [MASB5B]
RNAV (GNSS) DEPARTURES
(RWYS 02C, 20C)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000



LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼

1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure on:
Rwy 02C: Proceed direct to Nylon Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
Rwy 20C: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲

Close-in obstacles (aircraft up to 80), exist on taxiways WEST of runway 02C.

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
MASBO 3A: 5.0% until reaching or passing 2500, thereafter 3.3%.
MASBO 5B: 7.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
7.0% V/V (fpm)	532	709	1063	1418	1772	2127

Initial climb clearance 3000

SID	RWY	INITIAL CLIMB
MASBO 3A	02C	To MOXIB on course 023° at or above 2000, turn LEFT. To AKOMA at or above 7000, turn LEFT. To AGVAR at or above 11000. To SABKA, turn RIGHT. To MASBO.
MASBO 5B	20C	To IBIXU on course 203° at or above 1500. To IBIVA at or above 2500, turn LEFT. To DUBOT at or above 4000, turn LEFT. To ADPON, turn LEFT. To SALRU, turn LEFT. To VTK VOR at or above 7000, turn RIGHT. To AKOMA at or above 11000, turn LEFT. To AGVAR. To SABKA, turn RIGHT. To MASBO.

15 MAR 24 10:3N

JEPPESSEN SINGAPORE, SINGAPORE

RNAV SID

WSSS/SIN CHANGI

MASBO 3A [MASB3A]
MASBO 5B [MASB5B]
RNAV (GNSS) DEPARTURES
(RWYS 02C, 20C)

BATAM Hang Nadim WIDD

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CHANGES: Procedures renumbered and revised, chart re-indexed.

WSSS/SIN
SINGAPORE
15 MAR 24
10-3P
JEPESEN
EFF 21 Mar

SINGAPORE Approach (DEP) 120.3

Apt Elev 22

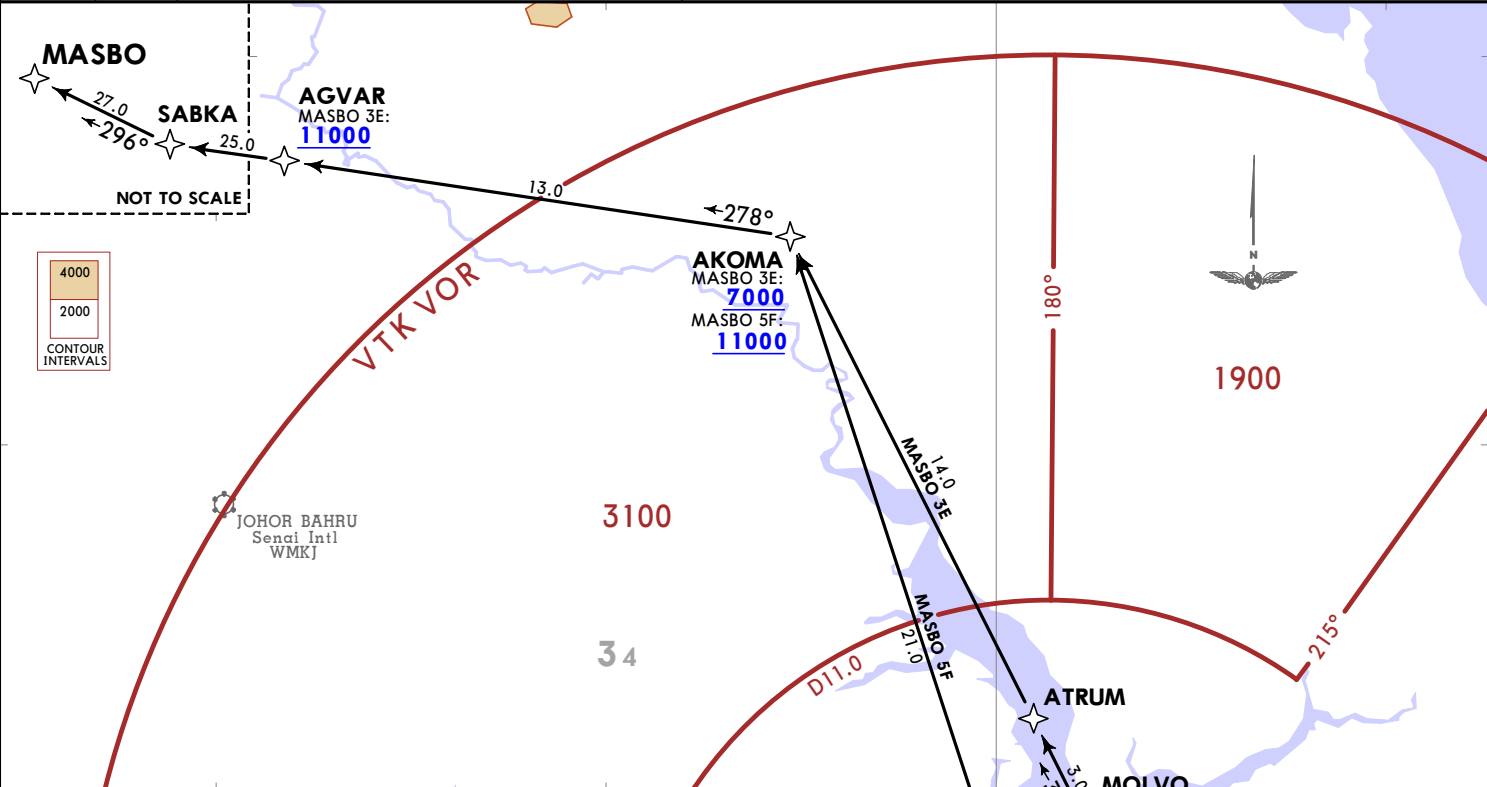
Trans alt: 11000

RNAV 1 Navigation Specification GNSS required.

1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.

MASBO 3E [MASB3E]
MASBO 5F [MASB5F]
RNAV (GNSS) DEPARTURES
(RWYS 02L, 20R)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000



LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼

1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure on:
 - Rwy 02L: Proceed direct to Nylon Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 - Rwy 20R: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
MASBO 3E: 5.0% until reaching or passing 2500, thereafter 3.3%.
MASBO 5F: 6.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
6.0% V/V (fpm)	456	608	911	1215	1519	1823

Initial climb clearance 3000

SID	RWY	INITIAL CLIMB
MASBO 3E	02L	To MOLVO on course 023° at or above 2000, turn LEFT. To ATRUM. To AKOMA at or above 7000, turn LEFT. To AGVAR at or above 11000. To SABKA, turn RIGHT. To MASBO.
MASBO 5F	20R	To LEDOX on course 203° at or above 1500. To LETGO at or above 2500, turn LEFT. To DUBOT at or above 4000, turn LEFT. To ADPON, turn LEFT. To SALRU, turn LEFT. To VTK VOR at or above 7000, turn RIGHT. To AKOMA at or above 11000, turn LEFT. To AGVAR. To SABKA, turn RIGHT. To MASBO.

MASBO 3E [MASB3E]
MASBO 5F [MASB5F]
RNAV (GNSS) DEPARTURES
(RWYS 02L, 20R)

SINGAPORE, SINGAPORE
RNAV SID

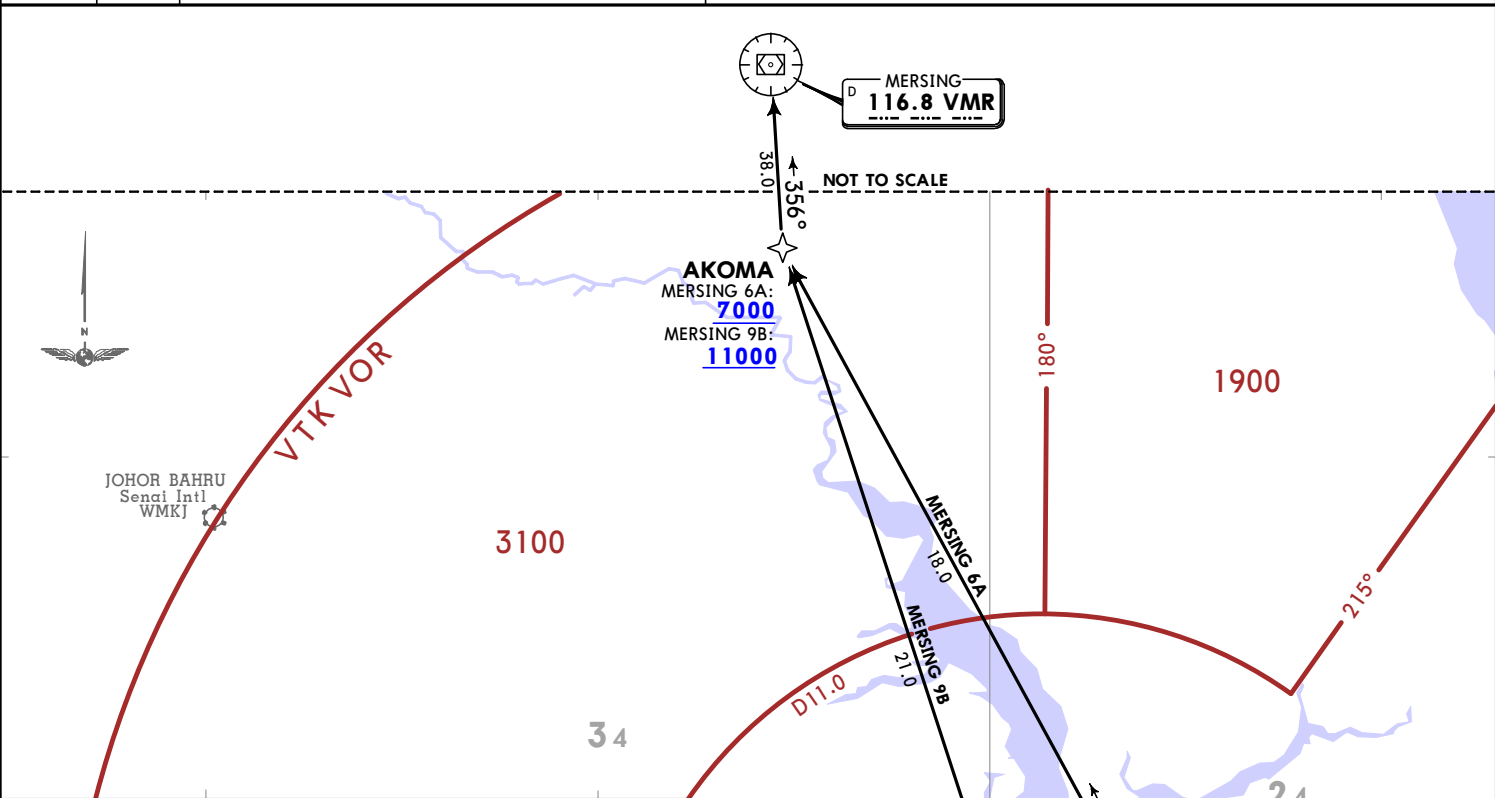
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CHANGES: Procedures renumbered and revised, chart reindexed.

SINGAPORE Approach (DEP) 120.3
 Apt Elev 22
 Trans alt: 11000
 RNAV 1 Navigation Specification GNSS required.
 1. RADAR required.
 2. CAUTION: Rwy 02R/20L closed until further advised.
 3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
 4. Cruising levels will be issued after take-off by Singapore RADAR.
 5. MERSING 6A: All SIDs include noise preferential routes.

MERSING 6A (VMR 6A)
MERSING 9B (VMR 9B)
RNAV (GNSS) DEPARTURES
(RWYS 02C, 20C)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000



LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼

1. Set transponder to Mode A/C code 7600.
 2. Communications failure occurs immediately after departure on:
 Rwy 02C: Proceed direct to Nylon Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 Rwy 20C: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

Close-in obstacles (aircraft up to 80), exist on taxiways WEST of runway 02C.

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
 MERSING 6A: 5.0% until reaching or passing 2500, thereafter 3.3%.
 MERSING 9B: 7.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
7.0% V/V (fpm)	532	709	1063	1418	1772	2127

Initial climb clearance 3000

SID	RWY	INITIAL CLIMB
MERSING 6A	02C	To MOXIB on course 023° at or above 2000, turn LEFT. To AKOMA at or above 7000, turn RIGHT. To VMR VOR.
MERSING 9B	20C	To IBIXU on course 203° at or above 1500. To IBIVA at or above 2500, turn LEFT. To DUBOT at or above 4000, turn LEFT. To ADPON, turn LEFT. To SALRU, turn LEFT. To VTK VOR at or above 7000, turn RIGHT. To AKOMA at or above 11000, turn RIGHT. To VMR VOR.



MERSING 6A (VMR 6A)
MERSING 9B (VMR 9B)
RNAV (GNSS) DEPARTURES
(RWYS 02C, 20C)

WSSS/SIN
 CHANGI
 15 MAR 24 (10-30) EFT 21 MAR
 JEPPISEN SINGAPORE, SINGAPORE
 RNAV SID

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CHANGES: Procedures renumbered and revised, chart reindexed.

WSSS/SIN 15 MAR 24 10-35 EFF 21 MAR 2024

SINGAPORE Approach (DEP) 120.3

Apt Elev 22

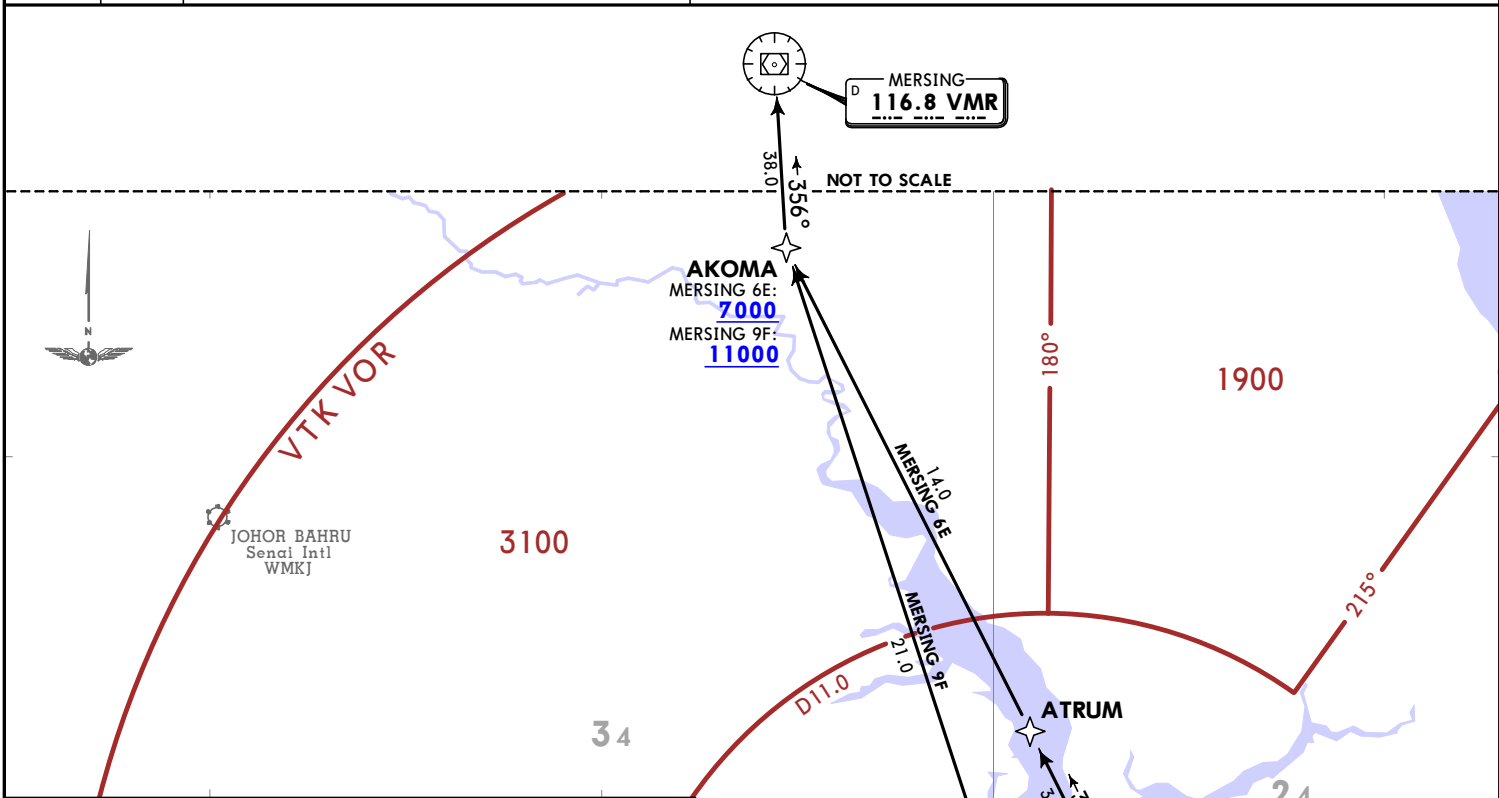
Trans alt: 11000

RNAV 1 Navigation Specification GNSS required.

1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.

MERSING 6E (VMR 6E)
MERSING 9F (VMR 9F)
RNAV (GNSS) DEPARTURES
(RWYS 02L, 20R)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000



LOST COMMS

1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure on:
Rwy 02L: Proceed direct to Nylon Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
Rwy 20R: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
MERSING 6E: 5.0% until reaching or passing 2500, thereafter 3.3%.
MERSING 9F: 6.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
6.0% V/V (fpm)	456	608	911	1215	1519	1823

Initial climb clearance 3000

SID	RWY	INITIAL CLIMB
MERSING 6E	02L	To MOLVO on course 023° at or above 2000, turn LEFT. To ATRUM. To AKOMA at or above 7000, turn RIGHT. To VMR VOR.
MERSING 9F	20R	To LEDOX on course 203° at or above 1500. To LETGO at or above 2500, turn LEFT. To DUBOT at or above 4000, turn LEFT. To ADPON, turn LEFT. To SALRU, turn LEFT. To VTK VOR at or above 7000, turn RIGHT. To AKOMA at or above 11000, turn RIGHT. To VMR VOR.

MERSING 6E (VMR 6E)
MERSING 9F (VMR 9F)
RNAV (GNSS) DEPARTURES
(RWYS 02L, 20R)

SINGAPORE, SINGAPORE RNAV SID

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SINGAPORE
 Approach (DEP) **120.3**
 Apt Elev **22**

Trans alt: 11000
 RNAV 1 Navigation Specification GNSS required.

1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.
5. MIBEL 1A: All SIDs include noise preferential routes.

**MIBEL 1A [MIBEL1A]
 MIBEL 1B [MIBEL1B]
 RNAV (GNSS) DEPARTURES
 (RWYS 02C, 20C)**

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

- LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼
1. Set transponder to Mode A/C code 7600.
 2. Communications failure occurs immediately after departure on: Rwy 02C: Proceed direct to Nylon Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-IP pages for radio communications failure procedure.
 3. Rwy 20C: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-IP pages for radio communications failure procedure.
- Close-in obstacles (aircraft up to 80), exist on taxiways WEST of runway 02C.
- Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
 See 10-3 and 10-3A.
- These SIDs shall be on minimum climb gradients of:
 MIBEL 1A: 5.0% until reaching or passing 2500, thereafter 3.3%.
 MIBEL 1B: 7.0% until reaching or passing 2500, thereafter 3.3%.

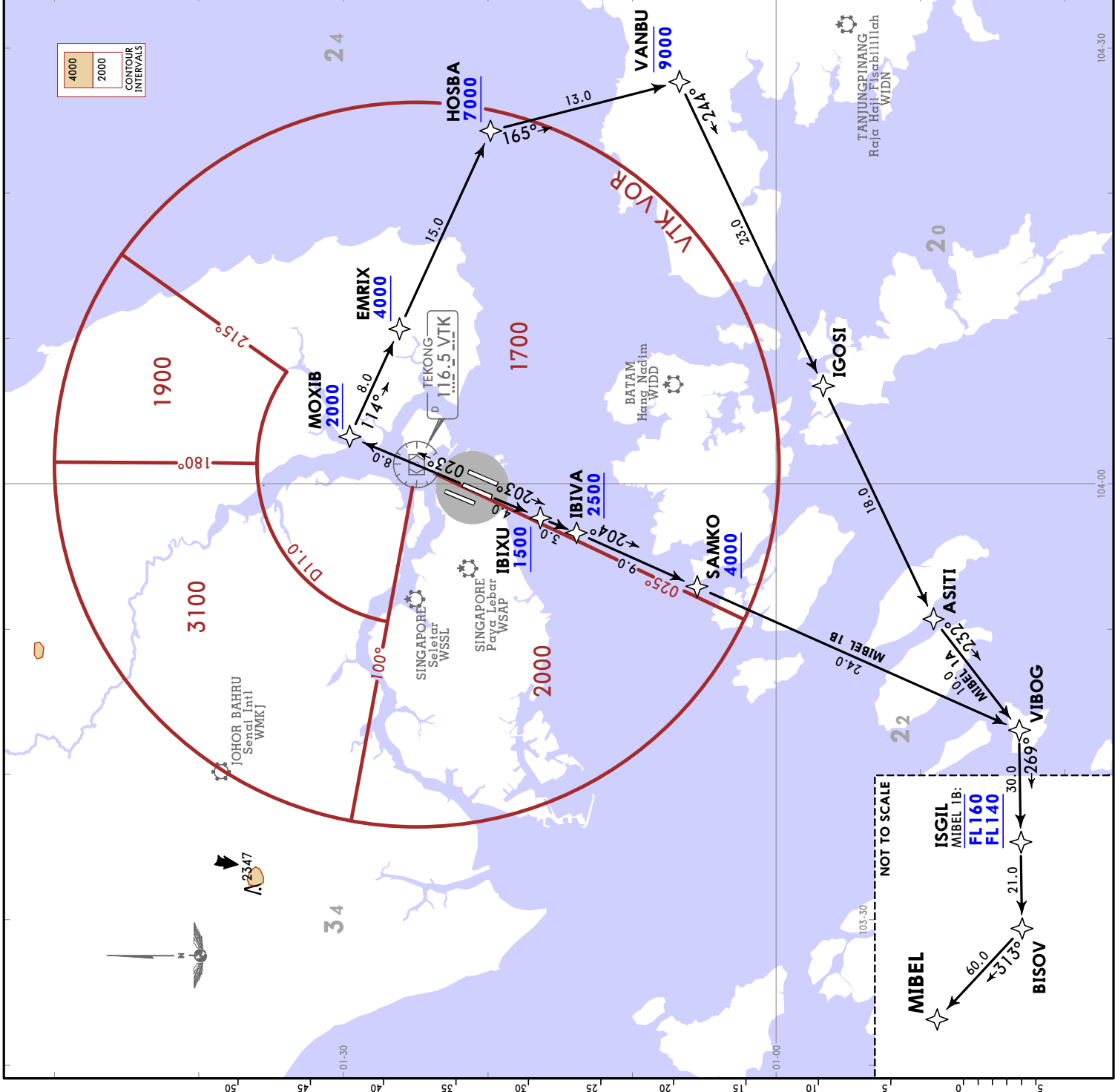
Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
7.0% V/V (fpm)	532	709	1063	1418	1772	2127

Initial climb clearance **3000**

INITIAL CLIMB
 To MOXIB on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000. To HOSBA at or above 7000, turn RIGHT. To VANBU at or below 9000, turn RIGHT. To IGOSI. To ASITI, turn LEFT. To VIBOG, turn RIGHT. To ISGIL. To BISOV, turn RIGHT. To MIBEL.

To IBIXU on course 203° at or above 1500. To IBIVA at or above 2500, turn RIGHT. To SAMKO at or above 4000. To VIBOG, turn RIGHT. To ISGIL, between FL140 to FL150. To BISOV, turn RIGHT. To MIBEL.

SID	RWY	Initial climb clearance
MIBEL 1A	02C	To MOXIB on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000. To HOSBA at or above 7000, turn RIGHT. To VANBU at or below 9000, turn RIGHT. To IGOSI. To ASITI, turn LEFT. To VIBOG, turn RIGHT. To ISGIL. To BISOV, turn RIGHT. To MIBEL.
MIBEL 1B	20C	To IBIXU on course 203° at or above 1500. To IBIVA at or above 2500, turn RIGHT. To SAMKO at or above 4000. To VIBOG, turn RIGHT. To ISGIL, between FL140 to FL150. To BISOV, turn RIGHT. To MIBEL.



SINGAPORE, SINGAPORE

RNAV SID

SINGAPORE Approach (DEP) 120.3	Apt Elev 22	Trans alt: 11000 RNAV 1 Navigation Specification GNSS required.
--	-----------------------	--

1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.

**MIBEL 1D [MIBE1D]
MIBEL 1E [MIBE1E]
RNAV (GNSS) DEPARTURES
(RWYS 02L, 20L)**

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

LOST COMMS ▼ LOST COMMS ▼

- Set transponder to Mode A/C code 7600.
- Communications failure occurs immediately after departure on:
Rwy 02L: Proceed direct to Nylon Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
Rwy 20L: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
MIBEL 1D: 9.0% until reaching or passing 2500, thereafter 3.3%.
MIBEL 1E: 5.0% until reaching or passing 2500, thereafter 3.3%.

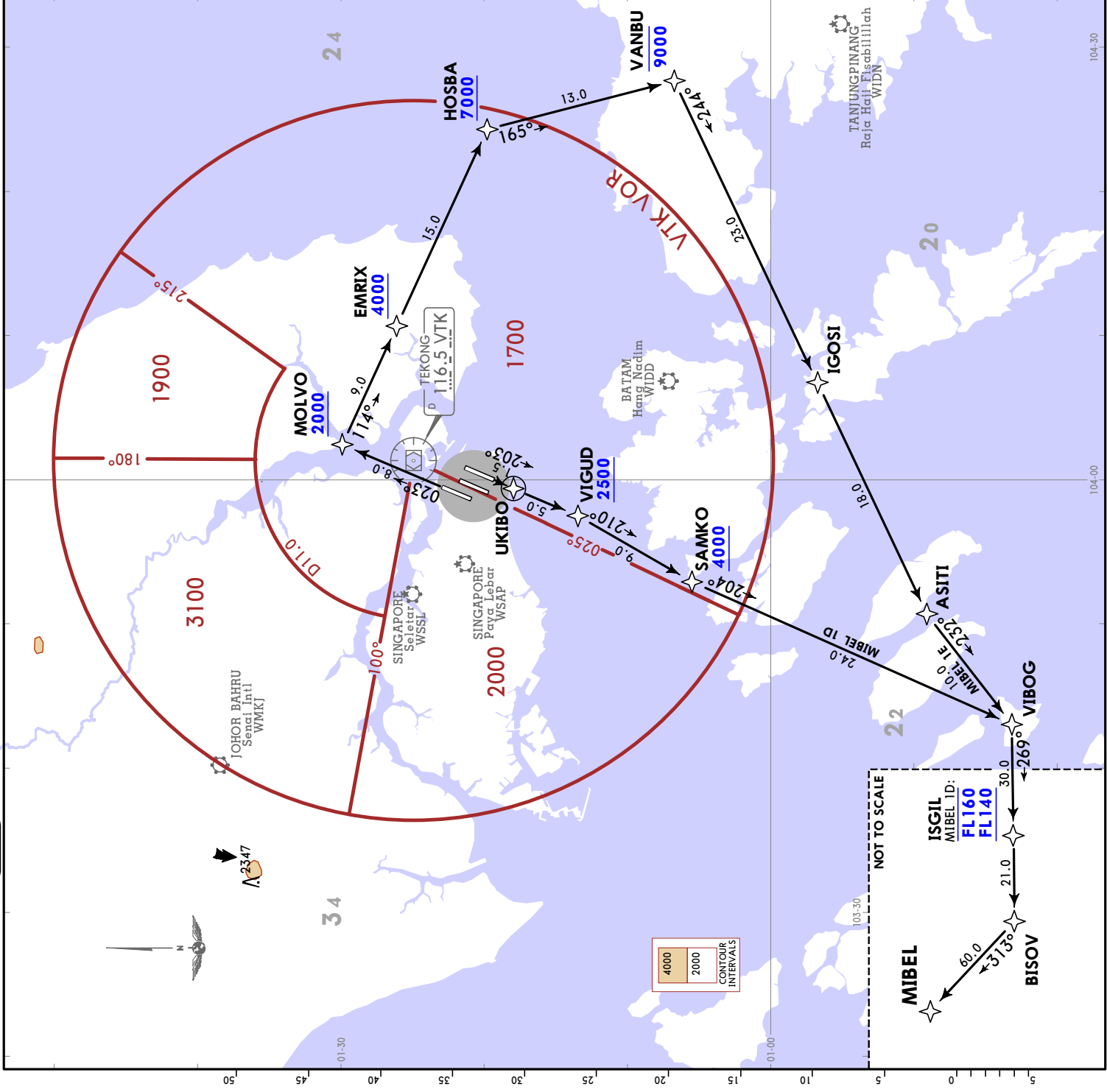
Grnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
9.0% V/V (fpm)	684	911	1367	1823	2279	2734

Initial climb clearance **3000**

SID	RWY	INITIAL CLIMB
MIBEL 1D	20L	To UKIBO on course 203° To VIGUD at or above 2500, turn RIGHT. To SAMKO at or above 4000, turn LEFT. To VIBOG, turn RIGHT. To ISGLI, between FL140 to FL160, to BISOV, turn RIGHT. To MIBEL.
MIBEL 1E	02L	To MOLVO on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000, To HOSBA at or above 7000, turn RIGHT. To VANBU at or below 9000, turn RIGHT. To IGOSI. To ASITI, turn LEFT. To VIBOG, turn RIGHT. To ISGLI. To BISOV, turn RIGHT. To MIBEL.

WSSS/SIN CHANGI

15 MAR 24 (10-3T) Eff 21 Mar



4000
2000
CONTOUR INTERVALS

NOT TO SCALE

MIBEL 1D: ISGLI
MIBEL 1E: FL160
FL140

MIBEL 1D: 23.0
MIBEL 1E: 23.0

BISOV 21.0
ASITI 20.0
VIBOG 26.9
IGOSI 18.0

VANBU 9000
HOSBA 7000
EMRIX 4000
MOLVO 2000
UKIBO 2000
SINGAPORE WSSS
SINGAPORE WAP

TEKONG 116.5 VTK
VTK VOR

BATAM Hang Nadim WIDD
TANJUNGPINANG Raja Haji Eschabilillah WIDD

JORHOR BAHRU Seletar Intl WMMK
A3347

104-00
104-30

SINGAPORE
Approach
(DEP)
120.3

Apt Elev
22

RNAV 1 Navigation Specification GNSS required.

1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.

**MIBEL 1F [MIBE1F]
TAROS 1F [TARO1F]
RNAV (GNSS) DEPARTURES
(RWY 20R)**

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼

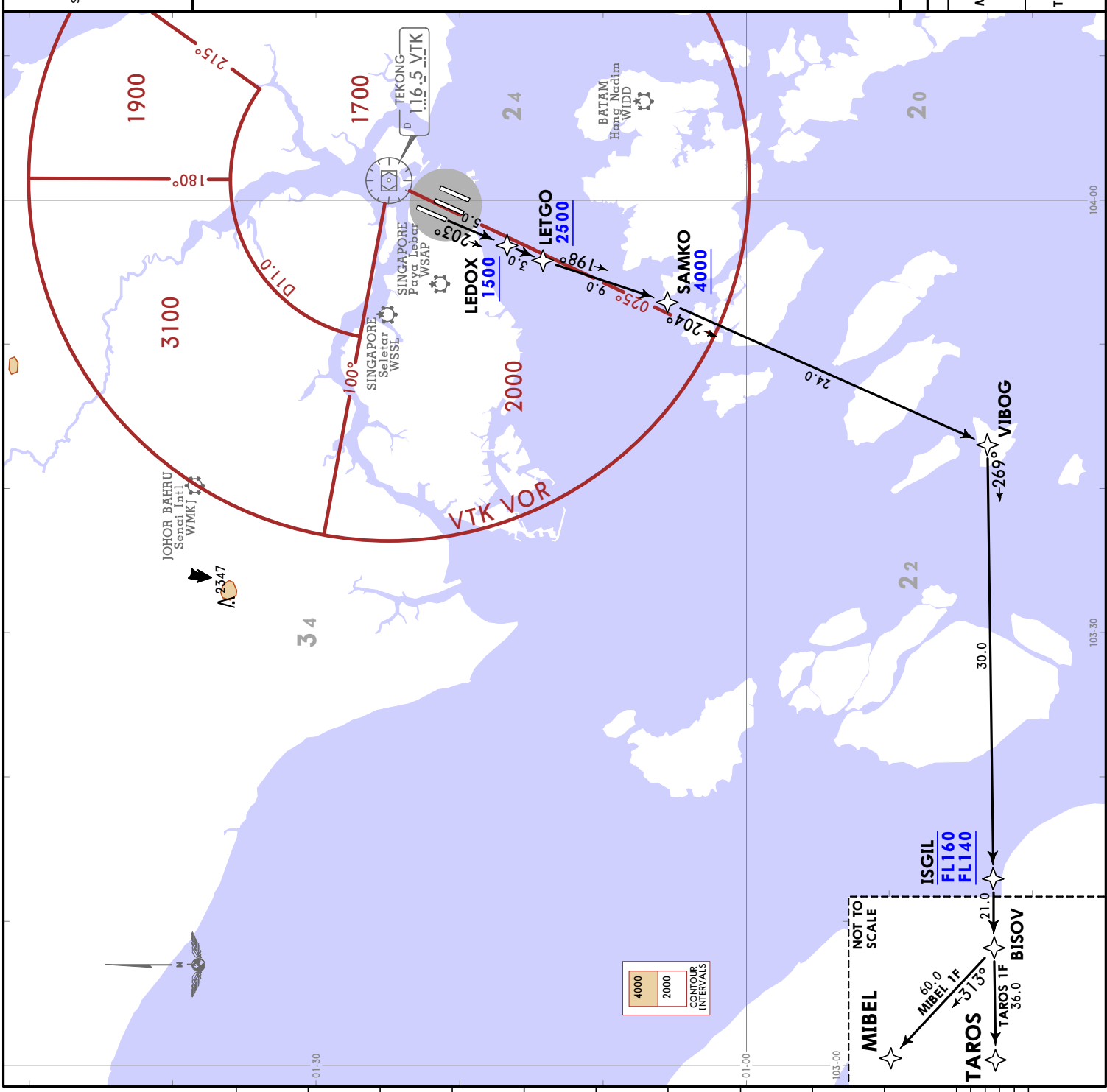
1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure on: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-IP pages for radio communications failure procedure.

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
6.0% until reaching or passing 2500, thereafter 3.5%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
6.0% V/V (fpm)	456	608	911	1215	1519	1823

Initial climb clearance 3000	
INITIAL CLIMB	
MIBEL 1F	To LEDOX on course 203° at or above 1500. To LETGO at or above 2500, turn LEFT. To SAMKO at or above 4000, turn RIGHT. To VIBOG, turn RIGHT. To ISGIL, between FL140 to FL160. To BISOV, turn RIGHT. To MIBEL.
TAROS 1F	To LEDOX on course 203° at or above 1500. To LETGO at or above 2500, turn LEFT. To SAMKO at or above 4000, turn RIGHT. To VIBOG, turn RIGHT. To ISGIL, between FL140 to FL160. To BISOV, turn RIGHT.



SINGAPORE, SINGAPORE

RNAV SID

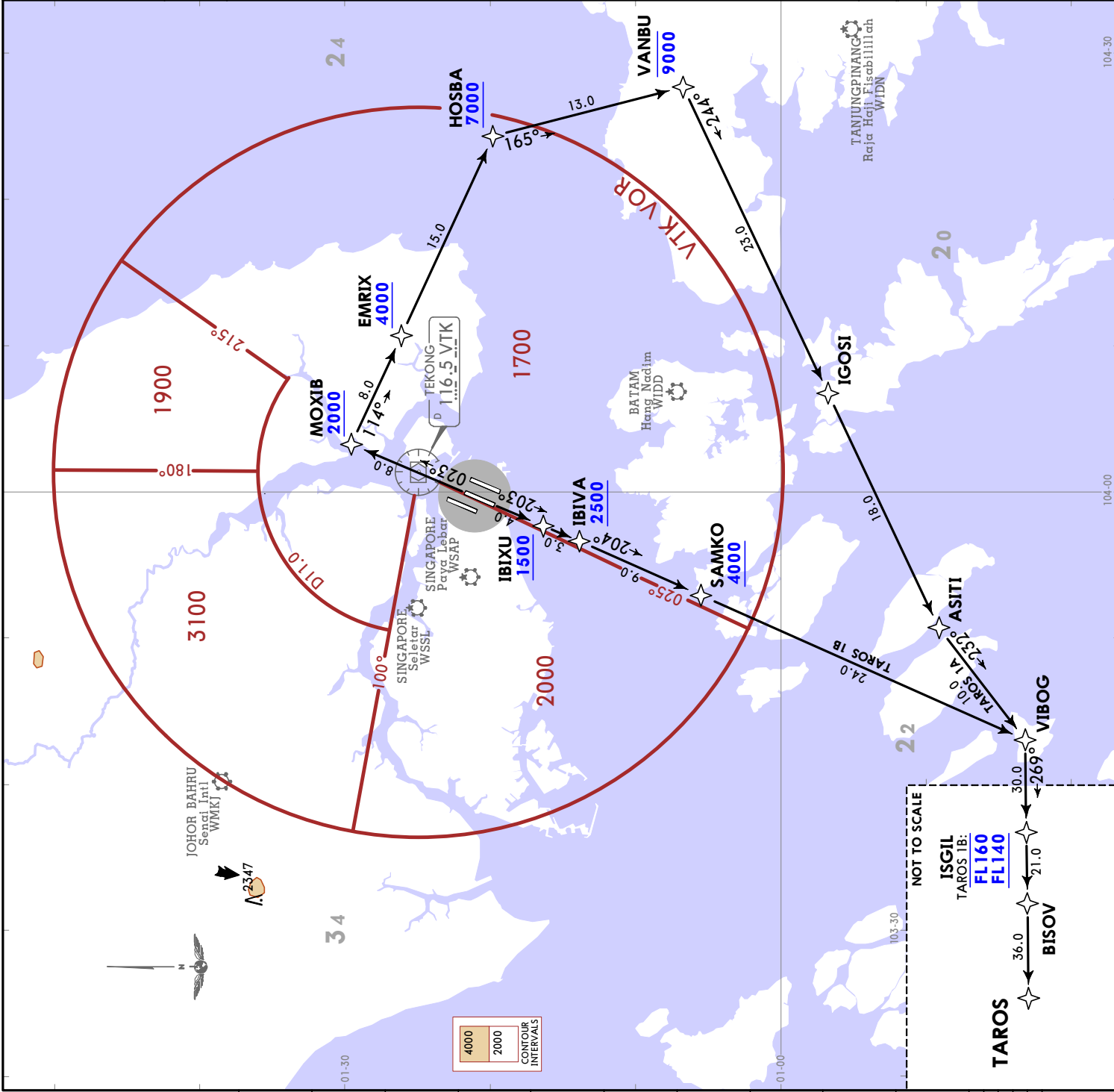
WSSS/SIN
CHANGI

15 MAR 24 (10-3T3) Eff 21 Mar

JEPESEN



JOHOR BAHRU
Senai Intl
WMKJ



SINGAPORE Approach (DEP) **120.3**

Trans alt: 11000

RNAV I Navigation Specification GNSS required.

- RADAR required.
- CAUTION: Rwy 02R/20L closed until further advised.
- Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
- Cruising levels will be issued after take-off by Singapore RADAR.
- TAROS 1A: All SIDs include noise preferential routes.

TAROS 1A [TAR01A]
TAROS 1B [TAR01B]
RNAV (GNSS) DEPARTURES
(RWYS 02C, 20C)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

LOST COMMS

- Set transponder to Mode A/C code 7600.
- Communications failure occur immediately after departure on:
 - Rwy 02C: Proceed direct to Nylon Holding Area (NHA), climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 - Rwy 20C: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

Close-in obstacles (aircraft up to 80), exist on taxiways WEST of runway 02C.

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
TAROS 1A: 5.0% until reaching or passing 2500, thereafter 3.3%.
TAROS 1B: 7.0% until reaching or passing 2500, thereafter 3.3%.

Initial climb clearance	3000
Gnd speed-KT	75 100 150 200 250 300
3.3% V/V (fpm)	251 334 501 668 835 1003
5.0% V/V (fpm)	380 506 760 1013 1266 1519
7.0% V/V (fpm)	532 709 1063 1418 1772 2127

SID	RWY	INITIAL CLIMB
TAROS 1A	02C	To MOXIB on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000. To HOSBA at or above 7000, turn RIGHT. To VANBU at or below 9000, turn RIGHT. To IGOSI, turn LEFT. To VIBOG, turn RIGHT. To ISGIL. To BISOV. To TAROS.
TAROS 1B	20C	To IBIXU on course 203° at or above 1500. To IBIVA at or above 2500, turn RIGHT. To SAMKO at or above 4000. To VIBOG, turn RIGHT. To ISGIL, between FL140 to FL160. To BISOV. To TAROS.

SINGAPORE Approach (DEP) 120.3	
Apt Elev 22	
Trans alt: 11000	
RNAV 1 Navigation Specification GNSS required.	
1. RADAR required.	
2. CAUTION: Rwy 02R/20L closed until further advised.	
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.	
4. Cruising levels will be issued after take-off by Singapore RADAR.	

TAROS 1D [TARO1D]
TAROS 1E [TARO1E]
 RNAV (GNSS) DEPARTURES
 (RWYS 02L, 20L)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼

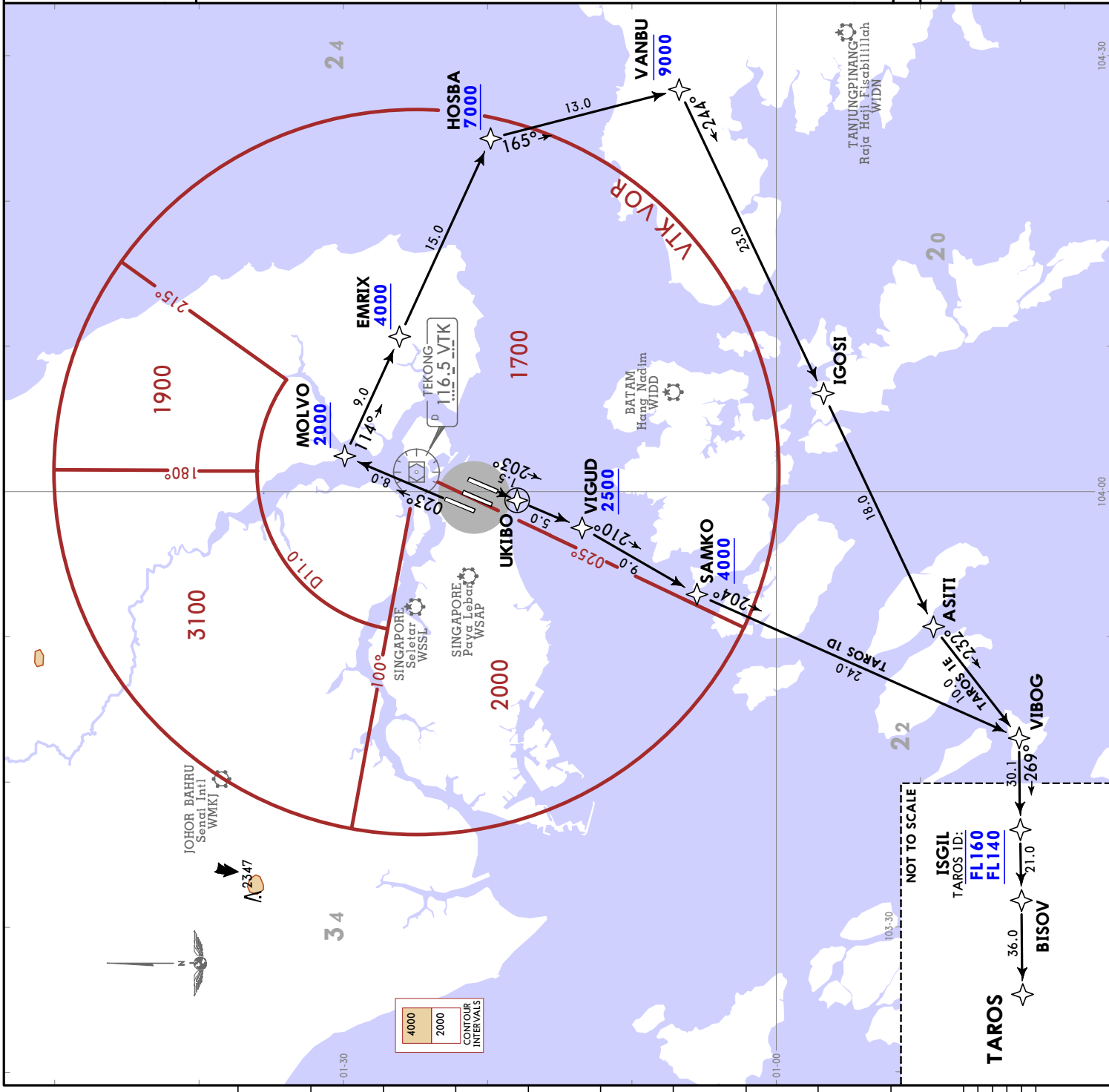
1. Set transponder to Mode A/C code 7600.
 2. Communications failure occurs immediately after departure on:
 Rwy 02L: Proceed direct to Nylong Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 Rwy 20L: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
 See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
 TAROS 1D: 9.0% until reaching or passing 2500, thereafter 3.3%.
 TAROS 1E: 5.0% until reaching or passing 2500, thereafter 3.3%.

Grnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
9.0% V/V (fpm)	684	911	1367	1823	2279	2734

Initial climb clearance 3000	
SID	RWY
INITIAL CLIMB	
TAROS 1D	20L
TAROS 1E	02L
To UKIBO on course 203°. To VIGUD at or above 2500; turn RIGHT. To SAMKO at or above 4000; turn LEFT. To VIBOG, turn RIGHT. To ISGIL, between FL140 to FL160. To BISOV. To TAROS.	
To MOLVO on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000. To HOSBA at or above 7000, turn RIGHT. To VANBU at or below 9000, turn RIGHT. To IGOSI. To ASITI, turn LEFT. To VIBOG, turn RIGHT. To ISGIL. To BISOV. To TAROS.	



SINGAPORE, SINGAPORE

RNAV SID

Trans alt: 11000

RNAV 1 Navigation Specification GNSS required.

1. RADAR required.

2. CAUTION: Rwy 02R/20L closed until further advised.

3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.

4. Cruising levels will be issued after take-off by Singapore RADAR.

5. TOMAN 3A: All SIDs include noise preferential routes.

SINGAPORE Approach (DEP) 120.3

Apt Elev 22

TOMAN 3A [TOMA3A]
TOMAN 5B [TOMA5B]
RNAV (GNSS) DEPARTURES
(RWYS 02C, 20C)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

TOMAN

54.0

NOT TO SCALE

Close-in obstacle (aircraft up to 80) exist on taxiways WEST of runway 02C.

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:

TOMAN 3A: 5.0% until reaching or passing 2500, thereafter 3.3%.

TOMAN 5B: 7.0% until reaching or passing 2500, thereafter 3.3%.

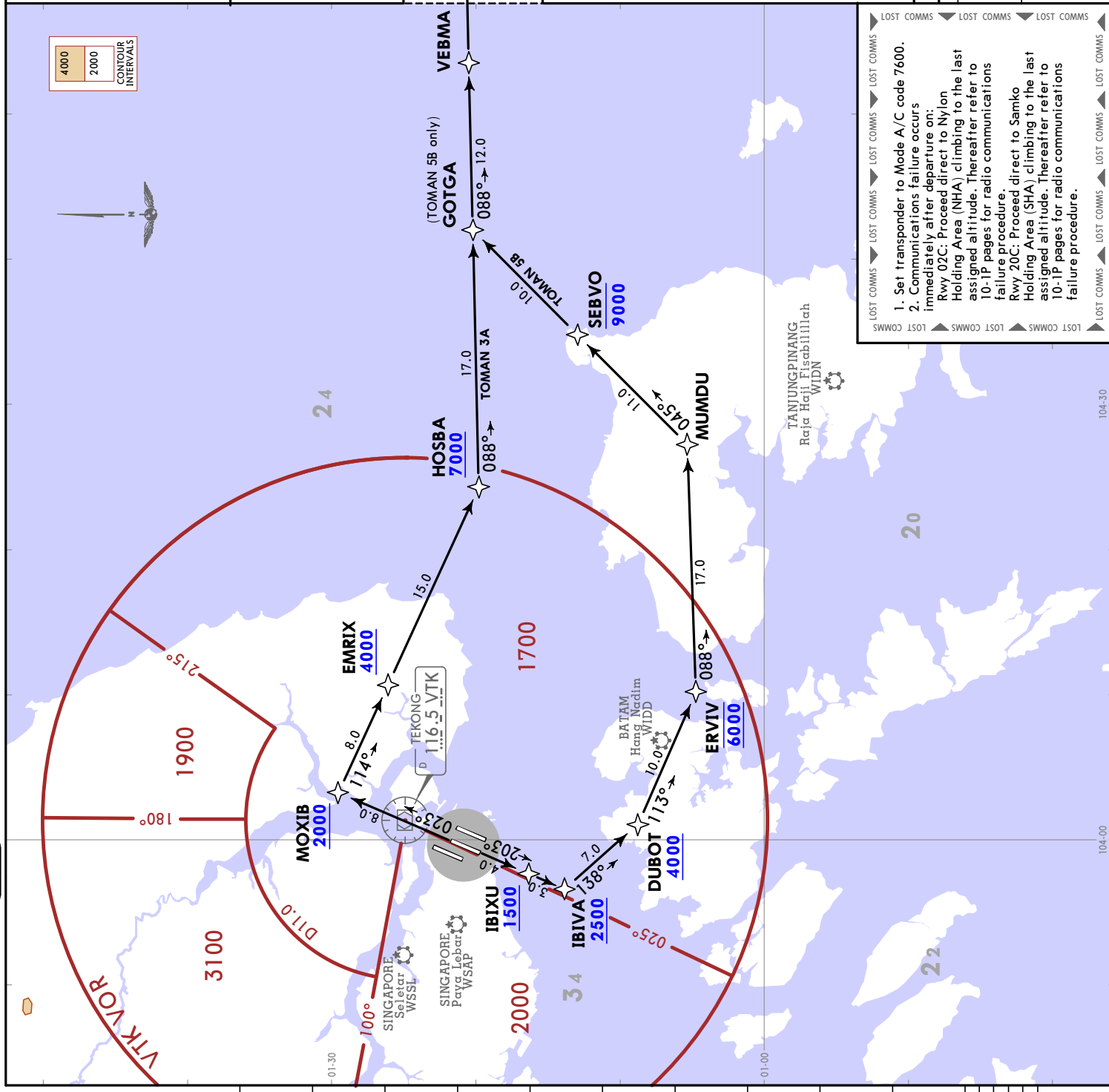
Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
7.0% V/V (fpm)	532	709	1063	1418	1772	2127

Initial climb clearance 3000	
SID	RWY
TOMAN 3A	02C
TOMAN 5B	20C

INITIAL CLIMB

To MOXIB on course 023° at or above 2000, turn RIGHT. To EMRIX at or above 4000. To HOSBA at or above 7000, turn LEFT. To VEBMA. To TOMAN.

To IBIXU on course 203° at or above 1500. To IBIVA at or above 2500, turn LEFT. To DUBOT at or above 4000, turn LEFT. To ERVIV at 6000, turn LEFT. To MUMDU, turn LEFT. To SEBVO at or below 9000, turn LEFT. To GOTGA, turn RIGHT. To VEBMA. To TOMAN.



LOST COMMS

- Set transponder to Mode A/C code 7600.
- Communications failure occurs immediately after departure on:
 - Rwy 02C: Proceed direct to Nylon Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 - Rwy 20C: Proceed direct to Samko Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.



Trans alt: 11000
RNAV 1 Navigation Specification GNSS required.

SINGAPORE Approach (DEP) 120.3

Apt Elev 22

1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.

TOMAN 3E [TOMA3E]
TOMAN 5F [TOMA5F]
RNAV (GNSS) DEPARTURES (RWYS 02L, 20R)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

TOMAN

54.0

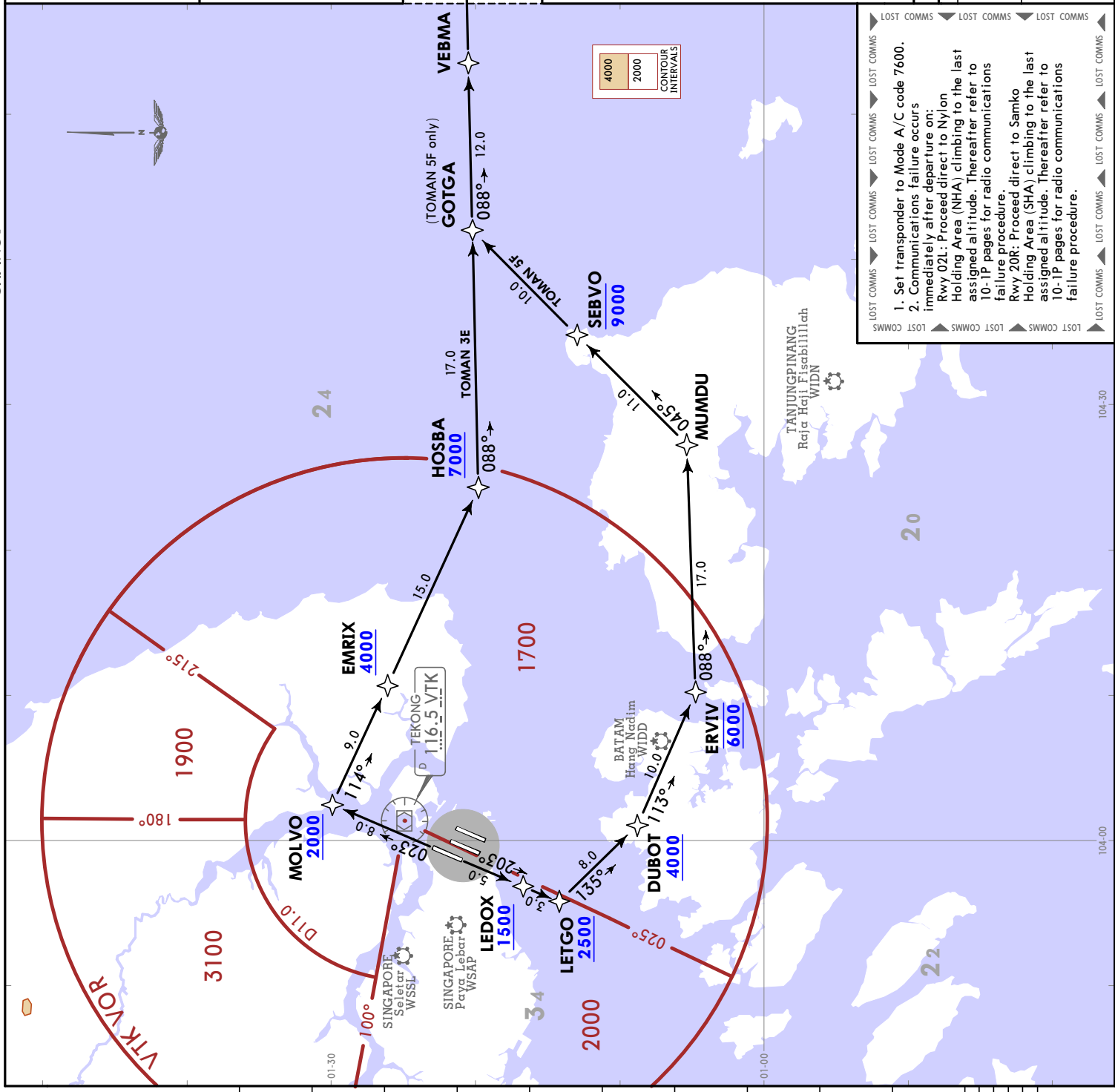
NOT TO SCALE

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:
TOMAN 3E: 5.0% until reaching or passing 2500, thereafter 3.3%.
TOMAN 5F: 6.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
6.0% V/V (fpm)	456	608	911	1215	1519	1823

Initial climb clearance 3000	
SID	RWY
TOMAN 3E	02L
TOMAN 5F	20R



WSSS/SIN
CHANGI

JEPPESSEN
15 MAR 24 10-3T7

SINGAPORE, SINGAPORE
Eff 21 Mar

RNAV SID

SINGAPORE Approach (DEP) **120.3**

Apt Elev **22**

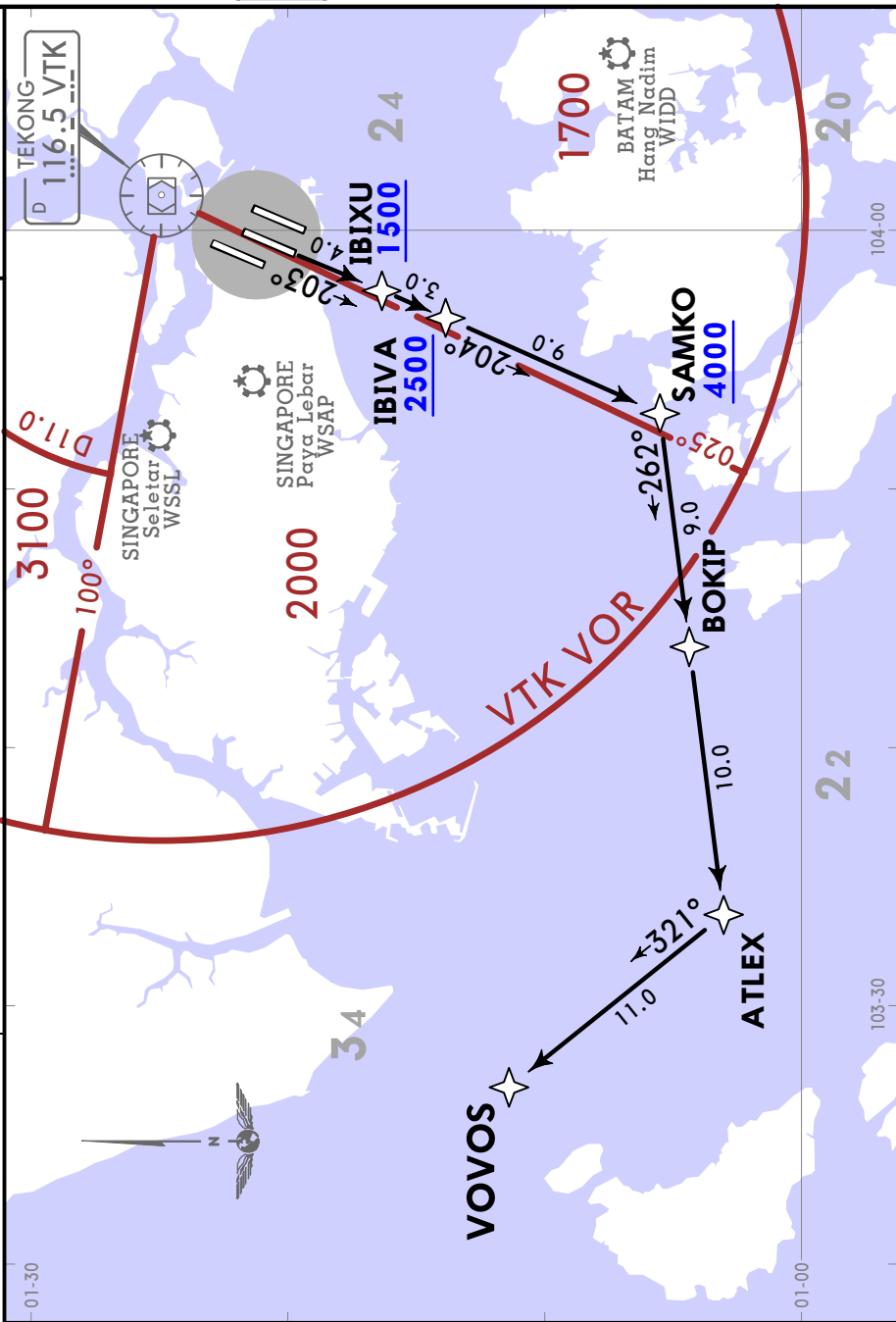
Trans alt: 11000

RNAV 1 Navigation Specification GNSS required.

- RADAR required.
- CAUTION: Rwy 02R/20L closed until further advised.
- VOVOS SID will not be available for flight planning until further advised.
- Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
- Cruising levels will be issued after take-off by Singapore RADAR.

VOVOS 1B RNAV (GNSS) DEPARTURE
[VOVO1B]
(RWY 20C)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000



LOST COMMS

- Set transponder to Mode A/C code 7600.
- Communications failure occurs immediately after departure on: (SHA) climbing to the last assigned altitude. Thereafter refer to 10-IP pages for radio communications failure procedure.

LOST COMMS

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC:
See 10-3 and 10-3A.

This SID shall be on minimum climb gradients of:
7.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
7.0% V/V (fpm)	532	709	1063	1418	1772	2127

Initial climb clearance **3000**

INITIAL CLIMB

To IBIXU on course 203° at or above 1500. To IBIVA at or above 2500, turn RIGHT. To SAMKO at or above 4000, turn RIGHT. To BOKIP. To ATLEX, turn RIGHT. To VOVOS.

WSSS/SIN
CHANGI

JEPPESSEN
15 MAR 24 10-3T8

Eff 21 Mar

SINGAPORE, SINGAPORE
RNAV SID

SINGAPORE Approach (DEP) 120.3

Apt Elev 22

Trans alt: 11000

RNAV 1 Navigation Specification GNSS required.

- RADAR required.
- CAUTION: Rwy 02R/20L closed until further advised.
- VOVOS SIDs will not be available for flight planning until further advised.
- Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
- Cruising levels will be issued after take-off by Singapore RADAR.

VOVOS 1D [VOVO1D]
VOVOS 1F [VOVO1F]
RNAV (GNSS) DEPARTURES (RWYS 20L, 20R)
SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

MSA VTK VOR
1700 within 11 NM

TEKONG 116.5 VTK

SINGAPORE Seletar WSSL

SINGAPORE Paya Lebar WSAP

VOVOS 1D: 9.0% until reaching or passing 2500, thereafter 3.3%.
VOVOS 1F: 6.0% until reaching or passing 2500, thereafter 3.3%.

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of:

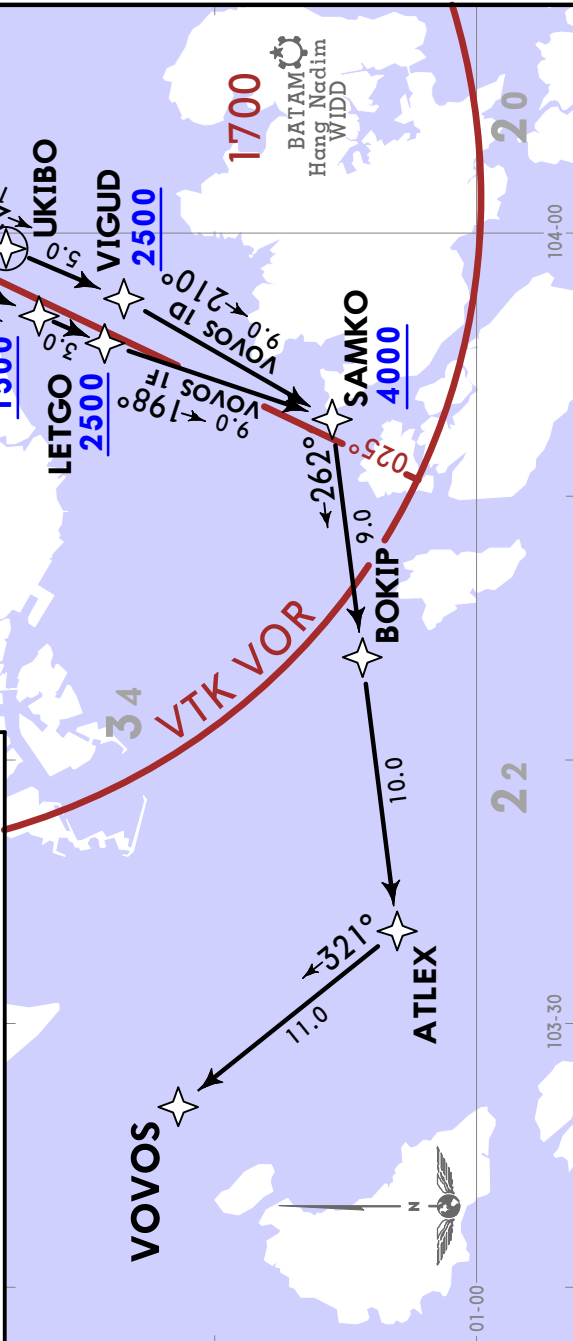
Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
6.0% V/V (fpm)	456	608	911	1215	1519	1823
9.0% V/V (fpm)	684	911	1367	1823	2279	2734

Initial climb clearance 3000

INITIAL CLIMB

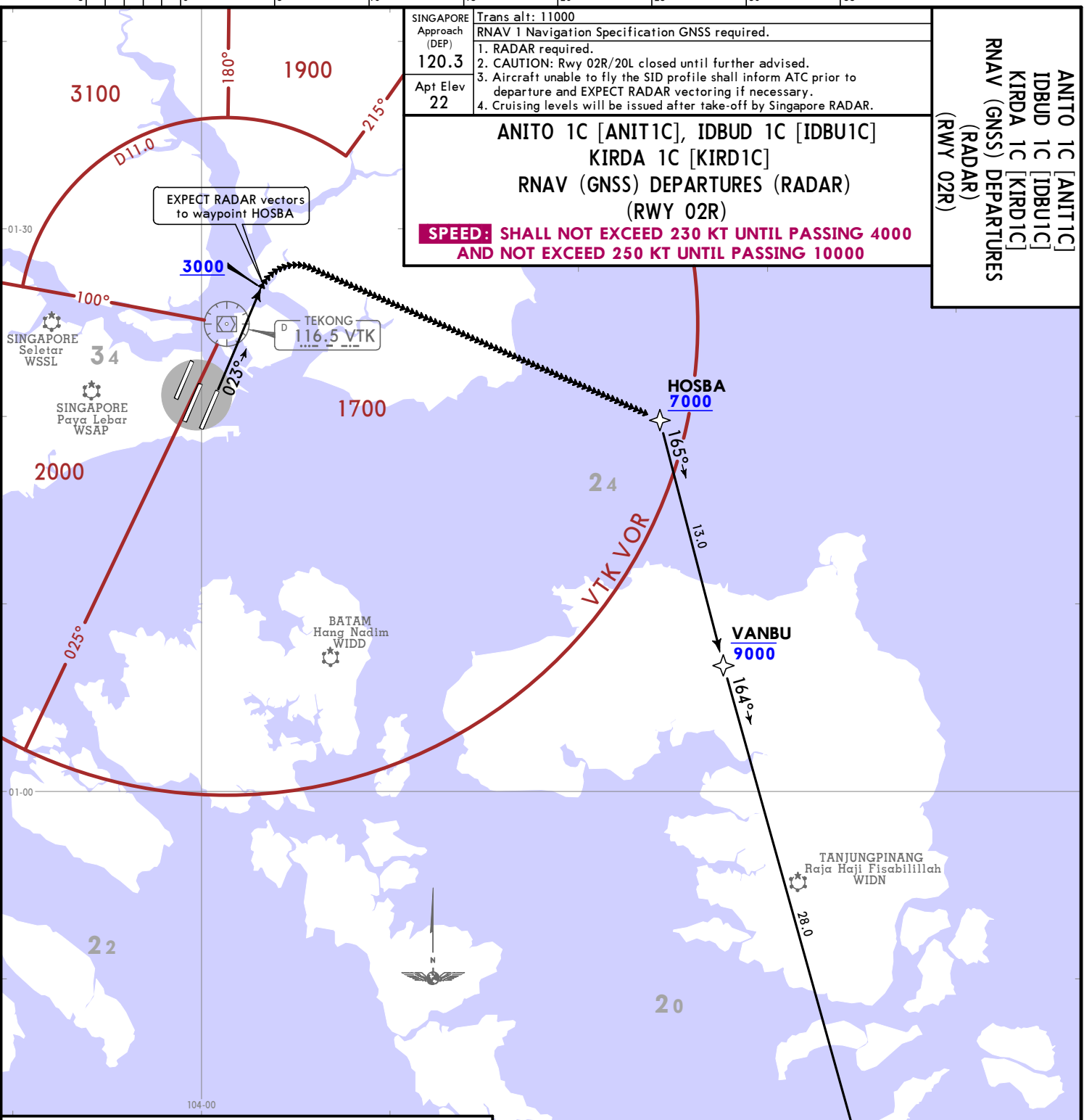
VOVOS 1D: To UKIBO on course 203°, turn RIGHT. To VIGUD at or above 2500, turn RIGHT. To SAMKO at or above 4000, turn RIGHT. To BOKIP. To ATLEX, turn RIGHT. To VOVOS.

VOVOS 1F: To LEDOX on course 203° at or above 1500. To LETGO at or above 2500, turn LEFT. To SAMKO at or above 4000, turn RIGHT. To BOKIP. To ATLEX, turn RIGHT. To VOVOS.



CHANGES: New procedures at this airport.

WSSS/SIN
 CHANGE 15 MAR 24 (10-3U) EFF 21 Mar
 JEPPESEN



SINGAPORE Approach (DEP) 120.3 Apt Elev 22

Trans alt: 11000
 RNAV 1 Navigation Specification GNSS required.

1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.

ANITO 1C [ANIT1C], IDBUD 1C [IDBU1C], KIRDA 1C [KIRD1C]
RNAV (GNSS) DEPARTURES (RADAR) (RWY 02R)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

ANITO 1C [ANIT1C]
 IDBUD 1C [IDBU1C]
 KIRDA 1C [KIRD1C]
 RNAV (GNSS) DEPARTURES (RADAR) (RWY 02R)

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of: 5.0% until reaching or passing 2500, thereafter 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519

Initial climb clearance 3000

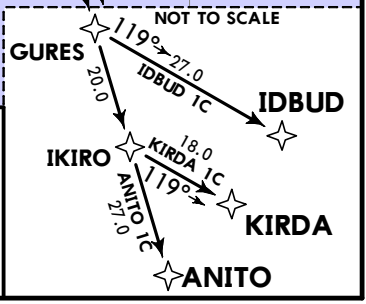
INITIAL CLIMB

Climb heading 023°. To HOSBA at or above 7000. To VANBU at or below 9000, turn LEFT. To VIRET at or above FL160, turn LEFT. To GURES.

SID	ROUTING
ANITO 1C	From GURES, to IKIRO. To ANITO.
IDBUD 1C	From GURES, turn LEFT. To IDBUD.
KIRDA 1C	From GURES, to IKIRO, turn LEFT. To KIRDA.

LOST COMMS

1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure: Proceed direct to Nylon Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.



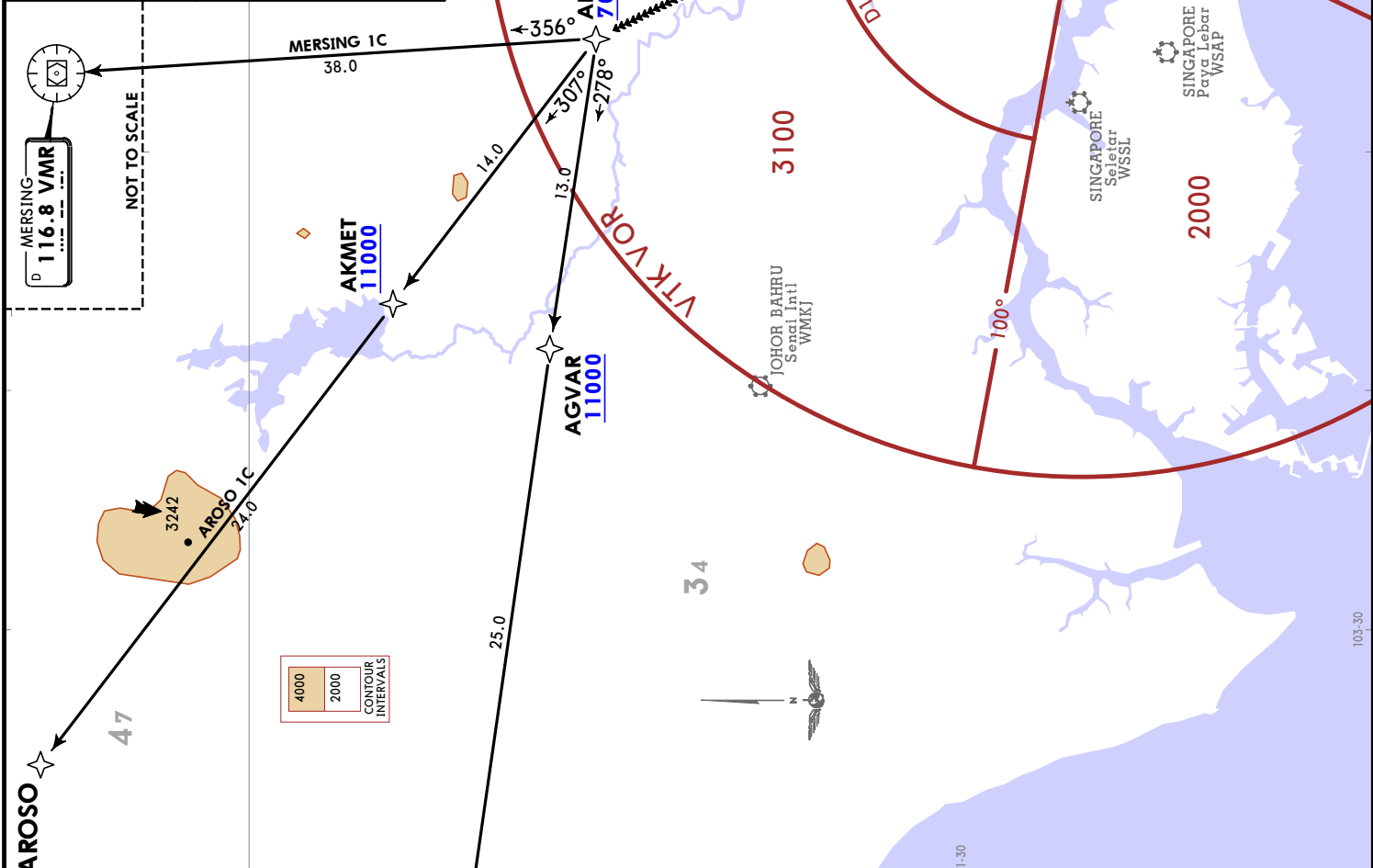
SINGAPORE, SINGAPORE
 RNAV SID

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Trans alt: 11000
SINGAPORE
RNAV 1 Navigation Specification GNSS required.
1. RADAR required.
2. CAUTION: Rwy 02R/20L closed until further advised.
3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXPECT RADAR vectoring if necessary.
4. Cruising levels will be issued after take-off by Singapore RADAR.

Approach (DEP)
120.3
Apt Elev
22

MERSING 1C [AROS1C]
MASBO 1C [MASB1C]
MERSING 1C [VMR1C]
RNAV (GNSS) DEPARTURES (RADAR)
(RWY 02R)
SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000



AROS1C 47

MERSING 1C 116.8 VMR

NOT TO SCALE

4000
2000
CONTOUR INTERVALS

COMMS

1. Set transponder to Mode A/C code 7600.
2. Communications failure occurs immediately after departure: Proceed direct to Nylon Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.

These SIDs shall be on minimum climb gradients of: 5.0% until reaching or passing 2500, thereafter 3.3%.

Grnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519

Initial climb clearance 3000

INITIAL CLIMB

Climb heading 023°. To AKOMA at or above 7000.

SID

AROS1C From AKOMA to AKMET at or above 11000. To AROSO.

MASBO 1C From AKOMA to AGVAR at or above 11000. To SABKA, turn RIGHT. To MASBO.

MERSING 1C From AKOMA to VMR VOR.

CHANGES: New procedures at this airport.

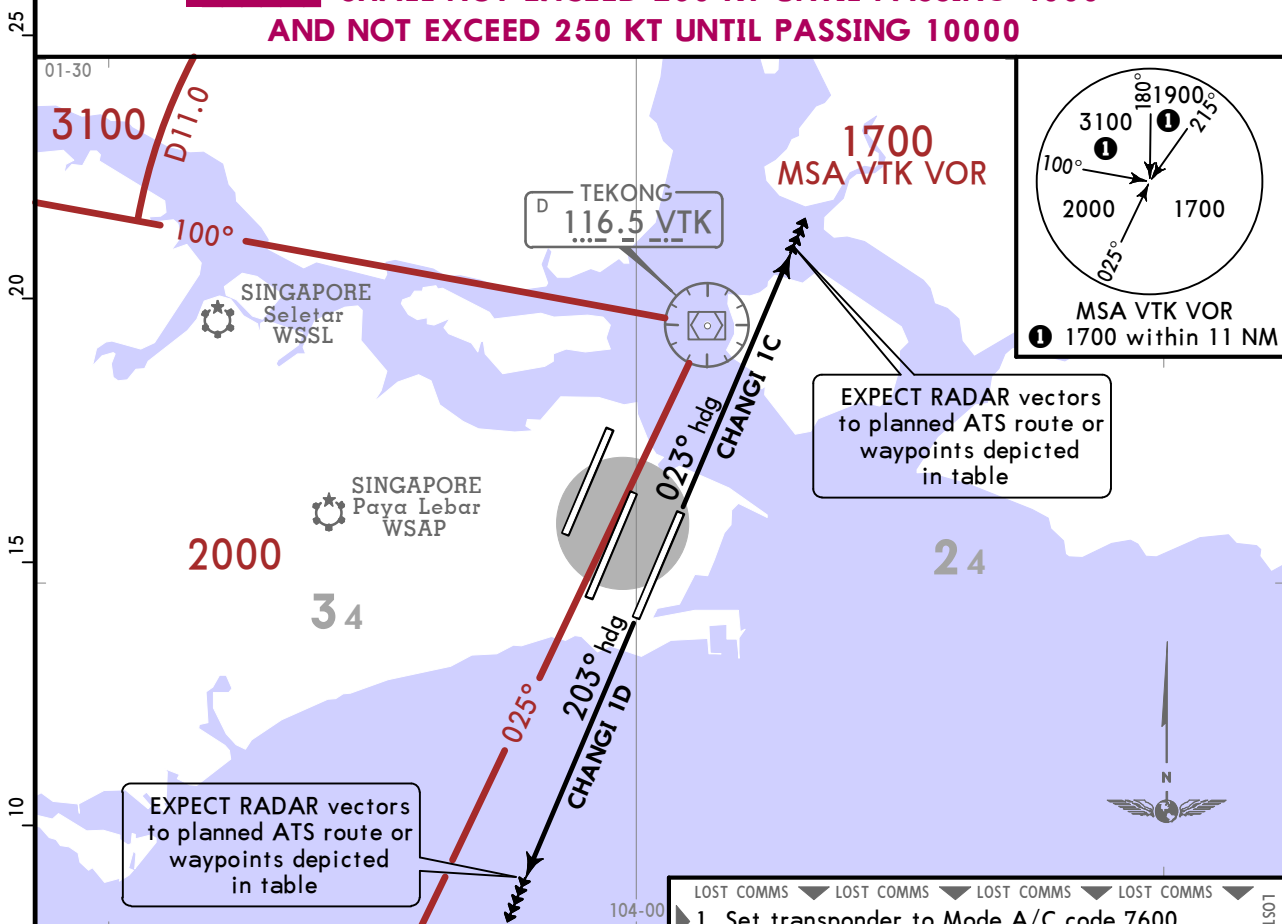
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WSSS/SIN CHANGI

SINGAPORE Approach (DEP) 120.3	Apt Elev 22	Trans alt: 11000 1. RADAR required. 2. CAUTION: Rwy 02R/20L closed until further advised. 3. Aircraft unable to comply with climb gradient restriction shall inform ATC during the time aircraft commences taxiing to holding point for departure. 4. Cruising levels will be issued after take-off by Singapore RADAR.
--	-----------------------	--

CHANGI 1C (CHA 1C), CHANGI 1D (CHA 1D) DEPARTURES (RADAR) (RWYS 02R, 20L)

SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000
AND NOT EXCEED 250 KT UNTIL PASSING 10000



These SIDs require minimum climb gradients of:
 CHANGI 1C: 5.0% until reaching or passing 2500, then 3.3%.
 CHANGI 1D: 9.0% until reaching or passing 2500, then 3.3%.

Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519
9.0% V/V (fpm)	684	911	1367	1823	2279	2734

- LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼
1. Set transponder to Mode A/C code 7600.
 2. Communications failure occurs immediately after departure on:
 Rwy 02R: Proceed direct to NYLON Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 Rwy 20L: Proceed direct to SAMKO Holding Area (SHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
- LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲

Planned ATS routes	Subsequent route waypoints
A-457	AKOMA direct SABKA direct MASBO
B-470	VIRET direct ANITO
G-580/M-646/L-625/T-21 - L-504/T-21 - M-774	VEBMA direct TOMAN
L-762	VIBOG direct BISOV direct MIBEL
B-469/M-751/M-771/L-642/M-753	AKOMA direct VMR VOR
T-24 - M-635	VIRET direct GURES direct IDBUD
W-26	VIRET direct GURES direct IKIRO direct KIRDA
R-469	VIBOG direct TAROS
Y-513	AKOMA direct AKMET direct AROSO

Initial climb clearance **3000**

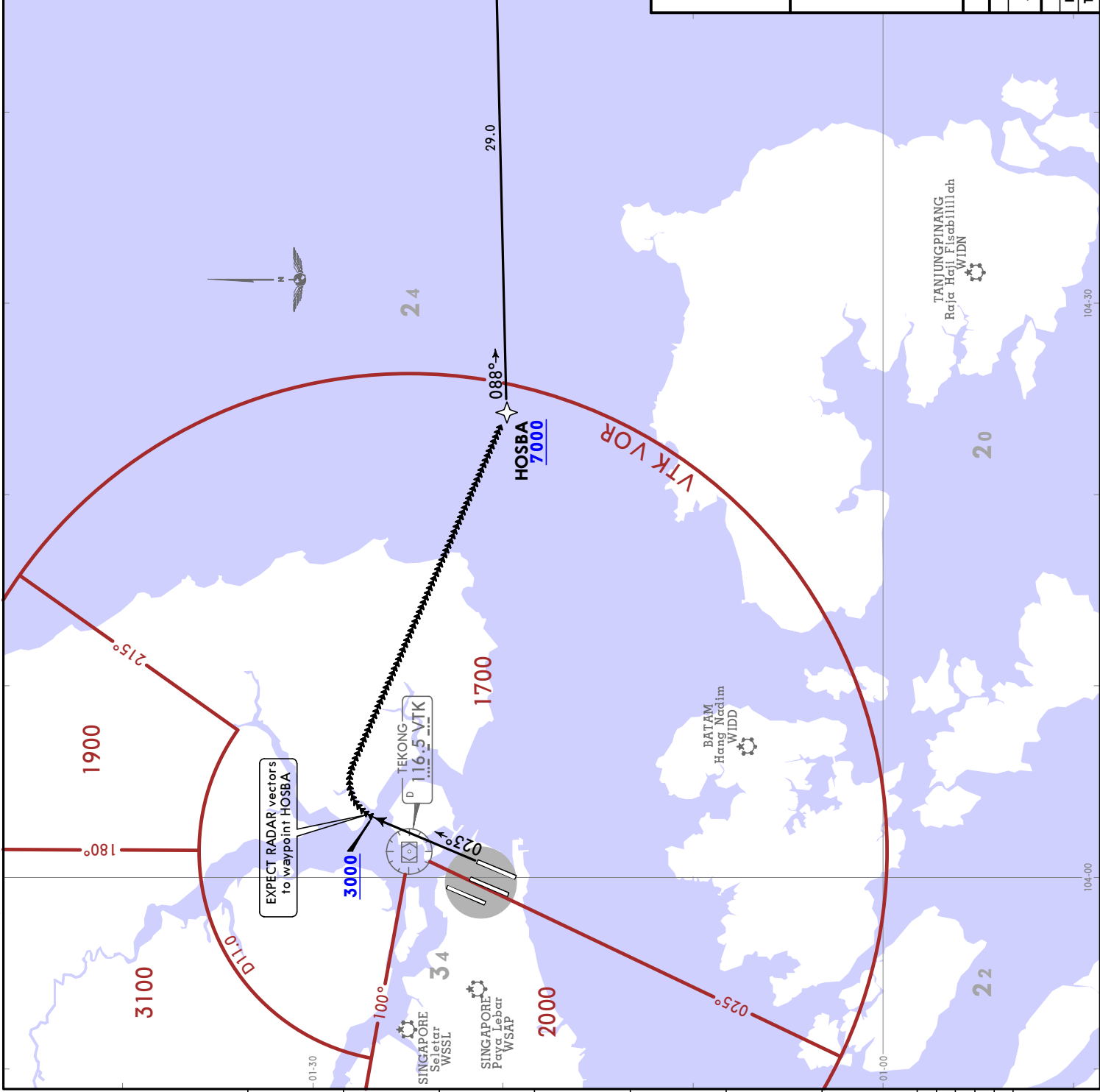
SID	RWY	INITIAL CLIMB
CHANGI 1C	02R	Climb runway heading 023°.
CHANGI 1D	20L	Climb runway heading 203°.

SINGAPORE, SINGAPORE
RNAV SID

WSSS/SIN
CHANGI 15 MAR 24 (10-3V2) Eff 21 Mar

Trans alt: 11000
 SINGAPORE Approach (DEP) **120.3**
 RNAV 1 Navigation Specification GNSS required.
 1. RADAR required.
 2. CAUTION: Rwy 02R/20L closed until further advised.
 3. Aircraft unable to fly the SID profile shall inform ATC prior to departure and EXCEPT RADAR vectoring if necessary.
 4. Cruising levels will be issued after take-off by Singapore RADAR.

DODSO 1C [DODS1C]
TOMAN 1C [TOMA1C]
 RNAV (GNSS) DEPARTURES (RADAR) (RWY 02R)
SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000



DODSO 1C [DODS1C]
TOMAN 1C [TOMA1C]
 RNAV (GNSS) DEPARTURES (RADAR) (RWY 02R)
SPEED: SHALL NOT EXCEED 230 KT UNTIL PASSING 4000 AND NOT EXCEED 250 KT UNTIL PASSING 10000

LOST COMMS
 1. Set transponder to Mode A/C code 7600.
 2. Communications failure occurs immediately after departure: Proceed direct to Nylon Holding Area (NHA) climbing to the last assigned altitude. Thereafter refer to 10-1P pages for radio communications failure procedure.
 LOST COMMS

Minimum climb gradient criteria, when taken off the SID, as instructed by ATC: See 10-3 and 10-3A.
 These SIDs shall be on minimum climb gradients of: 5.0% until reaching or passing 2500, thereafter 3.3%.

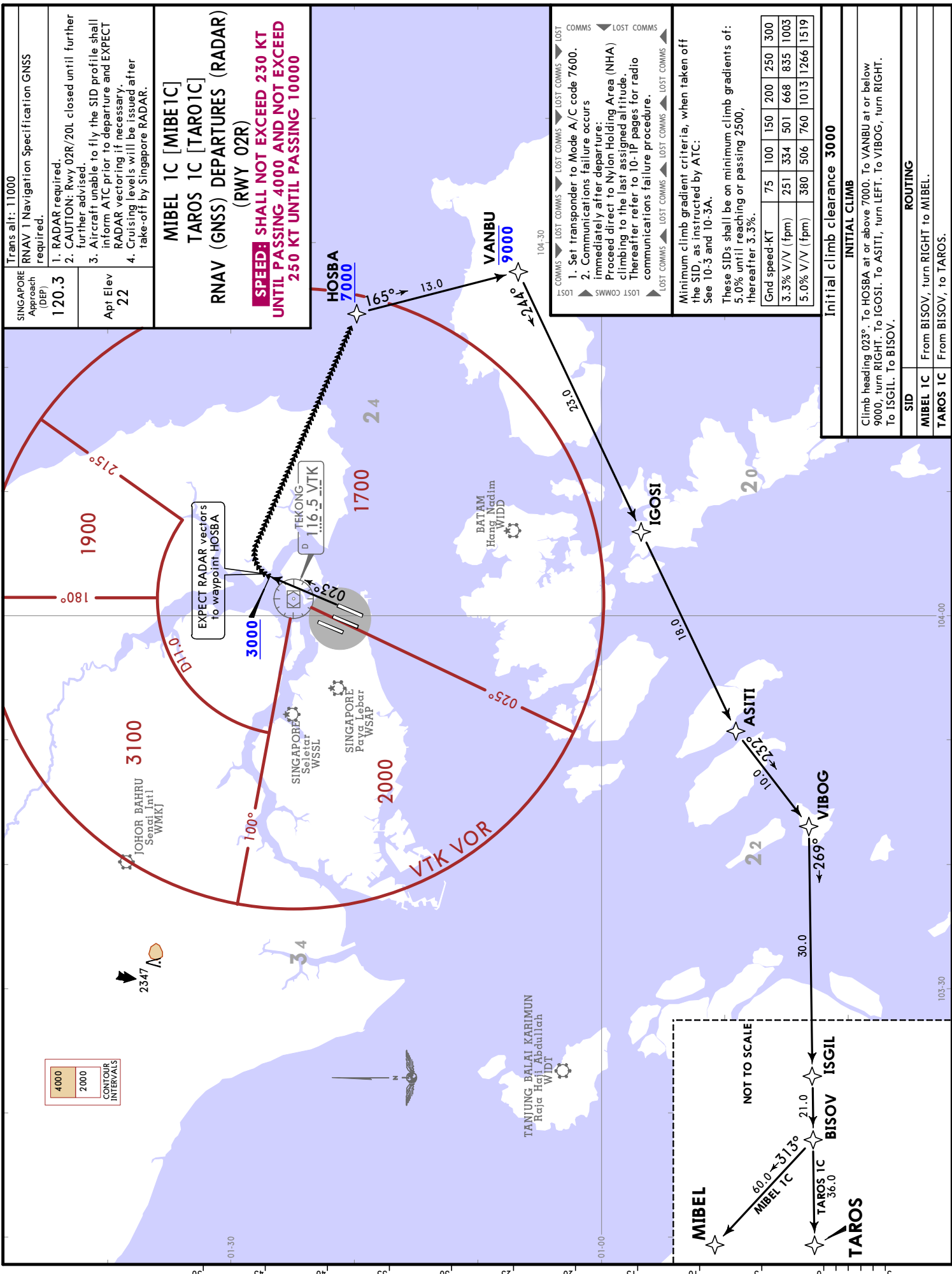
Gnd speed-KT	75	100	150	200	250	300
3.3% V/V (fpm)	251	334	501	668	835	1003
5.0% V/V (fpm)	380	506	760	1013	1266	1519

Initial climb clearance **3000**
INITIAL CLIMB
 Climb heading 023°. To HOSBA at or above 7000. To VEBMA.
SID
DODSO 1C From VEBMA to TOMAN. To DODSO.
TOMAN 1C From VEBMA to TOMAN.

WSSS/SIN
CHANGI

JEPPESEN
15 MAR 24 (10-3V3) Eff 21 Mar

SINGAPORE, SINGAPORE
RNAV SID



WSSS/SIN



10-8B

SINGAPORE, SINGAPORE
CHANGI

**CLOSURE OF RUNWAY 02R/20L,
TAXIWAY CLOSURES AND RESTRICTIONS
(AIP SUP 072/2024)**

INTRODUCTION

This chart informs aircraft operators and pilots of closure of Runway 02R/20L, taxiway closures and taxiways restricted for use by the Republic of Singapore Air Force (RSAF) only at Singapore Changi Airport from 16 May 2024, 0000 UTC to 31 October 2024, 2359 UTC.

CLOSURE OF RUNWAY 02R/20L

There will not be any scheduled maintenance closures and inspections on Runway 02R/20L during the closure period.

CLOSURE OF TAXIWAYS AND TAXIWAYS RESTRICTED FOR RSAF USE

Taxiways	Closure period
TWY A1, A2, A3, A4, A5, A6, A7, A8, A9, A10, A11, A12	From 16 May 2024, 0000 UTC To 31 October 2024, 2359 UTC
TWY A	
TWY B1, B2, B3, B4, B5, H, G, B6, F, E, B7, B8, B9, B10, B11, B12, B13, B14	
TWY B	
TWY J8, J9, J10, J11, J12	
TWY J between TWY J12 and TWY C	
TWY K between TWY J12 and TWY C	
TWY K2, K3	
TWY L between TWY U13 and C14	

Taxiways restricted for RSAF use only	Restriction period
TWY C between TWY C1 and TWY K	From 16 May 2024, 0000 UTC To 31 October 2024, 2359 UTC
TWY K between TWY P1 and TWY K2	

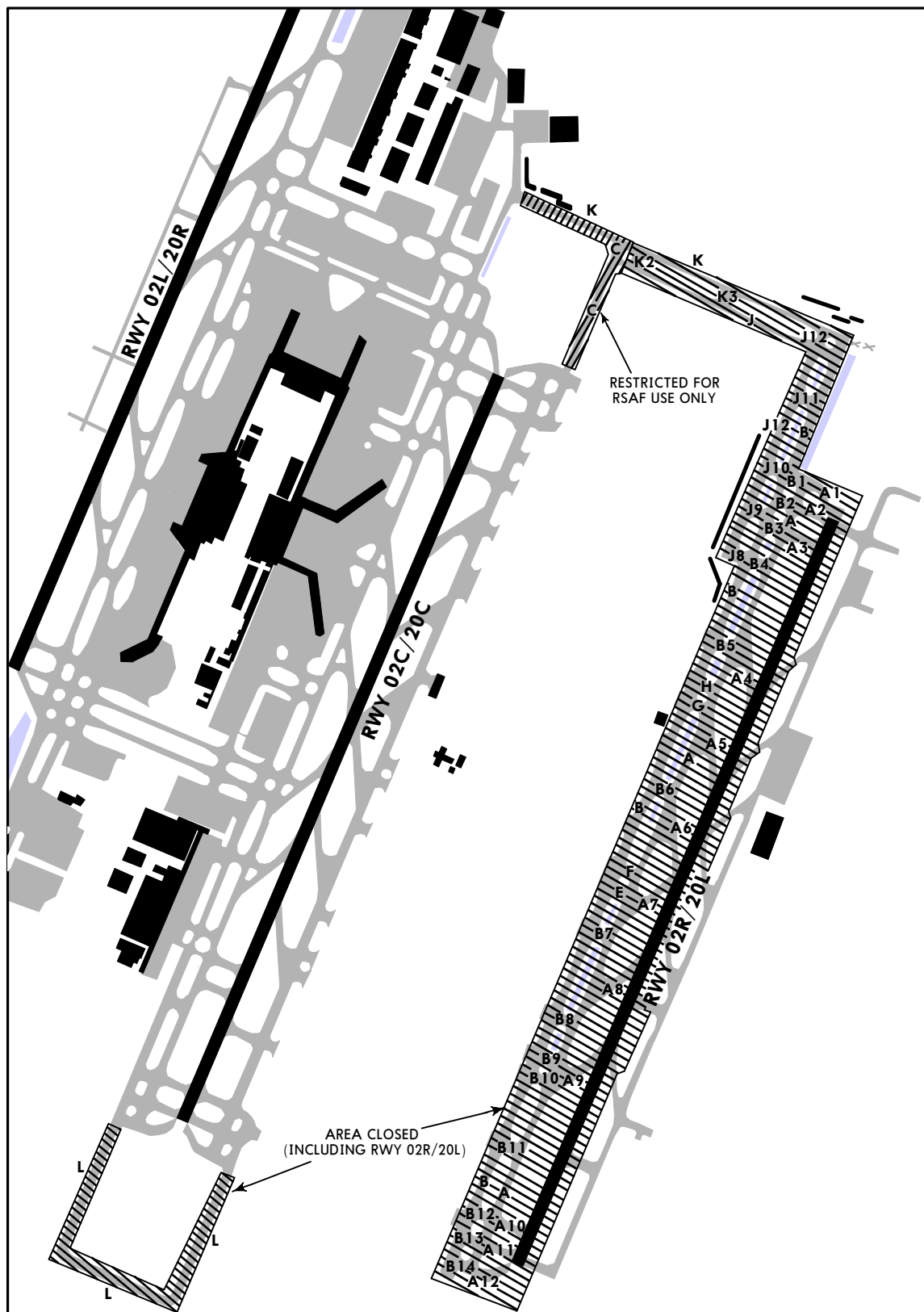
WSSS/SIN



10 MAY 24
Eff 16 May

JEPPESEN
10-8B1

SINGAPORE, SINGAPORE
CHANGI

CLOSURE OF RUNWAY 02R/20L,
TAXIWAY CLOSURES AND RESTRICTIONS (CONTD)
(AIP SUP 072/2024)



- Legend**
-  Works Area
 -  Restricted for RSAF use only

DECOMMISSIONING OF AIRCRAFT STANDS E1 AND F30 AND TEMPORARY CLOSURE OF TAXILANES R1, R2, R3 AND AIRCRAFT STANDS E2, E3, E4, F31, F32, F33 AND F34 DUE TO CONSTRUCTION WORK ACTIVITIES AT TERMINAL 2 (AIP SUP 165/2023)

INTRODUCTION

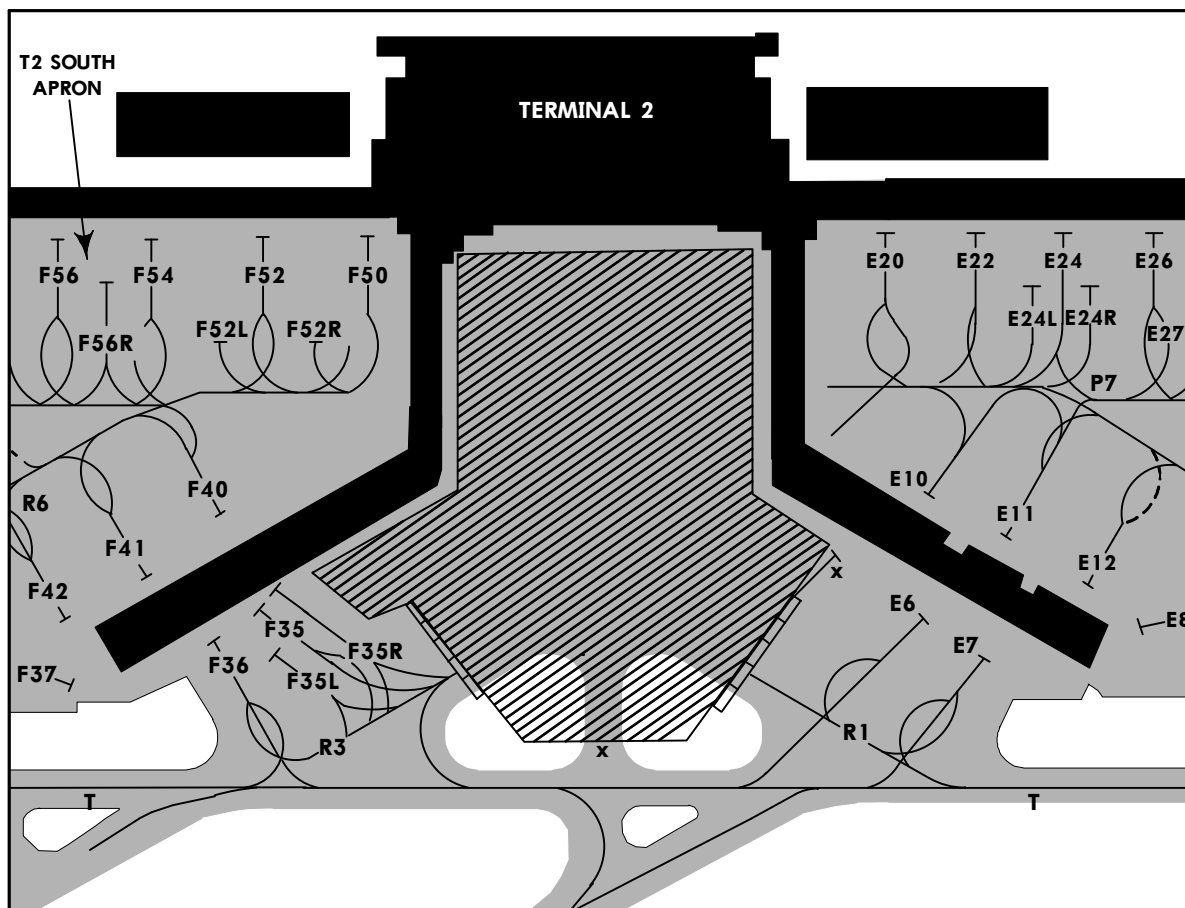
This chart informs aircraft operators and pilots of the permanent decommissioning of aircraft stands E1 and F30, and the temporary closure of taxilanes R1, R2, R3 and aircraft stands E2, E3, E4, F31, F32, F33 and F34 to facilitate construction work activities at Terminal 2 in Singapore Changi Airport from 08 February 2024, 0400 UTC to 03 January 2028, 2359 UTC

CLOSURE OF TAXILANES AND AIRCRAFT STANDS

Taxilanes/Aircraft stands	Closure period
Aircraft stands E1 and F30 and TXL R2 behind aircraft stands	Permanently Decommissioned Effective From 08 February 2024, 0400 UTC
Aircraft stands E2, E3, E4, F31, F32, F33 and F34	Temporarily Closed From 08 February 2024, 0400 UTC To 03 January 2028, 2359 UTC
TXL R1 behind aircraft stand E5, TXL R2, and TXL R3 behind aircraft stand F34	

TEMPORARY CHANGES TO GROUND MARKINGS AND LIGHTING

All markings leading into the closed taxilanes, aircraft stands, and work area will be removed. All airfield lighting leading into the unserviceable areas of taxilanes R1, R2, R3 and closed aircraft stands will be switched off. Unserviceability markers will be in place to demarcate Taxilane R2 as closed. Due to temporary changes in visual aids and aircraft pushback procedures at the affected taxilanes and aircraft stands, pilots are to pay extra attention to visual aids and ATC instructions when taxiing in the vicinity of the closed work areas.



LEGEND

- Works Area
- Jet blast fence

CLOSURE OF AIRCRAFT STAND 504 AT WEST CARGO APRON (AIP SUP 017/2024)

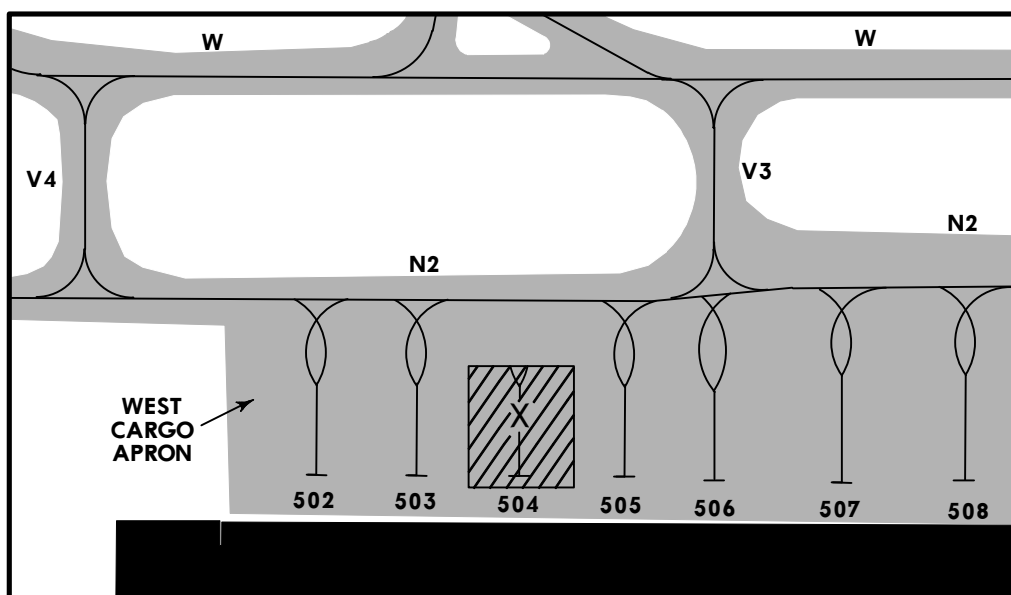
INTRODUCTION

This chart is to inform airline operators and pilots that aircraft stand 504 at West Cargo Apron will be closed from 22 February 2024, 0100 UTC to 31 October 2025, 0900 UTC.

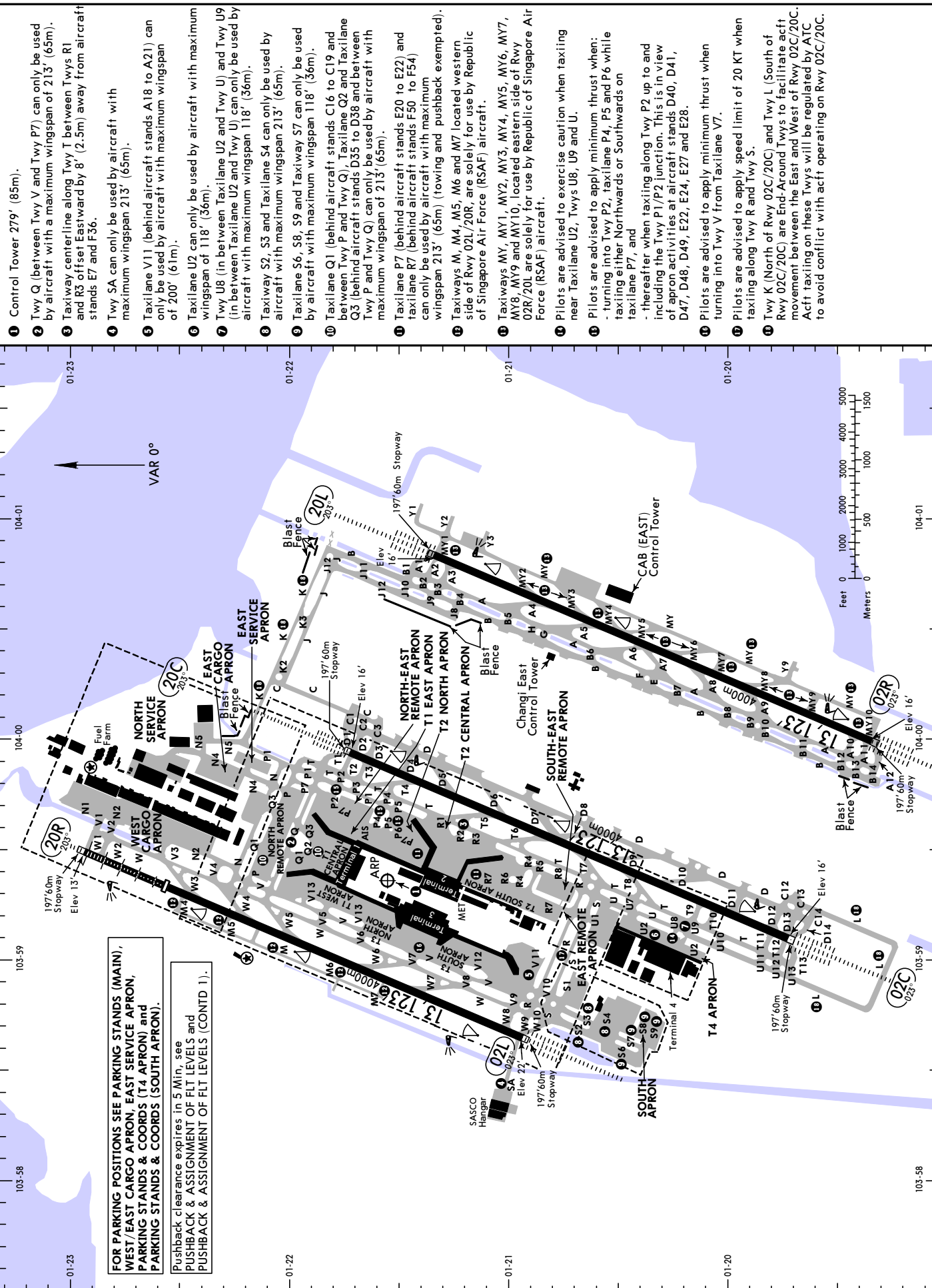
CLOSURE OF AIRCRAFT STAND 504

Closed aircraft stand will be marked with marker boards with obstruction lights placed along the Apron Boundary Line.

Aircraft stand lead-in lines and stand information markings on Twy N2 will be removed during the closure.



D-ATIS Departure	128.6	SINGAPORE Delivery (Cpt)	121.65	*West of Terminal 3	124.3	*East of Terminal 2	121.725	*North of Terminal 1	121.85	Ground Controller 4 West	125.65	Controller 4 East	122.55	West of RWY 02R/20L & East of Twy C	127.275	Emergency	121.0	RWY 02L/20R	118.6	Tower RWY 02C/20C	118.25	RWY 02R/20L	131.4	SINGAPORE Departure	120.3
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FOR PARKING POSITIONS SEE PARKING STANDS (MAIN), WEST/EAST CARGO APRON, EAST SERVICE APRON, PARKING STANDS & COORDS (T4 APRON) and PARKING STANDS & COORDS (SOUTH APRON).

Pushback clearance expires in 5 Min, see PUSHBACK & ASSIGNMENT OF FLT LEVELS and PUSHBACK & ASSIGNMENT OF FLT LEVELS (CONTD 1).

- Control Tower 279' (85m).
- Twy Q (between Twy V and Twy P7) can only be used by aircraft with a maximum wingspan of 213' (65m).
- Taxiway centerline along Twy T between Twys R1 and R3 offset Eastward by 8' (2.5m) away from aircraft stands E7 and F36.
- Twy SA can only be used by aircraft with maximum wingspan 213' (65m).
- Taxilane V11 (behind aircraft stands A18 to A21) can only be used by aircraft with maximum wingspan of 200' (61m).
- Taxilane U2 can only be used by aircraft with maximum wingspan of 118' (36m).
- Twy U8 (in between Taxilane U2 and Twy U) and Twy U9 (in between Taxilane U2 and Twy U) can only be used by aircraft with maximum wingspan 118' (36m).
- Taxiway S2, S3 and Taxilane S4 can only be used by aircraft with maximum wingspan 213' (65m).
- Taxilane S6, S8, S9 and Taxiway S7 can only be used by aircraft with maximum wingspan 118' (36m).
- Taxilane Q1 (behind aircraft stands C16 to C19 and between Twy P and Twy Q), Taxilane Q2 and Taxilane Q3 (behind aircraft stands D35 to D38 and between Twy P and Twy Q) can only be used by aircraft with maximum wingspan of 213' (65m).
- Taxilane P7 (behind aircraft stands E20 to E22) and taxilane R7 (behind aircraft stands F50 to F54) can only be used by aircraft with maximum wingspan 213' (65m) (towing and pushback exempted).
- Taxiways M, M4, M5, M6 and M7 located western side of Rwy 02L/20R, are solely for use by Republic of Singapore Air Force (RSAF) aircraft.
- Taxiways MY, MY1, MY2, MY3, MY4, MY5, MY6, MY7, MY8, MY9 and MY10, located eastern side of Rwy 02R/20L are solely for use by Republic of Singapore Air Force (RSAF) aircraft.
- Pilots are advised to exercise caution when taxiing near Taxilane U2, Twys U8, U9 and U.
- Pilots are advised to apply minimum thrust when:
 - turning into Twy P2, taxilane P4, P5 and P6 while taxiing either Northwards or Southwards on taxilane P7, and
 - thereafter when taxiing along Twy P2 up to and including the Twy P1/P2 junction. This is in view of apron activities at aircraft stands D40, D41, D47, D48, D49, E22, E24, E27 and E28.
- Pilots are advised to apply minimum thrust when turning into Twy V from Taxilane V7.
- Pilots are advised to apply speed limit of 20 KT when taxiing along Twy R and Twy S.
- Twy K (North of Rwy 02C/20C) and Twy L (South of Rwy 02C/20C) are End-Around Twys to facilitate acft movement between the East and West of Rwy 02C/20C. Acft taxiing on these Twys will be regulated by ATC to avoid conflict with acft operating on Rwy 02C/20C.

ADDITIONAL RUNWAY INFORMATION				USABLE LENGTHS				
RWY	HIRL(60m) PAPI (angle 3.0°)	CL (30m) ALSIF-II TDZ REIL SFL	CL (30m) ALSIF-II TDZ REIL SFL	RVR	Landing Threshold	BEYOND		TAKE-OFF WIDTH
						Glide Slope	12,001' 3658m	
02L	1 HIRL(60m) PAPI (angle 3.0°)	2 CL (30m) ALSIF-II TDZ REIL SFL	3 CL (30m) ALSIF-II TDZ REIL SFL	4 RVR	10,696' 3260m	12,001' 3658m	197' 60m	
1 Grooved. 2 Length 900m.								
02C	5 HIRL(60m) PAPI-L (angle 3.0°)	4 CL (30m) ALSIF-II TDZ REIL SFL	5 CL (30m) ALSIF-II TDZ REIL SFL	6 RVR	12,024' 3665m	12,009' 3660m	197' 60m	
3 Grooved. 4 Length 900m.								
02R	5 HIRL(60m) PAPI (angle 3.0°)	6 CL (30m) ALSIF-II TDZ REIL SFL	7 CL (30m) ALSIF-II TDZ REIL SFL	8 RVR	12,024' 3665m	12,024' 3665m	197' 60m	
5 Grooved. 6 Length 900m.								

Rwy Designator	DECLARED DISTANCES		TORA
	Intersection Departures	Not applicable	
20R	Not applicable	W2 W3	13,123' 4000m 12,605' 3842m 9,928' 3026m
02L	Not applicable	W8 W7	13,123' 4000m 12,605' 3842m 9,928' 3026m
20C	Not applicable	T3 T4 T5 D3 D4 D5 D6	13,123' 4000m 12,493' 3808m 11,224' 3421m 8,927' 2721m 12,605' 3842m 11,490' 3502m 9,931' 3027m 8,373' 2552m
02C	Not applicable	T11 T10 T9 T8 D12 D11 D10 D9	13,123' 4000m 12,605' 3842m 10,922' 3329m 10,489' 3197m 8,369' 2551m 12,605' 3842m 11,417' 3480m 9,439' 2877m 7,881' 2402m
20L	Not applicable	A3 A4 A5	13,123' 4000m 12,605' 3842m 9,931' 3027m 8,373' 2552m
02R	Not applicable	A10 A9 A8	13,123' 4000m 12,605' 3842m 9,439' 2877m 7,881' 2402m

GENERAL
 Frangible poles are installed for the purpose of identifying 295' (90m) away from the centerline of Rwy 02L/20R and Rwy 02C/20C.
 Open-air drains, demarcated by frangible poles, within the runway strip of Rwy 02R/20L.
 Due to close proximity of Paya Lebar and Seletar airports, correct approach is vital.
 Maritime vessels of variable heights off Changi Apt.
 Birds in vicinity of airport.
 Low-level wind shear alert system.
 Departures on Runway 20R are not permitted between 1600/2200 UTC. However, this restriction is not applicable when Runway 20C/02C is unavailable because of maintenance work or for other reasons.
 Unless it is necessary for operational or safety reasons, when using engine reverse, arrivals on Runway 02L/20R between 1600/2200 UTC may not exceed idle reverse thrust.
 To maximize runway utilization and minimize runway occupancy time, departing aircraft, when instructed to enter the runway, shall commence the maneuver without delay. Pilots are required to commence take-off roll as soon as take-off clearance is issued by ATC. Arriving aircraft upon landing shall vacate the runway as quickly as practicable to enable ATC to apply minimum spacing on final approach and minimize the occurrence of go-arounds.

DECLARED DISTANCES

Intersection departures are allowed subject to the following:
 (a) Initiated by pilot and approved by ATC, traffic permitting.
 (b) ATC is able to keep aircraft visual at all times.
 Intersection departures are not applicable from Twys W4, W5, W6, T6 and T7.

Std	TAKE-OFF	
	RL & CL & relevant RVR	RL & CL
	RL & RCLM 1	RL or RCLM 1
	TDZ R150m Mid R150m Rollout R150m	R/V200m
		R/V300m
		R/V400m
		R/V500m
		DAY
		NIGHT

CHANGES: Note 2 added to stand 208, buildings

16 FEB 24 10:9B

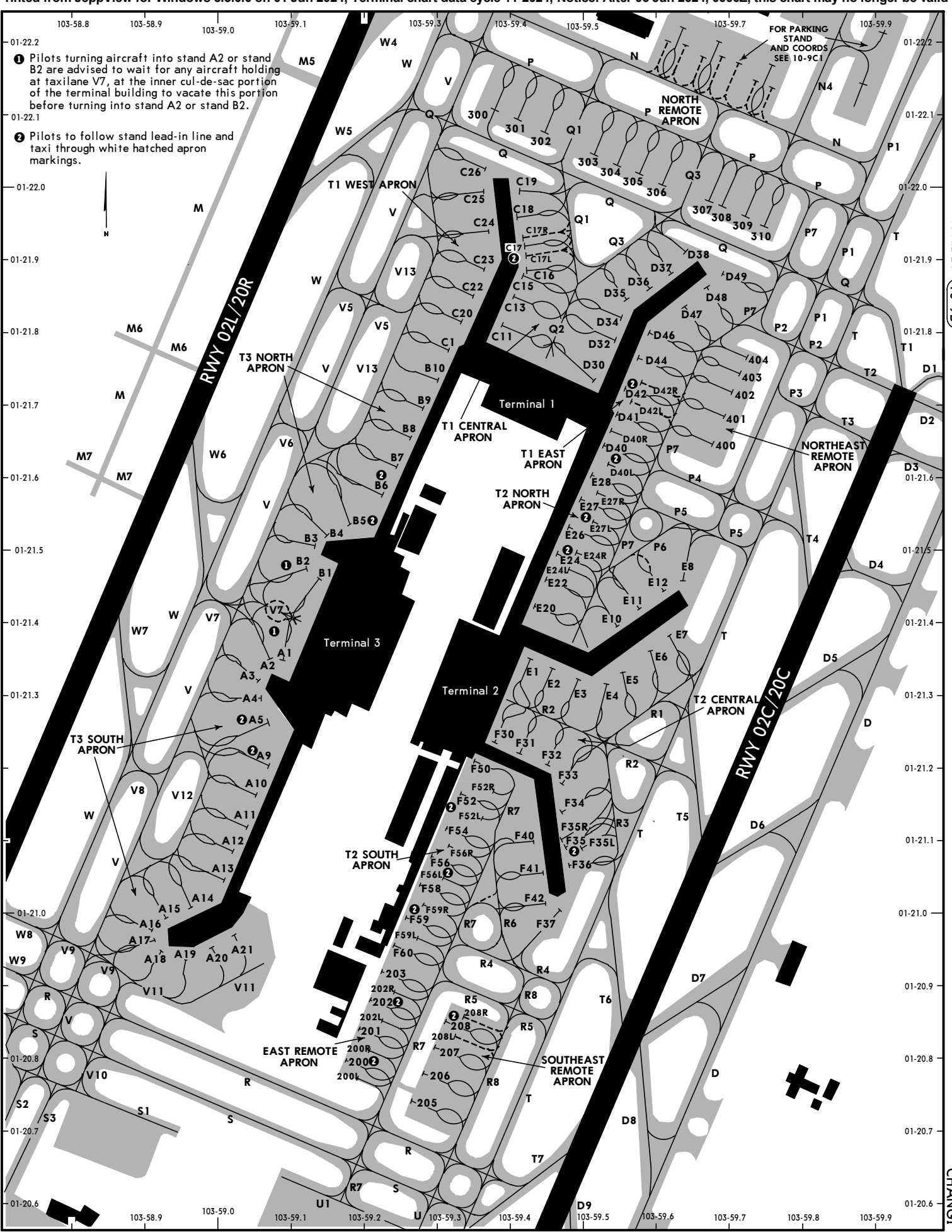
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- ① Pilots turning aircraft into stand A2 or stand B2 are advised to wait for any aircraft holding at taxiway V7, at the inner cul-de-sac portion of the terminal building to vacate this portion before turning into stand A2 or stand B2.
- ② Pilots to follow stand lead-in line and taxi through white hatched apron markings.

FOR PARKING STAND AND COORDS SEE 10-9C1



103-58.8 103-58.9 103-59.0 103-59.1 103-59.3 103-59.4 103-59.5 103-59.7 103-59.9

01-22.2 01-22.1 01-22.0 01-21.9 01-21.8 01-21.7 01-21.6 01-21.5 01-21.4 01-21.3 01-21.2 01-21.1 01-21.0 01-20.9 01-20.8 01-20.7 01-20.6

103-58.9 103-59.0 103-59.1 103-59.2 103-59.3 103-59.4 103-59.5 103-59.6 103-59.7 103-59.8 103-59.9

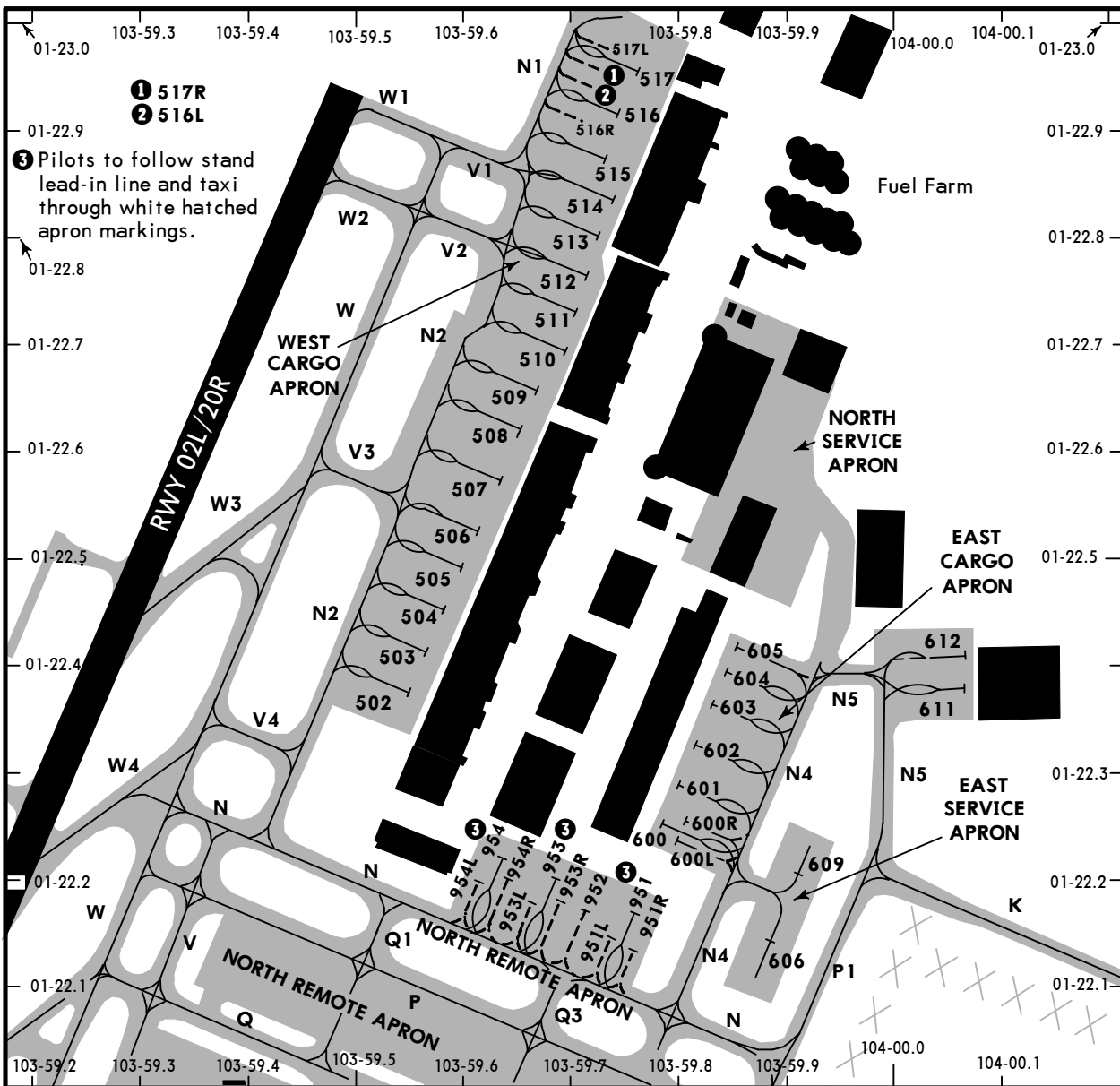
STAND No.	PARKING STAND COORDINATES		STAND No.	COORDINATES	ELEV (ft)
	COORDINATES	ELEV (ft)			
A1	T3 SOUTH APRON	16	E1	T2 CENTRAL APRON	16
A2	N01 21.4 E103 59.1	15	E2 thru E4	N01 21.3 E103 59.4	16
A3	N01 21.4 E103 59.1	15	E5	N01 21.3 E103 59.4	16
A4	N01 21.3 E103 59.0	16	E6, E7	N01 21.3 E103 59.6	16
A5	N01 21.3 E103 59.1	16	F30, F31	N01 21.2 E103 59.4	16
A9	N01 21.2 E103 59.1	16	F32, F33	N01 21.2 E103 59.5	16
A10	N01 21.2 E103 59.0	17	F34, F35, F35L	N01 21.1 E103 59.5	16
A11	N01 21.1 E103 59.0	17	F35R	N01 21.1 E103 59.5	17
A12, A13	N01 21.1 E103 59.0	18	F36	N01 21.1 E103 59.5	16
A14	N01 21.0 E103 59.0	18			
A15, A16	N01 21.0 E103 58.9	18		T2 NORTH APRON	
A17	N01 21.0 E103 58.9	17	E8	N01 21.5 E103 59.6	15
A18	N01 20.9 E103 58.9	18	E10	N01 21.4 E103 59.5	15
A19, A20	N01 20.9 E103 59.0	18	E11	N01 21.4 E103 59.6	16
A21	N01 21.0 E103 59.0	18	E12	N01 21.5 E103 59.6	16
B1	T3 NORTH APRON		E20, E22	N01 21.4 E103 59.5	17
B2, B3	N01 21.4 E103 59.1	16	E24, E24L, E24R, E26	N01 21.5 E103 59.5	17
B4	N01 21.5 E103 59.1	15	E27L	N01 21.5 E103 59.5	16
B5	N01 21.5 E103 59.2	16	E27, E27R, E28	N01 21.6 E103 59.5	17
B6, B7	N01 21.6 E103 59.2	16			
B8 thru B10	N01 21.7 E103 59.3	17	F37	T2 SOUTH APRON	
C1, C20	T1 WEST APRON		F40, F41	N01 21.0 E103 59.5	16
C22, C23	N01 21.8 E103 59.3	17	F42	N01 21.1 E103 59.4	16
C24	N01 21.9 E103 59.3	16	F50	N01 21.0 E103 59.4	15
C25, C26	N01 22.0 E103 59.3	16	F52R	N01 21.2 E103 59.4	17
C11, C13	T1 CENTRAL APRON		F52, F52L, F54, F56	N01 21.2 E103 59.3	17
C15	N01 21.8 E103 59.4	17	F56L, F56R	N01 21.1 E103 59.3	17
C16	N01 21.9 E103 59.4	16	F58, F59R	N01 21.1 E103 59.3	18
C17, C17L	N01 21.9 E103 59.4	16	F59, F59L	N01 21.0 E103 59.3	18
C17R	N01 21.9 E103 59.4	17	F60	N01 21.0 E103 59.3	19
C18, C19	N01 22.0 E103 59.4	16		N01 20.9 E103 59.3	19
D30	N01 21.7 E103 59.5	17		EAST REMOTE APRON	
D32, D34	N01 21.8 E103 59.5	17	200, 200R	N01 20.8 E103 59.2	20
D35	N01 21.8 E103 59.5	16	200L	N01 20.8 E103 59.2	21
D36	N01 21.9 E103 59.6	17	201	N01 20.8 E103 59.2	20
D37, D38	N01 21.9 E103 59.6	16	202, 202L, 202R	N01 20.9 E103 59.2	19
D40, D40L, D40R	T1 EAST APRON		203	N01 20.9 E103 59.2	19
D41, D42, D42L	N01 21.6 E103 59.5	17	205	SOUTH-EAST REMOTE APRON	
D42R, D44	N01 21.7 E103 59.6	17	206, 207, 208, 208L	N01 20.7 E103 59.3	16
D46	N01 21.7 E103 59.6	17	208R	N01 20.8 E103 59.3	16
D47	N01 21.8 E103 59.6	16		N01 20.9 E103 59.3	15
D48	N01 21.8 E103 59.7	16	300	NORTH REMOTE APRON	
D49	N01 21.9 E103 59.7	16	301, 302	N01 22.1 E103 59.4	15
			303	N01 22.1 E103 59.4	16
			304	N01 22.1 E103 59.5	17
			305, 306	N01 22.0 E103 59.6	18
			307 thru 309	N01 22.0 E103 59.6	17
			310	N01 22.0 E103 59.7	16
				NORTH-EAST REMOTE APRON	
			400	N01 21.6 E103 59.7	14
			401 thru 403	N01 21.7 E103 59.7	14
			404	N01 21.8 E103 59.7	14

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24 NOV 23

10-9C1 Eff 30 Nov

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PARKING STAND COORDINATES

STAND No.	COORDINATES	ELEV (ft)
West Cargo Apron		
502, 503	N01 22.4 E103 59.5	14
504 thru 506	N01 22.5 E103 59.6	14
507, 508	N01 22.6 E103 59.6	14
509	N01 22.7 E103 59.6	13
510, 511	N01 22.7 E103 59.7	14
512 thru 514	N01 22.8 E103 59.7	14
515	N01 22.9 E103 59.7	13
516L, 516, 516R	N01 22.9 E103 59.7	13
517	N01 23.0 E103 59.8	13
517L, 517R	N01 23.0 E103 59.7	13
East Cargo Apron		
600L, 600, 600R	N01 22.2 E103 59.8	14
601, 602	N01 22.3 E103 59.8	14
603 thru 605	N01 22.4 E103 59.9	14
East Service Apron		
606	N01 22.2 E103 59.9	8
609	N01 22.2 E103 59.9	10
Ace Hub		
611, 612	N01 22.4 E104 00.0	13
North Remote Apron		
951R	N01 22.1 E103 59.8	16
951	N01 22.2 E103 59.8	17
951L	N01 22.1 E103 59.7	16
952, 953L, 953, 953R	N01 22.2 E103 59.7	16
954, 954R	N01 22.2 E103 59.6	16
954L	N01 22.2 E103 59.6	15

CHANGES: Twys T and J closed.

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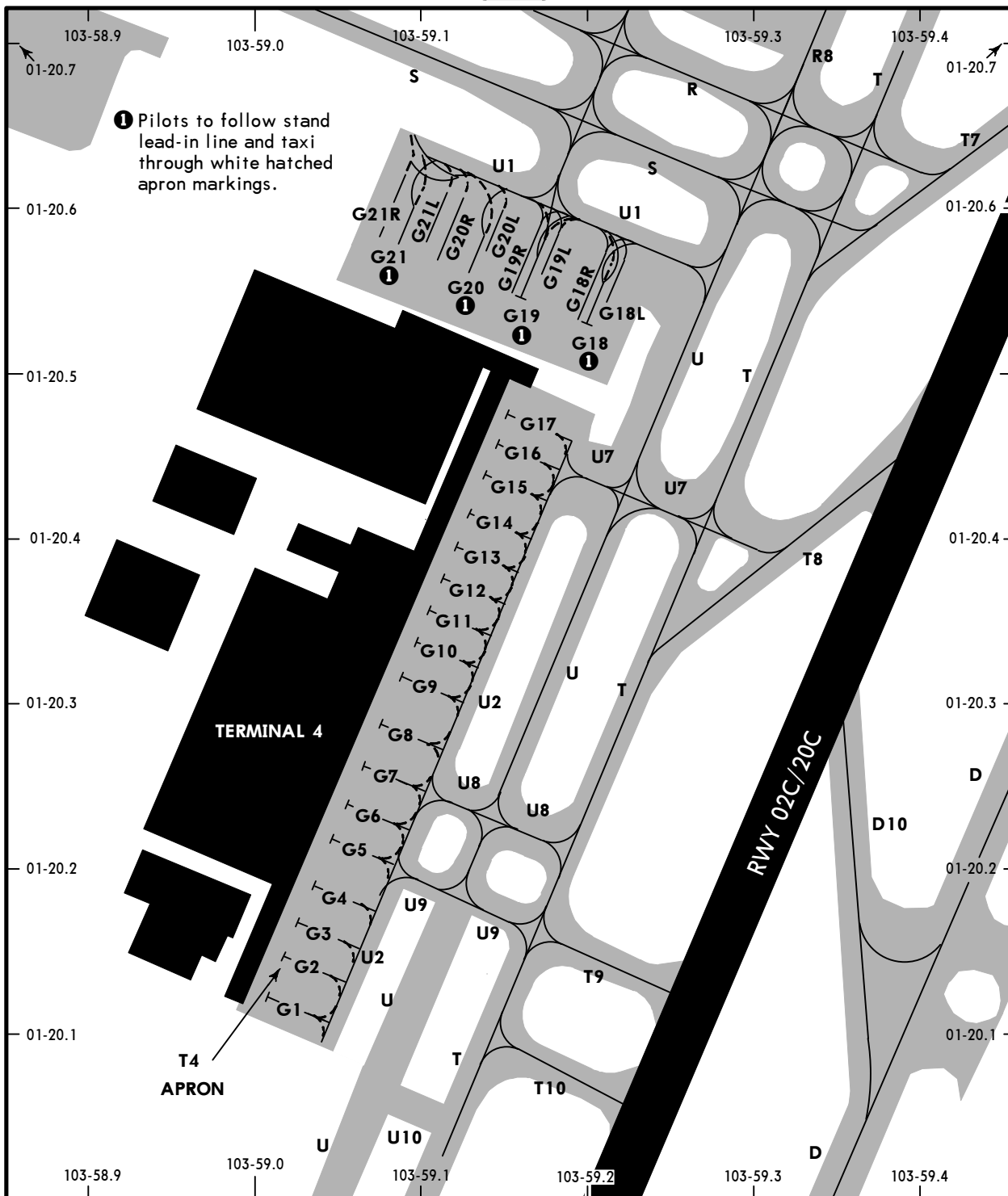
SINGAPORE, SINGAPORE

24 NOV 23

10-9C2

Eff 30 Nov

CHANGI



PARKING STAND COORDINATES

STAND No.	COORDINATES	ELEV (ft)
T4 Apron		
G1, G2	N01 20.1 E103 59.0	13
G3, G4	N01 20.2 E103 59.0	13
G5, G6	N01 20.2 E103 59.1	13
G7 thru G11	N01 20.3 E103 59.1	13
G12 thru G15	N01 20.4 E103 59.1	13
G16, G17	N01 20.5 E103 59.2	13
G18, G18L	N01 20.5 E103 59.2	14
G18R, G19	N01 20.5 E103 59.2	15
G19L	N01 20.6 E103 59.2	15
G19R	N01 20.5 E103 59.1	15
G20L, G20, G20R	N01 20.6 E103 59.1	15
G21L, G21, G21R	N01 20.6 E103 59.1	15

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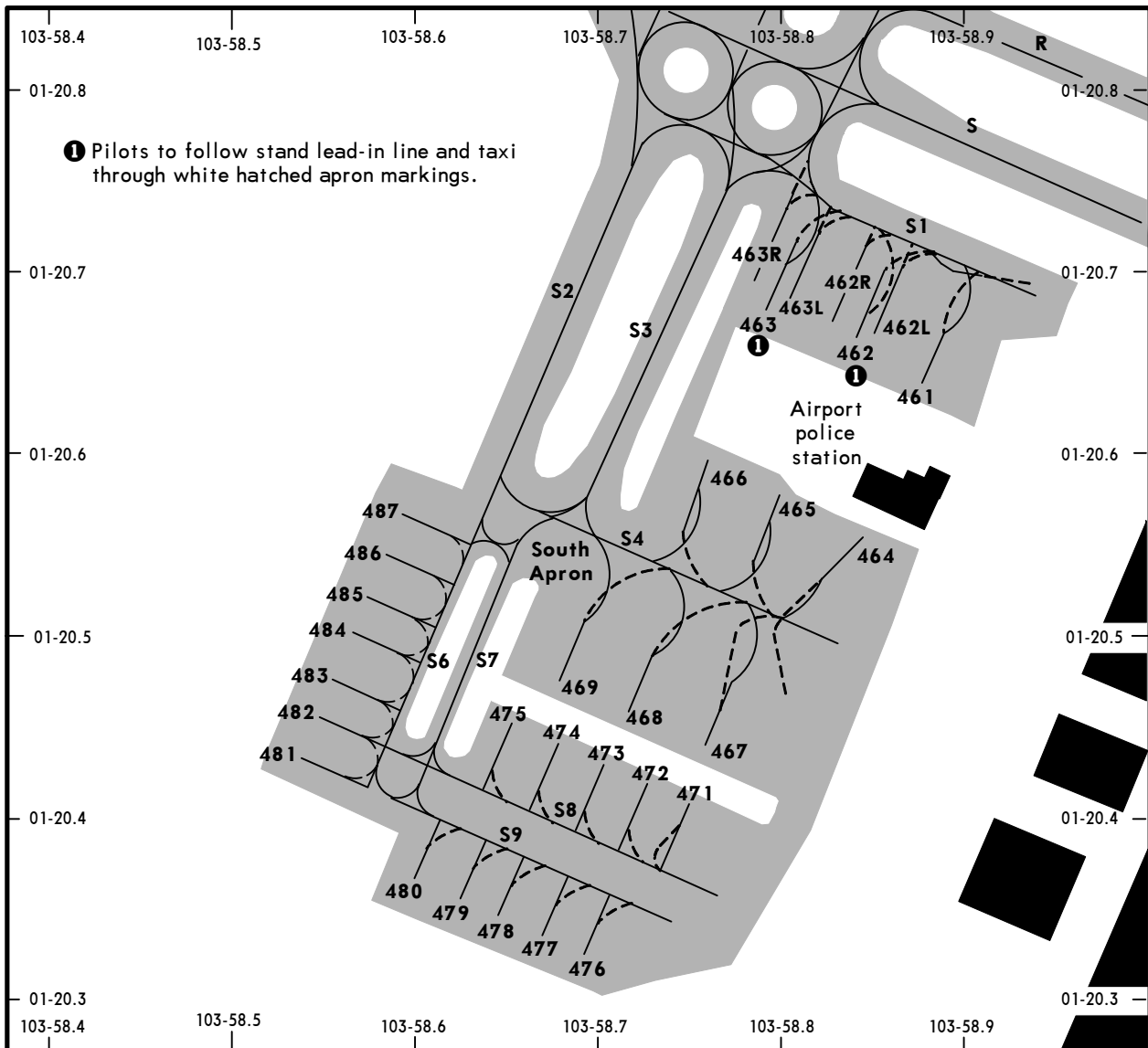
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SINGAPORE, SINGAPORE

27 OCT 23

10-9C3

CHANGI



PARKING STAND COORDINATES

STAND No.	COORDINATES	ELEV (ft)
South Apron		
461	N01 20.7 E103 58.9	17
462L	N01 20.7 E103 58.9	18
462, 462R	N01 20.7 E103 58.8	19
463	N01 20.7 E103 58.8	20
463L, 463R	N01 20.7 E103 58.8	19
464	N01 20.5 E103 58.8	16
465, 466	N01 20.6 E103 58.8	16
467	N01 20.5 E103 58.8	16
468, 469	N01 20.5 E103 58.7	16
471 thru 475	N01 20.4 E103 58.7	17
476, 477	N01 20.3 E103 58.7	17
478, 479	N01 20.3 E103 58.6	17
480	N01 20.4 E103 58.6	17
481	N01 20.4 E103 58.5	17
482	N01 20.4 E103 58.6	17
483 thru 486	N01 20.5 E103 58.6	17
487	N01 20.6 E103 58.6	17

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27 OCT 23 (10-9D)

SINGAPORE, SINGAPORE
CHANGI**AIRFIELD LIGHTING CONTROL SYSTEM
(ALCS) AND MARKINGS**

The Advanced Surface Movement Guidance and Control System (A-SMGCS) at Singapore Changi Airport is able to control and monitor the runway and taxiway airfield lights such as the stop bars and green taxiway centreline lights, through the Airfield Lighting Control System. The system is designed to provide pilots with visual guidance while taking off, landing and taxiing during day/night operations and during periods of low visibility. It is controlled by air traffic controllers at Singapore Changi Airport using the A-SMGCS display.

Taxi instructions

When the green centreline lights are switched on, ATC will issue verbal instructions to pilots/airline operators for taxi/tow clearance. The green taxiway centreline lights are provided for guidance. Pilots/airline operators shall stop at all red stop bar lights.

All green centreline lights on taxiways leading to the runways terminate at the runway holding positions where, by default, red stop bar lights remain on unless deselected by the Runway Controller. When deselected, these stop bar lights will re-activate automatically. Pilots and drivers shall not cross any lighted red stop bar lights.

Pilots shall enter/cross the runway or taxiway only when both the following conditions are met:

The crew have

- a. received positive ATC clearance to enter/cross the runway or taxiway, and
- b. observed that the red stopbar lights are turned off.

Information and Mandatory Signs/Markings

When following ATC verbal taxi instructions, pilots are advised to also navigate their taxi route with reference to information and mandatory signs/markings provided at the airport so as to maintain situational awareness of their whereabouts at all times.

**ADVANCED- SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM
(A-SMGCS)- MULTILATERATION SYSTEM DEPLOYMENT AT SINGAPORE CHANGI AIRPORT**

1 Introduction

1.1 The Multilateration System is a new surveillance system which is able to detect and identify all Mode S equipped aircraft and vehicles moving on the airport surface even during bad weather conditions such as heavy rain. It will integrate with the current radar-based ground surveillance system as a part of the Advanced- Surface Movement Guidance and Control System (A-SMGCS) at Singapore Changi Airport. This will enhance the efficiency and safety at the airport.

2 Carriage of Mode-S SSR Transponder

2.1 Carriage and operation of Mode-S transponder is required for all civil aircraft operating at Singapore Changi Airport. The Mode-S transponder shall comply, at least, to the requirements of Level 2 as prescribed in ICAO Annex 10 Volume IV (Amendment 77 or later) Standards and Recommended Practices.

3 Multilateration System Outline

- 3.1 The Multilateration System uses multiple receivers to pick up 'squitters' transmitted by aircraft or vehicle Mode S transponders. It calculates the position of an aircraft or a vehicle by comparing the time its 'squitter' arrives at each receiver.
- 3.2 The system will derive the identity of an aircraft by selectively interrogating its transponder to receive its assigned Mode A code or extracting its aircraft identification (that is, the ICAO callsign used in flight and inserted in the Flight Management System (FMS) or Transponder Control Panel), if available, from its squitter. For transponder equipped vehicles, the system will derive their respective identities from the unique Mode S addresses contained in their squitters.

4 Aircraft Requirements

- 4.1 The Multilateration System is essentially passive. It relies on aircraft transponders squittering at all times when moving on the airfield. At present, some aircraft checklist procedures instruct pilots to turn off the transponder shortly after leaving the runway on arrival and, not to switch it on until reaching the runway holding point for departure. This is in line with the requirement that Mode A/C transponders should not transmit on the ground, which does not apply to Mode S transmissions.
- 4.2 For the Multilateration System to work effectively, all aircraft Mode S transponders need to transmit Mode S squitters at all times when moving on the airfield, starting immediately prior to pushback, and for arrival aircraft until they are stationary at the aircraft stands. The Mode S transponders should not respond to All-Call interrogations, but should respond to addressed interrogations.

5 Procedures / Actions Required By Pilots

- 5.1 The Multilateration System needs to receive squitters and to acquire the Mode A code of a Mode S equipped aircraft at all times when it is on the ground. This is to enable detection and identification of the aircraft (from its Mode A code or ICAO callsign) as soon as it pushes back. Hence, the following actions from pilots are required.
- 5.2 Pre-Pushback / Taxi
- a) Pilots will be required to enter an assigned Mode A code at start-up. This code will be either a discrete or non-discrete code (a conspicuity code, e.g. 1000).
 - b) Pilots shall ensure that the aircraft transponder is operating (that is, XPNDR or the equivalent according to specific installation, AUTO if available, not OFF or STBY) and the assigned Mode A code is selected prior to the request for pushback or taxi, whichever is earlier.
 - c) Whenever the aircraft is capable of reporting aircraft identification, the aircraft identification must also be entered prior to the request for pushback or taxi, whichever is earlier, through the FMS or the Transponder Control Panel. Flight crew must use the 3-letter ICAO designator of the operator, followed by flight identification number (for example, BAW123, SIA002).
- 5.3 After Landing
- a) Pilots shall ensure that the aircraft transponder is operating (that is, XPNDR or the equivalent according to specific installation, AUTO if available, not OFF or STBY) after landing, and continuously until the aircraft is stationary at the aircraft stand.
 - b) Pilots shall ensure that the assigned Mode A code is not changed until the aircraft is stationary at the aircraft stand. (The system requires it for identification of the aircraft).

**PROCEDURES FOR PUSHBACK AND ASSIGNMENT OF
FLIGHT LEVELS TO DEPARTING AIRCRAFT**

PROCEDURES FOR START-UP AND PUSHBACK OF AIRCRAFT

1. Ground crew shall ensure that the area behind an aircraft is clear of vehicles, equipment and other obstructions before the start-up or pushback of aircraft commences.
2. When it becomes necessary to vary a procedure to expedite aircraft movements, Ground Movement Controller ("Singapore Ground") shall issue specific instructions to the pilot.
3. When the pilot is ready for start-up and pushback, he/she shall seek confirmation from the ground crew that there is no hazard to the aircraft starting up. The pilot shall then notify Singapore Ground that the aircraft is ready for pushback. On being told by Singapore Ground that pushback is approved, the pilot shall coordinate with the ground crew for the start-up and pushback of the aircraft.
4. The lead-in lines are for aircraft nose-in guidance. For aircraft stands without dedicated pushback lines, ground crew may use the lead-in lines for pushback guidance.
5. For more information, refer to Airport Operations Centre System (AOCS) for detailed pushback procedures.

**ASSIGNMENT OF FLIGHT LEVELS TO AIRCRAFT DEPARTING FROM SINGAPORE
CHANGI AIRPORT**

Assignment of flight levels to departing aircraft is made on a best-planned-best-served basis. Aircraft will normally be assigned the level requested unless an alternate level is offered after coordination with the adjacent ATC centres.

Departing flights from Singapore requesting FL280 or FL320 on L759, M770, N571, N571/N877 or P628 will be cleared as follows:

- a. Aircraft departing Singapore will be cleared to FL280;
- b. Succeeding aircraft on the same route will be cleared to FL280 with 10min longitudinal separation provided there is no closing speed with the preceding aircraft;
- c. Additional longitudinal separation as appropriate shall be imposed by ATC when the succeeding aircraft is faster than the preceding aircraft on the same route;
- d. The first aircraft from either Singapore or Kuala Lumpur to be over GUNIP on N571 or N571/N877, the Kuala Lumpur/Bangkok FIR boundary on M770 or L759 and VPL on P628 can expect its requested flight level.

DELAY IN PUSHBACK AND/OR TAXIING DUE TO OTHER AIRCRAFT

Delays may be expected for the second aircraft to pushback and to taxi when two or more aircraft are parked either adjacent to one another or close together. However, it will retain its ATC clearance even if the 5 minutes grace period.

Note: The TSAT may not be able to predict delays arising from apron congestion as traffic movement on ground is dynamic and situations may change on a real time basis depending on aircraft readiness. ATC will facilitate pushback as soon as possible when traffic permits.

DELAY IN TAKE-OFF DUE TO RESTRICIONS IN THE ATC CLEARANCE

The ATC clearance may require an aircraft to arrive at a reporting point at a specified time and level or to depart a number of minutes behind a preceding traffic to establish the appropriate longitudinal separation. Such delay will not deprive a departing aircraft of its ATC clearance even though the 5 minutes grace period.

DELAY DUE TO OVERFLIGHTS

Overflights are flights that traverse Singapore FIR and/or airspace within Jakarta FIR where ATS is provided by Singapore without landing at Singapore Changi Airport. Depending on the positions of overflights, a departing aircraft requesting the same flight level may have to accept an alternate flight level or delay its departure in order to establish the prescribed separation.

**PROCEDURES FOR PUSHBACK AND ASSIGNMENT OF
FLIGHT LEVELS TO DEPARTING AIRCRAFT (CONTD)**

NON-CDM MODE OF OPERATIONS

The non-CDM procedures is applicable for non-scheduled flights departing Changi Airport or when TOBT and TSAT references used in A-CDM mode of operations become unavailable due to system issues or maintenance.

If TOBT cannot be submitted or it is unavailable through different channels:

- a. Pilots shall notify ATC when the aircraft is ready to pushback within 5 minutes.
- b. ATC will advise the pilot whether the proposed flight level or other alternate flight level is available and an ATC clearance will be issued accordingly. If pre-departure coordination with an adjacent unit or centre is required, the pilot will be instructed to standby.
- c. Once flight level is accepted by the pilot and an ATC clearance issued, the aircraft must be pushed back within 5 minutes from the time the ATC clearance is accepted unless other ATC restrictions are imposed. The ATC clearance will be cancelled on expiry of the 5 minutes grace period. This also applies to situations when aircraft return to blocks after pushback or develop technical issues and is unable to continue taxi.
- d. Pilots who are ready to depart following the cancellation of an ATC clearance will adopt the procedures as if it is the first time they are ready to depart.

If TSAT is unavailable through different means:

- a. AO and GHA shall continue to submit TOBT and pilots shall request for ATC clearance 5 minutes within TOBT
- b. ATC will revert to the gate hold procedures and issue estimated pushback times accordingly.

GATE HOLD PROCEDURES FOR DEPARTING AIRCRAFT (DURING NON-CDM MODE OF OPERATIONS)

Whenever there are about five to seven departing aircraft at the runway holding point, subsequent pushback of departures will be regulated such that the Ground Movement Planner (GMP) on VHF frequency 121.65MHz will start to issue pilots with Expected Pushback Time (EPT) as TSAT used in A-CDM operations is not available. The determination of EPT will take into account an aircraft's parking stand as well as taxi time to the runway-in-use holding point.

When an EPT is issued, pilots will be instructed to either remain on GMP frequency or to monitor Singapore Ground Control (frequencies 121.725MHz, 121.85MHz, 122.55MHz, 124.3MHz or 125.65MHz). It should be noted that when instructed to monitor the Singapore Ground frequencies, pilots shall not establish contact with the Singapore Ground Control, rather, pilots shall maintain listening watch on the assigned Singapore Ground Control frequency and wait for pushback instruction. This is to prevent unnecessary frequency congestion.

A flight issued with an EPT but chooses to commence pushback before the assigned time will be allowed to do so subject to traffic. However, the flight should not expect an earlier departure time as the planned pre-departure sequence will be maintained.

In a situation when a departing aircraft is occupying a gate that has been assigned to an arriving aircraft, the departing aircraft will be instructed by GMP to contact Singapore Ground Movement Control for pushback for the purpose of better gate utilisation.

To maximise runway utilisation, departure sequence will be planned on the basis of increasing runway throughput so as to enhance overall efficiency.

GROUND MOVEMENT PLANNER ON VHF 121.65MHz

The frequency shall be used for aircraft pre-flight checks and ATC clearances. Pilot-in-command to make his initial call from the parked position on this frequency.

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CHANGI**GROUND MOVEMENT CONTROL ON VHF 121.725, 121.85, 122.55, 124.3, 125.65 AND 127.275.**

- a. This frequency shall be used for aircraft start-up/push-back clearance.
- b. Unless otherwise instructed by ATC, the pilot-in-command shall prior to starting engines listen out on the Ground Movement Control frequency on 121.725, 121.85, 122.55, 124.3 or 125.65.
- c. The pilot-in-command shall:
 1. Request and obtain taxi instructions prior to taxiing;
Note: ATC clearance, including the assigned SSR code will normally be issued prior to push back. Pilot shall squawk the SSR code immediately when airborne.
 2. Change from Ground Movement Control frequency to the Runway Control frequency when instructed (118.6, 118.25 or 131.4). It should be noted that when instructed to monitor Singapore Tower frequencies, pilots shall not establish contact with Singapore Tower; rather, pilots shall maintain a listening watch on the assigned Singapore Tower frequency and wait for instruction. This is to prevent unnecessary frequency congestion.
- d. Departing aircraft will be instructed when to change from 118.6, 118.25 or 131.4 to Singapore Departure frequency 120.3.
- e. In the case of the aircraft having landed, the pilot-in-command shall change from 118.6, 118.25 or 131.4 to 121.725, 121.85, 122.55, 124.3, 125.65 or 127.275 immediately upon instructed by ATC after clearing the runway. He shall maintain watch on 121.725, 121.85, 122.55, 124.3, 125.65 or 127.275 for taxiing and parking instructions until he arrives at his aircraft stand.

TAXIING

- a. Taxi clearance given by Singapore Ground Movement Control will relate to movement on the manoeuvring area, but excluding the marshalling area.
- b. Aircraft taxiing on the manoeuvring area will be regulated by ATC to avoid or reduce possible conflict and will be provided with traffic information and alerting service. ATC shall apply taxiing clearance limits whenever necessary.
- c. The taxiway routes to be used by aircraft after landing or when taxiing for departure will be specified by ATC. The issuance by ATC of a taxi route to an aircraft does not relieve the pilot-in-command of the responsibility to maintain separation with other aircraft on the manoeuvring area or to comply with ATC directions intended to regulate aircraft on the manoeuvring area. Pilots are also advised of the possibility of misjudging the clearance between the acft wing tips and other obstacles, especially in areas of hot-spots or during low-light/poor visibility conditions.
- d. Pilots are reminded to always use minimum power when starting engines, when manoeuvring within the apron area or when maneuvering from apron taxiways to other parts of the aerodrome. It is especially critical when commencing to taxi that break-away thrusts are kept to an absolute minimum and then be reduced to idle thrusts as soon as possible.
- e. Twy K (north of Rwy 02C/20C) and Twy L (south of Rwy 02C/20C) are End-Around Taxiways to facilitate aircraft movement between the east and west of Rwy 02C/20C. Acft taxiing on these Twys will be regulated by ATC to avoid conflict with acft operating on Rwy 02C/20C.

TAKE-OFF AND LANDING

- a. Departing aircraft will normally be directed by ATC to use the full length of the runway for take-off. On obtaining an ATC clearance the aircraft shall enter the runway via designated taxiways:
 - Rwy 02C - Twy T12, T13, D13, D14
 - Rwy 02L - Twy W8, W9 or W10
 - Rwy 02R - Twy A10, A11 or A12
 - Rwy 20C - Twy T1, T2, D1, D2
 - Rwy 20L - Twy A1, A2 or A3
 - Rwy 20R - Twy W1, W2
- b. The pilot-in-command shall not take-off or land without a clearance from Aerodrome Control.
- c. The pilot-in-command shall not run-up on the runway in use unless authorized by Aerodrome Control. Engine run-ups in the holding pan or taxiway holding point clear of the runway in use may be carried out subject to approval by Aerodrome Control.
- d. After landing, the pilot-in-command shall vacate the runway by the shortest suitable route and to contact Singapore Ground Movement Control who will issue specific taxi route instructions to its assigned aircraft stand.
- e. Aircraft with radio communication failure shall vacate the runway and stop on the taxiway and watch for light signals from Aerodrome Control.

WSSS/SIN

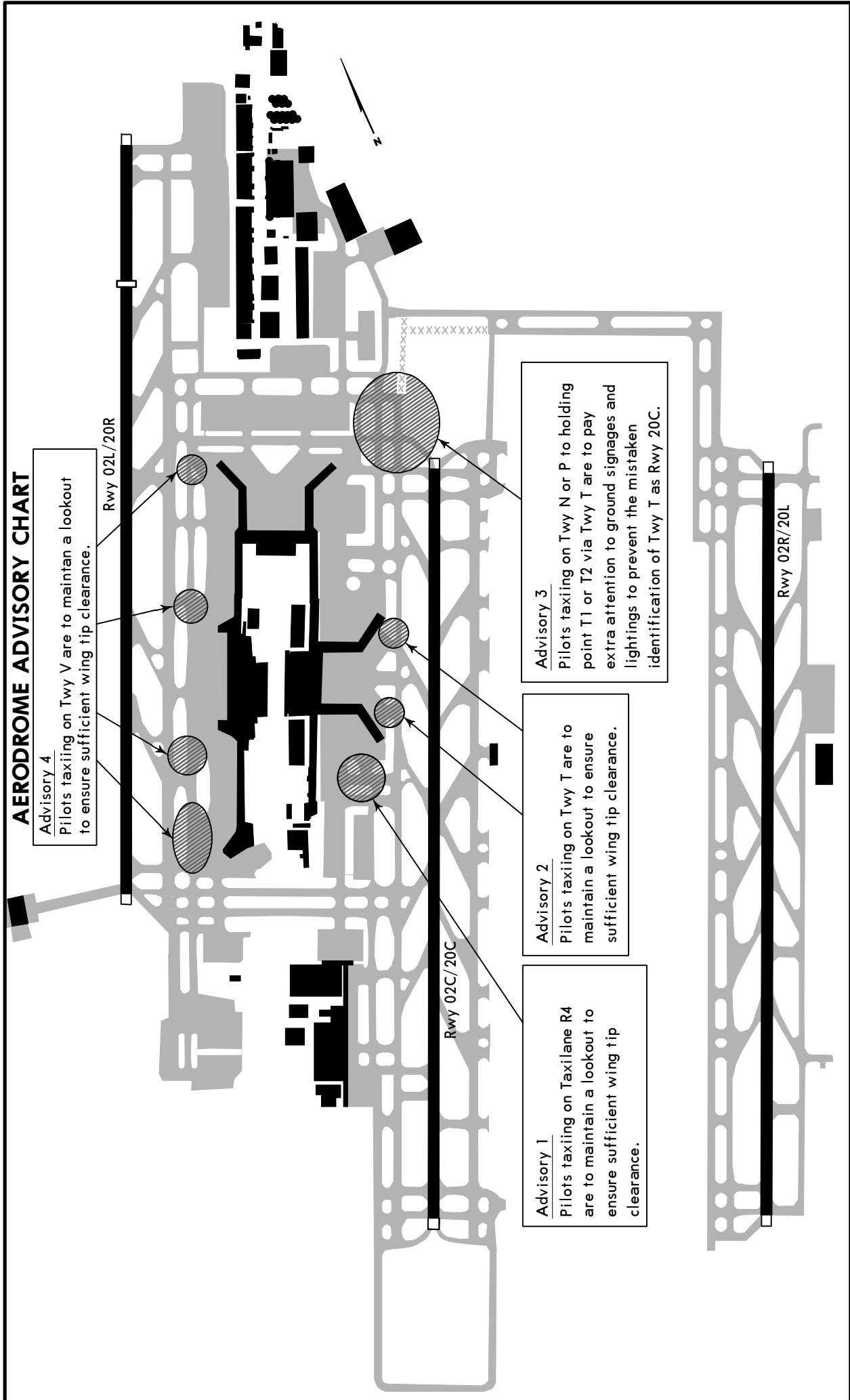
Apt Elev 22'
N01 21.6 E103 59.4

JEPPesen

22 DEC 23 10-9G Eff 28 Dec

SINGAPORE, SINGAPORE

CHANGI



CHANGES: Twy C extended.

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ADB SAFEGATE AIRCRAFT DOCKING GUIDANCE SYSTEM - SAFEDOCK

1. INTRODUCTION

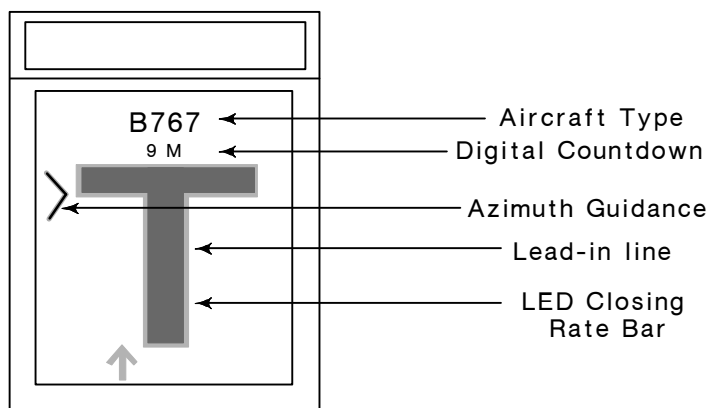
1.1 The ADB Safegate Aircraft Docking Guidance System - SAFEDOCK is a fully automatic aircraft docking guidance system installed at the contact aircraft stands at Terminals 1, 2, 3 and 4, and at the remote aircraft stands at South Apron of Singapore Changi Airport.

2. DESCRIPTION OF SYSTEM

- 2.1 The system is based on a laser scanning technique and it tracks both the lateral and longitudinal position of the aircraft. This 3D technique allows the system to identify the incoming aircraft and check it against the one selected by the operator to ensure that the pilot is provided with the correct stop indication for the aircraft.
- 2.2 The system is operated only in Automatic Mode. When the system fails, the aircraft is to be marshalled into the stand manually.
- 2.3 Azimuth guidance, continuous closing rate information, aircraft type, etc., are shown to the pilot on a single display clearly visible for both pilot and co-pilots. Figure A shows the Display and Laser Scanning Unit mounted on the terminal or pole in front of the aircraft stand.

LED DISPLAY AND LASER SCANNING UNIT

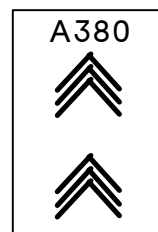
Figure A



3. DOCKING PROCEDURES

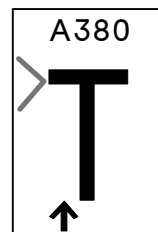
Checking of Aircraft Type

- Check that the correct aircraft type is displayed. The scrolling arrows indicate that the system is activated.
- Follow the lead-in line.



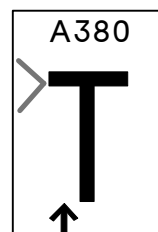
Capture of Correct Aircraft Type

- When the aircraft has been caught by the scanning unit, the scanning unit checks that the aircraft is the correct type and the display provides azimuth guidance information. When the solid yellow closing rate bar appears, the aircraft is being tracked by the system.



Steering and Alignment of Aircraft

- Look for the flashing red arrow and solid yellow arrow which provide azimuth guidance information. The flashing red arrow shows which direction to steer, while the solid yellow arrow gives an indication of how far the aircraft is off the centerline.



WSSS/SIN

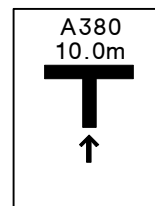
JEPPESEN
27 MAY 22 (10-9H1)

SINGAPORE, SINGAPORE
CHANGI

SAFEDOCK-Continued.

Distance of Aircraft from STOP Position

- When the aircraft is 15m from the stop position, closing rate information is given. "Distance to go" is indicated by turning off one row of LEDs (Laser Electronic Displays) for every half meter that the aircraft advances towards the stop position. From 15m to the stop position, the display will indicate the distance from the stop position for every 1m. At 3m from the stop position, the display will indicate the distance from the stop position for every 0.2m.



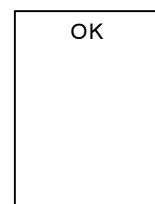
STOP Position

- When the correct stop position is reached, all of the LEDs for the closing rate bar will be off, the word "STOP" in red with red border will appear in the display.



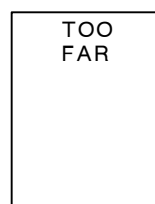
Checking of STOP Position

- If the aircraft stops at the correct position, "OK" will be displayed after a few seconds.



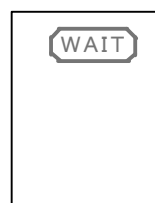
Overshooting of STOP Position

- If the aircraft has gone past the correct stop position, the display will show "TOO FAR" after the aircraft comes to a complete stop.



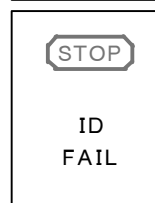
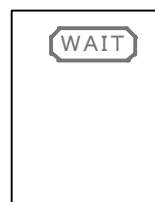
Object Blocking the View

- If some object is blocking the view towards the approaching aircraft or the detected aircraft is lost before 12m to the correct stop position, the system will show "WAIT"



Identification of Aircraft

- The aircraft must be identified at least 12m before the correct stop position. Otherwise, the display will show "WAIT", "STOP" and "ID FAIL".

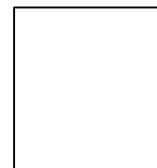


SAFEDOCK-Continued.

4. SAFETY MEASURES

ADGS Blank / Wrong Aircraft Type

- Pilot should not turn an aircraft into the aircraft stand if the docking system is not activated or on seeing a wrong aircraft type displayed on the system.



Proceeding beyond Passenger Loading Bridges

- Pilot should not proceed beyond the passenger loading bridges unless the scrolling arrows (see figure 1) have been superseded by the solid yellow closing rate bar (see figure 2).

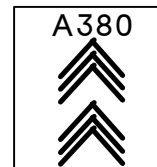


Figure 1

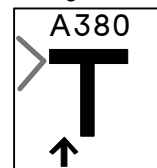
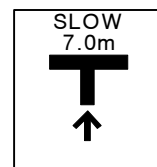


Figure 2

Minimum Speed

- When using the docking system, pilots are to taxi into the aircraft stand at minimum speed. The system will display "SLOW" to inform the pilot if the aircraft's taxiing speed exceeded 1.2 m/s.



Slow Down (In Abnormal Situations)

- In bad weather conditions, the docking system may go into downgrade mode. The display will show the aircraft type and "SLOW" and the scrolling arrows are disabled (see figure 1). When the system has detected the aircraft, the solid yellow closing rate bar appears. Docking process is allowed to continue but pilot should exercise caution.

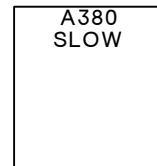
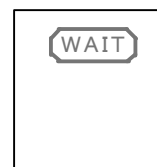
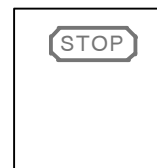


Figure 1

Overshooting

- To avoid overshooting, pilots are advised to approach the stop position slowly and observe the closing rate information displayed. Pilots should stop the aircraft immediately when seeing the "STOP" or "WAIT" display or when given the stop sign by the aircraft marshaller or is unsure of the information displayed during the docking process.



No Display

- Pilot should stop the aircraft immediately if the display goes black, for power failure (see figure 1) or system failure (see figure 2), during the docking process. The aircraft is to be manually marshalled into the aircraft stand.

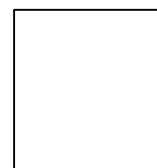


Figure 1

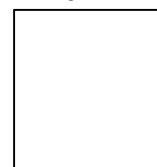


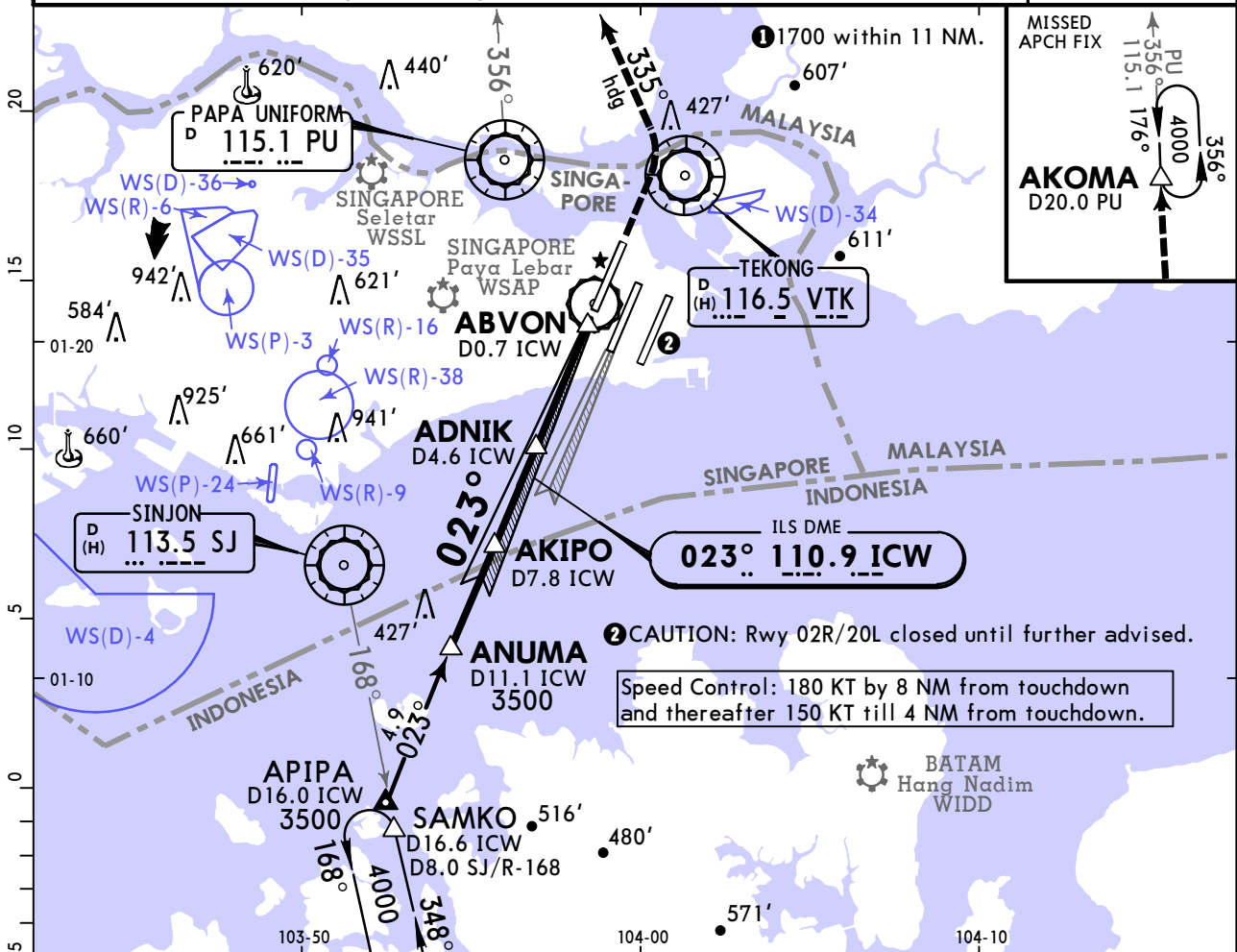
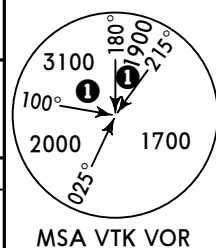
Figure 2

WSSS/SIN CHANGI

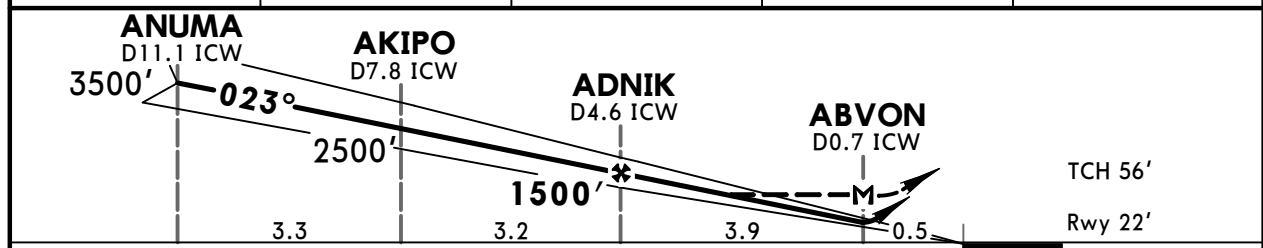
JEPPESSEN
26 APR 24 (11-1)

SINGAPORE, SINGAPORE ICW ILS DME Rwy 02L

D-ATIS Arrival 128.025	*SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02L/20R 118.6 Rwy 02C/20C 118.25	*Ground 124.3
LOC ICW 110.9	Final Apch Crs 023°	ADNIK 1500' (1478')	ILS DA(H) 222' (200')	Apt Elev 22' Rwy 22'
MISSED APCH: Climb to 1000', then climbing LEFT turn to 4000' via heading 335° and outbound PU VOR R-356 to AKOMA (PU VOR R-356/D20.0) and hold or as directed by ATC.				
Alt Set: hPa Rwy Elev: 1 hPa Trans level: FL130 Trans alt: 11000'				
1. Radar required. 2. Simultaneous approaches authorized with Rwy 02R or 02C. 3. ILS DME co-located with glideslope. 4. Maritime vessels of variable heights in water north and south of Rwy. 5. Circling not authorized.				



LOC (GS out)	ICW DME	4.0	3.0	2.0
	ALTITUDE	1290'	970'	660'



Gnd speed-Kts	70	90	100	120	140	160	ALSF-II REIL PAPI PAPI	1000'	4000'	335° via hdg
GS	3.00°	372	478	531	637	743				
MAP at ABVON/D0.7 ICW										
1 FAF to MAP	3.9	3:21	2:36	2:20	1:57	1:40	1:28			

PANS OPS	Std ILS STRAIGHT-IN LANDING				LOC (GS out) CDFA	
	DA(H) 222' (200')				2 DA/MDA(H) 420' (398')	
	TDZ or CL out		ALS out		ALS out	
	A	R550m	3 R550m	R1200m	R1100m	R1500m
B						
C					R1800m	
D						

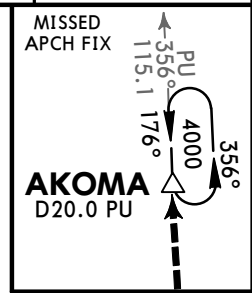
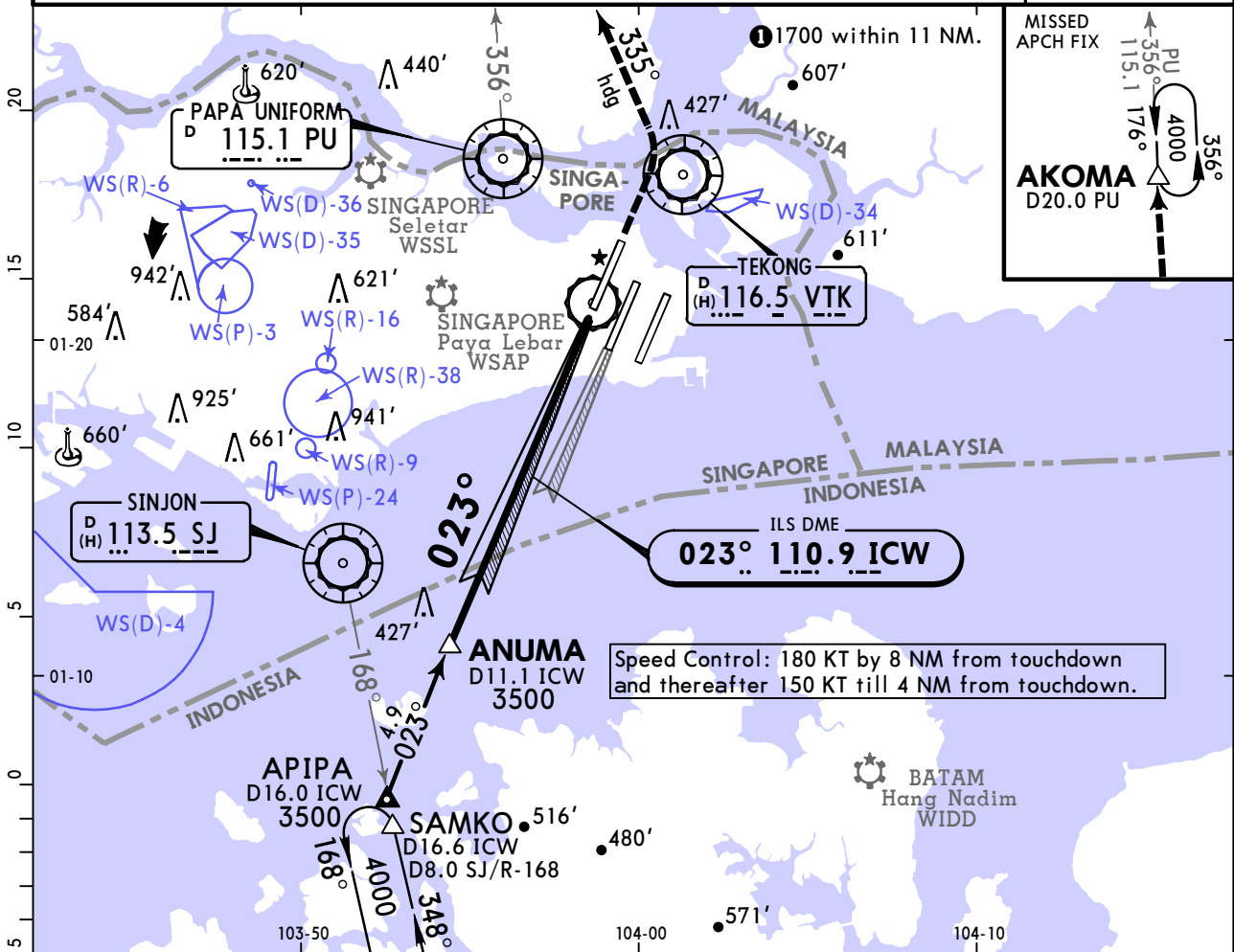
1 Timing not authorized when GS inop. 2 VNAV DA(H) in lieu of MDA(H) depends on operator policy. 3 R750m when a Flight Director or Autopilot or HUD to DA is not used.

WSSS/SIN CHANGI

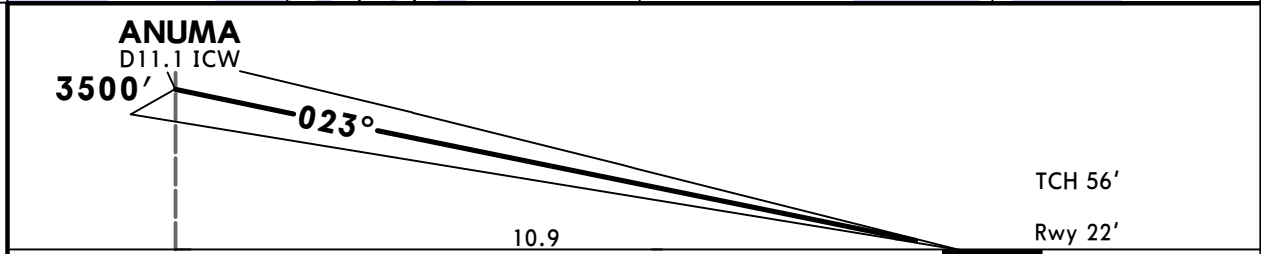
26 APR 24 **(11-1A)** ICW ILS DME Rwy 02L CAT II

SINGAPORE, SINGAPORE

D-ATIS Arrival 128.025	*SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02L/20R 118.6 Rwy 02C/20C 118.25	*Ground 124.3
LOC ICW 110.9	Final Apch Crs 023°	ANUMA 3500' (3478')	CAT II ILS Refer to Minimums	Apt Elev 22' Rwy 22'
MISSED APCH: Climb to 1000', then climbing LEFT turn to 4000' via heading 335° and outbound PU VOR R-356 to AKOMA (PU VOR R-356/D20.0) and hold or as directed by ATC.				<p>MSA VTK VOR</p>
Alt Set: hPa Rwy Elev: 1 hPa Trans level: FL130 Trans alt: 11000'				
1. Special Aircrew and Acft Certificaton Required. 2. Radar required. 3. CAUTION: Rwy 02R/20L closed until further advised. 4. Simultaneous approaches authorized with Rwy 02R or 02C. 5. ILS DME co-located with glideslope. 6. Maritime vessels of variable heights in water north and south of Rwy.				



Speed Control: 180 KT by 8 NM from touchdown and thereafter 150 KT till 4 NM from touchdown.



Gnd speed-Kts	70	90	100	120	140	160	ALSF-II REIL PAPI PAPI	1000'	4000'	335° via LT hdg
GS	3.00°	372	478	531	637	743				

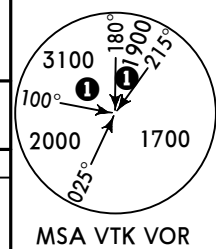
PANS OPS	Std		STRAIGHT-IN LANDING	
	ABC RA 104' DA(H) 122' (100')		CAT II ILS D RA 109' DA(H) 127' (105')	
	R350m		R350m	

WSSS/SIN CHANGI

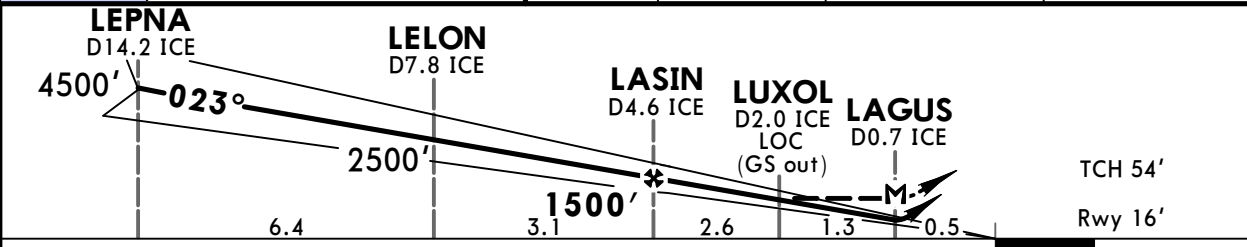
JEPPESEN
26 APR 24 **(11-2)**

SINGAPORE, SINGAPORE ICE ILS DME Rwy 02C

D-ATIS Arrival 128.025	*SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02L/20R 118.6 Rwy 02C/20C 118.25	*Ground 124.3
LOC ICE 108.3	Final Apch Crs 023°	LASIN 1500' (1484')	ILS DA(H) 216' (200')	Apt Elev 22' Rwy 16'
MISSED APCH: Climb to 3000' via heading 023° and outbound VTK VOR R-023 to NYLON (VTK VOR R-023/D13.0) and hold or as directed by ATC.				
Alt Set: hPa Rwy Elev: 1 hPa Trans level: FL130 Trans alt: 11000'				
1. Radar required. 2. CAUTION: Rwy 02R/20L closed until further advised. 3. Simultaneous approaches authorized with Rwy 02R or 02L. 4. ILS DME co-located with glide slope. 5. Maritime vessels of variable heights in water north and south of Rwy. 6. Circling not authorized.				



LOC (GS out)	ICE DME ALTITUDE	4.0 1290'	3.0 970'
--------------	------------------	-----------	----------



Gnd speed-Kts	70	90	100	120	140	160	ALS-F-I REIL PAPI PAPI	3000'	via	023°	hdg	VTK and 116.5 R-023
GS	3.00°	372	478	531	637	849						
MAP at LAGUS/D0.7 ICE												
1 FAF to MAP	3.9	3:21	2:36	2:20	1:57	1:40	1:28					

PANS OPS	STRAIGHT-IN LANDING					
	ILS		CDFA		LOC (GS out)	
	DA(H) 216' (200')	2 DA/MDA(H) 420' (404') With LUXOL/D2.0 ICE	2 DA/MDA(H) 660' (644') Without LUXOL/D2.0 ICE			
	TDZ or CL out	ALS out	ALS out	ALS out	ALS out	
A				R1500m	R1500m	
B	R550m	3 R550m	R1200m	R1200m		
C				R1900m	R2300m	R2400m
D						

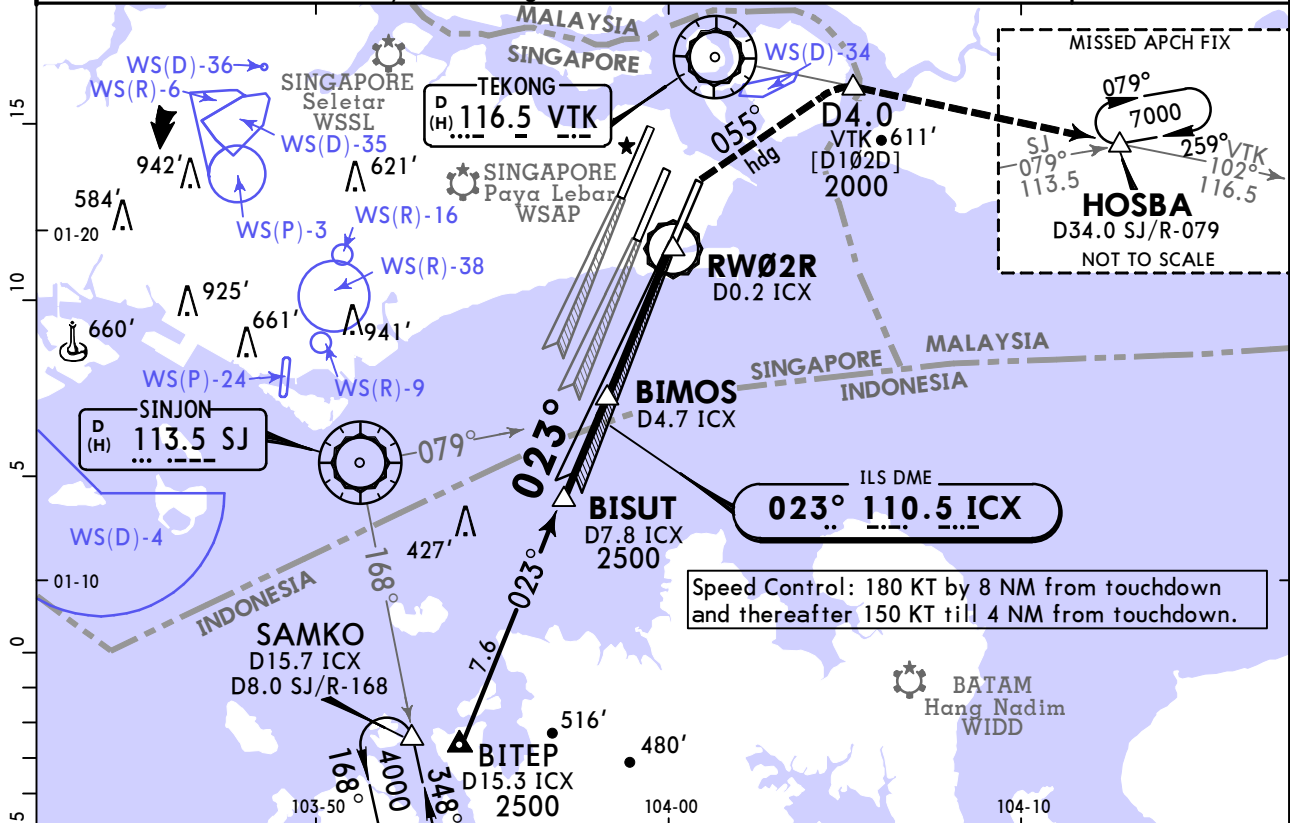
1 Timing not authorized when GS inop. 2 VNAV DA(H) in lieu of MDA(H) depends on operator policy. 3 R750m when a Flight Director or Autopilot or HUD to DA is not used.

WSSS/SIN CHANGI

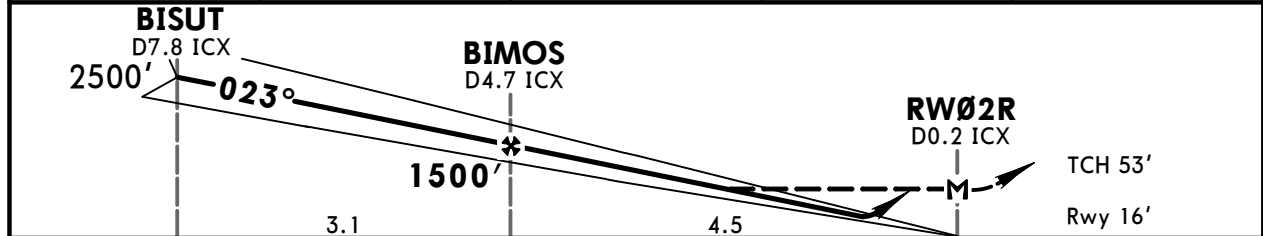
JEPPESEN
29 MAR 24 **11-2A**

SINGAPORE, SINGAPORE ICX ILS DME Rwy 02R

D-ATIS Arrival 128.025	SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02R/20L 131.4	*Ground 124.3
LOC ICX 110.5	Final Apch Crs 023°	BIMOS 1500' (1484')	ILS Refer to Minimums	Apt Elev 22' Rwy 16'
MISSED APCH (MIN CLIMB GRAD 5.0% (304'/NM) UNTIL PASSING 2000') : Climb STRAIGHT to 500', turn RIGHT heading 055°. Cross D4.0 VTK at 2000' or above. Thereafter, turn RIGHT climbing to 7000' or above to HOSBA (SJ VOR R-079/D34.0) via outbound VTK VOR R-102. Hold at HOSBA or as directed by ATC. No turn before MAPt. MAX 185 KT during turning missed approach.				
MISSED APCH (MIN CLIMB GRAD 2.5% (152'/NM)) : Climb STRAIGHT to 1200' before commencing RIGHT turn climbing to 7000' or above to HOSBA. Refer to minimums for missed apch climb gradients.				
Alt Set: hPa		Rwy Elev: 1 hPa	Trans level: FL130	Trans alt: 11000'
1. Radar required. 2. CAUTION: Rwy 02R/20L closed until further advised. 3. ILS DME co-located with glideslope. 4. Maritime vessels of variable heights in water north and south of Rwy. 5. Circling not authorized.				



LOC (GS out)	ICX DME	4.0	3.0	2.0
	ALTITUDE	1300'	980'	660'



Gnd speed-Kts	70	90	100	120	140	160	ALSF-II REIL PAPI PAPI Refer to Missed Apch above
GS	3.00°	372	478	531	637	849	
MAP at RW02R/D0.2 ICX							
1 BIMOS to MAP	4.5	3:51	3:00	2:42	2:15	1:56	

Std STRAIGHT-IN LANDING				MACG MIN 2.5% (152'/NM)			
MACG MIN 5.0% (304'/NM) until passing 2000'		LOC (GS out)		MACG MIN 2.5% (152'/NM)		LOC (GS out)	
ILS DA(H) 216' (200')	2 DA/CDFA MDA(H) 330' (314')	ILS DA(H) 816' (800')	2 DA/CDFA MDA(H) 820' (804')	ILS DA(H) 816' (800')	2 DA/CDFA MDA(H) 820' (804')	ILS DA(H) 816' (800')	2 DA/CDFA MDA(H) 820' (804')
TDZ or CL out	ALS out	ALS out	ALS out	TDZ or CL out	ALS out	ALS out	ALS out
A R550m	3 R550m	R1200m	R750m	R1400m	R1500m	R1500m	R1500m
B R550m					R2400m	R2400m	R2400m
C R550m							
D R550m							

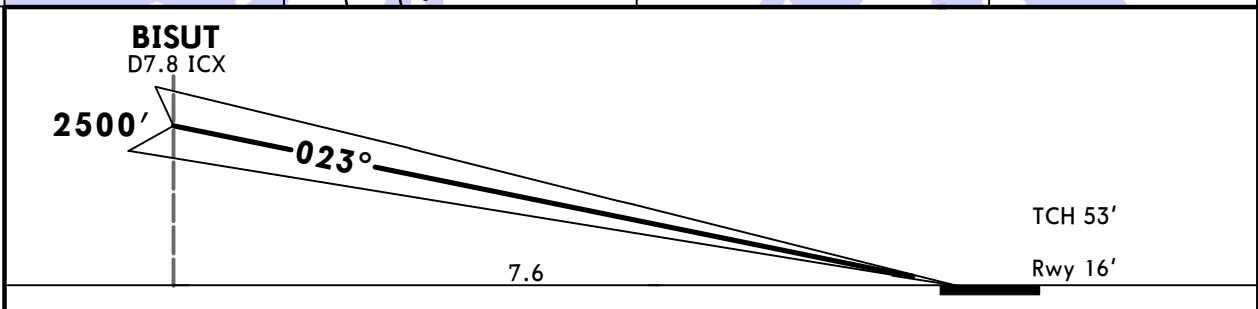
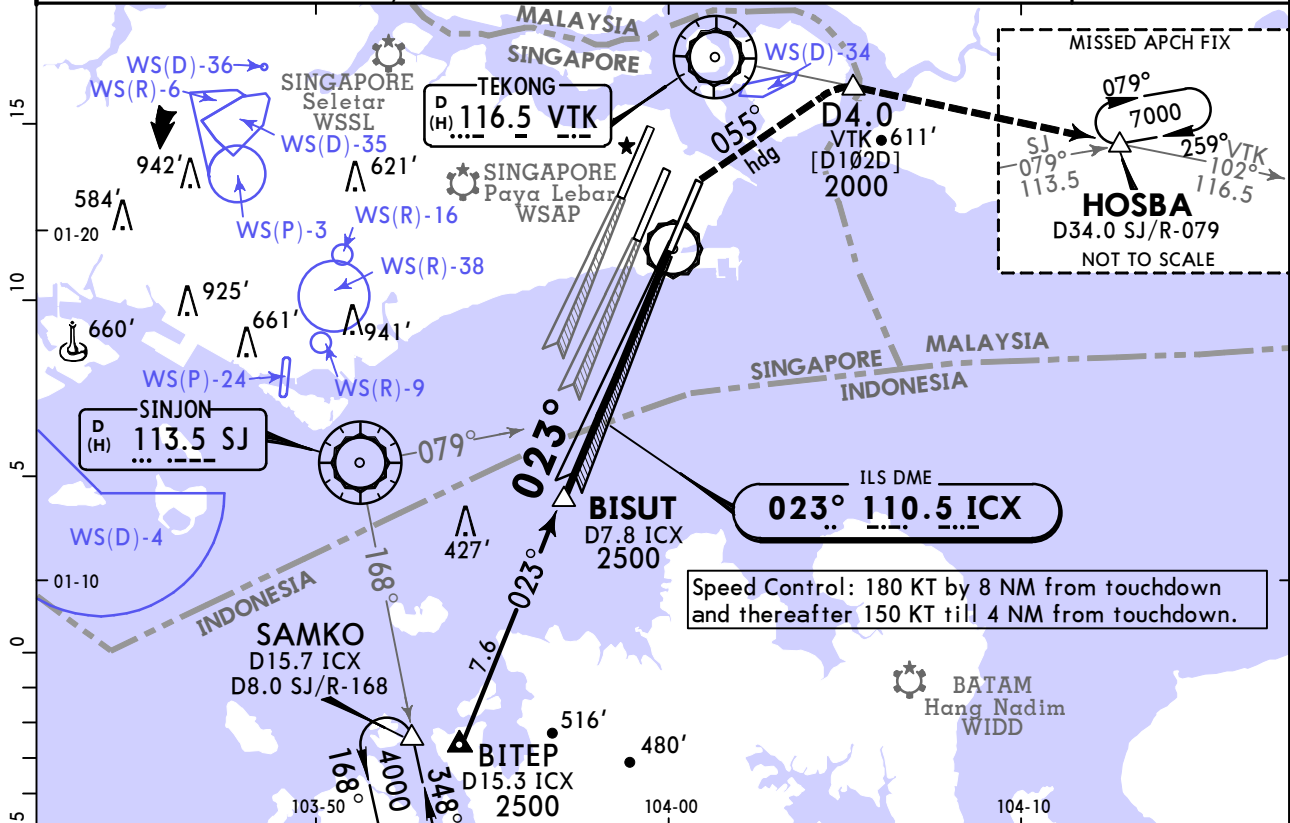
1 Timing not authorized when GS inop. **2** VNAV DA(H) in lieu of MDA(H) depends on operator policy. **3** R750m when a Flight Director or Autopilot or HUD to DA is not used.

WSSS/SIN CHANGI

29 MAR 24 **11-2B**

SINGAPORE, SINGAPORE ICX ILS DME Rwy 02R CAT II

D-ATIS Arrival 128.025	SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02R/20L 131.4	*Ground 124.3
LOC ICX 110.5	Final Apch Crs 023°	BISUT 2500' (2484')	CAT II ILS Refer to Minimums	Apt Elev 22' Rwy 16'
<p>MISSED APCH (MIN CLIMB GRAD 5.0% (304'/NM) UNTIL PASSING 2000'): Climb STRAIGHT to 500', turn RIGHT heading 055°. Cross D4.0 VTK at 2000' or above. Thereafter, turn RIGHT climbing to 7000' or above to HOSBA (SJ VOR R-079/D34.0) via outbound VTK VOR R-102. Hold at HOSBA or as directed by ATC. No turn before MAPt. MAX 185 KT during turning missed approach.</p> <p>MISSED APCH (MIN CLIMB GRAD 2.5% (152'/NM)): Climb STRAIGHT to 1200' before commencing RIGHT turn climbing to 7000' or above to HOSBA. Refer to minimums for missed apch climb gradients.</p>				<p>MSA VTK VOR ① 1700 within 11 NM</p>
Alt Set: hPa Rwy Elev: 1 hPa Trans level: FL130 Trans alt: 11000'				
1. Radar required. 2. CAUTION: Rwy 02R/20L closed until further advised. 3. ILS DME co-located with glideslope. 4. Maritime vessels of variable heights in water north and south of Rwy.				



Gnd speed-Kts	70	90	100	120	140	160	ALSF-II REIL PAPI PAPI Refer to Missed Apch above
Gs	3.00°	372	478	531	637	849	

PANS OPS	Std STRAIGHT-IN LANDING	
	MACG MIN 5.0% (304'/NM) until passing 2000' RA 100' DA(H) 116' (100')	CAT II ILS MACG MIN 2.5% (152'/NM) DA(H) 816' (800')
	① R300m	R450m

① CAT D without autoland: R350m.

WSSS/SIN CHANGI

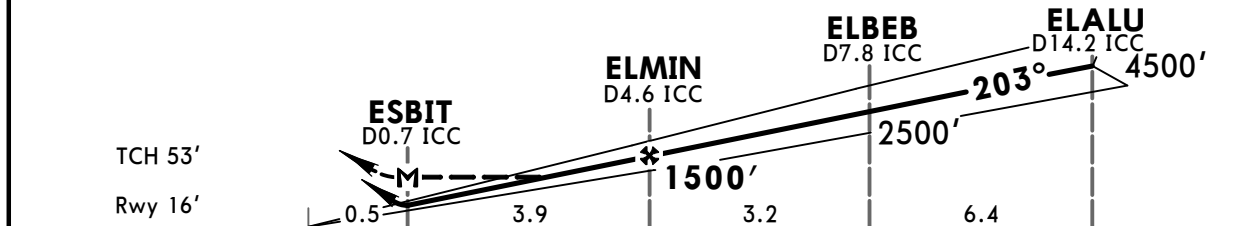
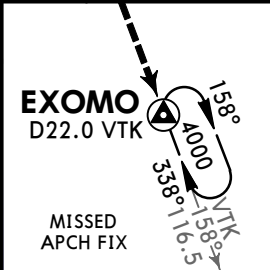
JEPPESSEN
26 APR 24 **(11-3)**

SINGAPORE, SINGAPORE ICC ILS DME Rwy 20C

D-ATIS Arrival 128.025	*SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02L/20R 118.6 Rwy 02C/20C 118.25	*Ground 124.3
LOC ICC 109.7	Final Apch Crs 203°	ELMIN 1500' (1484')	ILS DA(H) Refer to Minimums	Apt Elev 22' Rwy 16'
MISSED APCH: Climb to 4000' outbound via VTK VOR R-203 to ESLUX (D6.7 VTK). At ESLUX turn LEFT heading 130° to intercept outbound VTK VOR R-158 to EXOMO (VTK VOR R-158/D22.0) and hold or as directed by ATC. Refer to minimums for missed apch climb gradients.				<p>MSA VTK VOR</p>
Alt Set: hPa Rwy Elev: 1 hPa Trans level: FL130 Trans alt: 11000'				
1. Radar required. 2. CAUTION: Rwy 02R/20L closed until further advised. 3. Simultaneous approaches authorized with Rwy 20L or 20R. 4. ILS DME co-located with glide slope. 5. Maritime vessels of variable heights in water north and south of Rwy. 6. Circling not authorized.				



LOC (GS out)	
ICC DME	ALTITUDE
4.0	1290'
3.0	980'
2.0	660'



Gnd speed-Kts	70	90	100	120	140	160	ALSF-II REIL PAPI	4000' ↑ via 116.5 R-203 ESLUX	
GS	3.00°	372	478	531	637	743			849
MAP at ESBIT/D0.7 ICC									
1 FAF to MAP	3.9	3:21	2:36	2:20	1:57	1:40	1:28		

PANS OPS	STRAIGHT-IN LANDING					
	Std		ILS		LOC (GS out)	
	Missed apch climb gradient MIN 2.8% (171'/NM) until passing 2000'		Missed apch climb gradient MIN 2.5% (152'/NM)		Missed apch climb gradient MIN 2.8% (171'/NM) until passing 2000'	
	DA(H) 216' (200')		DA(H) 316' (300')		2 DA/MDA(H) 420' (404')	
	TDZ or CL out	ALS out	TDZ or CL out	ALS out	ALS out	ALS out
A						R1500m
B	R550m	3 R550m	R1200m	R650m	3 R650m	R1400m
C						R1200m
D						R1900m

1 Timing not authorized when GS inop. 2 VNAV DA(H) in lieu of MDA(H) depends on operator policy. 3 R750m when a Flight Director or Autopilot or HUD to DA is not used.

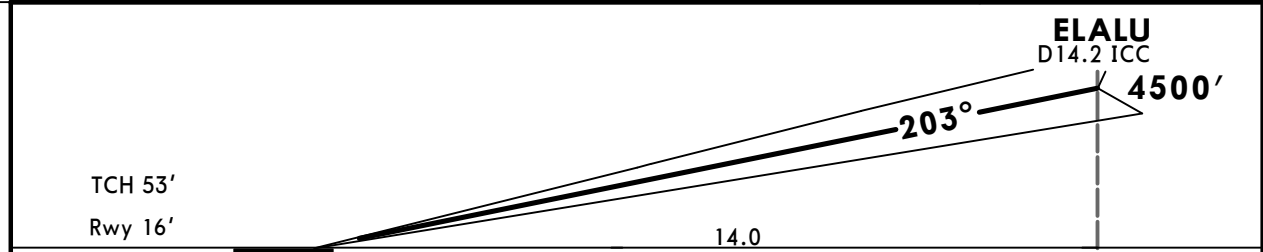
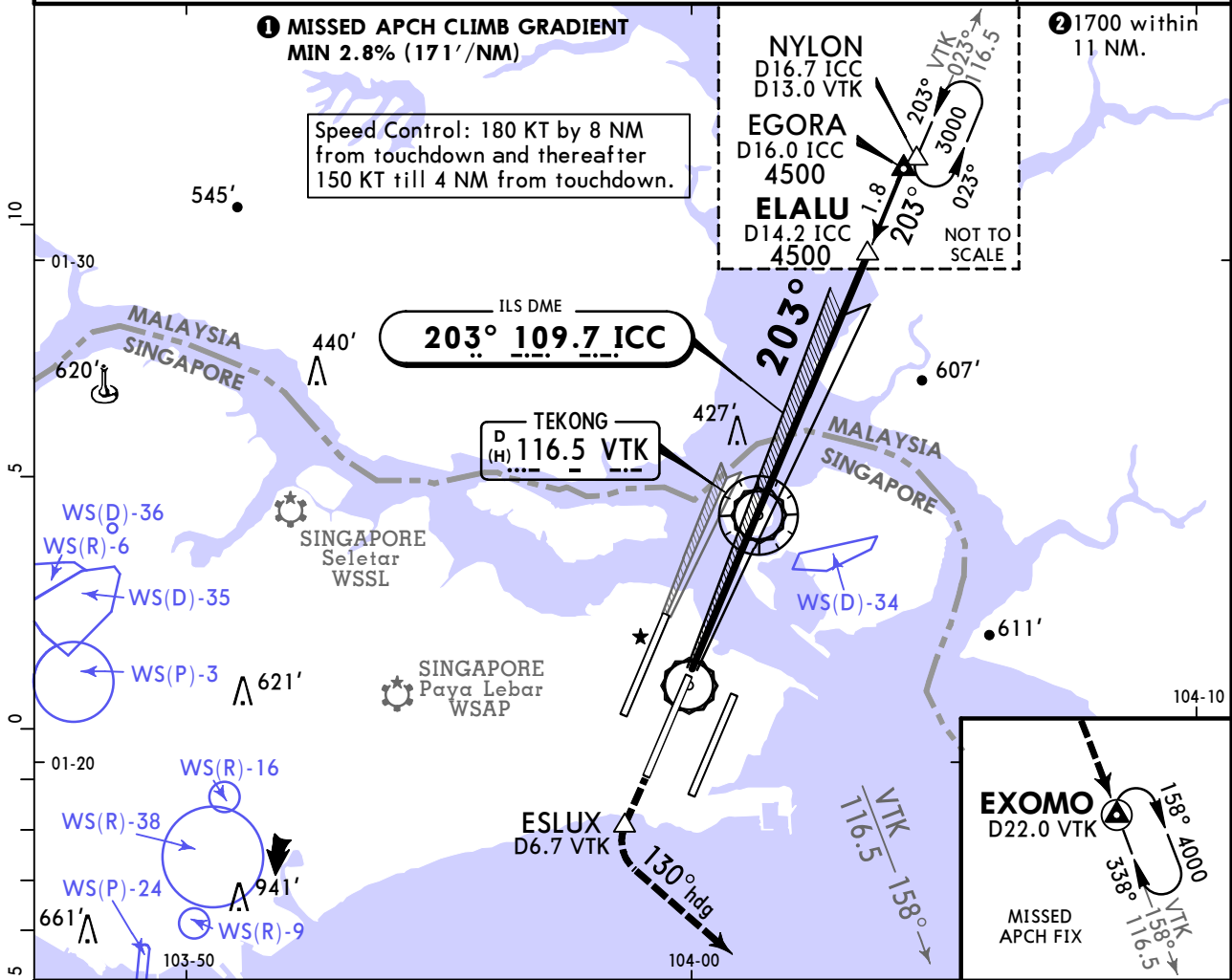
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WSSS/SIN CHANGI

JEPPESEN
26 APR 24 **(11-3A)**

SINGAPORE, SINGAPORE ●ICC ILS DME Rwy 20C CAT II

D-ATIS Arrival 128.025	*SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02L/20R 118.6 Rwy 02C/20C 118.25	*Ground 124.3
LOC ICC 109.7	Final Apch Crs 203°	ELALU 4500' (4484')	CAT II ILS RA 100' DA(H) 116'(100')	Apt Elev 22' Rwy 16'
MISSED APCH: Climb to 4000' outbound via VTK VOR R-203 to ESLUX (D6.7 VTK). At ESLUX turn LEFT heading 130° to intercept outbound VTK VOR R-158 to EXOMO (VTK VOR R-158/D22.0) and hold or as directed by ATC. Missed approach requires a minimum climb of 2.8% (171'/NM) until passing 2000'.				<p>MSA VTK VOR</p>
Alt Set: hPa Rwy Elev: 1 hPa Trans level: FL130 Trans alt: 11000'				
1. Radar required. 2. CAUTION: Rwy 02R/20L closed until further advised. 3. Simultaneous approaches authorized with Rwy 20L or 20R. 4. ILS DME co-located with glide slope. 5. Maritime vessels of variable heights in water north and south of Rwy.				



Gnd speed-Kts	70	90	100	120	140	160	ALSF-II REIL PAPI	4000' ↑ via 116.5 R-203	VTK ESLUX
Gs	3.00°	372	478	531	637	743			

Std STRAIGHT-IN LANDING
CAT II ILS
RA 100'
DA(H) **116'** (100')

R350m

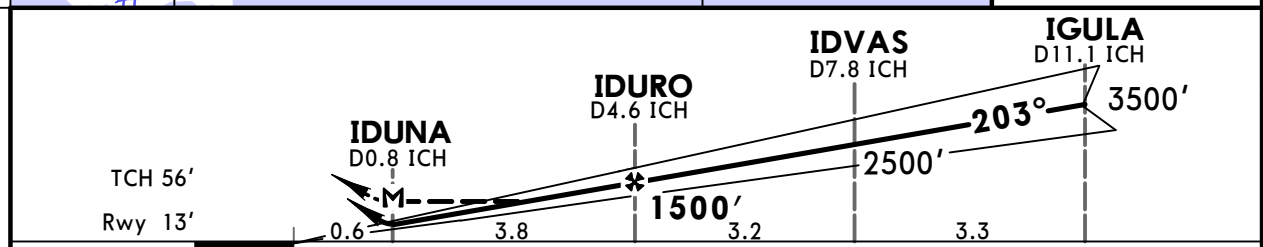
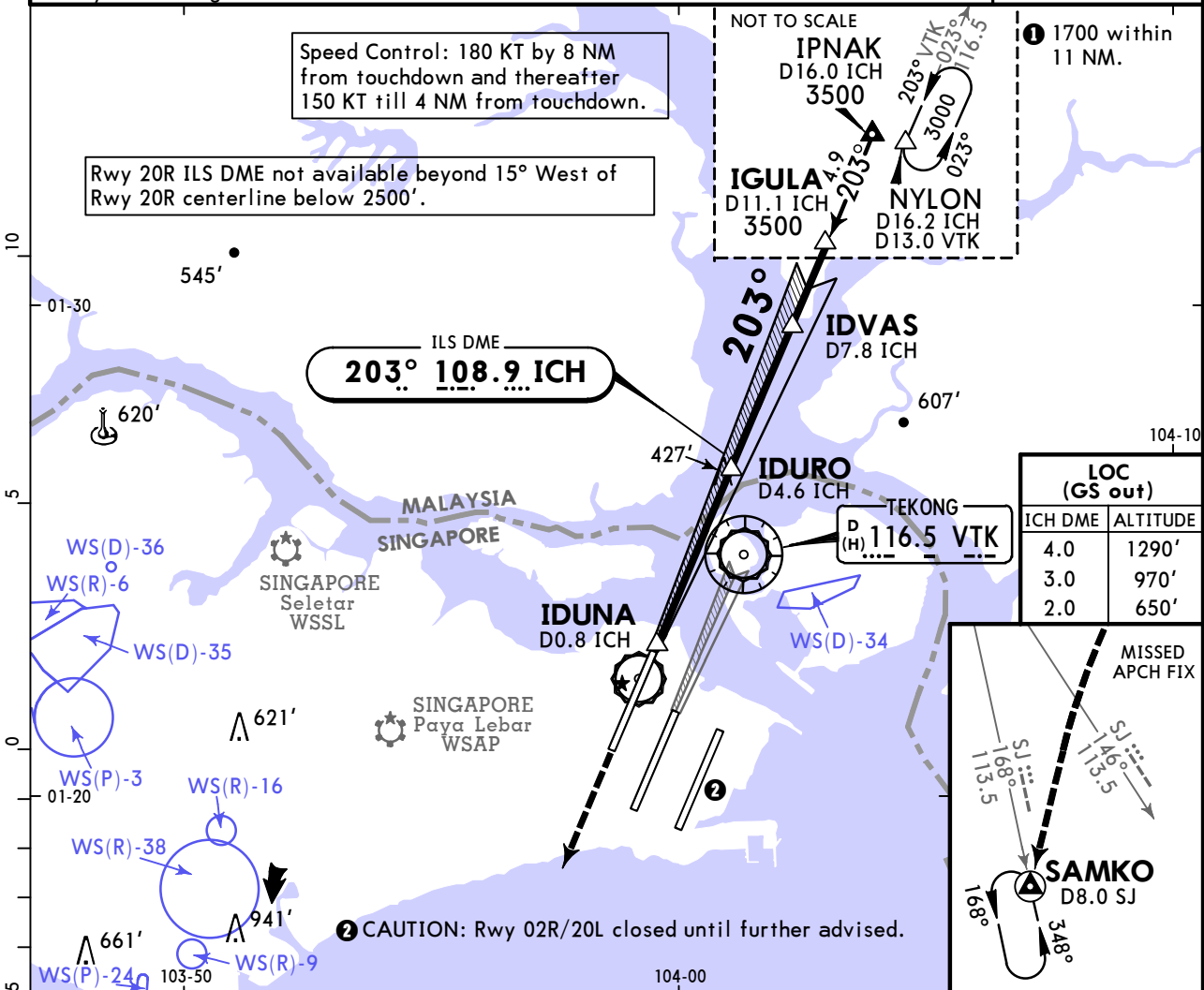
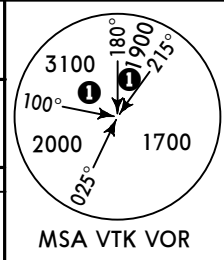
PANS OPS

WSSS/SIN CHANGI

JEPPESEN
26 APR 24 **(11-4)**

SINGAPORE, SINGAPORE ICH ILS DME Rwy 20R

D-ATIS Arrival 128.025	*SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02L/20R 118.6 Rwy 02C/20C 118.25	*Ground 124.3
LOC ICH 108.9	Final Apch Crs 203°	IDURO 1500' (1487')	ILS DA(H) Refer to Minimums	Apt Elev 22' Rwy 13'
MISSED APCH: Climb STRAIGHT AHEAD to 5000'. On crossing outbound SJ VOR R-146, proceed direct to SAMKO holding area and hold or as directed by ATC. Refer to minimums for missed apch climb gradients.				
Alt Set: hPa Rwy Elev: 0 hPa Trans level: FL130 Trans alt: 11000'				
1. Radar required. 2. Simultaneous approaches authorized with Rwy 20L or 20C. 3. ILS DME co-located with glide slope. 4. Maritime vessels of variable heights in water north and south of Rwy. 5. Circling not authorized.				



Gnd speed-Kts	70	90	100	120	140	160	HIALS REIL PAPI PAPI 5000' on crossing SJ R-146 → SAMKO
GS	3.00°	372	478	531	637	849	
MAP at IDUNA/D0.8 ICH							
FAF to MAP	3.9	3:21	2:36	2:20	1:57	1:40	

Std ILS STRAIGHT-IN LANDING			LOC (GS out)		
Missed apch climb gradient MIN 3.7% (225'/NM) until passing 2500'	ALS out	ALS out	Missed apch climb gradient MIN 3.7% (225'/NM) until passing 2500'	ALS out	ALS out
DA(H) 213' (200')			DA(H) 693' (680')		2 DA/MDA(H) 420' (407')
3 R550m	R1200m	R1500m	R1200m	R1500m	R1900m

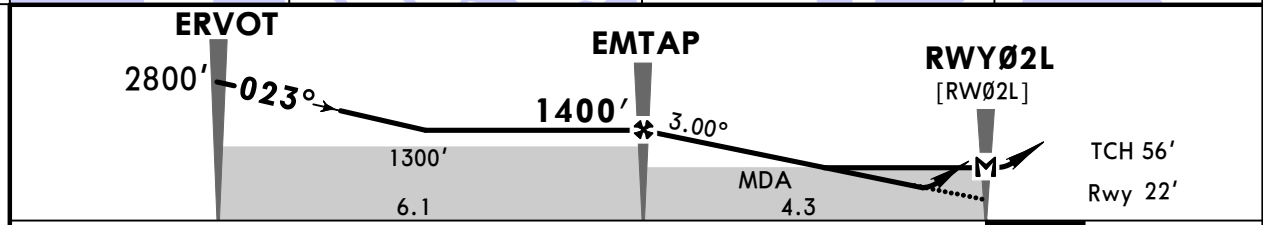
1 Timing not authorized when GS inop. **2** VNAV DA(H) in lieu of MDA(H) depends on operator policy. **3** R750m when a Flight Director or Autopilot or HUD to DA is not used.

WSSS/SIN CHANGI

JEPPESSEN
26 APR 24 (12-1)

SINGAPORE, SINGAPORE RNP Rwy 02L

D-ATIS Arrival 128.025	SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02L/20R 118.6 Rwy 02C/20C 118.25	*Ground 124.3	
RNAV	Final Apch Crs 023°	EMTAP 1400' (1378')	LNAV/VNAV DA(H) 452' (430')	Apt Elev 22' Rwy 22'	
MISSED APCH: Climb direct to ENSUN. Turn LEFT to AKOMA to join the holding at 4000' or above or as directed by ATC.					
RNP Apch	Alt Set: hPa	Rwy Elev: 1 hPa	Trans level: FL130		Trans alt: 11000'
1. CAUTION: Rwy 02R/20L closed until further advised. 2. Minimum temperature for Baro-VNAV approaches: 5°C. 3. Maritime vessels of variable heights in water north and south of Rwy. 4. Circling not authorized.					



Gnd speed-Kts	70	90	100	120	140	160	ALSF-II REIL PAPI PAPI 4000' ENSUN
Glide Path Angle	3.00°	372	478	531	637	849	
MAP at RWY02L							
EMTAP to MAP	4.3	3:41	2:52	2:35	2:09	1:51	

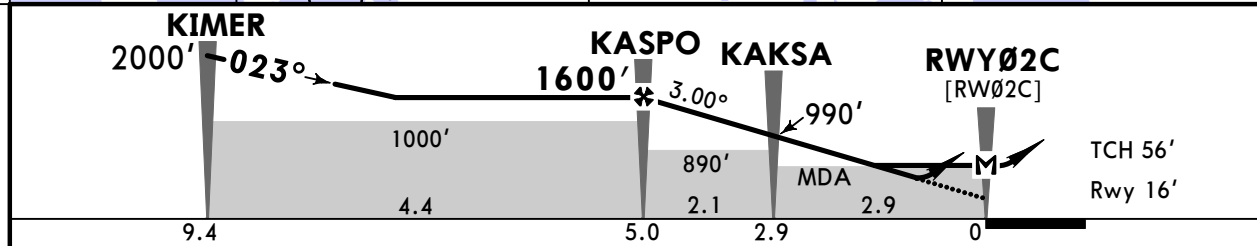
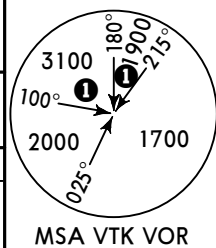
PANS OPS	Std LNAV/VNAV STRAIGHT-IN LANDING	
	DA(H) 452' (430')	LNAV CDFA DA/MDA(H) 540' (518')
	ALS out	ALS out
	A R1300m B R1500m C R2000m D R1600m R2400m	A R1500m B R1500m C R1600m R2400m D R1600m R2400m

WSSS/SIN CHANGI

26 APR 24 **(12-2)**

SINGAPORE, SINGAPORE RNP Rwy 02C

D-ATIS Arrival 128.025	SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02L/20R 118.6 Rwy 02C/20C 118.25	*Ground 124.3
RNAV	Final Apch Crs 023°	KASPO 1600' (1584')	LNAV/VNAV DA(H) 366' (350')	Apt Elev 22' Rwy 16'
MISSED APCH: Climb direct to NYLON to join the holding at 3000' or above or as directed by ATC.				
RNP Apch	Alt Set: hPa	Rwy Elev: 1 hPa	Trans level: FL130	Trans alt: 11000'
1. CAUTION: Rwy 02R/20L closed until further advised. 2. Minimum temperature for Baro-VNAV approaches: 5°C. 3. Maritime vessels of variable heights in water north and south of Rwy. 4. Circling not authorized.				



Gnd speed-Kts	70	90	100	120	140	160	HIALS REIL PAPI PAPI 3000' → NYLON
Glide Path Angle 3.00°	372	478	531	637	743	849	
MAP at RWY02C	5.0	4:17	3:20	3:00	2:30	2:09	

PANS OPS	Std	STRAIGHT-IN LANDING	
	LNAV/VNAV	LNAV CDFA	
	DA(H) 366' (350')	DA/MDA(H) 490' (474')	without KAKSA DA/MDA(H) 890' (874')
	ALS out	ALS out	ALS out
A	R1500m	R1500m	R1500m
B	R900m	R1500m	R1500m
C	R1600m	R2200m	R2400m
D			

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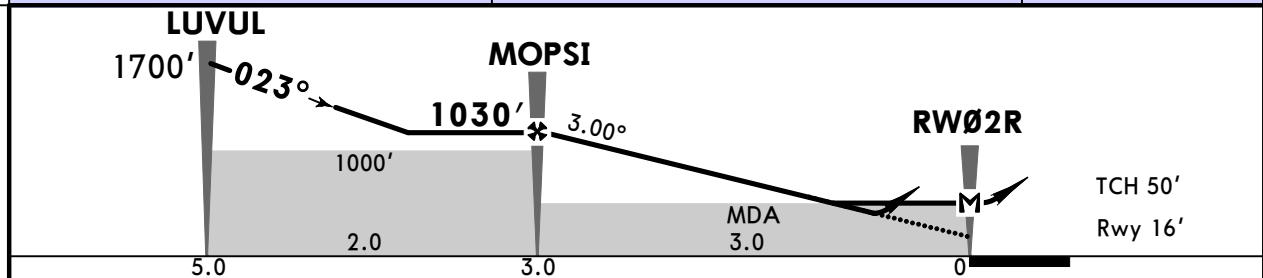
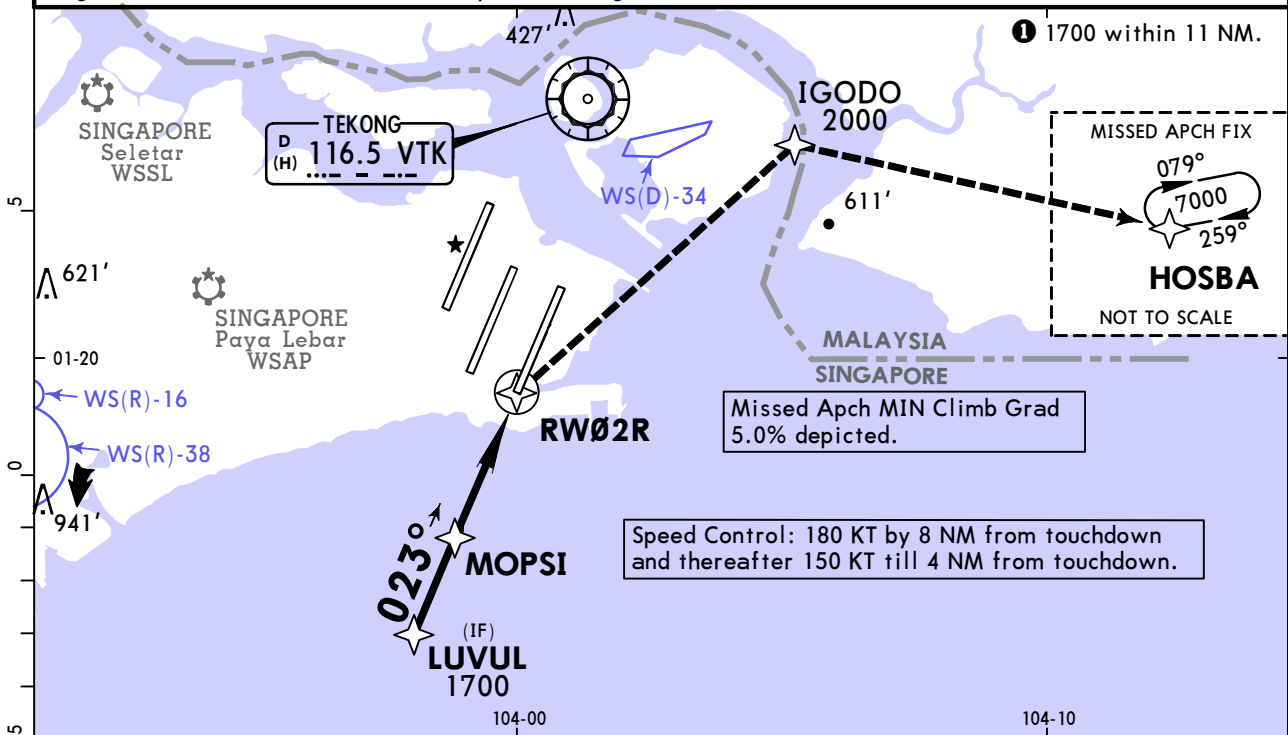
26 APR 24 **(12-3)**

SINGAPORE, SINGAPORE RNP Rwy 02R

D-ATIS Arrival 128.025	SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02R/20L 131.4	*Ground 124.3
RNAV	Final Apch Crs 023°	MOPSI 1030' (1014')	DA/MDA(H) Refer to Minimums	Apt Elev 22' Rwy 16'
MISSED APCH (MIN CLIMB GRAD 5.0% (304'/NM) UNTIL PASSING 2000') : Climb direct to IGODO at 2000' or above. Thereafter, turn RIGHT climbing to 7000' or above to HOSBA. Hold at HOSBA or as directed by ATC. No turn before MAP. MAX 185 KT during turning missed approach.				<p>MSA VTK VOR</p>
MISSED APCH (MIN CLIMB GRAD 2.5% (152'/NM)) : Climb STRAIGHT to 1200' before commencing RIGHT turn climbing to 7000' or above to HOSBA. Refer to minimums for missed apch climb gradients.				

RNP Apch | Alt Set: hPa | Rwy Elev: 1 hPa | Trans level: FL130 | Trans alt: 11000'

1. Radar required. 2. Expect radar vectors to LUVUL. 3. CAUTION: Rwy 02R/20L closed until further advised. 4. Minimum temperature for Baro-VNAV approaches: 5°C. 5. Maritime vessels of variable heights in water north and south of Rwy. 6. Circling not authorized.



Gnd speed-Kts	70	90	100	120	140	160	ALSF-II REIL PAPI PAPI Refer to Missed Apch above
Glide Path Angle	3.00°	372	478	531	637	743	
MAP at RW02R							
MOPSI to MAP	3.0	2:34	2:00	1:48	1:30	1:17	

Std		STRAIGHT-IN LANDING			
		Missed apch climb gradient MIN 5.0% (304'/NM) until passing 2000'		Missed apch climb gradient MIN 2.5% (152'/NM)	
		RNAV/VNAV	RNAV CDFA	RNAV/VNAV	RNAV CDFA
		DA(H) 326' (310')	DA/MDA(H) 420' (404')	DA(H) 816' (800')	DA/MDA(H) 820' (804')
		ALS out	ALS out	ALS out	ALS out
A			R1500m	R1500m	R1500m
B	R750m	R1400m	R1200m		
C			R1900m	R2400m	R2400m
D					

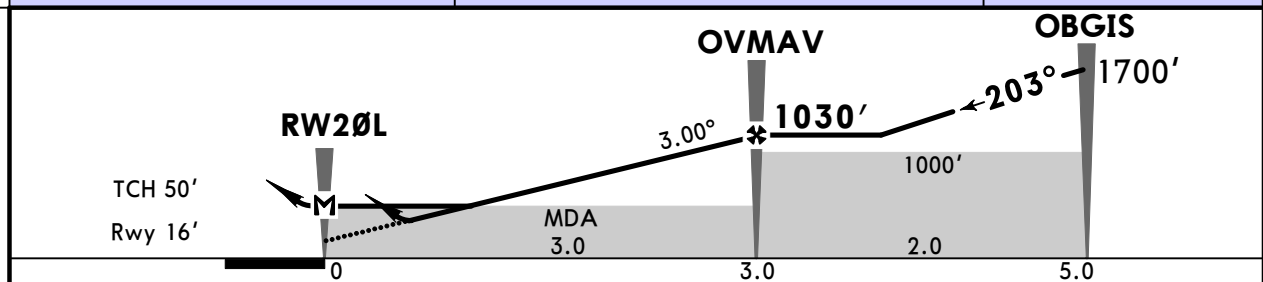
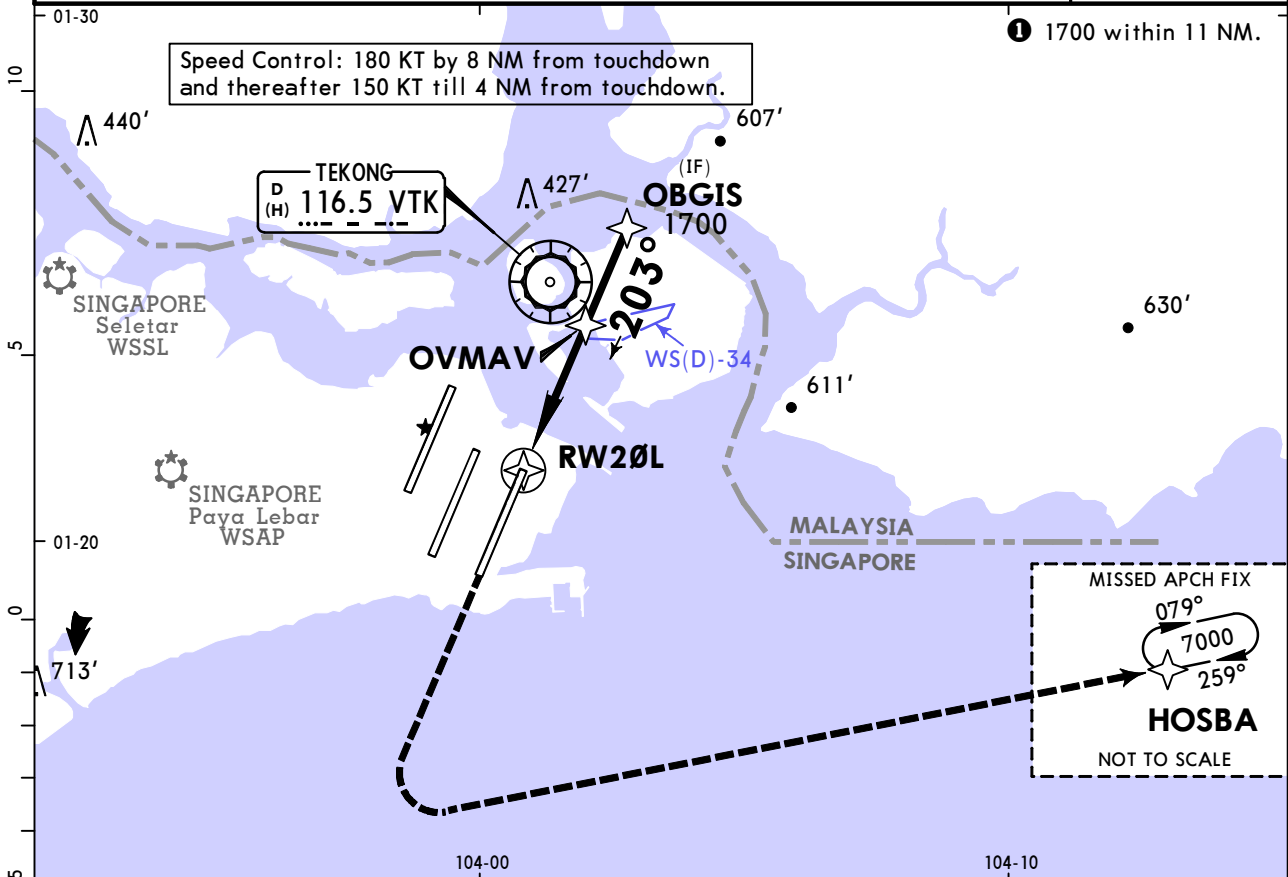
■ VNAV DA(H) in lieu of MDA(H) depends on operator policy.
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26 APR 24 **(12-4)**

SINGAPORE, SINGAPORE RNP Rwy 20L

D-ATIS Arrival 128.025	SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02R/20L 131.4	*Ground 124.3	
RNAV	Final Apch Crs 203°	OVM AV 1030' (1014')	DA/MDA(H) Refer to Minimums	Apt Elev 22' Rwy 16'	
MISSED APCH: Climb STRAIGHT to 1500', turn LEFT climbing to 7000' or above to HOSBA. Hold at HOSBA or as directed by ATC. No turn before MAP. Refer to minimums for missed apch climb gradient.				<p>MSA VTK VOR</p>	
RNP Apch	Alt Set: hPa	Rwy Elev: 1 hPa	Trans level: FL130		Trans alt: 11000'
1. Radar required. 2. Expect radar vectors to OBGIS. 3. CAUTION: Rwy 02R/20L closed until further advised. 4. Minimum temperature for Baro-VNAV approaches: 5°C. 5. Maritime vessels of variable heights in water north and south of Rwy. 6. Circling not authorized.					



Gnd speed-Kts	70	90	100	120	140	160	ALSF-II REIL PAPI PAPI 1500' 7000' HOSBA ↑ LT
Glide Path Angle	3.00°	372	478	531	637	849	
MAP at RW20L							
OVM to MAP	3.0	2:34	2:00	1:48	1:30	1:17	1:08

Std		STRAIGHT-IN LANDING					
		Missed apch climb gradient MIN 5.0% (304'/NM) until passing 3000'		Missed apch climb gradient MIN 2.5% (152'/NM)			
LNAV/VNAV		LNAV CDFA		LNAV/VNAV		LNAV CDFA	
DA(H) 276' (260')		DA/MDA(H) 380' (364')		DA(H) 1076' (1060')		DA/MDA(H) 1080' (1064')	
ALS out		ALS out		ALS out		ALS out	
A				R1500m	R1500m	R1500m	R1500m
B	R750m	R1300m	R1000m	R1500m	R1500m	R1500m	R1500m
C				R1700m	R2400m	R2400m	R2400m
D							

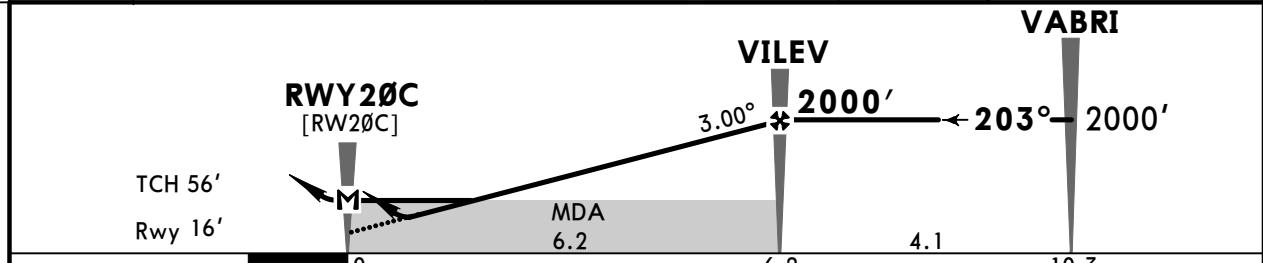
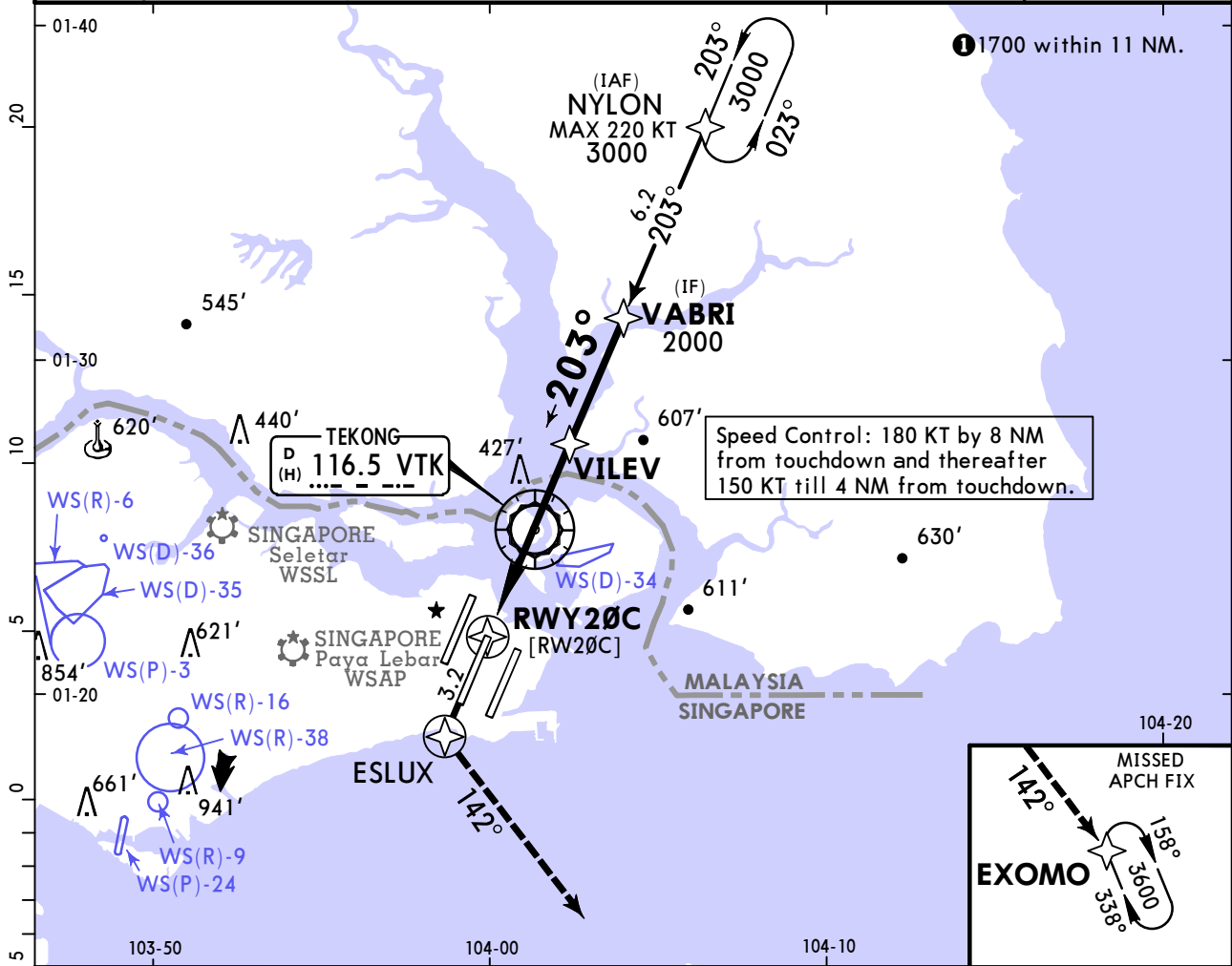
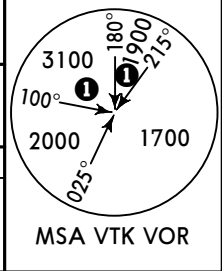
■ VNAV DA(H) in lieu of MDA(H) depends on operator policy.

WSSS/SIN CHANGI

JEPPESSEN
26 APR 24 **(12-5)**

SINGAPORE, SINGAPORE RNP Rwy 20C

D-ATIS Arrival 128.025	SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02L/20R 118.6 Rwy 02C/20C 118.25	*Ground 124.3
RNAV	Final Apch Crs 203°	VILEV 2000' (1984')	LNAV/VNAV DA(H) 496' (480')	Apt Elev 22' Rwy 16'
MISSED APCH: Climb direct to ESLUX. Turn LEFT to course 142° to join the holding at 3600' or above or as directed by ATC.				
RNP Apch	Alt Set: hPa	Rwy Elev: 1 hPa	Trans level: FL130	Trans alt: 11000'
1. CAUTION: Rwy 02R/20L closed until further advised. 2. Minimum temperature for Baro-VNAV approaches: 5°C. 3. Maritime vessels of variable heights in water north and south of Rwy. 4. Circling not authorized.				



Gnd speed-Kts	70	90	100	120	140	160	ALSF-II	3600'	ESLUX
Glide Path Angle	3.00°	372	478	531	637	743	REIL PAPI	↑	→
MAP at RWY20C									
VILEV to MAP	6.2	5:19	4:08	3:43	3:06	2:39	2:20		

PANS OPS	Std				STRAIGHT-IN LANDING			
	LNAV/VNAV				LNAV CDFA			
	DA(H) 496' (480')				DA/MDA(H) 540' (524')			
	ALS out				ALS out			
A	R1500m		R1500m		R1500m		R1500m	
B	R1500m		R1500m		R1500m		R1500m	
C	R1500m		R2200m		R1700m		R2400m	
D	R1500m		R2200m		R1700m		R2400m	

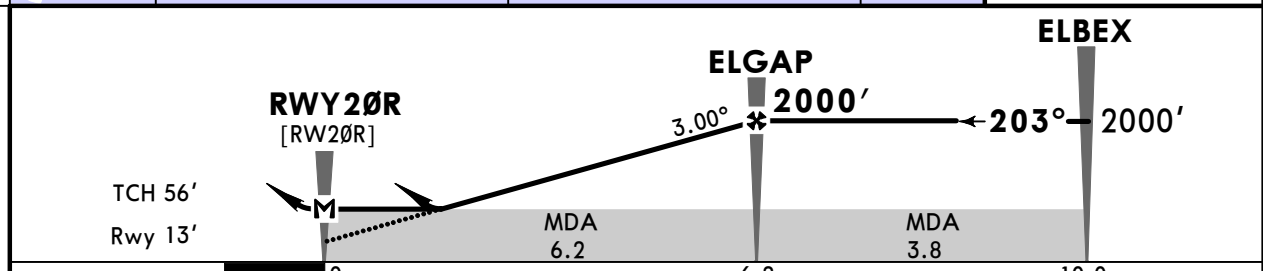
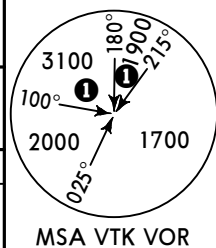
1 VNAV DA(H) in lieu of MDA(H) depends on operator policy.
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WSSS/SIN CHANGI

JEPPESSEN
26 APR 24 (12-6)

SINGAPORE, SINGAPORE RNP Rwy 20R

D-ATIS Arrival 128.025	SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02L/20R 118.6 Rwy 02C/20C 118.25	*Ground 124.3
RNAV	Final Apch Crs 203°	ELGAP 2000' (1987')	LNAV DA/MDA(H) 690' (677')	Apt Elev 22' Rwy 13'
MISSED APCH: Climb direct to ENLES. Turn LEFT to SAMKO to join the holding at 3200' or above or as directed by ATC.				
RNP Apch	Alt Set: hPa	Rwy Elev: 0 hPa	Trans level: FL130	Trans alt: 11000'
1. CAUTION: Rwy 02R/20L closed until further advised. 2. Minimum temperature for Baro-VNAV approaches: 5°C. 3. Maritime vessels of variable heights in water north and south of Rwy. 4. Circling not authorized.				



Gnd speed-Kts	70	90	100	120	140	160	ALSF-II REIL PAPI PAPI	3200'	ENLES	
Glide Path Angle	3.00°	372	478	531	637	743				849
MAP at RWY20R										
ELGAP to MAP	6.2	5:19	4:08	3:43	3:06	2:39				2:20

PANS OPS	Std		STRAIGHT-IN LANDING	
	LNAV/VNAV		LNAV CDFA	
	DA(H) 693' (680')		DA/MDA(H) 690' (677')	
	ALS out		ALS out	
A	R1500m		R1500m	
B	R1500m		R1500m	
C	R2400m		R2400m	
D	R2400m		R2400m	

■ VNAV DA(H) in lieu of MDA(H) depends on operator policy.
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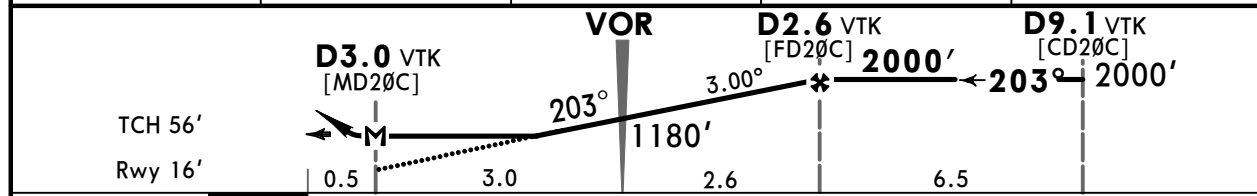
JEPPESSEN
26 APR 24 **(13-1)**

SINGAPORE, SINGAPORE VTK VOR DME Rwy 20C

D-ATIS Arrival 128.025	*SINGAPORE Approach (R) 124.05	SINGAPORE Arrival (R) 119.3	SINGAPORE Tower Rwy 02L/20R 118.6 Rwy 02C/20C 118.25		*Ground 124.3
VOR VTK 116.5	Final Apch Crs 203°	D2.6 VTK 2000' (1984')	DA/MDA(H) 580' (564')	Apt Elev 22' Rwy 16'	<p>MSA VTK VOR</p>
MISSED APCH: Climb to 4000' via VTK VOR R-203 to ESLUX (D6.7 VTK). At ESLUX (1000' or above) turn LEFT heading 130° to intercept VTK VOR R-158 to EXOMO (VTK VOR R-158/D22.0) and hold or directed by ATC.					
Alt Set: hPa Rwy Elev: 1 hPa Trans level: FL130 Trans alt: 11000' 1. CAUTION: Rwy 02R/20L closed until further advised. 2. Maritime vessels of variable heights in water north and south of Rwy.					



VTK DME ALTITUDE	D1.0 AFTER VTK 860'	VTK 1180'	D1.0 BEFORE VTK 1500'	D2.0 BEFORE VTK 1820'
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Gnd speed-Kts	70	90	100	120	140	160	ALSF-II REIL PAPI 4000' via 116.5 VTK R-203 ESLUX
Descent Angle 3.00°	372	478	531	637	743	849	
MAP at D3.0 VTK							
D2.6 VTK to MAP	5.6	4:48	3:44	3:22	2:48	2:24	2:06

Std STRAIGHT-IN LANDING CDFA
 DA/MDA(H) **580'** (564')
 ALS out

A	R1500m	
B		
C	R1900m	R2400m
D		

V VNAV DA(H) in lieu of MDA(H) depends on operator policy.

Chart changes since cycle 10-2024

ADD = added chart, REV = revised chart, DEL = deleted chart.

ACT	PROCEDURE IDENT	INDEX	REV DATE	EFF DATE
SINGAPORE, (CHANGI - WSSS)				
REV	AIRPORT, AIRPORT INFO	10-9	24 May 2024	
REV	AIRPORT INFO (CONTD), TAK...	10-9A	24 May 2024	

TERMINAL CHART CHANGE NOTICES

Chart Change Notices for Airport WSSS

Type: Terminal
Effectivity: Temporary
Begin Date: 20200330
End Date: 20241230

(10-9B) (10-9C) (10-9J) Parking bay E5 closed due to construction work activities around Northeast Pier of Terminal 2. Long term closure to 30 DEC 2024.

Type: Terminal
Effectivity: Temporary
Begin Date: 20231102
End Date: 20250530

(10-9C1) WEST/EAST CARGO APRON, EAST SERVICE APRON. Parking stand 604 is closed.

Type: Terminal
Effectivity: Temporary
Begin Date: 20200825
End Date: 20261230

(10-9B) Parking bay E20 closed for long term due to construction work activities at Terminal 2.