

**STANDARD DEPARTURE CHART  
RNAV (GNSS) -  
INSTRUMENT (SID)**

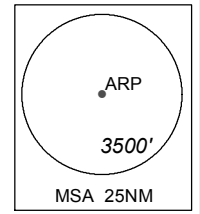
TWR 118.6 / 118.25  
APP 120.3  
ACC 133.25

TRANSITION ALTITUDE  
11 000ft

D-ATIS AP ID-WSSS  
128.6

**SINGAPORE/Singapore Changi  
RWY 02C/20C  
AROSO DEPARTURES  
AROSO 2A (R02C)  
AROSO 2B (R20C)**

ELEV, ALT IN FEET  
BEARINGS, TRACKS AND  
RADIALS ARE MAGNETIC  
VAR 26°E (2015)



DISTANCES IN NM  
**AROSO**  
02° 08' 46" N  
103° 24' 21" E

- NOTE:** RADAR REQUIRED
- NOTE:** ACFT UNABLE TO FLY THE SID PROFILE SHALL INFORM ATC PRIOR TO DEPARTURE AND TO EXPECT RADAR VECTORING, IF NECESSARY
- NOTE:** RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED
- NOTE:** REFER TO BACK PAGE FOR  
- FORMAL AND TABULAR DESCRIPTIONS  
- RADIO COM FAILURE PROCEDURES

**GENERAL INFORMATION**

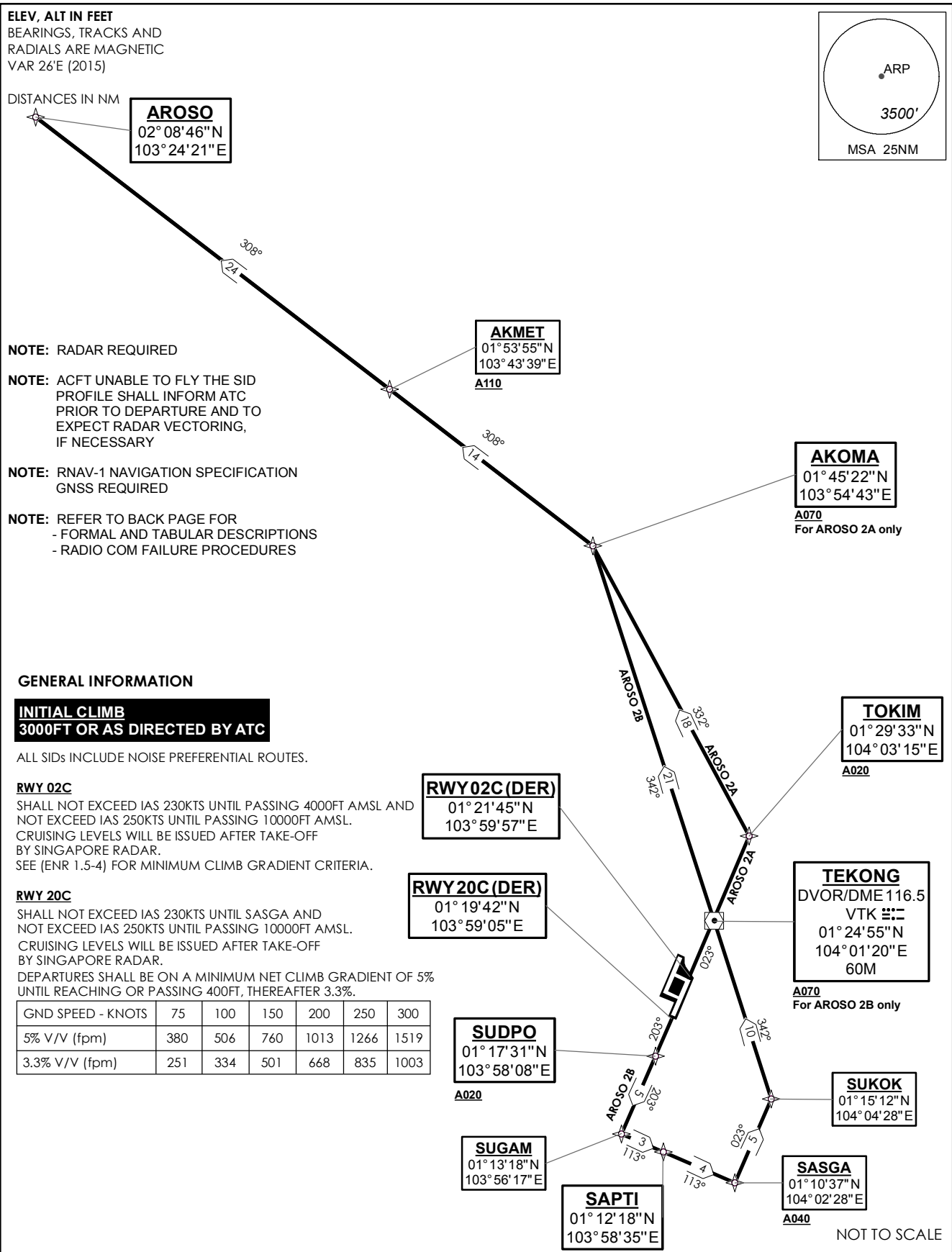
**INITIAL CLIMB**  
3000FT OR AS DIRECTED BY ATC

ALL SIDs INCLUDE NOISE PREFERENTIAL ROUTES.

**RWY 02C**  
SHALL NOT EXCEED IAS 230KTS UNTIL PASSING 4000FT AMSL AND NOT EXCEED IAS 250KTS UNTIL PASSING 10000FT AMSL. CRUISING LEVELS WILL BE ISSUED AFTER TAKE-OFF BY SINGAPORE RADAR. SEE (ENR 1.5-4) FOR MINIMUM CLIMB GRADIENT CRITERIA.

**RWY 20C**  
SHALL NOT EXCEED IAS 230KTS UNTIL SASGA AND NOT EXCEED IAS 250KTS UNTIL PASSING 10000FT AMSL. CRUISING LEVELS WILL BE ISSUED AFTER TAKE-OFF BY SINGAPORE RADAR. DEPARTURES SHALL BE ON A MINIMUM NET CLIMB GRADIENT OF 5% UNTIL REACHING OR PASSING 400FT, THEREAFTER 3.3%.

GND SPEED - KNOTS	75	100	150	200	250	300
5% V/V (fpm)	380	506	760	1013	1266	1519
3.3% V/V (fpm)	251	334	501	668	835	1003



**AKOMA**  
01° 45' 22" N  
103° 54' 43" E  
**A070**  
For AROSO 2A only

**TOKIM**  
01° 29' 33" N  
104° 03' 15" E  
**A020**

**TEKONG**  
DVOR/DME 116.5  
VTK  
01° 24' 55" N  
104° 01' 20" E  
60M  
**A070**  
For AROSO 2B only

**SUDPO**  
01° 17' 31" N  
103° 58' 08" E  
**A020**

**SUKOK**  
01° 15' 12" N  
104° 04' 28" E

**SUGAM**  
01° 13' 18" N  
103° 56' 17" E

**SAPTI**  
01° 12' 18" N  
103° 58' 35" E

**SASGA**  
01° 10' 37" N  
104° 02' 28" E  
**A040**

NOT TO SCALE

**AROSO 2A (SID) RNAV GNSS RWY 02C - DESCRIPTIONS**

**Formal & Abbreviated Descriptions**

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
To TOKIM on course 023° at or above 2000ft, turn left. To AKOMA at or above 7000ft, turn left. To AKMET at or above 11000ft. To AROSO.	TOKIM [M023; A020+; L] -	CF	N
	AKOMA [A070+; L] -	TF	N
	AKMET [A110+] -	TF	N
	AROSO	TF	N

**Tabular Descriptions**

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	TOKIM	-	023(022.5)	-0.5	L	A020+	-	RNAV1
TF	AKOMA	-	332(331.5)	-0.5	L	A070+	-	RNAV1
TF	AKMET	-	308(307.5)	-0.5	-	A110+	-	RNAV1
TF	AROSO	-	308(307.5)	-0.5	-	-	-	RNAV1

**AROSO 2B (SID) RNAV GNSS RWY 20C - DESCRIPTIONS**

**Formal & Abbreviated Descriptions**

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
To SUDPO on course 203° at or above 2000ft. To SUGAM, turn left. To SAPTI. To SASGA at or above 4000ft, speed 230kts, turn left. To SUKOK, turn left. To VTK at or above 7000ft. To AKOMA, turn left. To AKMET at or above 11000ft. To AROSO.	SUDPO [M203; A020+] -	CF	N
	SUGAM [L] -	TF	N
	SAPTI -	TF	N
	SASGA [A040+; K230; L] -	TF	N
	SUKOK [L] -	TF	N
	VTK [A070+] -	TF	N
	AKOMA [L] -	TF	N
	AKMET [A110+] -	TF	N
	AROSO	TF	N

**Tabular Descriptions**

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	SUDPO	-	203(202.5)	-0.5	-	A020+	-	RNAV1
TF	SUGAM	-	203(202.5)	-0.5	L	-	-	RNAV1
TF	SAPTI	-	113(113.3)	-0.5	-	-	-	RNAV1
TF	SASGA	-	113(113.3)	-0.5	L	A040+	K230	RNAV1
TF	SUKOK	-	023(023.6)	-0.5	L	-	-	RNAV1
TF	VTK	-	342(341.5)	-0.5	-	A070+	-	RNAV1
TF	AKOMA	-	342(341.5)	-0.5	L	-	-	RNAV1
TF	AKMET	-	308(307.5)	-0.5	-	A110+	-	RNAV1
TF	AROSO	-	308(307.5)	-0.5	-	-	-	RNAV1

**RADIO COMMUNICATIONS FAILURE PROCEDURE**

1	SET TRANSPONDER TO MODE A/C CODE 7600
2	<p><b>COMMUNICATIONS FAILURE OCCURS IMMEDIATELY AFTER DEPARTURE ON:</b></p> <p><b>RWY 02C</b> - PROCEED STRAIGHT AHEAD TO NYLON HOLDING AREA (NHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE.</p> <p><b>RWY 20C</b> - PROCEED STRAIGHT AHEAD TO SAMKO HOLDING AREA (SHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE.</p>