

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

TWR 118.6 / 118.25  
APP 120.3  
124.05  
ACC 133.25

TRANSITION ALTITUDE  
11 000ft

D-ATIS AP ID-WSSS  
128.6

**SINGAPORE/Singapore Changi  
RWY 02C/20C  
MASBO DEPARTURES  
MASBO 2A (R02C)  
MASBO 4B (R20C)**

**ELEV, ALT IN FEET**  
BEARINGS, TRACKS AND  
RADIALS ARE MAGNETIC  
VAR 23°E (2020)

DISTANCES IN NM

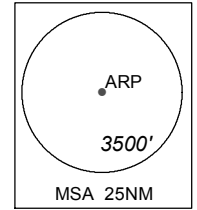
**NOTE:** RADAR REQUIRED

**NOTE:** RNAV-1 NAVIGATION SPECIFICATION  
GNSS REQUIRED

**NOTE:** ACFT UNABLE TO FLY THE SID  
PROFILE SHALL INFORM ATC  
PRIOR TO DEPARTURE AND TO  
EXPECT RADAR VECTORED,  
IF NECESSARY

**NOTE:** WHEN TAKEN OFF THE SID,  
AS INSTRUCTED BY ATC,  
REFER TO ENR 1.5, SECTION 3,  
PARAGRAPH 3.3 [A] - FOR RWY 02C MINIMUM CLIMB GRADIENT AND  
PARAGRAPH 3.4.1 - FOR RWY 20C MINIMUM CLIMB GRADIENT

**NOTE:** REFER TO BACK PAGE FOR  
- FORMAL AND TABULAR DESCRIPTIONS  
- RADIO COM FAILURE PROCEDURES



**MASBO**  
02° 02' 48" N  
102° 52' 51" E

**SABKA**  
01° 50' 51" N  
103° 17' 13" E

**AGVAR**  
01° 47' 19" N  
103° 41' 45" E  
A110

**AKOMA**  
01° 45' 22" N  
103° 54' 43" E

A070  
For MASBO 2A only

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

**RWY 02C (DER)**  
01° 21' 45" N  
103° 59' 57" E

**RWY 20C (DER)**  
01° 19' 42" N  
103° 59' 05" E

**TEKONG**  
DVOR/DME 116.5  
VTK   
01° 24' 55" N  
104° 01' 20" E  
60M

A070  
For MASBO 4B only

**IBIXU**  
01° 16' 21" N  
103° 57' 40" E  
A015

**DOSPA**  
01° 14' 59" N  
104° 04' 41" E

**IBIVA**  
01° 13' 51" N  
103° 56' 37" E  
A025

**DONDI**  
01° 12' 52" N  
103° 58' 55" E

**DIVSA**  
01° 11' 05" N  
104° 03' 03" E  
A040

**GENERAL INFORMATION**

**INITIAL CLIMB**  
3000FT

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. SID SHALL BE ON A MINIMUM CLIMB GRADIENT OF 3.3%.

**RWY 20C**

SHALL NOT EXCEED IAS 230KTS UNTIL DIVSA AND NOT EXCEED IAS 250KTS UNTIL PASSING 10000FT AMSL. CRUISING LEVELS WILL BE ISSUED AFTER TAKE-OFF BY SINGAPORE RADAR. SID SHALL BE ON A MINIMUM CLIMB GRADIENT OF 7% UNTIL REACHING OR PASSING 2500FT, THEREAFTER 3.3%.

GND SPEED - KNOTS	75	100	150	200	250	300
7% V/V (fpm)	532	709	1062	1416	1769	2123
3.3% V/V (fpm)	251	334	501	668	835	1003

NOT TO SCALE

### MASBO 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 AGVAR at or above 11000ft. To SABKA, turn right. To MASBO.	TOKIM [M023; A020+; L] -	CF	N
	AKOMA [A070+; L] -	TF	N
	AGVAR [A110+] -	TF	N
	SABKA [R] -	TF	N
	MASBO	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	AGVAR	-	278(277.5)	-0.5	-	A110+	-	RNAV1
TF	SABKA	-	278(277.5)	-0.5	R	-	-	RNAV1
TF	MASBO	-	296(295.5)	-0.5	-	-	-	RNAV1

### MASBO 4B (SID) RNAV GNSS RWY 20C - DESCRIPTIONS

#### Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
To IBIXU on course 203° at or above 1500ft. To IBIVA at or above 2500ft, turn left. To DONDI. To DIVSA at or above 4000ft, speed 230kts, turn left. To DOSPA, turn left. To VTK at or above 7000ft. To AKOMA, turn left. To AGVAR at or above 11000ft. To SABKA, turn right. To MASBO.	IBIXU [M203; A015+] -	CF	N
	IBIVA [A025+; L] -	TF	N
	DONDI -	TF	N
	DIVSA [A040+; K230; L] -	TF	N
	DOSPA [L] -	TF	N
	VTK [A070+] -	TF	N
	AKOMA [L] -	TF	N
	AGVAR [A110+] -	TF	N
	SABKA [R] -	TF	N
	MASBO	TF	N

#### Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	IBIXU	-	203(202.5)	-0.5	-	A015+	-	RNAV1
TF	IBIVA	-	203(202.5)	-0.5	L	A025+	-	RNAV1
TF	DONDI	-	113(112.5)	-0.5	-	-	-	RNAV1
TF	DIVSA	-	113(112.5)	-0.5	L	A040+	K230	RNAV1
TF	DOSPA	-	023(022.5)	-0.5	L	-	-	RNAV1
TF	VTK	-	342(341.5)	-0.5	-	A070+	-	RNAV1
TF	AKOMA	-	342(341.5)	-0.5	L	-	-	RNAV1
TF	AGVAR	-	278(277.5)	-0.5	-	A110+	-	RNAV1
TF	SABKA	-	278(277.5)	-0.5	R	-	-	RNAV1
TF	MASBO	-	296(295.5)	-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>