

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

TWR 118.6
APP 120.3
124.05
ACC 133.25

TRANSITION ALTITUDE
11 000ft

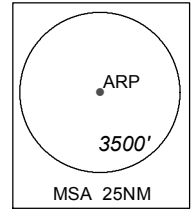
D-ATIS AP ID-WSSS
128.6

**SINGAPORE/Singapore Changi
RWY 02L/20R
MASBO DEPARTURES
MASBO 2E (R02L)
MASBO 4F (R20R)**

ELEV, ALT IN FEET
BEARINGS, TRACKS AND
RADIALS ARE MAGNETIC
VAR 0°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 3.2 [A] - FOR RWY 02L MINIMUM CLIMB GRADIENT AND
PARAGRAPH 3.4.2 - FOR RWY 20R 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 2E only

ATRUM
01°32'56"N
104°00'57"E

TOPOM
01°29'55"N
104°02'27"E
A020

RWY 02L (DER)
01°23'05"N
103°59'33"E

RWY 20R (DER)
01°20'47"N
103°58'35"E

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

A070
For MASBO 4F only

LEDOX
01°16'42"N
103°56'51"E
A015

DOSPA
01°14'59"N
104°04'41"E

LETGO
01°14'11"N
103°55'48"E
A025

DIVSA
01°11'05"N
104°03'03"E
A040

GENERAL INFORMATION

**INITIAL CLIMB
3000FT**

ALL SIDs INCLUDE NOISE PREFERENTIAL ROUTES.

RWY 02L

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 20R

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 6% UNTIL REACHING OR PASSING 2500FT, THEREAFTER 3.3%.

GND SPEED - KNOTS	75	100	150	200	250	300
6% V/V (fpm)	456	608	911	1215	1518	1821
3.3% V/V (fpm)	251	334	501	668	835	1003

NOT TO SCALE

MASBO 2E (SID) RNAV GNSS RWY 02L - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
To TOPOM on course 023° at or above 2000ft, turn left. To ATRUM. To AKOMA at or above 7000ft, turn left. To AGVAR at or above 11000ft. To SABKA, turn right. To MASBO.	TOPOM [M023; A020+; L] -	CF	N
	ATRUM -	TF	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	TOPOM	-	023(023.4)	-0.4	L	A020+	-	RNAV1
TF	ATRUM	-	333(333.4)	-0.4	-	-	-	RNAV1
TF	AKOMA	-	333(333.4)	-0.4	L	A070+	-	RNAV1
TF	AGVAR	-	278(278.4)	-0.4	-	A110+	-	RNAV1
TF	SABKA	-	278(278.4)	-0.4	R	-	-	RNAV1
TF	MASBO	-	296(296.4)	-0.4	-	-	-	RNAV1

MASBO 4F (SID) RNAV GNSS RWY 20R - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
To LEDOX on course 203° at or above 1500ft. To LETGO at or above 2500ft, turn left. 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.	LEDOX [M203; A015+] -	CF	N
	LETGO [A025+; L] -	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	LEDOX	-	203(203.4)	-0.4	-	A015+	-	RNAV1
TF	LETGO	-	203(203.4)	-0.4	L	A025+	-	RNAV1
TF	DIVSA	-	113(113.4)	-0.4	L	A040+	K230	RNAV1
TF	DOSPA	-	023(023.4)	-0.4	L	-	-	RNAV1
TF	VTK	-	342(342.4)	-0.4	-	A070+	-	RNAV1
TF	AKOMA	-	342(342.4)	-0.4	L	-	-	RNAV1
TF	AGVAR	-	278(278.4)	-0.4	-	A110+	-	RNAV1
TF	SABKA	-	278(278.4)	-0.4	R	-	-	RNAV1
TF	MASBO	-	296(296.4)	-0.4	-	-	-	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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