

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

TWR 118.6 / 118.25  
APP 120.3  
ACC 134.2

TRANSITION ALTITUDE  
11 000ft

D-ATIS AP ID-WSSS  
128.6

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

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

DISTANCES IN NM

**NOTE:** RADAR REQUIRED

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

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.

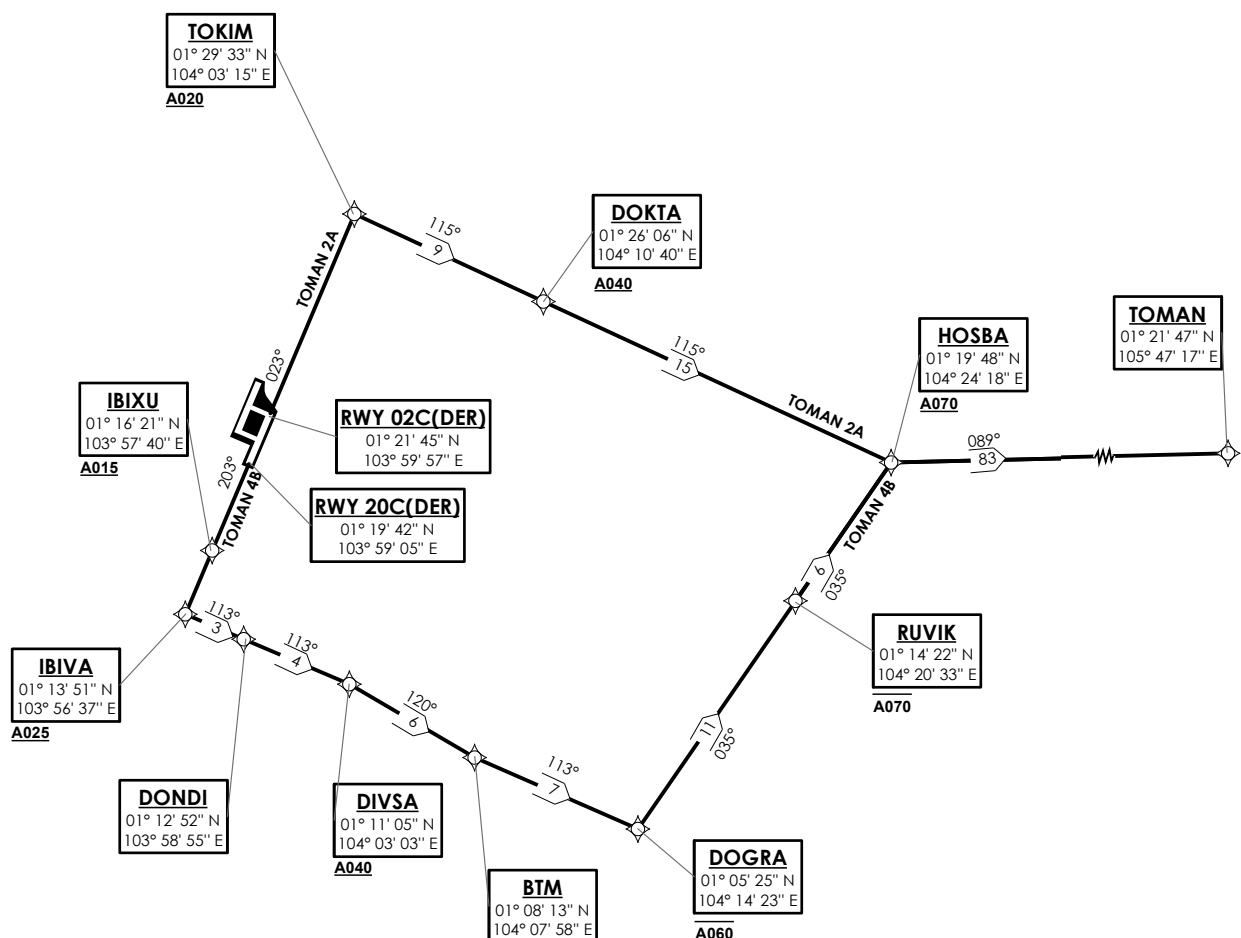
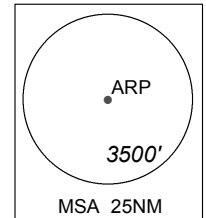
**RWY 20C**

SHALL NOT EXCEED IAS 230KTS UNTIL PASSING 4000FT AMSL 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 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

28 FEB 2019

**TOMAN 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 right. To DOKTA at or above 4000ft. To HOSBA at or above 7000ft, turn left. To TOMAN. | TOKIM [M023; A020+; R] - | CF              | N                 |
|                                                                                                                                        | DOKTA [A040+] -          | TF              | N                 |
|                                                                                                                                        | HOSBA [A070+; L] -       | TF              | N                 |
|                                                                                                                                        | TOMAN                    | 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               | R              | A020+    | -           | RNAV1           |
| TF        | DOKTA         | -        | 115(114.5)    | -0.5               | -              | A040+    | -           | RNAV1           |
| TF        | HOSBA         | -        | 115(114.5)    | -0.5               | L              | A070+    | -           | RNAV1           |
| TF        | TOMAN         | -        | 089(088.5)    | -0.5               | -              | -        | -           | RNAV1           |

**TOMAN 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, turn right. To BTM, turn left. To DOGRA at or below 6000ft, turn left. To RUVIK at or below 7000ft. To HOSBA at or above 7000ft, turn right. To TOMAN. | IBIXU [M203; A015+] -   | CF              | N                 |
|                                                                                                                                                                                                                                                                                   | IBIVA [A025+; L] -      | TF              | N                 |
|                                                                                                                                                                                                                                                                                   | DONDI -                 | TF              | N                 |
|                                                                                                                                                                                                                                                                                   | DIVSA [A040+; R] -      | TF              | N                 |
|                                                                                                                                                                                                                                                                                   | BTM [L] -               | TF              | N                 |
|                                                                                                                                                                                                                                                                                   | DOGRA [A060-; L] -      | TF              | N                 |
|                                                                                                                                                                                                                                                                                   | RUVIK [A070-] -         | TF              | N                 |
|                                                                                                                                                                                                                                                                                   | HOSBA [A070+; R] -      | TF              | N                 |
|                                                                                                                                                                                                                                                                                   | TOMAN                   | 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               | R              | A040+    | -           | RNAV1           |
| TF        | BTM           | -        | 120(119.5)    | -0.5               | L              | -        | -           | RNAV1           |
| TF        | DOGRA         | -        | 113(112.5)    | -0.5               | L              | A060-    | -           | RNAV1           |
| TF        | RUVIK         | -        | 035(034.5)    | -0.5               | -              | A070-    | -           | RNAV1           |
| TF        | HOSBA         | -        | 035(034.5)    | -0.5               | R              | A070+    | -           | RNAV1           |
| TF        | TOMAN         | -        | 089(088.5)    | -0.5               | -              | -        | -           | RNAV1           |

**RADIO COMMUNICATIONS FAILURE PROCEDURE**

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | SET TRANSPONDER TO MODE A/C CODE 7600                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2 | <b>COMMUNICATIONS FAILURE OCCURS IMMEDIATELY AFTER DEPARTURE ON:</b><br><br><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.<br><br><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. |