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eAIP

AMDT
04/2020
Effective date
16 JUL 2020
Publication date
16 JUL 2020

wp-AMDT-2020-04

1. Significant information and changes

1.1 Singapore FIR

a. Updated the addressing of flight plan and its associated ATS messages within Singapore FIR.

b. Updated magnetic variation for WSSS, WSSL, WSAP, WSAT, WSAG and all associated Aeronautical Charts to read as 0^0 23'E (2020).

1.2 Singapore Changi Airport

a. Inclusion of new D-ATIS frequencies -128.6 MHz for Changi Airport Departure Information and 128.025 MHz for Changi Airport Arrival Information.

1.3 Seletar Airport

a. Inclusion of ATIS frequency - 128.425 MHz for Seletar Airport Information.

2. This amendment incorporates information contained in the listed AIP Supplements which are hereby superseded:

AIP Supplements
027/2020 dated 07/05/2020
039/2020 dated 21/05/2020

Amended Pages

GEN 0.2-1/2: *: replace.*
GEN 0.3-1/2: *: replace.*
GEN 0.3-3/4: *: replace.*
GEN 0.3-5: *: replace.*
GEN 0.4-1/2: *: replace.*
GEN 0.4-3: *: replace.*
GEN 1.2-5/6: *: replace.*
GEN 1.6-1/2: *: replace.*
GEN 1.6-3/4: *: replace.*
GEN 3.2-3/4: *: replace.*
GEN 3.5-1/2: *: replace.*
ENR 1.11-1: *: replace.*
ENR-3.6-7: *: replace.*
ENR-3.6-9: *: replace.*
AD 0.6-3/4: *: replace.*
AD 0.6-5/6: *: replace.*
AD 2.WSSS-1/2: *: replace.*
AD 2.WSSS-17/18: *: replace.*
AD-2-WSSS-ADC-2: *: replace.*

AD-2-WSSS-ADC-3: *: replace.*
AD-2-WSSS-AOC-1: *: replace.*
AD-2-WSSS-AOC-2: *: replace.*
AD-2-WSSS-AOC-3: *: replace.*
AD-2-WSSS-SID-1 to 1.1: *: replace.*
AD-2-WSSS-SID-2 to 2.1: *: replace.*
AD-2-WSSS-SID-3 to 3.1: *: replace.*
AD-2-WSSS-SID-4 to 4.1: *: replace.*
AD-2-WSSS-SID-5 to 5.1: *: replace.*
AD-2-WSSS-SID-6 to 6.1: *: replace.*
AD-2-WSSS-SID-7 to 7.1: *: replace.*
AD-2-WSSS-SID-8 to 8.1: *: replace.*
AD-2-WSSS-SID-9 to 9.1: *: replace.*
AD-2-WSSS-SID-10 to 10.1: *: replace.*
AD-2-WSSS-SID-11 to 11.1: *: replace.*
AD-2-WSSS-SID-12 to 12.1: *: replace.*
AD-2-WSSS-SID-13 to 13.1: *: replace.*
AD-2-WSSS-SID-14 to 14.1: *: replace.*
AD-2-WSSS-SID-15 to 15.1: *: replace.*
AD-2-WSSS-SID-16 to 16.1: *: replace.*
AD-2-WSSS-SID-17 to 17.1: *: replace.*
AD-2-WSSS-SID-18 to 18.1: *: replace.*
AD-2-WSSS-STAR-1 to 1.1: *: replace.*
AD-2-WSSS-STAR-2 to 2.1: *: replace.*
AD-2-WSSS-STAR-3 to 3.1: *: replace.*
AD-2-WSSS-STAR-4 to 4.1: *: replace.*
AD-2-WSSS-STAR-5 to 5.1: *: replace.*
AD-2-WSSS-STAR-6 to 6.1: *: replace.*
AD-2-WSSS-STAR-7 to 7.1: *: replace.*
AD-2-WSSS-STAR-8 to 8.1: *: replace.*
AD-2-WSSS-STAR-9 to 9.1: *: replace.*
AD-2-WSSS-STAR-11 to 11.1: *: replace.*
AD-2-WSSS-STAR-13 to 13.1: *: replace.*
AD-2-WSSS-STAR-14 to 14.1: *: replace.*
AD-2-WSSS-STAR-15 to 15.1: *: replace.*
AD-2-WSSS-STAR-16 to 16.1: *: replace.*
AD-2-WSSS-STAR-17 to 17.1: *: replace.*
AD-2-WSSS-STAR-18 to 18.1: *: replace.*
AD-2-WSSS-STAR-19 to 19.1: *: replace.*
AD-2-WSSS-STAR-20 to 20.1: *: replace.*
AD-2-WSSS-STAR-21 to 21.1: *: replace.*
AD-2-WSSS-IAC-1: *: replace.*
AD-2-WSSS-IAC-2: *: replace.*
AD-2-WSSS-IAC-5: *: replace.*
AD-2-WSSS-IAC-6: *: replace.*
AD-2-WSSS-IAC-7: *: replace.*
AD-2-WSSS-IAC-9: *: replace.*
AD-2-WSSS-IAC-10: *: replace.*
AD-2-WSSS-IAC-11: *: replace.*
AD-2-WSSS-IAC-12: *: replace.*
AD-2-WSSS-VAC-1: *: replace.*
AD 2.WSSL-1/2: *: replace.*
AD 2.WSSL-15/16: *: replace.*
AD-2-WSSL-ADC-1: *: replace.*
AD-2-WSSL-ADC-2: *: replace.*
AD-2-WSSL-ADC-3: *: replace.*
AD-2-WSSL-AOC-1: *: replace.*
AD-2-WSSL-AOC-2: *: replace.*
AD-2-WSSL-VAC-1: *: replace.*
AD-2-WSSL-VAC-2: *: replace.*
AD-2-WSSL-VAC-3: *: replace.*
AD-2-WSSL-VAC-4: *: replace.*
AD-2-WSSL-VDC-1: *: replace.*
AD-2-WSSL-VDC-2: *: replace.*
AD 2.WSAP-1/2: *: replace.*
AD 2.WSAP-7/8: *: replace.*
AD 2.WSAP-9/10: *: replace.*
AD-2-WSAP-ADC-1: *: replace.*

AD-2-WSAP-ADC-2: *: replace.*
AD-2-WSAP-AOC-1: *: replace.*
AD-2-WSAP-IAC-1: *: replace.*
AD-2-WSAP-IAC-2: *: replace.*
AD-2-WSAP-IAC-3: *: replace.*
AD-2-WSAP-IAC-4: *: replace.*
AD-2-WSAP-IAC-5: *: replace.*
AD-2-WSAP-IAC-6: *: replace.*
AD 2.WSAT-1/2: *: replace.*
AD 2.WSAT-5/6: *: replace.*
AD-2-WSAT-ADC-1: *: replace.*
AD 2.WSAG-1/2: *: replace.*
AD 2.WSAG-3/4: *: replace.*

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GEN 0.2 RECORD OF AIP AMENDMENTS

AIP AMENDMENT

NR/Year	*Publication date*	*Date inserted*	*Inserted by*
5/2014	18 SEP 2014	18 SEP 2014	
6/2014	13 NOV 2014	13 NOV 2014	
1/2015	08 JAN 2015	08 JAN 2015	
2/2015	05 MAR 2015	05 MAR 2015	
3/2015	30 APR 2015	30 APR 2015	
4/2015	25 JUN 2015	25 JUN 2015	
5/2015	20 AUG 2015	20 AUG 2015	
6/2015	15 OCT 2015	15 OCT 2015	
07/2015	10 DEC 2015	10 DEC 2015	
01/2016	04 FEB 2016	04 FEB 2016	
02/2016	31 MAR 2016	31 MAR 2016	
03/2016	26 MAY 2016	26 MAY 2016	
04/2016	21 JUL 2016	21 JUL 2016	
05/2016	15 SEP 2016	15 SEP 2016	
06/2016	10 NOV 2016	10 NOV 2016	
01/2017	05 JAN 2017	05 JAN 2017	
02/2017	02 MAR 2017	02 MAR 2017	
03/2017	27 APR 2017	27 APR 2017	
04/2017	22 JUN 2017	22 JUN 2017	
05/2017	17 AUG 2017	17 AUG 2017	
06/2017	12 OCT 2017	12 OCT 2017	
07/2017	07 DEC 2017	07 DEC 2017	
01/2018	01 FEB 2018	01 FEB 2018	
02/2018	29 MAR 2018	29 MAR 2018	
03/2018	24 MAY 2018	24 MAY 2018	
04/2018	19 JUL 2018	19 JUL 2018	
05/2018	13 SEP 2018	13 SEP 2018	

AIP AMENDMENT

NR/Year	*Publication date*	*Date inserted*	*Inserted by*
06/2018	08 NOV 2018	08 NOV 2018	
01/2019	03 JAN 2019	03 JAN 2019	
02/2019	28 FEB 2019	28 FEB 2019	
03/2019	25 APR 2019	25 APR 2019	
04/2019	20 JUN 2019	20 JUN 2019	
05/2019	15 AUG 2019	15 AUG 2019	
06/2019	10 OCT 2019	10 OCT 2019	
07/2019	05 DEC 2019	05 DEC 2019	
01/2020	30 JAN 2020	30 JAN 2020	
02/2020	26 MAR 2020	26 MAR 2020	
03/2020	21 MAY 2020	21 MAY 2020	
04/2020	16 JUL 2020	16 JUL 2020	

GEN 0.3 RECORD OF CURRENT AIP SUPPLEMENTS

NR/Year	*Subject*	*AIP section(s) affected*	*Period of validity (from/to)*	*Cancellation record*
058/2017	Paya Lebar Airport - Topless Cranes	AD	*13 APR 2017 / 26 OCT 2020*	
068/2017	Paya Lebar Airport - Obstacles	AD	*27 APR 2017 / 26 OCT 2020*	
121/2017	Paya Lebar Airport - Topless Cranes and Luffer Cranes	AD	*10 DEC 2017 / 30 SEP 2020*	
122/2017	Paya Lebar Airport - Luffer Cranes	AD	*10 DEC 2017 / 31 DEC 2020*	
123/2017	Paya Lebar Airport - Luffer Cranes	AD	*10 DEC 2017 / 31 DEC 2020*	
124/2017	Paya Lebar Airport - Luffer Crane	AD	*10 DEC 2017 / 31 DEC 2020*	
006/2018	Paya Lebar Airport - Topless Crane and Luffer Crane	AD	*22 JAN 2018 / 28 FEB 2021*	
018/2018	Paya Lebar Airport - Topless Cranes and Luffer Crane	AD	*25 APR 2018 / 27 OCT 2020*	
019/2018	Paya Lebar Airport - Luffer Crane	AD	*06 APR 2018 / 31 DEC 2020*	
020/2018	Paya Lebar Airport - Mobile Crane	AD	*06 APR 2018 / 03 FEB 2021*	
021/2018	Paya Lebar Airport - Luffer Crane and Saddle Cranes	AD	*06 APR 2018 / 31 DEC 2022*	
028/2018	Paya Lebar Airport - Saddle Cranes	AD	*20 JUN 2018 / 31 DEC 2022*	
029/2018	Paya Lebar Airport - Luffer Cranes	AD	*20 JUN 2018 / 31 DEC 2021*	
030/2018	Paya Lebar Airport - Luffer Crane and Topless Cranes	AD	*20 JUN 2018 / 31 DEC 2021*	
053/2018	Sembawang Aerodrome - Saddle Cranes	AD	*25 SEP 2018 / 31 DEC 2021*	
058/2018	Paya Lebar Airport - Luffer Crane	AD	*25 SEP 2018 / 14 AUG 2020*	
059/2018	Paya Lebar Airport - Topless Cranes	AD	*25 SEP 2018 / 31 AUG 2020*	
060/2018	Paya Lebar Airport - Topless Cranes	AD	*25 SEP 2018 / 01 SEP 2020*	
061/2018	Paya Lebar Airport - Luffer Cranes	AD	*25 SEP 2018 / 10 SEP 2020*	
062/2018	Paya Lebar Airport - Topless Cranes and Luffer Cranes	AD	*25 SEP 2018 / 31 DEC 2020*	
070/2018	Paya Lebar Airport - Luffer Cranes and Flat Top Cranes	AD	*13 NOV 2018 / 31 DEC 2020*	
071/2018	Paya Lebar Airport - Saddle Cranes	AD	*13 NOV 2018 / 31 DEC 2023*	
076/2018	Paya Lebar Airport - Topless Cranes	AD	*29 NOV 2018 / 30 NOV 2020*	
077/2018	Paya Lebar Airport - Luffer Crane	AD	*28 NOV 2018 / 18 NOV 2021*	
078/2018	Paya Lebar Airport - Luffer Cranes	AD	*28 NOV 2018 / 30 DEC 2022*	
006/2019	Paya Lebar Airport - Topless Cranes and Luffer Crane	AD	*30 JAN 2019 / 09 JAN 2021*	
007/2019	Tengah Aerodrome - Topless Cranes and Luffer Crane	AD	*30 JAN 2019 / 31 JAN 2021*	
008/2019	Paya Lebar Airport - Mobile Crane	AD	*31 JAN 2019 / 31 JAN 2021*	

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
009/2019	Paya Lebar Airport - Luffer Cranes	AD	*01 JUN 2019 / 31 MAY 2021*	
011/2019	Paya Lebar Airport - Mobile Crane	AD	*01 FEB 2019 / 22 DEC 2020*	
014/2019	Paya Lebar Airport - Topless Cranes	AD	*01 FEB 2019 / 31 JAN 2021*	
016/2019	Singapore Changi Airport - Updated information and data for Runway 02R/20L	AD	*15 FEB 2019* PERM	
028/2019	Paya Lebar Airport - Topless Cranes	AD	*27 MAR 2019 / 20 MAR 2021*	
029/2019	Paya Lebar Airport - Topless Cranes	AD	*27 MAR 2019 / 20 MAR 2021*	
030/2019	Paya Lebar Airport - Luffer Crane and Topless Cranes	AD	*27 MAR 2019 / 30 JUL 2021*	
031/2019	Paya Lebar Airport - Luffer Cranes	AD	*27 MAR 2019 / 28 JAN 2022*	
032/2019	Paya Lebar Airport - Topless Cranes	AD	*27 MAR 2019 / 09 MAR 2022*	
033/2019	Paya Lebar Airport - Luffer Crane	AD	*27 MAR 2019 / 31 DEC 2022*	
034/2019	Paya Lebar Airport - Saddle Cranes	AD	*27 MAR 2019 / 31 DEC 2022*	
035/2019	Paya Lebar Airport - Luffer Crane	AD	*27 MAR 2019 / 31 DEC 2022*	
042/2019	Paya Lebar Airport - Luffer Cranes	AD	*04 APR 2019 / 31 DEC 2020*	
043/2019	Paya Lebar Airport - Saddle Cranes	AD	*04 APR 2019 / 31 DEC 2020*	
044/2019	Paya Lebar Airport - Luffer Crane	AD	*04 APR 2019 / 13 MAR 2021*	
049/2019	Paya Lebar Airport - Topless Cranes	AD	*07 MAY 2019 / 30 DEC 2020*	
050/2019	Paya Lebar Airport - Crawler Crane	AD	*07 MAY 2019 / 30 NOV 2020*	
051/2019	Paya Lebar Airport - Luffer Crane	AD	*07 MAY 2019 / 22 APR 2021*	
052/2019	Paya Lebar Airport - Cranes and Piling Rig	AD	*07 MAY 2019 / 31 AUG 2020*	
053/2019	Paya Lebar Airport - Saddle Cranes and Luffer Crane	AD	*07 MAY 2019 / 31 DEC 2023*	
054/2019	Paya Lebar Airport - Topless Cranes	AD	*07 MAY 2019 / 30 SEP 2020*	
055/2019	Paya Lebar Airport - Topless Cranes	AD	*07 MAY 2019 / 25 APR 2021*	
060/2019	Paya Lebar Airport - Topless Crane	AD	*06 JUN 2019 / 14 NOV 2021*	
064/2019	Paya Lebar Airport - Luffing Crane	AD	*04 JUL 2019 / 30 AUG 2020*	
066/2019	Paya Lebar Airport - Luffing Crane	AD	*04 JUL 2019 / 16 JUN 2021*	
067/2019	Paya Lebar Airport - Topless Cranes	AD	*04 JUL 2019 / 30 JUN 2021*	
068/2019	Paya Lebar Airport - Luffing Crane	AD	*04 JUL 2019 / 30 DEC 2021*	
069/2019	Paya Lebar Airport - Luffing Crane	AD	*04 JUL 2019 / 30 DEC 2020*	
072/2019	Paya Lebar Airport - Luffing Cranes	AD	*19 AUG 2019 / 01 AUG 2020*	
073/2019	Paya Lebar Airport - Luffer Cranes	AD	*19 AUG 2019 / 31 DEC 2021*	

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
075/2019	Paya Lebar Airport - Luffing Crane	AD	*19 AUG 2019 / 31 DEC 2021*	
076/2019	Paya Lebar Airport - Luffer Cranes	AD	*19 AUG 2019 / 17 JUL 2020*	
084/2019	Paya Lebar Airport - Topless Cranes	AD	*10 SEP 2019 / 02 SEP 2020*	
085/2019	Paya Lebar Airport - Luffer Cranes	AD	*10 SEP 2019 / 30 SEP 2020*	
086/2019	Paya Lebar Airport - Luffing Crane	AD	*10 SEP 2019 / 01 OCT 2020*	
091/2019	Paya Lebar Airport - Cranes	AD	*10 SEP 2019 / 30 DEC 2021*	
094/2019	Paya Lebar Airport - Cranes	AD	*10 SEP 2019 / 28 AUG 2020*	
095/2019	Paya Lebar Airport - Mobile Cranes	AD	*10 SEP 2019 / 30 DEC 2020*	
096/2019	Paya Lebar Airport - Flat Top Cranes	AD	*10 SEP 2019 / 31 DEC 2020*	
097/2019	Paya Lebar Airport - Cranes	AD	*10 SEP 2019 / 31 DEC 2020*	
099/2019	Paya Lebar Airport - Luffer Cranes	AD	*10 SEP 2019 / 05 AUG 2020*	
100/2019	Paya Lebar Airport - Cranes	AD	*10 SEP 2019 / 31 DEC 2020*	
102/2019	Paya Lebar Airport - Luffer Crane	AD	*10 SEP 2019 / 17 JUL 2020*	
105/2019	Paya Lebar Airport - Cranes	AD	*10 OCT 2019 / 31 DEC 2020*	
106/2019	Paya Lebar Airport - Obstacles	AD	*10 OCT 2019 / 30 SEP 2020*	
107/2019	Paya Lebar Airport - Cranes	AD	*10 OCT 2019 / 01 OCT 2020*	
108/2019	Paya Lebar Airport - Cranes	AD	*10 OCT 2019 / 30 DEC 2020*	
110/2019	Paya Lebar Airport - Topless Cranes	AD	*10 OCT 2019 / 01 OCT 2020*	
112/2019	Sembawang Aerodrome - Crawler Cranes	AD	*10 OCT 2019 / 22 SEP 2020*	
114/2019	Paya Lebar Airport - Luffer Cranes	AD	*12 NOV 2019 / 02 NOV 2020*	
116/2019	Paya Lebar Airport - Luffer Cranes	AD	*12 NOV 2019 / 30 NOV 2020*	
117/2019	Paya Lebar Airport - Luffing Crane	AD	*12 NOV 2019 / 31 MAR 2021*	
118/2019	Paya Lebar Airport - Flat Top Cranes	AD	*12 NOV 2019 / 31 DEC 2020*	
119/2019	Paya Lebar Airport - Topless Cranes	AD	*12 NOV 2019 / 24 OCT 2020*	
120/2019	Paya Lebar Airport - Topless Cranes	AD	*12 NOV 2019 / 31 DEC 2020*	
121/2019	Paya Lebar Airport - Obstacles	AD	*12 NOV 2019 / 30 AUG 2020*	
122/2019	Paya Lebar Airport - Luffer Cranes	AD	*12 NOV 2019 / 31 OCT 2020*	
123/2019	Paya Lebar Airport - Mobile Crane	AD	*12 NOV 2019 / 31 DEC 2020*	
124/2019	Paya Lebar Airport - Cranes	AD	*12 NOV 2019 / 31 DEC 2020*	
125/2019	Paya Lebar Airport - Luffer Cranes	AD	*12 NOV 2019 / 31 DEC 2020*	

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
126/2019	Paya Lebar Airport - Luffer Cranes	AD	*12 NOV 2019 / 31 DEC 2022*	
128/2019	Paya Lebar Airport - Obstacles	AD	*05 DEC 2019 / 21 NOV 2020*	
129/2019	Paya Lebar Airport - Cranes	AD	*05 DEC 2019 / 20 NOV 2020*	
131/2019	Paya Lebar Airport - Cranes	AD	*31 DEC 2019 / 31 DEC 2020*	
136/2019	Paya Lebar Airport - Cranes	AD	*05 DEC 2019 / 31 DEC 2020*	
002/2020	Paya Lebar Airport - Luffing Crane	AD	*14 JAN 2020 / 31 DEC 2020*	
003/2020	Paya Lebar Airport - Topless Cranes	AD	*08 JAN 2020 / 05 JAN 2021*	
004/2020	Paya Lebar Airport - Mobile Cranes	AD	*08 JAN 2020 / 20 JUN 2021*	
005/2020	Paya Lebar Airport - Luffer Cranes	AD	*08 JAN 2020 / 15 DEC 2020*	
006/2020	Paya Lebar Airport - Topless Cranes	AD	*08 JAN 2020 / 31 DEC 2020*	
008/2020	Paya Lebar Airport - Luffing Crane	AD	*11 FEB 2020 / 05 APR 2021*	
009/2020	Paya Lebar Airport - Topless Cranes	AD	*11 FEB 2020 / 30 APR 2021*	
010/2020	Paya Lebar Airport - Luffer Crane	AD	*11 FEB 2020 / 30 SEP 2020*	
012/2020	Paya Lebar Airport - Luffer Crane	AD	*11 FEB 2020 / 01 FEB 2021*	
014/2020	Paya Lebar Airport - Luffer Cranes	AD	*11 FEB 2020 / 31 DEC 2020*	
015/2020	Paya Lebar Airport - Saddle Cranes	AD	*11 FEB 2020 / 31 DEC 2020*	
017/2020	Paya Lebar Airport - Luffing Crane	AD	*11 FEB 2020 / 31 DEC 2020*	
018/2020	Paya Lebar Airport - Luffer Crane	AD	*11 FEB 2020 / 31 JAN 2021*	
019/2020	Paya Lebar Airport - Luffer Crane	AD	*11 FEB 2020 / 31 JAN 2021*	
021/2020	Singapore Changi Airport - Long term closure of aircraft stand E5 at Terminal 2, Singapore Changi Airport	AD	*30 MAR 2020 / 30 DEC 2024*	
024/2020	Paya Lebar Airport - Mobile Cranes	AD	*10 MAR 2020 / 31 DEC 2020*	
025/2020	Paya Lebar Airport - Luffing Cranes	AD	*10 MAR 2020 / 31 DEC 2021*	
026/2020	Singapore Changi Airport - Works schedule and movement area restrictions pertaining to Changi East development works	AD	*29 MAR 2020 / 24 OCT 2020*	
028/2020	Paya Lebar Airport - Mobile Cranes	AD	*19 MAY 2020 / 31 DEC 2020*	
029/2020	Paya Lebar Airport - Luffer Cranes	AD	*19 MAY 2020 / 05 APR 2021*	
030/2020	Paya Lebar Airport - Luffer Cranes	AD	*19 MAY 2020 / 31 DEC 2020*	
031/2020	Paya Lebar Airport - Cranes	AD	*19 MAY 2020 / 31 MAR 2021*	
032/2020	Paya Lebar Airport - Luffing Cranes	AD	*19 MAY 2020 / 05 APR 2021*	
033/2020	Paya Lebar Airport - Cranes	AD	*19 MAY 2020 / 31 DEC 2021*	

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
034/2020	Paya Lebar Airport - Cranes	AD	*19 MAY 2020 / 31 DEC 2021*	
035/2020	Paya Lebar Airport - Luffing Crane	AD	*19 MAY 2020 / 30 DEC 2021*	
036/2020	Paya Lebar Airport - Cranes	AD	*19 MAY 2020 / 01 MAR 2021*	
037/2020	Paya Lebar Airport - Crawler Cranes	AD	*19 MAY 2020 / 10 APR 2021*	
038/2020	Paya Lebar Airport - Topless Cranes	AD	*19 MAY 2020 / 01 APR 2021*	
040/2020	Changes to Instrument Flight Procedure (IFP) Approach chart identification from RNAV (GNSS) to RNP	AD	*13 AUG 2020* PERM	
041/2020	Singapore Changi Airport - Re-designation of taxiways and taxilanes (Phase 3)	AD	*13 AUG 2020* PERM	
042/2020	Paya Lebar Airport - Crawler Crane	AD	*12 JUN 2020 / 05 MAY 2021*	
043/2020	Paya Lebar Airport - Topless Cranes	AD	*12 JUN 2020 / 31 MAY 2021*	
044/2020	Paya Lebar Airport - Obstacles	AD	*12 JUN 2020 / 31 DEC 2021*	
045/2020	Paya Lebar Airport - Topless Cranes	AD	*12 JUN 2020 / 01 MAY 2021*	
046/2020	Paya Lebar Airport - Luffer Crane	AD	*12 JUN 2020 / 31 MAR 2021*	
047/2020	Paya Lebar Airport - Saddle Crane	AD	*12 JUN 2020 / 16 APR 2021*	
048/2020	Paya Lebar Airport - Topless Cranes	AD	*31 JUL 2020 / 01 AUG 2021*	
049/2020	Paya Lebar Airport - Cranes	AD	*12 JUN 2020 / 15 MAY 2021*	
050/2020	Paya Lebar Airport - Mobile Crane	AD	*12 JUN 2020 / 30 APR 2021*	
051/2020	Paya Lebar Airport - Topless Crane	AD	*12 JUN 2020 / 12 APR 2021*	
052/2020	Paya Lebar Airport - Crawler Crane	AD	*12 JUN 2020 / 31 DEC 2021*	
053/2020	Sembawang Aerodrome - Saddle Cranes	AD	*15 JUN 2020 / 30 DEC 2021*	
054/2020	RSAF Aerial Flypast prior to and on Singapore's National Day, 09th August 2020	AD/ENR	*25 JUN 2020 / 09 AUG 2020*	
055/2020	Paya Lebar Airport - Cranes	AD	*16 JUL 2020 / 15 DEC 2020*	
056/2020	Paya Lebar Airport - Flat Top Cranes	AD	*16 JUL 2020 / 30 DEC 2021*	
057/2020	Paya Lebar Airport - Flat Top Cranes	AD	*16 JUL 2020 / 30 DEC 2021*	
058/2020	Sembawang Aerodrome - Mobile Crane	AD	*16 JUL 2020 / 24 JUN 2021*	

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GEN 0.4 CHECKLIST OF AIP PAGES

Part 1 – General (GEN)

GEN 0

GEN 0.1-1	26 MAR 2020
GEN 0.1-2	10 OCT 2019
GEN-0.1-3	08 NOV 2018
GEN 0.2-1	13 SEP 2018
GEN 0.2-2	16 JUL 2020
GEN 0.3-1	16 JUL 2020
GEN 0.3-2	16 JUL 2020
GEN 0.3-3	16 JUL 2020
GEN 0.3-4	16 JUL 2020
GEN 0.3-5	16 JUL 2020
GEN 0.4-1	16 JUL 2020
GEN 0.4-2	16 JUL 2020
GEN 0.4-3	16 JUL 2020
GEN 0.5-1	30 JAN 2020
GEN 0.6-1	30 JAN 2020
GEN 0.6-2	26 MAR 2020
GEN 0.6-3	30 JAN 2020

GEN 1

GEN 1.1-1	05 DEC 2019
GEN 1.1-2	25 APR 2019
GEN 1.2-1	15 SEP 2016
GEN 1.2-2	30 JAN 2020
GEN 1.2-3	30 JAN 2020
GEN 1.2-4	21 MAY 2020
GEN 1.2-5	30 JAN 2020
GEN 1.2-6	16 JUL 2020
GEN 1.2-7	30 JAN 2020
GEN 1.3-1	25 APR 2019
GEN 1.3-2	25 APR 2019
GEN 1.3-3	25 APR 2019
GEN 1.3-4	25 APR 2019
GEN 1.3-5	25 APR 2019
GEN-1.3/ARR PAX FLOW	25 APR 2019
GEN-1.3/DEP PAX FLOW 1	25 APR 2019
GEN-1.3/DEP PAX FLOW 2	25 APR 2019
GEN 1.4-1	20 JUN 2019
GEN 1.4-2	15 AUG 2019
GEN 1.4-3	15 AUG 2019
GEN 1.5-1	12 NOV 2015
GEN 1.6-1	26 MAR 2020
GEN 1.6-2	16 JUL 2020
GEN 1.6-3	16 JUL 2020
GEN 1.6-4	26 MAR 2020
GEN 1.7-1	03 JAN 2019
GEN 1.7-2	26 MAR 2020
GEN 1.7-3	26 MAR 2020
GEN 1.7-4	26 MAR 2020

GEN 2

GEN 2.1-1	12 NOV 2015
GEN 2.1-2	10 OCT 2019
GEN 2.2-1	02 MAR 2017
GEN 2.2-2	02 MAR 2017
GEN 2.2-3	02 MAR 2017
GEN 2.2-4	05 JAN 2017
GEN 2.2-5	10 NOV 2016
GEN 2.3-1	12 NOV 2015
GEN 2.3-2	12 NOV 2015
GEN 2.3-3	12 NOV 2015
GEN 2.4-1	25 APR 2019
GEN 2.5-1	28 FEB 2019
GEN-2.5-3	21 JUL 2016
GEN 2.6-1	12 NOV 2015
GEN 2.6-2	12 NOV 2015
GEN 2.7-1	05 DEC 2019

GEN 3

GEN 3.1-1	10 OCT 2019
GEN 3.1-2	10 OCT 2019
GEN 3.1-3	10 OCT 2019
GEN 3.1-4	10 OCT 2019
GEN 3.2-1	10 OCT 2019
GEN 3.2-2	31 MAR 2016
GEN 3.2-3	31 MAR 2016
GEN 3.2-4	16 JUL 2020
GEN 3.2-5	25 APR 2019
GEN 3.2-6	31 MAR 2016
GEN 3.3-1	12 NOV 2015
GEN 3.3-2	21 JUL 2016
GEN 3.4-1	12 NOV 2015
GEN 3.4-2	02 MAR 2017
GEN 3.4-3	02 MAR 2017
GEN 3.4-4	02 MAR 2017
GEN 3.4-5	12 NOV 2015
GEN-3.4-7	21 JUL 2016
GEN-3.4-9	21 JUL 2016
GEN 3.5-1	25 APR 2019
GEN 3.5-2	16 JUL 2020
GEN 3.5-3	25 APR 2019
GEN 3.5-4	08 NOV 2018
GEN 3.5-5	10 OCT 2019
GEN 3.5-6	12 NOV 2015
GEN 3.5-7	25 APR 2019
GEN 3.5-8	25 APR 2019
GEN 3.5-9	08 NOV 2018
GEN 3.6-1	12 NOV 2015
GEN 3.6-2	12 NOV 2015
GEN 3.6-3	12 NOV 2015
GEN 3.6-4	12 NOV 2015
GEN-3.6-5	21 JUL 2016

GEN 4

GEN 4.1-1	15 SEP 2016
GEN 4.2-1	24 MAY 2018
GEN 4.2-2	12 NOV 2015
GEN 4.2-3	12 NOV 2015
GEN 4.2-4	12 NOV 2015
GEN 4.2-5	12 NOV 2015
GEN 4.2-6	12 NOV 2015

Part 2 – EN-ROUTE (ENR)

ENR 0

ENR 0.6-1	08 NOV 2018
ENR 0.6-2	15 AUG 2019
ENR 0.6-3	15 AUG 2019
ENR 0.6-4	30 JAN 2020
ENR 0.6-5	30 JAN 2020
ENR 0.6-6	26 MAR 2020

ENR 1

ENR 1.1-1	25 APR 2019
ENR 1.1-2	12 NOV 2015
ENR 1.1-3	12 NOV 2015
ENR 1.1-4	12 NOV 2015
ENR 1.1-5	12 NOV 2015
ENR 1.1-6	12 NOV 2015
ENR 1.1-7	12 NOV 2015
ENR 1.1-8	12 NOV 2015
ENR 1.1-9	12 NOV 2015
ENR 1.1-10	08 NOV 2018
ENR 1.1-11	08 NOV 2018
ENR 1.1-12	08 NOV 2018
ENR 1.1-13	08 NOV 2018
ENR 1.1-14	08 NOV 2018
ENR 1.1-15	08 NOV 2018
ENR 1.2-1	21 JUL 2016
ENR 1.3-1	12 NOV 2015
ENR 1.4-1	12 NOV 2015
ENR 1.5-1	12 NOV 2015
ENR 1.5-2	17 AUG 2017
ENR 1.5-3	10 OCT 2019
ENR 1.5-4	10 OCT 2019
ENR 1.6-1	12 NOV 2015
ENR 1.6-2	12 NOV 2015
ENR 1.6-3	12 NOV 2015
ENR 1.6-4	17 AUG 2017
ENR 1.6-5	15 AUG 2019
ENR 1.6-6	29 MAR 2018
ENR 1.6-7	29 MAR 2018
ENR 1.6-8	29 MAR 2018
ENR-1.6-9	21 JUL 2016
ENR-1.6-11	21 JUL 2016
ENR 1.7-1	15 AUG 2019
ENR 1.7-2	15 AUG 2019
ENR 1.7-3	15 AUG 2019
ENR 1.7-4	15 AUG 2019
ENR 1.7-5	15 AUG 2019
ENR 1.7-6	15 AUG 2019
ENR 1.7-7	15 AUG 2019
ENR 1.8-1	10 OCT 2019
ENR 1.8-2	15 AUG 2019
ENR 1.8-3	15 AUG 2019
ENR 1.8-4	15 AUG 2019
ENR 1.8-5	15 AUG 2019
ENR 1.8-6	15 AUG 2019
ENR 1.8-7	29 MAR 2018
ENR 1.8-8	29 MAR 2018
ENR 1.8-9	29 MAR 2018
ENR 1.8-10	29 MAR 2018
ENR 1.8-11	29 MAR 2018
ENR 1.8-12	15 AUG 2019
ENR 1.8-13	15 AUG 2019
ENR 1.8-14	15 AUG 2019
ENR 1.8-15	15 AUG 2019
ENR 1.8-16	15 AUG 2019
ENR 1.8-17	15 AUG 2019
ENR 1.8-18	15 AUG 2019
ENR 1.8-19	15 AUG 2019
ENR 1.8-20	15 AUG 2019
ENR 1.8-21	15 AUG 2019
ENR 1.8-22	15 AUG 2019
ENR 1.8-23	15 AUG 2019
ENR 1.8-24	15 AUG 2019
ENR 1.8-25	05 DEC 2019
ENR 1.8-26	15 AUG 2019
ENR 1.8-27	15 AUG 2019
ENR 1.8-28	15 AUG 2019
ENR 1.8-29	15 AUG 2019
ENR 1.9-1	30 JAN 2020
ENR 1.9-2	30 JAN 2020
ENR 1.9-3	30 JAN 2020
ENR 1.9-4	30 JAN 2020
ENR 1.9-5	30 JAN 2020
ENR 1.9-6	30 JAN 2020
ENR 1.10-1	10 OCT 2019
ENR 1.10-2	10 OCT 2019
ENR 1.10-3	29 MAR 2018
ENR 1.11-1	16 JUL 2020
ENR 1.12-1	12 NOV 2015
ENR 1.12-2	12 NOV 2015
ENR 1.12-3	12 NOV 2015
ENR 1.12-4	12 NOV 2015
ENR 1.13-1	12 NOV 2015
ENR 1.14-1	10 DEC 2015
ENR 1.14-2	15 SEP 2016
ENR-1.14-3 to ENR-1.14-4	15 SEP 2016
ENR-1.14-5 to ENR-1.14-6	15 SEP 2016
ENR-1.14-7 to ENR-1.14-8	15 AUG 2019

ENR 2

ENR 2.1-1	03 JAN 2019
ENR 2.1-2	03 JAN 2019
ENR 2.1-3	03 JAN 2019
ENR 2.1-4	25 APR 2019
ENR-2.1-7	21 JUL 2016
ENR-2.1-9	29 MAR 2018
ENR-2.1-11A	21 JUL 2016
ENR-2.1-11B	21 JUL 2016
ENR-2.1-13	21 JUL 2016
ENR-2.1-15	28 FEB 2019

ENR 3

ENR 3.1-1	02 MAR 2017
ENR 3.1-2	02 MAR 2017
ENR 3.1-3	28 FEB 2019

AD 2.WSSL-14	15 AUG 2019
AD 2.WSSL-15	16 JUL 2020
AD 2.WSSL-16	10 OCT 2019
AD 2.WSSL-17	15 AUG 2019
AD 2.WSSL-18	15 AUG 2019
AD 2.WSSL-19	15 AUG 2019
AD 2.WSSL-20	10 OCT 2019
AD 2.WSSL-21	15 AUG 2019
AD 2.WSSL-22	10 OCT 2019
AD 2.WSSL-23	10 OCT 2019
AD 2.WSSL-24	15 AUG 2019
AD 2.WSSL-25	10 OCT 2019
AD-2-WSSL-ADC-1	16 JUL 2020
AD-2-WSSL-ADC-2	16 JUL 2020
AD-2-WSSL-ADC-3	16 JUL 2020
AD-2-WSSL-AOC-1	16 JUL 2020
AD-2-WSSL-AOC-2	16 JUL 2020
AD-2-WSSL-VAC-1	16 JUL 2020
AD-2-WSSL-VAC-2	16 JUL 2020
AD-2-WSSL-VAC-3	16 JUL 2020
AD-2-WSSL-VAC-4	16 JUL 2020
AD-2-WSSL-VDC-1	16 JUL 2020
AD-2-WSSL-VDC-2	16 JUL 2020
AD-2-WSSL-VFR-1	15 AUG 2019
AD-2-WSSL-IFR-1	10 OCT 2019
AD-2-WSSL-IFR-2	10 OCT 2019
AD 2.WSAP-1	16 JUL 2020
AD 2.WSAP-2	19 JUL 2018
AD 2.WSAP-3	10 OCT 2019
AD 2.WSAP-4	19 JUL 2018
AD 2.WSAP-5	10 OCT 2019
AD 2.WSAP-6	12 OCT 2017
AD 2.WSAP-7	19 JUL 2018
AD 2.WSAP-8	16 JUL 2020
AD 2.WSAP-9	16 JUL 2020
AD 2.WSAP-10	16 JUL 2020
AD 2.WSAP-11	25 APR 2019
AD-2-WSAP-ADC-1	16 JUL 2020
AD-2-WSAP-ADC-2	16 JUL 2020
AD-2-WSAP-AOC-1	16 JUL 2020
AD-2-WSAP-IAC-1	16 JUL 2020
AD-2-WSAP-IAC-2	16 JUL 2020
AD-2-WSAP-IAC-3	16 JUL 2020
AD-2-WSAP-IAC-4	16 JUL 2020
AD-2-WSAP-IAC-5	16 JUL 2020
AD-2-WSAP-IAC-6	16 JUL 2020
AD 2.WSAT-1	16 JUL 2020
AD 2.WSAT-2	26 MAR 2020
AD 2.WSAT-3	25 APR 2019
AD 2.WSAT-4	25 APR 2019
AD 2.WSAT-5	16 JUL 2020
AD 2.WSAT-6	16 JUL 2020
AD 2.WSAT-7	12 NOV 2015
AD 2.WSAT-8	12 NOV 2015
AD-2-WSAT-ADC-1	16 JUL 2020
AD 2.WSAG-1	16 JUL 2020
AD 2.WSAG-2	08 NOV 2018
AD 2.WSAG-3	16 JUL 2020
AD 2.WSAG-4	16 JUL 2020
AD 2.WMKJ-1	12 NOV 2015
AD 2.WIDD-1	12 NOV 2015
AD 2.WIDD-2	12 NOV 2015
AD-2-WIDD-SID-1	12 NOV 2015
AD-2-WIDD-SID-2	12 NOV 2015
AD-2-WIDD-SID-3	12 NOV 2015
AD-2-WIDD-SID-4	12 NOV 2015
AD-2-WIDD-STAR-1	12 NOV 2015
AD-2-WIDD-STAR-2	12 NOV 2015
AD-2-WIDD-STAR-3	12 NOV 2015
AD-2-WIDD-STAR-4	12 NOV 2015
AD 2.WIDN-1	03 JAN 2019
AD 2.WIDN-2	03 JAN 2019
AD-2-WIDN-SID-1	12 NOV 2015
AD-2-WIDN-SID-2	12 NOV 2015
AD-2-WIDN-SID-3	12 NOV 2015
AD-2-WIDN-SID-4	12 NOV 2015
AD-2-WIDN-STAR-1	12 NOV 2015
AD-2-WIDN-STAR-2	12 NOV 2015
AD-2-WIDN-STAR-3	21 JUL 2016
AD-2-WIDN-STAR-4	12 NOV 2015

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5.1.3.5 All business aviation aircraft operating as executive jet charter may be permitted to remain on the ground or layover at Singapore Changi Airport.

5.1.3.6 All business aviation aircraft shall park in a nose-in position and be pushed back with the aid of an aircraft tow-bar and tow-tractor. Reverse thrust or variable pitch propellers shall not be used when parking or pushing back aircraft. The aircraft operator must ensure that an appropriate tow-bar for the aircraft type is available to facilitate push back operations from the aircraft stand. The aircraft operators may use their own tow-bar or approach ground handling agents in either Seletar or Singapore Changi Airport to secure the appropriate tow-bar.

5.1.3.7 All passengers of the business aviation flight will have to clear CIQ via the Commercially-Important-Persons facility located beside Terminal 2.

5.1.3.8 Requests to handle executive jet charter or charter flights via the main terminals are to be sent via email to csc@changiairport.com for exceptional consideration at all times.

5.1.3.9 All business aviation flights must engage aground handling agent at Singapore Changi Airport.

5.1.3.10 The appropriate legislation dealing with non-scheduled flights for hire or reward is contained in PART III - *Permits For Journeys Other Than Scheduled Journeys* of the Air Navigation (Licensing of Air Services) Regulations. Any person who uses any aircraft in contravention of the provisions of Regulation 15 of the legislation shall be guilty of an offence and shall be liable on conviction to a fine not exceeding S$2,500 or to imprisonment for a term not exceeding 3 months or to both and in the case of a second or subsequent offence, to a fine not exceeding S$20,000 or to imprisonment for a term not exceeding 2 years or to both.

5.1.3.11 **Permit Fees**

(a) Normal Permits

The following fees shall be paid to the Authority [in accordance with Regulation 18 of the Air Navigation (Licensing of Air Services) Regulations] to obtain a permit which must be applied at least 3 whole working days before the first flight:

i. S$84 for a single one-way or return flight;
ii. S$162 for 2 or more one-way or return flights but not more than 5 such flights;
iii. S$326 for 5 one-way or return flights but not more than 10 such flights; or
iv. S$810 for more than 10 one-way or return flights.

(b) Express Permits

Operators who wish to obtain a permit under 3 working days, but at least 24 hours before the flight, should contact the Duty Officer at +65 98331775 and submit a complete application via this weblink: https://appserver1.caas.gov.sg/ATLAS. The following fee shall be paid:

i. S$252 for a single one-way or return flight.

Note 1: "Working Day" means:

i. a period that begins at 8.30am and ends at 6pm on any Monday to Thursday that CAAS is open for business; and
ii. a period that begins at 8.30am and ends at 5.30pm on any Friday that CAAS is open for business.

Note 2: Any application that is made after the close of business shall be deemed to have been made on the next working day.

Definitions:

Non-scheduled flight - a flight for the carriage of passengers, mail or cargo by air for hire and reward on journeys other than scheduled.

Business aviation flight - a flight that is owned and operated privately by a business corporation or chartered privately by business or corporate executives for non-revenue purposes.

Charterer - a person, company or corporate body who charters the aircraft and whose name and address appear in the Aircraft Charter Agreement.

Operator- in relation to an aircraft, the person for the time being having the business management of that aircraft.

5.2 DOCUMENTARY REQUIREMENTS FOR CLEARANCE OF AIRCRAFT

5.2.1 Same requirements as for SCHEDULED FLIGHTS.

5.3 PERMIT CONDITIONS

5.3.1 The Director-General of Civil Aviation may attach such conditions to a permit as he considers necessary.

5.4 APPLICATION FOR DIPLOMATIC CLEARANCE FOR FOREIGN STATE AIRCRAFT

5.4.1 *Procedures for Applying Diplomatic Clearance for Landing and Overflight for Foreign State Aircraft in Singapore*

← 5.4.1.1 Except where otherwise agreed, all Foreign State aircraft intending to land at or overfly Singapore are to obtain diplomatic clearance for such landing or overflight from the Ministry of Foreign Affairs, giving information as in para 5.4.2.

5.4.1.2 The application is to be made giving at least 14 days' notice.

5.4.2 *Information to be provided when applying for Diplomatic Clearance*

5.4.2.1 All applications for diplomatic clearance should contain the following information:

a. Name of Mission/Organisation;
b. Liaison Officer;
c. Telephone Number;
d. Number and Type of Aircraft;
e. Callsign;
f. Aircraft Registration;
g. Full flight itinerary;
h. Route after entering and before leaving Singapore FIR;
i. Date of Arrival;
j. Time of Arrival;
k. Date of Departure;
l. Time of Departure;
m. Arrival from;
n. Departing to;
o. Airfield requested;
p. Name of Pilot;
q. Number of Crew;
r. Number of Passengers;
s. If VIP flight, Name of VIP and number of other officials;
t. Purpose;
u. Photograph and sensory equipment if any;
v. Nature of freight or cargoes carried if any;
w. Dangerous cargoes, if any (e.g. arms, ammunition, explosives, toxic chemicals);
x. Types of services required (e.g. type of fuel, APU/GPU, ground handling etc.);
y. Additional/Special request

Note: Aircraft used in military, customs or police services are deemed to be State aircraft.

6 APPLICATION FOR TEST FLIGHTS

6.1 All applications for test flights are subject to prior approval.

6.2 All applications are to be made at least 2 working days but not more than 2 weeks in advance. If notice is not complied with, the application may not be considered.

6.3 Applicants should provide details as listed in items a. to e. below and ensure that the documents as listed in items f. to h. of the aircraft undergoing test flights remain valid during the period of operation:

a. Aircraft Registration;
b. Aircraft Callsign;
c. Aircraft Type;
d. Date / Time / Duration of flight;
e. Point of Departure and Arrival;
f. Certificate of Registration;
g. Certificate of Airworthiness;
h. A Permit to Fly, issued by CAAS, in the absence of a valid Certificate of Airworthiness.

GEN 1.6 SUMMARY OF NATIONAL REGULATIONS AND INTERNATIONAL AGREEMENTS/CONVENTIONS

1 LIST OF CIVIL AVIATION LEGISLATION, AIR NAVIGATION REGULATIONS AND ORDERS

The following is a list of legislation (Acts and subsidiary legislation) affecting aviation and air navigation in the Republic of Singapore together with the International Agreements/Conventions acceded to by the Republic of Singapore. It is essential that anyone engaged in air operations be acquainted with the relevant legal documents.

Copies of the legislation may be obtained as follows:

Electronic versions of the legislation may be freely accessed at
http://sso.agc.gov.sg
http://www.caas.gov.sg

Electronic versions of all Singapore legislation may be accessed via subscription to Lawnet at
http://www.lawnet.com.sg

Print copies of all the legislation may be purchased (by post) from:

Post:
Toppan Leefung Pte. Ltd.,
No. 1 Kim Seng Promenade, #18-01,
Great World City, East Tower
Singapore 237994.
Tel: (65) 68269600
Fax: (65) 68203341
URL: www.toppanleefung.com

1.1 CIVIL AVIATION LEGISLATION

No	Legislation	Citation
Civil Aviation Authority of Singapore Act & related legislation		
1	Civil Aviation Authority of Singapore Act	Cap. 41 (2014 Rev Ed.)
2	Civil Aviation Authority of Singapore (Airport Development Levy) Order 2018	S437/2018
3	Civil Aviation Authority of Singapore (Aviation Levy) Order 2018	S522/2018
4	Civil Aviation Authority of Singapore (Changi Airport) By-laws 2009	S313/2009
5	Civil Aviation Authority of Singapore (Changi Airport) Notification 2009	S293/2009
6	Civil Aviation Authority of Singapore (Composition of Offences) Regulations 2009	S315/2009
7	Civil Aviation Authority of Singapore (Licensing of Airport Operators) Regulations 2009	S311/2009
8	Civil Aviation Authority of Singapore (Price Control of Aeronautical Charges) Rules 2009	S298/2009
9	Civil Aviation Authority of Singapore (Seletar Airport) By-laws 2009	S314/2009
10	Civil Aviation Authority of Singapore (Seletar Airport) Notification 2009	S294/2009
11	Delegation of Powers	Cap. 41, N1
Air Navigation Act & related legislation		
12	Air Navigation Act	Cap. 6 (2014 Rev Ed.)
13	Air Navigation Order	Cap. 6, O2 (1990 Rev Ed.)
14	Air Navigation (101 - Unmanned Aircraft Operations) Regulations 2019	S833/2019
15	Air Navigation (119 – Air Operator Certification) Regulations 2018	S443/2018
16	Air Navigation (121 – Commercial Air Transport by Large Aeroplanes) Regulations 2018	S444/2018
17	Air Navigation (125 – Complex General Aviation) Regulations 2018	S501/2018

No	Legislation	Citation
18	Air Navigation (135 – Commercial Air Transport by Helicopters and Small Aeroplanes) Regulations 2018	S445/2018
19	Air Navigation (137 – Aerial Work) Regulations 2018	S502/2018
20	Air Navigation (91 – General Operating Rules) Regulations 2018	S441/2018
21	Air Navigation (98 – Special Operations) Regulations 2018	S442/2018
22	Air Navigation (99 - Breath Testing for Alcohol) Regulations 2019	S177/2019
23	Air Navigation (Flight Crew Recency - Exemption) Order 2020	S347/2020
← 24	Air Navigation (Investigation of Accidents and Incidents) Order	Cap. 6, O7
← 25	Air Navigation (Wreck and Salvage of Aircraft) Regulations	Cap. 6, RG 1
← 26	Air Navigation (Aviation Security) Order	Cap. 6, O5
← 27	Air Navigation (Regulated Air Cargo Agents) Regulations 2017	S166/2017
← 28	Air Navigation (Protected Areas) Order 2015	S350/2015
← 29	Air Navigation (Protected Areas) (No. 2) Order 2015	S435/2015
← 30	Air Navigation (Composition of Offences) Rules 2017	S667/2017
← 31	Air Navigation (Delegation of Powers) Notification	Cap. 6, N3
← 32	Designation of Authorised Persons	Cap. 6, N2
← 33	Air Navigation (Licensing of Air Services) Regulations	Cap. 6, RG 2
← 34	Air Navigation (Paya Lebar and Tengah Aerodrome Fees) Order	Cap. 6, O1
← 35	Air Navigation (Prohibited Flights) Order	Cap. 6, O6
← 36	Use of Seletar Aerodrome	Cap. 6, N1
Other Acts & related legislation		
← 37	Carriage by Air Act	Cap. 32A (2001 Rev Ed.)
← 38	Carriage by Air (Parties to Conventions) Order	Cap. 32A, O1
← 39	Carriage by Air (Singapore Currency Equivalents) Order	Cap. 32A, O2
← 40	Carriage by Air (Montreal Convention, 1999) Act	Cap. 32B (2008 Rev Ed.)
← 41	Carriage by Air (Montreal Convention, 1999) (Exclusion from Convention) Order	Cap. 32B, O1
← 42	Tokyo Convention Act	Cap. 327 (1985 Rev Ed.)
← 43	Tokyo Convention (Convention Countries) Notification	Cap. 327, N1
← 44	Tokyo Convention (Protocol Countries) Notification 2019	S893/2019
← 45	Hijacking of Aircraft and Protection of Aircraft and International Airports Act	Cap. 124 (1997 Rev Ed.)
← 46	International Interests in Aircraft Equipment Act	Cap. 144B (2012 Rev Ed.)
← 47	Infrastructure Protection Act 2017	Act 41 of 2017
← 48	Immigration Act	Cap. 133 (2008 Rev Ed.)
← 49	Immigration (Authorised Places of Entry and Departure, and Rates) Notification 2012	S627/2012
← 50	Immigration Regulations	Cap. 133, RG 1
← 51	Arms and Explosives Act	Cap. 13 (2003 Rev Ed.)
← 52	Arms and Explosives (Aircraft Exemption) Rules	Cap. 13, R3
← 53	Arms and Explosives (Explosives) Rules	Cap. 13, R2
← 54	Arms and Explosives (Movement Control) Rules	Cap. 13, R4
← 55	International Organisations (Immunities and Privileges) Act	Cap. 145 (2013 Rev Ed.)
← 56	International Organisations (Immunities and Privileges) (International Civil Aviation Organisation) Order	Cap. 145, OR 4

1.2 OTHER RELEVANT LEGISLATION

No	Legislation	Citation
1	Infectious Diseases Act	Cap. 137 (2003 Rev Ed.)
2	Infectious Diseases (Quarantine) Regulations	Cap. 137, RG 1
3	Infectious Diseases (Certificates of Vaccination or Other Prophylaxis) Regulations 2008	S611/2008
4	Arms and Explosives (Arms) Rules	Cap. 13, R1
5	Inspector of Explosives	Cap. 13, N1
6	Arms Offences Act	Cap. 14 (2008 Rev Ed.)

Note: "Cap." means "Chapter ", unless otherwise stated.

1.3 INTERNATIONAL CONVENTIONS AND PROTOCOLS

No	Legislation
1	Convention on International Civil Aviation, done at Chicago on 7 December 1944
2	International Air Services Transit Agreement, signed at Chicago on 7 December 1944
3	Protocol Relating to an Amendment to the Convention on International Civil Aviation [Article 83 bis], signed at Montreal on 6 October 1980
4	Convention on Offences and Certain Other Acts Committed on Board Aircraft, signed at Tokyo on 14 September 1963
5	Protocol to Amend the Convention on Offences and Certain Other Acts Committed on Board Aircraft, done at Montreal on 4 April 2014
6	Convention for the Suppression of Unlawful Seizure of Aircraft, signed at The Hague on 16 December 1970
7	Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation,signed at Montreal on 23 September 1971
8	Protocol for the Suppression of Unlawful Acts of Violence at Airports Serving International Civil Aviation, Supplementary to the Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation, done at Montreal on 23 September 1971, signed at Montreal on 24 February 1988
9	Convention on the Marking of Plastic Explosives for the Purpose of Detection, signed at Montreal on 1 March 1991
10	Convention for the Unification of Certain Rules Relating to International Carriage by Air, signed at Warsaw on 12 October 1929
11	Protocol to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air signed at Warsaw on 12 October 1929, done at The Hague on 28 September 1955
12	Montreal Protocol No. 4 to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air, signed at Warsaw on 12 October 1929, signed at Montreal on 25 September 1975
13	Convention for the Unification of Certain Rules for International Carriage by Air, signed at Montreal on 28 May 1999
14	Convention on International interests in Mobile Equipment, signed at Cape Town on 16 November 2001
15	Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Aircraft Equipment, signed at Cape Town on 16 November 2001
16	Protocol for the Amendment Agreement on the Joint Financing of Certain Air Navigation Services in Iceland (1956) as amended in 1982 and 2008
17	Protocol for the Amendment Agreement on the Joint Financing of Certain Air Navigation Services in Greenland (1956) as amended in 1982 and 2008
18	The International COSPAS-SARSAT Programme Agreement, done at Paris on 1 July 1988

2 TAXATION IN THE FIELD OF INTERNATIONAL AIR TRANSPORT

2.1 Petroleum exemptions and income tax

a. Petroleum for aircraft is granted Goods and Services Tax (GST) relief under item 11 of the Schedule to the GST (Imports Relief) Order (2001 Rev Ed.).

b. The matter of income tax on air transport is contained within Section 12(2) of the Income Tax Act (2014 Rev Ed.).

Where a non-resident person carries on either:

i. the business of shipowner or charterer, or

ii. the business of air transport,

and any ship or aircraft owned or chartered by him calls at a port, an aerodrome or an airport in Singapore, his full profits arising from the carriage of passengers, mail, livestock or goods shipped, or loaded into an aircraft, in Singapore shall be deemed to accrue in Singapore.

This subsection shall not apply to passengers, mail, livestock or goods which are brought to Singapore solely for transhipment, or for transfer from one aircraft to another or from an aircraft to a ship or from a ship to an aircraft.

2.2 Capital gains tax, or income on wealth, etc.

There is no capital gains tax, or income on wealth, etc., which are chargeable on the sale or use of international air transport.

k. **Visual Approach Chart - ICAO**

This chart is produced for aerodromes used by civil aviation where:

* only limited navigation facilities are available; or
* radio communication facilities are not available; or
* no adequate aeronautical charts of the aerodrome and its surroundings at 1:500 000 or greater scale are available; or
* visual approach procedures have been established

The aeronautical data shown include information on aerodromes obstacles, designated airspace, visual approach information, radio navigation aids and communication facilities, as appropriate.

5 LIST OF AERONAUTICAL CHARTS AVAILABLE

GEN 3.2.5 LIST OF AERONAUTICAL CHARTS AVAILABLE					
Title of Chart Series	*Scale*	*Name and/or number*		*Price ($)*	*Date*
World Aeronautical Chart ICAO (WAC)	1:1 000 000		WAC 2860	In AIP	30 JAN 20
Enroute Chart ICAO (ENRC)			ERC 6-1	In AIP	15 AUG 19
Instrument Approach Chart ICAO (IAC)		***Singapore Changi***			
	1:400 000	RWY 02L - ICW ILS/DME	AD-2-WSSS-IAC-1	In AIP	16 JUL 20
	1:400 000	RWY 02C - ICE ILS/DME	AD-2-WSSS-IAC-2	In AIP	16 JUL 20
	1:400 000	RWY 20R - ICH ILS/DME	AD-2-WSSS-IAC-5	In AIP	16 JUL 20
	1:400 000	RWY 20C - ICC ILS/DME	AD-2-WSSS-IAC-6	In AIP	16 JUL 20
	1:400 000	RWY 20C - VTK DVOR/DME	AD-2-WSSS-IAC-7	In AIP	16 JUL 20
	1:400 000	RWY 02L - RNAV(GNSS)	AD-2-WSSS-IAC-9	In AIP	16 JUL 20
	1:400 000	RWY 02C - RNAV(GNSS)	AD-2-WSSS-IAC-10	In AIP	16 JUL 20
	1:400 000	RWY 20R - RNAV(GNSS)	AD-2-WSSS-IAC-11	In AIP	16 JUL 20
	1:400 000	RWY 20C - RNAV(GNSS)	AD-2-WSSS-IAC-12	In AIP	16 JUL 20
		Paya Lebar			
	1:400 000	RWY 20 - PU DVOR/DME	AD-2-WSAP IAC-1	In AIP	16 JUL 20
	1:400 000	RWY 02 - PU DVOR/DME	AD-2-WSAP IAC-2	In AIP	16 JUL 20
	1:400 000	RWY 20 - IPS ILS/DME	AD-2-WSAP IAC-3	In AIP	16 JUL 20
	1:400 000	RWY 02 - IPN ILS/DME	AD-2-WSAP IAC-4	In AIP	16 JUL 20
	1:400 000	RWY 02 - RNAV(GNSS)	AD-2-WSAP-IAC-5	In AIP	16 JUL 20
	1:400 000	RWY 20 - RNAV(GNSS)	AD-2-WSAP-IAC-6	In AIP	16 JUL 20
Visual Approach Chart ICAO (VAC)	1:400 000	***Singapore Changi***	AD-2-WSSS-VAC-1	In AIP	16 JUL 20
		Seletar			
	1:100 000	RWY 03	AD-2-WSSL-VAC-1	In AIP	16 JUL 20
	1:100 000	RWY 21	AD-2-WSSL-VAC-2	In AIP	16 JUL 20
	1:100 000	RWY 03	AD-2-WSSL-VAC-3	In AIP	16 JUL 20
	1:100 000	RWY 21	AD-2-WSSL-VAC-4	In AIP	16 JUL 20
Visual Departure Chart		***Seletar***			
	1:100 000	RWY 03	AD-2-WSSL-VDC-1	In AIP	16 JUL 20
	1:100 000	RWY 21	AD-2-WSSL-VDC-2	In AIP	16 JUL 20
Aerodrome Chart ICAO (AC)		***Singapore Changi***	AD-2-WSSS-ADC-2	In AIP	16 JUL 20
		Seletar	AD-2-WSSL-ADC-1	In AIP	16 JUL 20
		Paya Lebar	AD-2-WSAP-ADC-1	In AIP	16 JUL 20
Aerodrome Obstacle Chart ICAO TYPE A (AOC)		***Singapore Changi***			
	1:10 000	RWY 20R/02L	AD-2-WSSS-AOC-1	In AIP	16 JUL 20
	1:10 000	RWY 20C/02C	AD-2-WSSS-AOC-2	In AIP	16 JUL 20
		Seletar			
	1:10 000	RWY 03/21	AD-2-WSSL-AOC-1	In AIP	16 JUL 20
		Paya Lebar			
	1:20 000	RWY 20/02	AD-2-WSAP-AOC-1	In AIP	16 JUL 20
Aerodrome Obstacle Chart ICAO TYPE B (AOC)		***Singapore Changi***			
	1:20 000	RWY 02L/20R and 02C/20C	AD-2-WSSS-AOC-3	In AIP	16 JUL 20
		Seletar			
	1:20 000	RWY 03/21	AD-2-WSSL-AOC-2	In AIP	16 JUL 20
Precision Approach Terrain Chart ICAO (PATC)		***Singapore Changi***			
	1:2 500	RWY 02L	AD-2-WSSS-PATC-1	In AIP	10 OCT 19
	1:2 500	RWY 20C	AD-2-WSSS-PATC-2	In AIP	01 FEB 18

GEN 3.5 METEOROLOGICAL SERVICES

1 RESPONSIBLE SERVICE

1.1 The meteorological services for civil aviation are provided by the Meteorological Service Singapore of the National Environment Agency.

Post:
THE DIRECTOR-GENERAL
Meteorological Service Singapore
Singapore Changi Airport,
P.O. Box 8
SINGAPORE 918141
Tel: (65) 65457190(HQ)
(65) 65425059 / (65) 65422837 (MET Office)
Fax: (65) 65457192 (HQ)
(65) 65425026 (MET Office)
AFS: WSSSYMYX
URL: www.weather.gov.sg

1.2 The service is provided in accordance with the provisions contained in the following ICAO documents:

Annex 3 – *Meteorological Service for International Air Navigation*
Doc 7030 – *Regional Supplementary Procedures Part 3 - Meteorology*

1.3 Differences to these provisions are detailed in subsection GEN 1.7.

2 AREA OF RESPONSIBILITY

2.1 Area meteorological watch is provided for the Singapore FIR.

3 METEOROLOGICAL OBSERVATIONS AND REPORTS

TABLE GEN 3.5.3 Meteorological Observations and Reports

Name of Station/ Location Indicator	*Type & Frequency of Observation/ Automatic Observing Equipment*	*Types of MET Reports & Supplementary Information included*	*Observation System & Sites (s)*	*Hours of Operation*	*Climatological Information*
1	2	3	4	5	6
SINGAPORE/ Singapore Changi WSSS	Half hourly plus special observations	METAR SPECI TREND WS	a. Ultrasonic Wind Sensor at MET station situated 345m west of centre of RWY 02L/20R. (wind report in METAR and SPECI taken from this measurement). b. Cup anemometers and wind vanes at ends and middle of both runways. c. Windsocks at ends of both runways. d. Transmissometers at both ends and in the middle of both runways. e. Low level wind shear observations made continuously by system of 13 surface wind sensors located in the airport and its vicinity. f. MET Doppler Weather Radar detecting windshear within 20km and monitoring storms up to 480km.	H24	Climatological Summaries available at Meteorological Service Singapore of the National Environment Agency.
SINGAPORE/ Seletar WSSL	Hourly plus special observations	METAR SPECI WS	a. Ultrasonic wind sensors at the ends of runway (surface wind report in METAR and SPECI is taken from measurements of the ultrasonic wind sensor at RWY 03). b. Windsocks at both ends of RWY 03 and 21. c. Transmissometers at both ends of RWY 03 and 21. d. Low level wind shear observations made continuously by system of 6 surface wind sensors located in its vicinity. e. Integrated and combination of MET Doppler C and S band weather radars for detecting wind shear within 20km and monitoring storms up to 480km.	H24	NIL
SINGAPORE/ Paya Lebar WSAP	Hourly plus special observations	METAR SPECI	a. Cup anemometers and wind vanes at both ends of RWY 02/20 (wind report in METAR and SPECI taken from the measurement associated with the RWY in use).	H24	NIL

ENR 1.11 ADDRESSING OF FLIGHT PLAN MESSAGES

1 Flight movement messages relating to traffic into or via the Singapore FIR shall be addressed as stated below in order to warrant correct relay and delivery.

Category of flight (IFR, VFR or both)	Route (into or via FIR and/or TMA)	Message Address
1	2	3
All flights	Transiting Singapore FIR (WSJC)	WSJCZQZX
	Inbound to Singapore Changi Airport (WSSS)	WSJCZQZX
←	Outbound from Singapore Changi Airport (WSSS)	WSSSZPZX
←	Inbound to Seletar Airport (WSSL)	WSJCZQZX WSSLZPZX
←	Outbound from Seletar Airport (WSSL)	WSSLZPZX
←	Inbound to/Outbound from Paya Lebar Airport (WSAP)	WSJCZQZX WSAPZPZX
←	Inbound to/Outbound from Tengah Airport (WSAT)	WSJCZQZX WSATZPZX

Note:
Flight movement messages comprise flight plan messages, amendment messages relating thereto and flight plan cancellation messages (ICAO DOC 4444 - PANS-ATM, Chapter 11, paragraph 11.2.1.1.3 refers).

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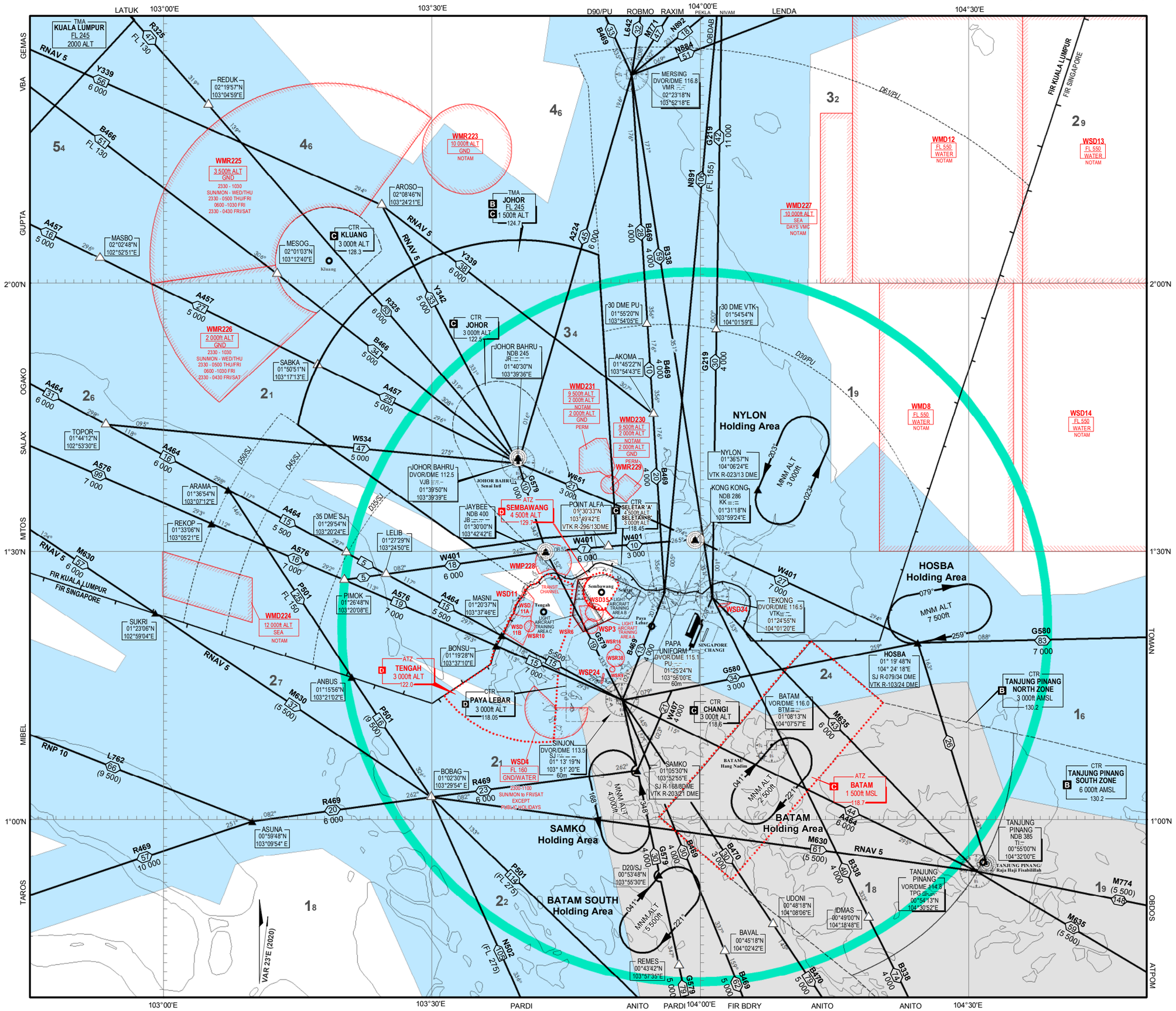
AREA CHART - ICAO

SINGAPORE/JOHOR AIRSPACE COMPLEX
LOW LEVEL HOLDING AREAS



LEGEND

Terminal Control Area (TMA)
Name of TMA
Airspace Classification
Upper Limit
Lower Limit
Radio frequency(ies)
TMA JOHOR FL 145 1 500ft 124.7

Control Zone (CTR)
Name of CTR
Airspace Classification
Upper Limit
Radio frequency(ies)
CTR CHANGI 3 000ft 118.6m

Aerodrome Traffic Zone (ATZ)
Name of ATZ
Airspace Classification
Upper Limit
Radio frequency(ies)
ATZ TENGAH 3 000ft 122.0

ATS Routes
Route designator
Distance in nautical miles
Minimum flight altitude (ft)/flight level
Lower limit (ft)/flight level
B469 20 4 000/FL 160 (4 000)/(FL 160)

Oceanic Control Area (OCA)

Reporting Point
Compulsory
On request

DME distance from SJ Navaid D35/SJ

Radio Navigation Aid
Name
Identification and frequency
Geographical Coordinates
Elevation of DME site
SINJON DVOR/DME 113.5 SJ 01° 13' 21"N 103° 51' 15"E 60m

Collocated VOR and DME Radio Navigation Aids
Compass rose orientated on the chart to Magnetic North

Restricted Airspace
(P - Prohibited, R - Restricted, D - Danger)
Identification of area
Nationality letter
Vertical limits
Activation by NOTAM
WSD13 FL 400 WATER NOTAM

NOTE :- See flip side for details of designated areas

Area Minimum Altitude (AMA)

Each quadrilateral contains an area minimum altitude (AMA) which represents the lowest altitude which may be used under instrument meteorological conditions (IMC). The AMA provides a minimum clearance of 1 000 feet (300m) above all terrains and obstacles in the quadrilateral. It is represented in thousands and hundreds of feet above mean sea level.

Example : 3 400 feet **3 4**

NOTE :- In computing the area minimum altitude, a margin of 200 feet (60m) for vegetation has been added for spot elevations.

Speed Control Procedures

Speed control procedures are in force unless notified otherwise by ATC or ATIS.

All arriving turbo-propeller and turbo-jet aircraft are to fly at not faster than indicated air speed 250 knots when within 40nm from Singapore Changi Airport or when at or below 10,000ft except all arriving aircraft into Singapore Changi Airport shall comply with the speed restrictions depicted on the transitions and RNAV STARS. Further speed reductions will be regulated by ATC as necessary.

Pilots who may not be able to comply with the speed limits specified above for reasons of flight safety and/or weather should inform ATC and state the speed(s) acceptable.

AIRSPACE CLASSIFICATION IN THE SINGAPORE FIR

Airspace		Levels	Classification
Controlled airspace		FL150 to FL460	A
		Surface to FL150	B
Controlled airspace more than 100 nm seaward from the shoreline		Lower limit to FL460	A
Control Zone (CTRs)	Changi CTR	Surface to upper limit	C
	Paya Lebar CTR		D
	Seletar CTR		C
ATZs		Surface to upper limit	D
Uncontrolled airspace			G*

* Aircraft operating in the Light Aircraft Training Areas A, B and C (please refer to page ENR 5.2-1) are required to have continuous two-way communications with the appropriate ATS authority.

SINGAPORE	D-ATIS	DEP	128.6
		ARR	128.025
	APP	DEP	120.3
		ARR	119.3
		APP	124.05
	TWR		118.6
			118.25

Note :
FOR DEPARTURE AND ARRIVAL ROUTES REFER TO AD-2-WSSS-SID-1 TO AD-2-WSSS-SID-18 AND AD-2-WSSS-STAR-1 TO AD-2-WSSS-STAR-9, AD-2-WSSS-STAR-11, AD-2-WSSS-STAR-13 TO AD-2-WSSS-STAR-21

CHANGES : D-ATIS and APP frequencies revised. Magnetic Variation revised.

Nautical Miles 10 0 10 20 30 40
Kilometers 10 0 10 20 30 40 50 60 70 80

PROHIBITED, RESTRICTED AND DANGER AREAS

	ACTIVITY	UPPER LIMIT / LOWER LIMIT	REMARKS
WSP3	-	750ft ALT / GND	Permanently Active as in ENR 5
WSD4	A/G and G/G Firing Range	FL 160 / GND/WATER	Permanently Active as in ENR 5
WMD8	Naval Air/Air Firing Range	FL 550 / WATER	Activation by NOTAM
WSD11	Small Arm Firing	1 300ft ALT / GND	Permanently Active as in ENR 5
WSD11A	Artillery Firing	FL 125 / GND	Activation by NOTAM
WSD11B	Artillery Firing	FL 125 / GND	Activation by NOTAM
WMD12	Naval Anti-aircraft Firing	FL 550 / WATER	Activation by NOTAM
WSD13	Naval Anti-aircraft Firing	FL 550 / WATER	Activation by NOTAM
WSD14	Naval Anti-aircraft Firing & Live Air/Air Firing	FL 550 / WATER	Activation by NOTAM
WSP24	-	800ft ALT / GND/WATER	Permanently Active as in ENR 5
WSR6	Helicopter Operations	200ft ALT / GND	Permanently Active as in ENR 5
WSR9	Helicopter Operations	200ft ALT / GND	Permanently Active as in ENR 5
WSR16	Helicopter Operations	200ft ALT / GND	Permanently Active as in ENR 5
WSD34	Rifle Range	500ft ALT / GND	Permanently Active as in ENR 5
WSD35	Rifle Range	900ft ALT / GND	Permanently Active as in ENR 5
WSR10	-	5 500ft ALT / GND	Permanently Active as in ENR 5
WSR38	-	10 000ft ALT / GND	Permanently Active as in ENR 5
	Transit Channel	2 000ft ALT / GND	Activated only for Military acft crossing
*	Light Aircraft Training Area A	4 500ft ALT / GND/*2 000ft	Training & Local Flts in VMC only
*	Light Aircraft Training Area B	10 500ft ALT / 4 500ft ALT	High Flying Training Ops in VMC only
*	Light Aircraft Training Area C	10 500ft ALT / 4 500ft ALT	High Flying Training Ops in VMC only
WMR223	Parachute Dropping	10 000ft ALT / GND	Permanently Active as in ENR 5
WMD224	Firing Range	12 000ft ALT / SEA	Activation by NOTAM
WMR225	RMAF Helicopter Training Area	3 500ft ALT / GND	Permanently Active as in ENR 5
WMR226	RMAF Helicopter Training Area	2 000ft ALT / GND	Permanently Active as in ENR 5
WMD227	Radar Bombing Range	10 000ft ALT / SEA	Activation by NOTAM
WMP228	Sultan's Palace	5 000ft ALT / GND	Permanently Active as in ENR 5
WMR229	Helicopter Operations	1 500ft ALT / GND	Permanently Active as in ENR 5
WMD230	Artillery Firing Range	2 000ft ALT / GND	Permanently Active as in ENR 5
WMD231	Artillery Firing Range	2 000ft ALT / GND	Permanently Active as in ENR 5

* In Transit Channel

* **AEROBATICS IS PROHIBITED IN LIGHT AIRCRAFT TRAINING AREAS A, B and C.**

SPECIAL NOTE :-

1. WEATHER BALLOONS

BALLOONS WILL BE RELEASED FOR MET OBSERVATION AT THE CENTRE FOR CLIMATE RESEARCH SINGAPORE, UPPER AIR OBSERVATORY (012025N 1035317E), BEARING 244° MAG AND DISTANCE 1.5NM FROM SOUTHERN END OF PAYA LEBAR RWY 02.

(I) BALLOONS WILL BE RELEASED DAILY AT 2330UTC AND 1040UTC. CUT-OFF TIMINGS FOR THE RELEASE ARE AT 0030UTC AND 1230UTC RESPECTIVLEY. RATE OF ASCENT IS 320M PER MIN. MAX HGT OF BALLOON 115 000FT (35 000M). THE BALLOON, UNCOLOURED AND 162CM IN DIAMETER, IS ATTACHED WITH RADIOSONDE EQUIPMENT. IT WILL BURST 1.5 TO 2HRS AFTER RELEASE AND RADIOSONDE EQUIPMENT WILL DECSEND WITHIN 60NM RADIUS.

(II) A BALLOON WILL BE RELEASED BETWEEN 2330UTC AND 0030UTC ON EITHER THE 3rd OR 4th WEEK OF THE MONTH. RATE OF ASCENT IS 320M PER MIN. MAX HGT OF BALLOONS IS 115 000FT (35 000M). THE BALLOON, UNCOLOURED AND 191CM IN DIAMETER, IS ATTACHED WITH OZONESONDE/RADIOSONDE EQUIPMENT AND PARACHUTE. IT WILL BURST 1.5 TO 2HR AFTER RELEASE.

2. AEROMODELLING AND KITE FLYING

(A) GENERAL WARNING

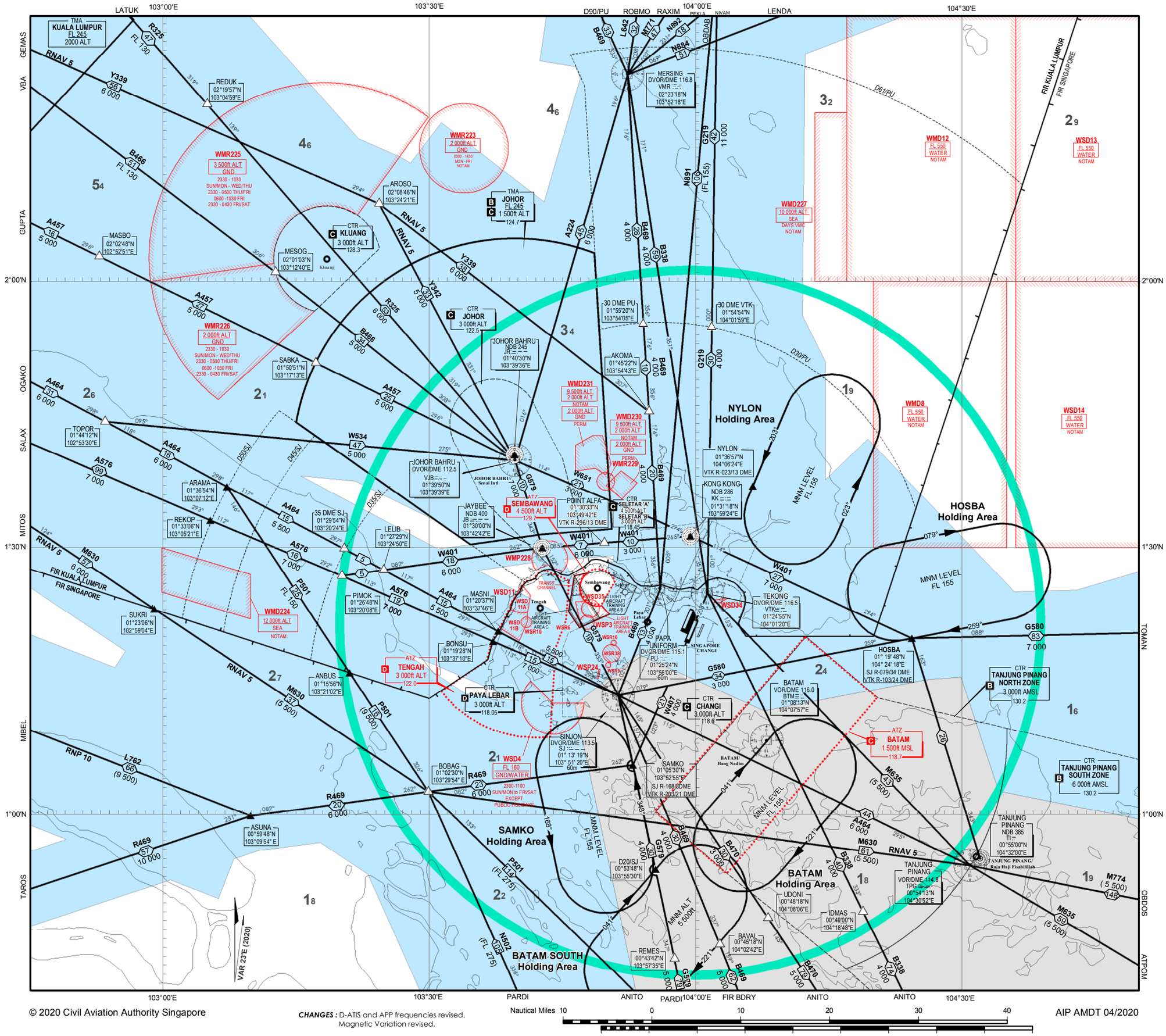
i) PILOTS FLYING AT LOW ALTITUDES SHOULD WATCH OUT FOR POSSIBLE HAZARDS SUCH AS MODEL AIRCRAFT AND KITES, ESPECIALLY WHEN FLYING NEAR PARKS AND OPEN GROUND.

ii) THE LOCATION OF SOME OF THE PARKS IN SINGAPORE WHERE KITE AND AERO MODEL FLYING MAY OCCUR ARE SHOWN ON ENR 3.4-5. PILOTS SHOULD NOTE THAT THE CHART AT ENR 3.4-5 DOES NOT SHOW ALL THE PARKS IN SINGAPORE AND THAT HAZARDS SUCH AS KITE FLYING AND AERO MODEL FLYING MAY TAKE PLACE AT PARKS AND OPEN GROUND NOT INDICATED IN ENR 3.4-5.

iii) ACCORDING TO THE SINGAPORE AIR NAVIGATION ORDER, 1985, KITE FLYING AND AERO MODEL FLYING ARE NOT PERMITTED ABOVE 200ft OR WITHIN 5km OF AN AERODROME. HOWEVER, PILOTS ARE ADVISED TO LOOK OUT FOR SUCH HAZARDS AT ALL TIMES AS MEMBERS OF THE PUBLIC MAY INADVERTENTLY FLY KITES OR AERO MODELS ABOVE THE HGT OF 200ft OR WITHIN 5km OF AN AERODROME.

AREA CHART - ICAO

SINGAPORE/JOHOR AIRSPACE COMPLEX
HIGH LEVEL HOLDING AREAS



LEGEND

- **Terminal Control Area (TMA)** — Name of TMA; Airspace Classification; Upper Limit; Lower Limit; Radio frequency(ies) — e.g. TMA JOHOR, B FL 145, C 1 500ft, 124.7
- **Control Zone (CTR)** — Name of CTR; Airspace Classification; Upper Limit; Radio frequency(ies) — e.g. CTR C CHANGI, 3 000ft, 118.6m
- **Aerodrome Traffic Zone (ATZ)** — Name of ATZ; Airspace Classification; Upper Limit; Radio frequency(ies) — e.g. ATZ D TENGAH, 3 000ft, 122.0
- **ATS Routes** — Route designator; Distance in nautical miles; Minimum flight altitude (ft)/flight level; Lower limit (ft)/flight level — e.g. B469, 20, 4 000/FL 160, (4 000)/(FL 160)
- **Oceanic Control Area (OCA)**
- **Reporting Point** — Compulsory; On request
- **DME distance from SJ Navaid** — D35/SJ
- **Radio Navigation Aid** — Name; Identification and frequency; Geographical Coordinates; Elevation of DME site — e.g. SINJON DVOR/DME 113.5 SJ 01° 13' 21"N 103° 51' 15"E 60m
- **Collocated VOR and DME Radio Navigation Aids** — Compass rose orientated on the chart to Magnetic North
- **Restricted Airspace** (P - Prohibited, R - Restricted, D - Danger) — Identification of area; Nationality letter; Vertical limits; Activation by NOTAM — e.g. WSD13, FL 400, WATER, NOTAM

NOTE :- See flip side for details of designated areas

Area Minimum Altitude (AMA)

Each quadrilateral contains an area minimum altitude (AMA) which represents the lowest altitude which may be used under instrument meteorological conditions (IMC). The AMA provides a minimum clearance of 1 000 feet (300m) above all terrains and obstacles in the quadrilateral. It is represented in thousands and hundreds of feet above mean sea level.

Example : 3 400 feet **34**

NOTE :- In computing the area minimum altitude, a margin of 200 feet (60m) for vegetation has been added for spot elevations.

Speed Control Procedures

Speed control procedures are in force unless notified otherwise by ATC or ATIS.

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AIRSPACE CLASSIFICATION IN THE SINGAPORE FIR

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		Surface to FL150	B
Controlled airspace more than 100 nm seaward from the shoreline		Lower limit to FL460	A
Control Zone (CTRs)	Changi CTR	Surface to upper limit	C
	Paya Lebar CTR		D
	Seletar CTR		C
ATZs		Surface to upper limit	D
Uncontrolled airspace			G*

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		ARR	119.3
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	TWR		118.6
			118.25

Note :
FOR DEPARTURE AND ARRIVAL ROUTES
REFER TO AD-2-WSSS-SID-1 TO AD-2-WSSS-SID-18 AND AD-2-WSSS-STAR-1 TO AD-2-WSSS-STAR-9, AD-2-WSSS-STAR-11, AD-2-WSSS-STAR-13 TO AD-2-WSSS-STAR-21

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

PROHIBITED, RESTRICTED AND DANGER AREAS

	ACTIVITY	UPPER LIMIT / LOWER LIMIT	REMARKS
WSP3	-	750ft ALT / GND	Permanently Active as in ENR 5
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WMD8	Naval Air/Air Firing Range	FL 550 / WATER	Activation by NOTAM
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WMR229	Helicopter Operations	1 500ft ALT / GND	Permanently Active as in ENR 5
WMD230	Artillery Firing Range	2 000ft ALT / GND	Permanently Active as in ENR 5
WMD231	Artillery Firing Range	2 000ft ALT / GND	Permanently Active as in ENR 5

* In Transit Channel

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SPECIAL NOTE :-

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ii) THE LOCATION OF SOME OF THE PARKS IN SINGAPORE WHERE KITE AND AERO MODEL FLYING MAY OCCUR ARE SHOWN ON ENR 3.4-5. PILOTS SHOULD NOTE THAT THE CHART AT ENR 3.4-5 DOES NOT SHOW ALL THE PARKS IN SINGAPORE AND THAT HAZARDS SUCH AS KITE FLYING AND AERO MODEL FLYING MAY TAKE PLACE AT PARKS AND OPEN GROUND NOT INDICATED IN ENR 3.4-5.

iii) ACCORDING TO THE SINGAPORE AIR NAVIGATION ORDER, 1985, KITE FLYING AND AERO MODEL FLYING ARE NOT PERMITTED ABOVE 200ft OR WITHIN 5km OF AN AERODROME. HOWEVER, PILOTS ARE ADVISED TO LOOK OUT FOR SUCH HAZARDS AT ALL TIMES AS MEMBERS OF THE PUBLIC MAY INADVERTENTLY FLY KITES OR AERO MODELS ABOVE THE HGT OF 200ft OR WITHIN 5km OF AN AERODROME.

AD 2 AERODROMES

WSSS — SINGAPORE / SINGAPORE CHANGI INTL

WSSS AD 2.1 AERODROME LOCATION INDICATOR AND NAME

WSSS — SINGAPORE / SINGAPORE CHANGI INTL

WSSS AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	*ARP coordinates and site at AD*	012133.16N 1035921.57E (Control Tower)
2	*Direction and distance from (city)*	17.2km North-East from City Centre (The Fullerton Hotel, Singapore)
3	*Elevation/Reference temperature*	6.66 M / 32.8℃
4	*Geoid Undulation (AD elevation position)*	10.24 M
5	*MAG VAR /Annual change*	0°23' E (2020) / Negligible
6	*AD Administration, address, telephone, telefax, AFS*	

CHANGI AIRPORT GROUP (SINGAPORE) PTE LTD
Singapore Changi Airport
P.O.Box 168, SINGAPORE 918146
Tel: (65)65956868

7	*Types of traffic permitted*	IFR
8	*Remarks*	

a. Not available to all non-scheduled civil aircraft types of 40-seater or below except in special circumstances. Aircraft larger than the above category shall not plan their arrival between 0900-1559UTC.

b. Aircraft shall leave nose-in position (90 degrees) with the aid of aircraft tow tractors. Reverse thrust or variable pitch propellers shall not be used. Aircraft operators shall make suitable arrangements.

c. Prior permission required for aircraft not equipped with radiotelephony.

d. A subsonic jet aircraft, unless otherwise exempted, is not permitted to operate in Singapore unless it possesses a noise certificate stating that it meets the noise standards of ICAO Annex 16, Volume 1, Chapter 3, or equivalent. The noise certificate may also take the form of a suitable statement contained in another document approved by the State of Registry of the aircraft.

e. RVR minima for CAT II ILS operations is limited to 350m due to runway and taxiway light spacing requirements on the airfield.

f. Frangible poles are installed for the purpose of identifying 90m away from the centreline of RWY 02L/20R and RWY 02C/20C

WSSS AD 2.3 OPERATIONAL HOURS

	Operational Hours	
1	Aerodrome Operator	H24
2	Customs and Immigration	H24
3	Health and Sanitation	H24
4	AIS Briefing Office	H24
5	ATS Reporting Office	H24
6	MET Briefing Office	H24
7	Air Traffic Services	H24

WSSS AD 2.4 HANDLING SERVICES AND FACILITIES

1	*Cargo Handling Facilities*	Cargo terminals equipped with advanced storage stacker, material and pallet container handling systems, computerised cargo information, data and documentation systems. By arrangement with airlines.
2	*Fuel / Oil Types*	JET A1(for aircraft). Oils: Various by arrangement with fuel companies.
3	*Fuelling Facilities / Capacity*	Hydrant refueling
4	*Hangar space for visiting aircraft*	By arrangement with SIA Engineering Company (SIAEC) or ST Aerospace Services Co.
5	*Repair facilities for visiting aircraft*	Maintenance and repairs for commercial aircraft up to and including A380 is by arrangement.
6	*Remarks*	a. Marshalling Service: No pilot shall taxi an aircraft on its own into a gate/stand without the aid of a docking system or a marshaller. b. Oxygen and related servicing: Oxygen for all cabin and aircraft system. No CO_2 recharging facilities.

WSSS AD 2.5 PASSENGER FACILITIES

1	*Hotels*	Transit area and adjacent to airport terminal.
2	*Restaurants*	Transit and public areas of terminal building.
3	*Transportation*	Buses, taxis, MRT train and car rental service.
4	*Medical Facilities*	Available at airport.
5	*Bank and Post Office*	Available at airport.
6	*Tourist Office*	Available at airport.
7	*Remarks*	Internet address : http://www.changiairport.com.sg for airport and flight information, shops and restaurants, facilities and services, flight connections and tourist information.

WSSS AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	*AD category for fire fighting*	CAT10 (No facilities for foaming of runways)
2	*Rescue equipment*	Adequately provided as recommended by ICAO.
3	*Capability for removal of disabled aircraft*	Specialised aircraft recovery equipment available for up to and including A380 size aircraft operation.
4	*Remarks*	All Airport Emergency Service personnel are trained in rescue and fire-fighting as well as medical first-aid.

WSSS AD 2.7 SEASONAL AVAILABILITY - CLEARING

There is no requirement for clearing. The aerodrome is available throughout the year.

WSSS AD 2.18 ATS COMMUNICATION FACILITIES

Service Designation	Call sign	*Frequency (P-Pri, S-Sec)*	Hours of operation	Remarks
ACC	Singapore Radar	P123.7 MHz S127.3 MHz	H24	for ATS Routes B469, G219, G334, R208, L625, L629, L635, L642, L644, M751, M753, M758, M761, M763, M771, N875, N884, N891 and N892.
		133.8 MHz	0000-1430	
		P134.7 MHz S134.15 MHz	H24	for ATS Routes G334, L625, L644, M758, M761, M771, N875, N884 and N892.
		P133.25 MHz S135.8 MHz	H24	for ATS Routes A457, A464, A576, B466, L762, M630, R325 and R469.
		P134.2 MHz S133.35 MHz		for ATS Routes G334. G580, L625, L644, M646 M767 and N875.
		P134.4 MHz S128.1 MHz		for ATS Routes B338, B469, B470, G579, L504, L644, M635, M774, N502, N875 , P501 and in area in the immediate vicinity of Singapore.
	Singapore Control	P134.35 MHz S133.6 MHz	H24	for ATS Routes L642, L644, M753, M771, M904, N891, N892, Q801, Q802, Q803 and T611 within airspace bounded by 073605N 1090045E, 040713N 1063543E, 041717N 1061247E (MABLI), 044841N 1052247E (DOLOX), 045223N 1041442E (ENREP), 045000N 1034400E, thence north along the Singapore FIR boundary to 070000N 1080000E.
	Singapore Radio	6556 kHz 11297 kHz	H24	SEA 1, Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
		5655 kHz 8942 kHz 11396 kHz		SEA 2, Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
		6556 kHz		SEA 3, Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
APP	Singapore Departure	P120.3 MHz S121.625 MHz	H24	DEP from all airports in Singapore.
	Singapore Arrival	P119.3 MHz S119.4 MHz S119.55 MHz		TAR - Intermediate and final approach to Singapore Changi AP.
	Singapore Approach	P124.05 MHz S124.6 MHz S126.3 MHz	2100-1700	TAR - flow control service provided for ARR/DEP ACFT. Intermediate approach to Singapore Changi AP and other airports in Singapore.
TWR	Singapore Tower	118.6 MHz	H24	for TKOF/LDG. for ACFT operating on RWY 02L/20R for vehicular movements on RWY 02L/20R
		118.25 MHz		for ACFT operating on RWY 02C/20C for vehicular movements on RWY 02C/20C

Service Designation	Call sign	*Frequency (P-Pri, S-Sec)*	Hours of operation	Remarks
TWR	Singapore Ground	124.3 MHz	1600-0000 0000-1600	for push-back / taxiing of all aircraft for ground movement of aircraft (including towing aircraft) west of Terminal 3
		121.725 MHz	0000-1700 2100-0000	for push-back / taxiing of all aircraft for ground movement of aircraft (including towing aircraft) east of Terminal 2
		121.85 MHz	0000-1800 2300-0000	for push-back / taxiing of all aircraft for ground movement of aircraft (including towing aircraft) north of Terminal 1
		121.00 MHz	H24	for ground emergency
		122.55 MHz		for push-back / taxiing of all aircraft for ground movement of aircraft (including towing aircraft) of Terminal 4
		125.65 MHz		for push-back / taxiing of all aircraft for ground movement of aircraft (including towing aircraft) west of Terminal 4
	Singapore Delivery	121.65 MHz	H24	for Pre-flight check/ATC clearance
		119.6 MHz	0030-0230 1200-1300	for issuance of ATC clearance
	Changi Tower / Changi Apron	121.9 MHz	H24	Requests for engine runs on aprons and taxiways, excluding runways, would be regulated by Changi Apron. All towing request to contact Changi Apron followed by instruction to contact respective Singapore Ground frequency for towing clearance. Request for vehicular movements on taxiways, excluding runways, would be regulated by Changi Tower. For aircraft on tow and vehicular movements on the runway when the runway is closed for maintenance. All personnel operating the radio station on board an aircraft that is on the ground in Changi Airport should possess the Aircraft Radio Operator Approval (AROA) or other equivalent certification.
D-ATIS	Changi Airport Departure Information	128.6 MHz	H24	(broadcasting with half hourly updated MET INFO) Data Link Service available. AP IDENT WSSS Messages comply with ARINC 623 Standards. Updating of data: H+00 to H+10 and H+30 to H+40
	Changi Airport Arrival Information	128.025 MHz	H24	

AERODROME CHART - ICAO

01° 21' 33"N
103°59' 22"E

AERODROME ELEVATION 6.66m

TWR	118.6 / 118.25
GND	124.3 / 121.85 / 121.725
DELIVERY	121.65

RAMP TWR
GND 122.55 (GMC 4 EAST)
125.65 (GMC 4 WEST)

SINGAPORE/SINGAPORE CHANGI

PAPI 3° (MEHT)*				
Pilot's eye height over the threshold when the following PAPI lights come into view.	**RUNWAY**			
	02L	**20R**	**02C**	**20C**
2 White lights and 2 red lights	20.0m	20.0m	19.8m	19.8m
3 White lights and 1 red light	24.0m	22.6m	23.7m	23.7m
4 White lights	26.4m	25.0m	26.2m	26.2m

* MEHT . Minimum Eye Height Over the Threshold.
Note . Aircraft with eye-to-wheel height greater than 8 metres are advised to fly with 2 white lights and 2 red lights visible so as to achieve sufficient wheel clearance.

RWY	DIRECTION	THR	GEOID UNDULATION	BEARING STRENGTH
02L	023°	01 20 56.27N 103 58 38.82E	10.24m	PCN 72/F/B/W/U
20R (DISP THR)	203°	01 22 33.95N 103 59 20.06E	10.25m	
02C	023°	01 19 43.51N 103 59 05.86E	10.27m	
20C	203°	01 21 43.37N 103 59 56.46E	10.30m	

TAXIWAYS	**BEARING STRENGTH** PCN 85/R/B/W/U - Taxiways W1, W9, E1, E3, E11 and EP (between E10-E11) PCN 72/F/B/W/U - All other Taxiways
APRONS	**BEARING STRENGTH** PCN 85/R/B/W/U

ANNUAL CHANGE NEGLIGIBLE VAR 25E (2020)

ELEVATIONS AND DIMENSIONS IN METRES

TAXIWAYS 30m WIDE

NOTE :
SEE FLIP SIDE FOR DETAILS OF
i) INS COORDINATES FOR AIRCRAFT STANDS AND PRE-FLIGHT ALTIMETER CHECK LOCATIONS.
ii) RESTRICTIONS ON TAXIWAYS.

TANAH MERAH COUNTRY CLUB CLUB HOUSE

4 000m X 60m BITUMINOUS CONCRETE

3 260m X 60m BITUMINOUS CONCRETE

STRIP 4 240m X 300m

OBSTACLE FREE ZONE

LEGEND	
	Aircraft Stands and Taxiways Markings
	Runway Centre Line Lights
	Runway Edge Lights
	White Touchdown Zone Lights
	Blue Taxiway Edge Lights
	Green Taxiway CentreLine Lights
	Cat II Holding Position Markings Red Stop Bar Lights Controllable ON/OFF
	Twy Intersection Holding Position Markings Red Stop Bar Lights Controllable ON/OFF
	Blue Taxiway Edge Markers
	iFERRET Tower

Metres 100 0 100 200 300 400 500 600 700 800 900 1000 Metres

Changes : Magnetic Variation revised.

INS COORDINATES FOR AIRCRAFT STANDS AND PRE-FLIGHT ALTIMETER CHECK LOCATIONS

LOCATION	STAND NR	NORTH LAT	EAST LONG	ELEVATION
T3 SOUTH APRON	A1	01 21 21.52	103 59 06.25	4.75m (15.58ft)
	A2	01 21 21.75	103 59 04.00	4.65m (15.26ft)
	A3	01 21 19.86	103 59 02.79	4.66m (15.29ft)
	A4	01 21 17.61	103 59 02.54	4.79m (15.72ft)
	A5	01 21 15.50	103 59 03.62	4.86m (15.94ft)
	A9	01 21 12.56	103 59 03.65	5.02m (16.47ft)
	A10	01 21 10.34	103 59 02.40	5.04m (16.54ft)
	A11	01 21 07.93	103 59 01.41	5.25m (17.22ft)
	A12	01 21 05.76	103 59 00.49	5.38m (17.65ft)
	A13	01 21 03.59	103 58 59.58	5.48m (17.98ft)
	A14	01 21 01.66	103 58 57.59	5.57m (18.27ft)
	A15	01 21 00.77	103 58 55.41	5.46m (17.91ft)
	A16	01 20 59.27	103 58 54.20	5.51m (18.08ft)
	A17	01 20 57.25	103 58 54.06	5.23m (17.16ft)
	A18	01 20 55.87	103 58 55.25	5.37m (17.62ft)
	A19	01 20 55.26	103 58 57.13	5.40m (17.72ft)
	A20	01 20 56.09	103 58 58.83	5.45m (17.88ft)
	A21	01 20 57.10	103 59 00.80	5.49m (18.01ft)
T3 NORTH APRON	B1	01 21 26.86	103 59 08.37	4.82m (15.81ft)
	B2	01 21 28.18	103 59 06.82	4.68m (15.35ft)
	B3	01 21 30.33	103 59 07.30	4.65m (15.26ft)
	B4	01 21 32.03	103 59 08.60	4.75m (15.58ft)
	B5	01 21 32.98	103 59 10.89	4.80m (15.75ft)
	B6	01 21 35.15	103 59 13.16	4.96m (16.27ft)
	B7	01 21 37.65	103 59 13.93	4.97m (16.31ft)
	B8	01 21 39.94	103 59 15.20	5.09m (16.70ft)
	B9	01 21 42.19	103 59 16.16	5.13m (16.83ft)
	B10	01 21 44.47	103 59 17.12	5.10m (16.73ft)
T1 WEST APRON	C1	01 21 46.75	103 59 18.08	5.09m (16.70ft)
	C20	01 21 48.83	103 59 19.23	5.08m (16.67ft)
	C22	01 21 51.00	103 59 20.13	5.15m (16.90ft)
	C23	01 21 53.56	103 59 20.77	5.08m (16.67ft)
	C24	01 21 56.54	103 59 20.97	4.89m (16.04ft)
	C25	01 21 59.12	103 59 20.59	4.99m (16.37ft)
	C26	01 22 01.48	103 59 20.76	5.01m (16.44ft)
T1 CENTRAL APRON	C11	01 21 47.42	103 59 23.82	5.07m (16.63ft)
	C13	01 21 49.64	103 59 24.75	5.05m (16.57ft)
	C15	01 21 51.90	103 59 25.71	5.05m (16.57ft)
	C16	01 21 53.47	103 59 26.62	4.86m (15.94ft)
	C17	01 21 55.50	103 59 26.20	5.01m (16.44ft)
	C17L	01 21 54.75	103 59 26.22	4.96m (16.27ft)
	C17R	01 21 56.01	103 59 25.68	5.12m (16.80ft)
	C18	01 21 57.86	103 59 25.75	4.99m (16.37ft)
	C19	01 21 59.79	103 59 25.63	4.95m (16.24ft)
	D30	01 21 44.54	103 59 30.14	5.09m (16.70ft)
	D32	01 21 46.73	103 59 31.07	5.08m (16.67ft)
	D34	01 21 49.03	103 59 32.04	5.07m (16.63ft)
	D35	01 21 50.87	103 59 32.82	5.02m (16.47ft)
	D36	01 21 51.98	103 59 34.52	5.06m (16.60ft)
	D37	01 21 53.37	103 59 36.28	4.97m (16.31ft)
	D38	01 21 54.58	103 59 37.77	4.99m (16.37ft)
T1 EAST APRON	D40	01 21 38.13	103 59 32.89	5.11m (16.77ft)
	D40L	01 21 37.38	103 59 32.83	5.09m (16.70ft)
	D40R	01 21 38.77	103 59 32.84	5.13m (16.83ft)
	D41	01 21 40.30	103 59 33.81	5.07m (16.63ft)
	D42	01 21 42.77	103 59 34.58	5.15m (16.89ft)
	D42L	01 21 42.00	103 59 34.47	5.12m (16.79ft)
	D42R	01 21 43.45	103 59 34.44	5.21m (17.09ft)
	D44	01 21 44.97	103 59 35.44	5.14m (16.86ft)
	D46	01 21 47.40	103 59 36.72	5.08m (16.67ft)
	D47	01 21 49.19	103 59 38.89	4.93m (16.17ft)
	D48	01 21 50.60	103 59 40.77	4.97m (16.31ft)
	D49	01 21 52.23	103 59 42.35	4.98m (16.34ft)
T2 NORTH APRON	E8	01 21 27.99	103 59 38.45	4.68m (15.35ft)
	E10	01 21 24.15	103 59 32.67	4.71m (15.45ft)
	E11	01 21 25.57	103 59 34.37	4.78m (15.68ft)
	E12	01 21 27.20	103 59 36.42	4.75m (15.58ft)
	E20	01 21 24.36	103 59 27.08	5.04m (16.54ft)
	E22	01 21 26.64	103 59 28.04	5.07m (16.63ft)
	E24	01 21 29.01	103 59 29.06	5.09m (16.70ft)
	E24L	01 21 28.32	103 59 28.77	5.10m (16.73ft)
	E24R	01 21 29.53	103 59 29.28	5.08m (16.67ft)
	E26	01 21 31.19	103 59 29.96	5.08m (16.67ft)
	E27	01 21 33.56	103 59 30.96	5.07m (16.62ft)
	E27L	01 21 32.79	103 59 30.86	5.03m (16.48ft)
	E27R	01 21 34.20	103 59 30.91	5.12m (16.80ft)
	E28	01 21 35.74	103 59 31.89	5.08m (16.67ft)

INS COORDINATES FOR AIRCRAFT STANDS AND PRE-FLIGHT ALTIMETER CHECK LOCATIONS

LOCATION	STAND NR	NORTH LAT	EAST LONG	ELEVATION
T2 CENTRAL APRON	E1	01 21 20.02	103 59 25.58	4.91m (16.11ft)
	E2	01 21 19.28	103 59 27.30	4.90m (16.08ft)
	E3	01 21 18.44	103 59 29.27	4.82m (15.81ft)
	E4	01 21 18.10	103 59 31.70	4.80m (15.75ft)
	E5	01 21 19.56	103 59 33.72	4.90m (16.08ft)
	E6	01 21 21.22	103 59 35.93	4.84m (15.88ft)
	E7	01 21 22.48	103 59 37.46	4.73m (15.52ft)
	F30	01 21 14.71	103 59 23.33	4.92m (16.14ft)
	F31	01 21 13.87	103 59 25.30	4.91m(16.11ft)
	F32	01 21 13.03	103 59 27.26	4.85m (15.91ft)
	F33	01 21 11.30	103 59 28.54	4.91m (16.11ft)
	F34	01 21 08.98	103 59 28.96	4.92m (16.14ft)
	F35	01 21 06.60	103 59 29.55	4.91m (16.11ft)
	F35L	01 21 06.06	103 59 30.13	4.74m (15.55ft)
	F35R	01 21 06.96	103 59 29.05	5.04m (16.54ft)
	F36	01 21 04.34	103 59 29.67	4.82m (15.81ft)
T2 SOUTH APRON	F37	01 20 59.83	103 59 27.87	4.75m (15.58ft)
	F40	01 21 05.62	103 59 25.34	4.85m (15.91ft)
	F41	01 21 03.19	103 59 25.58	4.82m (15.81ft)
	F42	01 21 00.61	103 59 25.96	4.72m (15.49ft)
	F50	01 21 10.69	103 59 21.32	5.03m (16.50ft)
	F52	01 21 08.51	103 59 20.40	5.11m (16.77ft)
	F52L	01 21 07.82	103 59 20.11	5.16m (16.93ft)
	F52R	01 21 09.04	103 59 20.62	5.08m (16.67ft)
	F54	01 21 06.14	103 59 19.40	5.22m (17.13ft)
	F56	01 21 03.96	103 59 18.48	5.30m (17.39ft)
	F56L	01 21 03.27	103 59 18.18	5.42m (17.78ft)
	F56R	01 21 04.49	103 59 18.70	5.34m (17.52ft)
	F58	01 21 01.58	103 59 17.47	5.49m (18.01ft)
	F59	01 20 59.41	103 59 16.55	5.64m (18.50ft)
	F59L	01 20 58.72	103 59 16.26	5.67m (18.60ft)
	F59R	01 20 59.93	103 59 16.78	5.60m (18.37ft)
	F60	01 20 56.91	103 59 15.50	5.77m (18.93ft)
EAST REMOTE APRON	200	01 20 47.83	103 59 11.67	6.23m (20.44ft)
	200L	01 20 46.91	103 59 11.92	6.29m (20.64ft)
	200R	01 20 48.35	103 59 11.89	6.18m (20.28ft)
	201	01 20 49.99	103 59 12.62	5.96m (19.55ft)
	202	01 20 52.34	103 59 13.57	5.94m (19.49ft)
	202L	01 20 51.65	103 59 13.28	5.76m (18.90ft)
	202R	01 20 52.87	103 59 13.79	5.73m (18.80ft)
	203	01 20 54.52	103 59 14.47	5.92m (19.42ft)
SOUTH-EAST REMOTE APRON	205	01 20 43.91	103 59 17.06	4.77m (15.65ft)
	206	01 20 46.08	103 59 17.98	4.76m (15.62ft)
	207	01 20 47.91	103 59 18.88	4.74m (15.55ft)
	208	01 20 49.48	103 59 19.54	4.74m (15.55ft)
	209	01 20 51.06	103 59 20.21	4.75m (15.58ft)
NORTH REMOTE APRON	300	01 22 06.95	103 59 22.67	4.53m (14.86ft)
	301	01 22 06.41	103 59 24.69	4.93m (16.17ft)
	302	01 22 05.21	103 59 26.75	4.97m (16.31ft)
	303	01 22 03.55	103 59 31.40	5.32m (17.45ft)
	304	01 22 02.84	103 59 33.05	5.35m (17.55ft)
	305	01 22 02.14	103 59 34.71	5.30m (17.39ft)
	306	01 22 01.41	103 59 36.42	5.16m (16.93ft)
	307	01 21 59.39	103 59 40.36	5.16m (16.93ft)
	308	01 21 58.96	103 59 41.35	5.10m (16.73ft)
	309	01 21 58.52	103 59 43.17	5.06m (16.60ft)
	310	01 21 57.42	103 59 44.96	4.74m (15.55ft)
NORTH-EAST REMOTE APRON	400	01 21 38.71	103 59 40.14	4.31m (14.14ft)
	401	01 21 40.98	103 59 41.10	4.31m (14.14ft)
	402	01 21 42.85	103 59 41.89	4.30m (14.11ft)
	403	01 21 44.37	103 59 42.53	4.29m (14.07ft)
	404	01 21 45.45	103 59 42.98	4.20m (13.78ft)
WEST CARGO APRON	502	01 22 22.23	103 59 31.62	4.35m (14.27ft)
	503	01 22 24.98	103 59 32.78	4.29m (14.07ft)
	504	01 22 27.26	103 59 33.74	4.29m (14.07ft)
	505	01 22 29.54	103 59 34.70	4.32m (14.17ft)
	506	01 22 31.81	103 59 35.66	4.38m (14.37ft)
	507	01 22 34.11	103 59 36.64	4.36m (14.30ft)
	508	01 22 36.41	103 59 37.61	4.29m (14.07ft)
	509	01 22 39.12	103 59 38.76	4.09m (13.42ft)
	510	01 22 41.37	103 59 40.18	4.19m (13.75ft)
	511	01 22 43.54	103 59 41.09	4.22m (13.85ft)
	512	01 22 45.71	103 59 42.01	4.24m (13.91ft)
	513	01 22 47.89	103 59 42.92	4.26m (13.98ft)
	514	01 22 50.19	103 59 43.54	4.36m (14.30ft)
	515	01 22 52.90	103 59 43.20	4.09m (13.43ft)
	516	01 22 55.39	103 59 43.97	4.04m (13.26ft)
	516L	01 22 56.24	103 59 43.80	3.96m (12.98ft)
	516R	01 22 54.93	103 59 43.25	3.95m (12.97ft)
	517	01 22 58.02	103 59 45.08	4.05m (13.27ft)
	517L	01 22 58.83	103 59 44.99	3.98m (13.05ft)
	517R	01 22 57.55	103 59 44.35	3.96m (12.98ft)

INS COORDINATES FOR AIRCRAFT STANDS AND PRE-FLIGHT ALTIMETER CHECK LOCATIONS

LOCATION	STAND NR	NORTH LAT	EAST LONG	ELEVATION
EAST CARGO APRON	600	01 22 14.12	103 59 48.10	4.25m (13.94ft)
	600L	01 22 13.28	103 59 48.27	4.22m (13.83ft)
	600R	01 22 14.58	103 59 48.81	4.15m (13.60ft)
	601	01 22 16.52	103 59 49.27	4.27m (14.01ft)
	602	01 22 18.80	103 59 50.23	4.30m (14.11ft)
	603	01 22 21.15	103 59 51.02	4.29m (14.07ft)
	604	01 22 23.46	103 59 51.99	4.31m (14.14ft)
	605	01 22 25.19	103 59 52.75	4.27m (14.01ft)
EAST SERVICE APRON	606	01 22 10.00	103 59 52.53	2.43m (7.97ft)
	609	01 22 12.95	103 59 55.04	2.91m (9.55ft)
ACEHUB	611	01 22 22.14	104 00 02.87	4.01m (13.16ft)
	612	01 22 24.50	104 00 02.87	3.91m (12.83ft)
SOUTH APRON	461	01 20 39.67	103 58 52.75	5.28m (17.32ft)
	462	01 20 40.69	103 58 50.37	5.75m (18.86ft)
	462L	01 20 40.41	103 58 51.02	5.48m (17.98ft)
	462R	01 20 40.97	103 58 49.71	5.71m (18.73ft)
	463	01 20 41.80	103 58 47.76	5.97m (19.59ft)
	463L	01 20 41.52	103 58 48.42	5.82m (19.10ft)
	463R	01 20 42.06	103 58 47.17	5.82m (19.10ft)
	464	01 20 32.33	103 58 49.39	4.98m (16.34ft)
	465	01 20 33.61	103 58 47.20	5.01m (16.44ft)
	466	01 20 34.53	103 58 45.05	5.01m (16.44ft)
	467	01 20 27.32	103 58 45.73	5.01m (16.44ft)
	468	01 20 28.34	103 58 43.34	5.00m (16.41ft)
	469	01 20 29.36	103 58 40.96	5.02m (16.47ft)
	471	01 20 23.76	103 58 44.49	5.16m (16.93ft)
	472	01 20 24.55	103 58 43.24	5.16m (16.93ft)
	473	01 20 25.12	103 58 41.90	5.16m (16.93ft)
	474	01 20 25.70	103 58 40.56	5.16m (16.93ft)
	475	01 20 26.27	103 58 39.22	5.16m (16.93ft)
	476	01 20 19.16	103 58 41.47	5.16m (16.93ft)
	477	01 20 19.74	103 58 40.13	5.16m (16.93ft)
	478	01 20 20.31	103 58 38.79	5.16m (16.93ft)
	479	01 20 20.88	103 58 37.45	5.16m (16.93ft)
	480	01 20 21.45	103 58 36.11	5.16m (16.93ft)
	481	01 20 25.27	103 58 32.56	5.22m (17.13ft)
	482	01 20 26.62	103 58 33.13	5.22m (17.13ft)
	483	01 20 27.96	103 58 33.70	5.22m (17.13ft)
	484	01 20 29.31	103 58 34.27	5.22m (17.13ft)
	485	01 20 30.66	103 58 34.84	5.22m (17.13ft)
	486	01 20 32.01	103 58 35.41	5.22m (17.13ft)
	487	01 20 33.36	103 58 35.98	5.22m (17.13ft)
T4 APRON	G1	01 20 07.58	103 59 00.97	3.95m (12.96ft)
	G2	01 20 08.88	103 59 01.52	3.95m (12.96ft)
	G3	01 20 10.18	103 59 02.07	3.95m (12.96ft)
	G4	01 20 11.48	103 59 02.07	3.94m (12.93ft)
	G5	01 20 12.77	103 59 03.17	3.94m (12.93ft)
	G6	01 20 14.49	103 59 03.89	3.93m (12.89ft)
	G7	01 20 15.70	103 59 04.57	3.89m (12.76ft)
	G8	01 20 17.01	103 59 05.12	3.85m (12.63ft)
	G9	01 20 18.31	103 59 05.67	3.85m (12.63ft)
	G10	01 20 19.60	103 59 06.22	3.86m (12.66ft)
	G11	01 20 20.90	103 59 06.77	3.84m (12.60ft)
	G12	01 20 22.20	103 59 07.31	3.83m (12.57ft)
	G13	01 20 23.50	103 59 07.86	3.82m (12.53ft)
	G14	01 20 24.79	103 59 08.41	3.83m (12.57ft)
	G15	01 20 26.09	103 59 08.96	3.88m (12.73ft)
	G16	01 20 27.39	103 59 09.50	4.05m (13.29ft)
	G17	01 20 28.69	103 59 10.05	4.00m (13.12ft)
	G18	01 20 31.53	103 59 11.86	4.36m (14.30ft)
	G18L	01 20 32.05	103 59 12.85	4.34m (14.24ft)
	G18R	01 20 31.65	103 59 11.26	4.43m (14.53ft)
	G19	01 20 32.64	103 59 09.25	4.56m (14.96ft)
	G19L	01 20 33.17	103 59 11.26	4.47m (14.67ft)
	G19R	01 20 32.77	103 59 08.66	4.56m (14.96ft)
	G20	01 20 33.75	103 59 06.65	4.52m (14.83ft)
	G20L	01 20 34.13	103 59 07.58	4.44m (14.57ft)
	G20R	01 20 33.99	103 59 06.10	4.52m (14.83ft)
	G21	01 20 34.87	103 59 04.04	4.51m (14.80ft)
	G21L	01 20 35.24	103 59 04.98	4.52m (14.83ft)
	G21R	01 20 35.10	103 59 03.49	4.55m (14.93ft)

RESTRICTIONS ON TAXIWAYS

1) Pilots are advised to apply minimum thrust when
   i) turning into TWY P2, P4, P5 and Taxilane P6 while taxiing either northwards or southwards on Taxilane P7, and
   ii) 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.

2) TWY SA can only be used by aircraft with maximum wingspan 65m. TWY SA is a one-way live TWY for aircraft taxiing into SASCO hangar via RWY 02L. Only tow-out operation is allowed from SASCO hangar into TWY SA and RWY 02L.

3) Taxiway Q (between TWY WA and TWY P7) can only be used by aircraft with maximum wingspan 65m.

4) Taxiway centreline along TWY EP between TWY R1 and R3 offset eastward by 2.5m away from aircraft stands E7 and F36.

5) Pilots are advised to apply minimum thrust when turning into taxiway WA from taxilane V6.

6) Taxilane U4 (behind aircraft stands A18 to A21) can only be used by aircraft with maximum wingspan 61m.

7) 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 65m.

8) Taxilane P7 (behind aircraft stands E20 to E22) and Taxilane C6 (behind aircraft stands F50 to F54) can only be used by aircraft with maximum wingspan 65m (towing and pushback exempted).

9) Taxilane L5 can only be used by aircraft with maximum wingspan 36m.

10) TWY L8, L9 and L10 can only be used by aircraft with maximum wingspan 65m.

11) Pilots are advised to exercise caution when taxiing near Taxilane L5, L8, L9 and L10.

12) Pilots are advised to apply speed limit of 20 knots when taxiing along TWY SOUTH CROSS 1 and SOUTH CROSS 2.

13) Pilots turning aircraft into aircraft stand A2 or aircraft stand B2 are advised to wait for any aircraft holding at Taxilane V6, at the inner cul-de-sac portion of the terminal building to vacate this portion before turning into aircraft stand A2 or aircraft stand B2.

14) TWY M, M4, M5, M6 and M7 are solely for use by Republic of Singapore Air Force (RSAF) aircraft.

15) TWY located western side of RWY 02L/20R, between TWY M5 and TWY M6 is solely for use by Republic of Singapore Air Force (RSAF) aircraft.

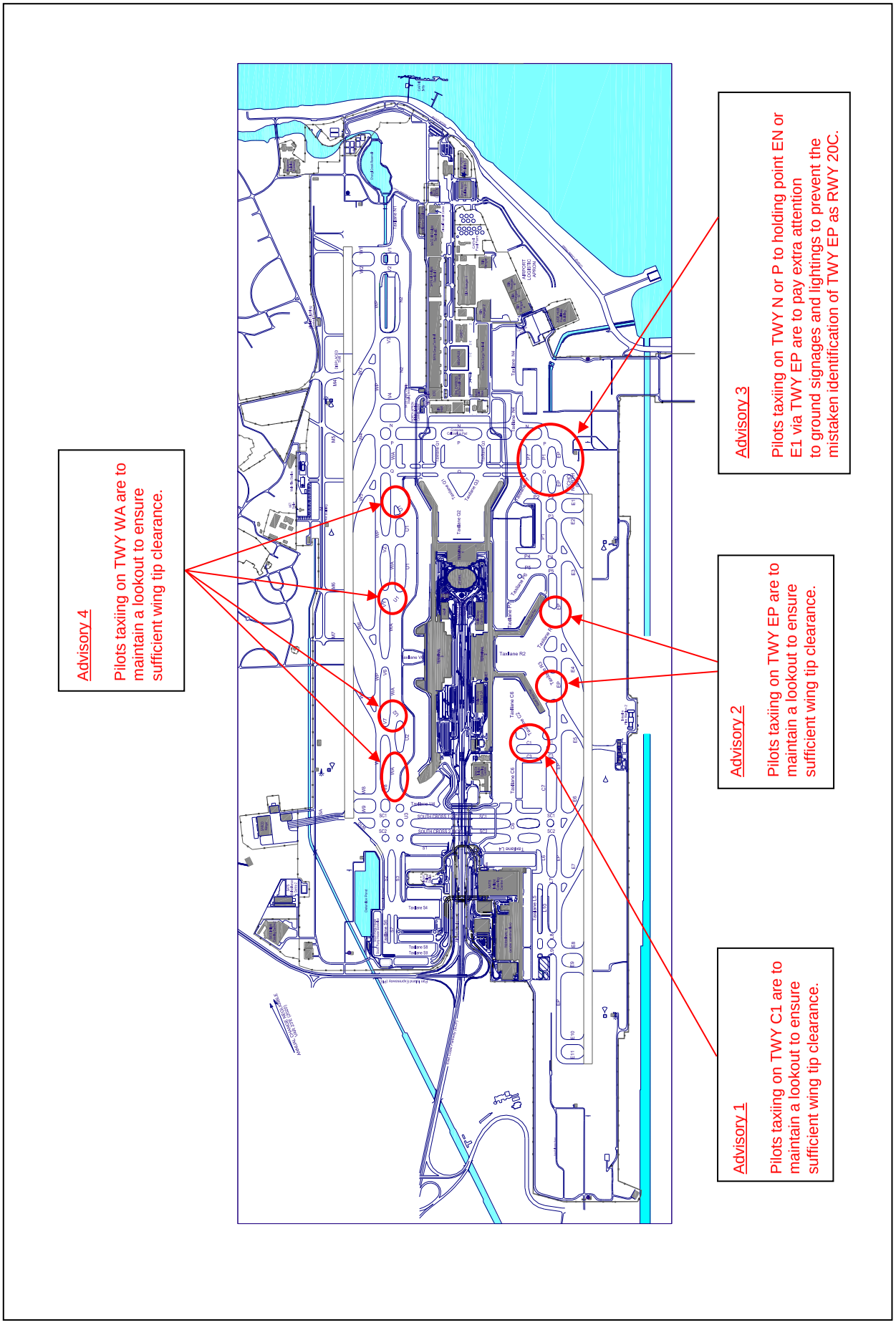
RADIO ALTIMETER OPERATIONS AREA

A radio altimeter operating area is established in the pre-threshold area of Runway 02L/20R and Runway 02C/20C.
The size of the radio altimeter operating area is 300m length and 120m width.

AIRCRAFT STANDS WITH SAFEGATE AIRCRAFT DOCKING GUIDANCE SYSTEM.

TOTAL AIRCRAFT PARKING POSITIONS : 230

AERODROME ADVISORY CHART



Changes : Magnetic Variation revised.

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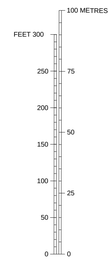
DIMENSIONS AND ELEVATIONS IN METRES

AERODROME OBSTACLE CHART - ICAO
TYPE A (OPERATING LIMITATIONS)

SINGAPORE/Singapore Changi

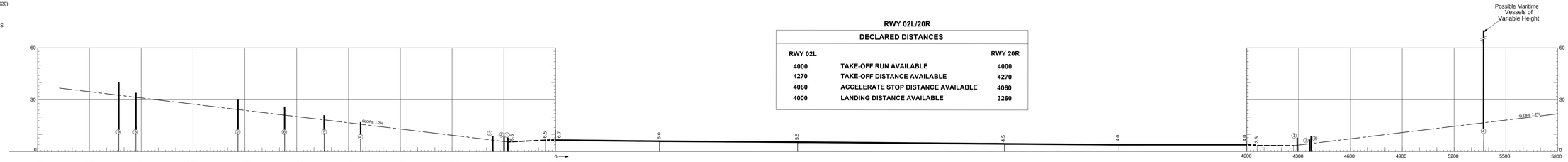
MAGNETIC VARIATION 23°E (2020)

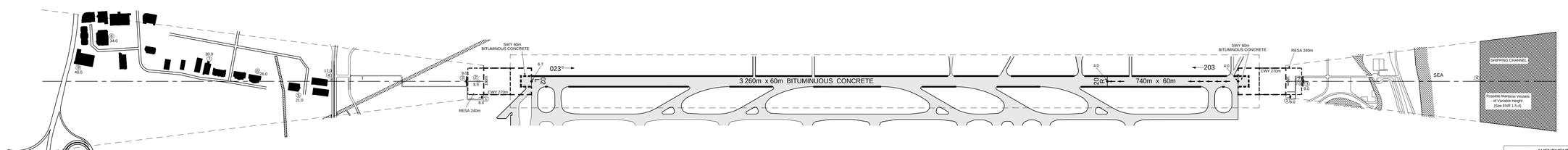


VERTICAL SCALE 1:1000

RWY 02L/20R

DECLARED DISTANCES		
RWY 02L		**RWY 20R**
4000	**TAKE-OFF RUN AVAILABLE**	**4000**
4270	**TAKE-OFF DISTANCE AVAILABLE**	**4270**
4060	**ACCELERATE STOP DISTANCE AVAILABLE**	**4060**
4000	**LANDING DISTANCE AVAILABLE**	**3260**





LEGEND

LOCALISER ANTENNA	
BUILDING	
IDENTIFICATION NUMBER	
LAMP POST, PRECISION APPROACH LIGHT	
ROAD	

HORIZONTAL SCALE 1:10,000

ORDER OF ACCURACY
HORIZONTAL : ±1m
VERTICAL : ±1m

AMENDMENT RECORD

NO.	DATE	ENTERED BY

CHANGES : Magnetic Variation revised.

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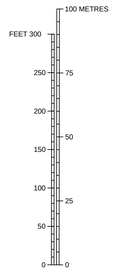
DIMENSIONS AND ELEVATIONS IN METRES

AERODROME OBSTACLE CHART - ICAO
TYPE A (OPERATING LIMITATIONS)

SINGAPORE/Singapore Changi

MAGNETIC VARIATION 23°E (2020)

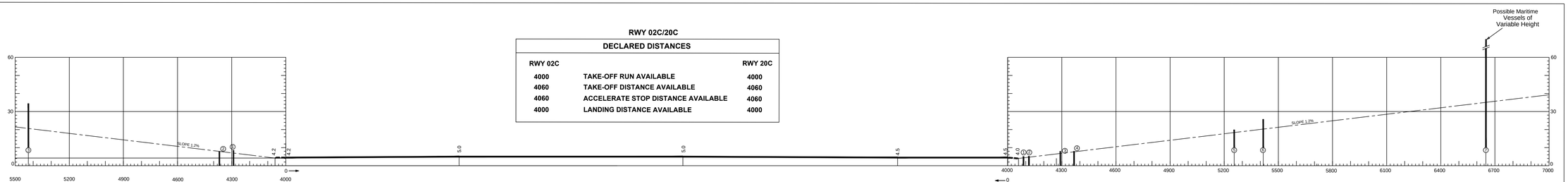


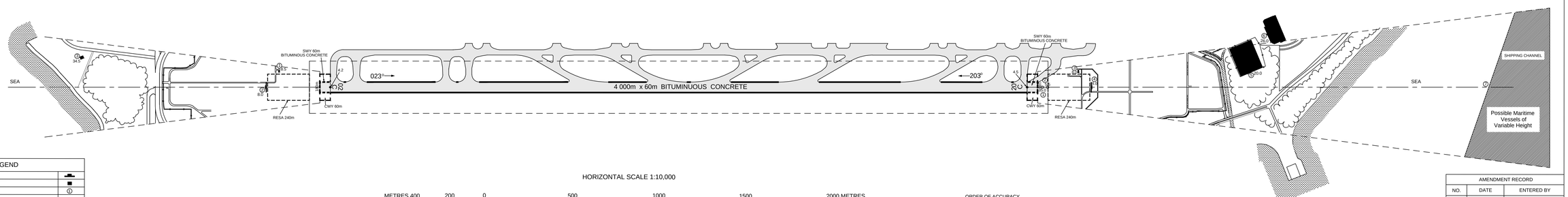
VERTICAL SCALE 1:1000

RWY 02C/20C

DECLARED DISTANCES

RWY 02C		RWY 20C
4000	TAKE-OFF RUN AVAILABLE	4000
4060	TAKE-OFF DISTANCE AVAILABLE	4060
4060	ACCELERATE STOP DISTANCE AVAILABLE	4060
4000	LANDING DISTANCE AVAILABLE	4000





HORIZONTAL SCALE 1:10,000

LEGEND	
LOCALISER ANTENNA	
BUILDING	
IDENTIFICATION NUMBER	
PRECISION APPROACH LIGHT	
ROAD	
TREE CANOPY	
FENCE	

ORDER OF ACCURACY
HORIZONTAL : ±1m
VERTICAL : ±1m

AMENDMENT RECORD		
NO.	DATE	ENTERED BY

CHANGES : Magnetic Variation revised.

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AERODROME OBSTACLE CHART - ICAO
TYPE B

SINGAPORE / Singapore Changi

AERODROME ELEVATION 7m

ELEVATIONS AND DIMENSIONS IN METRES
(ACCURACY OF ELEVATIONS : ± 2.5m)

103°56'E 103°57'E 103°58'E 103°59'E 104°0'E 104°1'E 104°2'E 104°3'E 104°4'E

1°27'N 1°26'N 1°25'N 1°24'N 1°23'N 1°22'N 1°21'N 1°20'N 1°19'N 1°18'N 1°17'N

JOHOR STRAIT

FIR KUALA LUMPUR
FIR SINGAPORE

APPROACH SURFACE SLOPE 1:40
TAKE-OFF CLIMB SURFACE SLOPE 1:50

Pulau Tekong Kechil
Pulau Tekong Reservoir
Pulau Tekong
Pulau Ubin

TAKE-OFF CLIMB SURFACE SLOPE 1:50
WSD34
GND - 500 ft ALT
APPROACH SURFACE SLOPE 1:40

Possible Maritime Vessels of Variable Height

CENTRE-LINE OF SHIPPING CHANNEL

APPROACH SURFACE SLOPE 1:50
R 20
CAFHI Jetty
Jetty
RESA 240m
CWY 270m
SWY 60m BITUMINOUS CONCRETE
203°
Displaced Threshold
TRANSITIONAL SURFACE SLOPE 1:7
Changi Ferry Terminal
APPROACH SURFACE SLOPE 1:50
CENTRE-LINE OF SHIPPING CHANNEL
C 20
RESA 240m
CWY 60m
SWY 60m BITUMINOUS CONCRETE
203°
L 20
SWY 150m ASPHALT
TRANSITIONAL SURFACE SLOPE 1:7
TRANSITIONAL SURFACE SLOPE 1:7
APPROACH SURFACE SLOPE 1:50
SWY 60m BITUMINOUS CONCRETE
RESA 240m
CWY 270m
02 L
023°
TRANSITIONAL SURFACE SLOPE 1:7
TRANSITIONAL SURFACE SLOPE 1:7
SWY 150m ASPHALT
023°
02 R
APPROACH SURFACE SLOPE 1:50
SWY 60m BITUMINOUS CONCRETE
RESA 240m
CWY 60m
02 C
APPROACH SURFACE SLOPE 1:50

CONICAL
SURFACE
Slope 1:20

Bedok Reservoir

MPF

CAUTION :
Rwy 02R/20L closed due development works.

CONICAL
SURFACE
Slope 1:20

INNER
HORIZONTAL
SURFACE
49m

Obstacles which penetrate the surfaces specified in Annex 14, Chapter 4 are shown with elevations.
Other obstacles which may penetrate these surfaces are possible ships and oil rigs. These maritime vessels may not have obstruction lightings.

Tanah Merah Ferry Terminal

Bedok Jetty

APPROACH SURFACE SLOPE 1:40
TAKE-OFF CLIMB SURFACE SLOPE 1:50
TAKE-OFF CLIMB SURFACE SLOPE 1:50
APPROACH SURFACE SLOPE 1:40
APPROACH SURFACE SLOPE 1:50
TAKE-OFF CLIMB SURFACE SLOPE 1:50
APPROACH SURFACE SLOPE 1:40

Possible Maritime Vessels of Variable Height

Restricted Waters
(Prior permission required
for vessels over 15m AMSL)

Restricted Waters
(Prior permission required
for vessels over 30m AMSL)

Restricted Waters
(Prior permission required
for vessels over 49m AMSL)

180 0
VAR 23° E (2020)
ANNUAL CHANGE
NEGLIGIBLE

LEGEND	
AERODROME REF POINT 01° 21' 33.16"N LAT 103° 59' 21.60"E LONG	⊕
ANTENNA, CHIMNEY, MAST, POLE, SPIRE or CRANE	⊙
SPOT HEIGHT IN METRES	•
BUILDING or STRUCTURE	▬
TREE	*
ROAD	
BUILD - UP AREA	

AMENDMENT RECORD		
NO	DATE	ENTERED BY

HORIZONTAL SCALE 1 : 20,000

Meters 1000 500 0 1000 2000 3000 4000 5000
Feet 1000 0 5000 10000 15000 20000

CHANGES : Magnetic Variation revised.

GRID : Grid lines and co-ordinates shown are based on WGS-84 datum.

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

TWR	118.6
APP	120.3
	124.05
ACC	134.4

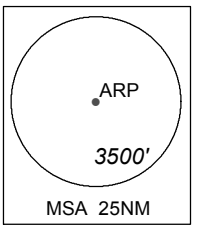
TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.6

SINGAPORE/Singapore Changi
RWY 02L/20R
ANITO DEPARTURES
ANITO 6E (R02L)
ANITO 7F (R20R)

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

DISTANCES IN NM



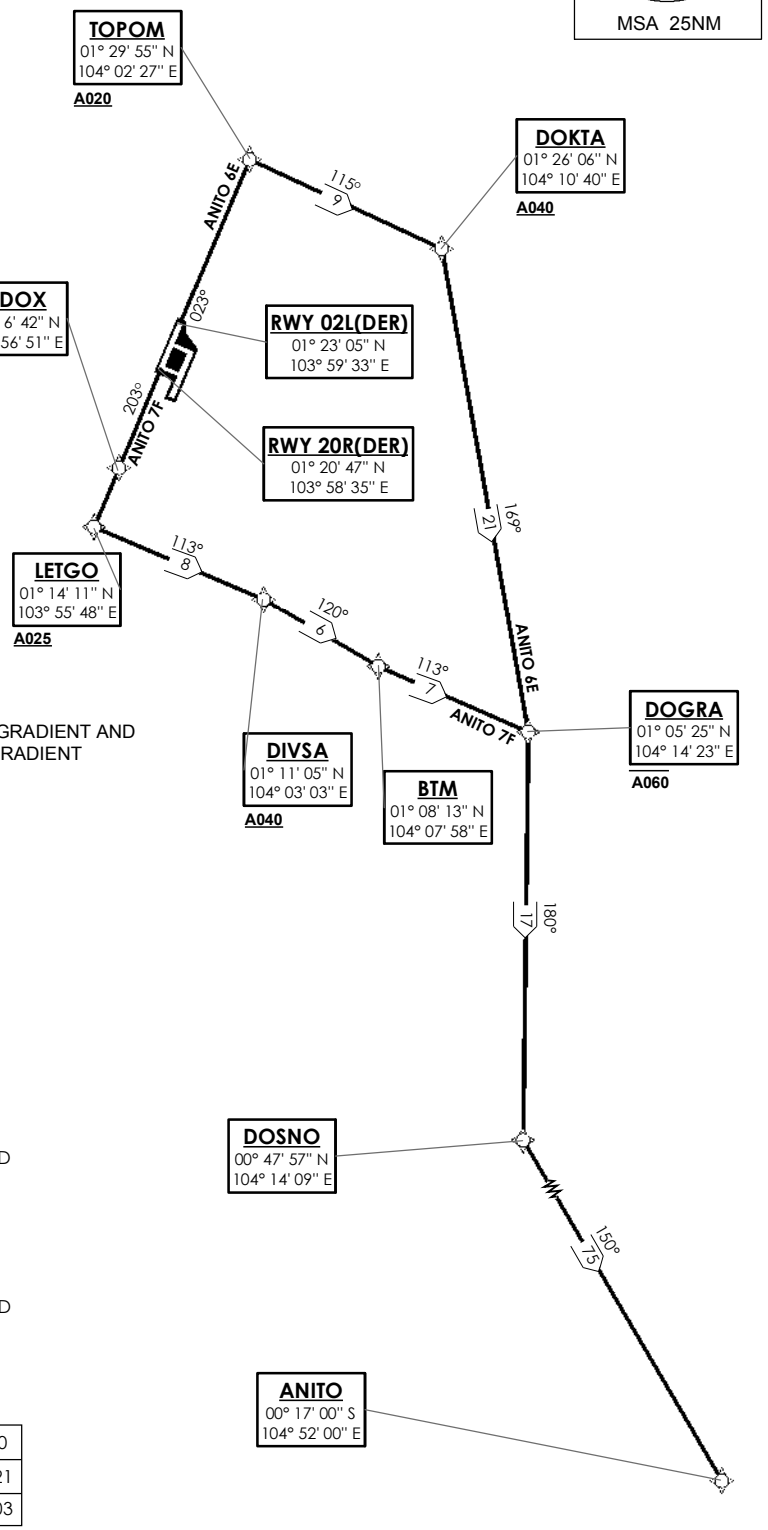
NOTE: RADAR REQUIRED

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 VECTORING, 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



NOT TO SCALE

GENERAL INFORMATION

INITIAL CLIMB
3000FT

ON INITIAL CONTACT WHEN REQUESTING ATC, INFORM ATC OF THE FLIGHT LEVEL AIRCRAFT CAN CROSS ANITO

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 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 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

CHANGES : D-ATIS and APP frequencies revised
Magnetic Variation revised.

ANITO 6E (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 right. To DOKTA at or above 4000ft, turn right. To DOGRA at or below 6000ft, turn right. To DOSNO, turn left. To ANITO.	TOPOM [M023; A020+; R] - DOKTA [A040+; R] - DOGRA [A060-; R] - DOSNO [L] - ANITO	CF TF TF TF TF	N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	TOPOM	-	023(022.5)	-0.5	R	A020+	-	RNAV1
TF	DOKTA	-	115(114.5)	-0.5	R	A040+	-	RNAV1
TF	DOGRA	-	169(168.5)	-0.5	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	ANITO	-	150(149.5)	-0.5	-	-	-	RNAV1

ANITO 7F (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, turn right. To BTM, turn left. To DOGRA at or below 6000ft, turn right. To DOSNO, turn left. To ANITO.	LEDOX [M203; A015+] - LETGO [A025+; L] - DIVSA [A040+; R] - BTM [L] - DOGRA [A060-; R] - DOSNO [L] - ANITO	CF TF TF TF TF TF TF	N N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	LEDOX	-	203(202.5)	-0.5	-	A015+	-	RNAV1
TF	LETGO	-	203(202.5)	-0.5	L	A025+	-	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	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	ANITO	-	150(149.5)	-0.5	-	-	-	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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

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

TWR	118.6 / 118.25
APP	120.3 124.05
ACC	134.4

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.6

SINGAPORE/Singapore Changi
RWY 02C/20C
ANITO DEPARTURES
ANITO 6A (R02C)
ANITO 7B (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 VECTORING, 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

GENERAL INFORMATION

INITIAL CLIMB 3000FT

ON INITIAL CONTACT WHEN REQUESTING ATC, INFORM ATC OF THE FLIGHT LEVEL AIRCRAFT CAN CROSS ANITO

ALL SIDs INCLUDE NOISE PREFERENTIAL ROUTES.

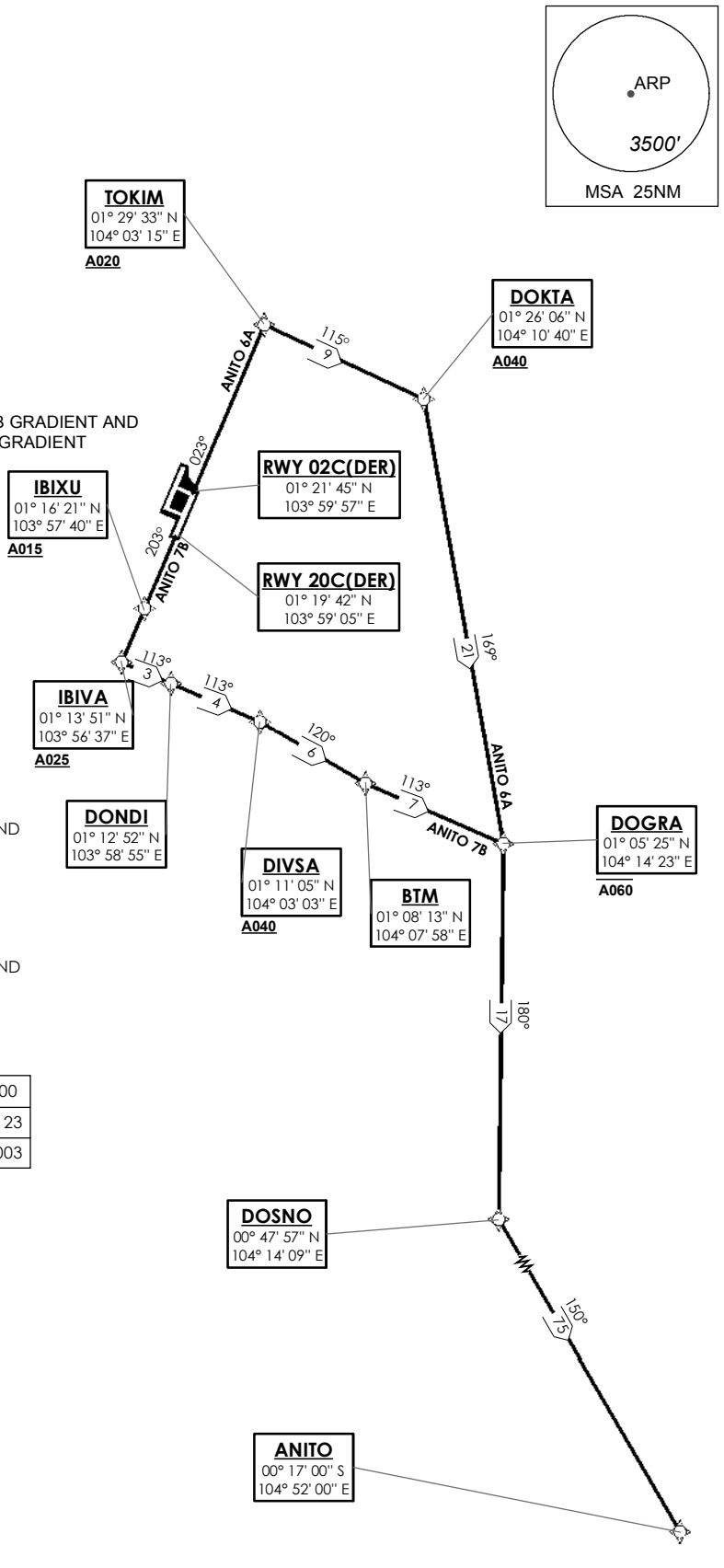
RWY 02C

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 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 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

CHANGES : D-ATIS and APP frequencies revised
Magnetic Variation revised.

ANITO 6A (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, turn right. To DOGRA at or below 6000ft, turn right. To DOSNO, turn left. To ANITO.	TOKIM [M023; A020+; R] - DOKTA [A040+; R] - DOGRA [A060-; R] - DOSNO [L] - ANITO	CF TF TF TF TF	N N N N 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	R	A040+	-	RNAV1
TF	DOGRA	-	169(168.5)	-0.5	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	ANITO	-	150(149.5)	-0.5	-	-	-	RNAV1

ANITO 7B (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 right. To DOSNO, turn left. To ANITO.	IBIXU [M203; A015+] - IBIVA [A025+; L] - DONDI - DIVSA [A040+; R] - BTM [L] - DOGRA [A060-; R] - DOSNO [L] - ANITO	CF TF TF TF TF TF TF TF	N N N N N N N 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	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	ANITO	-	150(149.5)	-0.5	-	-	-	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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

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
DEP 128.6

SINGAPORE/Singapore Changi
RWY 02L/20R
ADMIM DEPARTURES
ADMIM 1E (R02L)
ADMIM 3F (R20R)

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

DISTANCES IN NM

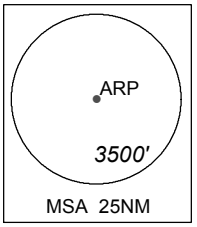
NOTE: RADAR REQUIRED

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 VECTORING,
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



GENERAL INFORMATION

INITIAL CLIMB
3000FT

ALL SIDs INCLUDE NOISE PREFERENTIAL ROUTES.

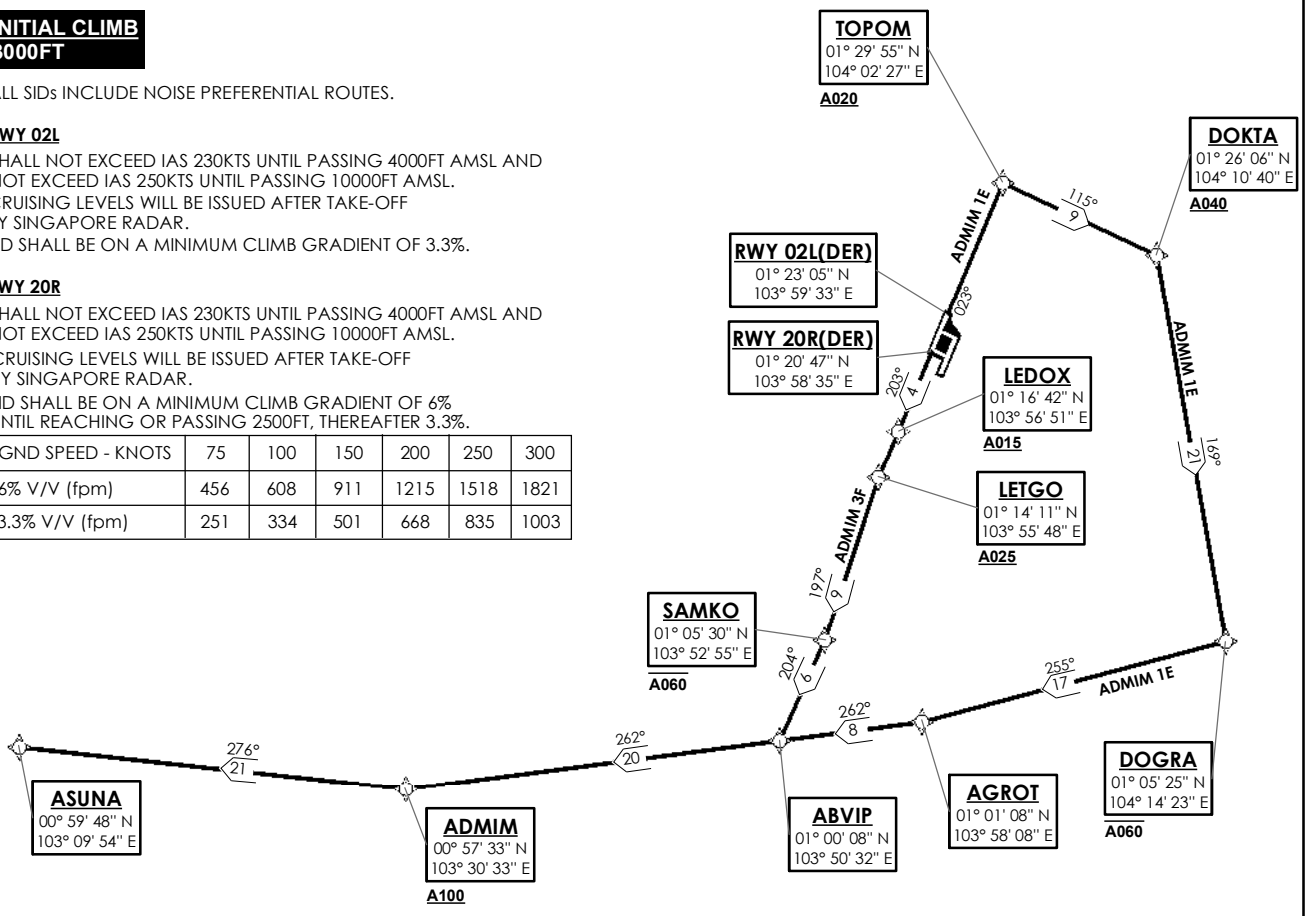
RWY 02L

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 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 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

CHANGES : D-ATIS and APP frequencies revised
Magnetic Variation revised.

ADMIM 1E (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 right. To DOKTA at or above 4000ft, turn right. To DOGRA at or below 6000ft, turn right. To AGROT, turn right. To ABVIP. To ADMIM at or above 10000ft, turn right. To ASUNA.	TOPOM [M023; A020+; R] - DOKTA [A040+; R] - DOGRA [A060-; R] - AGROT [R] - ABVIP - ADMIM [A100+; R] - ASUNA	CF TF TF TF TF TF TF	N N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	TOPOM	-	023(022.5)	-0.5	R	A020+	-	RNAV1
TF	DOKTA	-	115(114.5)	-0.5	R	A040+	-	RNAV1
TF	DOGRA	-	169(168.5)	-0.5	R	A060-	-	RNAV1
TF	AGROT	-	255(254.5)	-0.5	R	-	-	RNAV1
TF	ABVIP	-	262(261.5)	-0.5	-	-	-	RNAV1
TF	ADMIM	-	262(261.5)	-0.5	R	A100+	-	RNAV1
TF	ASUNA	-	276(275.5)	-0.5	-	-	-	RNAV1

ADMIM 3F (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 SAMKO at or below 6000ft, turn right. To ABVIP, turn right. To ADMIM at or above 10000ft, turn right. To ASUNA.	LEDOX [M203; A015+] - LETGO [A025+; L] - SAMKO [A060-; R] - ABVIP [R] - ADMIM [A100+; R] - ASUNA	CF TF TF TF TF TF	N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	LEDOX	-	203(202.5)	-0.5	-	A015+	-	RNAV1
TF	LETGO	-	203(202.5)	-0.5	L	A025+	-	RNAV1
TF	SAMKO	-	197(197.5)	-0.5	R	A060-	-	RNAV1
TF	ABVIP	-	204(203.5)	-0.5	R	-	-	RNAV1
TF	ADMIM	-	262(261.5)	-0.5	R	A100+	-	RNAV1
TF	ASUNA	-	276(275.5)	-0.5	-	-	-	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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

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
ADMIM DEPARTURES
ADMIM 1A (R02C)
ADMIM 3B (R20C)

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

DISTANCES IN NM

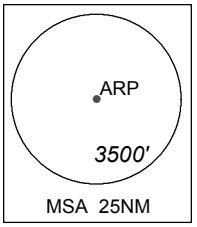
NOTE: RADAR REQUIRED

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 VECTORING,
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



GENERAL INFORMATION

INITIAL CLIMB
3000FT

ALL SIDs INCLUDE NOISE PREFERENTIAL ROUTES.

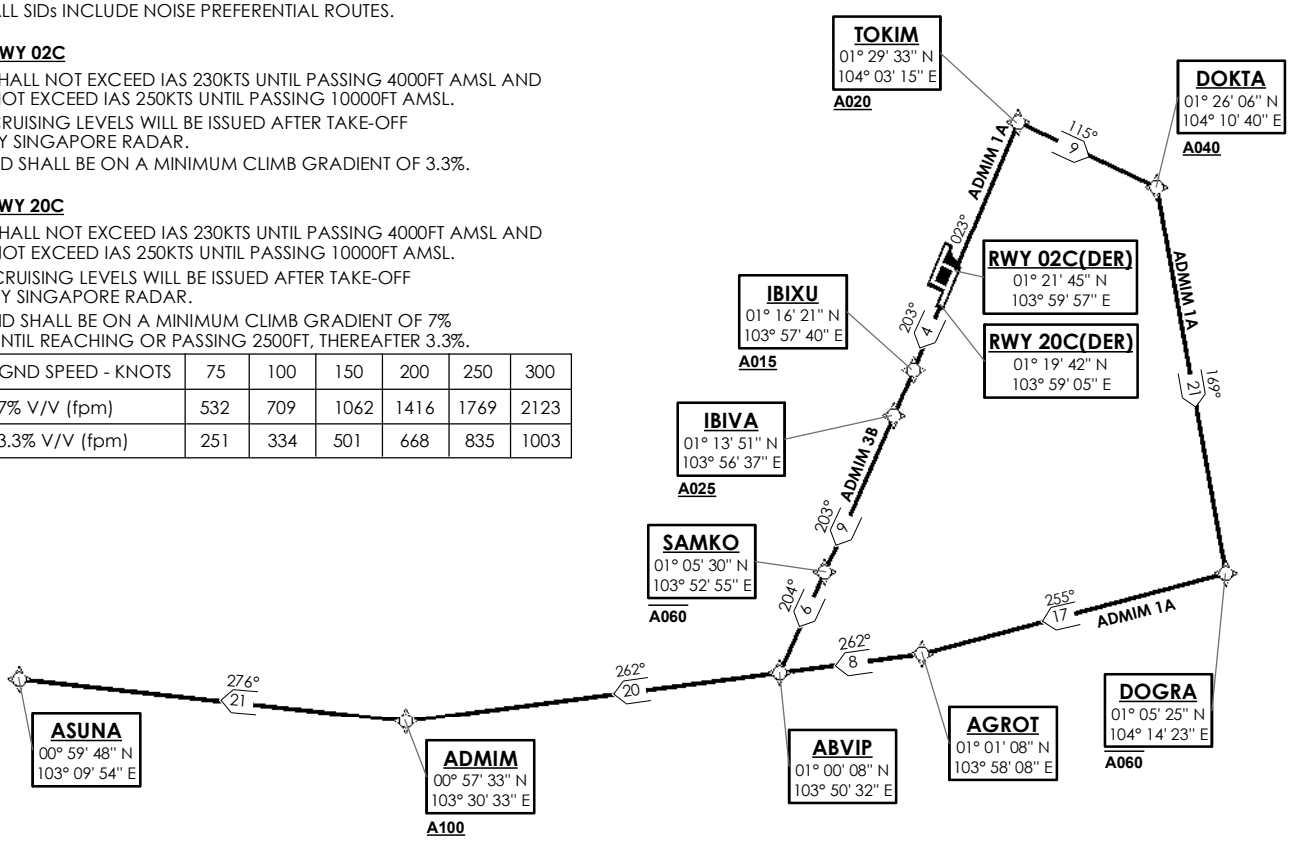
RWY 02C

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 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 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

CHANGES : D-ATIS and APP frequencies revised
Magnetic Variation revised.

ADMIM 1A (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, turn right. To DOGRA at or below 6000ft, turn right. To AGROT, turn right. To ABVIP. To ADMIM at or above 10000ft, turn right. To ASUNA.	TOKIM [M023; A020+; R] - DOKTA [A040+; R] - DOGRA [A060-; R] - AGROT [R] - ABVIP - ADMIM [A100+; R] - ASUNA	CF TF TF TF TF TF TF	N N N N N N 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	R	A040+	-	RNAV1
TF	DOGRA	-	169(168.5)	-0.5	R	A060-	-	RNAV1
TF	AGROT	-	255(254.5)	-0.5	R	-	-	RNAV1
TF	ABVIP	-	262(261.5)	-0.5	-	-	-	RNAV1
TF	ADMIM	-	262(261.5)	-0.5	R	A100+	-	RNAV1
TF	ASUNA	-	276(275.5)	-0.5	-	-	-	RNAV1

ADMIM 3B (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. To SAMKO at or below 6000ft, turn right. To ABVIP, turn right. To ADMIM at or above 10000ft, turn right. To ASUNA.	IBIXU [M203; A015+] - IBIVA [A025+] - SAMKO [A060-; R] - ABVIP [R] - ADMIM [A100+; R] - ASUNA	CF TF TF TF TF TF	N N N N N 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	-	A025+	-	RNAV1
TF	SAMKO	-	203(202.5)	-0.5	R	A060-	-	RNAV1
TF	ABVIP	-	204(203.5)	-0.5	R	-	-	RNAV1
TF	ADMIM	-	262(261.5)	-0.5	R	A100+	-	RNAV1
TF	ASUNA	-	276(275.5)	-0.5	-	-	-	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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

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

TWR 118.6
APP 120.3
124.05
ACC 134.2

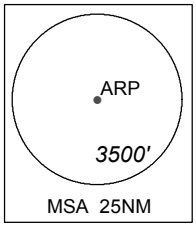
TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.6

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

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 VECTORING, 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

GENERAL INFORMATION

INITIAL CLIMB 3000FT

ALL SIDs INCLUDE NOISE PREFERENTIAL ROUTES.

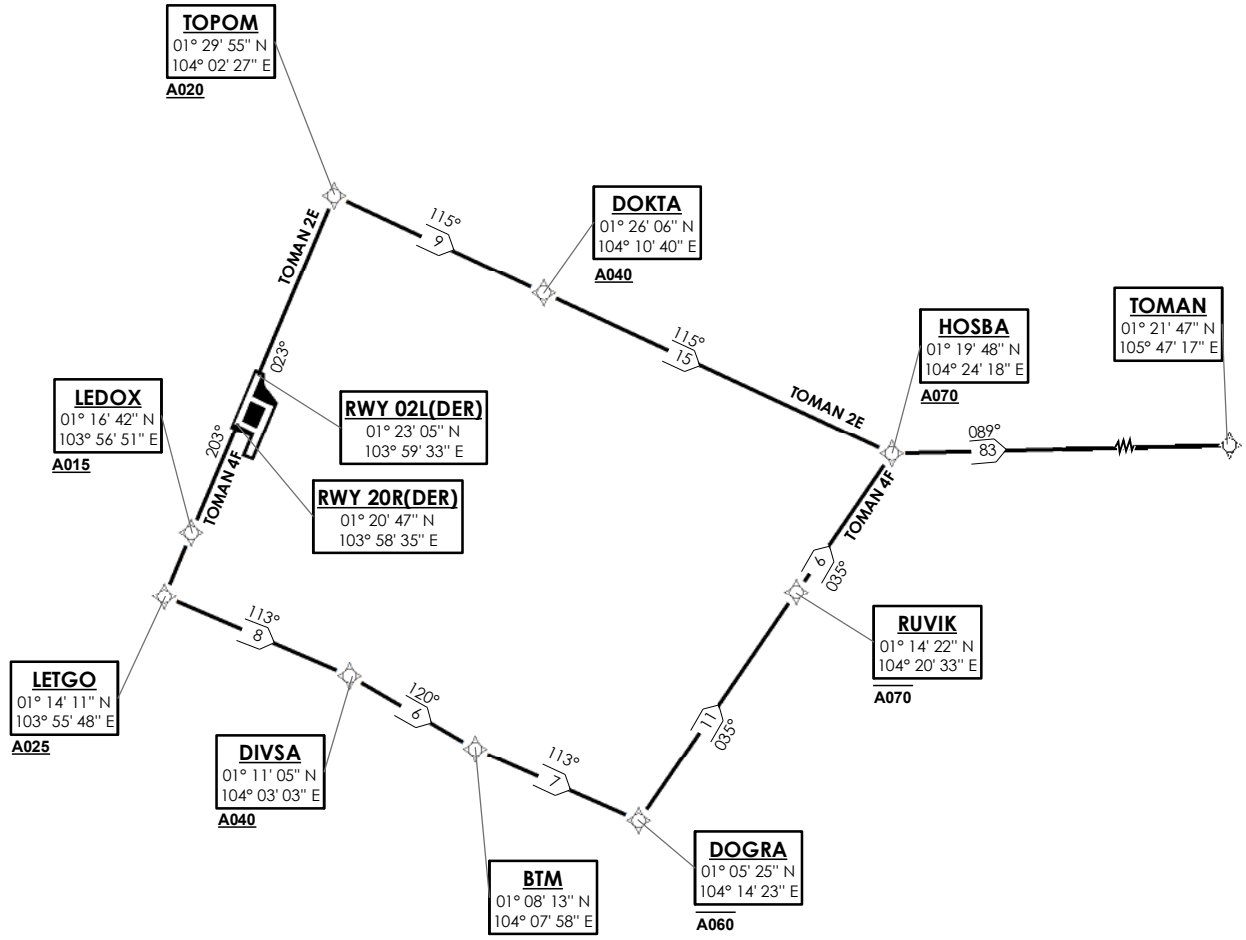
RWY 02L

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 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 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

CHANGES : D-ATIS and APP frequencies revised
Magnetic Variation revised.

TOMAN 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 right. To DOKTA at or above 4000ft. To HOSBA at or above 7000ft, turn left. To TOMAN.	TOPOM [M023; A020+; R] - DOKTA [A040+] - HOSBA [A070+; L] - TOMAN	CF TF TF TF	N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	TOPOM	-	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 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, 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.	LEDOX [M203; A015+] - LETGO [A025+; L] - DIVSA [A040+; R] - BTM [L] - DOGRA [A060-; L] - RUVIK [A070-] - HOSBA [A070+; R] - TOMAN	CF TF TF TF TF TF TF TF	N N N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	LEDOX	-	203(202.5)	-0.5	-	A015+	-	RNAV1
TF	LETGO	-	203(202.5)	-0.5	L	A025+	-	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	**COMMUNICATIONS FAILURE OCCURS IMMEDIATELY AFTER DEPARTURE ON:** **RWY 02L -** PROCEED STRAIGHT AHEAD TO NYLON HOLDING AREA (NHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE. **RWY 20R -** PROCEED STRAIGHT AHEAD TO SAMKO HOLDING AREA (SHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE.

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

TWR 118.6 / 118.25
APP 120.3
124.05
ACC 134.2

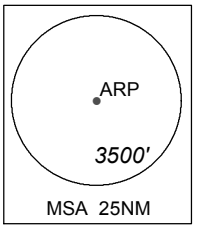
TRANSITION ALTITUDE
11 000ft

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 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 VECTORING, 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

GENERAL INFORMATION

INITIAL CLIMB 3000FT

ALL SIDs INCLUDE NOISE PREFERENTIAL ROUTES.

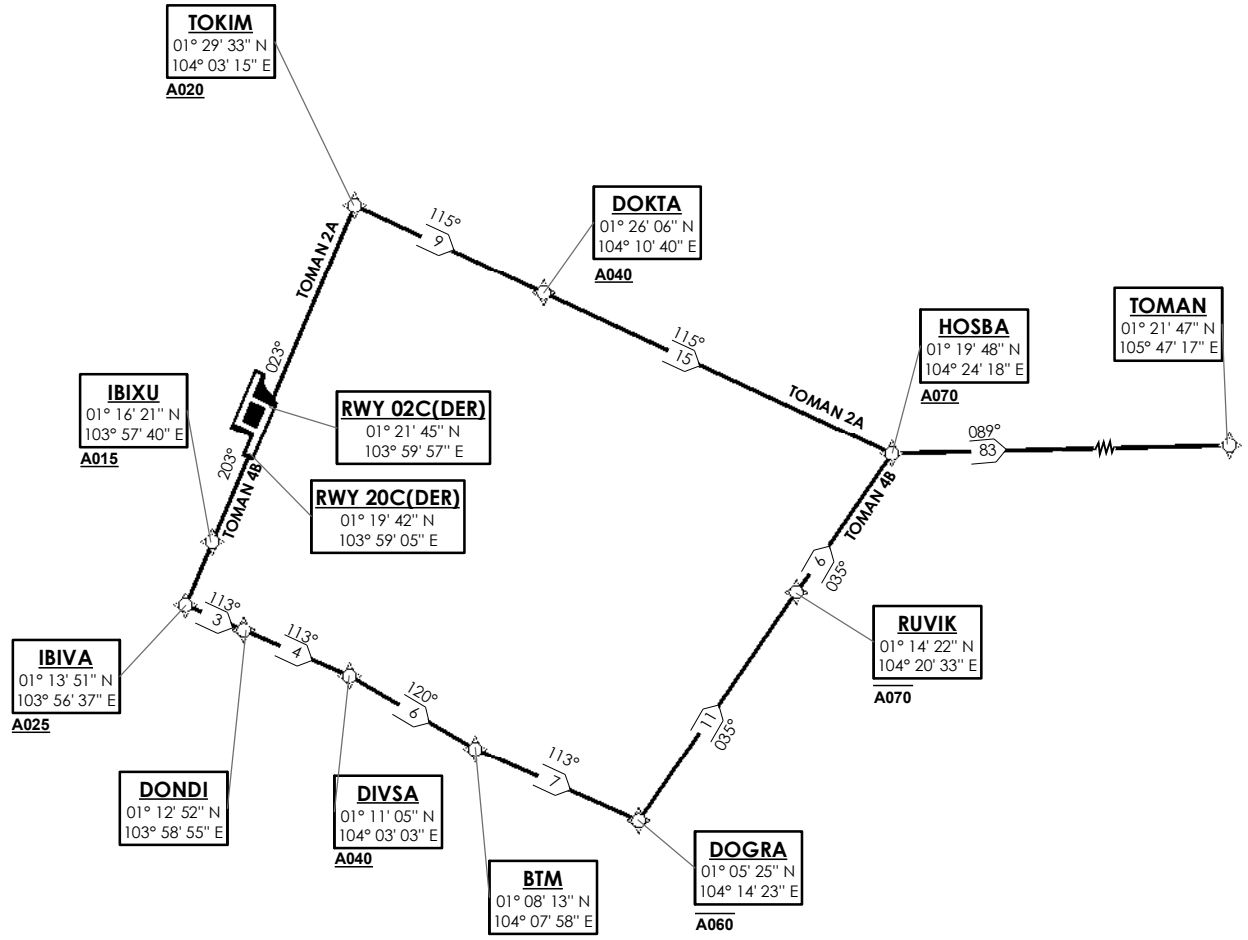
RWY 02C

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 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 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

CHANGES : D-ATIS and APP frequencies revised
Magnetic Variation revised.

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] - DOKTA [A040+] - HOSBA [A070+; L] - TOMAN	CF TF TF TF	N N N 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+] - IBIVA [A025+; L] - DONDI - DIVSA [A040+; R] - BTM [L] - DOGRA [A060-; L] - RUVIK [A070-] - HOSBA [A070+; R] - TOMAN	CF TF TF TF TF TF TF TF TF	N N N N N N N N 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	**COMMUNICATIONS FAILURE OCCURS IMMEDIATELY AFTER DEPARTURE ON:** **RWY 02C -** PROCEED STRAIGHT AHEAD TO NYLON HOLDING AREA (NHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE. **RWY 20C -** PROCEED STRAIGHT AHEAD TO SAMKO HOLDING AREA (SHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE.

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

TWR	118.6
APP	120.3 124.05
ACC	134.4

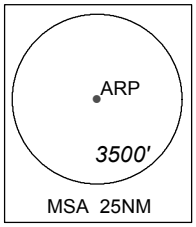
TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.6

SINGAPORE/Singapore Changi
RWY 02L/20R
BAVUS DEPARTURES
BAVUS 1E (R02L)
BAVUS 3F (R20R)

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

DISTANCES IN NM



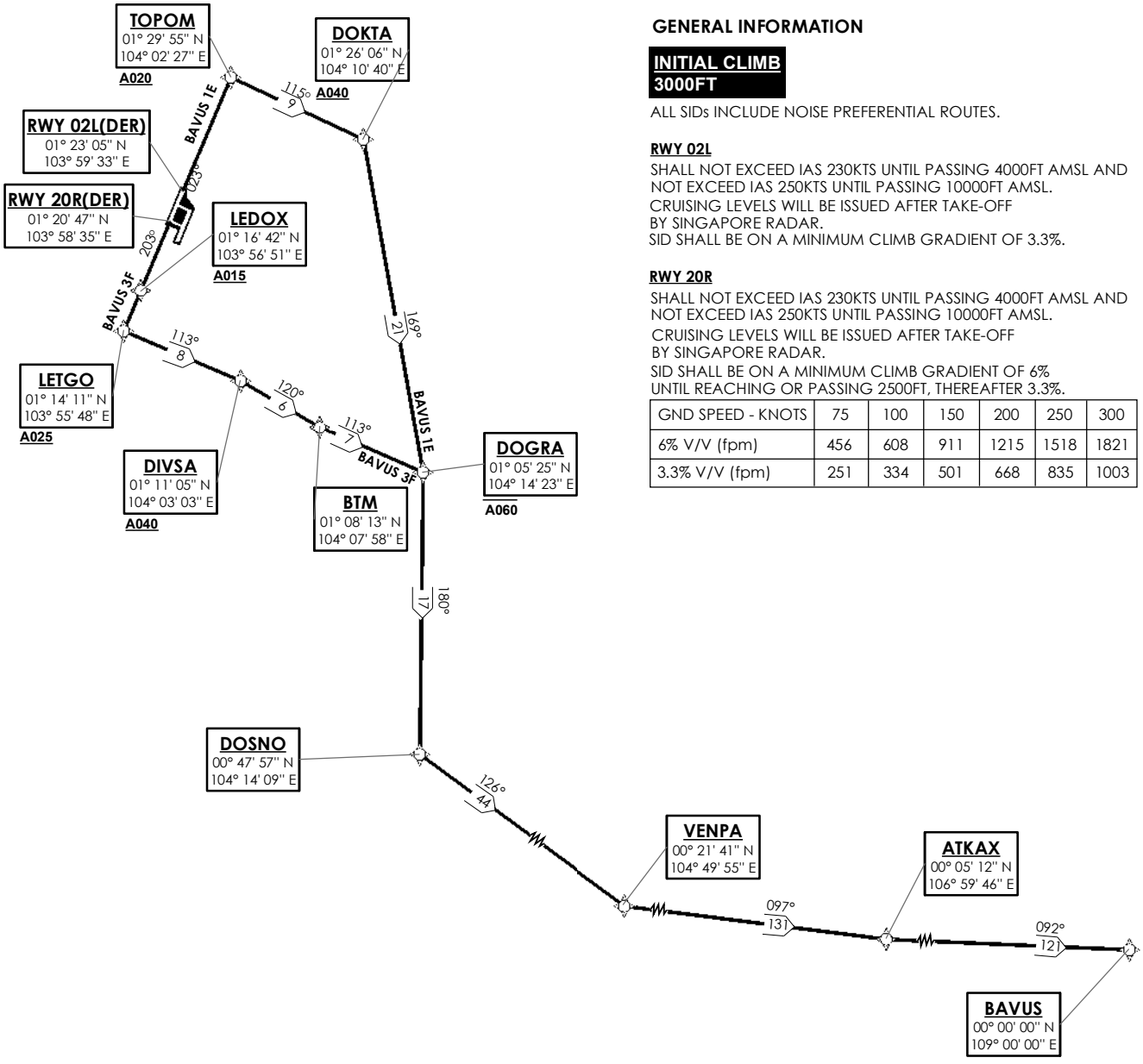
NOTE: RADAR REQUIRED

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 VECTORING, 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



NOT TO SCALE

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 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 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

CHANGES : D-ATIS and APP frequencies revised
Magnetic Variation revised.

BAVUS 1E (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 right. To DOKTA at or above 4000ft, turn right. To DOGRA at or below 6000ft, turn right. To DOSNO, turn left. To VENPA, turn left. To ATKAX, turn left. To BAVUS.	TOPOM [M023; A020+; R] -	CF	N
	DOKTA [A040+; R] -	TF	N
	DOGRA [A060-; R] -	TF	N
	DOSNO [L] -	TF	N
	VENPA [L] -	TF	N
	ATKAX [L] -	TF	N
	BAVUS	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(022.5)	-0.5	R	A020+	-	RNAV1
TF	DOKTA	-	115(114.5)	-0.5	R	A040+	-	RNAV1
TF	DOGRA	-	169(168.5)	-0.5	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	VENPA	-	126(125.5)	-0.5	L	-	-	RNAV1
TF	ATKAX	-	097(096.5)	-0.5	L	-	-	RNAV1
TF	BAVUS	-	092(091.5)	-0.5	-	-	-	RNAV1

BAVUS 3F (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, turn right. To BTM, turn left. To DOGRA at or below 6000ft, turn right. To DOSNO, turn left. To VENPA, turn left. To ATKAX, turn left. To BAVUS.	LEDOX [M203; A015+] -	CF	N
	LETGO [A025+; L] -	TF	N
	DIVSA [A040+; R] -	TF	N
	BTM [L] -	TF	N
	DOGRA [A060-; R] -	TF	N
	DOSNO [L] -	TF	N
	VENPA [L] -	TF	N
	ATKAX [L] -	TF	N
	BAVUS	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(202.5)	-0.5	-	A015+	-	RNAV1
TF	LETGO	-	203(202.5)	-0.5	L	A025+	-	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	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	VENPA	-	126(125.5)	-0.5	L	-	-	RNAV1
TF	ATKAX	-	097(096.5)	-0.5	L	-	-	RNAV1
TF	BAVUS	-	092(091.5)	-0.5	-	-	-	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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

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

TWR	118.6 / 118.25
APP	120.3 124.05
ACC	134.4

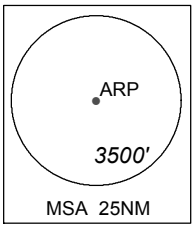
TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.6

SINGAPORE/Singapore Changi
RWY 02C/20C
BAVUS DEPARTURES
BAVUS 1A (R02C)
BAVUS 3B (R20C)

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

DISTANCES IN NM



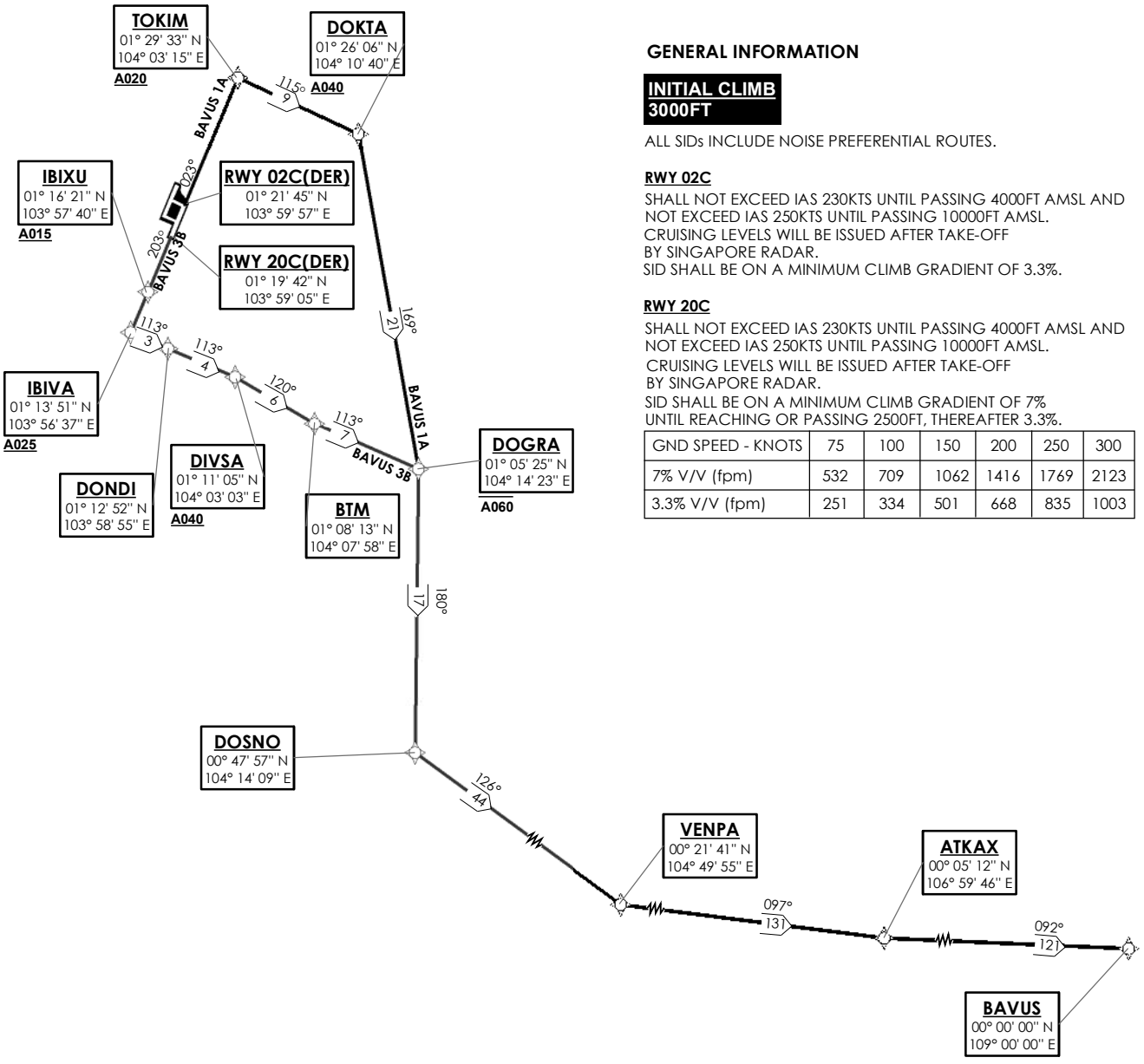
NOTE: RADAR REQUIRED

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 VECTORING, 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



NOT TO SCALE

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 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 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

BAVUS 1A (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, turn right. To DOGRA at or below 6000ft, turn right. To DOSNO, turn left. To VENPA, turn left. To ATKAX, turn left. To BAVUS.	TOKIM [M023; A020+; R] -	CF	N
	DOKTA [A040+; R] -	TF	N
	DOGRA [A060-; R] -	TF	N
	DOSNO [L] -	TF	N
	VENPA [L] -	TF	N
	ATKAX [L] -	TF	N
	BAVUS	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	R	A040+	-	RNAV1
TF	DOGRA	-	169(168.5)	-0.5	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	VENPA	-	126(125.5)	-0.5	L	-	-	RNAV1
TF	ATKAX	-	097(096.5)	-0.5	L	-	-	RNAV1
TF	BAVUS	-	092(091.5)	-0.5	-	-	-	RNAV1

BAVUS 3B (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 right. To DOSNO, turn left. To VENPA, turn left. To ATKAX, turn left. To BAVUS.	IBIXU [M203; A015+] -	CF	N
	IBIVA [A025+; L] -	TF	N
	DONDI -	TF	N
	DIVSA [A040+; R] -	TF	N
	BTM [L] -	TF	N
	DOGRA [A060-; R] -	TF	N
	DOSNO [L] -	TF	N
	VENPA [L] -	TF	N
	ATKAX [L] -	TF	N
	BAVUS	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	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	VENPA	-	126(125.5)	-0.5	L	-	-	RNAV1
TF	ATKAX	-	097(096.5)	-0.5	L	-	-	RNAV1
TF	BAVUS	-	092(091.5)	-0.5	-	-	-	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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

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

TWR 118.6
APP 120.3
124.05
ACC 133.25

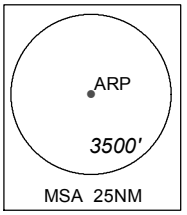
TRANSITION ALTITUDE
11 000ft

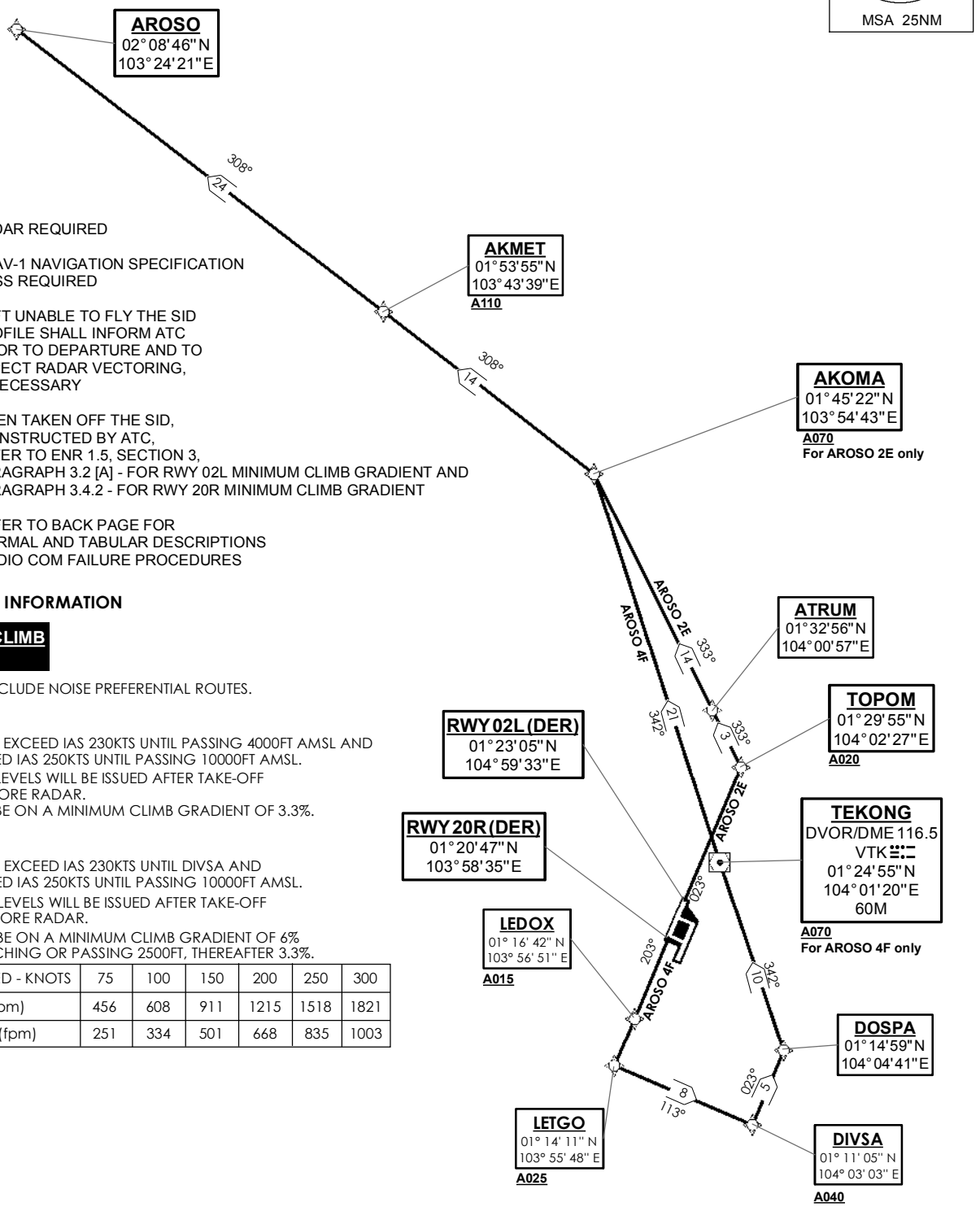
D-ATIS AP ID-WSSS
128.6

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

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 VECTORING, 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

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

CHANGES : D-ATIS and APP frequencies revised
Magnetic Variation revised.

AROSO 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 AKMET at or above 11000ft. To AROSO.	TOPOM [M023; A020+; L] - ATRUM - AKOMA [A070+; L] - AKMET [A110+] - AROSO	CF TF TF TF TF	N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	TOPOM	-	023(022.5)	-0.5	L	A020+	-	RNAV1
TF	ATRUM	-	333(332.5)	-0.5	-	-	-	RNAV1
TF	AKOMA	-	333(332.5)	-0.5	L	A070+	-	RNAV1
TF	AKMET	-	308(307.5)	-0.5	-	A110+	-	RNAV1
TF	AROSO	-	308(307.5)	-0.5	-	-	-	RNAV1

AROSO 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 AKMET at or above 11000ft. To AROSO.	LEDOX [M203; A015+] - LETGO [A025+; L] - DIVSA [A040+; K230; L] - DOSPA [L] - VTK [A070+] - AKOMA [L] - AKMET [A110+] - AROSO	CF TF TF TF TF TF TF TF	N N N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	LEDOX	-	203(202.5)	-0.5	-	A015+	-	RNAV1
TF	LETGO	-	203(202.5)	-0.5	L	A025+	-	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	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	**COMMUNICATIONS FAILURE OCCURS IMMEDIATELY AFTER DEPARTURE ON:** **RWY 02L -** PROCEED STRAIGHT AHEAD TO NYLON HOLDING AREA (NHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE. **RWY 20R -** PROCEED STRAIGHT AHEAD TO SAMKO HOLDING AREA (SHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE.

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 23'E (2020)

DISTANCES IN NM

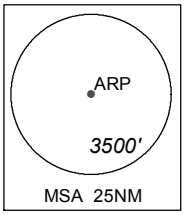
NOTE: RADAR REQUIRED

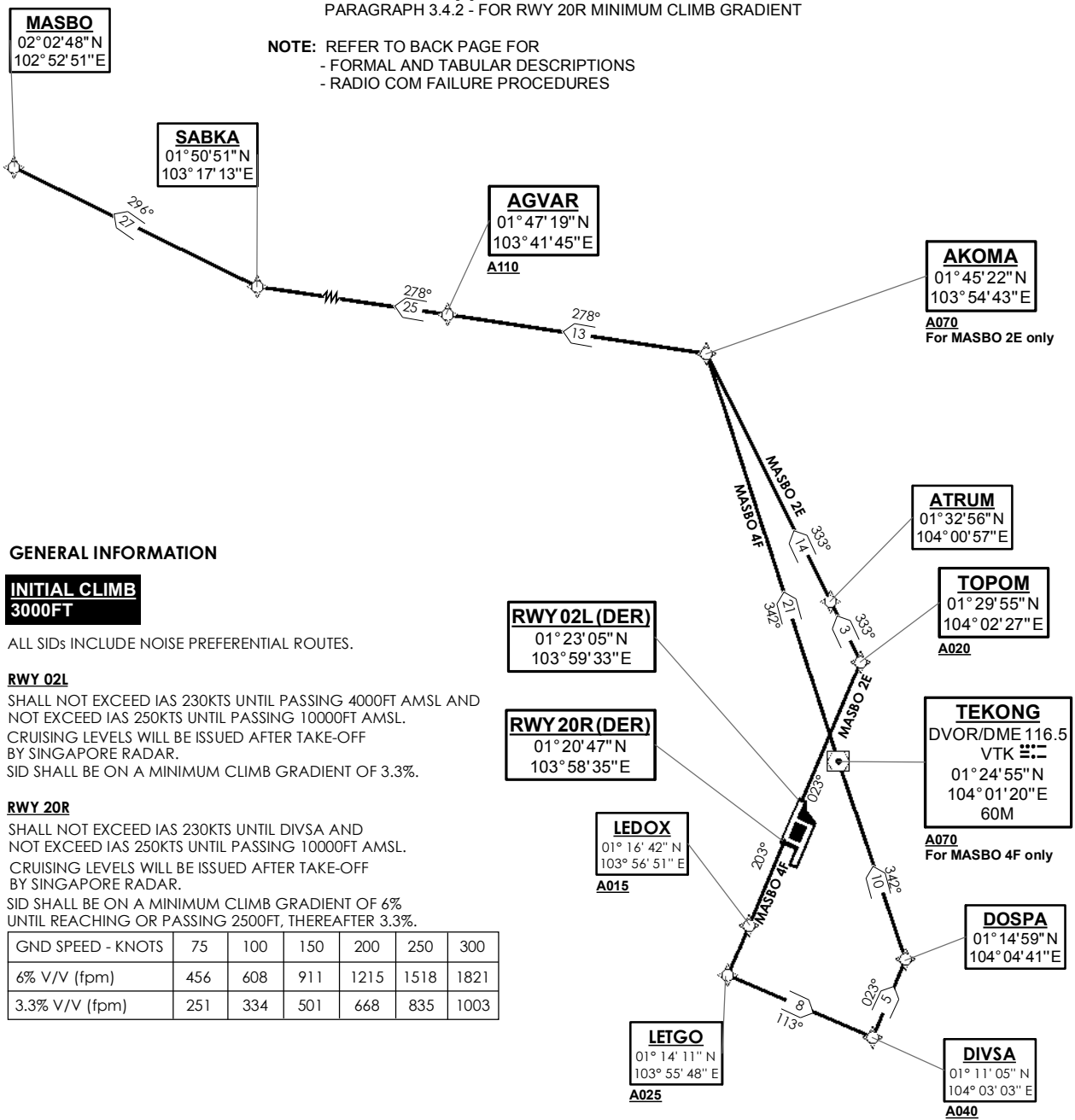
NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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





NOT TO SCALE

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

CHANGES : D-ATIS and APP frequencies revised
Magnetic Variation revised.

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(022.5)	-0.5	L	A020+	-	RNAV1
TF	ATRUM	-	333(332.5)	-0.5	-	-	-	RNAV1
TF	AKOMA	-	333(332.5)	-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 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(202.5)	-0.5	-	A015+	-	RNAV1
TF	LETGO	-	203(202.5)	-0.5	L	A025+	-	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	**COMMUNICATIONS FAILURE OCCURS IMMEDIATELY AFTER DEPARTURE ON:** **RWY 02L -** PROCEED STRAIGHT AHEAD TO NYLON HOLDING AREA (NHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE. **RWY 20R -** PROCEED STRAIGHT AHEAD TO SAMKO HOLDING AREA (SHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE.

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

TWR 118.6 / 118.25
APP 120.3
124.05
ACC 133.25

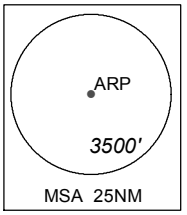
TRANSITION ALTITUDE
11 000ft

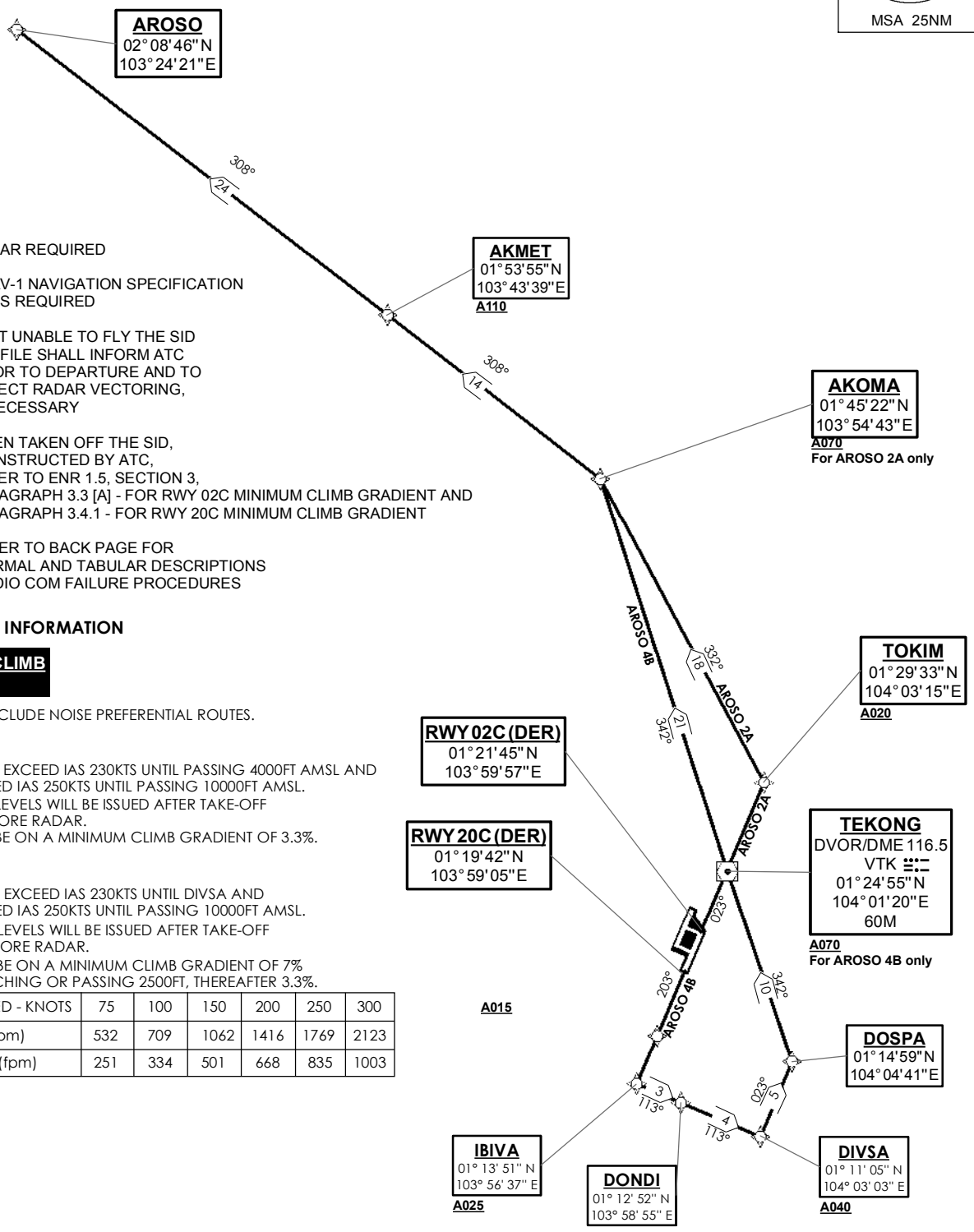
D-ATIS AP ID-WSSS
128.6

SINGAPORE/Singapore Changi
RWY 02C/20C
AROSO DEPARTURES
AROSO 2A (R02C)
AROSO 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 VECTORING, 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

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

CHANGES : D-ATIS and APP frequencies revised
Magnetic Variation revised.

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] - AKOMA [A070+; L] - AKMET [A110+] - AROSO	CF TF TF TF	N N N 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 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 AKMET at or above 11000ft. To AROSO.	IBIXU [M203; A015+] - IBIVA [A025+; L] - DONDI - DIVSA [A040+; K230; L] - DOSPA [L] - VTK [A070+] - AKOMA [L] - AKMET [A110+] - AROSO	CF TF TF TF TF TF TF TF TF	N N N N N N N N 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(113.3)	-0.5	-	-	-	RNAV1
TF	DIVSA	-	113(113.3)	-0.5	L	A040+	K230	RNAV1
TF	DOSPA	-	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	**COMMUNICATIONS FAILURE OCCURS IMMEDIATELY AFTER DEPARTURE ON:** **RWY 02C -** PROCEED STRAIGHT AHEAD TO NYLON HOLDING AREA (NHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE. **RWY 20C -** PROCEED STRAIGHT AHEAD TO SAMKO HOLDING AREA (SHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE.

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

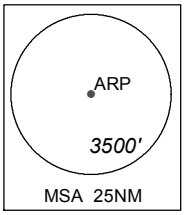
NOTE: RADAR REQUIRED

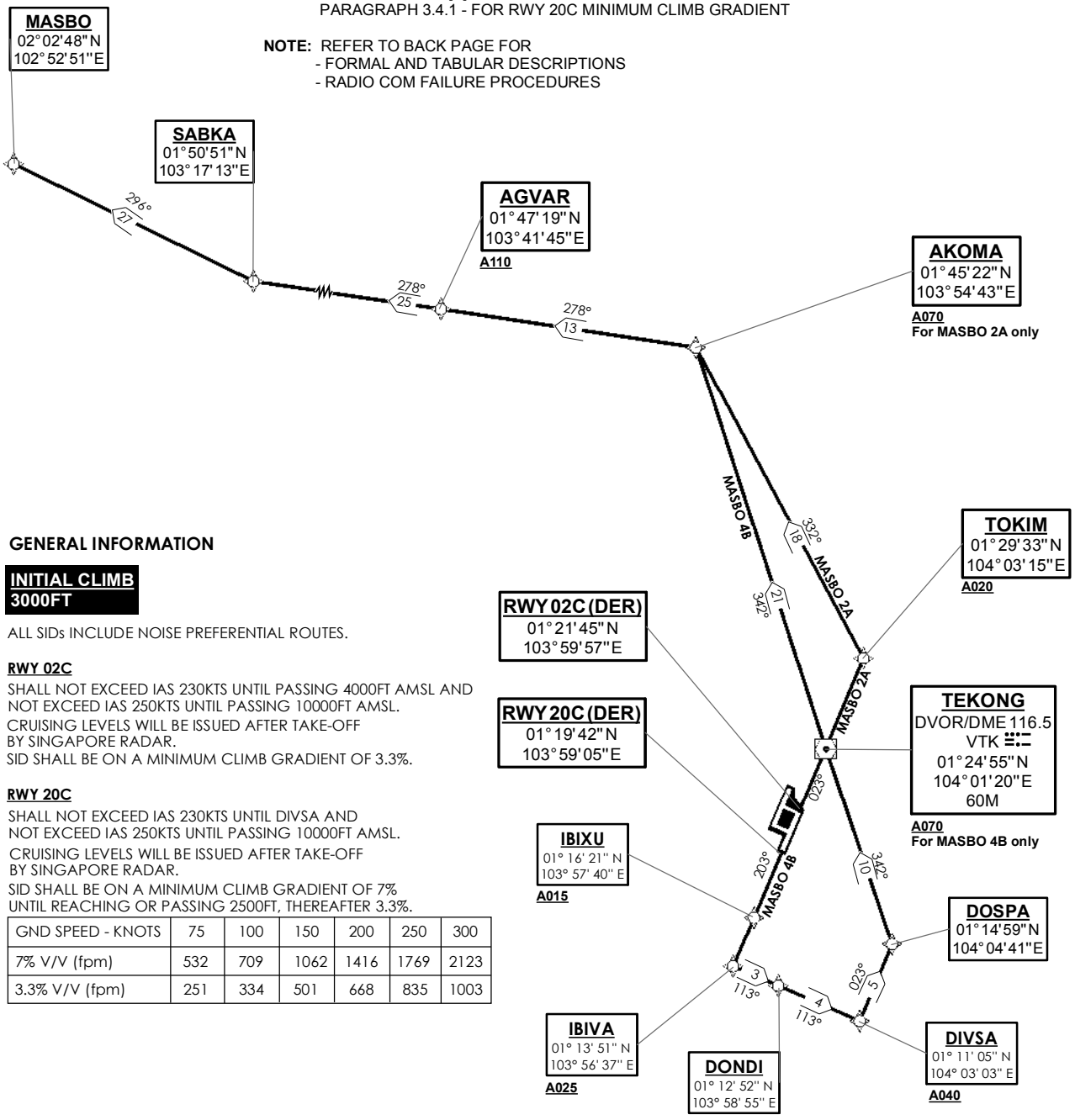
NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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





NOT TO SCALE

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

CHANGES : D-ATIS and APP frequencies revised
Magnetic Variation revised.

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] - AKOMA [A070+; L] - AGVAR [A110+] - SABKA [R] - MASBO	CF TF TF TF TF	N N N N 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+] - IBIVA [A025+; L] - DONDI - DIVSA [A040+; K230; L] - DOSPA [L] - VTK [A070+] - AKOMA [L] - AGVAR [A110+] - SABKA [R] - MASBO	CF TF TF TF TF TF TF TF TF TF	N N N N N N N N N 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	**COMMUNICATIONS FAILURE OCCURS IMMEDIATELY AFTER DEPARTURE ON:** **RWY 02C -** PROCEED STRAIGHT AHEAD TO NYLON HOLDING AREA (NHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE. **RWY 20C -** PROCEED STRAIGHT AHEAD TO SAMKO HOLDING AREA (SHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE.

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

TWR 118.6
APP 120.3
124.05
ACC 133.8

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.6

SINGAPORE/Singapore Changi
RWY 02L/20R
MERSING DEPARTURES
VMR 5E (R02L)
VMR 8F (R20R)

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

DISTANCES IN NM

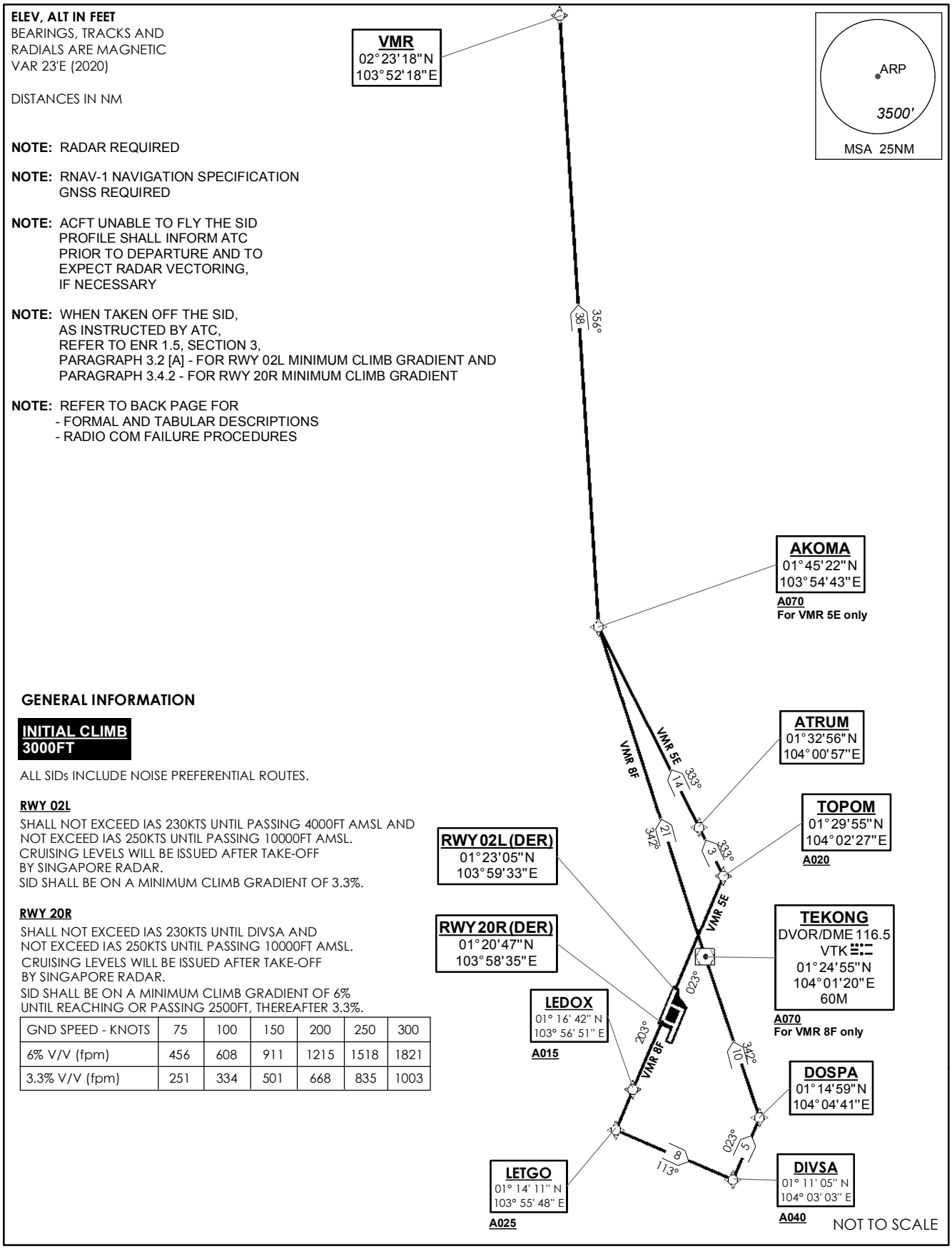
NOTE: RADAR REQUIRED

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 VECTORING, 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



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

CHANGES : D-ATIS and APP frequencies revised. Magnetic Variation revised.

VMR 5E (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 right. To VMR.	TOPOM [M023; A020+; L] - ATRUM - AKOMA [A070+; R] - VMR	CF TF TF TF	N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	TOPOM	-	023(022.5)	-0.5	L	A020+	-	RNAV1
TF	ATRUM	-	333(332.5)	-0.5	-	-	-	RNAV1
TF	AKOMA	-	333(332.5)	-0.5	R	A070+	-	RNAV1
TF	VMR	-	356(355.5)	-0.5	-	-	-	RNAV1

VMR 8F (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 right. To VMR.	LEDOX [M203; A015+] - LETGO [A025+; L] - DIVSA [A040+; K230; L] - DOSPA [L] - VTK [A070+] - AKOMA [R] - VMR	CF TF TF TF TF TF TF	N N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	LEDOX	-	203(202.5)	-0.5	-	A015+	-	RNAV1
TF	LETGO	-	203(202.5)	-0.5	L	A025+	-	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	R	-	-	RNAV1
TF	VMR	-	356(355.5)	-0.5	-	-	-	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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

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

TWR 118.6 / 118.25
APP 120.3
124.05
ACC 133.8

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.6

SINGAPORE/Singapore Changi
RWY 02C/20C
MERSING DEPARTURES
VMR 5A (R02C)
VMR 8B (R20C)

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

DISTANCES IN NM

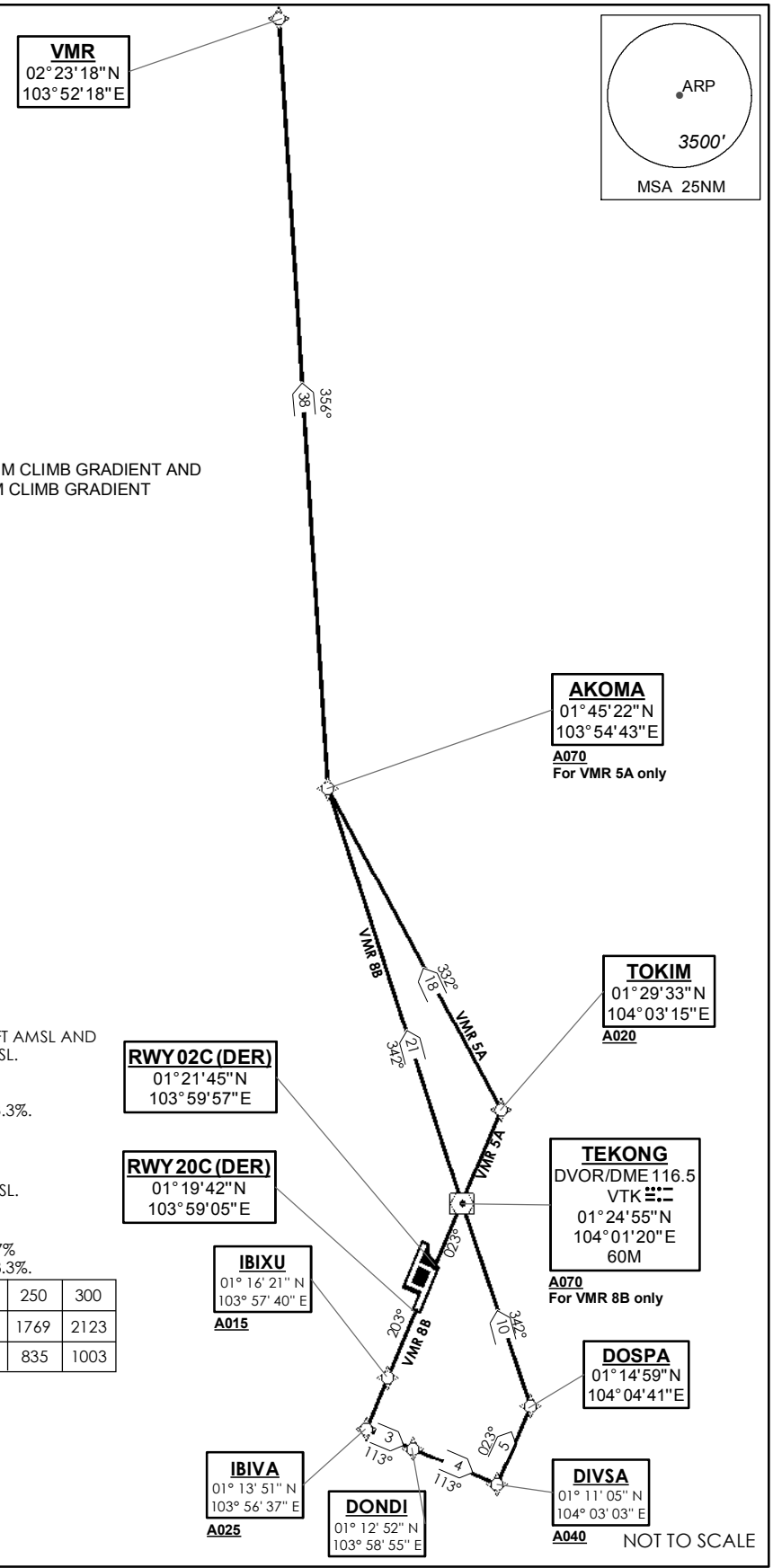
NOTE: RADAR REQUIRED

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 VECTORING, 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



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

CHANGES : D-ATIS and APP frequencies revised. Magnetic Variation revised.

VMR 5A (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 right. To VMR.	TOKIM [M023; A020+; L] - AKOMA [A070+; R] - VMR	CF TF TF	N N 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	R	A070+	-	RNAV1
TF	VMR	-	356(355.5)	-0.5	-	-	-	RNAV1

VMR 8B (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 right. To VMR.	IBIXU [M203; A015+] - IBIVA [A025+; L] - DONDI - DIVSA [A040+; K230; L] - DOSPA [L] - VTK [A070+] - AKOMA [R] - VMR	CF TF TF TF TF TF TF TF	N N N N N N N 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	R	-	-	RNAV1
TF	VMR	-	356(355.5)	-0.5	-	-	-	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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

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

TWR 118.6 / 118.25
APP 120.3
124.05
ACC 134.4

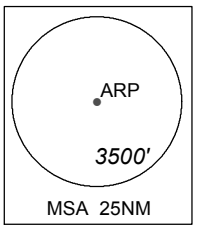
TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.6

SINGAPORE/Singapore Changi
RWY 02C/20C
VENIX DEPARTURES
VENIX 1A (R02C)
VENIX 3B (R20C)

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

DISTANCES IN NM



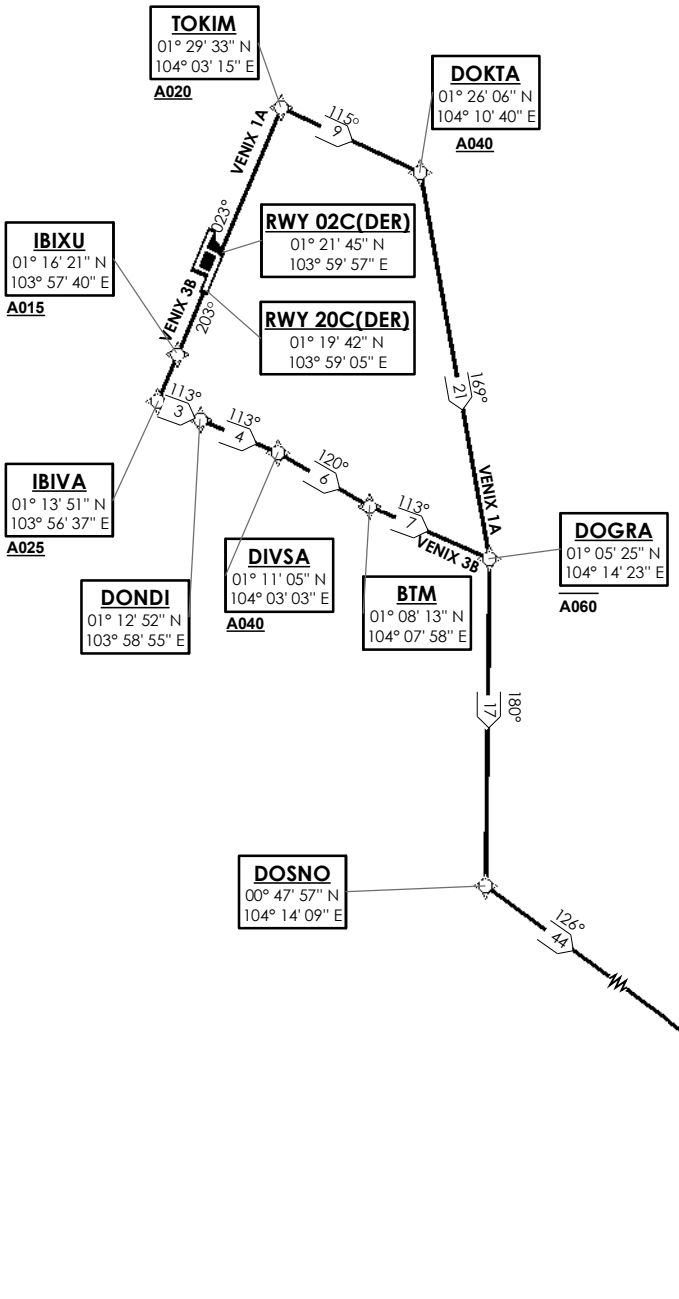
NOTE: RADAR REQUIRED

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 VECTORING, 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



NOT TO SCALE

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 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 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

CHANGES : D-ATIS and APP frequencies revised. Magnetic Variation revised.

VENIX 1A (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, turn right. To DOGRA at or below 6000ft, turn right. To DOSNO, turn left. To VENPA, turn left. To VENIX. To SURGA.	TOKIM [M023; A020+; R] -	CF	N
	DOKTA [A040+; R] -	TF	N
	DOGRA [A060-; R] -	TF	N
	DOSNO [L] -	TF	N
	VENPA [L] -	TF	N
	VENIX -	TF	N
	SURGA	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	R	A040+	-	RNAV1
TF	DOGRA	-	169(168.5)	-0.5	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	VENPA	-	126(125.5)	-0.5	L	-	-	RNAV1
TF	VENIX	-	120(199.5)	-0.5	-	-	-	RNAV1
TF	SURGA	-	120(199.5)	-0.5	-	-	-	RNAV1

VENIX 3B (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 right. To DOSNO, turn left. To VENPA, turn left. To VENIX. To SURGA.	IBIXU [M203; A015+] -	CF	N
	IBIVA [A025+; L] -	TF	N
	DONDI -	TF	N
	DIVSA [A040+; R] -	TF	N
	BTM [L] -	TF	N
	DOGRA [A060-; R] -	TF	N
	DOSNO [L] -	TF	N
	VENPA [L] -	TF	N
	VENIX -	TF	N
	SURGA	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	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	VENPA	-	126(125.5)	-0.5	L	-	-	RNAV1
TF	VENIX	-	120(199.5)	-0.5	-	-	-	RNAV1
TF	SURGA	-	120(199.5)	-0.5	-	-	-	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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

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

TWR	118.6
APP	120.3
	124.05
ACC	134.4

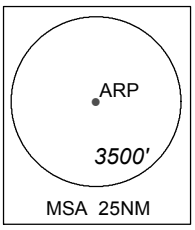
TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.6

SINGAPORE/Singapore Changi
RWY 02L/20R
VENIX DEPARTURES
VENIX 1E (R02L)
VENIX 3F (R20R)

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

DISTANCES IN NM



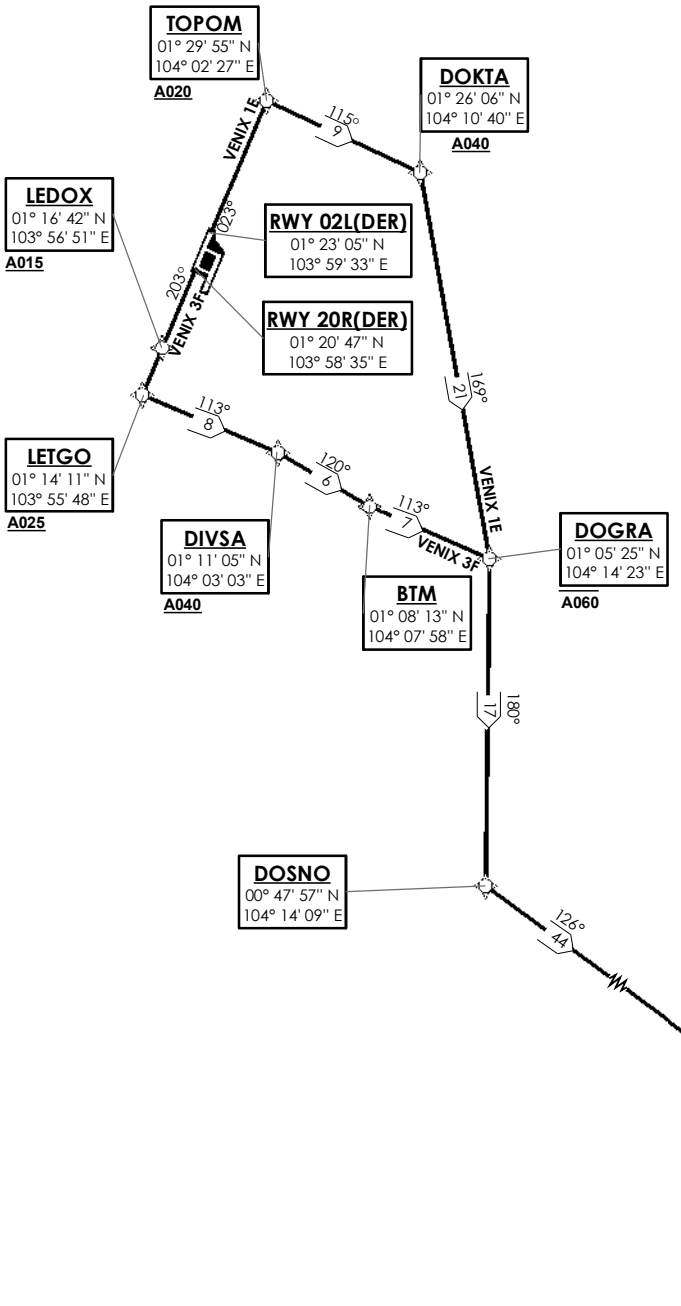
NOTE: RADAR REQUIRED

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 VECTORING, 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



NOT TO SCALE

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 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 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

CHANGES : D-ATIS and APP frequencies revised. Magnetic Variation revised.

VENIX 1E (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 right. To DOKTA at or above 4000ft, turn right. To DOGRA at or below 6000ft, turn right. To DOSNO, turn left. To VENPA, turn left. To VENIX. To SURGA.	TOPOM [M023; A020+; R] -	CF	N
	DOKTA [A040+; R] -	TF	N
	DOGRA [A060-; R] -	TF	N
	DOSNO [L] -	TF	N
	VENPA [L] -	TF	N
	VENIX -	TF	N
	SURGA	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(022.5)	-0.5	R	A020+	-	RNAV1
TF	DOKTA	-	115(114.5)	-0.5	R	A040+	-	RNAV1
TF	DOGRA	-	169(168.5)	-0.5	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	VENPA	-	126(125.5)	-0.5	L	-	-	RNAV1
TF	VENIX	-	120(199.5)	-0.5	-	-	-	RNAV1
TF	SURGA	-	120(199.5)	-0.5	-	-	-	RNAV1

VENIX 3F (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, turn right. To BTM, turn left. To DOGRA at or below 6000ft, turn right. To DOSNO, turn left. To VENPA, turn left. To VENIX. To SURGA.	LEDOX [M203; A015+] -	CF	N
	LETGO [A025+; L] -	TF	N
	DIVSA [A040+; R] -	TF	N
	BTM [L] -	TF	N
	DOGRA [A060-; R] -	TF	N
	DOSNO [L] -	TF	N
	VENPA [L] -	TF	N
	VENIX -	TF	N
	SURGA	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(202.5)	-0.5	-	A015+	-	RNAV1
TF	LETGO	-	203(202.5)	-0.5	L	A025+	-	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	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	VENPA	-	126(125.5)	-0.5	L	-	-	RNAV1
TF	VENIX	-	120(199.5)	-0.5	-	-	-	RNAV1
TF	SURGA	-	120(199.5)	-0.5	-	-	-	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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

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

TWR	118.6 / 118.25
APP	120.3
	124.05
ACC	134.4

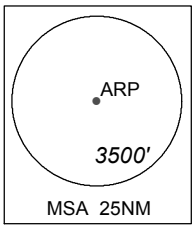
TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.6

SINGAPORE/Singapore Changi
RWY 02C/20C
KADAR DEPARTURES
KADAR 1A (R02C)
KADAR 3B (R20C)

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

DISTANCES IN NM



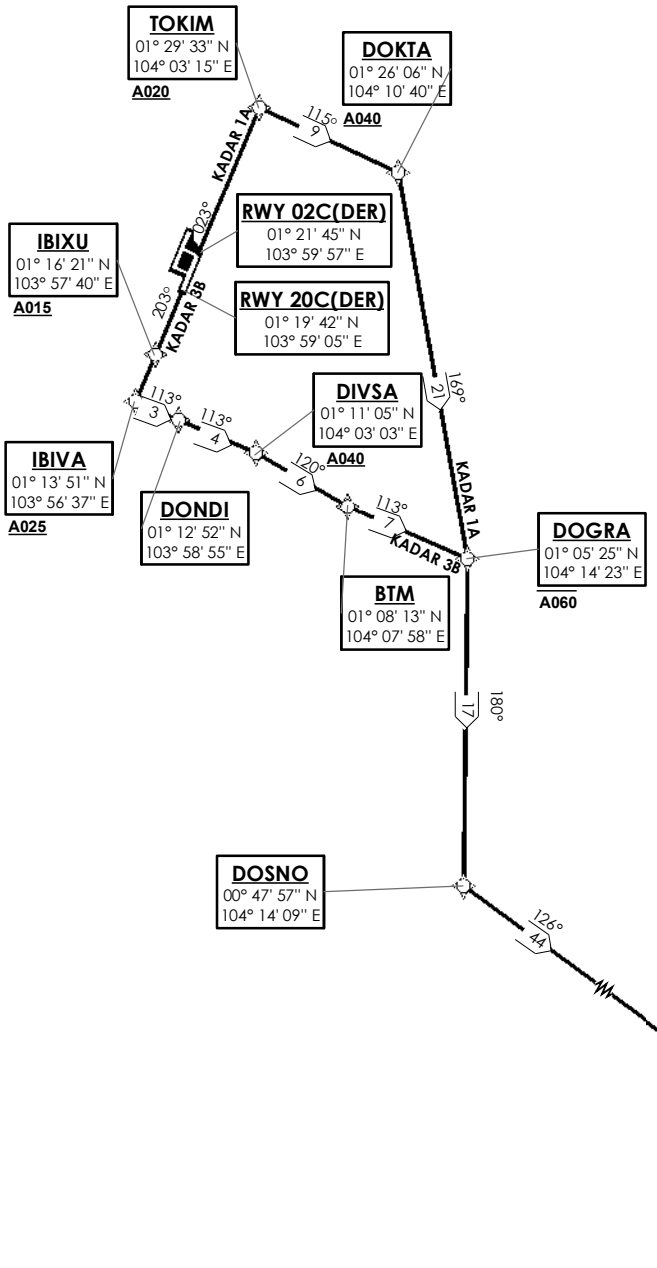
NOTE: RADAR REQUIRED

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 VECTORING,
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



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 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 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

CHANGES : D-ATIS and APP frequencies revised
Magnetic Variation revised.

KADAR 1A (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, turn right. To DOGRA at or below 6000ft, turn right. To DOSNO, turn left. To VENPA, turn left. To ATKAX, turn right. To KADAR.	TOKIM [M023; A020+; R] -	CF	N
	DOKTA [A040+; R] -	TF	N
	DOGRA [A060-; R] -	TF	N
	DOSNO [L] -	TF	N
	VENPA [L] -	TF	N
	ATKAX [R] -	TF	N
	KADAR	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	R	A040+	-	RNAV1
TF	DOGRA	-	169(168.5)	-0.5	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	VENPA	-	126(125.5)	-0.5	L	-	-	RNAV1
TF	ATKAX	-	097(096.5)	-0.5	R	-	-	RNAV1
TF	KADAR	-	105(104.5)	-0.5	-	-	-	RNAV1

KADAR 3B (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 right. To DOSNO, turn left. To VENPA, turn left. To ATKAX, turn right. To KADAR.	IBIXU [M203; A015+] -	CF	N
	IBIVA [A025+; L] -	TF	N
	DONDI -	TF	N
	DIVSA [A040+; R] -	TF	N
	BTM [L] -	TF	N
	DOGRA [A060-; R] -	TF	N
	DOSNO [L] -	TF	N
	VENPA [L] -	TF	N
	ATKAX [R] -	TF	N
	KADAR	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	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	VENPA	-	126(125.5)	-0.5	L	-	-	RNAV1
TF	ATKAX	-	097(096.5)	-0.5	R	-	-	RNAV1
TF	KADAR	-	105(104.5)	-0.5	-	-	-	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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

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

TWR	118.6
APP	120.3
	124.05
ACC	134.4

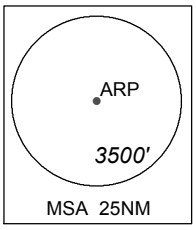
TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.6

SINGAPORE/Singapore Changi
RWY 02L/20R
KADAR DEPARTURES
KADAR 1E (R02L)
KADAR 3F (R20R)

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

DISTANCES IN NM



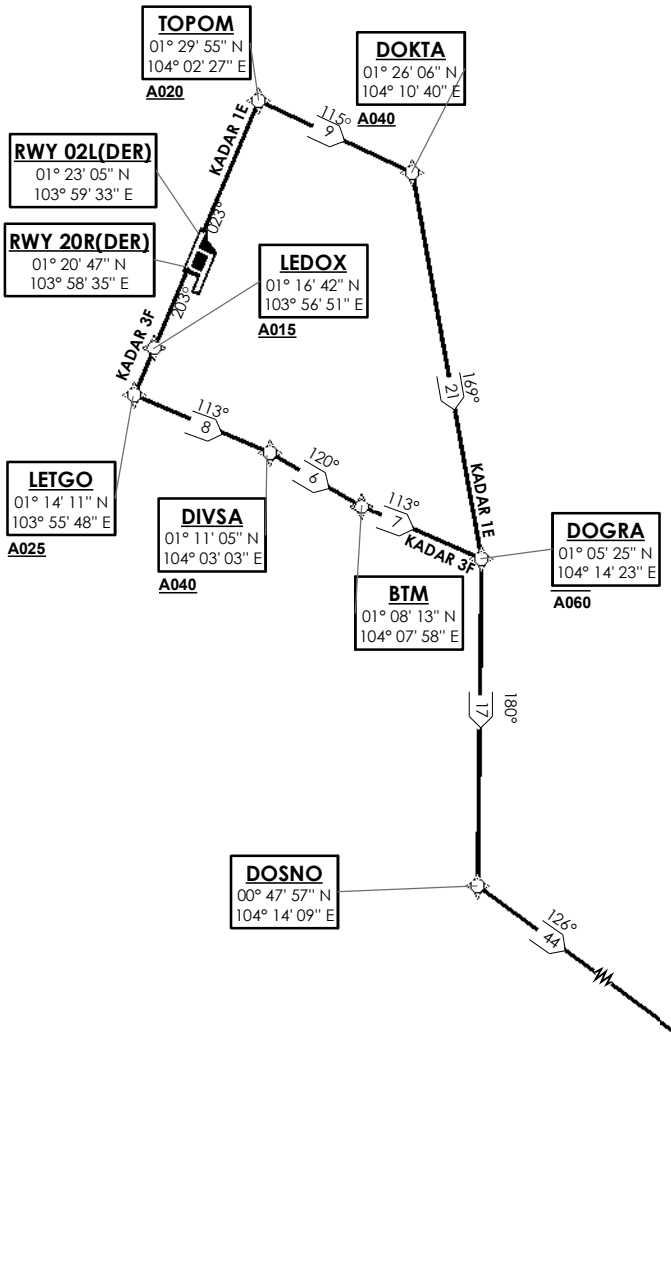
NOTE: RADAR REQUIRED

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 VECTORING, 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



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 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 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

CHANGES : D-ATIS and APP frequencies revised
Magnetic Variation revised.

KADAR 1E (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 right. To DOKTA at or above 4000ft, turn right. To DOGRA at or below 6000ft, turn right. To DOSNO, turn left. To VENPA, turn left. To ATKAX, turn right. To KADAR.	TOPOM [M023; A020+; R] -	CF	N
	DOKTA [A040+; R] -	TF	N
	DOGRA [A060-; R] -	TF	N
	DOSNO [L] -	TF	N
	VENPA [L] -	TF	N
	ATKAX [R] -	TF	N
	KADAR	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(022.5)	-0.5	R	A020+	-	RNAV1
TF	DOKTA	-	115(114.5)	-0.5	R	A040+	-	RNAV1
TF	DOGRA	-	169(168.5)	-0.5	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	VENPA	-	126(125.5)	-0.5	L	-	-	RNAV1
TF	ATKAX	-	097(096.5)	-0.5	R	-	-	RNAV1
TF	KADAR	-	105(104.5)	-0.5	-	-	-	RNAV1

KADAR 3F (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, turn right. To BTM, turn left. To DOGRA at or below 6000ft, turn right. To DOSNO, turn left. To VENPA, turn left. To ATKAX, turn right. To KADAR.	LEDOX [M203; A015+] -	CF	N
	LETGO [A025+; L] -	TF	N
	DIVSA [A040+; R] -	TF	N
	BTM [L] -	TF	N
	DOGRA [A060-; R] -	TF	N
	DOSNO [L] -	TF	N
	VENPA [L] -	TF	N
	ATKAX [R] -	TF	N
	KADAR	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(202.5)	-0.5	-	A015+	-	RNAV1
TF	LETGO	-	203(202.5)	-0.5	L	A025+	-	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	R	A060-	-	RNAV1
TF	DOSNO	-	180(179.5)	-0.5	L	-	-	RNAV1
TF	VENPA	-	126(125.5)	-0.5	L	-	-	RNAV1
TF	ATKAX	-	097(096.5)	-0.5	R	-	-	RNAV1
TF	KADAR	-	105(104.5)	-0.5	-	-	-	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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

STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC 133.25
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
ARR 128.025

SINGAPORE/Singapore Changi
RWY 02L/C
ARAMA ONE ALPHA ARRIVAL
ARAMA 1A

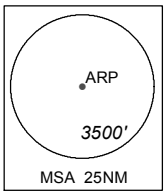
ELEV, ALT IN FEET
BEARINGS, TRACKS AND
RADIALS ARE MAGNETIC
VAR 23'E (2020)

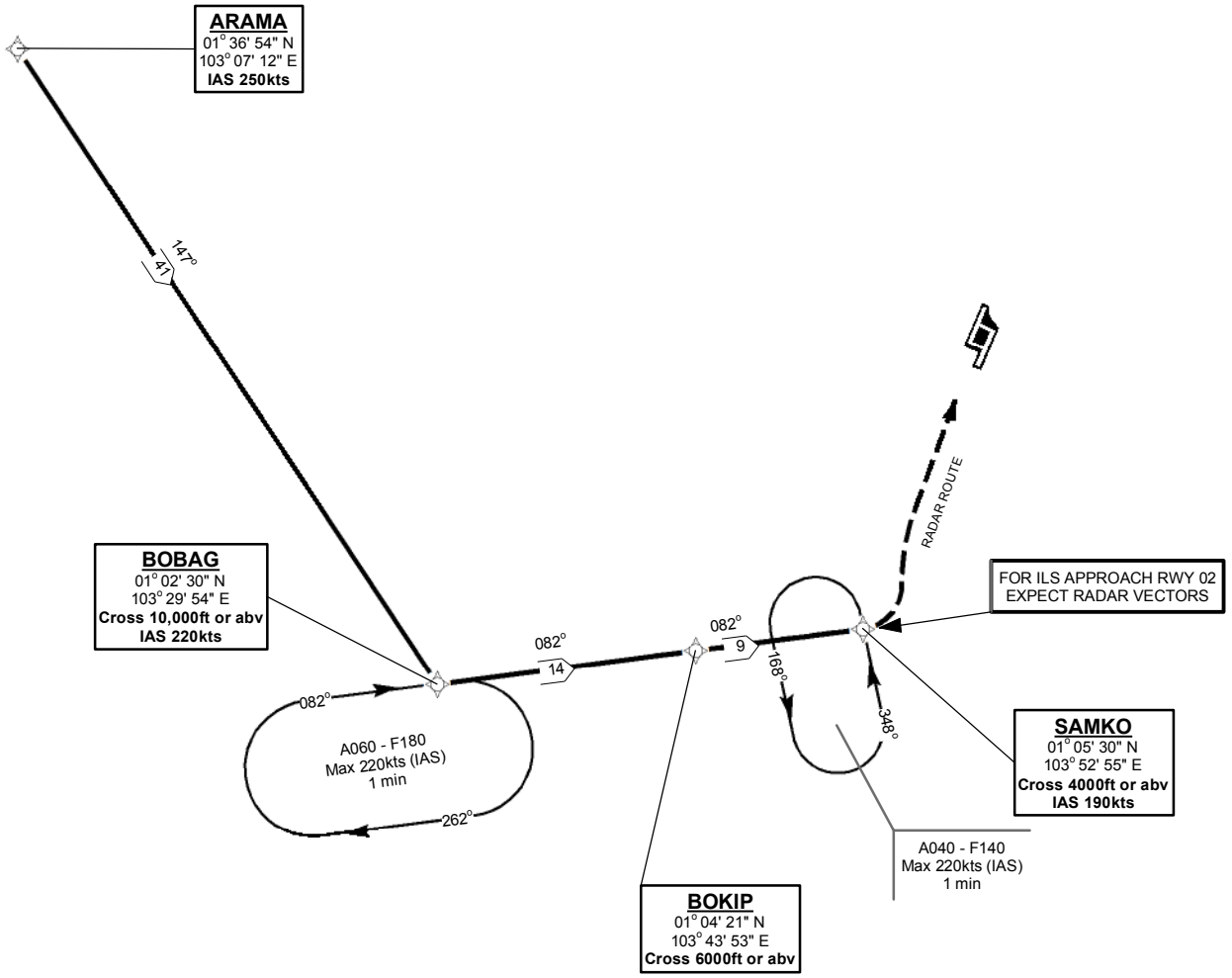
DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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





NOT TO SCALE

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

ARAMA 1A (STAR) RNAV GNSS RWY 02L/02C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From ARAMA, speed 250kts. To BOBAG at or above 10000ft, speed 220kts, turn left. To BOKIP at or above 6000ft. To SAMKO at or above 4000ft, speed 190kts.	ARAMA [K250] - BOBAG [A100+; K220; L] - BOKIP [A060+] - SAMKO [A040+; K190]	IF TF TF TF	N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	ARAMA	-	-	-0.5	-	-	K250	RNAV1
TF	BOBAG	-	147(147.5)	-0.5	L	A100+	K220	RNAV1
TF	BOKIP	-	082(082.5)	-0.5	-	A060+	-	RNAV1
TF	SAMKO	-	082(082.8)	-0.5	-	A040+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via ARAMA 1A by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on ARAMA 1A 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC	133.25
APP	124.05 119.3
TWR	118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 02L/C
ASUNA ONE ALPHA ARRIVAL
ASUNA 1A

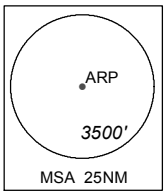
ELEV, ALT IN FEET
BEARINGS, TRACKS AND
RADIALS ARE MAGNETIC
VAR 23'E (2020)

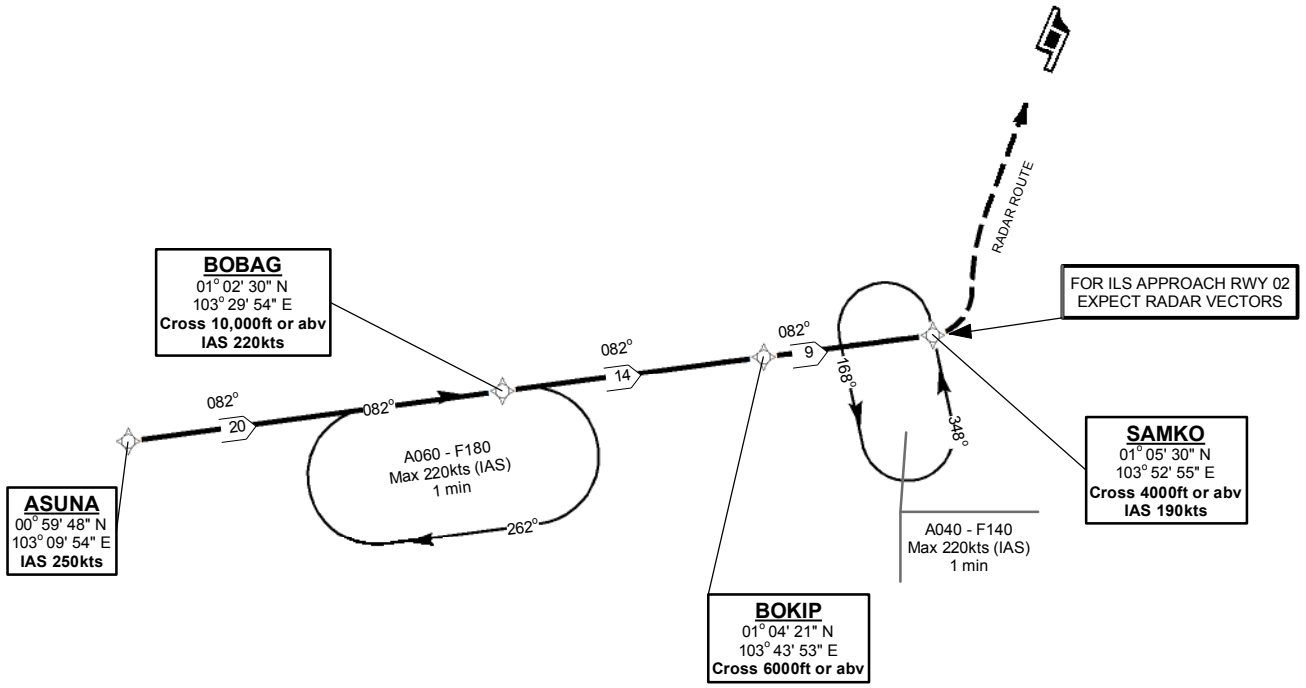
DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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





NOT TO SCALE

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

ASUNA 1A (STAR) RNAV GNSS RWY 02L/02C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From ASUNA, speed 250kts. To BOBAG at or above 10000ft, speed 220kts. To BOKIP at or above 6000ft. To SAMKO at or above 4000ft, speed 190kts.	ASUNA [K250] - BOBAG [A100+; K220] - BOKIP [A060+] - SAMKO [A040+; K190]	IF TF TF TF	N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	ASUNA	-	-	-0.5	-	-	K250	RNAV1
TF	BOBAG	-	082(082.4)	-0.5	-	A100+	K220	RNAV1
TF	BOKIP	-	082(082.5)	-0.5	-	A060+	-	RNAV1
TF	SAMKO	-	082(082.8)	-0.5	-	A040+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via ASUNA 1A by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on ASUNA 1A 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC 133.25
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 20R/C
ARAMA ONE BRAVO ARRIVAL
ARAMA 1B

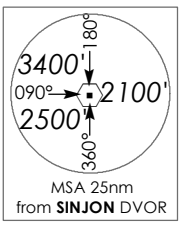
ELEV, ALT IN FEET
BEARINGS, TRACKS AND
RADIALS ARE MAGNETIC
VAR 23'E (2020)

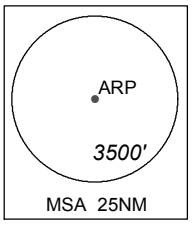
DISTANCES IN NM

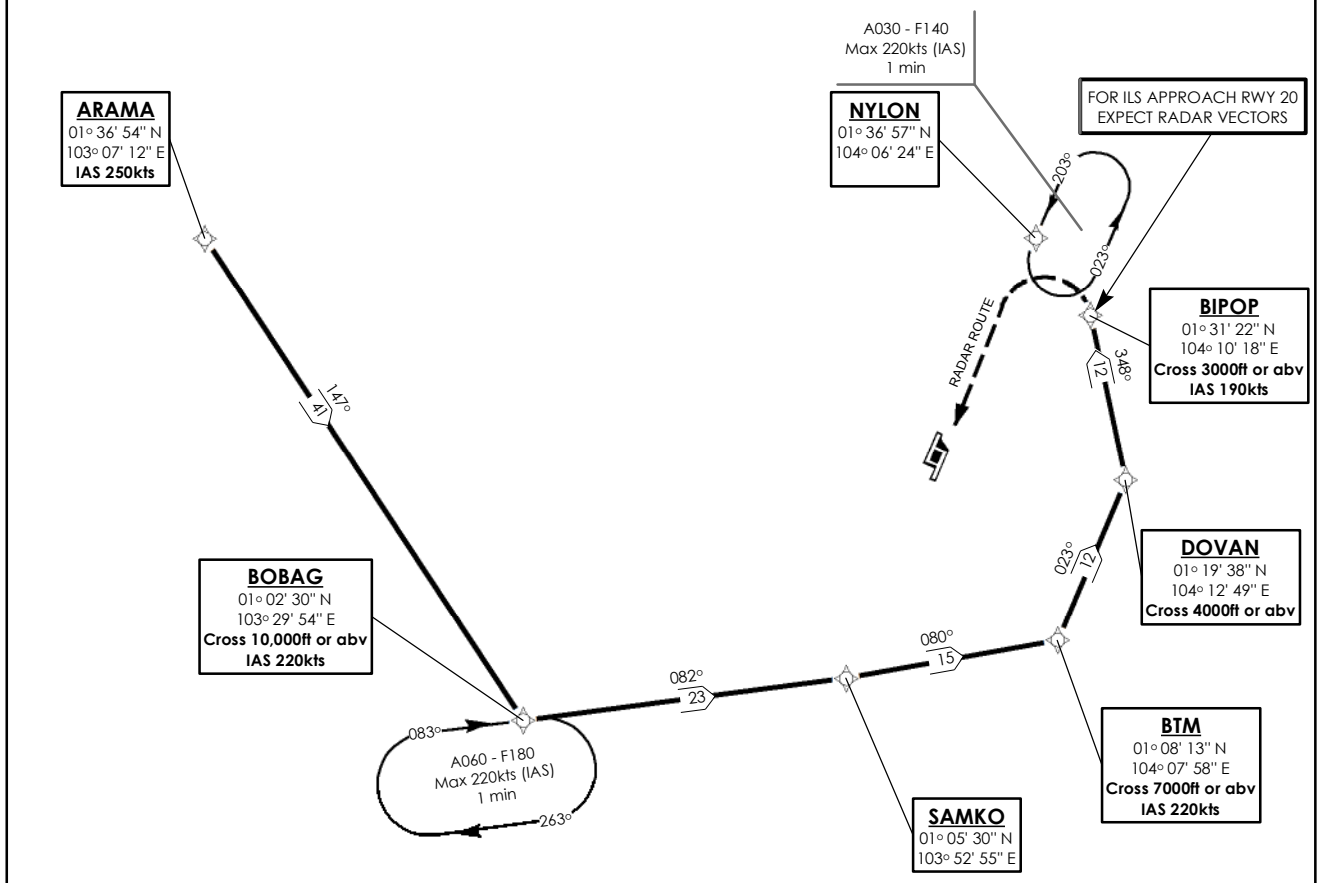
NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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







NOT TO SCALE

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

ARAMA 1B (STAR) RNAV GNSS RWY 20R/20C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From ARAMA, speed 250kts. To BOBAG at or above 10000ft, speed 220kts, turn left. To SAMKO, turn left. To BTM at or above 7000ft, speed 220kts, turn left. To DOVAN at or above 4000ft, turn left. To BIPOP at or above 3000ft, speed 190kts.	ARAMA [K250] - BOBAG [A100+; K220; L] - SAMKO [L] - BTM [A070+; K220; L] - DOVAN [A040+; L] - BIPOP [A030+; K190]	IF TF TF TF TF TF	N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	ARAMA	-	-	-0.5	-	-	K250	RNAV1
TF	BOBAG	-	147(147.5)	-0.5	L	A100+	K220	RNAV1
TF	SAMKO	-	082(082.6)	-0.5	L	-	-	RNAV1
TF	BTM	-	080(080.5)	-0.5	L	A070+	K220	RNAV1
TF	DOVAN	-	023(023.1)	-0.5	L	A040+	-	RNAV1
TF	BIPOP	-	348(348.5)	-0.5	-	A030+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via ARAMA 1B by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on ARAMA 1B to BIPOP, 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC 133.25
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 20R/C
ASUNA ONE BRAVO ARRIVAL
ASUNA 1B

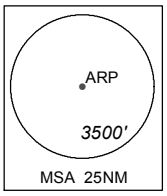
ELEV, ALT IN FEET
BEARINGS, TRACKS AND
RADIALS ARE MAGNETIC
VAR 23'E (2020)

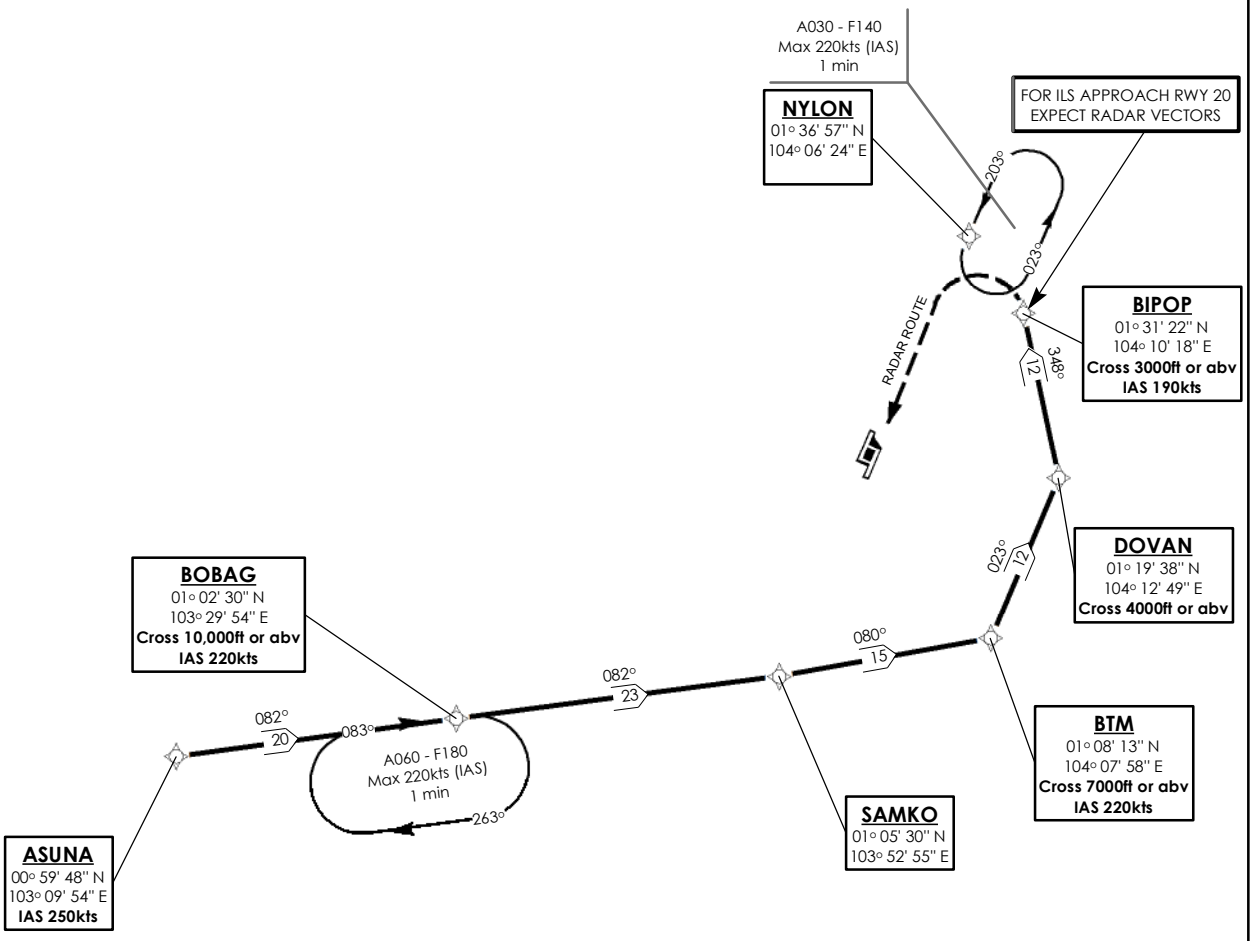
DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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





NOT TO SCALE

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

ASUNA 1B (STAR) RNAV GNSS RWY 20R/20C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From ASUNA, speed 250kts. To BOBAG at or above 10000ft, speed 220kts. To SAMKO, turn left. To BTM at or above 7000ft, speed 220kts, turn left. To DOVAN at or above 4000ft, turn left. To BIPOP at or above 3000ft, speed 190kts.	ASUNA [K250] - BOBAG [A100+; K220] - SAMKO [L] - BTM [A070+; K220; L] - DOVAN [A040+; L] - BIPOP [A030+; K190]	IF TF TF TF TF TF	N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	ASUNA	-	-	-0.5	-	-	K250	RNAV1
TF	BOBAG	-	082(082.4)	-0.5	-	A100+	K220	RNAV1
TF	SAMKO	-	082(082.6)	-0.5	L	-	-	RNAV1
TF	BTM	-	080(080.5)	-0.5	L	A070+	K220	RNAV1
TF	DOVAN	-	023(023.1)	-0.5	L	A040+	-	RNAV1
TF	BIPOP	-	348(348.5)	-0.5	-	A030+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via ASUNA 1B by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on ASUNA 1B to BIPOP, 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART
RNAV (GNSS) - INSTRUMENT (STAR)

ACC 134.2
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 02L/C
KARTO ONE ALPHA ARRIVAL
KARTO 1A

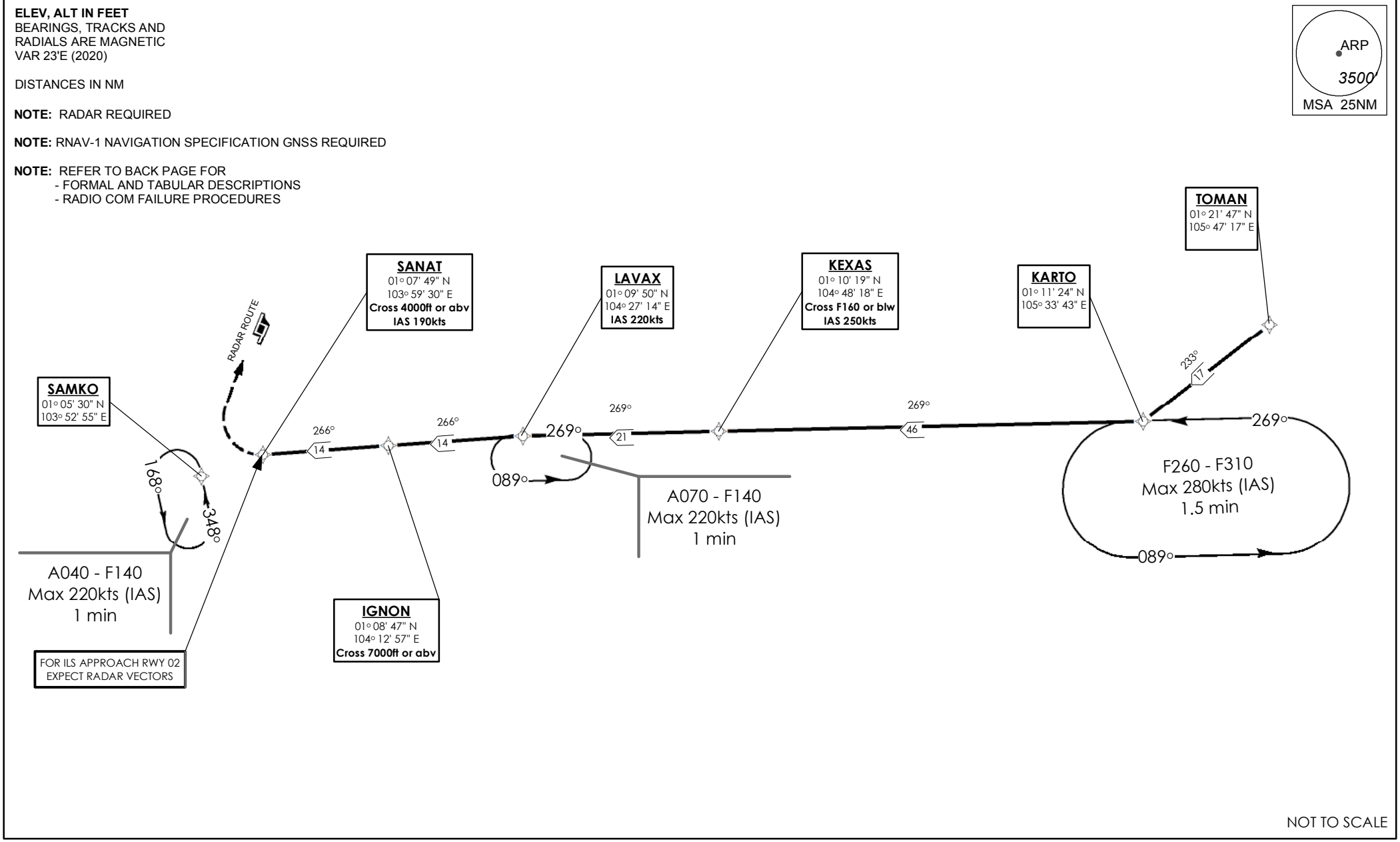
ELEV, ALT IN FEET
BEARINGS, TRACKS AND RADIALS ARE MAGNETIC
VAR 23'E (2020)

DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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



NOT TO SCALE

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

KARTO 1A (STAR) RNAV GNSS RWY 02L/02C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From TOMAN. To KARTO, turn right. To KEXAS at or below FL160, speed 250kts. To LAVAX, speed 220kts,turn left.To IGNON at or above 7000ft. To SANAT at or above 4000ft, speed 190kts.	TOMAN - KARTO [R] - KEXAS [FL160-; K250] - LAVAX [K220; L] - IGNON [A070+] - SANAT [A040+; K190]	IF TF TF TF TF TF	N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	TOMAN	-	-	-0.5	-	-	-	RNAV1
TF	KARTO	-	233(233.5)	-0.5	R	-	-	RNAV1
TF	KEXAS	-	269(269.5)	-0.5	-	FL160-	K250	RNAV1
TF	LAVAX	-	269(269.5)	-0.5	L	-	K220	RNAV1
TF	IGNON	-	266(266.5)	-0.5	-	A070+	-	RNAV1
TF	SANAT	-	266(266.5)	-0.5	-	A040+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via KARTO 1A by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on KARTO 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC 134.4
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 02L/C
OBDOS ONE ALPHA ARRIVAL
OBDOS 1A

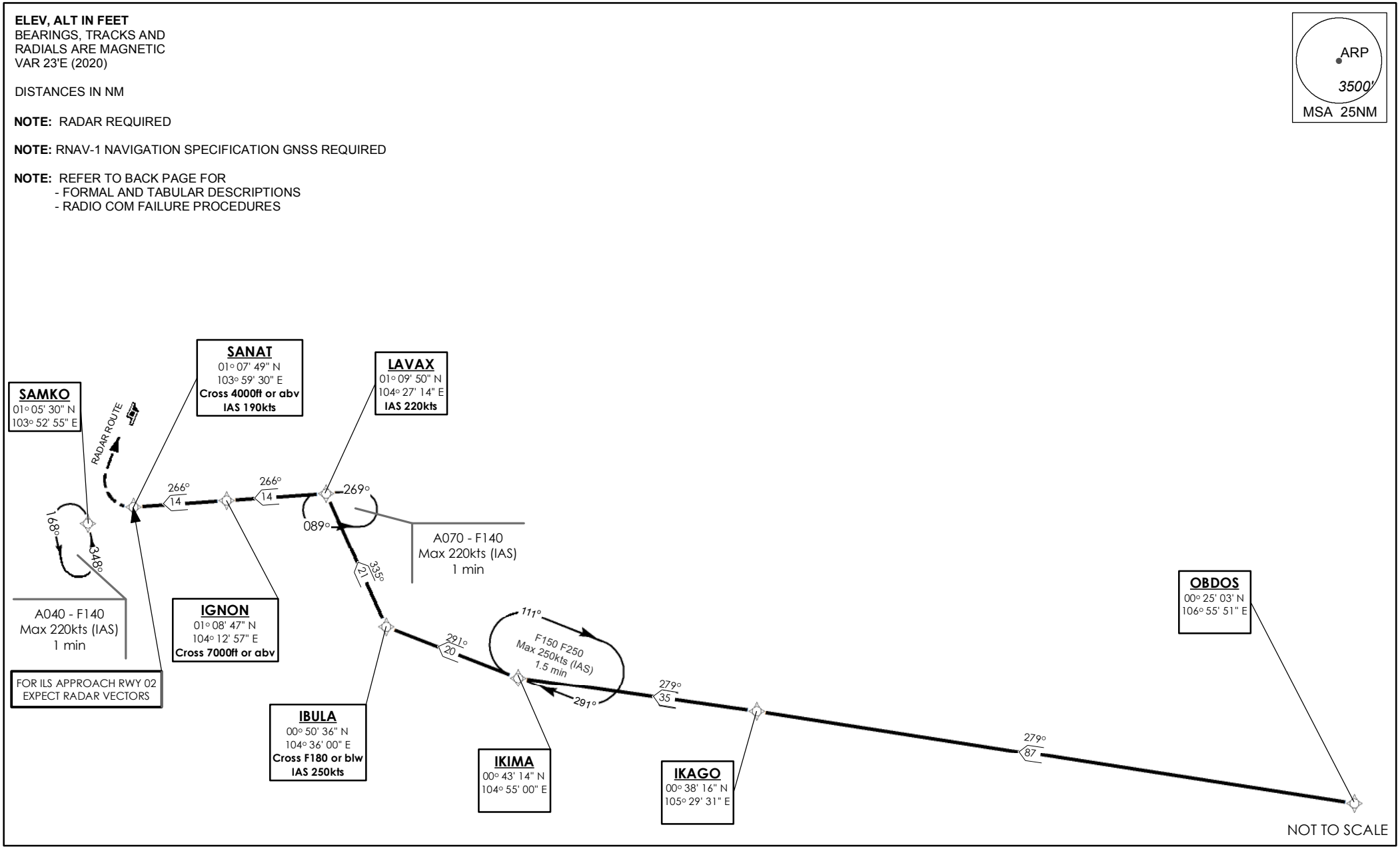
ELEV, ALT IN FEET
BEARINGS, TRACKS AND RADIALS ARE MAGNETIC
VAR 23'E (2020)

DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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



CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

OBDOS 1A (STAR) RNAV GNSS RWY 02L/02C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From OBDOS. To IKAGO. To IKIMA, turn right. To IBULA at or below FL180, speed 250kts, turn right. To LAVAX, speed 220kts, turn left. To IGNON at or above 7000ft. To SANAT at or above 4000ft, speed 190kts.	OBDOS - IKAGO - IKIMA [R] - IBULA [FL180-; K250; R] - LAVAX [K220; L] - IGNON [A070+] - SANAT [A040+; K190]	IF TF TF TF TF TF TF	N N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	OBDOS	-	-	-0.5	-	-	-	RNAV1
TF	IKAGO	-	279(279.5)	-0.5	-	-	-	RNAV1
TF	IKIMA	-	279(279.5)	-0.5	R	-	-	RNAV1
TF	IBULA	-	291(291.1)	-0.5	R	FL180-	K250	RNAV1
TF	LAVAX	-	335(335.4)	-0.5	L	-	K220	RNAV1
TF	IGNON	-	266(266.5)	-0.5	-	A070+	-	RNAV1
TF	SANAT	-	266(266.5)	-0.5	-	A040+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via OBDOS 1A by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on OBDOS 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART
RNAV (GNSS) - INSTRUMENT (STAR)

ACC 134.2
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 20R/C
KARTO ONE BRAVO ARRIVAL
KARTO 1B

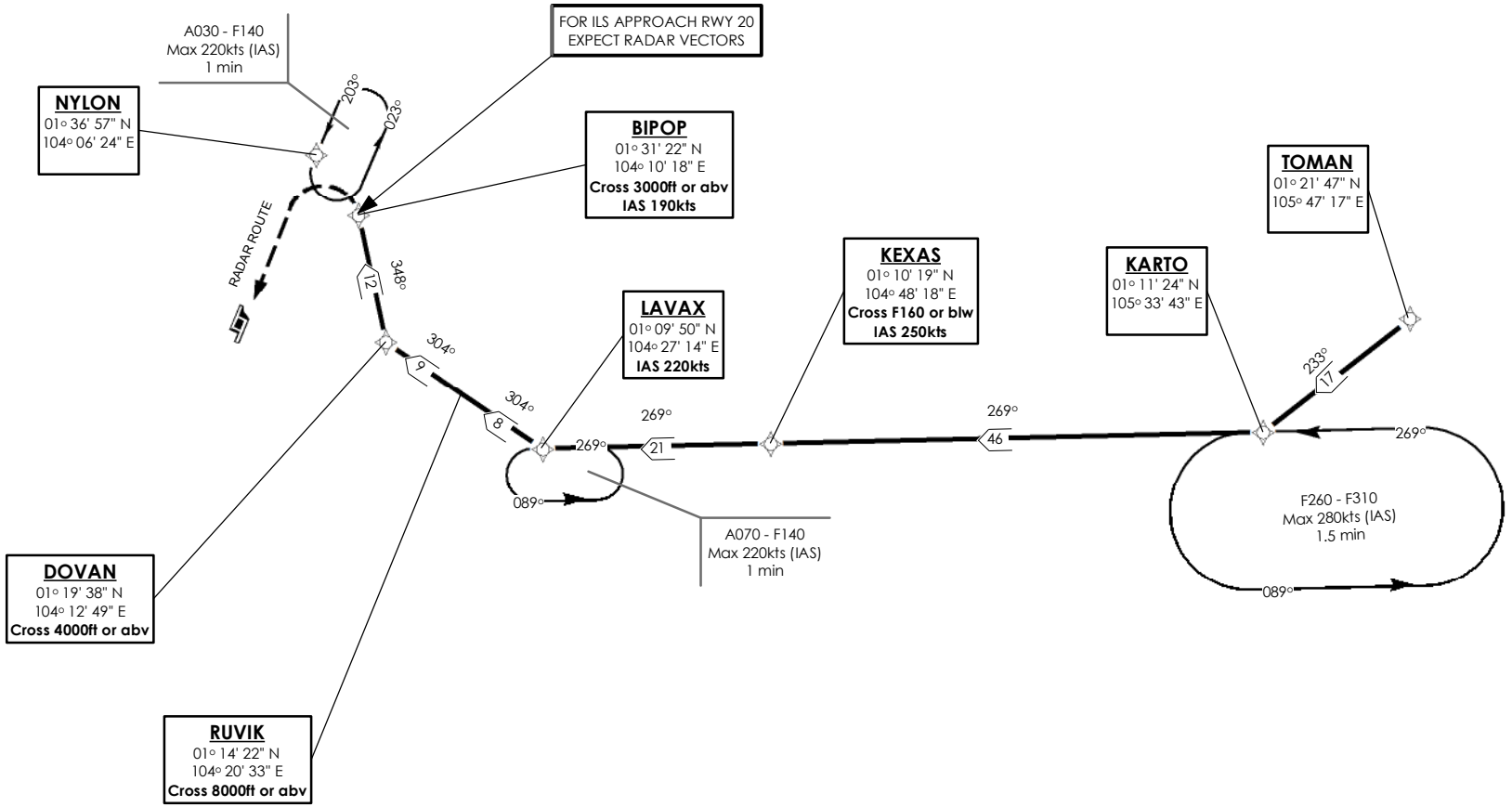
ELEV, ALT IN FEET
BEARINGS, TRACKS AND RADIALS ARE MAGNETIC
VAR 23'E (2020)

DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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



NOT TO SCALE

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

KARTO 1B (STAR) RNAV GNSS RWY 20R/20C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From TOMAN. To KARTO, turn right. To KEXAS at or below FL160, speed 250kts. To LAVAX, speed 220kts, turn right. To RUVIK at or above 8000ft. To DOVAN at or above 4000ft, turn right. To BIPOP at or above 3000ft, speed 190kts.	TOMAN - KARTO [R] - KEXAS [FL160-; K250] - LAVAX [K220; R] - RUVIK [A080+] - DOVAN [A040+; R] - BIPOP [A030+; K190]	IF TF TF TF TF TF TF	N N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	TOMAN	-	-	-0.5	-	-	-	RNAV1
TF	KARTO	-	233(233.5)	-0.5	R	-	-	RNAV1
TF	KEXAS	-	269(269.5)	-0.5	-	FL160-	K250	RNAV1
TF	LAVAX	-	269(269.5)	-0.5	R	-	K220	RNAV1
TF	RUVIK	-	304(304.0)	-0.5	-	A080+	-	RNAV1
TF	DOVAN	-	304(304.1)	-0.5	R	A040+	-	RNAV1
TF	BIPOP	-	348(348.5)	-0.5	-	A030+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via KARTO 1B by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on KARTO 1B to BIPOP, 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART
RNAV (GNSS) - INSTRUMENT (STAR)

ACC 134.4
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 20R/C
OBDOS ONE BRAVO ARRIVAL
OBDOS 1B

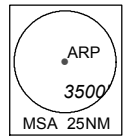
ELEV, ALT IN FEET
BEARINGS, TRACKS AND
RADIALS ARE MAGNETIC
VAR 23'E (2020)

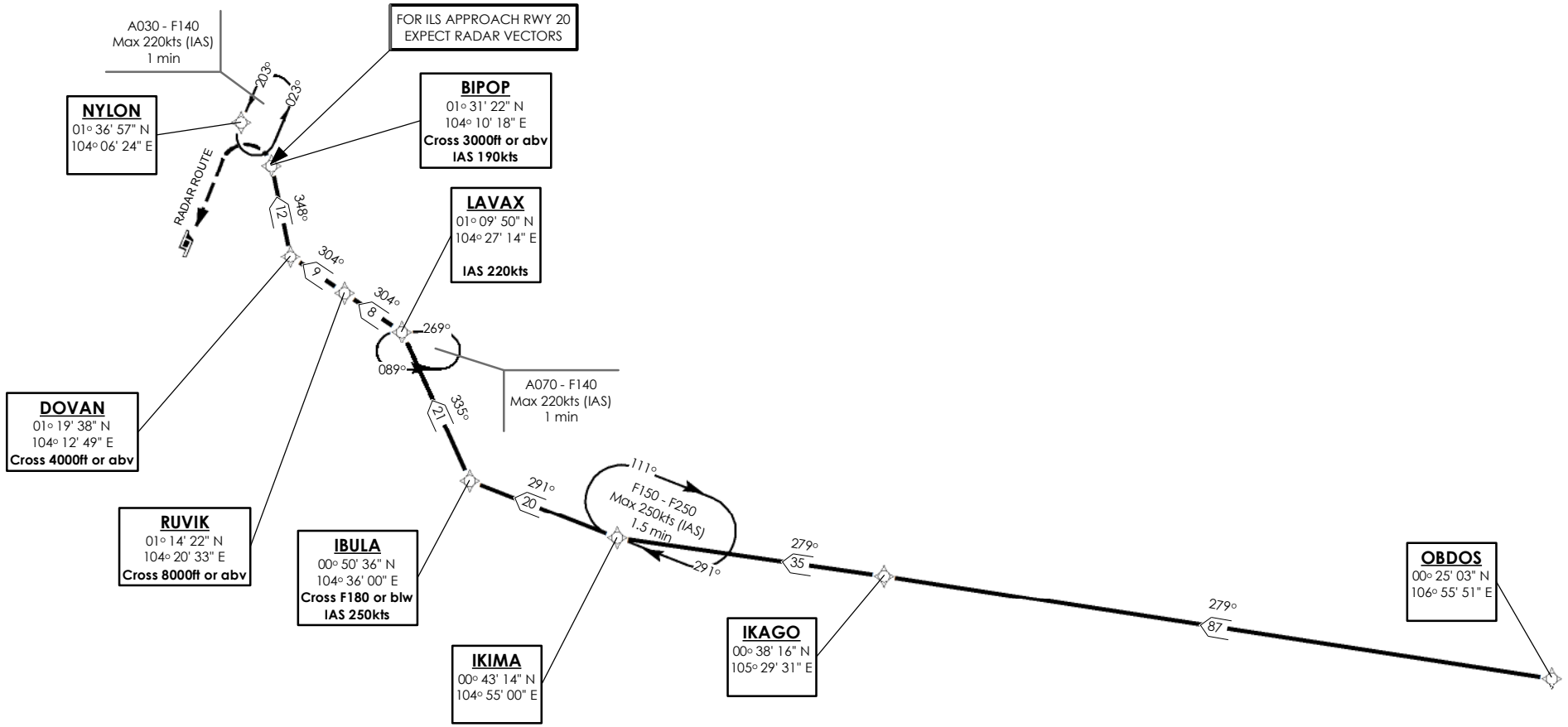
DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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





NOT TO SCALE

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

OBDOS 1B (STAR) RNAV GNSS RWY 20R/20C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From OBDOS. To IKAGO. To IKIMA, turn right. To IBULA at or below FL180, speed 250kts, turn right. To LAVAX, speed 220kts, turn left. To RUVIK at or above 8000ft. To DOVAN at or above 4000ft, turn right. To BIPOP at or above 3000ft, speed 190kts.	OBDOS - IKAGO - IKIMA [R] - IBULA [FL180-; K250; R] - LAVAX [K220; L] - RUVIK [A080+] - DOVAN [A040+; R] - BIPOP [A030+; K190]	IF TF TF TF TF TF TF TF	N N N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	OBDOS	-	-	-0.5	-	-	-	RNAV1
TF	IKAGO	-	279(279.5)	-0.5	-	-	-	RNAV1
TF	IKIMA	-	279(279.5)	-0.5	R	-	-	RNAV1
TF	IBULA	-	291(291.1)	-0.5	R	FL180-	K250	RNAV1
TF	LAVAX	-	335(335.4)	-0.5	L	-	K220	RNAV1
TF	RUVIK	-	304(304.0)	-0.5	-	A080+	-	RNAV1
TF	DOVAN	-	304(304.1)	-0.5	R	A040+	-	RNAV1
TF	BIPOP	-	348(348.5)	-0.5	-	A030+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via OBDOS 1B by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on OBDOS 1B to BIPOP, 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC 133.25
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 20R/C
LELIB THREE BRAVO ARRIVAL
LELIB 3B

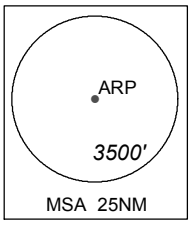
ELEV, ALT IN FEET
BEARINGS, TRACKS AND
RADIALS ARE MAGNETIC
VAR 23'E (2020)

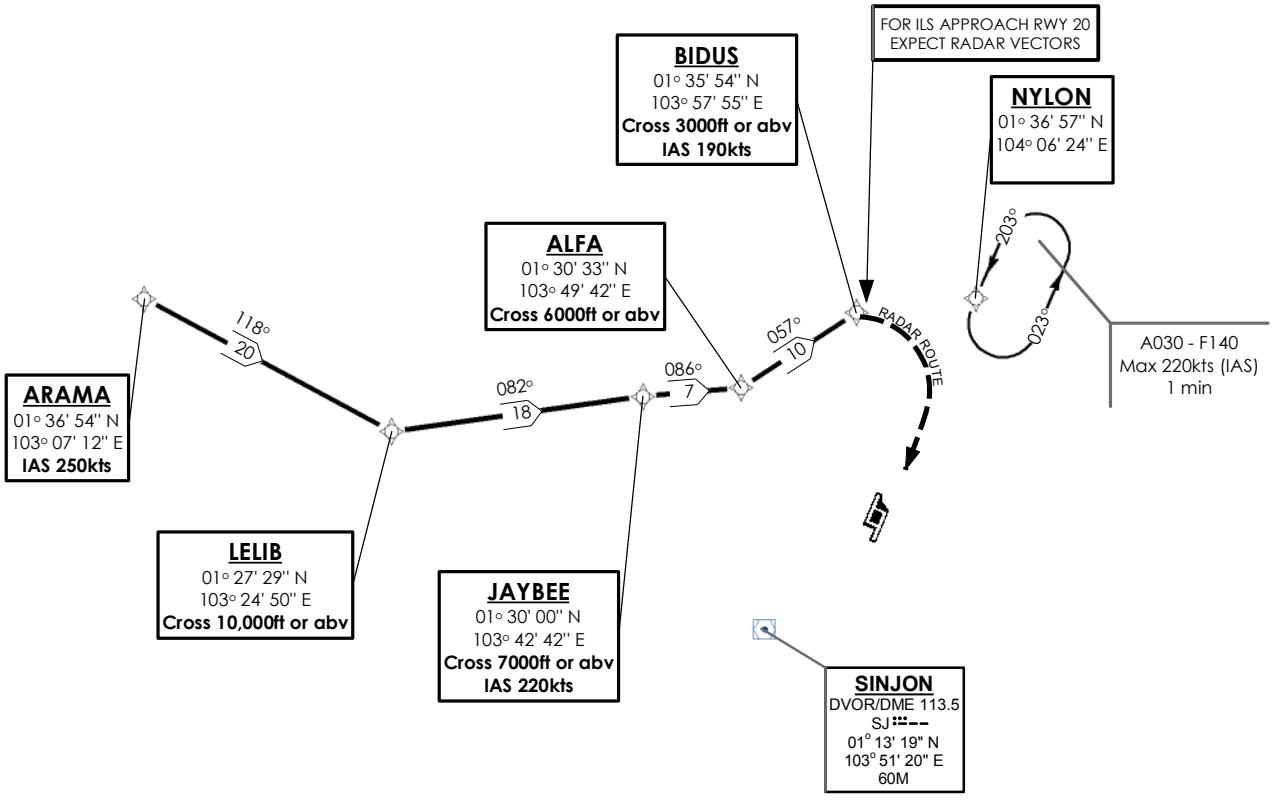
DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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





ARAMA 1B shall be the default STAR for WSSS RWY 20.
ATC will offer LELIB 3B when traffic permits.

NOT TO SCALE

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

LELIB 3B (STAR) RNAV GNSS RWY 20R/20C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From ARAMA, speed 250kts. To LELIB at or above 10000ft, turn left. To JAYBEE at or above 7000ft, speed 220kts, turn right. To ALFA at or above 6000ft, turn left. To BIDUS at or above 3000ft, speed 190kts.	ARAMA [K250] - LELIB [A100+; L] - JAYBEE [A070+; K220; R] - ALFA [A060+; L] - BIDUS [A030+; K190]	IF TF TF TF TF	N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	ARAMA	-	-	-0.5	-	-	K250	RNAV1
TF	LELIB	-	118(118.5)	-0.5	L	A100+	-	RNAV1
TF	JAYBEE	-	082(082.0)	-0.5	R	A070+	K220	RNAV1
TF	ALFA	-	086(086.5)	-0.5	L	A060+	-	RNAV1
TF	BIDUS	-	057(057.1)	-0.5	-	A030+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via LELIB 3B by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on LELIB 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

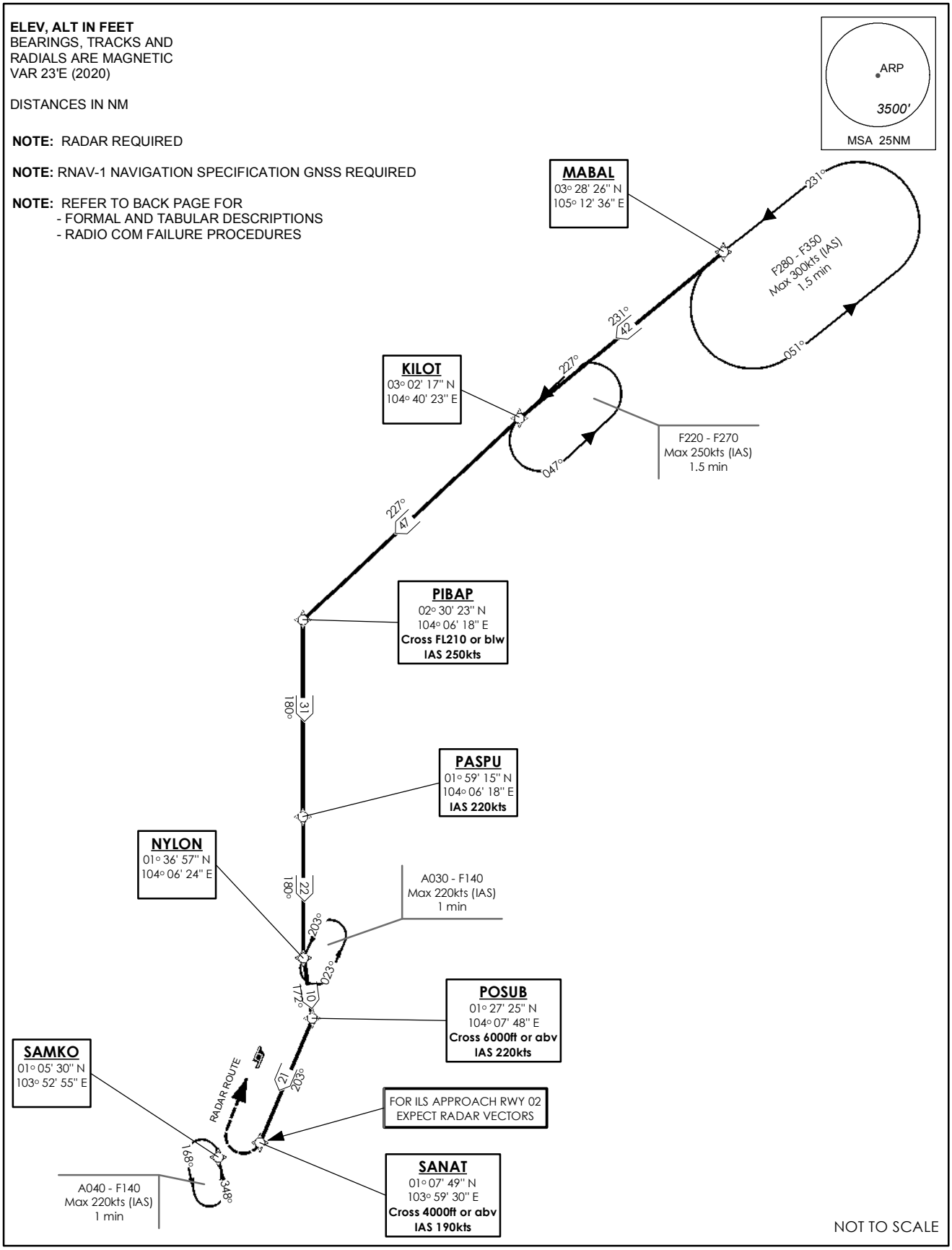
STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC 133.8
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 02L/C
MABAL TWO ALPHA ARRIVAL
MABAL 2A



CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

MABAL 2A (STAR) RNAV GNSS RWY 02L/02C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From MABAL. To KILOT, turn left. To PIBAP at or below FL210, speed 250kts, turn left. To PASPU, speed 220kts. To NYLON, turn left. To POSUB at or above 6000ft, speed 220kts, turn right. To SANAT at or above 4000ft, speed 190kts.	MABAL - KILOT [L] - PIBAP [FL210-; K250; L] - PASPU [K220] - NYLON [L] - POSUB [A060+; K220; R] - SANAT [A040+; K190]	IF TF TF TF TF TF TF	N N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	MABAL	-	-	-0.5	-	-	-	RNAV1
TF	KILOT	-	231(231.1)	-0.5	L	-	-	RNAV1
TF	PIBAP	-	227(227.5)	-0.5	L	FL210-	K250	RNAV1
TF	PASPU	-	180(180.5)	-0.5	-	-	K220	RNAV1
TF	NYLON	-	180(180.5)	-0.5	L	-	-	RNAV1
TF	POSUB	-	172(172.5	-0.5	R	A060+	K220	RNAV1
TF	SANAT	-	203(203.1)	-0.5	-	A040+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via MABAL 2A by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on MABAL 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC 133.8
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 20R/C
MABAL TWO BRAVO ARRIVAL
MABAL 2B

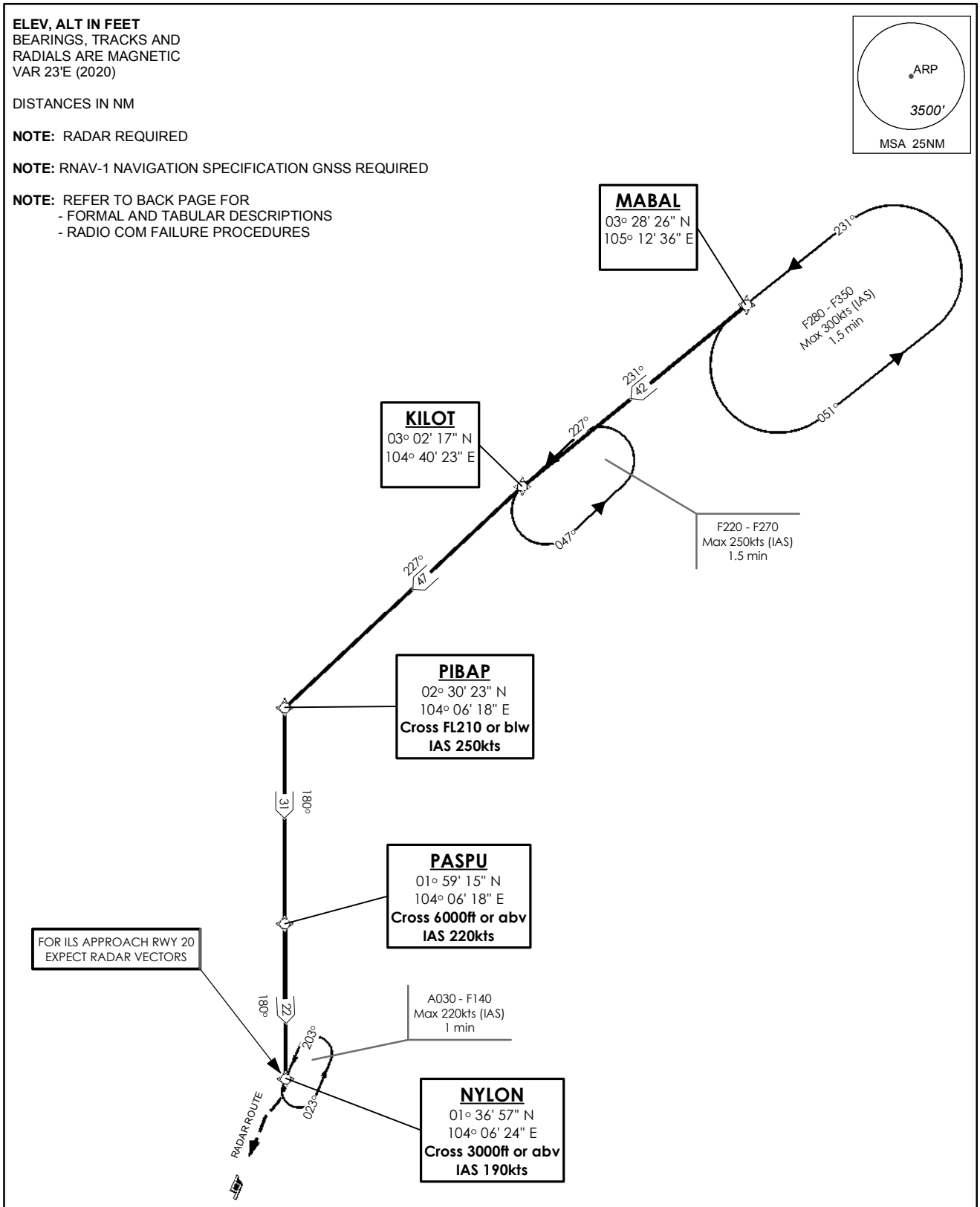
ELEV, ALT IN FEET
BEARINGS, TRACKS AND
RADIALS ARE MAGNETIC
VAR 23'E (2020)

DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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



NOT TO SCALE

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

MABAL 2B (STAR) RNAV GNSS RWY 20R/20C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From MABAL. To KILOT, turn left. To PIBAP at or below FL210, speed 250kts, turn left. To PASPU, at or above 6000ft, speed 220kts. To NYLON at or above 3000ft, speed 190kts.	MABAL - KILOT [L] - PIBAP [FL210-; K250; L] - PASPU [A060+; K220] - NYLON [A030+; K190]	IF TF TF TF TF	N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	MABAL	-	-	-0.5	-	-	-	RNAV1
TF	KILOT	-	231(231.1)	-0.5	L	-	-	RNAV1
TF	PIBAP	-	227(227.5)	-0.5	L	FL210-	K250	RNAV1
TF	PASPU	-	180(180.5)	-0.5	-	A060+	K220	RNAV1
TF	NYLON	-	180(180.5)	-0.5	-	A030+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via MABAL 2B by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on MABAL 2B 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

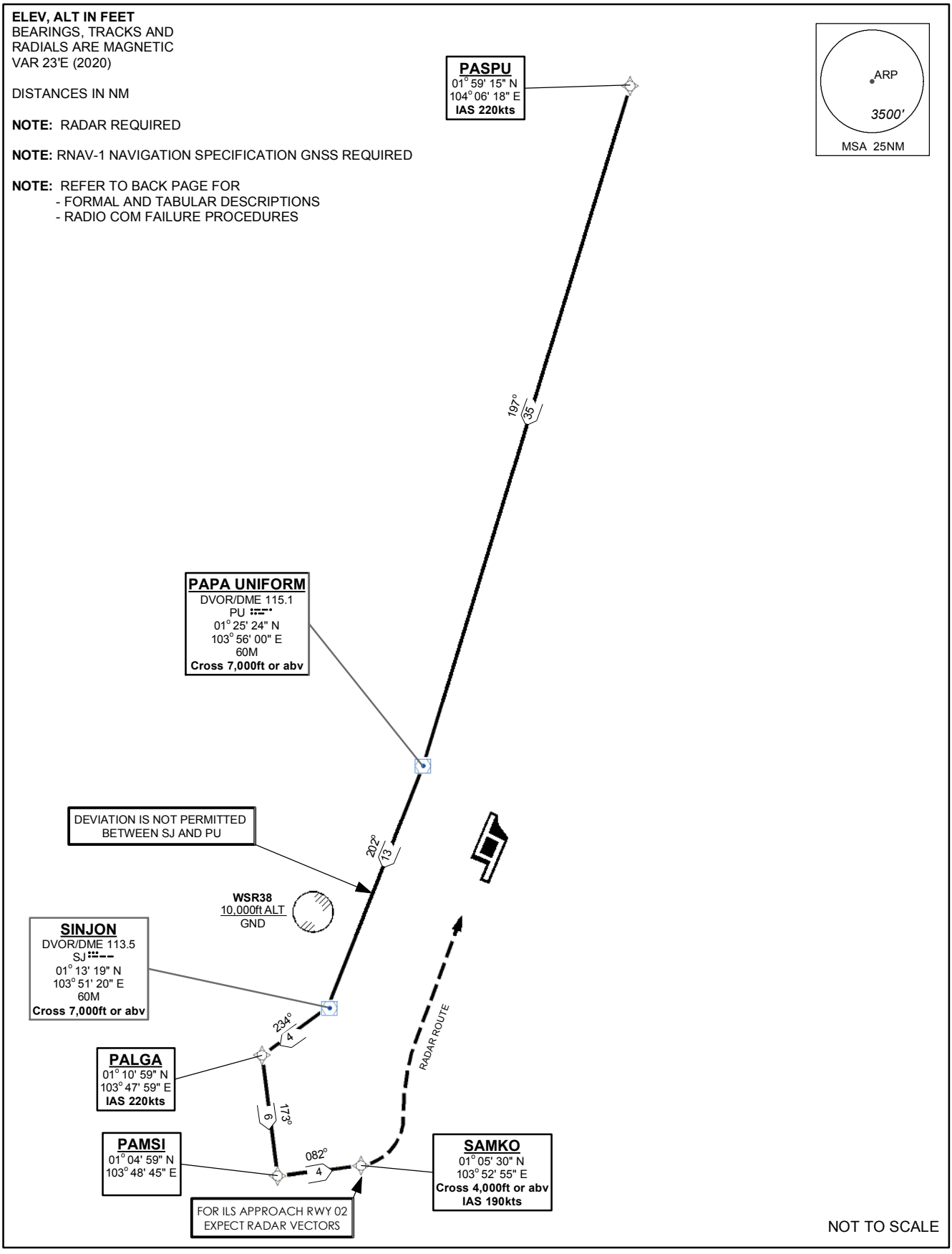
STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC 133.8
APP 124.05
119.3
TWR 118.6

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 02L
LEBAR TWO ALPHA ARRIVAL
LEBAR 2A



CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

LEBAR 2A (STAR) RNAV GNSS RWY 02L - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From PASPU, speed 220kts. To PU at or above 7000ft, turn right. To SJ at or above 7000ft, turn right. To PALGA, speed 220kts, turn left. To PAMSI, turn left. To SAMKO at or above 4000ft, speed 190kts.	PASPU [K220] - PU [A070+; R] - SJ [A070+; R] - PALGA [K220; L] - PAMSI [L] - SAMKO [A040+; K190]	IF TF TF TF TF TF	N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	PASPU	-	-	-0.5	-	-	K220	RNAV1
TF	PU	-	197(197.5)	-0.5	R	A070+	-	RNAV1
TF	SJ	-	202(202.5)	-0.5	R	A070+	-	RNAV1
TF	PALGA	-	234(234.5)	-0.5	L	-	K220	RNAV1
TF	PAMSI	-	173(173.5)	-0.5	L	-	-	RNAV1
TF	SAMKO	-	082(082.5)	-0.5	-	A040+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC 133.25 / 134.4
APP 124.05
119.3
TWR 118.6

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 20R
LEBAR TWO BRAVO ARRIVAL
LEBAR 2B

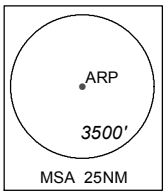
ELEV, ALT IN FEET
BEARINGS, TRACKS AND
RADIALS ARE MAGNETIC
VAR 23'E (2020)

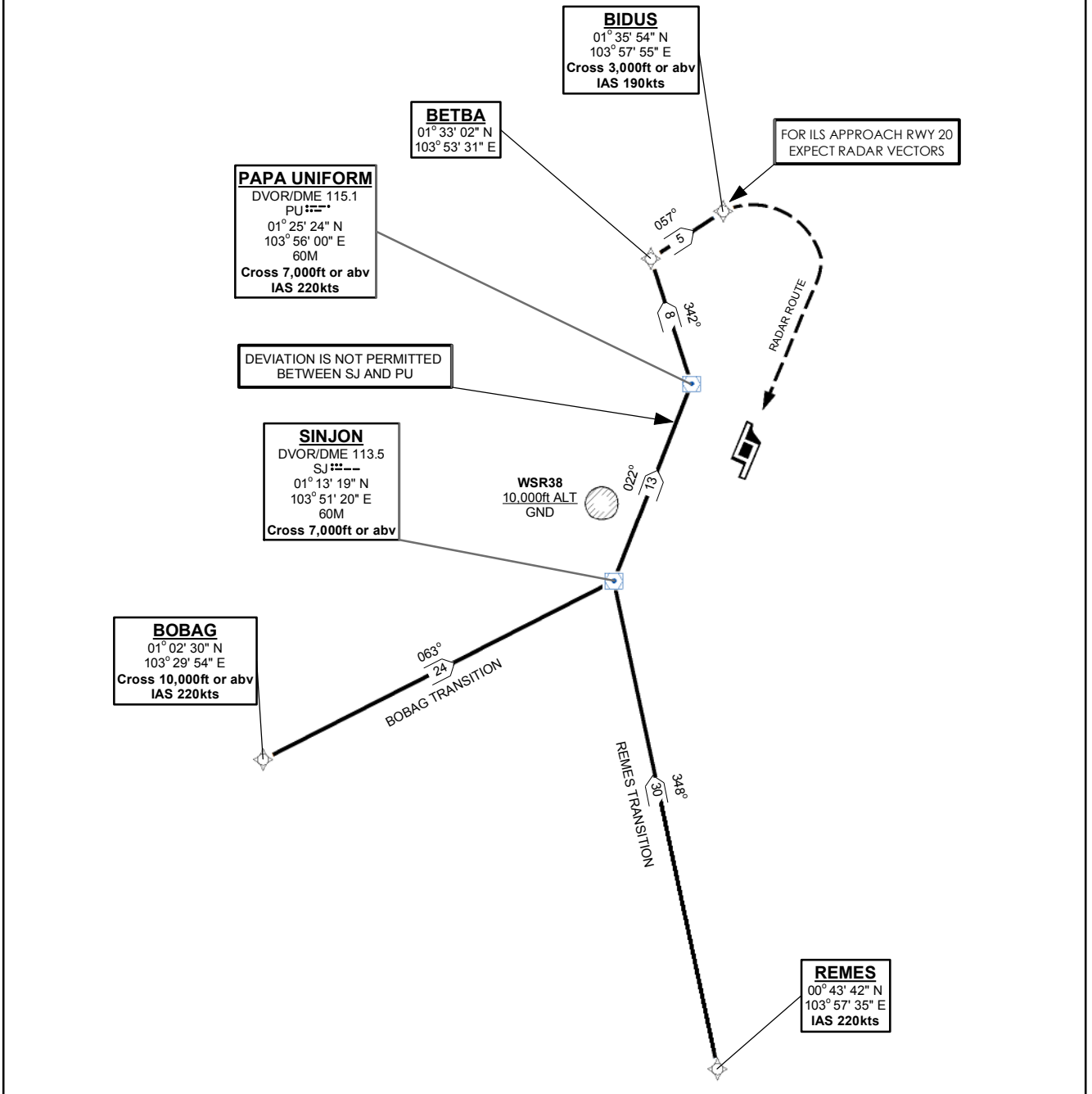
DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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





NOT TO SCALE

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

LEBAR 2B (STAR) RNAV GNSS RWY 20R - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description (BOBAG Transition)	Abbreviated Description	Path Terminator	Fly-Over required
From BOBAG at or above 10000ft, speed 220kts. To SJ at or above 7000ft, turn left. To PU at or above 7000ft, speed 220kts, turn left. To BETBA, turn right. To BIDUS at or above 3000ft, speed 190kts.	BOBAG [A100+; K220] - SJ [A070+; L] - PU [A070+; K220; L] - BETBA [R] - BIDUS [A030+; K190]	IF TF TF TF TF	N N N N N
Formal Description (REMES Transition)	**Abbreviated Description**	**Path Terminator**	**Fly-Over required**
From REMES, speed 220kts. To SJ at or above 7000ft, turn right. To PU at or above 7000ft, speed 220kts, turn left. To BETBA, turn right. To BIDUS at or above 3000ft, speed 190kts.	REMES [K220] - SJ [A070+; R] - PU [A070+; K220; L] - BETBA [R] - BIDUS [A030+; K190]	IF TF TF TF TF	N N N N N

Tabular Descriptions (BOBAG Transition)

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	BOBAG	-	-	-0.5	-	A100+	K220	RNAV1
TF	SJ	-	063(063.5)	-0.5	L	A070+	-	RNAV1
TF	PU	-	022(022.5)	-0.5	L	A070+	K220	RNAV1
TF	BETBA	-	342(342.5)	-0.5	R	-	-	RNAV1
TF	BIDUS	-	057(057.5)	-0.5	-	A030+	K190	RNAV1

Tabular Descriptions (REMES Transition)

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	REMES	-	-	-0.5	-	-	K220	RNAV1
TF	SJ	-	348(348.5)	-0.5	R	A070+	-	RNAV1
TF	PU	-	022(022.5)	-0.5	L	A070+	K220	RNAV1
TF	BETBA	-	342(342.5)	-0.5	R	-	-	RNAV1
TF	BIDUS	-	057(057.5)	-0.5	-	A030+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via LEBAR 2B by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on LEBAR 2B to BIDUS, then direct to NYLON **(b)** From NYLON commence descent and carry out appropriate landing procedure for RWY 20R as close as possible to EAT or ETA **(c)** If unable to effect a landing, refer to Singapore AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC 134.4
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 02L/C
REPOV ONE ALPHA ARRIVAL
REPOV 1A

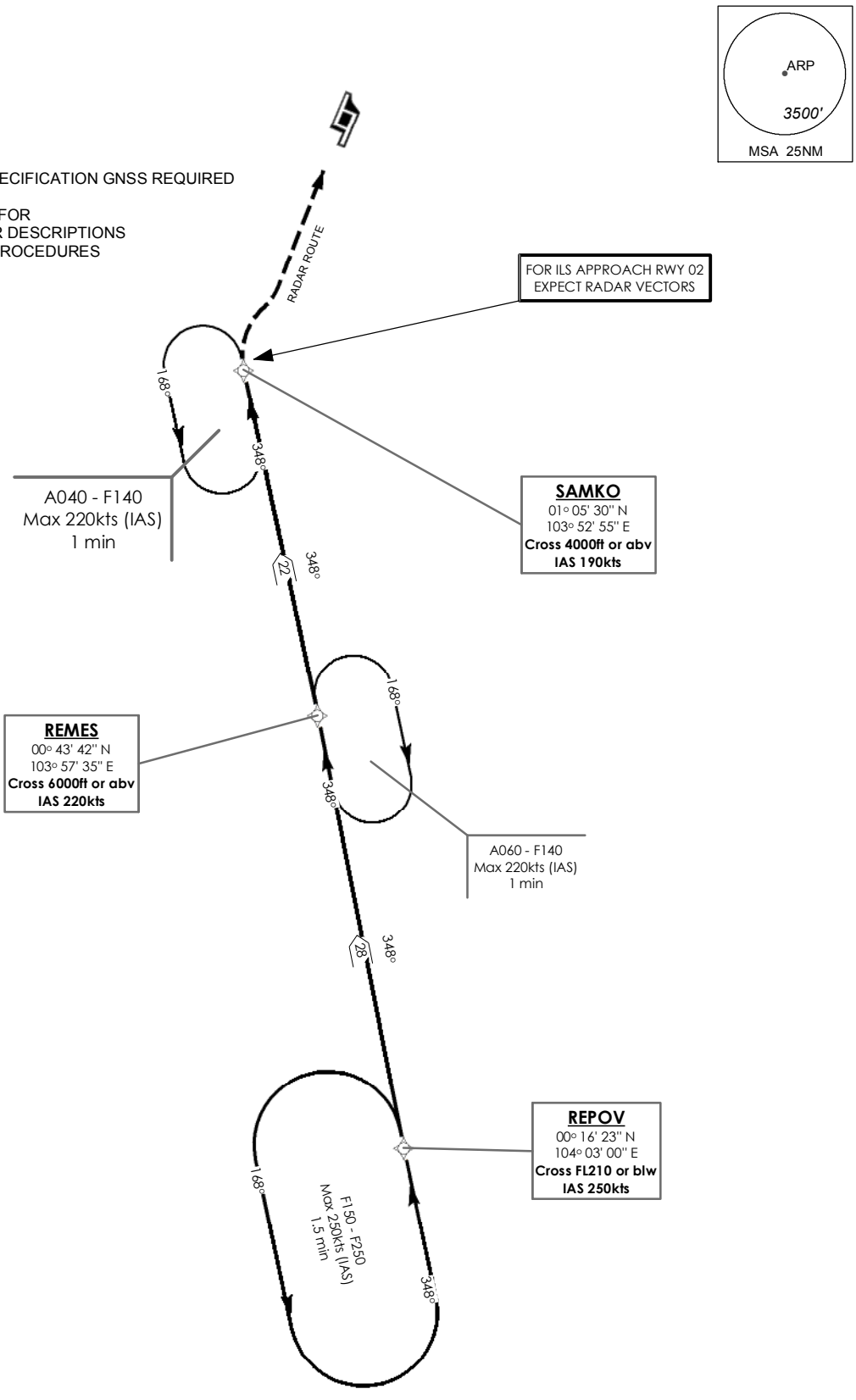
ELEV, ALT IN FEET
BEARINGS, TRACKS AND RADIALS ARE MAGNETIC
VAR 23'E (2020)

DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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



NOT TO SCALE

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

REPOV 1A (STAR) RNAV GNSS RWY 02L/02C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From REPOV at or below FL210, speed 250kts. To REMES at or above 6000ft, speed 220kts. To SAMKO at or above 4000ft, speed 190kts.	REPOV [FL210-; K250] - REMES [A060+; K220] - SAMKO [A040+; K190]	IF TF TF	N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	REPOV	-	-	-0.5	-	FL210-	K250	RNAV1
TF	REMES	-	348(348.7)	-0.5	-	A060+	K220	RNAV1
TF	SAMKO	-	348(348.5)	-0.5	-	A040+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via REPOV 1A by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on REPOV 1A 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART
RNAV (GNSS) -
INSTRUMENT (STAR)

ACC 134.4
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 02L/C
SURGA ONE ALPHA ARRIVAL
SURGA 1A

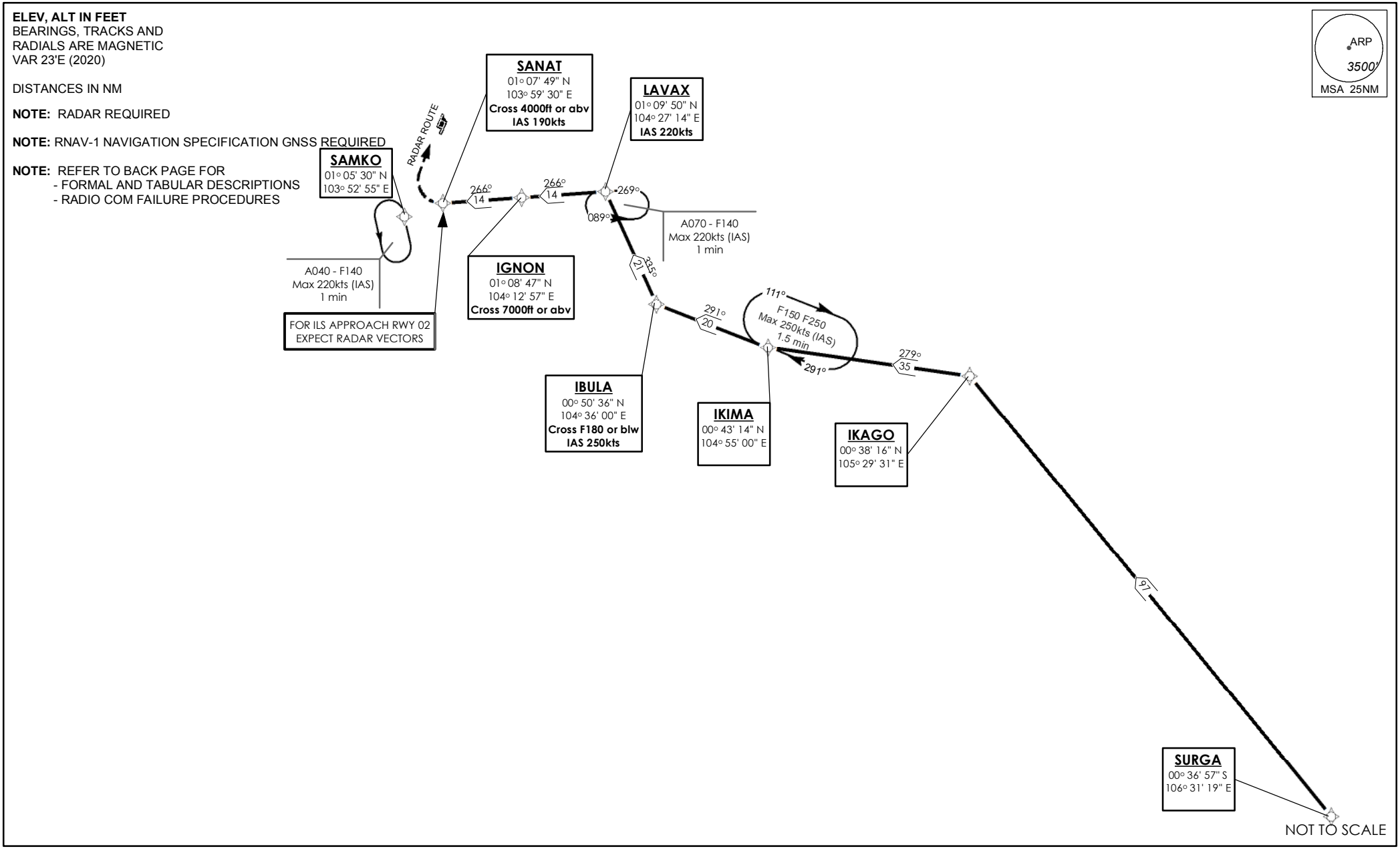
ELEV, ALT IN FEET
BEARINGS, TRACKS AND
RADIALS ARE MAGNETIC
VAR 23'E (2020)

DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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



CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

SURGA 1A (STAR) RNAV GNSS RWY 02L/02C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From SURGA. To IKAGO, turn left. To IKIMA, turn right. To IBULA at or below FL180, speed 250kts, turn right. To LAVAX, speed 220kts, turn left. To IGNON at or above 7000ft. To SANAT at or above 4000ft, speed 190kts.	SURGA - IKAGO [L] - IKIMA [R] - IBULA [FL180-; K250; R] - LAVAX [K220; L] - IGNON [A070+] - SANAT [A040+; K190]	IF TF TF TF TF TF TF	N N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	SURGA	-	-	-0.5	-	-	-	RNAV1
TF	IKAGO	-	320(320.4)	-0.5	L	-	-	RNAV1
TF	IKIMA	-	279(279.5)	-0.5	R	-	-	RNAV1
TF	IBULA	-	291(291.1)	-0.5	R	FL180-	K250	RNAV1
TF	LAVAX	-	335(335.4)	-0.5	L	-	K220	RNAV1
TF	IGNON	-	266(266.5)	-0.5	-	A070+	-	RNAV1
TF	SANAT	-	266(266.5)	-0.5	-	A040+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via SURGA 1A by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on SURGA 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC 134.4
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 20R/C
REPOV ONE BRAVO ARRIVAL
REPOV 1B

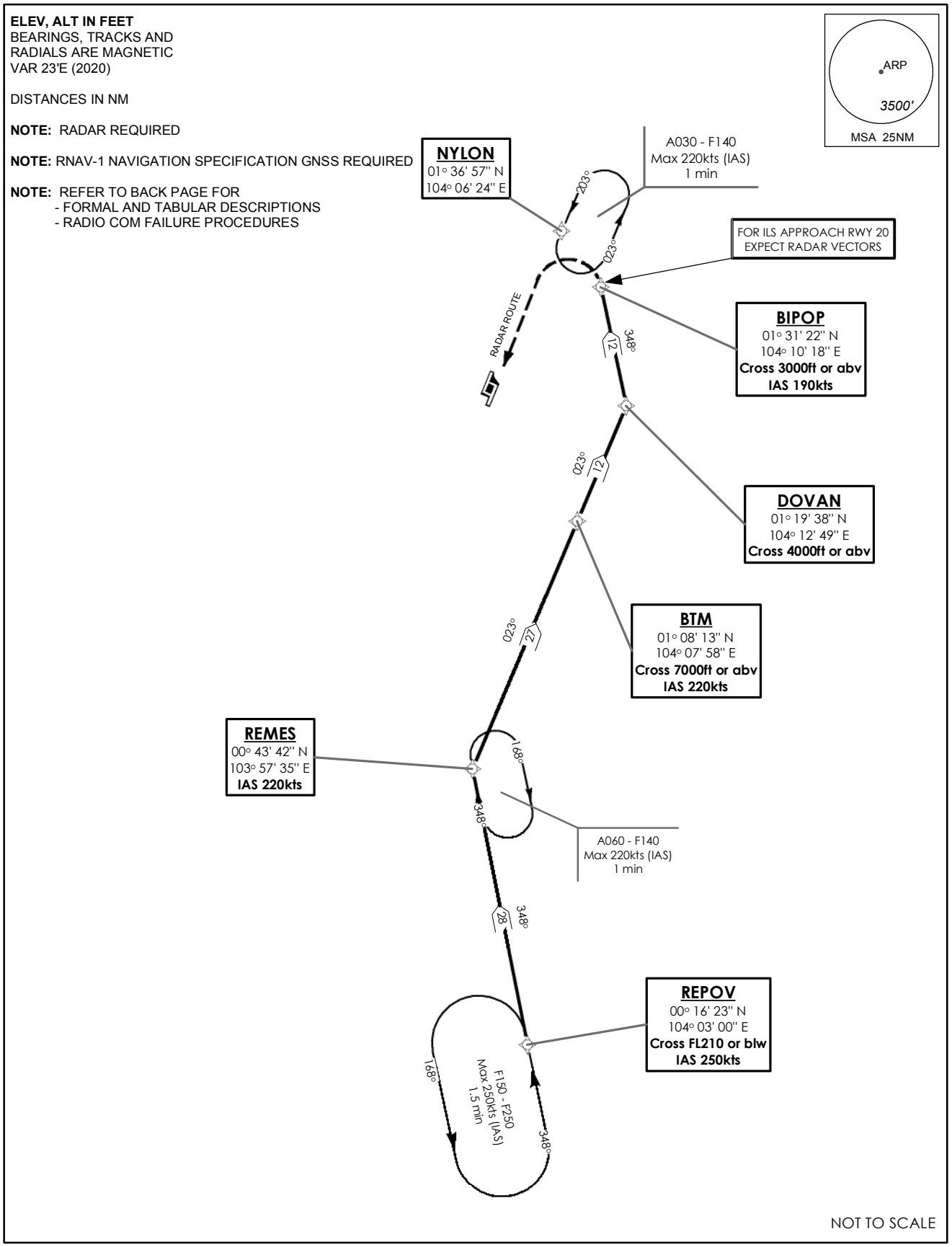
ELEV, ALT IN FEET
BEARINGS, TRACKS AND
RADIALS ARE MAGNETIC
VAR 23'E (2020)

DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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



CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

REPOV 1B (STAR) RNAV GNSS RWY 20R/20C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From REPOV at or below FL210, speed 250kts. To REMES, speed 220kts, turn right. To BTM at or above 7000ft, speed 220kts. To DOVAN at or above 4000ft, turn left. To BIPOP at or above 3000ft, speed 190kts.	REPOV [FL210-; K250] - REMES [K220; R] - BTM [A070+; K220] - DOVAN [A040+; L] - BIPOP [A030+; K190]	IF TF TF TF TF	N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	REPOV	-	-	-0.5	-	FL210-	K250	RNAV1
TF	REMES	-	348(348.7)	-0.5	R	-	K220	RNAV1
TF	BTM	-	023(023.1)	-0.5	-	A070+	K220	RNAV1
TF	DOVAN	-	023(023.1)	-0.5	L	A040+	-	RNAV1
TF	BIPOP	-	348(348.5)	-0.5	-	A030+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via REPOV 1B by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on REPOV 1B to BIPOP, 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART
RNAV (GNSS) - INSTRUMENT (STAR)

ACC 134.4
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 20R/C
SURGA ONE BRAVO ARRIVAL
SURGA 1B

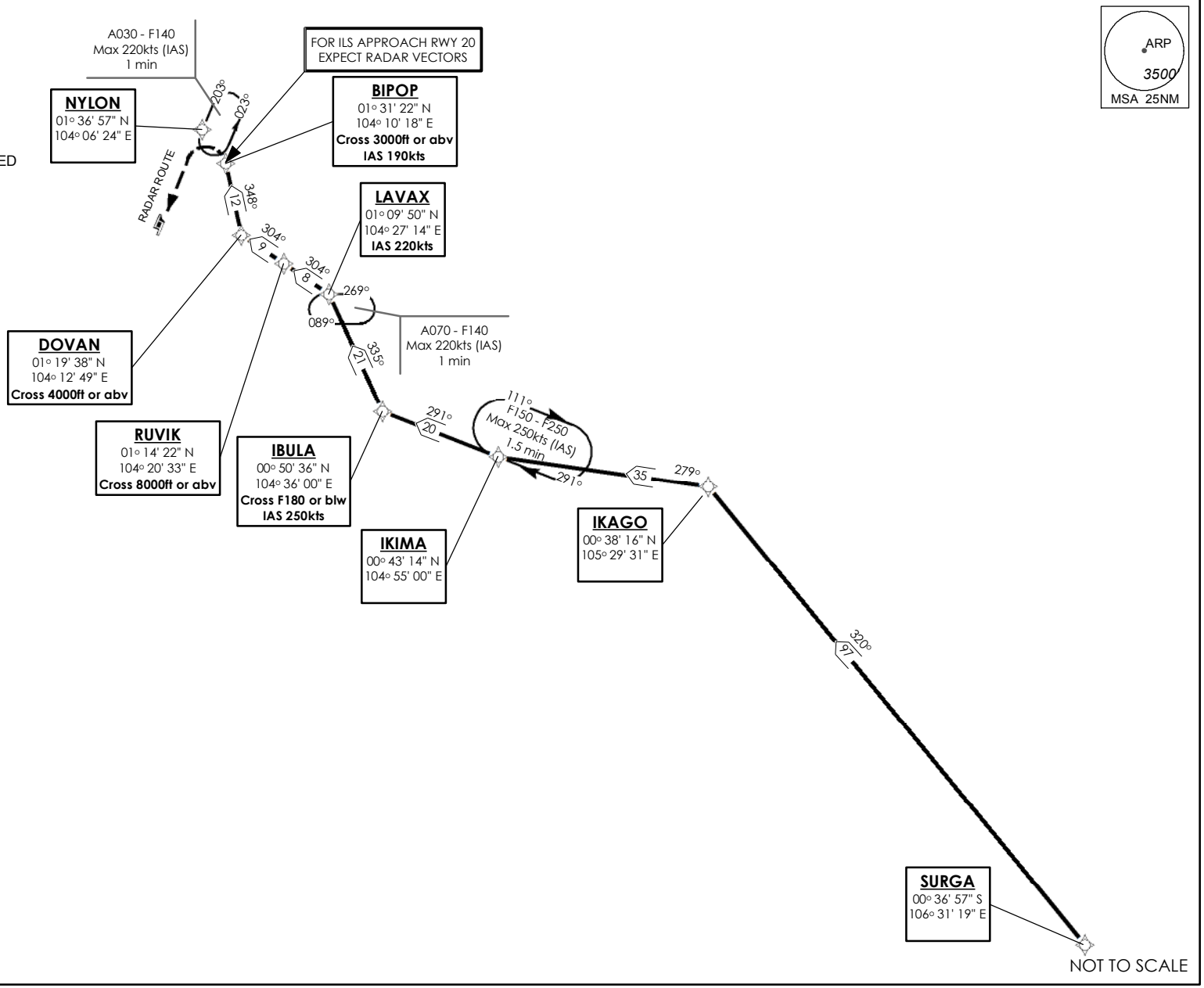
ELEV, ALT IN FEET
BEARINGS, TRACKS AND RADIALS ARE MAGNETIC
VAR 23'E (2020)

DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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



CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

SURGA 1B (STAR) RNAV GNSS RWY 20R/20C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From SURGA. To IKAGO, turn left. To IKIMA, turn right. To IBULA at or below FL180, speed 250kts, turn right. To LAVAX, speed 220kts, turn left. To RUVIK at or above 8000ft. To DOVAN at or above 4000ft, turn right. To BIPOP at or above 3000ft, speed 190kts.	SURGA - IKAGO [L] - IKIMA [R] - IBULA [FL180-; K250; R] - LAVAX [K220; L] - RUVIK [A080+] - DOVAN [A040+; R] - BIPOP [A030+; K190]	IF TF TF TF TF TF TF TF	N N N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	SURGA	-	-	-0.5	-	-	-	RNAV1
TF	IKAGO	-	320(320.4)	-0.5	L	-	-	RNAV1
TF	IKIMA	-	279(279.5)	-0.5	R	-	-	RNAV1
TF	IBULA	-	291(291.1)	-0.5	R	FL180-	K250	RNAV1
TF	LAVAX	-	335(335.4)	-0.5	L	-	K220	RNAV1
TF	RUVIK	-	304(304.0)	-0.5	-	A080+	-	RNAV1
TF	DOVAN	-	304(304.1)	-0.5	R	A040+	-	RNAV1
TF	BIPOP	-	348(348.5)	-0.5	-	A030+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via SURGA 1B by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on SURGA 1B to BIPOP, 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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

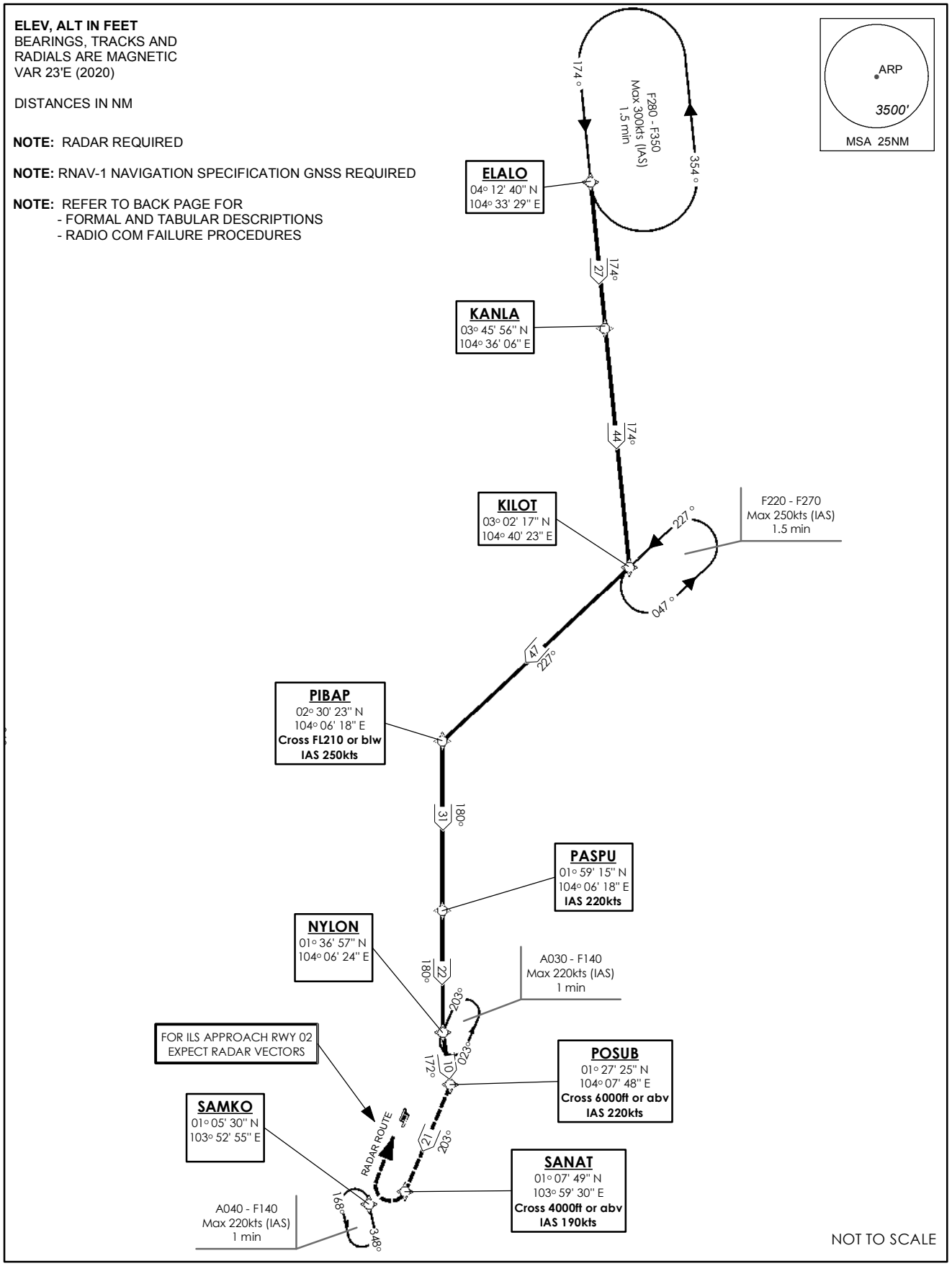
STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC 133.8
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 02L/C
ELALO ONE ALPHA ARRIVAL
ELALO 1A



CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

ELALO 1A (STAR) RNAV GNSS RWY 02L/02C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From ELALO. To KANLA. To KILOT, turn right. To PIBAP at or below FL210, speed 250kts, turn left. To PASPU, speed 220kts. To NYLON, turn left. To POSUB at or above 6000ft, speed 220kts, turn right. To SANAT at or above 4000ft, speed 190kts.	ELALO - KANLA - KILOT [R] - PIBAP [FL210-; K250; L] - PASPU [K220] - NYLON [L] - POSUB [A060+; K220; R] - SANAT [A040+; K190]	IF TF TF TF TF TF TF TF	N N N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	ELALO	-	-	-0.5	-	-	-	RNAV1
TF	KANLA	-	174(174.5)	-0.5	-	-	-	RNAV1
TF	KILOT	-	174(174.5	-0.5	R	-	-	RNAV1
TF	PIBAP	-	227(227.5)	-0.5	L	FL210-	K250	RNAV1
TF	PASPU	-	180(180.5)	-0.5	-	-	K220	RNAV1
TF	NYLON	-	180(180.5)	-0.5	L	-	-	RNAV1
TF	POSUB	-	172(172.5)	-0.5	R	A060+	K220	RNAV1
TF	SANAT	-	203(203.1)	-0.5	-	A040+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

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 AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

STANDARD ARRIVAL CHART RNAV (GNSS) - INSTRUMENT (STAR)

ACC 133.8
APP 124.05
119.3
TWR 118.6 / 118.25

TRANSITION ALTITUDE
11 000ft

D-ATIS AP ID-WSSS
128.025

SINGAPORE/Singapore Changi
RWY 20R/C
ELALO ONE BRAVO ARRIVAL
ELALO 1B

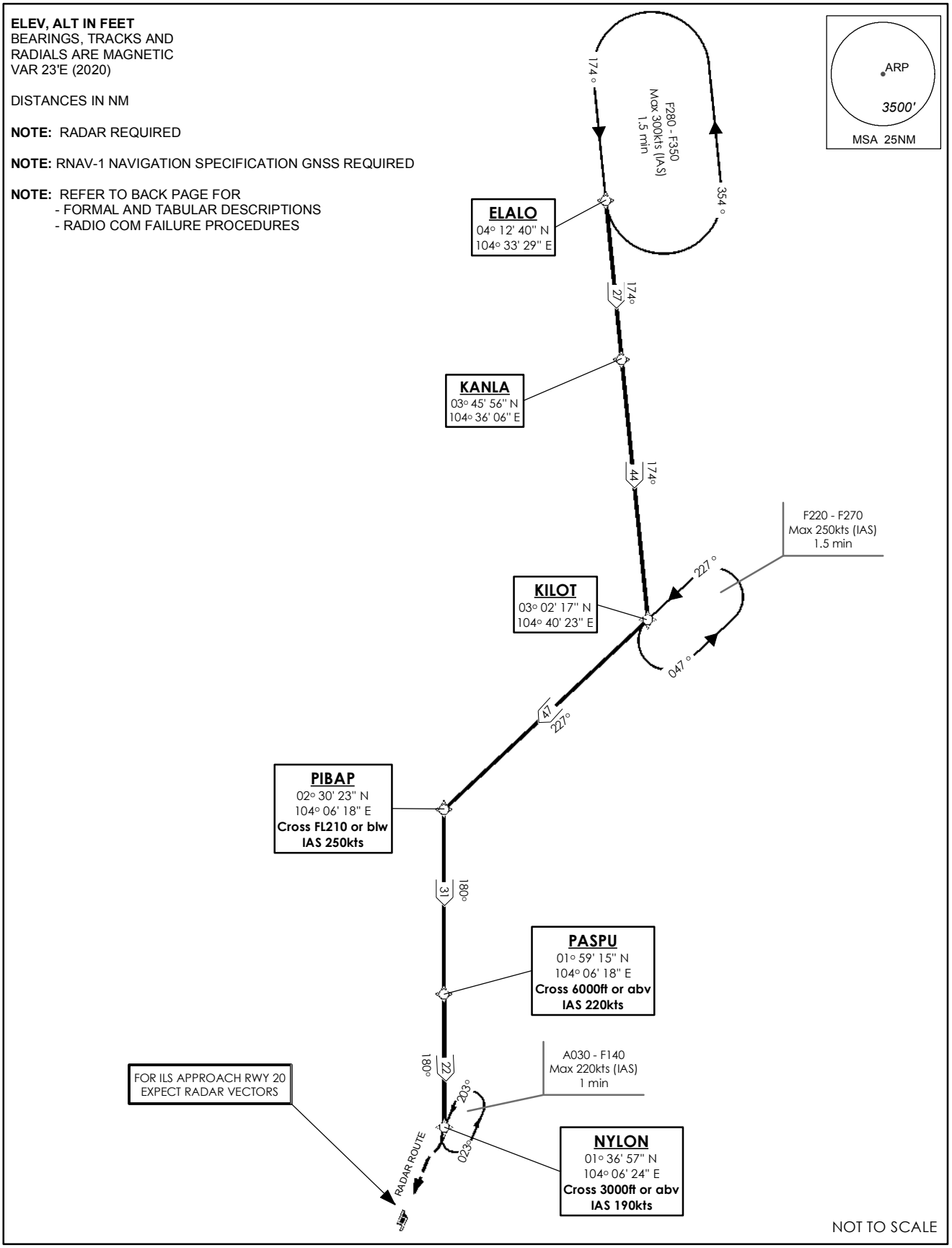
ELEV, ALT IN FEET
BEARINGS, TRACKS AND RADIALS ARE MAGNETIC
VAR 23'E (2020)

DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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



CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

ELALO 1B (STAR) RNAV GNSS RWY 20R/20C - DESCRIPTIONS

Formal & Abbreviated Descriptions

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
From ELALO. To KANLA. To KILOT, turn right. To PIBAP at or below FL210, speed 250kts turn left. To PASPU, at or above 6000ft, speed 220kts. To NYLON at or above 3000ft, speed 190kts.	ELALO - KANLA - KILOT [R] - PIBAP [FL210-; K250; L] - PASPU [A060+; K220] - NYLON [A030+; K190]	IF TF TF TF TF TF	N N N N N N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	ELALO	-	-	-0.5	-	-	-	RNAV1
TF	KANLA	-	174(174.5)	-0.5	-	-	-	RNAV1
TF	KILOT		174(174.5)	-0.5	R	-	-	RNAV1
TF	PIBAP	-	227(227.5)	-0.5	L	FL210-	K250	RNAV1
TF	PASPU	-	180(180.5)	-0.5	-	A060+	K220	RNAV1
TF	NYLON	-	180(180.5)	-0.5	-	A030+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

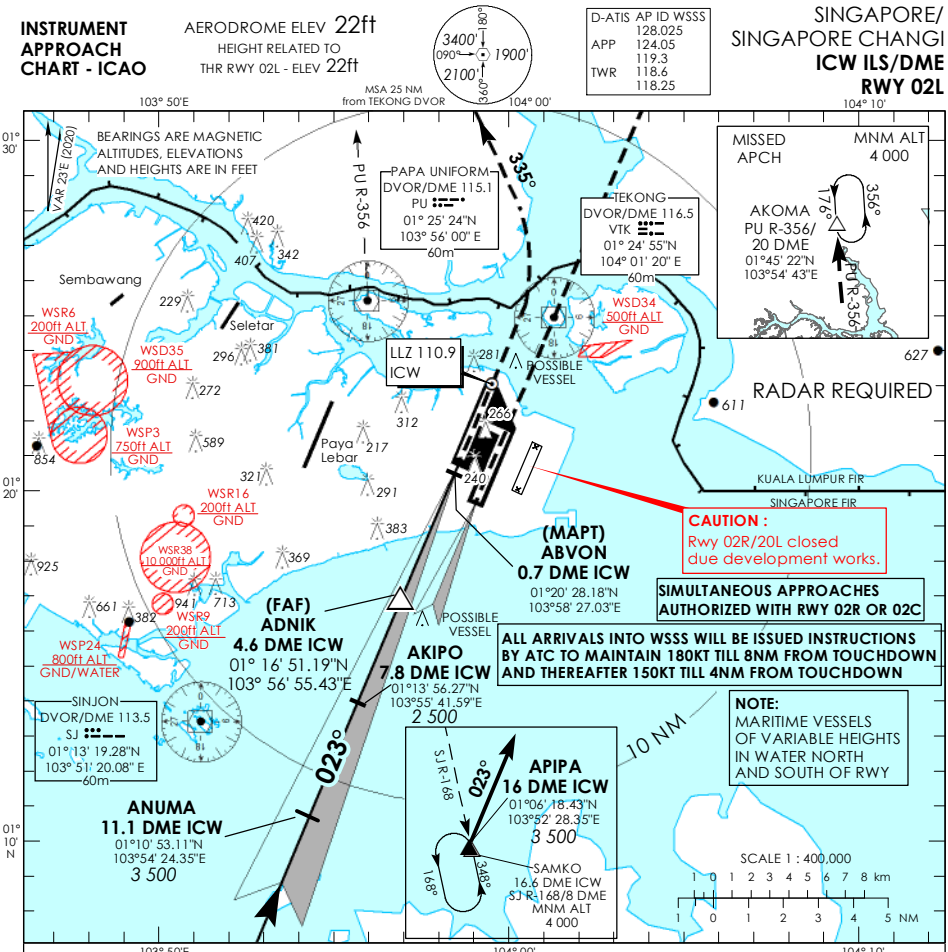
1	**SET TRANSPONDER TO MODE A/C CODE 7600**
2	**When cleared via ELALO 1B by Singapore ATC** **(a)** Maintain last assigned flight level or altitude and proceed on ELALO 1B to NYLON **(b)** From NYLON commence descent and carry out appropriate landing procedure for RWY 20 as close as possible to EAT or ETA **(c)** If unable to effect a landing, refer to Singapore AIP for missed approach procedure
3	**No clearance or instruction received from Singapore ATC** - Refer to Singapore AIP for radio communications failure procedure

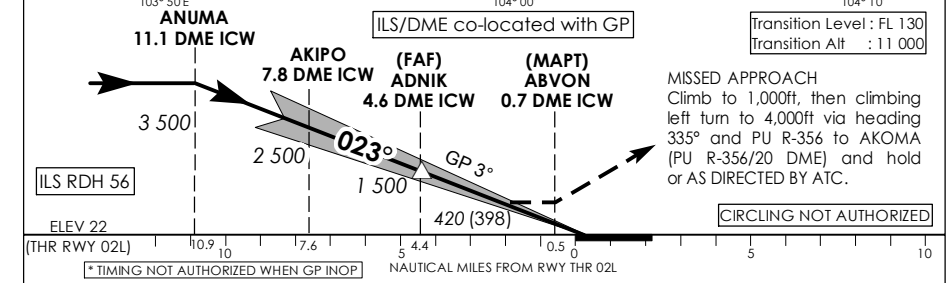
INSTRUMENT APPROACH CHART - ICAO

AERODROME ELEV 22ft
HEIGHT RELATED TO THR RWY 02L - ELEV 22ft

D-ATIS	AP ID WSSS
	128.025
APP	124.05
	119.3
TWR	118.6
	118.25

SINGAPORE/ SINGAPORE CHANGI
ICW ILS/DME RWY 02L





* TIMING NOT AUTHORIZED WHEN GP INOP

Category of Aircraft		OCA (OCH) A	B	C	D	D_L
Straight-in	CAT I ILS	173 (151)	187 (165)	203 (181)	216 (194)	219 (197)
	CAT II ILS	88 (66)	98 (76)	108 (86)	127 (105)	127 (105)
	GP INOP	420 (398)				

Distance	4 DME	3 DME	2 DME
Altitude (Height)	1290 (1268)	970 (948)	660 (638)

Speed	knots	70	120	150	185
FAF - MAPT 3.9nm	min : s *	3 : 21	1 : 57	1 : 34	1 : 16
Rate of descent/GS	ft/min	370	635	795	980

CHANGES : D-ATIS and APP frequencies revised. Magnetic Variation revised.

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INSTRUMENT APPROACH CHART - ICAO

AERODROME ELEV 22ft
HEIGHT RELATED TO THR RWY 02C - ELEV 14ft

MSA 25 NM from TEKONG DVOR: 3400' (080°–090°), 1900' (090°–180°), 2100' (180°–360°)

D-ATIS	AP ID WSSS
	128.025
APP	124.05
	119.3
TWR	118.6
	118.25

SINGAPORE/ SINGAPORE CHANGI
ICE ILS/DME RWY 02C

103° 50'E — 104° 00' — 104° 10'

BEARINGS ARE MAGNETIC
ALTITUDES, ELEVATIONS AND HEIGHTS ARE IN FEET
VAR 2.3°E (2020)

10 NM

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

VTK R-023

MISSED APCH
NYLON VTK R-023/ 13 DME
01°36' 57"N 104°06' 24"E
203° 023°
MNM ALT 3 000

Sembawang 229 — Seletar 381 — 296 — 272 — 281 — 312 — 266 — 217 — Paya Lebar — 240 — 321 — 291 — 383 — 369 — 925 — 661 — 382 — 941 — 713

WSR6 200ft ALT GND
WSD35 900ft ALT GND
WSP3 750ft ALT GND
WSR16 200ft ALT GND
WSR38 10 000ft ALT GND
WSR9 200ft ALT GND
WSP24 800ft ALT GND/WATER
WSD34 500ft ALT GND

POSSIBLE VESSEL

LLZ 108.3 ICE

PIC SAFETY AREA 2000ft ALT GND

KUALA LUMPUR FIR / SINGAPORE FIR

CAUTION :
Rwy 02R/20L closed due development works.

NOTE:
MARITIME VESSELS OF VARIABLE HEIGHTS IN WATER NORTH AND SOUTH OF RWY

(MAPT) LAGUS
0.7 DME ICE
01°19' 15.29"N
103°58' 54.00"E

(Stepdown Fix) LUXOL
2.0 DME ICE
01°18' 02.73"N
103°58' 23.38"E

(FAF) LASIN
4.6 DME ICE
01° 15' 38.25"N
103° 57' 22.39"E

LELON
7.8 DME ICE
01°12' 43.51"N
103°56' 08.62"E
2 500

023°

ALL ARRIVALS INTO WSSS WILL BE ISSUED INSTRUCTIONS BY ATC TO MAINTAIN 180KT TILL 8NM FROM TOUCHDOWN AND THEREAFTER 150KT TILL 4NM FROM TOUCHDOWN

SINJON DVOR/DME 113.5 SJ
01° 13' 19.28"N
103° 51' 20.08" E
60m

SAMKO
15.6 DME ICE
SJ R-168/8 DME
MNM ALT 4 000

SJ R-168 — 023° — 168° — 348°

LIDVA
16 DME ICE
01°05' 05.67"N
103°52' 55.38"E
4 500

SIMULTANEOUS APPROACHES AUTHORIZED WITH RWY 02R OR 02L

LEPNA
14.2 DME ICE
01°06' 48.29"N
103°53' 38.82"E
4 500

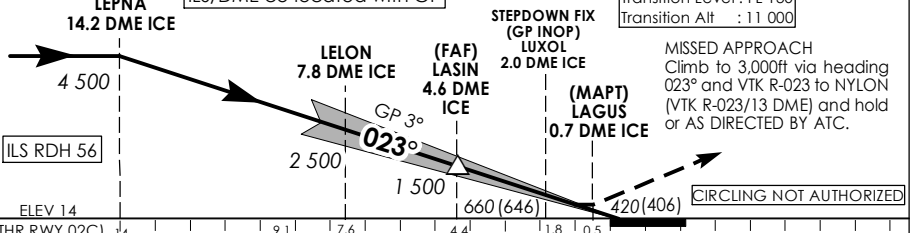
RADAR REQUIRED

SCALE 1 : 400,000
1 0 1 2 3 4 5 6 7 8 9 km
1 0 1 2 3 4 5 NM

01° 20' — 01° 10' N

ILS/DME co-located with GP

Transition Level : FL 130
Transition Alt : 11 000



MISSED APPROACH
Climb to 3,000ft via heading 023° and VTK R-023 to NYLON (VTK R-023/13 DME) and hold or AS DIRECTED BY ATC.

* TIMING NOT AUTHORIZED WHEN GP INOP

OCA (OCH)						
Category of Aircraft		A	B	C	D	D_L
Straight-in	CAT I ILS	**170 (156)**	**180 (166)**	**196 (182)**	**209 (195)**	**212 (198)**
	GP INOP (with stepdown fix)	**420 (406)**				
	GP INOP (without stepdown fix)	**660 (646)**				

Distance	4 DME			3 DME	
Altitude (Height)	**1290 (1276)**			**970 (956)**	
Speed	knots	70	120	150	185
FAF - MAPT 3.9nm	min : s*	**3 : 21**	**1 : 57**	**1 : 34**	**1 : 16**
Rate of descent/GS	ft/min	**370**	**635**	**795**	**980**

CHANGES : D-ATIS and APP frequencies revised. Magnetic Variation revised.

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INSTRUMENT APPROACH CHART - ICAO

AERODROME ELEV 22ft
HEIGHT RELATED TO
DTHR RWY 20R - ELEV 13ft

MSA 25 NM from TEKONG DVOR
3400' 080° 1900' 2100' 360°

D-ATIS	AP ID WSSS
APP	128.025 124.05
TWR	119.3 118.6 118.25

SINGAPORE/
SINGAPORE CHANGI
ICH ILS/DME
RWY 20R

103° 50'E 104° 00' 104° 10'

ALL ARRIVALS INTO WSSS WILL BE ISSUED INSTRUCTIONS BY ATC TO MAINTAIN 180KT TILL 8NM FROM TOUCHDOWN AND THEREAFTER 150KT TILL 4NM FROM TOUCHDOWN

RWY 20R ILS DME NOT AVAILABLE BEYOND 15 DEG WEST OF RWY 20R CENTRELINE BELOW 2500FT

SIMULTANEOUS APPROACHES AUTHORIZED WITH RWY 20L OR 20C

BEARINGS ARE MAGNETIC
ALTITUDES, ELEVATIONS
AND HEIGHTS ARE IN FEET

VAR 2.3°E (2020)

10 NM

IGULA
11.1 DME ICH
01°32' 32.27"N
104°03' 32.66"E
3 500

IDVAS
7.8 DME ICH
01°29' 34.66"N
104°02' 17.75"E
2 500

(FAF)
IDURO
4.6 DME ICH
01° 26' 39.84"N
104° 01' 03.94"E

(MAPT)
IDUNA
0.8 DME ICH
01°23' 05.80"N
103°59' 33.58"E

203°

IPNAK
16 DME ICH
01°37' 11.93"N
104°05' 30.83"E
3 500

NYLON
(16.2 DME ICH/
VTK R-023/
13 DME)
MNM ALT
3 000

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

RADAR REQUIRED

Sembawang
Seletar
Paya Lebar

WSR6 200ft ALT GND
WSD35 900ft ALT GND
WSP3 750ft ALT GND
WSR16 200ft ALT GND
WSR38 10 000ft ALT GND
WSR9 200ft ALT GND
WSP24 800ft ALT GND/WATER
WSD34 500ft ALT GND

POSSIBLE VESSEL

CAUTION :
Rwy 02R/20L closed due development works.

LLZ 108.9
ICH

NOTE:
MARITIME VESSELS OF VARIABLE HEIGHTS IN WATER NORTH AND SOUTH OF RWY

KUALA LUMPUR FIR
SINGAPORE FIR

SINJON
DVOR/DME 113.5
SJ
01°13' 19.28"N
103° 51' 20.08" E
60m

SCALE 1 : 400,000
1 0 1 2 3 4 5 6 7 8 9 km
1 0 1 2 3 4 5 NM

MISSED APCH
SJ R-168
SJ R-146
MNM ALT 5 000
SAMKO
SJ R-168/8 DME
01°05': 30"N
103°52' 55"E
348°
168°

103° 50'E 104° 00' 104° 10'

This procedure requires a missed approach climb gradient of 3.7% (225 ft/NM) until passing 2,500ft.
For aircraft which can only achieve a 2.5% (152 ft/NM) climb gradient, the CAT I OCA (OCH) is 693ft (680ft).

MISSED APPROACH
Climb straight ahead to 5,000ft.
On crossing SJ R-146, proceed direct to SAMKO Holding Area and hold or AS DIRECTED BY ATC.

CIRCLING NOT AUTHORIZED

Transition Level : FL 130
Transition Alt : 11 000

ILS RDH 56

(MAPT) IDUNA 0.8 DME ICH
(FAF) IDURO 4.6 DME ICH
IDVAS 7.8 DME ICH
IGULA 11.1 DME ICH 3 500

203°
GP 3°
2 500
1 500
420(407)

ILS/DME co-located with GP

ELEV 13
(DTHR RWY 20R)

10 5 0 DISPLACED THR 0.6 4.4 5 7.6 9.1 10 10.9
NAUTICAL MILES FROM RWY DTHR 20R

* TIMING NOT AUTHORIZED WHEN GP INOP

		OCA (OCH)				
Category of Aircraft		A	B	C	D	D_L
Straight-in	CAT I ILS	**152 (139)**	**159 (146)**	**179 (166)**	**192 (179)**	**195 (182)**
	GP INOP	**420 (407)**				

Distance	4 DME		3 DME		2 DME	
Altitude (Height)	**1290 (1277)**		**970 (957)**		**650 (637)**	
Speed	knots	70	120	150	185	
FAF - MAPT 3.9nm	min : s *	**3 : 21**	**1 : 57**	**1 : 34**	**1 : 16**	
Rate of descent/GS	ft/min	**370**	**635**	**795**	**980**	

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

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INSTRUMENT APPROACH CHART - ICAO

AERODROME ELEV 22ft
HEIGHT RELATED TO
THR RWY 20C - ELEV 15ft

MSA 25 NM from TEKONG DVOR
3400' 090° 1900' 180° 2100' 360°

D-ATIS	AP ID WSSS
	128.025
APP	124.05
	119.3
TWR	118.6
	118.25

SINGAPORE/ SINGAPORE CHANGI
ICC ILS/DME RWY 20C

103° 50'E 104° 00' 104° 10'

ALL ARRIVALS INTO WSSS WILL BE ISSUED INSTRUCTIONS BY ATC TO MAINTAIN 180KT TILL 8NM FROM TOUCHDOWN AND THEREAFTER 150KT TILL 4NM FROM TOUCHDOWN

RADAR REQUIRED

SIMULTANEOUS APPROACHES AUTHORIZED WITH RWY 20L OR 20R

VAR 2.3°E (2020)

BEARINGS ARE MAGNETIC
ALTITUDES, ELEVATIONS AND HEIGHTS ARE IN FEET

01° 30'

10 NM

ELALU
14.2 DME ICC
01°34' 39.87"N
104°05' 24.21"E
4 500

EGORA
16 DME ICC
01°36' 21.37"N
104°06' 07.23"E
4 500

203° 023° 203°

NYLON
16.7 DME ICC
VTK R-023/
13 DME
MNM ALT
3 000

ELBEB
7.8 DME ICC
01°28' 44.66"N
104°02' 54.38"E

(FAF) ELMIN
4.6 DME ICC
01° 25' 49.68"N
104° 01' 40.51"E
2 500

203°

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

Sembawang
Selatar
Paya Lebar

WSR6 200ft ALT GND
WSD35 900ft ALT GND
WSP3 750ft ALT GND
WSR16 200ft ALT GND
WSR38 10 000ft ALT GND
WSR9 200ft ALT GND
WSP24 800ft ALT GND/WATER
WSD34 500ft ALT GND

POSSIBLE VESSEL

(MAPT) ESBIT
0.7 DME ICC
01°22' 12.07"N
104°00' 08.64"E

CAUTION :
Rwy 02R/20L closed due development works.

KUALA LUMPUR FIR
SINGAPORE FIR

ESLUX
6.7 DME VTK
01° 18' 44.31"N
103° 58' 40.44"E

POSSIBLE VESSEL

130°

LLZ 109.7
ICC

EXOMO
VTK R-158/
22 DME
01° 04' 25.49"N
104° 09' 33.17"E

VTK R-158° 158° 338°

MISSED APCH
MNM ALT
4 000

NOTE:
MARITIME VESSELS OF VARIABLE HEIGHTS IN WATER NORTH AND SOUTH OF RWY

SINJON
DVOR/DME 113.5
SJ
01° 13' 19.28"N
103° 51' 20.08" E
60m

SCALE 1 : 400,000
1 0 1 2 3 4 5 6 7 8 9 km
1 0 1 2 3 4 5 NM

01° 20' N

This procedure requires a missed approach climb gradient of 2.8% (171 ft/NM) until passing 2,000ft.
For aircraft which can only achieve a 2.5% (152 ft/NM) climb gradient, the CAT I OCA (OCH) is 315ft (300ft).

MISSED APPROACH
Climb to 4,000ft via VTK R-203 to ESLUX (6.7 DME VTK). At ESLUX turn left heading 130° to intercept VTK R-158 to EXOMO (VTK R-158/22 DME) and hold or AS DIRECTED BY ATC.

ILS/DME co-located with GP

ELEV 15
(THR RWY 20C)

CIRCLING NOT AUTHORIZED

(MAPT) ESBIT 0.7 DME ICC
(FAF) ELMIN 4.6 DME ICC
ELBEB 7.8 DME ICC
ELALU 14.2 DME ICC
4 500
203°
GP 3°
2 500
1 500
420 (405)
ILS RDH 56

Transition Level : FL 130
Transition Alt : 11 000

0 0.5 4.4 5 7.6 10 14 15
NAUTICAL MILES FROM RWY THR 20C

* TIMING NOT AUTHORIZED WHEN GP INOP

Category of Aircraft		OCA (OCH) A	B	C	D	D_L
Straight-in	CAT I ILS	166 (151)	180 (165)	196 (181)	209 (194)	212 (197)
	CAT II ILS	71 (56)	78 (63)	91 (76)	101 (86)	107 (92)
	GP INOP	420 (405)				

Distance	4 DME		3 DME		2 DME	
Altitude (Height)	1290 (1275)		980 (965)		660 (645)	
Speed	knots	70	120	150	185	
FAF - MAPT 3.9nm	min : s *	3 : 21	1 : 57	1 : 34	1 : 16	
Rate of descent/GS	ft/min	370	635	795	980	

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

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INSTRUMENT APPROACH CHART - ICAO

AERODROME ELEV 22ft
HEIGHT RELATED TO AD ELEV

MSA 25 NM from TEKONG DVOR
3400' 090° 1900' 2100' 180° 360°

D-ATIS	AP ID WSSS
	128.025
APP	124.05
	119.3
TWR	118.6
	118.25

SINGAPORE/ SINGAPORE CHANGI
VTK DVOR/DME
RWY 20C

103° 50'E 104° 00' 104° 10'

ALL ARRIVALS INTO WSSS WILL BE ISSUED INSTRUCTIONS BY ATC TO MAINTAIN 180KT TILL 8NM FROM TOUCHDOWN AND THEREAFTER 150KT TILL 4NM FROM TOUCHDOWN

BEARINGS ARE MAGNETIC
ALTITUDES, ELEVATIONS AND HEIGHTS ARE IN FEET

VAR 2.5°E (2020)

01° 30'

10 NM

IF
9.1 DME VTK
2 000

203°

NYLON
(13 DME VTK-R-023 VTK)
203°
203°
MNM ALT 3 000

FAF
2.6 DME VTK
01° 27' 19.46"N
104° 02' 18.41"E

Sembawang
Seletar
Pava Lebar

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

WSR6 200ft ALT GND
WSD35 900ft ALT GND
WSP3 750ft ALT GND
WSR16 200ft ALT GND
WSR38 10 000ft ALT GND
WSR9 200ft ALT GND
WSP24 800ft ALT GND/WATER
WSD34 500ft ALT GND

POSSIBLE VESSEL

MAPT
3 DME VTK

CAUTION :
Rwy 02R/20L closed due development works.

KUALA LUMPUR FIR
SINGAPORE FIR

01° 20' N

ESLUX
6.7 DME VTK
01° 18' 44.31"N
103° 58' 40.44"E

130°

POSSIBLE VESSEL

NOTE:
MARITIME VESSELS OF VARIABLE HEIGHTS IN WATER NORTH AND SOUTH OF RWY

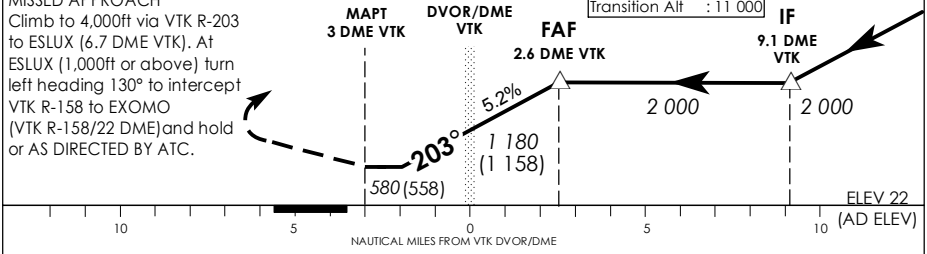
EXOMO
VTK R-158/ 22 DME
01° 04' 25.49"N
104° 09' 33.17"E
VTK R-158°
158°
338°
MISSED APCH
MNM ALT 4 000

SINJON
DVOR/DME 113.5
SJ
01° 13' 19.28"N
103° 51' 20.08" E
60m

SCALE 1 : 400,000
1 0 1 2 3 4 5 6 7 8 9 km
1 0 1 2 3 4 5 NM

Transition Level : FL 130
Transition Alt : 11 000

MISSED APPROACH
Climb to 4,000ft via VTK R-203 to ESLUX (6.7 DME VTK). At ESLUX (1,000ft or above) turn left heading 130° to intercept VTK R-158 to EXOMO (VTK R-158/22 DME) and hold or AS DIRECTED BY ATC.



OCA (OCH)				
Category of Aircraft	A	B	C	D
Straight-in	580 (558)			

Distance	2 DME	1 DME	VTK	1 DME
Altitude (Height)	1820 (1798)	1500 (1478)	1180 (1158)	860 (838)
Speed	knots	70	120	150	185
FAF - MAPT 5.6nm	min : s	4 : 48	2 : 48	2 : 15	1 : 49
Rate of descent/GS	ft/min	370	635	795	980

CHANGES : D-ATIS and APP frequencies revised. Magnetic Variation revised.

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INSTRUMENT APPROACH CHART - ICAO

AERODROME ELEV 22ft
HEIGHT RELATED TO THR RWY 02L - ELEV 22ft

MSA 3500 — 25 NM — ARP

D-ATIS	AP ID WSSS
	128.025
APP	124.05
	119.3
TWR	118.6
	118.25

SINGAPORE/ SINGAPORE CHANGI
RNAV (GNSS) RWY 02L

103° 50'E — 104° 00' — 104° 10'

01° 30' — 01° 20' — 01° 10' N

BEARINGS ARE MAGNETIC
ALTITUDES, ELEVATIONS AND HEIGHTS ARE IN FEET

VAR 23°E (2020)

TO AKOMA

342° 20.2 NM

ENSUN
01° 26' 02.56"N
104° 00' 48.10"E

023° 5.5 NM

MISSED APCH — MNM ALT 4 000
2081 — 176° — 356°
AKOMA
01°45' 22.00"N
103°54' 43.00"N

Sembawang — Seletar — Paya Lebar

WSR6 200ft ALT GND
WSD35 900ft ALT GND
WSP3 750ft ALT GND
WSR16 200ft ALT GND
WSR38 10 000ft ALT GND
WSR9 200ft ALT GND
WSP24 800ft ALT GND/WATER
WSD34 500ft ALT GND

CAUTION :
Rwy 02R/20L closed due development works.

KUALA LUMPUR FIR
SINGAPORE FIR

RWY02L
01° 20' 56.26"N
103° 58' 38.83"E

NOTE:
MARITIME VESSELS OF VARIABLE HEIGHTS IN WATER NORTH AND SOUTH OF RWY

(FAF) EMTAP
01° 16' 55.88"N
103° 56' 57.47"E
023° 4.3 NM

ALL ARRIVALS INTO WSSS WILL BE ISSUED INSTRUCTIONS BY ATC TO MAINTAIN 180KT TILL 8NM FROM TOUCHDOWN AND THEREAFTER 150KT TILL 4NM FROM TOUCHDOWN

(IF) ERVOT
01° 11' 20.09"N
103° 54' 35.85"E
023° 6.1 NM

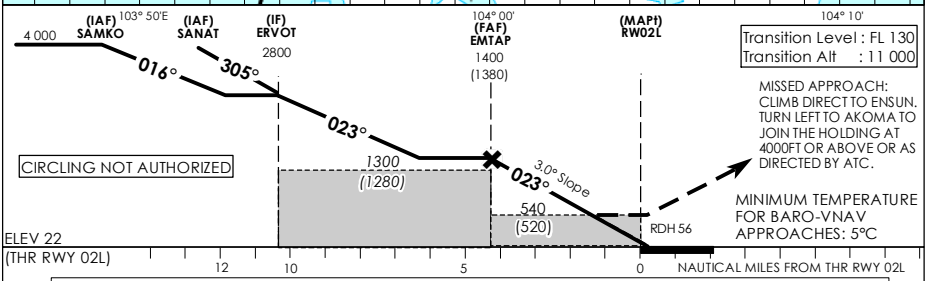
10 NM

MNM ALT 4 000
(IAF) SAMKO
Max IAS 220 kts
01° 05' 29.51"N
103° 52' 54.86"E
016° 348° 168°

(IAF) SANAT
Max IAS 220 kts
01° 07' 48.79"N
103° 59' 29.76"E
305° 6.0 NM

016° 6.1 NM FROM SAMKO

SCALE 1 : 400,000
1 0 1 2 3 4 5 6 7 8 9 km
1 0 1 2 3 4 5 NM



Transition Level : FL 130
Transition Alt : 11 000

MISSED APPROACH: CLIMB DIRECT TO ENSUN. TURN LEFT TO AKOMA TO JOIN THE HOLDING AT 4000FT OR ABOVE OR AS DIRECTED BY ATC.

MINIMUM TEMPERATURE FOR BARO-VNAV APPROACHES: 5°C

		OCA (OCH)			
Category of Aircraft		A	B	C	D
LNAV/VNAV	2.5%	**450 (430)**			
LNAV	2.5%	**540 (520)**			

Fix	SAMKO	SANAT	ERVOT	EMTAP	RW02L	ENSUN	AKOMA
Altitude (Height)	**4000 (3978)**	**4000 (3978)**	**2800 (2778)**	**1400 (1378)**	**540 (518)**	**880 (858)**	**4000 (3978)**
Speed	knots	80	100	120	140	160	180
FAF - MAPt 4.3nm	min : s	**3 : 14**	**2 : 35**	**2 : 09**	**1 : 51**	**1 : 37**	**1 : 26**
Rate of descent/GS	ft/min	**424**	**530**	**637**	**743**	**849**	**955**

CHANGES : D-ATIS and APP frequencies revised. Magnetic Variation revised.

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INSTRUMENT APPROACH CHART - ICAO

AERODROME ELEV 22ft
HEIGHT RELATED TO THR RWY 02C - ELEV 14ft

MSA 3500 ARP 25 NM

D-ATIS	AP ID WSSS
	128.025
APP	124.05
	119.3
TWR	118.6
	118.25

SINGAPORE/ SINGAPORE CHANGI
RNAV (GNSS) RWY 02C

ALL ARRIVALS INTO WSSS WILL BE ISSUED INSTRUCTIONS BY ATC TO MAINTAIN 180KT TILL 8NM FROM TOUCHDOWN AND THEREAFTER 150KT TILL 4NM FROM TOUCHDOWN

TO NYLON

MISSED APCH — MNM ALT 3000
614 203° 023°
NYLON
01°36' 57.00"N
104°06' 24.00"E

Sembawang
Seletar
Paya Lebar
KUALA LUMPUR FIR
SINGAPORE FIR

WSR6 200ft ALT GND
WSD35 900ft ALT GND
WSP3 750ft ALT GND
WSR16 200ft ALT GND
WSR38 10 000ft ALT GND
WSR9 200ft ALT GND
WSP24 800ft ALT GND/WATER
WSD34 500ft ALT GND

18.6 NM 023°

CAUTION : Rwy 02R/20L closed due development works.

RWY02C
01° 19' 43.51"N
103° 59' 05.86"E

NOTE: MARITIME VESSELS OF VARIABLE HEIGHTS IN WATER NORTH AND SOUTH OF RWY

2.9 NM 023°
(SDF) KAKSA
01° 17' 02.58"N
103° 57' 57.92"E

2.1 NM
(FAF) KASPO
01° 15' 07.15"N
103° 57' 09.20"E

4.4 NM 023°
10 NM
(IF) KIMER
01° 11' 05.74"N
103° 55' 27.30"E

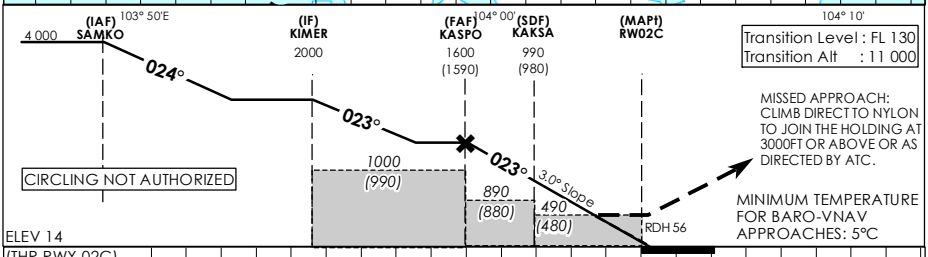
6.1 NM 024° FROM SAMKO

MNM ALT 4 000
024° 348° 168°
SAMKO
Max IAS 220 kts
01° 05' 29.51"N
103° 52' 54.86"E
660

VAR 2.3°E (2020)

BEARINGS ARE MAGNETIC
ALTITUDES, ELEVATIONS AND HEIGHTS ARE IN FEET

SCALE 1 : 400,000
1 0 1 2 3 4 5 6 7 8 9 km
1 0 1 2 3 4 5 NM



Transition Level : FL 130
Transition Alt : 11 000

MISSED APPROACH: CLIMB DIRECT TO NYLON TO JOIN THE HOLDING AT 3000FT OR ABOVE OR AS DIRECTED BY ATC.

MINIMUM TEMPERATURE FOR BARO-VNAV APPROACHES: 5°C

		OCA (OCH)			
Category of Aircraft		A	B	C	D
LNAV	2.5%	490 (480)			
LNAV without SDF	2.5%	890 (880)			
LNAV/VNAV	2.5%	360 (350)			

Fix		SAMKO	KIMER	KASPO	KAKSA	RW02C	NYLON
Altitude (Height)		4000 (3986)	2000 (1986)	1600 (1586)	990 (976)	490 (476)	3000 (2986)
Speed	knots	80	100	120	140	160	180
FAF - MAPt 5nm	min : s	3 : 45	3 : 00	2 : 30	2 : 09	1 : 53	1 : 40
Rate of descent/GS	ft/min	425	531	637	743	849	955

CHANGES : D-ATIS and APP frequencies revised. Magnetic Variation revised.

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INSTRUMENT APPROACH CHART - ICAO

AERODROME ELEV 22ft
HEIGHT RELATED TO
DTHR RWY 20R - ELEV 13ft

MSA 3500 ARP 25 NM

D-ATIS	AP ID WSSS
	128.025
APP	124.05
	119.3
TWR	118.6
	118.25

SINGAPORE/ SINGAPORE CHANGI
RNAV (GNSS) RWY 20R

103° 50'E 104° 10'

ALL ARRIVALS INTO WSSS WILL BE ISSUED INSTRUCTIONS BY ATC TO MAINTAIN 180KT TILL 8NM FROM TOUCHDOWN AND THEREAFTER 150KT TILL 4NM FROM TOUCHDOWN

VAR 23°E (2020)

BEARINGS ARE MAGNETIC
ALTITUDES, ELEVATIONS
AND HEIGHTS ARE IN FEET

FROM NYLON

(IAF) BIDUS
Max IAS 220 kts
01° 35' 54.05"N
103° 57' 54.86"E

127° 6.7 NM

211° 6.0 NM

(IAF) BIPOP
Max IAS 220 kts
01° 31' 21.83"N
104° 10' 18.03"E

273° 7.1 NM

(IF) ELBEX
01° 31' 48.96"N
104° 03' 14.18"E

203° 3.8 NM

10 NM

(FAF) ELGAP
01° 28' 20.28"N
104° 01' 46.15"E

RWY20R (DTHR)
01° 22' 33.95"N
103° 59' 20.06"E

203° 6.2 NM

(IAF) NYLON
Max IAS 220 kts
01° 36' 57.00"N
104° 06' 24.00"E

203° 023° 211°

MNM ALT 3000

01° 30'

Sembawang
Seletar
Paya Lebar

WSR6 200ft ALT GND
WSD35 900ft ALT GND
WSP3 750ft ALT GND
WSR16 200ft ALT GND
WSR38 10 000ft ALT GND
WSR9 200ft ALT GND
WSP24 800ft ALT GND/WATER
WSD34 500ft ALT GND

CAUTION :
Rwy 02R/20L closed due development works.

KUALA LUMPUR FIR
SINGAPORE FIR

NOTE:
MARITIME VESSELS OF VARIABLE HEIGHTS IN WATER NORTH AND SOUTH OF RWY

MISSED APCH
ENLES 01°09'31.51"N 103°53' 49.83"E
SAMKO 01°05'29.51"N 103°52' 54.86"E
4.1 NM 192° 168° 348°
MNM ALT 3200

203° 14.1 NM TO ENLES

SCALE 1 : 400,000
1 0 1 2 3 4 5 6 7 8 9 km
1 0 1 2 3 4 5 NM

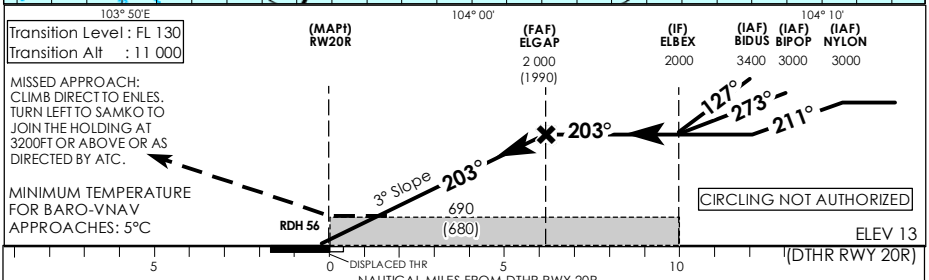
01° 20' N

103° 50'E 104° 00' 104° 10'

Transition Level : FL 130
Transition Alt : 11 000

MISSED APPROACH:
CLIMB DIRECT TO ENLES.
TURN LEFT TO SAMKO TO JOIN THE HOLDING AT 3200FT OR ABOVE OR AS DIRECTED BY ATC.

MINIMUM TEMPERATURE FOR BARO-VNAV APPROACHES: 5°C



CIRCLING NOT AUTHORIZED

ELEV 13
(DTHR RWY 20R)

OCA (OCH)					
Category of Aircraft		A	B	C	D
LNAV/VNAV	2.5%	690 (680)			
LNAV	2.5%	690 (680)			

Fix	BIDUS	NYLON	BIPOP	ELBEX	ELGAP	RW20R	ENLES	SAMKO
Altitude (Height)	3400 (3387)	3000 (2987)	3000 (2987)	2000 (1987)	2000 (1987)	690 (680)	2180 (2167)	3200 (3187)

Speed	knots	80	100	120	140	160	180
FAF - MAPt 6.2 nm	min : s	4 : 39	3 : 44	3: 06	2 : 40	2 : 20	2 : 04
Rate of descent/GS	ft/min	425	531	637	743	849	955

CHANGES : D-ATIS and APP frequencies revised. Magnetic Variation revised.

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INSTRUMENT APPROACH CHART - ICAO

AERODROME ELEV 22ft
HEIGHT RELATED TO
THR RWY 20C - ELEV 15ft

MSA
3500
ARP
25 NM

D-ATIS	AP ID WSSS
	128.025
APP	124.05
	119.3
TWR	118.6
	118.25

SINGAPORE/ SINGAPORE CHANGI
RNAV (GNSS) RWY 20C

103° 50'E 104° 10'

ALL ARRIVALS INTO WSSS WILL BE ISSUED INSTRUCTIONS BY ATC TO MAINTAIN 180KT TILL 8NM FROM TOUCHDOWN AND THEREAFTER 150KT TILL 4NM FROM TOUCHDOWN

BEARINGS ARE MAGNETIC
ALTITUDES, ELEVATIONS
AND HEIGHTS ARE IN FEET

VAR 23E (2020)

FROM NYLON

(IF)
VABRI
01° 31' 14.96"N
104° 03' 57.78"E

(IAF)
NYLON
Max IAS 220 kts
01° 36' 57.00"N
104° 06' 24.00"E
MNM ALT
3000

(FAF)
VILEV
01° 27' 29.10"N
104° 02' 22.42"E

RWY20C
01° 21' 43.37"N
103° 59' 56.46"E

ESLUX
01° 18' 44.31"N
103° 58' 40.44"E

10 NM
6.2 NM
4.1 NM
6.2 NM
3.2 NM
203°
023°
158°
338°
142°

NOTE:
MARITIME VESSELS OF VARIABLE HEIGHTS IN WATER NORTH AND SOUTH OF RWY

CAUTION :
Rwy 02R/20L closed due development works.

Sembawang
Seletar
Paya Lebar
KUALA LUMPUR FIR
SINGAPORE FIR

WSR6 200ft ALT GND
WSD35 200ft ALT GND
WSP3 750ft ALT GND
WSR16 200ft ALT GND
WSR38 10 000ft ALT GND
WSR9 200ft ALT GND
WSP24 800ft ALT GND/WATER
WSD34 500ft ALT GND

MISSED APCH
EXOMO
01°04'25.49"N
104°09' 33.17"E
MNM ALT
3600

TO EXOMO

SCALE 1 : 400,000
1 0 1 2 3 4 5 6 7 8 9 km
0 1 2 3 4 5 NM

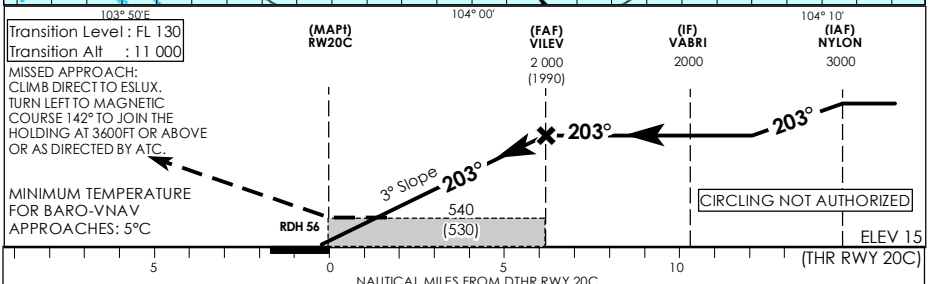
01° 30' N
01° 20' N

103° 50'E 104° 00' 104° 10'

Transition Level : FL 130
Transition Alt : 11 000

MISSED APPROACH:
CLIMB DIRECT TO ESLUX.
TURN LEFT TO MAGNETIC COURSE 142° TO JOIN THE HOLDING AT 3600FT OR ABOVE OR AS DIRECTED BY ATC.

MINIMUM TEMPERATURE FOR BARO-VNAV APPROACHES: 5°C



OCA (OCH)					
Category of Aircraft		A	B	C	D
LNAV/VNAV	2.5%	**490 (480)**			
LNAV	2.5%	**540 (530)**			

Fix		NYLON	VABRI	VILEV	RW20C	ESLUX	EXOMO
Altitude (Height)		**3000 (2985)**	**2000 (1985)**	**2000 (1985)**	**540 (525)**	**540 (525)**	**3600 (3585)**
Speed	knots	80	100	120	140	160	180
FAF - MAPt 6.2 nm	min : s	**4 : 39**	**3 : 44**	**3: 06**	**2 : 40**	**2 : 20**	**2 : 04**
Rate of descent/GS	ft/min	**425**	**531**	**637**	**743**	**849**	**955**

CHANGES : D-ATIS and APP frequencies revised. Magnetic Variation revised.

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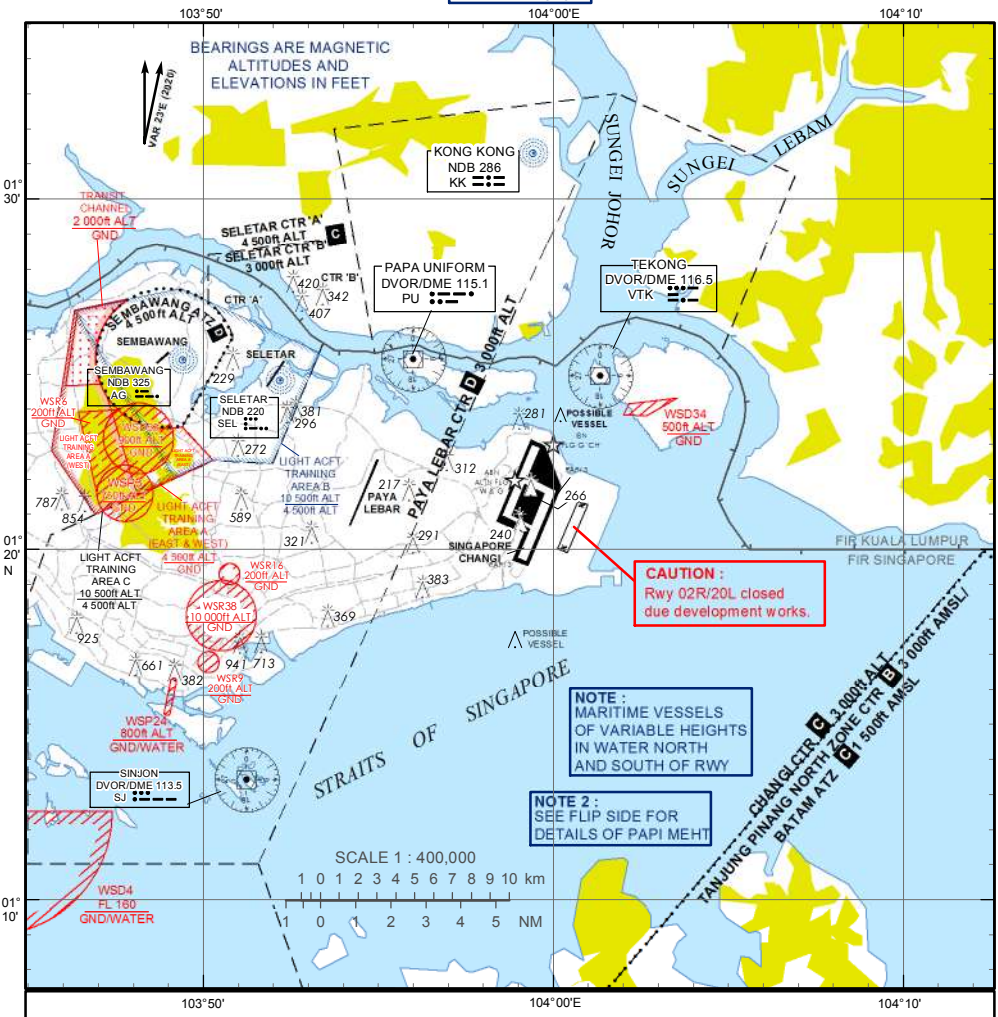
VISUAL APPROACH CHART - ICAO

AERODROME ELEV 22 ft

D-ATIS	AP ID WSSS
	128.025
APP	124.05
	119.3
TWR	118.6
	118.25

SINGAPORE/SINGAPORE CHANGI



VISUAL APPROACH PROCEDURE

1. **An IFR flight operating into Singapore Changi Airport may be cleared for a visual approach subject to the following conditions :-**
   a) **The pilot has the aerodrome in sight and can conduct his approach with visual reference to terrain;**
   b) **The flight will not cause delay to other traffic;**
   c) **There is no conflicting tall vessel movement;**
   d) **The cloud ceiling at the aerodrome is 4,000ft or more for landing on RWY 20C/R and 3,000ft or more for on RWY 02C/L ; and**
   e) **The visibility at the aerodrome is 5km or more.**
2. **Notwithstanding para 1d) and 1e), if the pilot reports that he has the aerodrome in sight and can conduct his approach with visual reference to terrain, the flight may be cleared for a visual approach.**
3. **Pilots may expect radar vectoring for separation and sequencing with other traffic prior to being cleared for a visual approach.**

CHANGES : D-ATIS and APP frequencies revised.
Magnetic Variation revised.

PAPI 3° (MEHT)*				
Pilot's eye height over the threshold when the following PAPI lights come in view.	**RUNWAY**			
	02L	20R	02C	20C
2 White lights and 2 Red lights	20.0m	20.0m	19.8m	19.8m
3 White lights and 1 Red light	24.0m	22.6m	23.7m	23.7m
4 White lights	26.4m	25.0m	26.2m	26.2m

*MEHT : Minimum Eye Height Over the Threshold.

Note : Aircraft with eye-to-wheel height greater than 8 metres are advised to fly with 2 white lights and 2 red lights visible so as to achieve sufficient wheel clearance.

WSSL — SINGAPORE / SELETAR

WSSL AD 2.1 AERODROME LOCATION INDICATOR AND NAME

WSSL — SINGAPORE / SELETAR

WSSL AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	*ARP Coordinates and Site at AD*	012501.04N 1035203.52E
2	*Direction and distance from (city)*	006°, 14.6km from city centre (The Fullerton Hotel, Singapore)
3	*Elevation/Reference Temperature*	14 M (46ft) / 33.7°C
4	*Geoid Undulation*	9.78 M
5	MAG VAR	0°23' E (2020)
6	*AD Administration, Address, Telephone, Telefax, AFS*	Address: CHANGI AIRPORT GROUP (S) PTE LTD SELETAR AIRPORT 21 Seletar Aerospace Road 1 Singapore 797405 TEL: (65)64812909, Fax: (65)64833044 (AIS) TEL: (65)64812893, Fax: (65)64831656 (Control Tower) TEL: (65)64815077, 97533361 FAX: (65)64831754 (Airside Operations) AFS: WSSLYDYX
7	*Types of Traffic Permitted*	IFR and VFR
8	*Remarks*	a. Scheduled Closure Periods for RWY 03/21: see AIP section WSSL AD 2.12 item 12 i). b. Night flight restriction for noise abatement purpose (see AIP section WSSL AD 2.21). c. PPR for aircraft not equipped with RTF. d. A subsonic jet aircraft, unless otherwise exempted, is not permitted to operate in Singapore unless it possesses a noise certificate stating that it meets the noise standards of ICAO Annex 16, Volume 1, Chapter 3, or equivalent. The noise certificate may also take the form of a suitable statement contained in another document approved by the State of Registry of the aircraft. e. Direct transit area. Overnight transit in Singapore city. f. All arriving and departing aircraft are required to appoint a licensed Ground Handling Agent (GHA). List of Seletar GHAs can be downloaded from URL - http://www.seletarairport.com/ground-handling-agents-at-seletar-airport.html g. For non-scheduled flights, all passengers and crews are required to clear Customs and Immigration at Seletar Business Aviation Centre (SBAC)

WSSL AD 2.3 OPERATIONAL HOURS

1	*Aerodrome Administration*	H24	5	*ATS Reporting Office*	H24
2	*Customs and Immigration*	H24	6	*MET Briefing Office*	H24
3	*Health and Sanitation*	H24	7	*Air Traffic Services*	H24
4	*AIS Self-Briefing Office*	H24	8	*Apron Control Office*	H24

WSSL AD 2.4 HANDLING SERVICES AND FACILITIES

1	*Cargo Handling Facilities*	Provided by handling agent.
2	*Fuel / Oil Types*	AVGAS 100LL, JET A1
3	*Fuelling Facilities / Capacity*	SUN/MON to THU/FRI BTN 2330-1400; SAT, SUN and Public holidays BTN 0030-0930 Contact during operating hours: TEL: (65)68538320 (Operations Room) Contact after operating hours: TEL: (65)91130816 (H24 Operations Mobile) FAX: (65)64839246 Group email: GX-SAV-Seletar-Operations24by7@shell.com PPP link: http://www.shell.com/business-customers/aviation/ppp.html
4	*Hangar space for visiting aircraft*	By arrangement with handling agent.
5	*Repair facilities for visiting aircraft*	By arrangement with handling agent.
6	*Remarks*	NIL

WSSL AD 2.5 PASSENGER FACILITIES

1	*Hotels*	NIL
2	*Restaurants*	Public area of terminal building
3	*Transportation*	Handling agent provides its own transport service for passengers and crew between airport and city. Public buses and private hired taxis are available at airport terminal.
4	*Medical Facilities*	NIL
5	*Bank and Post Office*	NIL
6	*Tourist Office*	NIL
7	*Remarks*	Internet address : http://www.seletarairport.com / for airport and flight information, facilities and services.

WSSL AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	*AD category for fire fighting*	CAT7 (No facilities for foaming of runways).
2	*Rescue equipment*	Adequately provided as recommended by ICAO.
3	*Capability for removal of disabled aircraft*	Up to B757-200. Contact Seletar Airside Operations at: +65 64815077 or +65 97533361
4	*Remarks*	All Airport Emergency Service personnel are trained in rescue and fire-fighting as well as medical first-aid.

WSSL AD 2.7 SEASONAL AVAILABILITY - CLEARING

The aerodrome is available throughout the year

WSSL AD 2.18 ATS COMMUNICATION FACILITIES

Service designation	Call sign	Frequency P-Pri S-Sec	Hours of operation	Remarks
TWR	Seletar Tower	P118.45 MHz S130.2 MHz 270.4 MHz	H24	NIL
	Seletar Ground	121.6 MHz * 122.9 MHz	H24	* for vehicular movements
ACC	Singapore Radar	P123.7 MHz S127.3 MHz	H24	for ATS Routes B469, G219, G334, R208, L625, L629, L635, L642, L644, M751, M753, M758, M761, M763, M771, N875, N884, N891 and N892.
		133.8 MHz	0000-1430	
		P134.7 MHz S134.15 MHz	H24	for ATS Routes G334, L625, L644, M758, M761, M771, N875, N884 and N892.
		P133.25 MHz S135.8 MHz		for ATS Routes A457, A464, A576, B466, L762, M630, R325 and R469.
		P134.2 MHz S133.35 MHz		for ATS Routes G334, G580, L625, L644, M646, M767 and N875.
		P134.4 MHz S128.1 MHz		for ATS Routes B338, B469, B470, G579, L504, L644, M635, M774, N502, N875, P501 and in area in the immediate vicinity of Singapore.
	Singapore Control	P134.35 MHz S133.6 MHz	H24	AUTOMATIC DEPENDENT SURVEILLANCE BROADCAST (ADS-B) OUT EXCLUSIVE AIRSPACE WITHIN PARTS OF THE SINGAPORE FIR - L642, L644, M753, M771, M904, N891, N892, Q801, Q802, Q803 and T611 within airspace bounded by 073605N 1090045E, 040713N 1063543E, 041717N 1061247E (MABLI), 044841N 1052247E (DOLOX), 045223N 1041442E (ENREP), 045000N 1034400E, thence north along the Singapore FIR boundary to 070000N 1080000E at or above FL290.
	Singapore Radio	6556 kHz 11297 kHz	H24	SEA 1. Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
		5655 kHz 8942 kHz 11396 kHz		SEA 2. Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
		6556 kHz		SEA 3. Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
APP	Singapore Approach	P124.05 MHz S124.6 MHz S126.3 MHz	H24	TAR – flow control service provided for ARR/DEP ACFT. Intermediate approach to Singapore Changi AP and other airports in Singapore. DEP from all airports in Singapore.
	Seletar Approach	121.625 MHz	0000-1500	TAR - Intermediate approach to Seletar Airport.
ATIS	Seletar Airport Information	128.425 MHz	H24	Combined ARR and DEP report (broadcasting with hourly updated MET INFO) Data Link Service available. AP IDENT WSSL Messages comply with ARINC 623 Standards. Updating of data: H+00 to H+10 and H+30 to H+40

WSSL AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of Aid and Variation	IDENT	Frequency	OPR Hour	Position of Transmitting Antenna Coordinates	DME Transmitting Antenna Elevation / Remarks
1	2	3	4	5	6 & 7
JAYBEE NDB	JB	400 KHz (80w)	H24	012959.77N 1034241.82E	BRG 298° DIST 19.6km from ARP Seletar. Coverage 50NM. Unusable 285°-060° beyond 20NM. Bearing fluctuations greater than +/- 10° may be observed in sector 138° to 148°. EM: A0/A2
KONG KONG NDB	KK	286 KHz (70w)	H24	013117.76N 1035923.69E	BRG 049° DIST 17.7km from ARP Seletar. Coverage 50NM. Unusable 270°-010° beyond 30NM. Bearing fluctuations greater than +/- 10° may be observed in sector 048° to 052°. EM: A0/A2
SELETAR NDB	SEL	220 KHz	H24	012448.50N 1035210.16E	BRG 152° DIST 0.44km from ARP Seletar. Coverage 50NM. EM: A0/A2

WSSL AD 2.20 LOCAL TRAFFIC REGULATIONS

1 LOCAL FLYING RESTRICTIONS:

1.1 Fixed-wing aircraft operations including circuit flying and training operations are restricted to the west of Seletar runway. Helicopter operations are confined to the west of Seletar runway between sunset and sunrise, subject to the restrictions in paragraph 1.3 below.

1.2 Circuit Heights:

Light aircraft 800ft (west of Seletar runway only);

Other aircraft 1,000ft - 1,500ft (west of Seletar runway only);

Helicopter-only area east of runway up to 600ft AGL

1.3 Circuit Flying and Training Operations are not permitted between 1400-2300 daily.

1.4 Pilots are required to keep clear of PAYA LEBAR CTR and SEMBAWANG ATZ.

2 TEST/TRAINING FLIGHTS

2.1 Flight notification shall be given prior to departure. Flight notification by means of RTF should be avoided.

2.2 For circuits and landings or flights to Light Aircraft Training Areas A, B and C, locally based operators shall submit details of their flight by electronic mail using the Seletar Test / Training Form which can be retrieved from webpage:

https://aim-sg.caas.gov.sg

2.3 For test/currency maintenance flight in the fixed-wing circuit, the operator shall contact Seletar Tower Manager, giving at least 2 days' advance notice from the date of flight. The Tower Manager will then liaise with the host slot-time operator during which the test/currency maintenance flight is to be conducted. The advance notice will enable the host slot-time operator to adjust its training programme to accommodate the flight.

AERODROME CHART - ICAO

01° 25' 01.04"N
103° 52' 03.52"E

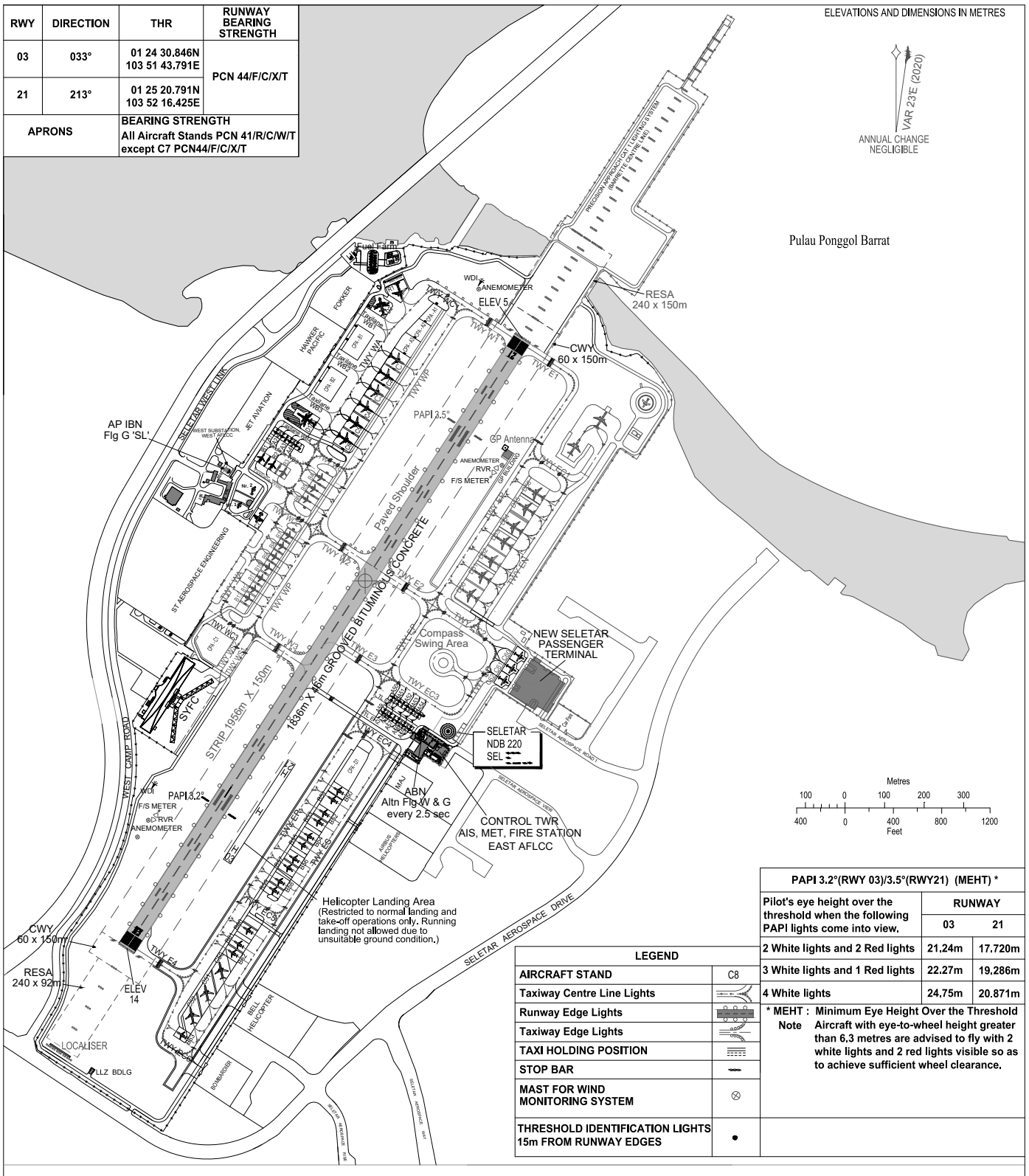
ELEV 14m

TWR	118.45
	121.6

SINGAPORE/SELETAR

RWY	DIRECTION	THR	RUNWAY BEARING STRENGTH
03	033°	01 24 30.846N 103 51 43.791E	PCN 44/F/C/X/T
21	213°	01 25 20.791N 103 52 16.425E	
APRONS		BEARING STRENGTH All Aircraft Stands PCN 41/R/C/W/T except C7 PCN44/F/C/X/T	

ELEVATIONS AND DIMENSIONS IN METRES



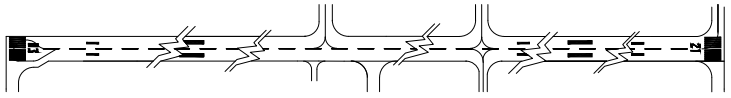
LEGEND	
AIRCRAFT STAND	C8
Taxiway Centre Line Lights	
Runway Edge Lights	
Taxiway Edge Lights	
TAXI HOLDING POSITION	
STOP BAR	
MAST FOR WIND MONITORING SYSTEM	⊗
THRESHOLD IDENTIFICATION LIGHTS 15m FROM RUNWAY EDGES	•

PAPI 3.2°(RWY 03)/3.5°(RWY21) (MEHT) *		
Pilot's eye height over the threshold when the following PAPI lights come into view.	RUNWAY	
	03	21
2 White lights and 2 Red lights	21.24m	17.720m
3 White lights and 1 Red lights	22.27m	19.286m
4 White lights	24.75m	20.871m

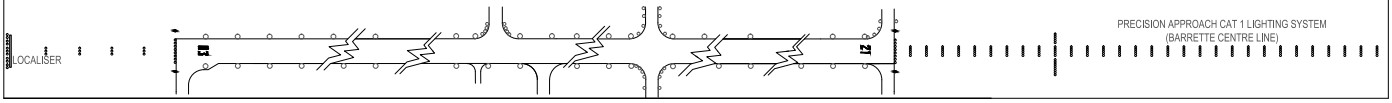
* MEHT : Minimum Eye Height Over the Threshold

Note Aircraft with eye-to-wheel height greater than 6.3 metres are advised to fly with 2 white lights and 2 red lights visible so as to achieve sufficient wheel clearance.

MARKING AIDS RWY 03/21 AND EXIT TWY



LIGHTING AIDS RWY 03/21 AND EXIT TWY



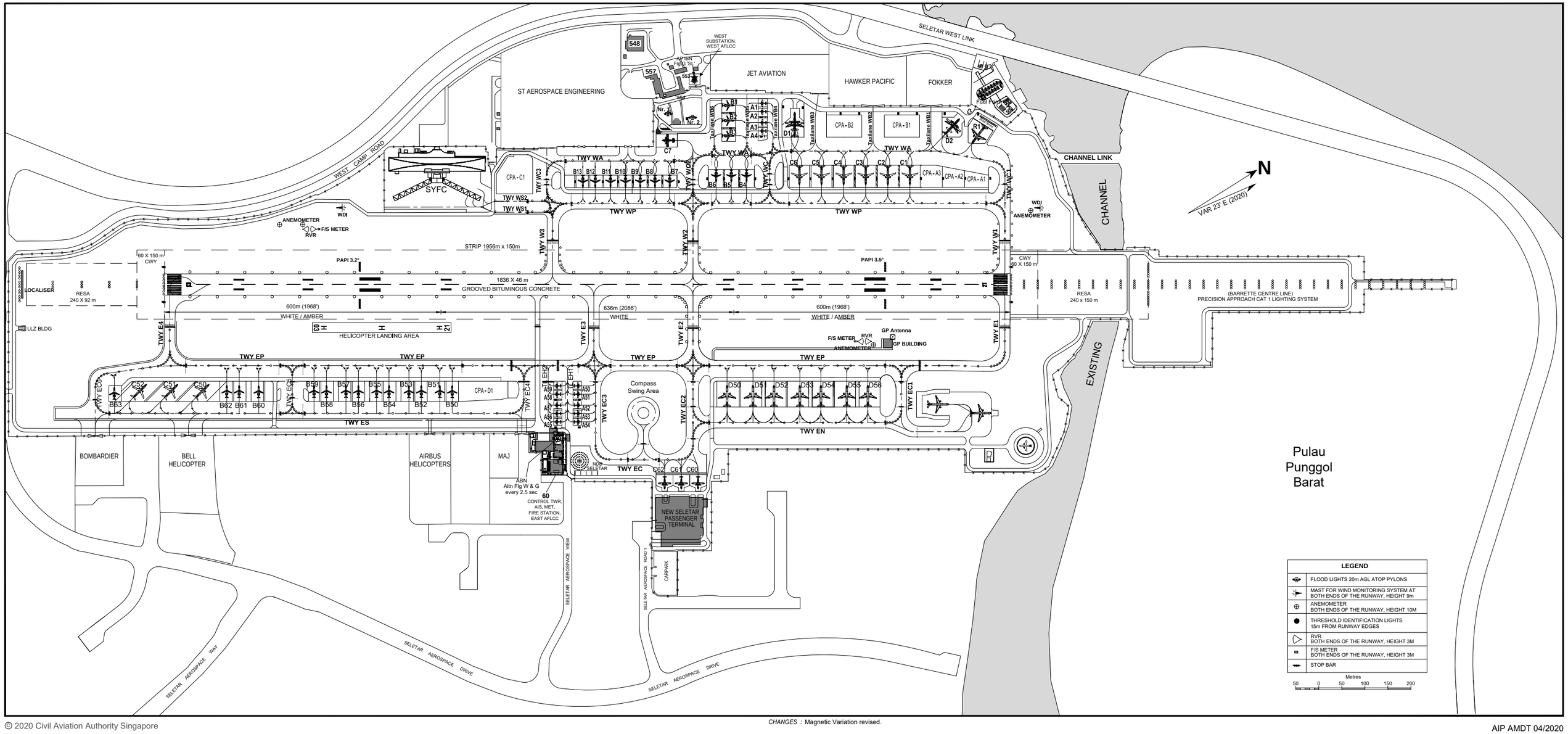
CHANGES : Magnetic Variation revised.

INS COORDINATES FOR AIRCRAFT STANDS

STAND NR	NORTH LATITUDE	EAST LONGITUDE	ELEVATION
A1	01 25 13.102	103 51 56.167	6.181m (20.280ft)
A2	01 25 12.779	103 51 56.653	6.338m (20.795ft)
A3	01 25 12.350	103 51 57.301	6.586m (21.609ft)
A4	01 25 12.029	103 51 57.787	6.761m (22.183ft)
A50	01 24 51.431	103 52 05.765	7.807m (25.615ft)
A51	01 24 51.110	103 52 06.251	7.948m (26.077ft)
A52	01 24 50.681	103 52 06.900	8.105m (26.593ft)
A53	01 24 50.358	103 52 07.387	8.211m (26.940ft)
A54	01 24 50.036	103 52 07.874	8.337m (27.354ft)
A55	01 24 48.591	103 52 06.930	8.750m (28.709ft)
A56	01 24 48.913	103 52 06.443	8.587m (28.174ft)
A57	01 24 49.236	103 52 05.957	8.402m (27.567ft)
A58	01 24 49.665	103 52 05.309	8.179m (26.835ft)
A59	01 24 49.987	103 52 04.822	8.014m (26.294ft)
B1	01 25 11.401	103 51 55.231	6.301m (20.674ft)
B2	01 25 10.817	103 51 56.116	6.639m (21.783ft)
B3	01 25 10.221	103 51 57.014	6.967m (22.859ft)
B4	01 25 09.180	103 52 00.361	7.703m (25.274ft)
B5	01 25 08.258	103 51 59.758	7.933m (26.028ft)
B6	01 25 07.348	103 51 59.163	8.163m (26.783ft)
B7	01 25 04.505	103 51 57.519	8.442m (27.698ft)
B8	01 25 03.635	103 51 56.951	8.406m (27.580ft)
B9	01 25 02.765	103 51 56.382	8.396m (27.547ft)
B10	01 25 01.893	103 51 55.814	8.383m (27.505ft)
B11	01 25 01.006	103 51 55.237	8.330m (27.331ft)
B12	01 25 00.109	103 51 54.650	8.449m (27.721ft)
B13	01 24 59.374	103 51 54.170	8.571m (28.121ft)
B50	01 24 43.887	103 52 00.875	8.753m (28.719ft)
B51	01 24 43.153	103 52 00.394	8.847m (29.027ft)
B52	01 24 42.063	103 51 59.681	8.988m (29.490ft)
B53	01 24 41.328	103 51 59.202	9.183m (30.129ft)
B54	01 24 40.154	103 51 58.435	9.358m (30.704ft)
B55	01 24 39.420	103 51 57.954	9.434m (30.953ft)
B56	01 24 38.347	103 51 57.253	9.592m (31.471ft)
B57	01 24 37.614	103 51 56.774	9.679m (31.757ft)
B58	01 24 36.462	103 51 56.021	9.806m (32.172ft)
B59	01 24 35.728	103 51 55.541	9.930m (32.580ft)
B60	01 24 32.416	103 51 53.376	10.094m (33.117ft)
B61	01 24 31.265	103 51 52.624	10.177m (33.389ft)
B62	01 24 30.529	103 51 52.144	10.246m (33.617ft)
B63	01 24 23.858	103 51 47.937	10.639m (34.907ft)
C1	01 25 18.803	103 52 06.627	5.105m (16.750ft)
C2	01 25 17.498	103 52 05.773	5.423m (17.793ft)
C3	01 25 16.192	103 52 04.921	5.759m (18.895ft)
C4	01 25 14.887	103 52 04.067	6.256m (20.526ft)
C5	01 25 13.581	103 52 03.214	6.824m (22.390ft)
C6	01 25 12.275	103 52 02.360	7.304m (23.964ft)
C7	01 25 05.738	103 51 54.466	7.192m (23.596ft)
C50	01 24 29.476	103 51 51.396	10.381m (34.060ft)
C51	01 24 27.626	103 51 50.188	10.589m (34.743ft)
C52	01 24 25.781	103 51 48.979	10.770m (35.335ft)
C60	01 24 54.470	103 52 16.296	6.280m (20.604ft)
C61	01 24 53.483	103 52 15.651	6.301m (20.673ft)
C62	01 24 52.496	103 52 15.006	6.312m (20.709ft)
D1	01 25 14.663	103 51 58.151	6.408m (21.025ft)
D2	01 25 24.033	103 52 04.804	3.471m (11.388ft)
D50	01 25 00.056	103 52 11.563	6.680m (21.916ft)
D51	01 25 01.585	103 52 12.561	6.440m (21.129ft)
D52	01 25 02.828	103 52 13.373	6.280m (20.604ft)
D53	01 25 04.357	103 52 14.372	6.040m (19.816ft)
D54	01 25 05.600	103 52 15.184	5.820m (19.094ft)
D55	01 25 07.129	103 52 16.184	5.550m (18.209ft)
D56	01 25 08.372	103 52 16.997	5.320m (17.454ft)

SELETAR AERODROME

LAYOUT OF SIGNIFICANT AERODROME BUILDINGS AND APRON FACILITIES



CHANGES : Magnetic Variation revised.

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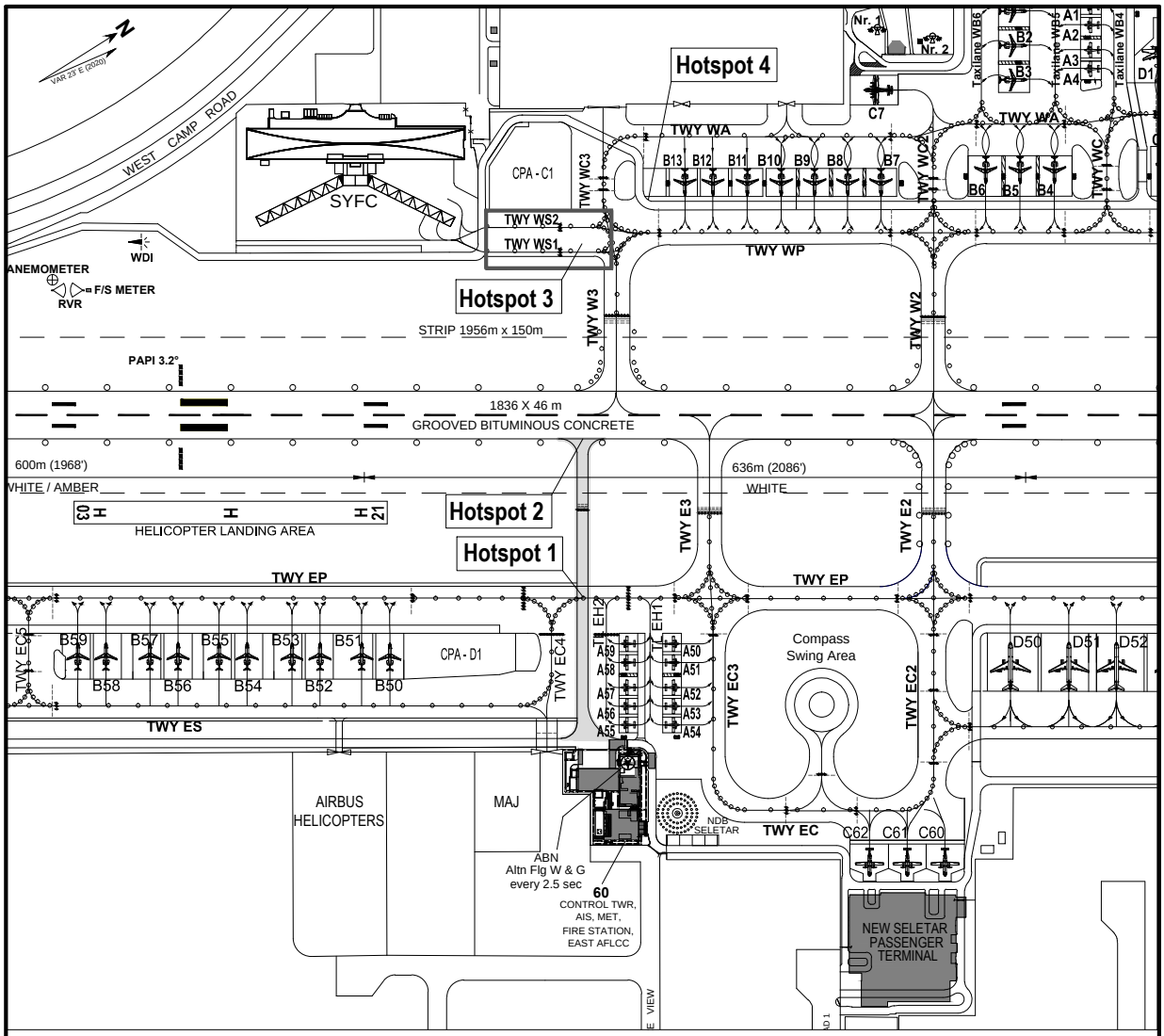
AERODROME HOTSPOTS



Hotspots

1) Emergency access road crossing TWY EP parallel to TWY EC4.
   Pilots and tow tug drivers to exercise caution. Stop Bar on both sides of emergency road will be lighted during emergency.

2) Emergency roadway South of TWY E3.
   Pilots on RWY to exercise caution and observe NO ENTRY marking. This is not a taxiway.

3) TWY WS1 & WS2.
   Available for Code A aircraft accessing SYFC Dispersal only.

4) Roadway R3A bends to the right after aircraft stand B13.
   Drivers travelling South to exercise caution. TWY WC3 ahead.

CHANGES : Magnetic Variation revised.

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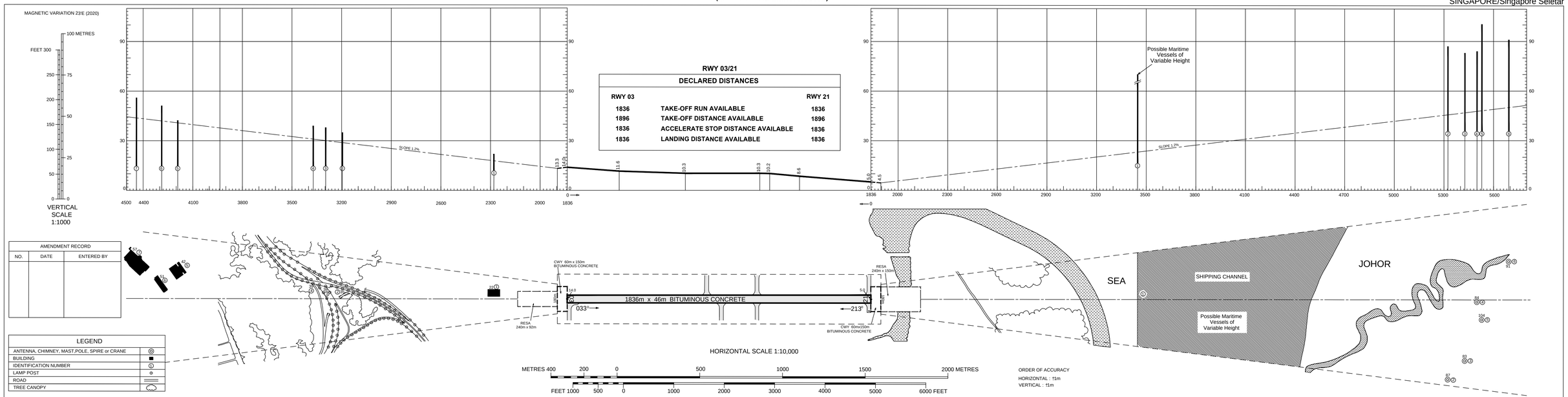
DIMENSIONS AND ELEVATIONS IN METRES

AERODROME OBSTACLE CHART - ICAO
TYPE A (OPERATING LIMITATIONS)

SINGAPORE/Singapore Seletar



AMENDMENT RECORD		
NO.	DATE	ENTERED BY

LEGEND	
ANTENNA, CHIMNEY, MAST,POLE, SPIRE or CRANE	◎
BUILDING	■
IDENTIFICATION NUMBER	①
LAMP POST	⊕
ROAD	═══
TREE CANOPY	☁

ORDER OF ACCURACY
HORIZONTAL : ±1m
VERTICAL : ±1m

CHANGES : Magnetic Variation revised.

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AERODROME OBSTACLE CHART - ICAO
TYPE B

SINGAPORE / Seletar

AERODROME ELEVATION 14m

ELEVATIONS AND DIMENSIONS IN METRES
(ACCURACY OF ELEVATIONS : + 2.5m)

SELAT JOHOR

JOHOR

OUTER HORIZONTAL SURFACE 153m

INNER HORIZONTAL SURFACE 56m

CONICAL SURFACE Slope 1:20

APPROACH SURFACE SLOPE 1:40

TAKE-OFF CLIMB SURFACE SLOPE 1:50

APPROACH SURFACE SLOPE 1:50

TRANSITIONAL SURFACE SLOPE 1:7

Mobile Cranes 128

Possible Maritime Vessels of Variable Height

Mobile Cranes 100.5

P. SELETAR

P. PUNGGOL BARAT

P. PUNGGOL TIMOR

RESA 240m

CWY 60m

21

033°

213°

22

Lower Seletar Reservoir

Buildings up to 90m

Punggol

Sungai

Serangoon

MRT LINE

LRT LINE

Lower Pierce Reservoir

HORIZONTAL SCALE 1 : 20,000

Meters 1000 500 0 1000 2000 3000 4000 5000

Feet 1000 0 5000 10000 15000 20000

VAR 23° E (2020)
ANNUAL CHANGE
NEGLIGIBLE

AMENDMENT RECORD		
NO	DATE	ENTERED BY

LEGEND	
AERODROME REF POINT 01° 25' 01.04"N LAT 103° 52' 03.52"E LONG	⊕
ANTENNA, CHIMNEY, MAST, POLE, SPIRE or CRANE	⊙
SPOT HEIGHT IN METRES	•
BUILDING or STRUCTURE	▬
ROAD	
BUILD - UP AREA	

CHANGES : Magnetic Variation revised.

GRID : Grid lines and co-ordinates shown are based on WGS-84 datum.

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VISUAL APPROACH CHART - ICAO

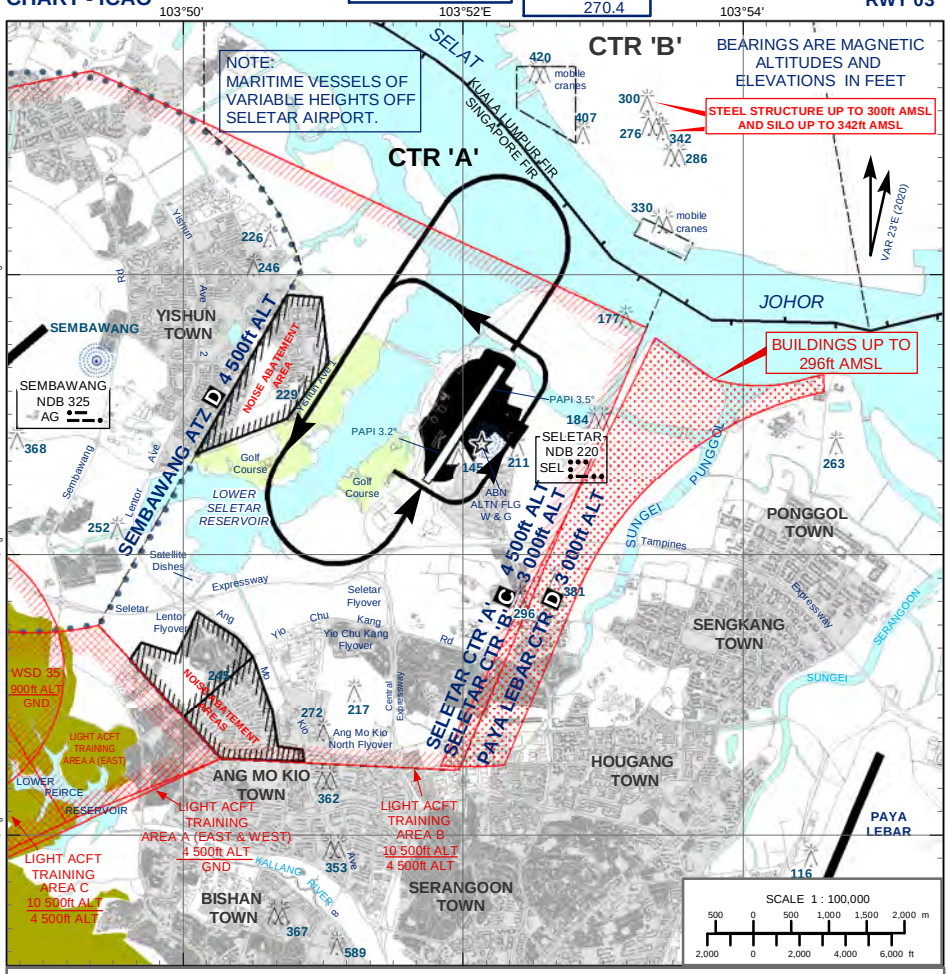
AD ELEV 46 ft

ATIS AP ID-WSSL 128.425

APP 124.05 121.625
TWR 118.45 270.4

SINGAPORE/SELETAR

RWY 03



JOINING PROCEDURE - RWY 03

1) Join overhead at 2 000ft ALT or as cleared by ATC and at a speed of not more than 170kt.

2) When over the south-end of the runway (THR RWY 03), join the circuit crossing the upwind north-end of the runway (THR RWY 21) at 1 500ft ALT or above or at the altitude cleared by ATC.

3) Joining aircraft shall give way to circuit traffic already on downwind.

CAUTION

a) Pilots are required to keep clear of Sembawang ATZ.

b) Pilots should not fly to the east of the runway.
This is to keep clear of tall buildings up to 296ft AMSL to the east of Seletar CTR.
(See area shaded in red).

Minimum altitudes apply over noise abatement areas (WSSL AD 2.21)
Aircraft types which are unable to safely manoeuvre clear of the noise abatement areas are not allowed to operate at Seletar Airport.

PAPI 3.2°		
Pilot's eye height over the threshold when the following PAPI lights come into view	RUNWAY	
	03	21
2 white lights and 2 red lights (MEHT)*	21.24m	17.720m
3 white lights and 1 red light	22.27m	19.286m
4 white lights	24.75m	20.871m

*MEHT : Minimum Eye Height Over the Threshold.

Note : Aircraft with eye-to-wheel height greater than 6.3 metres are advised to fly with 2 white and 2 red lights visible so as to achieve sufficient wheel clearance.

Note:
1) Pilots are to be advised of the steel structure 300ft AMSL and the Silo 342ft AMSL 2nm north of the airfield.
2) Pilots are required to keep their turns within Seletar Control Zone.
3) Pilots are required to keep clear of Sembawang CTR and Paya Lebar CTR.

CHANGES : ATIS and APP frequencies revised.
Magnetic Variation revised.

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VISUAL APPROACH CHART - ICAO

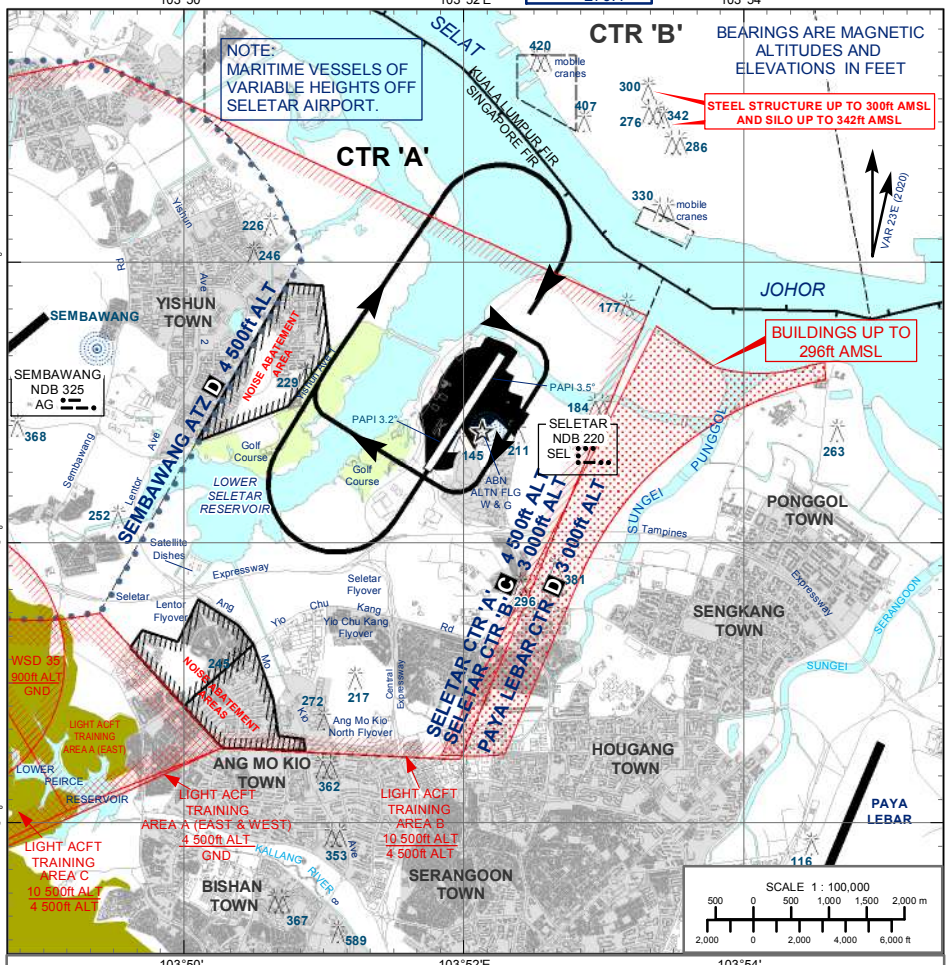
AD ELEV 46 ft

ATIS AP ID-WSSL 128.425

APP 124.05 121.625
TWR 118.45 270.4

SINGAPORE/SELETAR

RWY 21



JOINING PROCEDURE - RWY 21

1) Join overhead at 2 000ft ALT or as cleared by ATC and at a speed of not more than 170kt.

2) When over the north-end of the runway (THR RWY 21), join the circuit crossing the upwind south-end of the runway (THR RWY 03) at 1 500ft ALT or above or at the altitude cleared by ATC.

3) Joining aircraft shall give way to circuit traffic already on downwind.

CAUTION

a) Pilots are required to keep clear of Sembawang ATZ.

b) Pilots should not fly to the east of the runway.
This is to keep clear of tall buildings up to 296ft AMSL to the east of Seletar CTR.
(See area shaded in red).

Minimum altitudes apply over noise abatement areas (WSSL AD 2.21)
Aircraft types which are unable to safely manoeuvre clear of the noise abatement areas are not allowed to operate at Seletar Airport.

PAPI 3.5°		
Pilot's eye height over the threshold when the following PAPI lights come into view	RUNWAY	
	03	21
2 white lights and 2 red lights (MEHT)*	21.24m	17.720m
3 white lights and 1 red light	22.27m	19.286m
4 white lights	24.75m	20.871m

*MEHT : Minimum Eye Height Over the Threshold.

Note : Aircraft with eye-to-wheel height greater than 6.3 metres are advised to fly with 2 white and 2 red lights visible so as to achieve sufficient wheel clearance.

Note:
1) Pilots are to be advised of the steel structure 300ft AMSL and the Silo 342ft AMSL 2nm north of the airfield.
2) Pilots are required to keep their turns within Seletar Control Zone.
3) Pilots are required to keep clear of Sembawang CTR and Paya Lebar CTR.

CHANGES : ATIS and APP frequencies revised. Magnetic Variation revised.

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VISUAL APPROACH CHART - ICAO

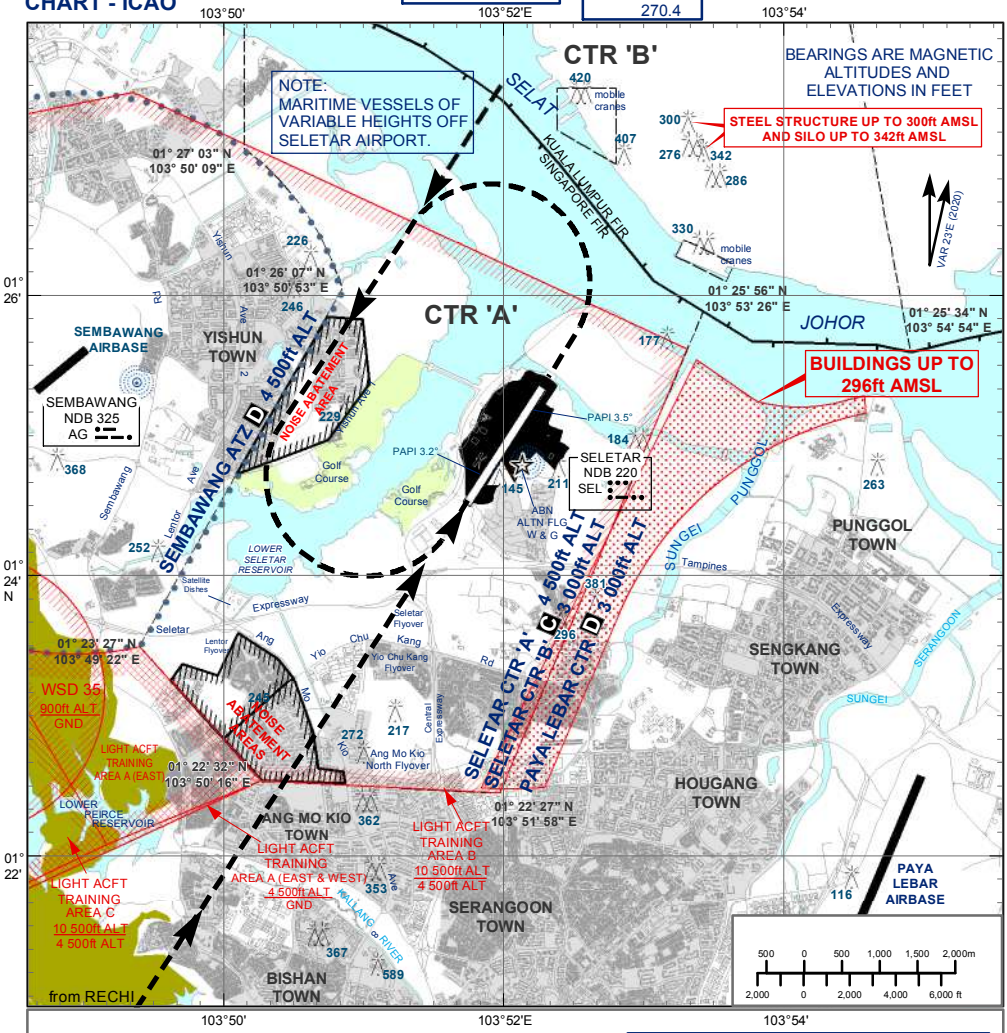
AD ELEV 46 ft

ATIS AP ID-WSSL 128.425

APP 124.05 121.625
TWR 118.45 270.4

SINGAPORE/SELETAR

RWY 03



ADVISORY JOINING PROCEDURES - RWY 03

Straight-in Approach

1) From JB or KK, join downwind at 2 000ft at a speed of not more than 170kt. When downwind, descend from 2 000ft for visual approach or as cleared by ATC. Pilots should have runway in sight.
2) From SJ-PONJO-RECHI, join direct for visual approach, descending from 2 000ft at a speed of not more than 170kt, or as cleared by ATC. Pilots should have runway in sight.
3) Joining aircraft shall give way to circuit traffic already on downwind.

Circling Approach

1) From JB or KK, join downwind at 2 000ft at a speed of not more than 160kt. Passing over north-end of the runway (THR RWY 21), descend from 2 000ft to 1 500ft and turn left for downwind RWY 03. At downwind, descend for a visual approach or as cleared by ATC. Pilots should have the runway in sight.
2) From SJ-PONJO-RECHI, overfly the runway at 2 000ft at a speed of not more than160kt. or as cleared by ATC. When passing over the north-end of the runway (THR 21), descend from 2 000ft to 1 500ft and turn left for downwind RWY 03. At downwind, descend for a visual approach or as cleared by ATC. Pilots should have runway in sight.
3) Joining aircraft shall give way to circuit traffic already on downwind.

CAUTION

a) Pilots are required to keep clear of Sembawang ATZ. Turns should therefore be kept within Seletar CTR.
b) Pilots should not fly to the east of the runway. This is to keep clear of tall buildings up to 296ft AMSL there. Pilots should have all relevant obstructions in sight, including the steel structure 300ft AMSL and the Silo 342ft AMSL 2nm north of the airfield.
c) Minimum altitudes apply over noise abatement areas (WSSL AD 2.21) Aircraft types which are unable to safely manoeuvre clear of the noise abatement areas are not allowed to operate at Seletar Airport.

PAPI 3.2°		
Pilot's eye height over the threshold when the following PAPI lights come into view	RUNWAY	
	03	21
2 white lights and 2 red lights (MEHT)*	21.24m	17.720m
3 white lights and 1 red light	22.27m	19.286m
4 white lights	24.75m	20.871m

*MEHT : Minimum Eye Height Over the Threshold.

Note : Aircraft with eye-to-wheel height greater than 6.3 metres are advised to fly with 2 white and 2 red lights visible so as to achieve sufficient wheel clearance.

CHANGES : ATIS and APP frequencies revised. Magnetic Variation revised.

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VISUAL APPROACH CHART - ICAO

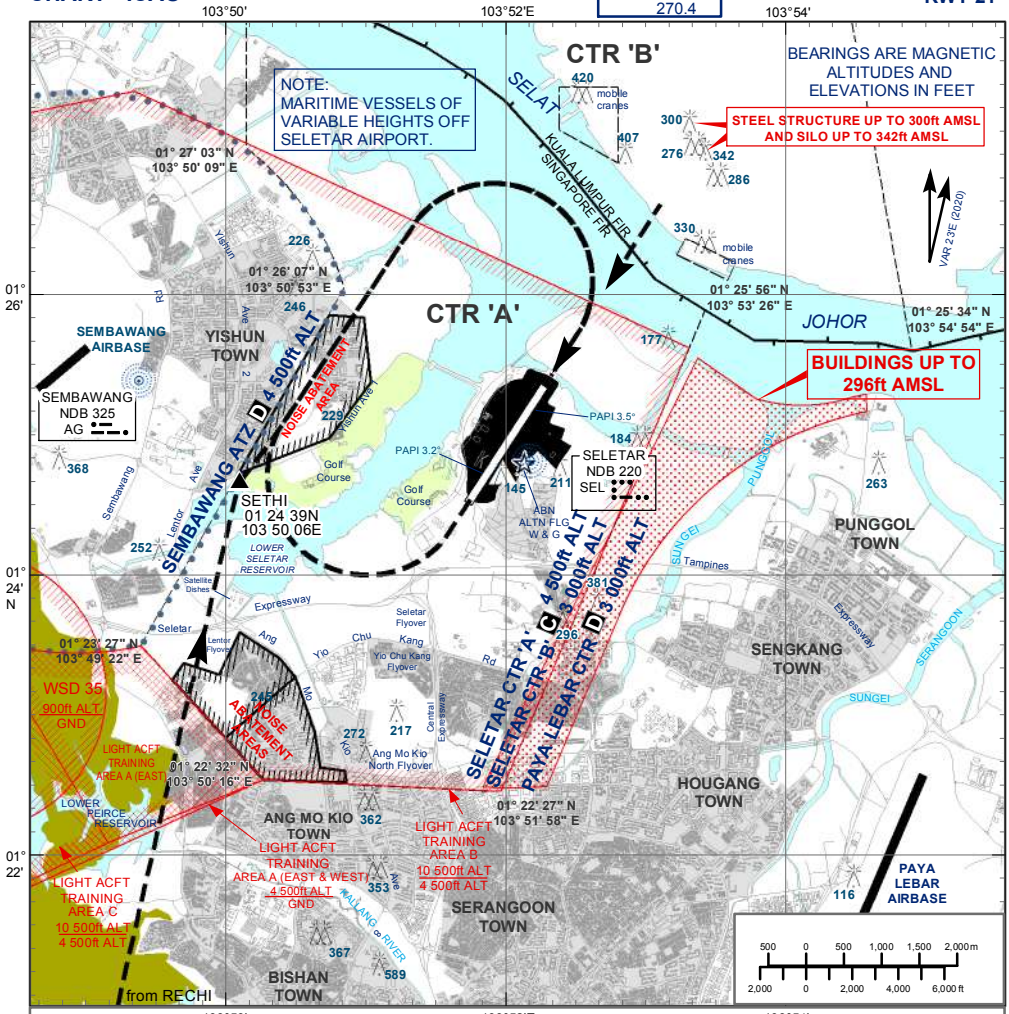
AD ELEV 46 ft

ATIS AP ID-WSSL 128.425

APP 124.05 121.625
TWR 118.45 270.4

SINGAPORE/SELETAR

RWY 21



ADVISORY JOINING PROCEDURES - RWY 21

Straight-in Approach

1) From JB or KK, join direct for a visual approach RWY 21, descending from 2 000ft at a speed of not more than 170kt, or as cleared by ATC. Pilots should have runway in sight.
2) From SJ-PONJO-RECHI-SETHI, join downwind RWY 21 via SETHI at 2 000ft at a speed of not more than 170kt, When downwind, descend from 2 000ft for a visual approach or as cleared by ATC. Pilots should have runway in sight.
3) Joining aircraft shall give way to circuit traffic already on downwind.

Circling Approach

1) From JB or KK, overfly the runway at 2 000ft at a speed of not more than 160kt. When passing over south-end of the runway (THR RWY 03), descend from 2 000ft to 1 500ft and turn right for downwind RWY 21. At downwind, descend for a visual approach or as cleared by ATC. Pilots should have the runway in sight.
2) From SJ-PONJO-RECHI-SETHI, join downwind RWY 21 via SETHI at 2 000ft at a speed of not more than160kt. At end of downwind, turn right and overfly the runway. When passing over south-end of the runway (THR RWY 03), descend from 2 000ft to 1 500ft and turn right for downwind RWY 21. At downwind, descend for a visual approach or as cleared by ATC. Pilots should have runway in sight.
3) Joining aircraft shall give way to circuit traffic already on downwind.

PAPI 3.5°		
Pilot's eye height over the threshold when the following PAPI lights come into view	RUNWAY	
	03	21
2 white lights and 2 red lights (MEHT)*	21.24m	17.720m
3 white lights and 1 red light	22.27m	19.286m
4 white lights	24.75m	20.871m

*MEHT : Minimum Eye Height Over the Threshold.

Note : Aircraft with eye-to-wheel height greater than 6.3 metres are advised to fly with 2 white and 2 red lights visible so as to achieve sufficient wheel clearance.

CAUTION

a) Pilots are required to keep clear of Sembawang ATZ. Turns should therefore be kept within Seletar CTR.
b) Pilots should not fly to the east of the runway. This is to keep clear of tall buildings up to 296ft AMSL there. Pilots should have all relevant obstructions in sight, including the steel structure 300ft AMSL and the Silo 342ft AMSL 2nm north of the airfield.
c) Minimum altitudes apply over noise abatement areas (WSSL AD 2.21)
Aircraft types which are unable to safely manoeuvre clear of the noise abatement areas are not allowed to operate at Seletar Airport.

CHANGES : ATIS and APP frequencies revised.
Magnetic Variation revised.

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VISUAL DEPARTURE CHART

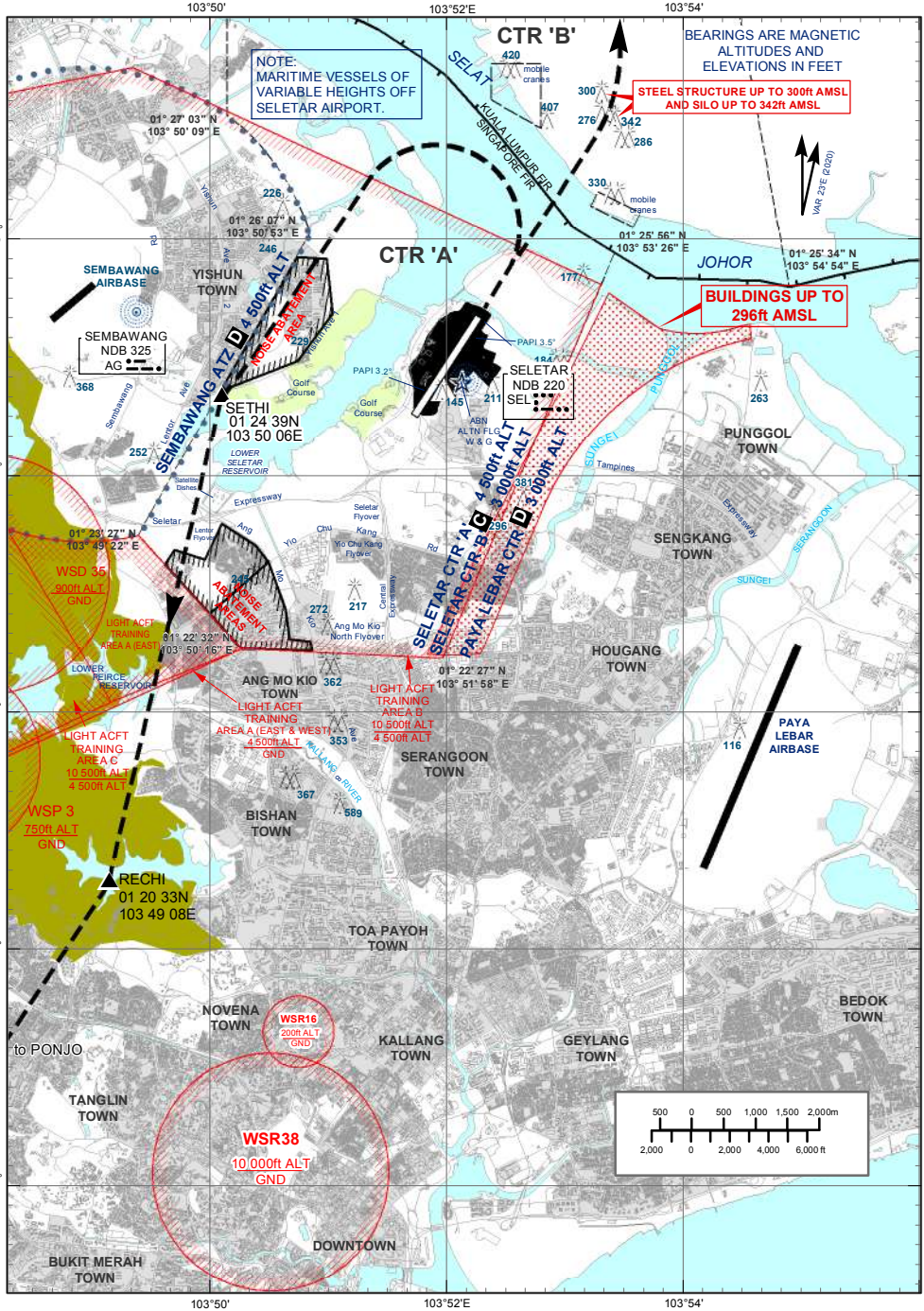
AD ELEV 46 ft

ATIS AP ID-WSSL 128.425

APP 124.05
TWR 118.45
270.4

SINGAPORE/SELETAR

RWY 03



CHANGES : ATIS and APP frequencies revised.
Magnetic Variation revised.

ADVISORY DEPARTURE PROCEDURES FOR RUNWAY 03

On departure, pilots of both fixed-wing and rotary-wing aircraft should climb ahead to an altitude cleared by ATC. Pilots can expect a radar heading to leave Seletar CTR. Where a radar heading is not given, pilots shall navigate to SETHI-RECHI-PONJO-SJ, or navigate to KK in accordance with their ATC clearance.

CAUTION

a) Pilots are required to keep clear of Sembawang ATZ. Turns should therefore be kept within Seletar CTR.

b) Pilots should not fly to the east of the runway. This is to keep clear of tall buildings up to 296ft AMSL there. Pilots should have all relevant obstructions in sight, including the steel structure 300ft AMSL and the Silo 342ft AMSL 2nm north of the airfield.

c) When cleared via SETHI-RECHI-PONJO-SJ, pilots shall not deviate from the clearance unless approved by ATC. This is due to the proximity of WSR38 which is Permanently active from Ground to 10,000ft.

d) Pilots shall maintain a speed of not more than 185KTS until passing PONJO to mitigate risk of encroaching into WSD4.

e)  Minimum altitudes apply over noise abatement areas (WSSL AD 2.21)
Aircraft types which are unable to safely manoeuvre clear of the noise abatement areas are not allowed to operate at Seletar Airport.

VISUAL DEPARTURE CHART

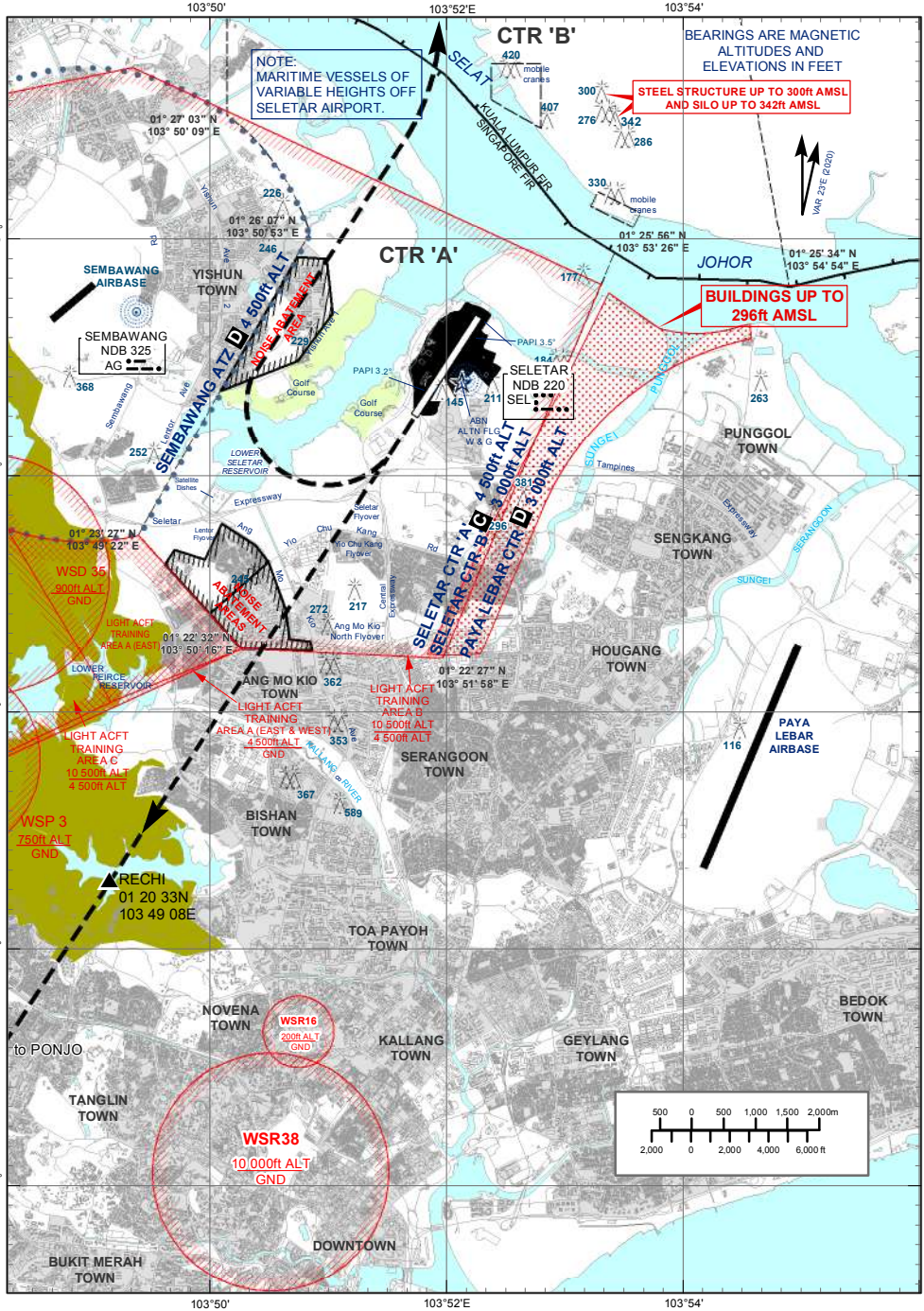
AD ELEV 46 ft

ATIS AP ID-WSSL 128.425

APP 124.05
TWR 118.45
270.4

SINGAPORE/SELETAR

RWY 21



CHANGES : ATIS and APP frequencies revised.
Magnetic Variation revised.

ADVISORY DEPARTURE PROCEDURES FOR RUNWAY 21

On departure, pilots can expect climb to an initial altitude cleared by ATC. Pilots of fixed-wing aircraft navigating to KK can expect to turn right to join the circuit till end of downwind and then expect a radar heading to leave Seletar CTR. Where a radar heading is not given, pilots shall navigate to RECHI-PONJO-SJ, or navigate to KK in accordance with their ATC clearance.

Pilots of rotary-wing aircraft can expect to turn left after departure to join the helicopter circuit pattern till end of downwind. Thereafter, they can expect further en-route clearance.

CAUTION

a) Pilots are required to keep clear of Sembawang ATZ. Turns should therefore be kept within Seletar CTR.

b) Pilots should not fly to the east of the runway. This is to keep clear of tall buildings up to 296ft AMSL there. Pilots should have all relevant obstructions in sight, including the steel structure 300ft AMSL and the Silo 342ft AMSL 2nm north of the airfield.

c) When cleared via RECHI-PONJO-SJ, pilots shall not deviate from the clearance unless approved by ATC. This is due to the proximity of WSR38 which is Permanently active from Ground to 10,000ft.

d) Pilots shall maintain a speed of not more than 185KTS until passing PONJO to mitigate risk of encroaching into WSD4.

e)  Minimum altitudes apply over noise abatement areas (WSSL AD 2.21)
Aircraft types which are unable to safely manoeuvre clear of the noise abatement areas are not allowed to operate at Seletar Airport.

WSAP — PAYA LEBAR

Note: The following sections in this chapter are intentionally left blank:
AD 2.16, AD 2.21.

WSAP AD 2.1 AERODROME LOCATION INDICATOR AND NAME

WSAP — PAYA LEBAR

WSAP AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	*ARP coordinates and site at AD*	012120.6N 1035410.0E(Paya Lebar IBN)
2	*Direction and distance from (city)*	-
3	*Elevation/Reference temperature*	20 M (65ft) / 31.5° C
4	*MAG VAR*	0°23' E (2020)
5	*AD Administration, address, telephone, telefax, telex, AFS*	PAYA LEBAR AIRPORT SINGAPORE 534395 Tel: 63813111 (Base Command Post) AFS: WSAPYWYX
6	*Types of traffic permitted*	IFR
7	*Remarks*	Operator: Republic of Singapore Air Force. Alternate/Emergency Diversionary Aerodrome for Singapore Changi Airport (see page WSAP AD 2-9)

WSAP AD 2.3 OPERATIONAL HOURS

1	*Aerodrome Administration*	BTN 2300-1100 SUN/MON to THU/FRI Public holidays and outside operating hours prior permission required from RSAF Headquarters via Paya Lebar Base Command Post.
2	*Customs and immigration*	by prior arrangement only
3	*Health and sanitation*	by prior arrangement only
4	*AIS Briefing Office*	-
5	*ATS Reporting Office*	-
6	*MET Briefing Office*	H24
7	*Air Traffic Services*	H24
8	*Remarks*	AD may be closed periodically for Foreign Object Damage (FOD) walk. Actual emergency or diversion will be accepted at 30 min notification. Such closure will be published via NOTAM.

WSAP AD 2.4 HANDLING SERVICES AND FACILITIES

1	*Cargo Handling Facilities*	-
2	*Fuel / Oil Types*	JET A1, Oil
3	*Fuelling Facilities / Capacity*	BTN 2300-1100 SUN/MON to THU/FRI Public holidays and outside operating hours prior permission required from RSAF Headquarters via Paya Lebar Base Command Post.
4	*Hangar space for visiting aircraft*	-
5	*Repair facilities for visiting aircraft*	-
6	*Remarks*	NIL

WSAP AD 2.5 PASSENGER FACILITIES

1	*Hotels*	NIL
2	*Restaurants*	NIL
3	*Transportation*	NIL
4	*Medical Facilities*	NIL
5	*Banks and Post Offices*	NIL
6	*Tourist Office*	NIL
7	*Remarks*	NIL

WSAP AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	*AD category for fire fighting*	CAT9
2	*Rescue equipment*	Adequately provided as recommended by ICAO
3	*Capability for removal of disabled aircraft*	Sufficient salvage equipment provided by Airfield Ground Services section at military bases.
4	*Remarks*	All Airport Emergency Services personnel are trained in rescue and fire-fighting as well as medical first-aid.

WSAP AD 2.7 SEASONAL AVAILABILITY - CLEARING

The aerodrome is available throughout the year.

WSAP AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS DATA

1	*Apron surface and strength*	Strength: LCN80 - F (Apron A) Strength: LCN100 - PCN71/R/B/W/U (Apron B) Strength: LCN100 - PCN72/F/B/W/U (Apron C) Strength: LCN80 - F (Jet Apron/Jet Apron Extension)
2	*Taxiway width, surface and strength*	Strength: PCN72/F/B/W/U
3	*Remarks*	TWY between TWY W1 and TWY W2 closed to all code C and above aircraft. Pilots to exercise caution.

WSAP AD 2.14 APPROACH AND RUNWAY LIGHTING

RWY Designator	**APCH LGT type LEN INTST**	**THR LGT colour WBAR**	**VASIS (MEHT) PAPI**	**TDZ LGT LEN**	**RWY Centre Line LGT LEN, spacing, colour, INTST**	**RWY edge LGT LEN, spacing colour, INTST**	**RWY END LGT colour WBAR**	**SWY LGT LEN colour**
1	2	3	4	5	6	7	8	9
02/20	Sequenced FLG LGT. Modified Calvert High INTST White LGT with brilliancy control.	Green	PAPI on 3° glide slope	-	NIL	White with Amber	Red	Red

WSAP AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

WDI/Taxiway/Stopway	Lighted
IBN	012120.6N 1035410.0E; Flashing Red 'PL" ; Operating hours HN and IMC

WSAP AD 2.17 ATS AIRSPACE

1	*Designation and Lateral Limits*	**PAYA LEBAR CTR** 011100N 1035134E 013300N 1040149E 013200N 1035344E 012534N 1035454E thence along international BDRY to 012544N 1035320E 012227N 1035158E 012232N 1035016E 012100N 1034654E 012025N 1034539E 011835N 1034459E thence southwards on 180° to 011100N 1034459E and eastwards to join up with 011100N 1035134E.
2	*Vertical Limits*	GND to 3000 FT ALT
3	*Airspace Classification*	D
4	*ATS Unit Call Sign, Language(s)*	PAYA LEBAR TOWER (Singapore APP outside the opr hours of PAYA LEBAR TOWER), English
5	*Transition Altitude*	11000 FT (3,350m)
6	*Remarks*	Northern Transit Corridor: RSAF military aircraft (with the exception of trainer aircraft) using the northern transit corridor will enter the airspace over Johor at or above 5,000ft. RSAF trainer aircraft using the northern corridor will enter the airspace over Johor at or above 2,000ft.

WSAP AD 2.18 ATS COMMUNICATION FACILITIES

Service designation	Call sign	Frequency	Hours of operation	Remarks
APP	SELETAR APPROACH	121.625 MHz	0000 - 1500	TAR – Intermediate approach to Seletar Airport
	SINGAPORE APPROACH	124.05 MHz 124.6 MHz 126.3 MHz	H24	TAR – flow control service provided for ARR/DEP ACFT. Intermediate approach to Singapore Changi AP and other airports in Singapore. DEP from all airports in Singapore.
	PAYA LEBAR APPROACH	119.9 MHz 298.0 MHz *255.8 MHz #127.7 MHz	BTN 2300-1100 SUN-MON to THU-FRI On SAT-SUN, public holidays and outside the above times PPR from RSAF Headquarters via Paya Lebar Base Command Post.	* for monitoring aircraft operating in Light Aircraft Training Areas. # for monitoring aircraft operating in Light Aircraft Training Areas and Seletar outbound/inbound traffic.
TWR	PAYA LEBAR TOWER	118.05 MHz 263.1 MHz		NIL
GND	PAYA LEBAR GROUND	130.8 MHz 296.0 MHz		
PAR	PAYA LEBAR TALKDOWN	119.9 MHz †269.0 MHz ♦240.5 MHz		† for Talkdown 1,♦for Talkdown 2 Maint Period: BTN 0001-1100 First THU of EV month
SRE	PAYA LEBAR DIRECTOR	283.0 MHz		Maint Period: BTN 0001-1100 Second THU of EV month
Flight Information Service	SINGAPORE RADAR	119.1 MHz	H24	NIL
ACC	SINGAPORE RADAR	P123.7 MHz S127.3 MHz	H24	for ATS routes B469, G219, G334, R208, L625, L629, L635, L642, L644 , M751, M753, M758, M761, M763, M771, N875, N884, N891 and N892.
		133.8 MHz	0000-1430	
		P134.7 MHz S134.15 MHz	H24	for ATS Routes G334, L625, L644, M758, M761, M771, N875, N884 and N892.
		P133.25 MHz S135.8 MHz		for ATS Routes A457, A464, A576, B466, L762, M630, R325 and R469.
		P134.2 MHz S133.35 MHz		for ATS Routes G334, G580, L625, L644, M646, M767 and N875.
		P134.4 MHz S128.1 MHz		for ATS Routes B338, B469, B470, G579, L504, L644, M635, M774, N502, N875, P501 and in area in the immediate vicinity of Singapore.
	SINGAPORE CONTROL	P134.35 MHz S133.6 MHz	H24	AUTOMATIC DEPENDENT SURVEILLANCE BROADCAST (ADS-B) OUT EXCLUSIVE AIRSPACE WITHIN PARTS OF THE SINGAPORE FIR - L642, L644, M753, M771, M904, N891, N892, Q801, Q802, Q803 and T611 within airspace bounded by 073605N 1090045E, 040713N 1063543E, 041717N 1061247E (MABLI), 044841N 1052247E (DOLOX), 045223N 1041442E (ENREP), 045000N 1034400E, thence north along the Singapore FIR boundary to 070000N 1080000E at or above FL290.
	SINGAPORE RADIO	6556 kHz 11297 kHz	H24	SEA 1. Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
		5655 kHz 8942 kHz 11396 kHz		SEA 2. Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
		6556 kHz		SEA 3. Emission: A3AJ. SSB suppressed carrier, SATCOM service available.

WSAP AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of Aid and MAG Variation	IDENT	FREQ	OPR Hour	Position of transmitting Antenna Coordinates	DME transmitting Antenna Elevation / Remarks
TACAN	PLA	CH110X	H24	012224.00N 1035451.00E	030° MAG 2.375km from ARP. Maint Period: BTN 0001-0900 Second SAT of EV month For homing purposes only.
PAPA UNIFORM DVOR/DME	PU	115.1 MHz CH98X	H24	012523.99N 1035559.74E	020° MAG 9km from THR RWY 02 Antenna Hgt: 190ft AMSL. Coverage 200NM. Maint Period: BTN 0200-0600 Third WED of EV month
SINJON DVOR/DME	SJ	113.5 MHz CH82X	H24	011319.28N 1035120.08E	201° MAG 14.5km from THR RWY 02 (Paya Lebar). Antenna HGT: 194ft AMSL Coverage 200NM Maint Period: BTN 0200-0600 Third THU of EV month
ILS LLZ RWY 02	IPN	109.3MHz	H24	012246.41N 1035503.64E	LOC 401m from THR RWY 20 along centreline of RWY. Course width 3 DEG. Maint Period: BTN 0001-0900 First SUN of EV month
ILS GP RWY 02	-	332.00MHz	H24	012050.42N 1035410.11E	GP angle 3 DEG.
ILS DME RWY 02	IPN	CH30X	H24	012050.42N 1035410.11E	DME co-located with GP
ILS LLZ RWY 20	IPS	111.5MHz	H24	012027.24N 1035404.48E	LOC 462m from THR RWY 02 along centreline of RWY. Course width 3 deg. Maint Period: BTN 0001-0900 Second SUN of EV month
ILS GP RWY 20	-	332.90MHz	H24	012227.29N 1035451.29E	GP angle 3 deg.
ILS DME RWY 20	IPS	CH52X	H24	012227.29N 1035451.29E	DME co-located with GP

WSAP AD 2.20 LOCAL TRAFFIC REGULATIONS - DESIGNATION OF PAYA LEBAR AIRPORT AS AN ALTERNATE AD FOR SINGAPORE CHANGI AIRPORT

1 INTRODUCTION

1.1 Paya Lebar Airport is designated as an alternate aerodrome to Singapore Changi Airport.

1.2 As Paya Lebar Airport is a joint civil/military aerodrome, its use as a planned alternate aerodrome for Singapore Changi Airport is subjected to certain restrictions and limitations. It also has limited ground, baggage and passenger handling facilities for civilian aircraft operations, such as passenger boarding bridges.

2 MANNING OF PAYA LEBAR AIRPORT

2.1 The airport is open from 2300-1100 on SUN-MON to THU-FRI. It is closed on Saturdays, Sundays and Public Holidays. Outside the stipulated operating hours and during airport closure, Paya Lebar Airport will be opened at 30 minutes' notice to accept diversion flights into the aerodrome.

2.2 Airline operators are requested to inform the Airport Manager and the Duty Tower Controller or SATCC Watch Manager at Singapore Changi Airport as soon as it is known that their service will require the use of Paya Lebar Airport. Revised ETAs and/or ETDs are to be notified as soon as known.

2.3 The airport will hold off all departures and arrivals when the aerodrome visibility falls below 3km, or when the aerodrome prevailing cloud base is lower than 500ft. This is a safety consideration to avoid aircraft from carrying out a missed approach under an adverse weather condition. For maintenance/test flights scheduled to depart and arrive back to the airport, such departures may be held off when the aerodrome visibility falls below 6km, or when the aerodrome prevailing cloud base is lower than 1,000ft.

3 OPERATIONAL SERVICES

3.1 Air-ground-air communications maintained by Paya Lebar Airport for aerodrome/approach control service are listed in page WSAP AD 2-7.

4 PASSENGER CLEARANCE

4.1 All Customs, Health and Immigration clearances will be carried out at Singapore Changi Airport.

4.2 The diverting aircraft Airline's Coordinator and its ground handling agency staff shall be present to provide assistance when an aircraft is required to land at Paya Lebar Airport.

5 SECURITY

5.1 All airline personnel, including ground handlers and support staff who have to proceed to Paya Lebar Airport must wear their Singapore Changi Airport passes at a prominent position for entry to the aircraft parking area. All personnel not in possession of the laminated Singapore Changi Airport pass will be denied entry into Paya Lebar Airport by the RSAF Security Guard. Entry into the airport by both the airline personnel and service equipment is via the main gate. The Airline Engineering Coordinator shall be responsible for the proper positioning of the ground servicing equipment and vehicles in the Apron Area where arriving aircraft are to be parked.

5.2 The security of civil aircraft parked in the Apron is the responsibility of the aircraft owner and any security service obtained shall first be cleared with the Paya Lebar Airport flight security.

6 AIRCRAFT STAND ALLOCATION

6.1 Nine aircraft parking positions in Apron C and on taxiway fillets are available for civil aircraft. A separation of 40 feet between wing-tips should be maintained.

6.2 Aircraft parking positions will be issued by the Paya Lebar Tower and the Airline Engineering Coordinator shall provide the marshalling services. Close coordination between the Airline Engineering Coordinator and the Tower Controller is essential in regard to aircraft parking and positioning of servicing equipment in and around the parking apron.

7 AIRCRAFT REFUELLING

7.1 ST Airport Services Pte Ltd (STARS) is the assigned aircraft fuelling agency. However, prior arrangement must be made between the airline and STARS for such services. The refuelling rate available is 350 imperial gallons per minute (IGPM).

8 GROUND OPERATIONS

8.1 Singapore Airport Terminal Services (SATS) and DNATA Singapore Pte Ltd (DNATA) will provide all ground services at one hour's prior notice except engineering services which will be provided by Singapore Airlines.

9 FULL EMERGENCY/CRASH PROCEDURE

9.1 In the event of a Full Emergency being declared on a civil aircraft diverted to Paya Lebar AP, Full Emergency/Crash Procedures applicable to Singapore Changi AP will equally apply to Paya Lebar AP.

9.2 Alerting of all outside organisations such as the Singapore Civil Defence Force, Police, MINDEF and ambulance services shall be carried out by the Singapore Changi AP Tower Controller.

10 METEOROLOGICAL AND AERONAUTICAL INFORMATION SERVICE

10.1 Meteorological service is available 24 hours at the 6th floor of the building where Paya Lebar Air Traffic Control Tower is located.

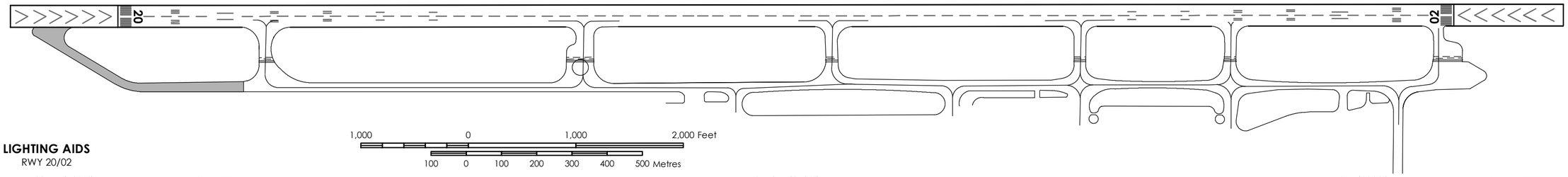
10.2 Aeronautical Information Service is available at Singapore Changi Airport.

11 ATC SERVICE OUTSIDE STIPULATED OPERATING HOURS

11.1 Radar service will not be available at Paya Lebar Airport outside its stipulated operating hours.

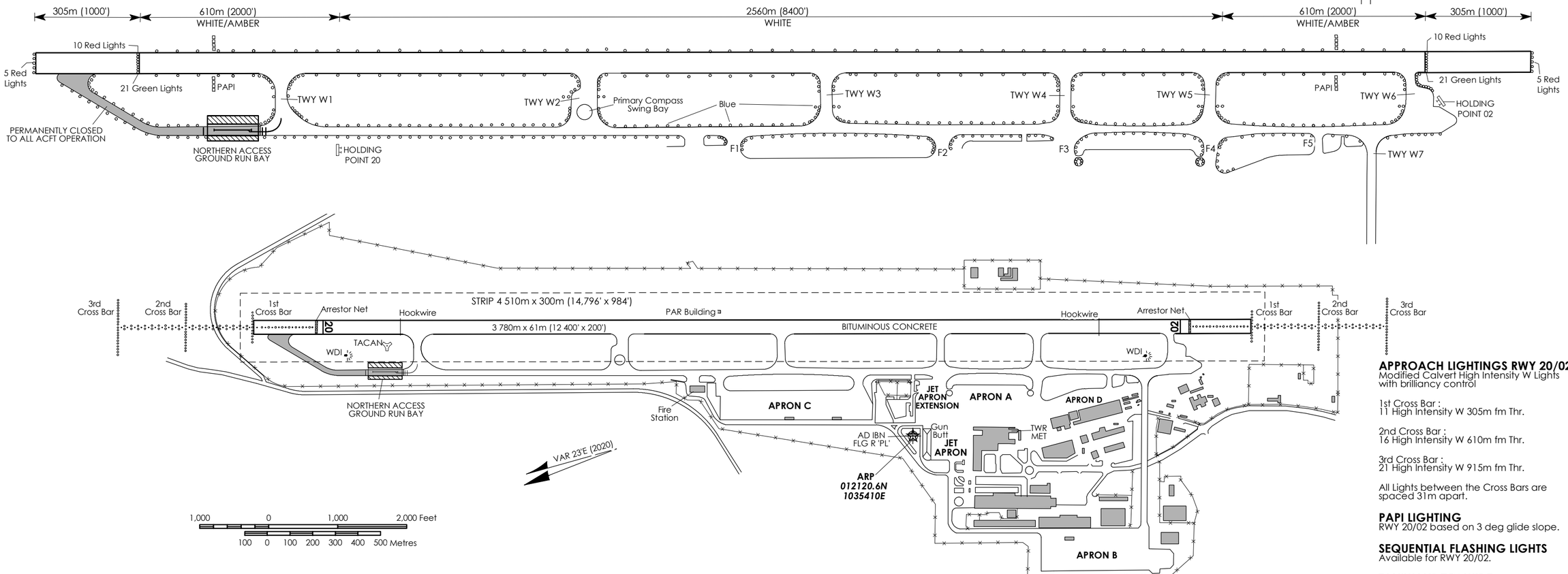
AERODROME CHART - PAYA LEBAR AIRPORT

MARKING AIDS
RWY 20/02



1,000 0 1,000 2,000 Feet
100 0 100 200 300 400 500 Metres

LIGHTING AIDS
RWY 20/02



1,000 0 1,000 2,000 Feet
100 0 100 200 300 400 500 Metres

APPROACH LIGHTINGS RWY 20/02
Modified Calvert High Intensity W Lights with brilliancy control

1st Cross Bar :
11 High Intensity W 305m fm Thr.

2nd Cross Bar :
16 High Intensity W 610m fm Thr.

3rd Cross Bar :
21 High Intensity W 915m fm Thr.

All Lights between the Cross Bars are spaced 31m apart.

PAPI LIGHTING
RWY 20/02 based on 3 deg glide slope.

SEQUENTIAL FLASHING LIGHTS
Available for RWY 20/02.

TAXIWAYS 75ft WIDE.

CHANGES : Magnetic Variation revised.

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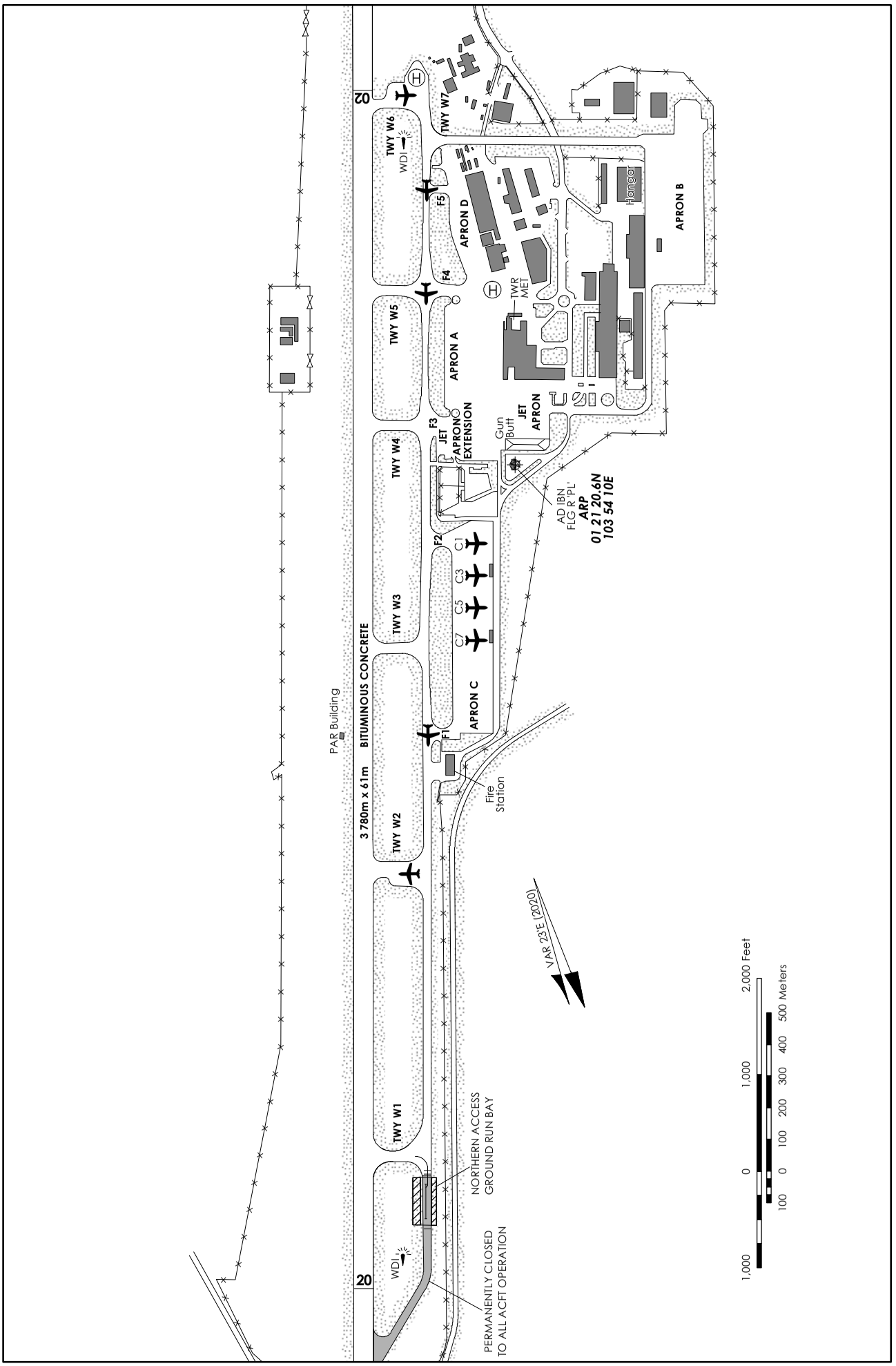
LOCATION OF AIRCRAFT STANDS FOR CIVIL AIRCRAFT AT PAYA LEBAR AIRPORT



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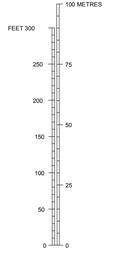
AERODROME OBSTACLE CHART - ICAO

TYPE A (OPERATING LIMITATIONS)

DIMENSIONS AND ELEVATIONS IN METRES

SINGAPORE/Paya Lebar Airport

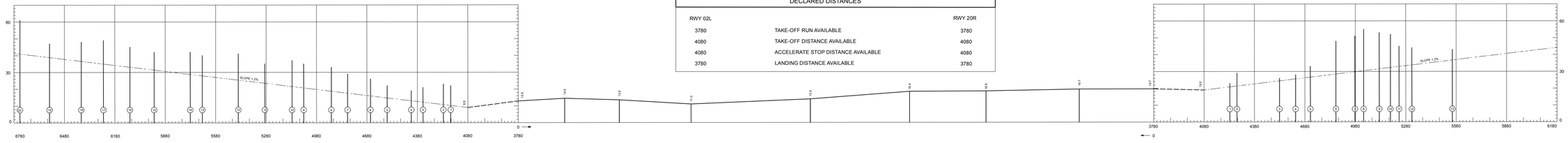
MAGNETIC VARIATION 23'E (2020)

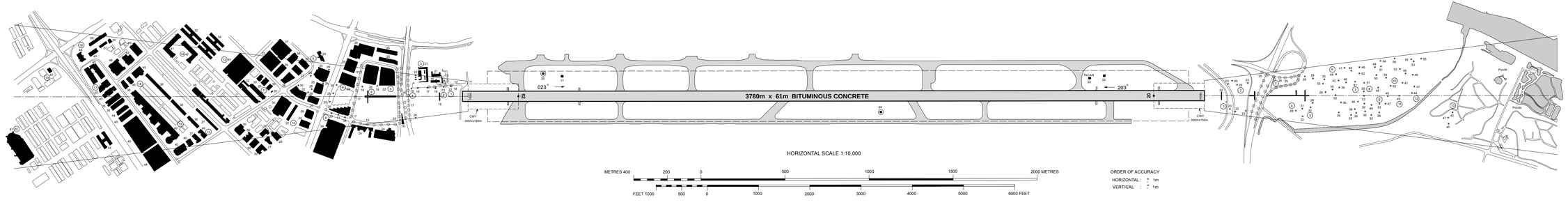


VERTICAL
SCALE
1:1000

RWY 02/20

DECLARED DISTANCES		
RWY 02L		RWY 20R
3780	TAKE-OFF RUN AVAILABLE	3780
4080	TAKE-OFF DISTANCE AVAILABLE	4080
4080	ACCELERATE STOP DISTANCE AVAILABLE	4080
3780	LANDING DISTANCE AVAILABLE	3780





HORIZONTAL SCALE 1:10,000

METRES 400 200 0 500 1000 1500 2000 METRES

FEET 1000 500 0 1000 2000 3000 4000 5000 6000 FEET

ORDER OF ACCURACY

HORIZONTAL	1m
VERTICAL	1m

AMENDMENT RECORD		
NO.	DATE	ENTERED BY

LEGEND	
ANTENNA, CHIMNEY, MAST, POLE, SPIRE or CRANE	
BUILDING	
IDENTIFICATION NUMBER	
LAMP POST	
LOCALISER ANTENNA	
ROAD	
SPOT HEIGHT	33
TREE	
TREE CANOPY	

CHANGES : Magnetic Variation revised.

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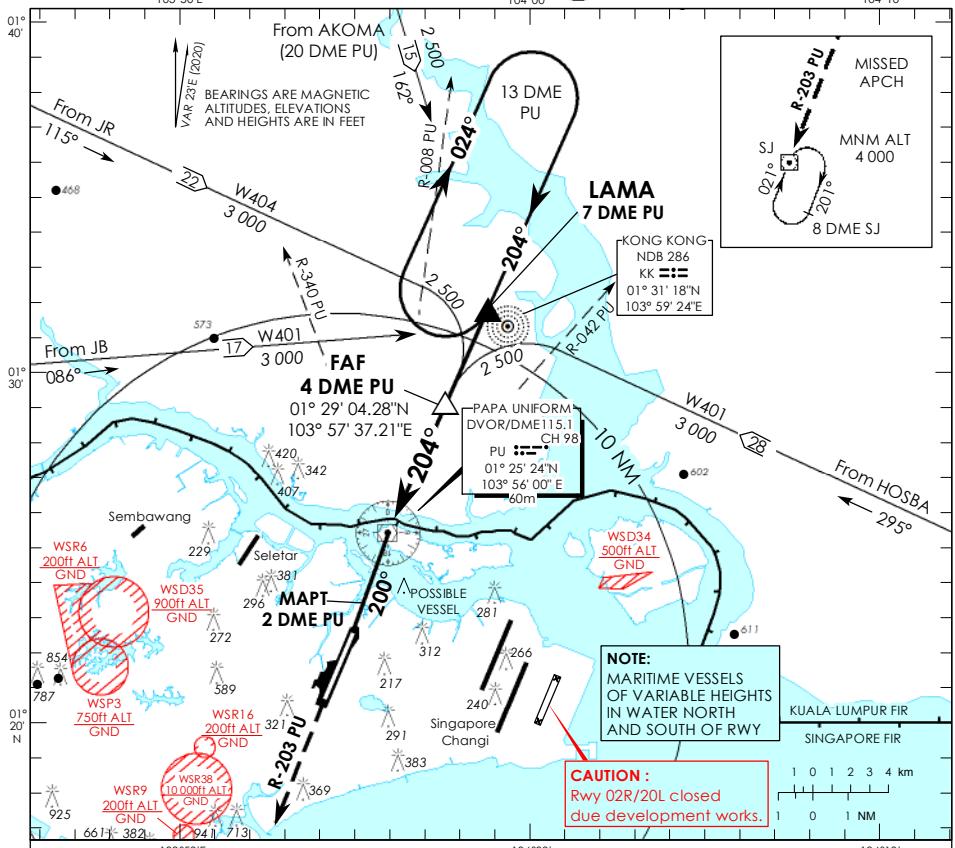
INSTRUMENT APPROACH CHART - ICAO

AERODROME ELEV 65ft
HEIGHT RELATED TO AD ELEV - 65ft

MSA 25 NM from PAPA UNIFORM DVOR
3400' 2900' 2100'

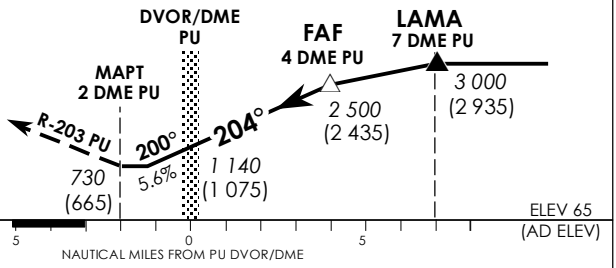
APP	124.05
	119.9
	121.625
TWR	118.05

SINGAPORE/ PAYA LEBAR
PU DVOR/DME RWY 20



Transition Level : FL 130
Transition Alt : 11 000

MISSED APPROACH
Climb to 4 000ft on R-203 PU to SJ DVOR/DME and hold South right turn 021° inbound or AS DIRECTED BY ATC



OCA (OCH)				
Category of Aircraft	A	B	C	D
Straight-in	**730 (665)**			

Distance	3 DME	2 DME	1 DME	PU DVOR/DME	1 DME
Altitude (Height)	**2160 (2095)**	**1820 (1755)**	**1480 (1415)**	**1140 (1075)**	**800 (735)**
Speed	knots	70	120	150	185
FAF - MAPT 6nm	min : s	**5 : 09**	**3 : 00**	**2 : 24**	**1 : 57**
Rate of descent/GS	ft/min	**370**	**635**	**795**	**980**

CHANGES : APP frequencies revised.
Magnetic Variation revised.

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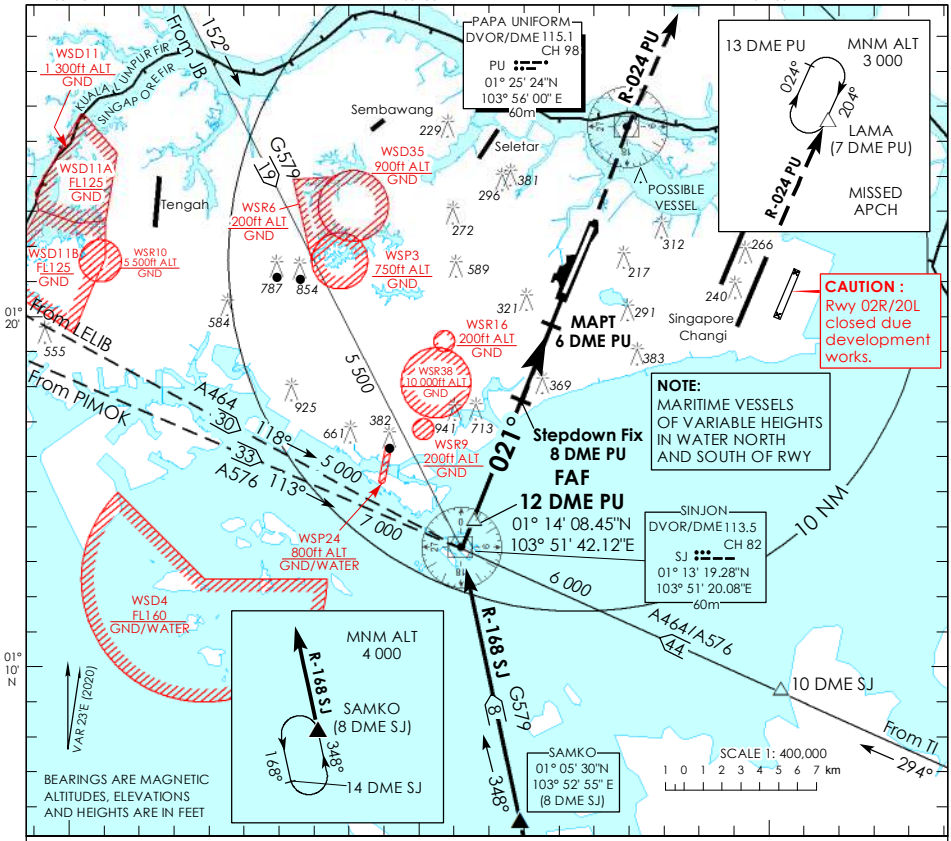
INSTRUMENT APPROACH CHART - ICAO

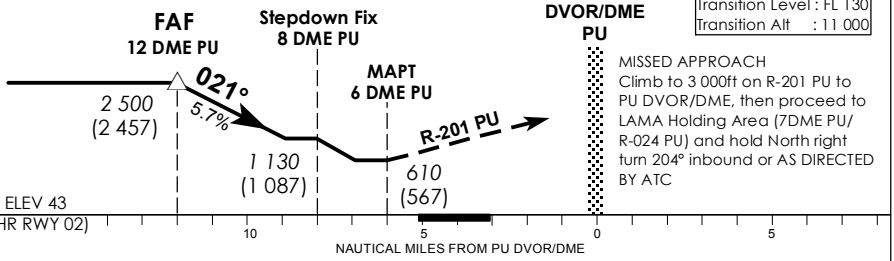
AERODROME ELEV 65ft
HEIGHT RELATED TO
THR RWY 02 - ELEV 43ft

MSA 25 NM from SINJON DVOR

APP	124.05 119.9 121.625
TWR	118.05

SINGAPORE/ PAYA LEBAR
PU DVOR/DME RWY 02





Transition Level	: FL 130
Transition Alt	: 11 000

MISSED APPROACH
Climb to 3 000ft on R-201 PU to PU DVOR/DME, then proceed to LAMA Holding Area (7DME PU/ R-024 PU) and hold North right turn 204° inbound or AS DIRECTED BY ATC

OCA (OCH)				
Category of Aircraft	A	B	C	D
Straight-in (with stepdown fix)	**610 (567)**			
Straight-in (without stepdown fix)	**1 130 (1 087)**			

Distance	11 DME	10 DME	9 DME	8 DME	7 DME
Altitude (Height)	**2170 (2127)**	**1820 (1777)**	**1470 (1427)**	**1130 (1087)**	**780 (737)**
Speed	knots	70	120	150	185
FAF - MAPT 6nm	min : s	**5 : 09**	**3 : 00**	**2 : 24**	**1 : 57**
Rate of descent/GS	ft/min	**370**	**635**	**795**	**980**

CHANGES : APP frequencies revised.
Magnetic Variation revised.

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INSTRUMENT APPROACH CHART - ICAO

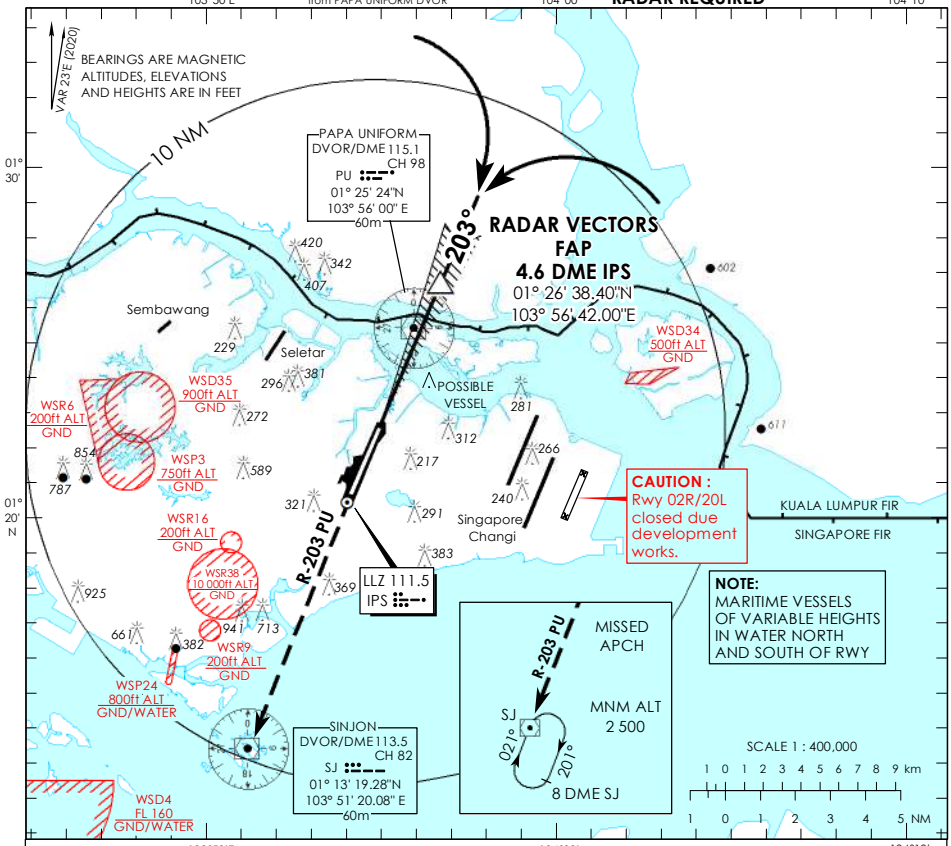
AERODROME ELEV 65ft
HEIGHT RELATED TO THR RWY 20 - 65ft

MSA 25 NM from PAPA UNIFORM DVOR
3400' 2900' 2100' 090° 270° 80°

ATIS Paya Lebar	148.9	
Singapore APP	124.05	
Paya Lebar APP	119.9	298.0
Seletar APP	121.625	
Paya Lebar TWR	118.05	263.1
Ground Control	130.8	296.0

RADAR REQUIRED

SINGAPORE/ PAYA LEBAR
IPS ILS/DME RWY 20

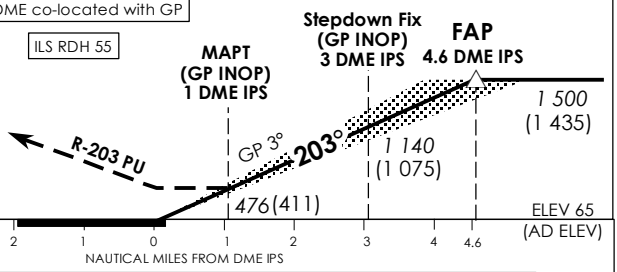


Transition Level : FL 130
Transition Alt : 11 000

ILS/DME co-located with GP

ILS RDH 55

MISSED APPROACH
Climb to 3 000ft on R-203 PU to SJ DVOR/DME and hold South right turn 021° inbound or AS DIRECTED BY ATC



OCA (OCH)					
Category of Aircraft		A	B	C	D
Straight-in	CAT I ILS	**194 (129)**	**204 (139)**	**214 (149)**	**224 (159)**
	GP INOP	**476 (411)**			

Distance		4 DME	3 DME	2 DME
Altitude (Height)		**1300 (1235)**	**1140 (1075)**	**820 (755)**
Speed	knots	70	120	150	185
FAF - MAPT 3.6nm	min : s	**3 : 06**	**1 : 48**	**1 : 27**	**1 : 11**
Rate of descent/GS	ft/min	**370**	**635**	**795**	**980**

CHANGES : APP frequencies revised.
Magnetic Variation revised.

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INSTRUMENT APPROACH CHART - ICAO

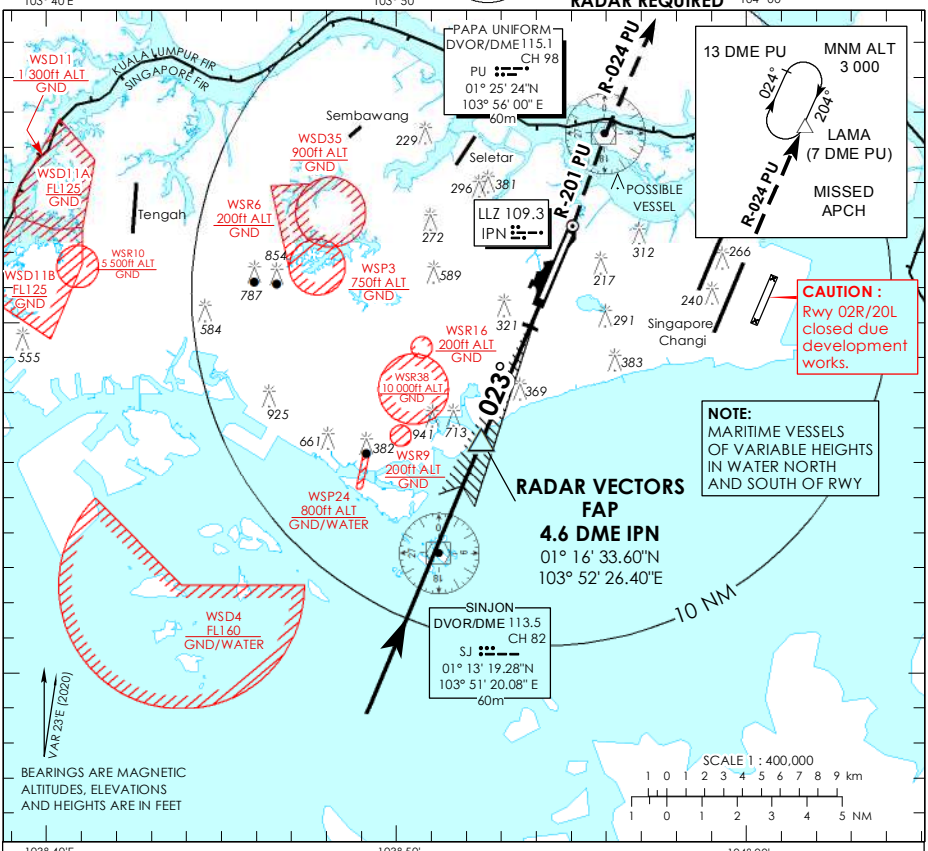
AERODROME ELEV 65ft
HEIGHT RELATED TO THR RWY 02 - ELEV 43ft
MSA 25 NM from PAPA UNIFORM DVOR

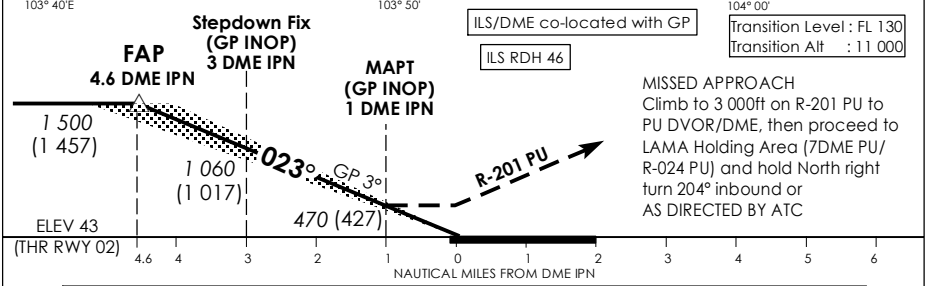
ATIS Paya Lebar	148.9
Singapore APP	124.05
Paya Lebar APP	119.9 298.0
Seletar APP	121.625
Paya Lebar TWR	118.05 263.1
Ground Control	130.8 296.0

SINGAPORE/ PAYA LEBAR

IPN ILS/DME RWY 02

RADAR REQUIRED





OCA (OCH)					
Category of Aircraft		A	B	C	D
Straight-in	CAT I ILS	**178 (135)**	**188 (145)**	**198 (155)**	**208 (165)**
	GP INOP	**470 (427)**			

Distance		4 DME	3 DME	2 DME
Altitude (Height)		**1300 (1257)**	**1060 (1017)**	**740 (697)**
Speed	knots	70	120	150	185
FAF - MAPT 3.6nm	min : s	**3 : 06**	**1 : 48**	**1 : 27**	**1 : 11**
Rate of descent/GS	ft/min	**370**	**635**	**795**	**980**

CHANGES : APP frequencies revised.
Magnetic Variation revised.

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INSTRUMENT APPROACH CHART - ICAO

AERODROME ELEV 65ft
HEIGHT RELATED TO THR RWY 02 - 43ft

ATIS Paya Lebar	148.9	
Singapore APP	124.05	
Paya Lebar APP	119.9	298.0
Seletar APP	121.625	
Paya Lebar TWR	118.05	263.1
Ground Control	130.8	296.0

SINGAPORE/ PAYA LEBAR RNAV (GNSS) RWY 02

MSA 25 NM from PAYA LEBAR ARP

RADAR REQUIRED

BEARINGS ARE MAGNETIC
ALTITUDES, ELEVATIONS AND HEIGHTS ARE IN FEET

VAR 2.3°E (2020)

(MATF) ALDAM
01°27'49.57"N
103°57'12.64"E

022° 4.3 NM 10 NM

023° 7.7 NM

MISSED APCH
MNM ALT 3 000
024°
204°
022°
LAMA
01°31'50.00"N
103°58'50.00"E

Sembawang
Seletar
WSD35 900ft ALT GND
WSR6 200ft ALT GND
WSP3 750ft ALT GND
WSD34 500ft ALT GND
POSSIBLE VESSEL
Singapore Changi
WSR16 200ft ALT GND
WSR38 10 000ft ALT GND
WSR9 200ft ALT GND
WSP24 800ft ALT GND/WATER
WSD4 FL 160 GND/WATER

CAUTION : Rwy 02R/20L closed due development works.

KUALA LUMPUR FIR
SINGAPORE FIR

023° 4.5 NM

(MAPt) RWY02
01°20'41.08"N
103°54'10.36"E

NOTE:
MARITIME VESSELS OF VARIABLE HEIGHTS IN WATER NORTH AND SOUTH OF RWY

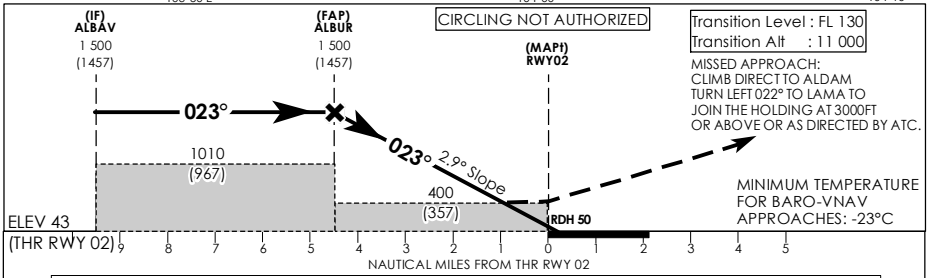
023° 5.0 NM

(FAP) ALBUR
01°16'28.90"N
103°52'23.08"E

RADAR VECTORS
(IF) ALBAV
01°11'52.85"N
103°50'25.65"E

SCALE 1 : 400,000
1 0 1 2 3 4 5 6 7 8 9 km
1 0 1 2 3 4 5 NM

103°50'E 104°00' 104°10'
01° 30' N 01° 20' N 01° 10' N



OCA (OCH)					
Category of Aircraft		A	B	C	D
LNAV/VNAV	2.5%	400 (357)			
LNAV	2.5%	400 (357)			

Fix		ALBAV	ALBUR	RWY02	ALDAM	LAMA
Altitude (Height)		1500 (1457)	1500 (1457)	400 (357)	1250 (1207)	1910 (1867)
Speed	knots	80	100	120	140	160	180
FAP - MAPt 4.5 nm	min : s	3 : 23	2 : 42	2 : 15	1 : 56	1 : 41	1 : 30
Rate of descent/GS	ft/min	410	513	615	718	821	923

CHANGES : APP frequencies revised.
Magnetic Variation revised.

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INSTRUMENT APPROACH CHART - ICAO

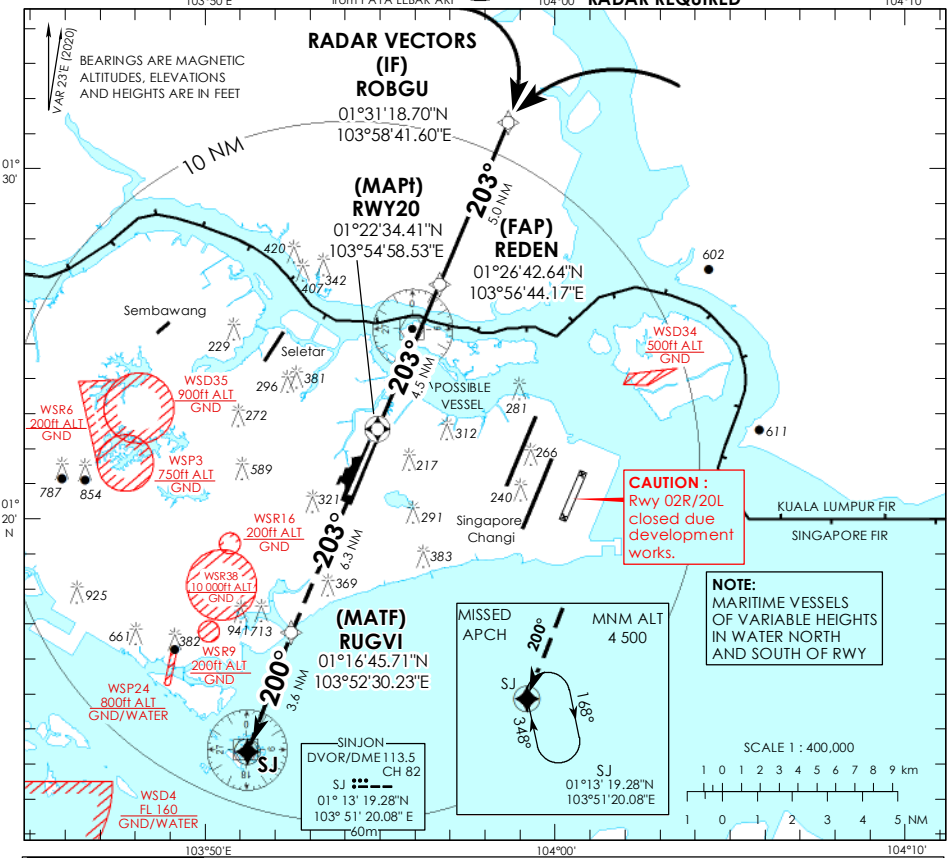
AERODROME ELEV 65ft
HEIGHT RELATED TO THR RWY 20 - 65ft

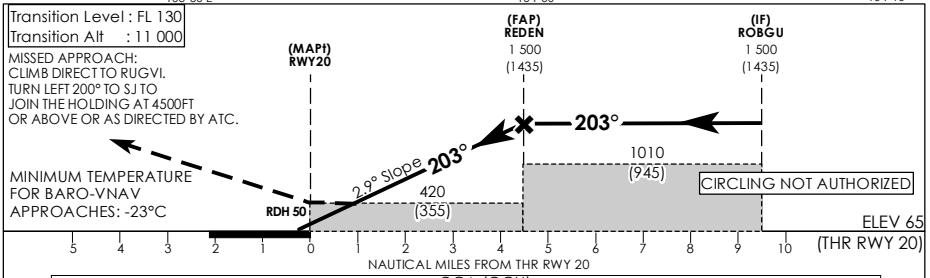
MSA 25 NM from PAYA LEBAR ARP

ATIS Paya Lebar	148.9	
Singapore APP	124.05	
Paya Lebar APP	119.9	298.0
Seletar APP	121.625	
Paya Lebar TWR	118.05	263.1
Ground Control	130.8	296.0

SINGAPORE/ PAYA LEBAR **RNAV (GNSS) RWY 20**

RADAR REQUIRED





OCA (OCH)					
Category of Aircraft		A	B	C	D
LNAV/VNAV	2.5%	**420 (355)**			
LNAV	2.5%	**420 (355)**			

Fix		ROBGU	REDEN	RWY20	RUGVI	SINJON
Altitude (Height)		**1500 (1435)**	**1500 (1435)**	**420 (355)**	**1030 (965)**	**1580 (1515)**
Speed	knots	80	100	120	140	160	180
FAP - MAPt 4.5 nm	min : s	**3 : 23**	**2 : 42**	**2 : 15**	**1 : 56**	**1 : 41**	**1 : 30**
Rate of descent/GS	ft/min	**410**	**513**	**615**	**718**	**821**	**923**

CHANGES : APP frequencies revised.
Magnetic Variation revised.

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WSAT — TENGAH

Note: The following sections in this chapter are intentionally left blank:
AD 2.9, AD 2.11, AD 2.16, AD 2.21, AD 2.22, AD 2.23.

WSAT AD 2.1 AERODROME LOCATION INDICATOR AND NAME

WSAT — TENGAH

WSAT AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	*ARP coordinates and site at AD*	012315.40N 1034229.80E
2	*Direction and distance from (city)*	-
3	*Elevation/Reference temperature*	15.24M (50ft) / 31.5°C
4	*MAG VAR*	0°23' E(2020)
5	*AD Administration, address, telephone, telefax, telex, AFS*	RSAF TENGAH AIRBASE CHOA CHU KANG ROAD SINGAPORE 669638 Telephone: (65)67612222 AFS : WSATYWYX
6	*Types of traffic permitted*	IFR
7	*Remarks*	Emergency Diversion Aerodrome for Singapore Changi Airport (see page WSAT AD 2-7)

WSAT AD 2.3 OPERATIONAL HOURS

1	*Aerodrome Administration*	2300-1100 SUN/MON to THU/FRI. Public holidays and outside the above stipulated operating hours, prior permission required from RSAF Headquarters via Tengah Operations. For EMERG diversions AD AVBL at 2 hours notice. Only Aerodrome Control Service provided. No radar service AVBL outside aerodrome OPR hours.
2	*Customs and Immigration*	by prior arrangement
3	*Health and Sanitation*	by prior arrangement
4	*AIS Briefing Office*	-
5	*ATS Reporting Office*	-
6	*MET Briefing Office*	-
7	*Air Traffic Services*	-
8	*Remarks*	-

WSAT AD 2.4 HANDLING SERVICES AND FACILITIES

1	*Cargo Handling Facilities*	-
2	*Fuel / Oil Types*	JET A1, F3
3	*Fuelling Facilities / Capacity*	2300-1100 SUN/MON to THU/FRI; Public holidays & outside OPR HR PPR from RSAF HQ via Tengah Operations.
4	*Hangar space for visiting aircraft*	-
5	*Repair facilities for visiting aircraft*	-
6	*Remarks*	Nil

WSAT AD 2.5 PASSENGER FACILITIES

1	*Hotels*	-
2	*Restaurants*	-
3	*Transportation*	-
4	*Medical Facilities*	-
5	*Bank and Post Office*	-
6	*Tourist Office*	-
7	*Remarks*	Nil

WSAT AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	*AD category for fire fighting*	CAT8
2	*Rescue equipment*	Adequately provided as recommended by ICAO
3	*Capability for removal of disabled aircraft*	Sufficient salvage equipment provided by Airfield Ground Services section at Military bases.
4	*Remarks*	All Airport Emergency Services personnel are trained in rescue and fire-fighting as well as medical first-aid.

WSAT AD 2.7 SEASONAL AVAILABILITY - CLEARING

The aerodrome is available throughout the year.

WSAT AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS/POSITIONS DATA

1	*Apron surface and strength*	-
2	*Taxiway width, surface and strength*	Strength : LCN80 (Taxiway E) Surface : Asphalt
3	*Remarks*	Nil

WSAT AD 2.18 ATS COMMUNICATION FACILITIES

Service designation	*Call sign*	*Frequency P - Primary S - Secondary*	*Hours of operation*	*Remarks*
APP	TENGAH APPROACH	P130.0 MHz P263.4 MHz S122.0 MHz	BTN 2300-1100 SUN/MON to THU/FRI; and On SUN, Public holidays and outside the above times, PPR from RSAF HQ via Tengah Ops.	Nil
TWR	TENGAH TOWER	P122.0 MHz P282.5 MHz S263.4 MHz		
	TENGAH GROUND	122.0 MHz 337.8 MHz		
	TENGAH TALKDOWN	130.0 MHz 290.8 MHz 328.5 MHz		
Flight Information Service	SINGAPORE RADAR	119.1 MHz	H24	Nil
ACC	SINGAPORE RADAR	P123.7 MHz S127.3 MHz	H24	for ATS Routes B469, G219, G334, R208, L625, L629, L635, L642, L644, M751, M753, M758, M761, M763, M771, N875, N884, N891 and N892.
		133.8 MHz	0000-1430	
		P134.7 MHz S134.15 MHz	H24	for ATS Routes G334, L625, L644, M758, M761, M771, N875, N884 and N892.
		P133.25 MHz S135.8 MHz		for ATS Routes A457, A464, A576, B466, L762, M630, R325 and R469.
		P134.2 MHz S133.35 MHz		for ATS Routes G334, G580, L625, L644, M646, M767 and N875.
		P134.4 MHz S128.1 MHz		for ATS Routes B338, B469, B470, G579, L504, L644, M635, M774, N502, N875, P501 and in area in the immediate vicinity of Singapore.
	SINGAPORE CONTROL	P134.35 MHz S133.6 MHz	H24	AUTOMATIC DEPENDENT SURVEILLANCE BROADCAST (ADS-B) OUT EXCLUSIVE AIRSPACE WITHIN PARTS OF THE SINGAPORE FIR - L642, L644, M753, M771, M904, N891, N892, Q801, Q802, Q803 and T611 within airspace bounded by 073605N 1090045E, 040713N 1063543E, 041717N 1061247E (MABLI), 044841N 1052247E (DOLOX), 045223N 1041442E (ENREP), 045000N 1034400E, thence north along the Singapore FIR boundary to 070000N 1080000E at or above FL290.

Service designation	*Call sign*	*Frequency P - Primary S - Secondary*	*Hours of operation*	*Remarks*
ACC	SINGAPORE RADIO	6556 kHz 11297 kHz	H24	SEA 1. Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
		5655 kHz 8942 kHz 11396 kHz		SEA 2. Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
		6556 kHz		SEA 3. Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
APP	SINGAPORE APPROACH	P124.05 MHz S124.6 MHz S126.3 MHz	H24	TAR – flow control service provided for ARR/DEP ACFT. Intermediate approach to Singapore Changi AP and other airports in Singapore. DEP from all airports in Singapore.

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WSAT AD 2.19 RADIO NAVIGATION AND LANDING AIDS

RADIO NAVIGATION AND LANDING AIDS					
Type of Aid	*IDENT*	*FREQ*	*OPR Hour*	*Coordinates*	*Remarks*
TACAN	TNG	CH86X	2300-1100 from SUN/MON to THU/FRI; SUN, Public holidays and outside the above times prior permission required from RSAF HQ via Tengah Operations.	012336.00N 1034242.00E	043° MAG 0.55km from ARP Maint Period: 0001-0900 second SAT of EV month
SINJON DVOR/DME	SJ	113.5 MHz CH82X	H24	011319.28N 1035120.08E	201° MAG 14.5km from THR RWY 02 (Paya Lebar) Antenna HGT: 194ft AMSL. Coverage 200NM Maint Period: 0200-0600 third THU of EV month
ILS LLZ RWY 36	ITN	108.1 MHz	H24	012408.43N 1034234.34E	Located 260m from THR RWY 18 along centreline of RWY. Course width 3°
ILS GP RWY 36	-	334.7 MHz	H24	012240.84N 1034231.01E	GP antenna 3°
ILS DME RWY 36	ITN	CH18X	H24	012241.02N 1034226.67E	DME co-located with GP
ILS LLZ RWY 18	ITS	111.3 MHz	H24	012221.63N 1034224.98E	Located 290m from THR RWY 36 along centreline of RWY. Course width 3°
ILS GP RWY 18	-	332.3 MHz	H24	012351.64N 1034237.33E	GP antenna 3°
ILS DME RWY 18	ITS	CH50X	H24	012350.04N 1034236.38E	DME co-located with GP

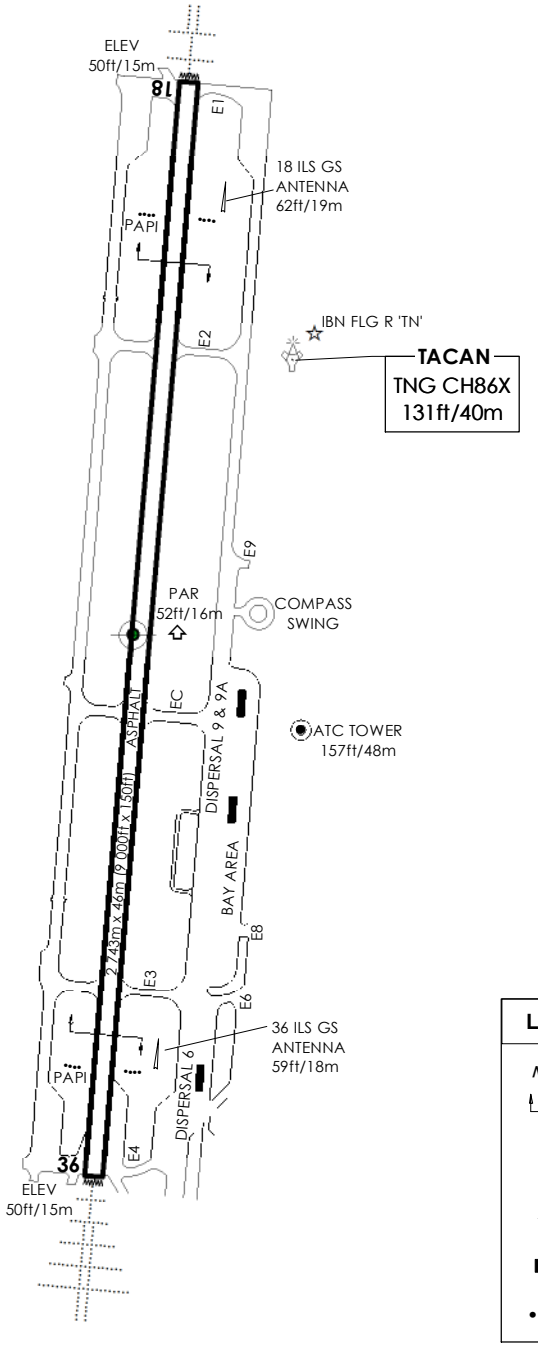
AERODROME CHART - TENGAH

01°23'15.40"N 103°42'29.80"E

RSAF TENGAH

ELEV 50ft/15.24m
ELEVATIONS AND HEIGHTS IN FEET/METRES

VAR 23°E (2020)
ANNUAL CHANGE NEGLIGIBLE



LEGEND

- Barrier
- Hookwire
- ILS Glideslope Antenna
- Precision Approach Radar
- Dispersal
- PAPI

AERODROME LIGHTING

APPROACH LIGHTING :

Approach RWY 18	High intensity white centre line and 2 bars. Superimposed omni-directional RED 'T'.
Approach RWY 36	High intensity white centre line and 5 bars. Superimposed omni-directional RED 'T'.
RWY 18/36	Sequenced flashing lights.

RUNWAY LIGHTING :

RWY 18/36	High intensity omni-directional white edge lights. Green THR lights. Red RWY end lights.
Ident Beacon	TN coding in RED.
Taxiway	Blue edge lights. Green centreline lights.
Dispersal	Blue edge lights. Floodlights

Illuminated distance to run marker boards.

CAUTION

1) RWY lights 0.3m out from RWY edge.

2) All circuits east of aerodrome within 3NM up to 1 500ft (457m).

3) RWY 36 - Right hand circuit.

4) Two masts, height 6m, located on the eastern shoulders :
   a) Runway 36 - 233m from threshold, 100m from runway centre line.
   b) Runway 18 - 273m from threshold, 100m from runway centre line.

Obstacles lit at night.
Helicopters operating in Helizone are to exercise extreme caution.

CHANGES : Magnetic Variation revised.

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WSAG — SEMBAWANG

Note: The following sections in this chapter are intentionally left blank:
AD 2.4, AD 2.5, AD 2.7, AD 2.9, AD 2.11, AD 2.14, AD 2.16, AD 2.20, AD 2.21, AD 2.22, AD 2.23, AD 2.24.

WSAG AD 2.1 AERODROME LOCATION INDICATOR AND NAME

WSAG — SEMBAWANG

WSAG AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	*ARP coordinates and site at AD*	012536N 1034858E
2	*Elevation/Reference temperature*	25.82M (86ft) / 31.5° C
3	*MAG VAR*	0°23' E (2020)
4	*Ad Administration, address, telephone, telefax, telex, AFS*	RSAF Sembawang Airbase, Sembawang Road, SINGAPORE TEL: (65)67508036 (Base Operations Centre) AFS: WSAGYWYX
5	*Types of traffic permitted*	VFR only
6	*Remarks*	Operator: Republic of Singapore Air Force. AD for helicopter use only.

WSAG AD 2.3 OPERATIONAL HOURS

1	*Aerodrome Administration*	2300-1100 SUN/MON to THU/FRI, 2300-0500 FRI/SAT. Prior permission required on SUN and Public holidays.
2	*MET Briefing Office*	H24
3	*Air Traffic Services*	H24
4	*Remarks*	Nil

WSAG AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	*AD category for fire fighting*	CAT 4
2	*Rescue equipment*	Adequately provided as recommended by ICAO
3	*Capability for removal of disabled aircraft*	Sufficient salvage equipment provided by Airfield Ground Services section at Military Bases.
4	*Remarks*	All Airport Emergency Services personnel are trained in rescue and fire fighting as well as medical first-aid.

WSAG AD 2.8 APRON, TAXIWAYS AND CHECK LOCATIONS/POSITIONS DATA

1	*Apron surface and strength*	Strength: PCN 26
2	*Taxiway width, surface and strength*	Strength: PCN 26
5	*Remarks*	Nil

WSAG AD 2.10 AERODROME OBSTACLES

In Approach / TKOF Areas	*In Circling Area and at Aerodrome*
6 tower cranes, HGT 128m, located at 012800N 1035000E (Sembawang Shipyard). Marked/Lighted.	Nil

WSAG AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

RWY Designator	*True and Magnetic Bearing*	*RWY Dimensions (m)*	*Strength and surface of RWY/ SWY*	*THR Coordinates*	*THR ELEV and highest ELEV of TDZ of Precision APCH RWY*
1	2	3	4	5	6
05	046°	914 x 30	LCN 26 Bitum	Nil	86 FT
23	226°	914 x 30	LCN 26 Bitum	Nil	54 FT

WSAG AD 2.13 DECLARED DISTANCES

RWY Designator	*TORA (m)*	*TODA (m)*	*ASDA (m)*	*LDA (m)*	*Remarks*
1	2	3	4	5	6
05	914	975	975	914	Nil
23	914	975	975	914	Nil

WSAG AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

1	*IBN*	012500N 1034854E, FLG R 'AG', EV 20 SEC, OPR HR: HN and IMC
2	*WDI/Taxiway/Stopway*	Lighted

WSAG AD 2.17 ATS AIRSPACE

1	*Designation and Lateral Limits*	**SEMBAWANG ATZ** An arc of 2NM radius centred on Sembawang AD (012527N 1034856E) commencing from 168° radial clockwise to 072° radial and thence a straight line joining these two points.
2	*Vertical Limits*	SFC to 4 500ft ALT Maximum Usable ALT 4 000ft
3	*Airspace Classification*	D
4	*ATS unit Callsign* *Language(s)*	SEMBAWANG TOWER English
5	*Transition Altitude*	11000 FT(3,350m)
6	*Remarks*	Controlling Authority: RSAF, Sembawang Air Base. Prior permission required for non-scheduled aircraft. Traffic Circuit: RWY 05 - left hand circuit Traffic Circuit: RWY 23 - right hand circuit Transit Channel: refer to chart on page ENR 3.5-3.

WSAG AD 2.18 COMMUNICATION FACILITIES

Service designation	*Call sign*	*Frequency*	*Hours of operation*	*Remarks*
1	2	3	4	5
APP	PAYA LEBAR APPROACH	127.7 MHz 255.8 MHz	BTN 2300-1100 SUN/MON to THU/FRI and BTN 2300-0500 FRI/SAT. Prior permission required on SUN and Public holidays	Nil
TWR	SEMBAWANG TOWER	129.7 MHz 239.0 MHz		Nil
GND	SEMBAWANG GROUND	277.1 MHz 118.8 MHz		Nil
Flight Information Service	SINGAPORE RADAR	119.1 MHz	H24	Nil
ACC	SINGAPORE RADAR	P123.7 MHz S127.3 MHz	H24	for ATS Routes B469, G219, G334, R208, L625, L629, L635, L642,L644, M751, M753, M758, M761, M763, M771, N875, N884, N891 and N892.
		133.8 MHz	0000 - 1430	
		P134.7 MHz S134.15 MHz	H24	for ATS Routes G334, L625, L644, M758, M761, M771, N875, N884 and N892.
		P133.25 MHz S135.8 MHz		for ATS Routes A457, A464, A576, B466, L762, M630, R325 and R469.
		P134.2 MHz S133.35 MHz		for ATS Routes G334, G580, L625, L644, M646, M767 and N875.
		P134.4 MHz S128.1 MHz		For ATS Routes B338, B469, B470, G579, L504, L644, M635, M774, N502, N875, P501 and in area in the immediate vicinity of Singapore.
	SINGAPORE CONTROL	P134.35 MHz S133.6 MHz	H24	AUTOMATIC DEPENDENT SURVEILLANCE BROADCAST (ADS-B) OUT EXCLUSIVE AIRSPACE WITHIN PARTS OF THE SINGAPORE FIR - L642, L644, M753, M771, M904, N891, N892, Q801, Q802, Q803 and T611 within airspace bounded by 073605N 1090045E, 040713N 1063543E, 041717N 1061247E (MABLI), 044841N 1052247E (DOLOX), 045223N 1041442E (ENREP), 045000N 1034400E, thence north along the Singapore FIR boundary to 070000N 1080000E at or above FL290.
	SINGAPORE RADIO	6556 kHz 11297 kHz	H24	SEA 1. Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
		5655 kHz 8942 kHz 11396 kHz		SEA 2. Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
		6556 kHz		SEA 3. Emission: A3AJ. SSB suppressed carrier, SATCOM service available.
APP	SINGAPORE ARRIVAL	P119.3 MHz S119.4 MHz S119.55 MHz	H24	TAR - Intermediate and final approach to Singapore Changi AP.
	SINGAPORE APPROACH	P124.05 MHz S124.6 MHz S126.3 MHz		TAR – flow control service provided for ARR/DEP ACFT. Intermediate approach to Singapore Changi AP and other airports in Singapore. DEP from all airports in Singapore.

WSAG AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of Aid	*IDENT*	*Frequency*	*OPR HR*	*Coordinates*	*Remarks*
1	2	3	4	5	6
SEMBAWANG NDB	AG	325 kHz	H24	012524.00N 1034924.00E	198° MAG 0.54km from ARP Coverage 30NM. MAINT Period: Monthly - EV 2nd FRI 0200-0400. For training approaches in VMC only.