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AMDT
02/2023
Effective date
20 APR 2023
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wp-AMDT-2023-02

1. Significant information and changes

1.1 Singapore FIR

a. Updated AD-2-WSSS-STAR-3 and AD-2-WSSS-STAR-4 chart for BOBAG Holding outbound track from 263⁰ to correct heading of 262⁰.

1.2 Singapore Changi Airport

a. Updated AIP Section WSSS AD 2.9, paragraph 2 - RWY and TWY markings and LGT.

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 This amendment incorporates information contained in the listed AIP Supplement and NOTAM which are hereby superseded:

AIP Supplement

043/2023 dated 09/03/2023

NOTAM

A0667/23 dated 22/03/2023

Amended Pages

GEN 0.2-3:	: <i>replace.</i>
GEN 0.3-1/2:	: <i>replace.</i>
GEN 0.3-3/4:	: <i>replace.</i>
GEN 0.3-5/6:	: <i>replace.</i>
GEN 0.4-1/2:	: <i>replace.</i>
GEN 0.4-3:	: <i>replace.</i>
GEN 1.6-1/2:	: <i>replace.</i>
GEN 1.6-3/4:	: <i>replace.</i>
GEN 3.2-3/4:	: <i>replace.</i>
GEN 3.5-1/2:	: <i>replace.</i>
GEN 3.5-3/4:	: <i>replace.</i>
ENR 0.6-5/6:	: <i>replace.</i>
ENR 1.1-11/12:	: <i>replace.</i>
ENR 1.10-1/2:	: <i>replace.</i>
ENR 2.1-1/2:	: <i>replace.</i>
ENR-2.1-9:	: <i>replace.</i>
ENR 3.1-1/2:	: <i>replace.</i>
ENR 3.2-1/2:	: <i>replace.</i>
ENR 3.2-3/4:	: <i>insert.</i>
ENR 3.2-5/6:	: <i>insert.</i>
ENR 3.2-7/8:	: <i>insert.</i>
ENR 3.2-9/10:	: <i>insert.</i>
ENR 3.2-11/12:	: <i>insert.</i>
ENR 3.2-13/14:	: <i>insert.</i>

ENR 3.2-15/16: : *insert.*
ENR 3.2-17/18: : *insert.*
ENR 3.2-19/20: : *insert.*
ENR 3.2-21/22: : *insert.*
ENR 3.2-23/24: : *insert.*
ENR 3.2-25/26: : *insert.*
ENR 3.2-27/28: : *insert.*
ENR 3.2-29/30: : *insert.*
ENR 3.2-31/32: : *insert.*
ENR 3.2-33/34: : *insert.*
ENR 3.2-35/36: : *insert.*
ENR 3.2-37/38: : *insert.*
ENR 3.2-39/40: : *insert.*
ENR 3.2-41/42: : *insert.*
ENR 3.2-43/44: : *insert.*
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ENR 3.3-3/4: : *remove.*
ENR 3.3-5/6: : *remove.*
ENR 3.3-7/8: : *remove.*
ENR 3.3-9/10: : *remove.*
ENR 3.3-11/12: : *remove.*
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ENR 3.3-31/32: : *remove.*
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ENR 3.3-37/38: : *remove.*
ENR 3.3-39/40: : *remove.*
ENR 3.3-41/42: : *remove.*
ENR 3.3-43: : *remove.*
ENR-3.5-3: : *replace.*
ENR-3.6-3: : *replace.*
ENR-3.6-5: : *replace.*
ENR-5.1-7: : *replace.*
ERC-6-1 En-Route Chart: : *replace.*
AD 2.WSSS-5/6: : *replace.*
AD-2-WSSS-ADC-2: : *replace.*
AD-2-WSSS-STAR-3 to 3.1: : *replace.*
AD-2-WSSS-STAR-4 to 4.1: : *replace.*
AD-2-WSSL-VFR-1: : *replace.*
AD-2-WSSL-IFR-1: : *replace.*
AD-2-WSSL-IFR-2: : *replace.*

AIP AMENDMENT

<i>NR/Year</i>	<i>Publication date</i>	<i>Date inserted</i>	<i>Inserted by</i>
02/2023	20 APR 2023	20 APR 2023	

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GEN 0.3 RECORD OF CURRENT AIP SUPPLEMENTS

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
071/2018	Paya Lebar Airport - Saddle Cranes	AD	13 NOV 2018 / 31 DEC 2023	
053/2019	Paya Lebar Airport - Saddle Cranes and Luffer Crane	AD	07 MAY 2019 / 31 DEC 2023	
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	
059/2020	Singapore Changi Airport - Long term closure of aircraft stand E20 at Terminal 2, Singapore Changi Airport	AD	25 AUG 2020 / 30 DEC 2026	
161/2021	Singapore Changi Airport - Steel Frame	AD	17 JAN 2022 / 17 DEC 2024	
028/2022	Paya Lebar Airport - Flat-Top Cranes	AD	12 JAN 2022 / 31 DEC 2023	
032/2022	Paya Lebar Airport - Cranes	AD	10 FEB 2022 / 31 DEC 2023	
035/2022	Paya Lebar Airport - Suspended Scaffold	AD	10 FEB 2022 / 31 DEC 2023	
036/2022	Paya Lebar Airport - Mobile Crane	AD	10 FEB 2022 / 31 DEC 2023	
037/2022	Paya Lebar Airport - Crawler Cranes	AD	10 FEB 2022 / 31 DEC 2023	
042/2022	Paya Lebar Airport - Mobile Crane	AD	10 FEB 2022 / 31 DEC 2023	
045/2022	Singapore Changi Airport - Frangible Frames	AD	01 APR 2022 / 31 JAN 2024	
048/2022	Paya Lebar Airport - Cranes	AD	10 MAR 2022 / 31 DEC 2023	
051/2022	Paya Lebar Airport - Tower Cranes	AD	10 MAR 2022 / 31 DEC 2023	
058/2022	Paya Lebar Airport - Mobile Cranes	AD	12 APR 2022 / 30 SEP 2023	
059/2022	Paya Lebar Airport - Topless Cranes	AD	12 APR 2022 / 30 SEP 2023	
067/2022	Paya Lebar Airport - Obstacles	AD	12 APR 2022 / 30 DEC 2023	
073/2022	Paya Lebar Airport - Cranes	AD	05 MAY 2022 / 30 APR 2023	
079/2022	Paya Lebar Airport - Luffing Cranes	AD	02 JUN 2022 / 30 MAY 2023	
083/2022	Paya Lebar Airport - Topless Tower Cranes	AD	07 JUL 2022 / 10 JUN 2023	
085/2022	Paya Lebar Airport - Tower Crane	AD	07 JUL 2022 / 17 JUN 2023	
086/2022	Paya Lebar Airport - Mobile Cranes	AD	07 JUL 2022 / 21 JUN 2023	
087/2022	Paya Lebar Airport - Luffing Crane	AD	07 JUL 2022 / 25 JUN 2023	
088/2022	Paya Lebar Airport - Crawler Crane	AD	07 JUL 2022 / 31 DEC 2023	
089/2022	Paya Lebar Airport - Luffer Crane	AD	07 JUL 2022 / 21 JUN 2023	
091/2022	Paya Lebar Airport - Cranes	AD	07 JUL 2022 / 31 DEC 2023	
093/2022	Paya Lebar Airport - Mobile Crane	AD	07 JUL 2022 / 31 DEC 2023	

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
095/2022	Paya Lebar Airport - Luffer Cranes	AD	07 JUL 2022 / 31 DEC 2023	
096/2022	Paya Lebar Airport - Mobile Cranes	AD	07 JUL 2022 / 21 JUN 2023	
097/2022	Paya Lebar Airport - Luffing Crane	AD	07 JUL 2022 / 31 DEC 2023	
100/2022	Sembawang Aerodrome - Mobile Cranes	AD	07 JUL 2022 / 03 JUN 2023	
103/2022	Paya Lebar Airport - Mobile Cranes	AD	04 AUG 2022 / 04 AUG 2023	
104/2022	Paya Lebar Airport - Topless Cranes	AD	04 AUG 2022 / 31 AUG 2023	
105/2022	Paya Lebar Airport - Cranes	AD	04 AUG 2022 / 30 JUL 2023	
106/2022	Paya Lebar Airport - Luffer Crane	AD	04 AUG 2022 / 31 JUL 2023	
107/2022	Paya Lebar Airport - Mobile Crane	AD	04 AUG 2022 / 31 DEC 2023	
108/2022	Paya Lebar Airport - Mobile Crane	AD	04 AUG 2022 / 31 JUL 2023	
109/2022	Paya Lebar Airport - Tower Cranes	AD	04 AUG 2022 / 01 AUG 2023	
111/2022	Paya Lebar Airport - Tower Crane	AD	04 AUG 2022 / 05 AUG 2023	
112/2022	Paya Lebar Airport - Mobile Crane	AD	04 AUG 2022 / 31 DEC 2023	
113/2022	Paya Lebar Airport - Mobile Crane	AD	04 AUG 2022 / 31 DEC 2023	
114/2022	Paya Lebar Airport - Cranes	AD	04 AUG 2022 / 30 DEC 2023	
115/2022	Paya Lebar Airport - Cranes	AD	04 AUG 2022 / 09 JUL 2023	
116/2022	Paya Lebar Airport - Tower Crane	AD	04 AUG 2022 / 09 JUL 2023	
117/2022	Paya Lebar Airport - Topless Cranes	AD	04 AUG 2022 / 01 DEC 2023	
118/2022	Paya Lebar Airport - Luffing Cranes	AD	04 AUG 2022 / 01 DEC 2023	
122/2022	Paya Lebar Airport - Cranes	AD	06 SEP 2022 / 31 DEC 2023	
123/2022	Paya Lebar Airport - Luffing Cranes	AD	06 SEP 2022 / 31 DEC 2023	
124/2022	Paya Lebar Airport - Mobile Cranes	AD	06 SEP 2022 / 28 DEC 2023	
125/2022	Paya Lebar Airport - Luffer Cranes	AD	06 SEP 2022 / 31 DEC 2023	
126/2022	Paya Lebar Airport - Mobile Crane	AD	06 SEP 2022 / 02 SEP 2023	
127/2022	Paya Lebar Airport - Luffer Crane	AD	06 SEP 2022 / 05 AUG 2023	
128/2022	Paya Lebar Airport - Cranes	AD	06 SEP 2022 / 05 AUG 2023	
129/2022	Singapore Changi Airport - Release of weather balloon with dual radiosondes	ENR	22 SEP 2022 / 21 JUN 2023	
130/2022	Seletar Airport - Closure of Helicopter Landing Area	AD	28 SEP 2022 / 30 SEP 2023	
131/2022	Paya Lebar Airport - Flat-Top Cranes	AD	30 NOV 2022 / 31 DEC 2023	
132/2022	Paya Lebar Airport - Cranes	AD	06 OCT 2022 / 07 OCT 2023	

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
133/2022	Paya Lebar Airport - Derrick Cranes	AD	06 OCT 2022 / 31 DEC 2023	
134/2022	Paya Lebar Airport - Mobile Crane	AD	06 OCT 2022 / 06 JUN 2023	
135/2022	Paya Lebar Airport - Crawler Cranes	AD	06 OCT 2022 / 20 SEP 2023	
136/2022	Paya Lebar Airport - Luffing Cranes	AD	06 OCT 2022 / 01 OCT 2023	
138/2022	Paya Lebar Airport - Luffing Cranes	AD	06 OCT 2022 / 01 MAY 2023	
139/2022	Paya Lebar Airport - Tower Cranes	AD	06 OCT 2022 / 23 SEP 2023	
140/2022	Paya Lebar Airport - Topless Cranes	AD	06 OCT 2022 / 01 SEP 2023	
141/2022	Paya Lebar Airport - Luffer Crane	AD	06 OCT 2022 / 10 DEC 2023	
143/2022	Singapore Changi Airport - Frangible Frames	AD	31 OCT 2022 / 31 JAN 2024	
144/2022	Temporary withdrawal and replacement of Mersing DVOR/DME (VMR)	AD/ENR	01 DEC 2022 / 03 JUN 2023	
145/2022	Paya Lebar Airport - Cranes	AD	10 NOV 2022 / 31 DEC 2023	
146/2022	Paya Lebar Airport - Topless Cranes	AD	10 NOV 2022 / 28 OCT 2023	
148/2022	Paya Lebar Airport - Cranes	AD	10 NOV 2022 / 01 NOV 2023	
149/2022	Paya Lebar Airport - Cranes	AD	10 NOV 2022 / 01 NOV 2023	
150/2022	Paya Lebar Airport - Mobile Cranes	AD	10 NOV 2022 / 20 APR 2023	
151/2022	Paya Lebar Airport - Topless Cranes	AD	10 NOV 2022 / 10 SEP 2023	
152/2022	Paya Lebar Airport - Mobile Cranes	AD	10 NOV 2022 / 29 NOV 2023	
154/2022	Paya Lebar Airport - Mobile Cranes	AD	15 DEC 2022 / 01 AUG 2023	
155/2022	Paya Lebar Airport - Tower Cranes	AD	15 DEC 2022 / 01 DEC 2023	
157/2022	Paya Lebar Airport - Cranes	AD	15 DEC 2022 / 15 NOV 2023	
158/2022	Paya Lebar Airport - Mobile Crane	AD	15 DEC 2022 / 31 DEC 2023	
159/2022	Paya Lebar Airport - Topless Cranes	AD	15 DEC 2022 / 01 NOV 2023	
160/2022	Paya Lebar Airport - Topless Cranes	AD	15 DEC 2022 / 31 DEC 2023	
162/2022	Singapore Changi Airport - Partial closure of Taxiways R1, R2, R3, and closure of aircraft stands E4 and F34 for construction work activities at Terminal 2	AD	31 JAN 2023 / 30 JAN 2024	
163/2022	Singapore Changi Airport - Closure of Taxiways P4, P5, Taxiway P6, and aircraft stand E12 for construction work activities at Terminal 2	AD	02 FEB 2023 / 30 AUG 2023	
001/2023	Paya Lebar Airport - Mobile Crane	AD	12 JAN 2023 / 31 DEC 2023	
002/2023	Paya Lebar Airport - Cranes	AD	12 JAN 2023 / 31 DEC 2023	
003/2023	Paya Lebar Airport - Cranes	AD	12 JAN 2023 / 31 DEC 2023	

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
004/2023	Paya Lebar Airport - Tower Cranes	AD	12 JAN 2023 / 31 DEC 2023	
005/2023	Paya Lebar Airport - Luffer Cranes	AD	12 JAN 2023 / 31 DEC 2023	
006/2023	Paya Lebar Airport - Tower Cranes	AD	12 JAN 2023 / 31 DEC 2023	
007/2023	Paya Lebar Airport - Crawler Tower Cranes	AD	12 JAN 2023 / 01 DEC 2023	
008/2023	Paya Lebar Airport - Luffing Cranes	AD	31 JAN 2023 / 31 DEC 2023	
009/2023	Paya Lebar Airport - Topless Tower Cranes	AD	12 JAN 2023 / 31 DEC 2023	
010/2023	Paya Lebar Airport - Cranes	AD	12 JAN 2023 / 31 DEC 2023	
011/2023	Paya Lebar Airport - Tower Cranes	AD	12 JAN 2023 / 30 JUN 2023	
012/2023	Paya Lebar Airport - Flat-Top Cranes	AD	12 JAN 2023 / 31 DEC 2023	
013/2023	Paya Lebar Airport - Flat-Top Cranes	AD	12 JAN 2023 / 31 DEC 2023	
014/2023	Paya Lebar Airport - Luffing Crane	AD	12 JAN 2023 / 30 JUN 2023	
015/2023	Paya Lebar Airport - Luffing Cranes	AD	12 JAN 2023 / 31 DEC 2023	
016/2023	Paya Lebar Airport - Flat-Top Cranes	AD	12 JAN 2023 / 31 DEC 2023	
017/2023	Paya Lebar Airport - Saddle Cranes	AD	12 JAN 2023 / 30 JUN 2023	
018/2023	Paya Lebar Airport - Topless Tower Cranes	AD	12 JAN 2023 / 31 DEC 2023	
019/2023	Paya Lebar Airport - Tower Cranes	AD	12 JAN 2023 / 19 DEC 2023	
020/2023	Paya Lebar Airport - Mobile Crane	AD	12 JAN 2023 / 28 OCT 2023	
021/2023	Paya Lebar Airport - Cranes	AD	12 JAN 2023 / 31 DEC 2023	
022/2023	Paya Lebar Airport - Mobile Cranes	AD	12 JAN 2023 / 31 DEC 2023	
023/2023	Paya Lebar Airport - Mobile Crane	AD	12 JAN 2023 / 20 OCT 2023	
024/2023	Singapore Changi Airport - Closure of aircraft stand F50 and taxilane R7 behind aircraft stand at Terminal 2	AD	26 JAN 2023 / 15 MAY 2023	
025/2023	Paya Lebar Airport - Cranes	AD	09 FEB 2023 / 31 DEC 2023	
026/2023	Paya Lebar Airport - Luffer Jib Cranes	AD	30 APR 2023 / 31 DEC 2023	
027/2023	Paya Lebar Airport - Flat-Top Cranes	AD	28 FEB 2023 / 31 DEC 2023	
028/2023	Paya Lebar Airport - Topless Cranes	AD	14 FEB 2023 / 31 DEC 2023	
029/2023	Paya Lebar Airport - Topless Cranes	AD	09 FEB 2023 / 31 DEC 2023	
030/2023	Paya Lebar Airport - Mobile Crane	AD	09 FEB 2023 / 26 JUN 2023	
031/2023	Paya Lebar Airport - Crawler Crane	AD	09 FEB 2023 / 30 JUL 2023	
032/2023	Paya Lebar Airport - Luffer Cranes	AD	09 FEB 2023 / 31 DEC 2023	

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
033/2023	Paya Lebar Airport - Topless Cranes	AD	09 FEB 2023 / 31 DEC 2023	
034/2023	Paya Lebar Airport - Mobile Cranes	AD	09 FEB 2023 / 12 DEC 2023	
035/2023	Paya Lebar Airport - Mobile Cranes	AD	09 FEB 2023 / 31 DEC 2023	
036/2023	Paya Lebar Airport - Mobile Crane	AD	09 FEB 2023 / 31 DEC 2023	
037/2023	Paya Lebar Airport - Tower Cranes	AD	09 FEB 2023 / 31 DEC 2023	
038/2023	Paya Lebar Airport - Mobile Crane	AD	09 FEB 2023 / 31 DEC 2023	
039/2023	Paya Lebar Airport - Cranes	AD	09 FEB 2023 / 10 JUL 2023	
040/2023	Singapore Changi Airport - Closure of Runway 02C/20C and Taxiways due to Changi East Development Works	AD	23 MAR 2023 / 06 SEP 2023	
041/2023	Implementation of Direct Routing Operations (DRO) for flights within Singapore FIR	ENR	20 APR 2023 PERM	
042/2023	Airspace Closure Kuala Lumpur and Singapore FIRs Exercise Bersama Shield 2023 012300UTC to 111100UTC May 2023	AD/ENR	01 MAY 2023 / 11 MAY 2023	
044/2023	Paya Lebar Airport - Cranes	AD	15 MAR 2023 / 31 DEC 2023	
045/2023	Paya Lebar Airport - Cranes	AD	15 MAR 2023 / 31 DEC 2023	
046/2023	Paya Lebar Airport - Tower Crane	AD	15 MAR 2023 / 31 DEC 2023	
047/2023	Paya Lebar Airport - Rough Terrain Crane	AD	15 MAR 2023 / 14 OCT 2023	
048/2023	Paya Lebar Airport - Luffing Crane	AD	15 MAR 2023 / 31 DEC 2023	
049/2023	Paya Lebar Airport - Cranes	AD	15 MAR 2023 / 31 DEC 2023	
050/2023	Paya Lebar Airport - Cranes	AD	15 MAR 2023 / 31 DEC 2023	
051/2023	Paya Lebar Airport - Luffing Crane	AD	15 MAR 2023 / 31 DEC 2023	
052/2023	Paya Lebar Airport - Luffer Jib Cranes	AD	15 MAR 2023 / 31 DEC 2023	
053/2023	Airspace Closures in support of Republic of Singapore Air Force (RSAF) operational requirements	AD/ENR	30 MAY 2023 / 12 AUG 2023	
054/2023	Singapore Changi Airport - Opening of new aircraft stands 951R to 954L	AD	18 MAY 2023 PERM	
055/2023	Paya Lebar Airport - Crawler Cranes	AD	13 APR 2023 / 01 APR 2024	
056/2023	Paya Lebar Airport - 25T Lorry Crane	AD	13 APR 2023 / 30 AUG 2023	
057/2023	Paya Lebar Airport - Cranes	AD	13 APR 2023 / 31 MAR 2024	
058/2023	Paya Lebar Airport - Mobile Crane	AD	13 APR 2023 / 31 DEC 2023	
059/2023	Paya Lebar Airport - Topless Cranes	AD	13 APR 2023 / 31 DEC 2023	
060/2023	Paya Lebar Airport - Crawler Tower Crane	AD	13 APR 2023 / 31 DEC 2023	
061/2023	Paya Lebar Airport - Mobile Crane	AD	13 APR 2023 / 23 MAR 2024	

<i>NR/Year</i>	<i>Subject</i>	<i>AIP section(s) affected</i>	<i>Period of validity (from/to)</i>	<i>Cancellation record</i>
062/2023	Paya Lebar Airport - Luffing Cranes	AD	13 APR 2023 / 23 MAR 2024	
063/2023	Paya Lebar Airport - Topless Cranes	AD	13 APR 2023 / 31 DEC 2023	
064/2023	Paya Lebar Airport - Mobile Crane	AD	13 APR 2023 / 10 MAR 2024	

GEN 0.4 CHECKLIST OF AIP PAGES

Part 1 – General (GEN)					
GEN 0					
GEN 0.1-1	26 MAR 2020	GEN 3.1-4	19 MAY 2022	ENR 1.6-6	03 NOV 2022
GEN 0.1-2	03 NOV 2022	GEN 3.2-1	19 MAY 2022	ENR 1.6-7	14 JUL 2022
GEN 0.1-3	19 MAY 2022	GEN 3.2-2	31 MAR 2016	ENR 1.6-8	03 NOV 2022
GEN 0.2-1	13 SEP 2018	GEN 3.2-3	31 MAR 2016	ENR 1.6-9	03 NOV 2022
GEN 0.2-2	23 FEB 2023	GEN 3.2-4	20 APR 2023	ENR 1.6-10	03 NOV 2022
GEN 0.2-3	20 APR 2023	GEN 3.2-5	14 JUL 2022	ENR 1.6-11	03 NOV 2022
GEN 0.3-1	20 APR 2023	GEN 3.2-6	19 MAY 2022	ENR 1.7-1	14 JUL 2022
GEN 0.3-2	20 APR 2023	GEN 3.3-1	19 MAY 2022	ENR 1.7-2	14 JUL 2022
GEN 0.3-3	20 APR 2023	GEN 3.3-2	19 MAY 2022	ENR 1.7-3	15 AUG 2019
GEN 0.3-4	20 APR 2023	GEN 3.4-1	19 MAY 2022	ENR 1.7-4	15 AUG 2019
GEN 0.3-5	20 APR 2023	GEN 3.4-2	19 MAY 2022	ENR 1.7-5	15 AUG 2019
GEN 0.3-6	20 APR 2023	GEN 3.4-3	10 SEP 2020	ENR 1.7-6	03 NOV 2022
GEN 0.4-1	20 APR 2023	GEN 3.4-4	19 MAY 2022	ENR 1.7-7	03 NOV 2022
GEN 0.4-2	20 APR 2023	GEN 3.4-5	12 NOV 2015	ENR 1.8-1	03 NOV 2022
GEN 0.4-3	20 APR 2023	GEN 3.4-7	10 SEP 2020	ENR 1.8-2	03 NOV 2022
GEN 0.5-1	30 JAN 2020	GEN 3.4-9	21 JUL 2016	ENR 1.8-3	02 DEC 2021
GEN 0.6-1	05 NOV 2020	GEN 3.5-1	20 APR 2023	ENR 1.8-4	03 NOV 2022
GEN 0.6-2	19 MAY 2022	GEN 3.5-2	20 APR 2023	ENR 1.8-5	03 NOV 2022
GEN 0.6-3	19 MAY 2022	GEN 3.5-3	20 APR 2023	ENR 1.8-6	03 NOV 2022
GEN 1		GEN 3.5-4	22 APR 2021	ENR 1.8-7	03 NOV 2022
GEN 1.1-1	05 DEC 2019	GEN 3.5-5	19 MAY 2022	ENR 1.8-8	03 NOV 2022
GEN 1.1-2	22 APR 2021	GEN 3.5-6	31 DEC 2020	ENR 1.8-9	03 NOV 2022
GEN 1.2-1	05 NOV 2020	GEN 3.5-7	19 MAY 2022	ENR 1.8-10	03 NOV 2022
GEN 1.2-2	30 JAN 2020	GEN 3.5-8	19 MAY 2022	ENR 1.8-11	03 NOV 2022
GEN 1.2-3	19 MAY 2022	GEN 3.5-9	19 MAY 2022	ENR 1.8-12	03 NOV 2022
GEN 1.2-4	19 MAY 2022	GEN 3.6-1	19 MAY 2022	ENR 1.8-13	03 NOV 2022
GEN 1.2-5	02 DEC 2021	GEN 3.6-2	19 MAY 2022	ENR 1.8-14	03 NOV 2022
GEN 1.2-6	16 JUL 2020	GEN 3.6-3	07 OCT 2021	ENR 1.8-15	03 NOV 2022
GEN 1.2-7	30 JAN 2020	GEN 3.6-4	07 OCT 2021	ENR 1.8-16	03 NOV 2022
GEN 1.3-1	25 APR 2019	GEN 3.6-5	21 JUL 2016	ENR 1.8-17	03 NOV 2022
GEN 1.3-2	22 APR 2021	GEN 4		ENR 1.8-18	03 NOV 2022
GEN 1.3-3	22 APR 2021	GEN 4.1-1	14 JUL 2022	ENR 1.8-19	03 NOV 2022
GEN 1.3-4	12 AUG 2021	GEN 4.2-1	24 MAY 2018	ENR 1.8-20	03 NOV 2022
GEN 1.3-5	22 APR 2021	GEN 4.2-2	12 NOV 2015	ENR 1.8-21	03 NOV 2022
GEN-1.3/ARR PAX FLOW	25 APR 2019	GEN 4.2-3	12 NOV 2015	ENR 1.8-22	03 NOV 2022
GEN-1.3/DEP PAX FLOW 1	25 APR 2019	GEN 4.2-4	12 NOV 2015	ENR 1.8-23	03 NOV 2022
GEN-1.3/DEP PAX FLOW 2	25 APR 2019	GEN 4.2-5	12 NOV 2015	ENR 1.8-24	03 NOV 2022
GEN 1.4-1	22 APR 2021	GEN 4.2-6	12 NOV 2015	ENR 1.8-25	03 NOV 2022
GEN 1.4-2	05 NOV 2020	Part 2 – EN-ROUTE (ENR)		ENR 1.8-26	03 NOV 2022
GEN 1.4-3	14 JUL 2022	ENR 0		ENR 1.8-27	03 NOV 2022
GEN 1.5-1	12 NOV 2015	ENR 0.6-1	03 NOV 2022	ENR 1.8-28	03 NOV 2022
GEN 1.6-1	20 APR 2023	ENR 0.6-2	03 NOV 2022	ENR 1.9-1	12 AUG 2021
GEN 1.6-2	20 APR 2023	ENR 0.6-3	03 NOV 2022	ENR 1.9-2	07 OCT 2021
GEN 1.6-3	20 APR 2023	ENR 0.6-4	03 NOV 2022	ENR 1.9-3	07 OCT 2021
GEN 1.6-4	05 NOV 2020	ENR 0.6-5	20 APR 2023	ENR 1.9-4	07 OCT 2021
GEN 1.7-1	08 SEP 2022	ENR 0.6-6	03 NOV 2022	ENR 1.9-5	07 OCT 2021
GEN 1.7-2	23 FEB 2023	ENR 1		ENR 1.10-1	08 SEP 2022
GEN 1.7-3	23 FEB 2023	ENR 1.1-1	03 NOV 2022	ENR 1.10-2	20 APR 2023
GEN 1.7-4	23 FEB 2023	ENR 1.1-2	12 NOV 2015	ENR 1.10-3	14 JUL 2022
GEN 2		ENR 1.1-3	03 NOV 2022	ENR 1.11-1	03 NOV 2022
GEN 2.1-1	24 MAR 2022	ENR 1.1-4	03 NOV 2022	ENR 1.12-1	12 NOV 2015
GEN 2.1-2	03 NOV 2022	ENR 1.1-5	12 NOV 2015	ENR 1.12-2	12 NOV 2015
GEN 2.2-1	02 MAR 2017	ENR 1.1-6	03 NOV 2022	ENR 1.12-3	12 NOV 2015
GEN 2.2-2	02 MAR 2017	ENR 1.1-7	12 NOV 2015	ENR 1.12-4	12 NOV 2015
GEN 2.2-3	02 MAR 2017	ENR 1.1-8	14 JUL 2022	ENR 1.13-1	12 NOV 2015
GEN 2.2-4	05 JAN 2017	ENR 1.1-9	08 SEP 2022	ENR 1.14-1	10 DEC 2015
GEN 2.2-5	10 NOV 2016	ENR 1.1-10	08 SEP 2022	ENR 1.14-2	15 SEP 2016
GEN 2.3-1	12 NOV 2015	ENR 1.1-11	08 NOV 2018	ENR-1.14-3 to ENR-1.14-4	15 SEP 2016
GEN 2.3-2	12 NOV 2015	ENR 1.1-12	20 APR 2023	ENR-1.14-5 to ENR-1.14-6	15 SEP 2016
GEN 2.3-3	12 NOV 2015	ENR 1.1-13	03 NOV 2022	ENR-1.14-7 to ENR-1.14-8	15 AUG 2019
GEN 2.4-1	25 APR 2019	ENR 1.1-14	03 NOV 2022	ENR 2	
GEN 2.5-1	08 SEP 2022	ENR 1.2-1	24 MAR 2022	ENR 2.1-1	20 APR 2023
GEN-2.5-3	08 SEP 2022	ENR 1.3-1	12 NOV 2015	ENR 2.1-2	08 SEP 2022
GEN 2.6-1	12 NOV 2015	ENR 1.4-1	12 NOV 2015	ENR 2.1-3	03 JAN 2019
GEN 2.6-2	12 NOV 2015	ENR 1.5-1	03 NOV 2022	ENR 2.1-4	25 APR 2019
GEN 2.7-1	05 DEC 2019	ENR 1.5-2	14 JUL 2022	ENR-2.1-7	21 JUL 2016
GEN 3		ENR 1.5-3	03 NOV 2022	ENR-2.1-9	20 APR 2023
GEN 3.1-1	19 MAY 2022	ENR 1.5-4	03 NOV 2022	ENR-2.1-11A	21 JUL 2016
GEN 3.1-2	10 OCT 2019	ENR 1.6-1	03 NOV 2022	ENR-2.1-11B	08 SEP 2022
GEN 3.1-3	02 DEC 2021	ENR 1.6-2	03 NOV 2022	ENR-2.1-13	21 JUL 2016
		ENR 1.6-3	03 NOV 2022	ENR 3	
		ENR 1.6-4	03 NOV 2022	ENR 3.1-1	20 APR 2023
		ENR 1.6-5	03 NOV 2022	ENR 3.1-2	02 MAR 2017
				ENR 3.1-3	07 OCT 2021
				ENR 3.1-4	07 OCT 2021

ENR 3.1-5	12 NOV 2015	ENR 4.5-1	10 SEP 2020	AD 2.WSSS-33	31 DEC 2020
ENR 3.1-6	29 DEC 2022			AD 2.WSSS-34	31 DEC 2020
ENR 3.1-7	07 OCT 2021	ENR 5		AD 2.WSSS-35	31 DEC 2020
ENR 3.1-8	17 JUN 2021	ENR 5.1-1	30 JAN 2020	AD 2.WSSS-36	31 DEC 2020
ENR 3.1-9	08 SEP 2022	ENR 5.1-2	08 SEP 2022	AD 2.WSSS-37	31 DEC 2020
ENR 3.1-10	08 SEP 2022	ENR 5.1-3	14 JUL 2022	AD 2.WSSS-38	31 DEC 2020
ENR 3.1-11	07 OCT 2021	ENR 5.1-4	14 JUL 2022	AD 2.WSSS-39	17 JUN 2021
ENR 3.1-12	17 JUN 2021	ENR 5.1-5	14 JUL 2022	AD 2.WSSS-40	17 JUN 2021
ENR 3.1-13	17 JUN 2021	ENR-5.1-7	20 APR 2023	AD 2.WSSS-41	08 SEP 2022
ENR 3.1-14	08 SEP 2022	ENR 5.1-9	14 JUL 2022	AD 2.WSSS-42	07 OCT 2021
ENR 3.1-15	17 JUN 2021	ENR 5.2-1	03 JAN 2019	AD 2.WSSS-43	03 NOV 2022
ENR 3.1-16	17 JUN 2021	ENR 5.2-2	03 JAN 2019	AD 2.WSSS-44	23 FEB 2023
ENR 3.1-17	08 SEP 2022	ENR 5.2-3	03 JAN 2019	AD 2.WSSS-45	03 NOV 2022
ENR 3.2-1	20 APR 2023	ENR 5.3-1	14 JUL 2022	AD 2.WSSS-46	03 NOV 2022
ENR 3.2-2	20 APR 2023	ENR 5.4-1	12 NOV 2015	AD 2.WSSS-47	03 NOV 2022
ENR 3.2-3	20 APR 2023	ENR 5.5-1	23 FEB 2023	AD 2.WSSS-48	03 NOV 2022
ENR 3.2-4	20 APR 2023	ENR 5.6-1	21 MAY 2020	AD-2.WSSS-ADC-1	31 DEC 2020
ENR 3.2-5	20 APR 2023	ENR 5.6-2	12 NOV 2015	AD-2.WSSS-ADC-2	20 APR 2023
ENR 3.2-6	20 APR 2023			AD-2.WSSS-ADC-3	12 AUG 2021
ENR 3.2-7	20 APR 2023	ENR 6		AD-2.WSSS-AOC-1	08 SEP 2022
ENR 3.2-8	20 APR 2023	ENR 6-1	15 SEP 2016	AD-2.WSSS-AOC-2	31 DEC 2020
ENR 3.2-9	20 APR 2023	ERC-6-1 En-Route Chart	20 APR 2023	AD-2.WSSS-AOC-3	14 JUL 2022
ENR 3.2-10	20 APR 2023	WAC-2860-Singapore-Island	08 SEP 2022	AD-2.WSSS-AOC-4	08 SEP 2022
ENR 3.2-11	20 APR 2023			AD-2.WSSS-PATC-1	10 OCT 2019
ENR 3.2-12	20 APR 2023	Part 3 – AERODROMES (AD)		AD-2.WSSS-PATC-2	01 FEB 2018
ENR 3.2-13	20 APR 2023			AD-2.WSSS-PATC-3	31 DEC 2020
ENR 3.2-14	20 APR 2023	AD 0		AD-2.WSSS-PATC-4	31 DEC 2020
ENR 3.2-15	20 APR 2023	AD 0.6-1	02 DEC 2021	AD-2.WSSS-SID-1 to 1.1	12 AUG 2021
ENR 3.2-16	20 APR 2023	AD 0.6-2	03 NOV 2022	AD-2.WSSS-SID-2 to 2.1	12 AUG 2021
ENR 3.2-17	20 APR 2023	AD 0.6-3	03 NOV 2022	AD-2.WSSS-SID-3 to 3.1	12 AUG 2021
ENR 3.2-18	20 APR 2023	AD 0.6-4	03 NOV 2022	AD-2.WSSS-SID-4 to 4.1	12 AUG 2021
ENR 3.2-19	20 APR 2023	AD 0.6-5	03 NOV 2022	AD-2.WSSS-SID-5 to 5.1	12 AUG 2021
ENR 3.2-20	20 APR 2023	AD 0.6-6	03 NOV 2022	AD-2.WSSS-SID-6 to 6.1	12 AUG 2021
ENR 3.2-21	20 APR 2023	AD 0.6-7	03 NOV 2022	AD-2.WSSS-SID-7 to 7.1	12 AUG 2021
ENR 3.2-22	20 APR 2023			AD-2.WSSS-SID-8 to 8.1	12 AUG 2021
ENR 3.2-23	20 APR 2023	AD 1		AD-2.WSSS-SID-9 to 9.1	12 AUG 2021
ENR 3.2-24	20 APR 2023	AD 1.1-1	12 NOV 2015	AD-2.WSSS-SID-10 to 10.1	12 AUG 2021
ENR 3.2-25	20 APR 2023	AD 1.1-2	12 NOV 2015	AD-2.WSSS-SID-11 to 11.1	12 AUG 2021
ENR 3.2-26	20 APR 2023	AD 1.1-3	15 AUG 2019	AD-2.WSSS-SID-12 to 12.1	12 AUG 2021
ENR 3.2-27	20 APR 2023	AD 1.1-4	02 DEC 2021	AD-2.WSSS-SID-13 to 13.1	12 AUG 2021
ENR 3.2-28	20 APR 2023	AD 1.1-5	02 DEC 2021	AD-2.WSSS-SID-14 to 14.1	12 AUG 2021
ENR 3.2-29	20 APR 2023	AD 1.2-1	12 NOV 2015	AD-2.WSSS-SID-15 to 15.1	12 AUG 2021
ENR 3.2-30	20 APR 2023	AD 1.3-1	12 NOV 2015	AD-2.WSSS-SID-16 to 16.1	12 AUG 2021
ENR 3.2-31	20 APR 2023	AD 1.3-3	21 JUL 2016	AD-2.WSSS-SID-17 to 17.1	12 AUG 2021
ENR 3.2-32	20 APR 2023	AD 1.4-1	12 NOV 2015	AD-2.WSSS-SID-18 to 18.1	12 AUG 2021
ENR 3.2-33	20 APR 2023	AD 1.5-1	10 SEP 2020	AD-2.WSSS-SID-19 to 19.1	24 MAR 2022
ENR 3.2-34	20 APR 2023			AD-2.WSSS-STAR-1 to 1.1	23 FEB 2023
ENR 3.2-35	20 APR 2023	AD 2		AD-2.WSSS-STAR-2 to 2.1	23 FEB 2023
ENR 3.2-36	20 APR 2023	AD 2.WSSS-1	31 DEC 2020	AD-2.WSSS-STAR-3 to 3.1	20 APR 2023
ENR 3.2-37	20 APR 2023	AD 2.WSSS-2	31 DEC 2020	AD-2.WSSS-STAR-4 to 4.1	20 APR 2023
ENR 3.2-38	20 APR 2023	AD 2.WSSS-3	31 DEC 2020	AD-2.WSSS-STAR-5 to 5.1	12 AUG 2021
ENR 3.2-39	20 APR 2023	AD 2.WSSS-4	07 OCT 2021	AD-2.WSSS-STAR-6 to 6.1	12 AUG 2021
ENR 3.2-40	20 APR 2023	AD 2.WSSS-5	20 APR 2023	AD-2.WSSS-STAR-7 to 7.1	12 AUG 2021
ENR 3.2-41	20 APR 2023	AD 2.WSSS-6	31 DEC 2020	AD-2.WSSS-STAR-8 to 8.1	12 AUG 2021
ENR 3.2-42	20 APR 2023	AD 2.WSSS-7	31 DEC 2020	AD-2.WSSS-STAR-9 to 9.1	08 SEP 2022
ENR 3.2-43	20 APR 2023	AD 2.WSSS-8	31 DEC 2020	AD-2.WSSS-STAR-11 to 11.1	
ENR 3.2-44	20 APR 2023	AD 2.WSSS-9	31 DEC 2020		12 AUG 2021
ENR 3.4-1	12 NOV 2015	AD 2.WSSS-10	31 DEC 2020	AD-2.WSSS-STAR-13 to 13.1	
ENR 3.4-2	29 DEC 2022	AD 2.WSSS-11	31 DEC 2020		12 AUG 2021
ENR 3.4-3	29 DEC 2022	AD 2.WSSS-12	31 DEC 2020	AD-2.WSSS-STAR-14 to 14.1	
ENR 3.4-5	29 DEC 2022	AD 2.WSSS-13	07 OCT 2021		07 OCT 2021
ENR 3.4-7	21 JUL 2016	AD 2.WSSS-14	31 DEC 2020	AD-2.WSSS-STAR-15 to 15.1	
ENR 3.5-1	02 MAR 2017	AD 2.WSSS-15	31 DEC 2020		07 OCT 2021
ENR 3.5-2	02 MAR 2017	AD 2.WSSS-16	31 DEC 2020	AD-2.WSSS-STAR-16 to 16.1	
ENR 3.5-3	20 APR 2023	AD 2.WSSS-17	31 DEC 2020		12 AUG 2021
ENR 3.6-1	23 FEB 2023	AD 2.WSSS-18	03 NOV 2022	AD-2.WSSS-STAR-17 to 17.1	
ENR 3.6-2	07 OCT 2021	AD 2.WSSS-19	25 FEB 2021		12 AUG 2021
ENR 3.6-3	20 APR 2023	AD 2.WSSS-20	31 DEC 2020	AD-2.WSSS-STAR-18 to 18.1	
ENR 3.6-5	20 APR 2023	AD 2.WSSS-21	31 DEC 2020		12 AUG 2021
		AD 2.WSSS-22	14 JUL 2022	AD-2.WSSS-STAR-19 to 19.1	
		AD 2.WSSS-23	31 DEC 2020		12 AUG 2021
		AD 2.WSSS-24	31 DEC 2020	AD-2.WSSS-STAR-20 to 20.1	
		AD 2.WSSS-25	07 OCT 2021		12 AUG 2021
		AD 2.WSSS-26	31 DEC 2020	AD-2.WSSS-STAR-21 to 21.1	
		AD 2.WSSS-27	31 DEC 2020		12 AUG 2021
ENR 4.1-1	03 NOV 2022	AD 2.WSSS-28	08 SEP 2022	AD-2.WSSS-IAC-1	14 JUL 2022
ENR 4.1-2	08 SEP 2022	AD 2.WSSS-29	31 DEC 2020	AD-2.WSSS-IAC-2	14 JUL 2022
ENR 4.3-1	12 NOV 2015	AD 2.WSSS-30	17 JUN 2021	AD-2.WSSS-IAC-5	14 JUL 2022
ENR 4.4-1	12 AUG 2021	AD 2.WSSS-31	17 JUN 2021	AD-2.WSSS-IAC-6	14 JUL 2022
ENR 4.4-2	12 AUG 2021	AD 2.WSSS-32	31 DEC 2020	AD-2.WSSS-IAC-7	14 JUL 2022
ENR 4.4-3	08 SEP 2022				
ENR 4.4-4	08 SEP 2022				
ENR 4.4-5	08 SEP 2022				
ENR 4.4-6	08 SEP 2022				

AD-2-WSSS-IAC-9 to 9.1	08 SEP 2022	AD-2-WIDD-SID-3	12 NOV 2015
AD-2-WSSS-IAC-10 to 10.1	08 SEP 2022	AD-2-WIDD-SID-4	12 NOV 2015
AD-2-WSSS-IAC-11 to 11.1	14 JUL 2022	AD-2-WIDD-STAR-1	12 NOV 2015
AD-2-WSSS-IAC-12 to 12.1	14 JUL 2022	AD-2-WIDD-STAR-2	12 NOV 2015
AD-2-WSSS-IAC-13 to 13.1	08 SEP 2022	AD-2-WIDD-STAR-3	12 NOV 2015
AD-2-WSSS-IAC-14 to 14.1	14 JUL 2022	AD-2-WIDD-STAR-4	12 NOV 2015
AD-2-WSSS-VAC-1 to 1.1	08 SEP 2022	AD 2.WIDN-1	03 JAN 2019
AD 2.WSSL-1	10 SEP 2020	AD 2.WIDN-2	03 JAN 2019
AD 2.WSSL-2	28 FEB 2019	AD-2-WIDN-SID-1	12 NOV 2015
AD 2.WSSL-3	15 AUG 2019	AD-2-WIDN-SID-2	12 NOV 2015
AD 2.WSSL-4	05 DEC 2019	AD-2-WIDN-SID-3	12 NOV 2015
AD 2.WSSL-5	12 AUG 2021	AD-2-WIDN-SID-4	12 NOV 2015
AD 2.WSSL-6	08 SEP 2022	AD-2-WIDN-STAR-1	12 NOV 2015
AD 2.WSSL-7	08 SEP 2022	AD-2-WIDN-STAR-2	12 NOV 2015
AD 2.WSSL-8	08 SEP 2022	AD-2-WIDN-STAR-3	21 JUL 2016
AD 2.WSSL-9	08 SEP 2022	AD-2-WIDN-STAR-4	12 NOV 2015
AD 2.WSSL-10	08 SEP 2022		
AD 2.WSSL-11	03 NOV 2022		
AD 2.WSSL-12	03 NOV 2022		
AD 2.WSSL-13	08 SEP 2022		
AD 2.WSSL-14	08 SEP 2022		
AD 2.WSSL-15	08 SEP 2022		
AD 2.WSSL-16	08 SEP 2022		
AD 2.WSSL-17	08 SEP 2022		
AD 2.WSSL-18	03 NOV 2022		
AD 2.WSSL-19	03 NOV 2022		
AD 2.WSSL-20	03 NOV 2022		
AD 2.WSSL-21	03 NOV 2022		
AD-2-WSSL-ADC-1	08 SEP 2022		
AD-2-WSSL-ADC-2	03 NOV 2022		
AD-2-WSSL-ADC-3	03 NOV 2022		
AD-2-WSSL-AOC-1	16 JUL 2020		
AD-2-WSSL-AOC-2	16 JUL 2020		
AD-2-WSSL-VAC-1	08 SEP 2022		
AD-2-WSSL-VAC-2	08 SEP 2022		
AD-2-WSSL-VAC-3	08 SEP 2022		
AD-2-WSSL-VAC-4	08 SEP 2022		
AD-2-WSSL-VDC-1 to 1.1	08 SEP 2022		
AD-2-WSSL-VDC-2 to 2.1	08 SEP 2022		
AD-2-WSSL-VFR-1	20 APR 2023		
AD-2-WSSL-IFR-1	20 APR 2023		
AD-2-WSSL-IFR-2	20 APR 2023		
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	14 JUL 2022		
AD 2.WSAP-9	07 OCT 2021		
AD 2.WSAP-10	16 JUL 2020		
AD 2.WSAP-11	14 JUL 2022		
AD-2-WSAP-ADC-1	16 JUL 2020		
AD-2-WSAP-ADC-2	16 JUL 2020		
AD-2-WSAP-AOC-1	24 MAR 2022		
AD-2-WSAP-IAC-1	08 SEP 2022		
AD-2-WSAP-IAC-2	08 SEP 2022		
AD-2-WSAP-IAC-3	14 JUL 2022		
AD-2-WSAP-IAC-4	14 JUL 2022		
AD-2-WSAP-IAC-5	14 JUL 2022		
AD-2-WSAP-IAC-6	14 JUL 2022		
AD 2.WSAT-1	16 JUL 2020		
AD 2.WSAT-2	26 MAR 2020		
AD 2.WSAT-3	25 FEB 2021		
AD 2.WSAT-4	25 FEB 2021		
AD 2.WSAT-5	12 AUG 2021		
AD 2.WSAT-6	07 OCT 2021		
AD 2.WSAT-7	12 NOV 2015		
AD 2.WSAT-8	25 FEB 2021		
AD-2-WSAT-ADC-1	17 JUN 2021		
AD 2.WSAG-1	16 JUL 2020		
AD 2.WSAG-2	08 NOV 2018		
AD 2.WSAG-3	12 AUG 2021		
AD 2.WSAG-4	03 NOV 2022		
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		

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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 ratified or 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

<https://sso.agc.gov.sg>

<https://www.caas.gov.sg/legislation-regulations/legislation>

Electronic versions of all Singapore legislation may be accessed via subscription to Lawnet at

<https://www.lawnet.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 Lobby
Singapore 237994.

Tel: (65) 68269600

Fax: (65) 68203341

URL: www.toppanleefung.com

1.1 CIVIL AVIATION LEGISLATION

No	Legislation	Citation
<u>Civil Aviation Authority of Singapore Act & related legislation</u>		
1	Civil Aviation Authority of Singapore Act 2009	2020 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
<u>Air Navigation Act & related legislation</u>		
12	Air Navigation Act 1966	2020 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 (139 – Aerodromes) Regulations 2023	S10/2023
21	Air Navigation (91 – General Operating Rules) Regulations 2018	S441/2018
22	Air Navigation (92 – Carriage of Dangerous Goods) Regulations 2022	S998/2022
23	Air Navigation (98 – Special Operations) Regulations 2018	S442/2018
24	Air Navigation (99 – Breath Testing for Alcohol) Regulations 2019	S177/2019
25	Air Navigation (Aviation Security) Order	Cap. 6, O5
26	Air Navigation (Carbon Emissions and Reporting) Regulations 2022	S997/2022
27	Air Navigation (Composition of Offences) Rules 2017	S667/2017
28	Air Navigation (Flight Crew Recency - Exemption) Order 2020	S347/2020
29	Air Navigation (Investigation of Accidents and Incidents) Order	Cap. 6, O7
30	Air Navigation (Licensing of Air Services) Regulations	Cap. 6, RG 2
31	Air Navigation (Paya Lebar and Tengah Aerodrome Fees) Order	Cap. 6, O1
32	Air Navigation (Prohibited Flights) Order	Cap. 6, O6
33	Air Navigation (Protected Areas) (No. 2) Order 2015	S435/2015
34	Air Navigation (Protected Areas) Order 2015	S350/2015
35	Air Navigation (Regulated Air Cargo Agents and Known Consignors) Regulations 2017	S166/2017
36	Air Navigation (Wreck and Salvage of Aircraft) Regulations	Cap. 6, RG 1
37	Designation of Authorised Persons	Cap. 6, N2
38	Use of Seletar Aerodrome	Cap. 6, N1
<u>Other Acts & related legislation</u>		
39	Carriage by Air Act 1988	2020 Rev Ed.
40	Carriage by Air (Parties to Conventions) Order	Cap. 32A, O1
41	Carriage by Air (Singapore Currency Equivalents) Order	Cap. 32A, O2
42	Carriage by Air (Montreal Convention, 1999) Act 2007	2020 Rev Ed.
43	Carriage by Air (Montreal Convention, 1999) (Exclusion from Convention) Order	Cap. 32B, O1
44	Tokyo Convention Act 1971	2020 Rev Ed.
45	Tokyo Convention (Convention Countries) Notification	Cap. 327, N1
46	Tokyo Convention (Protocol Countries) Notification 2019	S893/2019
47	Hijacking of Aircraft and Protection of Aircraft and International Airports Act 1978	2020 Rev Ed.
48	Infrastructure Protection Act 2017	Act 41 of 2017
49	International Interests in Aircraft Equipment Act 2009	2020 Rev Ed.
50	Immigration Act 1959	2020 Rev Ed.
51	Immigration (Authorised Places of Entry and Departure, and Rates) Notification 2012	S627/2012
52	Immigration Regulations	Cap. 133, RG 1
53	Arms and Explosives Act 1913	2020 Rev Ed.
54	Arms and Explosives (Aircraft Exemption) Rules	Cap. 13, R3
55	Arms and Explosives (Explosives) Rules	Cap. 13, R2
56	Arms and Explosives (Movement Control) Rules	Cap. 13, R4
57	International Organisations (Immunities and Privileges) Act 1948	2020 Rev Ed.
58	International Organisations (Immunities and Privileges) (International Civil Aviation Organisation) Order	Cap. 145, OR 4

1.2 OTHER RELEVANT LEGISLATION

No	Legislation	Citation
1	COVID-19 (Temporary Measures) Act 2020	Act 14 of 2020
2	COVID-19 (Temporary Measures) (Control Order) Regulations 2020	S254/2020
3	Infectious Diseases Act 1976	2020 Rev Ed.
4	Infectious Diseases (Certificates of Vaccination or Other Prophylaxis) Regulations 2008	S611/2008
5	Infectious Diseases (Quarantine) Regulations	Cap. 137, RG 1
6	Arms and Explosives (Arms) Rules	Cap. 13, R1
7	Inspector of Explosives	Cap. 13, N1
8	Arms Offences Act 1973	2020 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	Protocol Relating to an Amendment to the Convention on International Civil Aviation [Article 83 bis], signed at Montreal on 6 October 1980
3	International Air Services Transit Agreement, signed at Chicago on 7 December 1944
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
19	Protocol Supplementary to the Convention for the Suppression of Unlawful Seizure of Aircraft, done at Beijing on 10 September 2010
20	Convention on the Suppression of Unlawful Acts Relating to International Civil Aviation, done at Beijing on 10 September 2010

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 transshipment, 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.

3.2.5 LIST OF AERONAUTICAL CHARTS AVAILABLE

GEN 3.2.5 LIST OF AERONAUTICAL CHARTS AVAILABLE					
<i>Title of Chart Series</i>	<i>Scale</i>	<i>Name and/or number</i>		<i>Price (\$)</i>	<i>Date</i>
World Aeronautical Chart ICAO (WAC)	1:1 000 000	WAC 2860		In AIP	08 SEP 22
Enroute Chart ICAO (ENRC)		ERC 6-1		In AIP	20 APR 23
Instrument Approach Chart ICAO (IAC)		Singapore Changi			
	1:400 000	RWY 02L - ICW ILS/DME	AD-2-WSSS-IAC-1	In AIP	14 JUL 22
	1:400 000	RWY 02C - ICE ILS/DME	AD-2-WSSS-IAC-2	In AIP	14 JUL 22
	1:400 000	RWY 20R - ICH ILS/DME	AD-2-WSSS-IAC-5	In AIP	14 JUL 22
	1:400 000	RWY 20C - ICC ILS/DME	AD-2-WSSS-IAC-6	In AIP	14 JUL 22
	1:400 000	RWY 20C - VTK DVOR/DME	AD-2-WSSS-IAC-7	In AIP	14 JUL 22
	1:400 000	RWY 02L - RNP	AD-2-WSSS-IAC-9	In AIP	08 SEP 22
	1:400 000	RWY 02C - RNP	AD-2-WSSS-IAC-10	In AIP	08 SEP 22
	1:400 000	RWY 20R - RNP	AD-2-WSSS-IAC-11	In AIP	14 JUL 22
	1:400 000	RWY 20C - RNP	AD-2-WSSS-IAC-12	In AIP	14 JUL 22
	1:400 000	RWY 02R - RNP	AD-2-WSSS-IAC-13	In AIP	08 SEP 22
	1:400 000	RWY 20L - RNP	AD-2-WSSS-IAC-14	In AIP	14 JUL 22
		Paya Lebar			
	1:400 000	RWY 20 - PU DVOR/DME	AD-2-WSAP IAC-1	In AIP	08 SEP 22
	1:400 000	RWY 02 - PU DVOR/DME	AD-2-WSAP IAC-2	In AIP	08 SEP 22
	1:400 000	RWY 20 - IPS ILS/DME	AD-2-WSAP IAC-3	In AIP	14 JUL 22
	1:400 000	RWY 02 - IPN ILS/DME	AD-2-WSAP IAC-4	In AIP	14 JUL 22
	1:400 000	RWY 02 - RNP	AD-2-WSAP-IAC-5	In AIP	14 JUL 22
	1:400 000	RWY 20 - RNP	AD-2-WSAP-IAC-6	In AIP	14 JUL 22
Visual Approach Chart ICAO (VAC)	1:400 000	Singapore Changi	AD-2-WSSS-VAC-1	In AIP	08 SEP 22
		Seletar			
	1:100 000	RWY 03	AD-2-WSSL-VAC-1	In AIP	08 SEP 22
	1:100 000	RWY 21	AD-2-WSSL-VAC-2	In AIP	08 SEP 22
	1:100 000	RWY 03	AD-2-WSSL-VAC-3	In AIP	08 SEP 22
	1:100 000	RWY 21	AD-2-WSSL-VAC-4	In AIP	08 SEP 22
Visual Departure Chart		Seletar			
	1:100 000	RWY 03	AD-2-WSSL-VDC-1	In AIP	08 SEP 22
	1:100 000	RWY 21	AD-2-WSSL-VDC-2	In AIP	08 SEP 22
Aerodrome Chart ICAO (AC)		Singapore Changi	AD-2-WSSS-ADC-2	In AIP	20 APR 23
		Seletar	AD-2-WSSL-ADC-1	In AIP	08 SEP 22
		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	08 SEP 22
	1:10 000	RWY 20C/02C	AD-2-WSSS-AOC-2	In AIP	31 DEC 20
	1:10 000	RWY 02R/20L	AD-2-WSSS-AOC-4	In AIP	08 SEP 22
		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	24 MAR 22

GEN 3.5 METEOROLOGICAL SERVICES

3.5.1 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) 62446133 / (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.

3.5.2 AREA OF RESPONSIBILITY

- 2.1 Area meteorological watch is provided for the Singapore FIR.

3.5.3 METEOROLOGICAL OBSERVATIONS AND REPORTS

TABLE GEN 3.5.3 Meteorological Observations and Reports

<i>Name of Station/ Location Indicator</i>	<i>Type & Frequency of Observation/ Automatic Observing Equipment</i>	<i>Types of MET Reports & Supplementary Information included</i>	<i>Observation System & Sites (s)</i>	<i>Hours of Operation</i>	<i>Climatological Information</i>
1	2	3	4	5	6
SINGAPORE/ Singapore Changi WSSS	Half hourly plus special observations	MET REPORT Special Report METAR SPECI TREND WS	a. Ultrasonic wind sensors at ends and middle of RWY 02L/20R (Runway 1) and RWY 02R/20L (Runway 3). Surface wind report in METAR and SPECI is taken from the wind sensor at the southern end of RWY 02L (with the sensor at the northern end of the runway 02R/20L as backup). b. Windsocks at ends of all runways. c. Transmissometers at both ends and in the middle of all runways. d. Low level wind shear observations made continuously by system of 15 surface wind sensors, located in the airport and its vicinity. e. Integrated and combination of MET Doppler X, C and S band weather radars and two wind lidars for detecting wind shear up to 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	MET REPORT Special Report 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 located at both ends of the runway, and an ultrasonic wind sensor located at 400m next to mid-runway. Surface wind report in METAR and SPECI is taken from the ultrasonic wind sensor.	H24	NIL

3.5.4 TYPES OF SERVICES

- 4.1 The Meteorological Office and Meteorological Watch Office at Singapore Changi Airport operate H24 and provide the following services for civil aviation:
- Full meteorological documentation and briefing for current operational planning for all flights operating out of Singapore Changi Airport;
 - Area meteorological watch over the Singapore FIR with the supply of meteorological information including SIGMET information to aircraft in flight through the Singapore ATS radio channels (see subsection AD 2.11);
 - HF RTF VOLMET broadcasts of meteorological information (see page GEN 3.5-7), Aviation weather report with trend statement, strong low level vertical wind shear report and aerodrome warnings are also included in VHF ATIS broadcasts for Singapore Changi Airport (see page GEN 3.4-3);
 - Meteorological information for ATS

- ← 4.2 Weather briefing by a forecaster is available H24 to qualified flight operations personnel at the Meteorological Office at Singapore Changi Airport or via telephone at (65)62446133 / (65)65422837. Weather information is available online via our Aviation Weather Services Portal at URL <http://www.weather.gov.sg/> (see paragraph 9.2 for further details).

- 4.3 The Meteorological Office at Seletar Aerodrome operates H24 and provides meteorological documentation without briefing for international and general aviation flights operating out of Seletar Aerodrome.
- 4.4 Details of documentation supplied for each flight are determined by arrangement between the operator and the Meteorological Office. In general, the pilot-in-command is provided with documentation comprising one or more fixed-time prognostic streamline/istotach/spot temperature charts of standard isobaric surfaces appropriate to the cruising level (ICAO model IS), one of fixed-time prognostic significant weather chart code form and appropriate aerodrome forecasts in TAF code form.
- 4.5 Routine aerodrome forecasts received from other Meteorological Offices are normally included in meteorological documentation without modification. When a required aerodrome forecast is not received, a provisional forecast may be issued by the Meteorological Office providing the documentation.
- 4.6 After documentation has been issued and until take-off (i.e. the latest ETD notified to the Meteorological Office), the Meteorological Office at Singapore Changi Airport makes available amendments to the documentation. It is the responsibility of the operator's local representative or the pilot-in-command to obtain any pre-departure amendment(s) from the Meteorological Office at Singapore Changi Airport. The pilot-in-command may request pre-departure amendment(s) through the Singapore Changi Airport Control Tower.
- 4.7 Climatological Summaries for Singapore Changi (WSSS-48698) are available from the Meteorological Service Singapore.

4.8 OBSERVING SYSTEMS AND OPERATING PROCEDURES AT SINGAPORE CHANGI AIRPORT AND SELETAR AERODROME**4.8.1 SINGAPORE CHANGI AIRPORT****4.8.1.1 RWY 02L/20R (Runway 1)**

- 4.8.1.1.1 Surface wind is measured by three ultrasonic wind sensors located as follows:

	<u>DIST FROM END OF RWY</u>	<u>DIST FROM RWY CENTRELINE</u>
(i) One set at	406 metres north of RWY 02L	120 metres
(ii) One set at	middle of runway	121 metres
(iii) One set at	381 metres south of RWY 20R	121 metres

- 4.8.1.1.2 RVR observations are made by means of three sets of transmissometers, located as follows:

	<u>DIST FROM END OF RWY</u>	<u>DIST FROM RWY CENTRELINE</u>
1st set	446 metres north of RWY 02L	120 metres
2nd set	Middle of runway	121 metres
3rd set	421 metres south of RWY 20R	121 metres

- 4.8.1.1.3 RVR is reported in steps of 25 metres between 0 and 400 metres, 50 metres between 400 and 800 metres and 100 metres between 800 and 1,500 metres.

4.8.1.1.4 Surface wind report in METAR and SPECI is taken from the wind sensor at the southern end of RWY 02L (with the sensor at the northern end of the runway 02R/20L as backup).

4.8.1.2 *RWY 02C/20C (Runway 2)*

4.8.1.2.1 Surface wind is measured by three cup anemometers and wind vanes located as follows:

	<u>DIST FROM END OF RWY</u>	<u>DIST FROM RWY CENTRELINE</u>
(i) One set at	450 metres north of RWY 02C	130 metres
(ii) One set at	middle of runway	130 metres
(iii) One set at	450 metres south of RWY 20C	130 metres

4.8.1.2.2 RVR observations are made by means of three sets of transmissometers, located as follows:

	<u>DIST FROM END OF RWY</u>	<u>DIST FROM RWY CENTRELINE</u>
1st set	400 metres north of RWY 02C	110 metres
2nd set	Middle of runway	110 metres
3rd set	400 metres south of RWY 20C	110 metres

4.8.1.2.3 RVR is reported in steps of 25 metres between 0 and 400 metres, 50 metres between 400 and 800 metres and 100 metres between 800 and 1,500 metres.

4.8.1.3 *RWY 02R/20L (Runway 3)*

4.8.1.3.1 Surface wind is measured by three ultrasonic wind sensors located as follows:

	<u>DIST FROM THRESHOLD</u>	<u>DIST FROM RWY CENTRELINE</u>
(i) One set at	428 metres north of RWY 02R	132 metres
(ii) One set at	Middle of runway	121 metres
(iii) One set at	435 metres south of RWY 20L	132 metres

4.8.1.3.2 RVR observations are made by means of three sets of transmissometers, located as follows:

	<u>DIST FROM THRESHOLD</u>	<u>DIST FROM RWY CENTRELINE</u>
1st Set	421 metres north of RWY 02R	120 metres
2nd Set	Middle of runway	121 metres
3rd Set	425 metres south of RWY 20L	120 metres

4.8.1.3.3 RVR is reported in steps of 25 metres between 0 and 400 metres, 50 metres between 400 and 800 metres and 100 metres between 800 and 1500 metres.

4.8.1.4 ***Wind Shear Observations (Singapore Changi Airport)***

4.8.1.4.1 Horizontal low level wind shear observations are measured continuously by a system consisting of 15 surface wind sensors, MET Doppler X, S and C band weather radars and two wind lidars located in Singapore Changi airport and its vicinity.

4.8.1.4.2 ATC will pass to all aircraft taking off or landing for the next 1/2 hour from the time of report whenever microburst or wind shear of intensity 15 knots or greater is observed/reported.

4.8.1.4.3 The phraseology used by ATC to warn pilots of the presence of wind shear of intensity between 15 and 30 knots is:

“..... (callsign) WIND SHEAR WARNING
STRONG LOW LEVEL WIND SHEAR OBSERVED IN THE VICINITY OF
CHANGI AIRPORT AT (time)”

1.6	RNAV APPROVED AIRCRAFT	ENR 1.10-2
1.7	RVSM AND NON-RVSM APPROVED AIRCRAFT	ENR 1.10-3
1.8	OTHER DOCUMENTARY AND / OR PERMIT REQUIREMENTS	ENR 1.10-3
ENR 1.11	ADDRESSING OF FLIGHT PLAN MESSAGES	ENR 1.11-1
ENR 1.12	INTERCEPTION OF CIVIL AIRCRAFT	ENR 1.12-1
1.1	ACTION BY INTERCEPTED AIRCRAFT	ENR 1.12-1
1.2	RADIO COMMUNICATION DURING INTERCEPTION	ENR 1.12-1
ENR 1.13	UNLAWFUL INTERFERENCE	ENR 1.13-1
ENR 1.14	AIR TRAFFIC INCIDENTS	ENR 1.14-1
1	DEFINITION OF AIR TRAFFIC INCIDENTS	ENR 1.14-1
2	USE OF AIR TRAFFIC INCIDENT REPORTING FORMS	ENR 1.14-1
3	AIR TRAFFIC INCIDENT REPORTING PROCEDURES	ENR 1.14-1
4	INVESTIGATION	ENR 1.14-2
5	CO-ORDINATION/INVESTIGATION AUTHORITY	ENR 1.14-2
6	OTHER REPORTS UNDER ICAO INITIATIVE FOR DATA COLLECTION AND ANALYSIS PURPOSES	ENR 1.14-2
7	INDEX OF REPORTING FORMS APPENDED TO THIS SECTION	ENR 1.14-2
ENR 2	AIR TRAFFIC SERVICES AIRSPACE	
ENR 2.1	FIR, UIR, TMA	ENR 2.1-1
ENR 2.2	[NIL] OTHER REGULATED AIRSPACE	ENR 2.2-1
ENR 3	ATS ROUTES	
ENR 3.1	CONVENTIONAL NAVIGATION ROUTES	ENR 3.1-1
ENR 3.2	AREA NAVIGATION ROUTES	ENR 3.2-1
	←	
ENR 3.3	[NIL] OTHER ROUTES	ENR 3.3-1
ENR 3.4	HELICOPTER ROUTES	ENR 3.4-1
1	HELICOPTER OPERATIONS OVER SINGAPORE ISLAND	ENR 3.4-1
2	PROCEDURES FOR THE CONTROL OF HELICOPTER OPERATIONS AT SINGAPORE CHANGI AIRPORT	ENR 3.4-3
ENR 3.5	OTHER ROUTES	ENR 3.5-1
1	SINJON CROSSING BY MILITARY AIRCRAFT	ENR 3.5-1
2	TRANSIT CHANNEL	ENR 3.5-2
3	HORSBURGH LIGHTHOUSE	ENR 3.5-2
ENR 3.6	ENROUTE HOLDING	ENR 3.6-1
ENR 4	RADIO NAVIGATION AIDS/SYSTEMS	
ENR 4.1	RADIO NAVIGATION AIDS - ENROUTE	ENR 4.1-1
ENR 4.2	[NIL] SPECIAL NAVIGATION SYSTEM	ENR 4.2-1
ENR 4.3	GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)	ENR 4.3-1
ENR 4.4	NAME-CODE DESIGNATIONS FOR SIGNIFICANT POINTS	ENR 4.4-1
ENR 4.5	AERONAUTICAL GROUND LIGHTS - ENROUTE	ENR 4.5-1
ENR 5	NAVIGATION WARNINGS	
ENR 5.1	PROHIBITED, RESTRICTED AND DANGER AREAS	ENR 5.1-1
1	INTRODUCTION	ENR 5.1-1
2	DANGER AREA	ENR 5.1-1
3	PROHIBITED AREA	ENR 5.1-1
4	RESTRICTED AREA	ENR 5.1-1
5	DESIGNATION OF AREA	ENR 5.1-1
ENR 5.2	MILITARY EXERCISE AND TRAINING AREAS	ENR 5.2-1

ENR 5.3	OTHER ACTIVITIES OF A DANGEROUS NATURE AND OTHER POTENTIAL HAZARD	ENR 5.3-1
5.3.1	OTHER ACTIVITIES OF DANGEROUS NATURE	ENR 5.3-1
5.3.2	OTHER POTENTIAL HAZARDS	ENR 5.3-1
ENR 5.4	AIR NAVIGATION OBSTACLES - AREA 1	ENR 5.4-1
ENR 5.5	AERIAL SPORTING AND RECREATIONAL ACTIVITIES	ENR 5.5-1
1	UNMANNED AIRCRAFT OPERATIONS AND KITE FLYING	ENR 5.5-1
2	AIRCRAFT OPERATIONS PROHIBITED OVER THE TERRITORY OF SINGAPORE	ENR 5.5-1
3	SEARCHLIGHT DISPLAY / LASER SHOWS - PAYA LEBAR CTR	ENR 5.5-1
4	UNMANNED AIRCRAFT OPERATIONS - PAYA LEBAR CTR	ENR 5.5-1
ENR 5.6	BIRD MIGRATION	ENR 5.6-1
1	BIRD MIGRATION	ENR 5.6-1
2	REPORTING OF WILDLIFE STRIKE	ENR 5.6-1
ENR 6	EN-ROUTE CHARTS	ENR 6-1

*Note: The following sections in this chapter are intentionally left blank:
ENR 0.1, ENR 0.2, ENR 0.3, ENR 0.4, ENR 0.5.*

7 LIGHT SIGNALS**Appendix A**

Light Directed towards aircraft concerned	From Aerodrome Control To:	
	Aircraft in Flight	Aircraft on the Ground
STEADY GREEN	Cleared to land	Cleared for take-off
STEADY RED	Give way to other aircraft and continue circling	Stop
SERIES OF GREEN FLASHES	Return for landing *	Cleared to taxi
SERIES OF RED FLASHES	Aerodrome unsafe, do not land	Taxi clear of landing area in use
SERIES OF WHITE FLASHES	Land at this aerodrome and proceed to apron *	Return to starting point on the aerodrome

* Clearance to land and to taxi will be thereafter given as a steady green light and a series of green flashes respectively.

8 DATA LINK SERVICES IN SINGAPORE FIR

8.1 BACKGROUND

- ← 8.1.1 Controller Pilot Data Link Communications (CPDLC) and Automatic Dependent Surveillance (ADS) data link applications will be used to provide services to FANS 1/A equipped aircraft, in particular within the Singapore FIR beyond the range of existing radar / ADS-B and VHF voice communications. Area Navigation (RNAV) routes suitable for ADS-C and / or CPDLC logon are described in ENR 3.2.
- 8.1.2 Messages will be transferred by VHF and satellite data link.
- 8.1.3 CPDLC supports the following services:
- a. Emergency alerting;
 - b. Pilot to Controller downlink of position reports and clearance requests;
 - c. Controller to Pilot uplink of ATC clearances and instructions; and
 - d. Free text as a supplement to pre-formatted message elements.
- 8.1.4 Pre-Departure Clearance (PDC) via CPDLC is available on selected ATS routes/destinations as described in WSSS AD 2.22 paragraph 8.4.
- 8.1.5 Automatic Dependent Surveillance (ADS) supports automatic reporting by the aircraft Flight Management System (FMS) of aircraft position and intent information. The FMS reports the required information in accordance with parameters selected by the ground system.

8.2 LOGON PROCEDURES

- 8.2.1 The AFN LOGON address for the Singapore FIR is WSJC.
- 8.2.2 To avoid automatic rejection of the LOGON, the flight identification number used by the pilot in the LOGON process must be identical to the flight identification number filed in the flight plan.
- 8.2.3 A LOGON must be received from the aircraft before any data link connections can be initiated by the ground system. This is achieved via the ATS facility notification (AFN) LOGON process to be initiated by the pilot in accordance with company procedures.
- 8.2.4 Aircraft requesting data link services inbound to Singapore FIR are required to manually LOGON onto WSJC at least 10 minutes prior to the estimated time for entering Singapore FIR. Data link equipped aircraft departing from aerodromes within the Singapore FIR and requesting data link may LOGON to WSJC prior to departure. Pilots who are unable to establish a data link connection are to inform ATC on VHF or HF RTF.
- 8.2.5 Pilots are reminded to provide the flight level on first contact with HF, including when established on data link.

ENR 1.10 FLIGHT PLANNING

1 PROCEDURES FOR SUBMISSION OF A FLIGHT PLAN

1.1 REQUIREMENT FOR SUBMISSION OF A FLIGHT PLAN

- 1.1.1 The pilot-in-command or airline operator shall submit an ICAO flight plan to ATC via the AFS or the AIM-SG system (accessible by registration at <https://aim-sg.caas.gov.sg>) for the following flights:
- Flights on airways, associated holding areas and all other controlled airspaces whether IFR or VFR;
 - Any flight or portion thereof to be provided with air traffic control service;
 - Any flight within or into designated areas, or along designated routes to facilitate co-ordination with appropriate military units or with air traffic service units in adjacent States in order to avoid the possible need for interception for the purpose of identification;
 - Any flight across international borders.
- 1.1.2 The pilot-in-command or the airline operator shall submit details of a test/training flight, planned to be conducted in the Seletar aerodrome circuit or in Light Aircraft Training Areas A, B and C, by electronic mail using the "Seletar Test/Training Form" retrievable from webpage: <https://aim-sg.caas.gov.sg>
- 1.1.3 For a flight that will be operating within Singapore only (except for flights mentioned in paragraph 1.1.2, the pilot-in-command or the operator shall submit the ICAO flight plan using the automated AIM-SG system and to include Military ATC addressee WSARYWYX. If for any reason a flight plan is not approved, the pilot-in-command shall contact RSAF Air Operations Control (AOC) at 67683702 for clarification.
- 1.1.4 The pilot-in-command or the operator of IFR flight operating out of Seletar is required to file via OMKOM or RECHI - PONJO - SJ.
- 1.1.5 The pilot-in-command or the operator of IFR flight operating into Seletar is required to file according to WSSL AD 2.22 Flight Procedures.
- 1.1.6 VFR flight operating between Seletar and Johor Bahru shall route via Point X (012830N1034954E), Tebrau City Mall (013259N1034748E), Felda Ulu Tebrau (013751N1034510E) and vice versa.

1.2 REQUIREMENT FOR SUBMISSION OF A FLIGHT PLAN FOR TEST FLIGHTS

- 1.2.1 Test flights shall be conducted on Airway G580 between HOSBA and NIMIX to minimise disruption to civil scheduled flight movements and to facilitate the test flight operations.
- 1.2.2 A flight plan shall be submitted for a test flight at least one hour before departure. The pilot-in-command or the operator shall include in Item 18 of the flight plan 'RMK/TEST FLT APPROVED BY ATC'.
- 1.2.3 The pilot-in-command shall maintain a 2-way VHF communication with Singapore ATC on the assigned VHF frequency at all times.
- 1.2.4 The pilot-in-command of the test flight shall adhere to ATC instructions at all times. Test flight manoeuvres are subject to ATC clearance, real-time coordination and traffic.
- 1.2.5 Procedures for application to conduct test flights are provided on GEN 1.2 section 6.

1.3 LEAD TIME FOR FILING FLIGHT PLANS AND FLIGHT PLAN ASSOCIATED MESSAGES

- 1.3.1 Flight plan shall be filed 120 hours, or five days, at the earliest but no later than 60 minutes prior to departure (estimated off-block time).
- 1.3.2 In the event of a delay of 30 minutes in excess of the estimated off-block time, the flight plan should be amended or a new flight plan submitted and the old flight plan cancelled, whichever is applicable. To indicate a delay to a flight, a DLA or a CHG message may be used depending on the circumstances.
- 1.3.3 The old flight plan shall be cancelled and a new flight plan shall be submitted when changes are made to any one of the following fields:
7/Aircraft Identification, 15/Route and/or 16/Destination Aerodrome.
- 1.3.4 A flight plan submitted in flight on HF RTF shall be submitted at least 20 minutes (or if on VHF RTF at least 10 minutes) prior to the intended point of entry into a control zone, control area, advisory area or advisory route.
- 1.3.5 A pilot-in-command may change from an IFR flight plan to a VFR flight plan by reporting "CANCELLING MY IFR FLIGHT" when weather conditions indicate that the remainder of the flight can be conducted under VFR.

[However, within Singapore, all flights whether IFR or VFR shall be regulated in accordance with instrument flight rules.] (see note 2 below).

1.3.6 ATC will acknowledge:

"IFR flight cancelled at.....(time)" or

if information is available which indicates the likelihood of IMC prevailing along the route, will notify these conditions as follows:

"Instrument MET conditions reported (or forecast) in the vicinity of....."

Note:

1) *The fact that pilot flying in VMC does not by itself constitute cancellation of an IFR flight plan.*

2) *Within the Singapore/Johor Airspace Complex and Control Zones all flights are regulated in accordance with IFR separation standards.*

1.4 **PERSONS ON BOARD (POB)**

1.4.1 The pilot-in-command or his representative is required to state the total number of persons on board (POB - i.e. passengers and crew) in the flight plan.

1.5 **DATA LINK COMMUNICATION AND SURVEILLANCE**

1.5.1 Aircraft using data link communications (see ENR 1.1 section 8) must insert one or more of the following letters in Item 10a of their flight plan to indicate serviceable COM aid equipment and capabilities available:

- J1 CPDLC ATN VDL Mode 2
- J2 CPDLC FANS 1/A HFDL
- J3 CPDLC FANS 1/A VDL Mode A
- J4 CPDLC FANS 1/A VDL Mode 2
- J5 CPDLC FANS 1/A SATCOM (INMARSAT)
- J6 CPDLC FANS 1/A SATCOM (MTSAT)
- J7 CPDLC FANS 1/A SATCOM (Iridium)
- P1 CPDLC RCP 400
- P2 CPDLC RCP 240
- P3 SATVOICE RCP 400
- P4-P9 Reserved for RCP

1.5.2 Aircraft using data link surveillance (see ENR 1.1 section 8) must insert one or more of the following letters in Item 10b of their flight plan to indicate serviceable SUR equipment and capabilities available:

- D1 ADS-C with FANS 1/A capabilities
- G1 ADS-C with ATN capabilities

1.5.3 Additional surveillance equipment or capabilities are to be listed in Item 18 following the indicator SUR/ .

1.6 **RNAV APPROVED AIRCRAFT**

← 1.6.1 Aircraft flying on RNAV routes (see ENR 3.2) must be RNAV equipped and should annotate their flight plan as follows:

	Item 10	Item 15	Item 18
RNAV equipment is carried	G (GNSS) I (Inertial Navigation) R (PBN approved) Guidance material in the application of performance based navigation to a specific route segment, route or area is contained in the Performance Based Navigation Manual (Doc 9613).	True Mach NR and FL at entry and exit points	The types of external GNSS augmentation, if any, are specified following the indicator NAV/ and separated by a space. The performance based navigation levels that can be met shall be specified following the indicator PBN/.

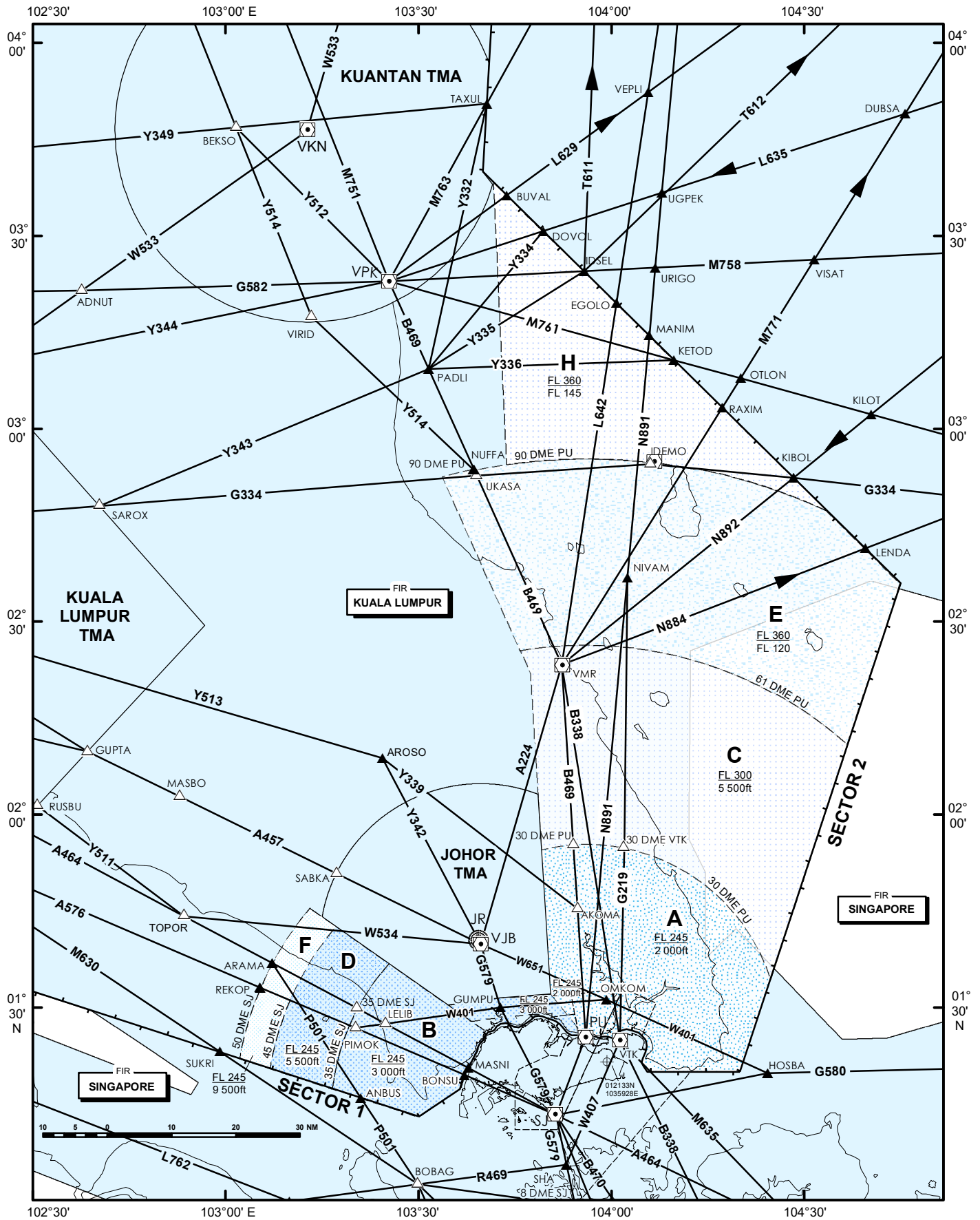
ENR 2 AIR TRAFFIC SERVICES AIRSPACE

ENR 2.1 FIR, UIR, TMA

<i>Name Lateral limits Upper limit/Lower limit Class of airspace</i>	<i>Unit providing service</i>	<i>Call sign Languages Area and conditions of use Hr of ser</i>	<i>Frequency /Purpose</i>	<i>Remarks</i>
1	2	3	4	5
SINGAPORE FIR 070000N 1030000E 070000N 1080000E 103000N 1140000E 082500N 1163000E 021500N 1083000E 010000N 1083000E 010000N 1085400E, thence along Kalimantan west coast to 001500N 1090000E to 000000N/S 1090000E 000000N/S 1080000E 005000S 1060000E 000000N/S 1051000E 000000N/S 1044600E, thence following the arc of a circle radius 100NM centred on Singapore Island 012136N 1034825E clockwise to 013900N 1021000E 011300N 1033000E 011700N 1033600E, thence east along the national boundary of Singapore/Malaysia, thence along 012000N to 012000N 1042000E 023600N 1044500E 034000N 1034000E 045000N 1034400E 064500N 1024000E 070000N 1030000E. UNL SFC	SINGAPORE ACC	SINGAPORE RADAR English H24	255.4MHz <u>Primary</u> 123.7 MHz 133.25MHz 134.4MHz 133.8MHz 134.2MHz 134.35 MHz <u>Secondary</u> 127.3 MHz 135.8MHz 128.1MHz 133.35MHz 133.6 MHz <u>SEA 1</u> 6556kHz 11297kHz <u>SEA 2</u> 5655kHz 8942kHz 11396kHz <u>SEA 3</u> 6556kHz	The responsibility for providing air traffic services to flights within the following portions of the Singapore FIR is vested in the Kuala Lumpur ACC: The airspace between a line from 023600N 1044500E to 020000N 1070000E and thereafter along 020000N, in the south, and a line along 060000N in the north, and from surface to FL150 west of longitude 105E and from surface level to FL200 east of longitude 105E. (Ref ANP-ASIA/PAC, Rec 7/4) SEA 1, SEA 2, SEA 3: SSB Suppressed Carriers.
		SINGAPORE CONTROL SOUTH CHINA SEA English H24	<u>AFN</u> <u>LOGON</u> WSJC	Suitably equipped aircraft operating outside radar cover and not in ADS-B exclusive airspace within the Singapore FIR should log on to Singapore's AFN LOGON address at least 10 minutes prior to entering the above-mentioned airspace in Singapore FIR. Area Navigation (RNAV) routes suitable for ADS-C and / or CPDLC logon are described in ENR 3.2.

<i>Name</i> <i>Lateral limits</i> <i>Upper limit/Lower limit</i> <i>Class of airspace</i>	<i>Unit</i> <i>providing</i> <i>service</i>	<i>Call sign</i> <i>Languages</i> <i>Area and</i> <i>conditions of</i> <i>use</i> <i>Hr of ser</i>	<i>Frequency</i> <i>/Purpose</i>	<i>Remarks</i>
1	2	3	4	5
AREAS WITHIN THE KUALA LUMPUR FIR FOR WHICH SINGAPORE ACC IS RESPONSIBLE FOR PROVIDING ATS				
SECTOR 1: That airspace contained within coordinates 011300N 1033000E 012203N 1030209E thence along an arc radius 50 DME SJ to 014529N 1031305E 014225N 1031728E, thence along the Johor TMA western boundary to 013022N 1033437E 012600N 1034055E, thence along the Peninsular Malaysia and Singapore international boundary to 011700N 1033600E 011300N 1033000E. The airspace herein is designated as follows: a. AREA B (SJ DVOR/DME - 35 DME SJ) - 3 000ft to FL245 b. AREA D (35 DME SJ - 45 DME SJ) - 5 500ft to FL245 c. AREA F (45 DME SJ - 50 DME SJ) - 9 500ft to FL245	SINGAPORE ACC	SINGAPORE RADAR English H24	<u>Primary</u> 133.25MHz <u>Secondary</u> 135.8MHz	Controlling Authority: Johor APP for airspaces below Sectors 1 and 2, Airway W401 and south of VMR DVOR. <u>Note:</u> <i>In the event an aircraft in the areas is forced to make an emergency descent which will penetrate Malaysian airspace, the pilot shall advise Singapore ATC immediately.</i>
SECTOR 2: That airspace contained within coordinates 013206N 1035031E 022205N 1034724E 025234N 1033340E 025432N 1034341E 033822N 1034139E 023600N 1044500E 012000N 1042000E 012000N 1040528E thence along the Peninsular Malaysia and Singapore international boundary to 012600N 1034055E to 013022N 1033437E 013130N 1034236E to 013206N 1035031E. The airspace herein is designated as follows: a. AREA A (PU DVOR/DME - 30 DME PU excluding the northern portion of Changi CTR) - 2 000FT to FL245 b. AREA C (30 DME PU - 61 DME PU) - 5 500FT to FL300 c. AREA E (61 DME PU - 90 DME PU) - FL120 to FL360 d. AREA H (from 025432N 1034341E thence along the 90 DME PU arc to the FIR boundary (024712N 1043337E) thence to 033822N 1034139E, 025432N 1034341E) - FL145 to FL360	SINGAPORE ACC	SINGAPORE RADAR English H24	<u>Primary</u> 123.7 MHz 133.8 MHz <u>Secondary</u> 127.3 MHz	
ATS ROUTES W401 and G579 a. W401 [Airspace between OMKOM and PU radial 324 from 2,000ft to FL245 and PU radial 324 to PIMOK (excluding WMP228) from 3,000ft to FL245]. b. G579 from 2000ft to FL460.	SINGAPORE ACC	SINGAPORE RADAR English H24		

AIRSPACE DIVISION KUALA LUMPUR/SINGAPORE AREAS CONTROL CENTRES



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ENR 3 ATS ROUTES

ENR 3.1 CONVENTIONAL NAVIGATION ROUTES

Route Designator {RNP Type}		[Route Usage Notes]								
	Significant Point Name	Significant Point Coordinates							Remarks	
{RNP Type}	Track MAG ↓ ↑	Dist NM	(COP)	Upper limit Lower limit	MNM FLT ALT	Lateral limits NM	FL series		Controlling unit Frequency {Airspace class} Remarks	
							↓	↑		
1	2	3	4	5	6	7	8	9	10	
A224		Route availability: (1) H24								
▲ JOHOR BAHRU DVOR/DME (VJB)		013950.4N 1033939.2E								
		196° 016°	45.3NM		FL 460 5500 FT ALT	6000 FT	10	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A –ABV FL150 Class B –BLW FL150]
▲ MERSING DVOR/DME (VMR) (58 DME PU)		022318N 1035218E								

Route Designator {RNP Type}		[Route Usage Notes]							
	Significant Point Name	Significant Point Coordinates							Remarks
{RNP Type}	Track MAG ↓ ↑	Dist NM	{COP}	Upper limit Lower limit	MNM FLT ALT	Lateral limits NM	FL series		Controlling unit Frequency {Airspace class} Remarks
							↓	↑	
1	2	3	4	5	6	7	8	9	10
A457		Route availability: (1) H24							
▲ JOHOR BAHRU DVOR/DME (VJB)		013950.4N 1033939.2E							
		296° 116°	25.0NM		FL 460 4500 FT ALT	5000 FT	20	Even ⁽¹⁾	[Class A –ABV FL150 Class B –BLW FL150]
Δ SABKA		015051N 1031713E							
		296° 116°	27.1NM		FL 460 4500 FT ALT	5000 FT	20	Even ⁽¹⁾	[Class A –ABV FL150 Class B –BLW FL150]
Δ MASBO		020248N 1025251E							
<u>Route Remarks:</u> <u>Flight Planning:</u> Northbound flights landing at WMKK and WMSA are to flight plan via A457. Tolerances of airway infringe WMD222 ASAHAN (activated by NOTAM) – Military activities									

ENR 3.2 AREA NAVIGATION ROUTES

Route Designator {RNP Type}		[Route Usage Notes]					
Significant Point Name		Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
L504		Route availability: (1) H24					
▲ OBDOS		002503N 1065551E					
			126.9NM	FL 460 FL 145	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] ⁽²⁾
▲ BAVUS (WSJC/WIIZ FIR BDRY)		000000N 1090000E					
<u>Route Remarks:</u> Lateral Limits: 25NM either side of line joining OBDOS to BAVUS. Singapore ACC FREQ: P134.4 MHz S128.1 MHz ADS-C and CPDLC services are available to suitably equipped aircraft operating outside radar cover within the Singapore FIR. Flight Planning: Flights overflying Singapore to destinations north of Kuala Lumpur and Subang are to flight plan via BAVUS L504 OBDOS M774 TPG A464 SJ G579 VJB Y342 AROSO Y513. Flights overflying Singapore to land at Kuala Lumpur and Subang are to flight Plan via BAVUS L504 OBDOS M774 TPG A464 SJ G579 VJB A457. <u>Point/Segment Remarks:</u> (2) NIL							

Route Designator {RNP Type}		[Route Usage Notes]					
Significant Point Name		Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
L517		Route availability: (1) H24					
▲ TERIX		041521N 1093456E				(2)	
			92.0NM	FL 460 FL 240		Even ⁽¹⁾	[Class A]
▲ GULIB (WSJC/WBFC FIR BDRY)		041714N 1110633E				(3)	
<u>Route Remarks:</u> Lateral Limits: 25NM either side of line joining GULIB to TERIX. ADS-C and CPDLC services are available to suitably equipped aircraft operating outside radar cover within the Singapore FIR. <u>Point/Segment Remarks:</u> (2) NIL (3) VMI 269° 173NM							

Route Designator {RNP Type}		[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates					Remarks
{RNP Type}	Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1	2	3	4	5	6	7
L625	Route availability: (1) H24					
▲ AKMON	081254N 1101306E					(6)
(10)	035° -	340.6NM	FL 460 FL 135			[Class A] (2) (3)
▲ LUSMO	033341N 1065534E					(7)
(10)	027° -	67.5NM	FL 460 FL 135			[Class A] (2) (3) (4)
▲ VERIN	023332N 1062425E					(6)
(10)	027° -	80.5NM	FL 460 FL 245			[Class A] (2) (5)
▲ TOMAN	012147N 1054717E					(6)
Route Remarks: Uni-directional for north-east bound flights from TOMAN to AKMON. No PDC Flight Levels FL310, FL320, FL350, FL360, FL390, FL400 applicable. Other levels available with prior approval.						
Point/Segment Remarks: (2) Lateral Limits: 10NM either side of line joining TOMAN to LUSMO and 25NM either side of the line joining LUSMO to AKMON. (3) ADS-C and CPDLC services are available to suitably equipped aircraft operating outside radar cover within the Singapore FIR. (4) Segment from VERIN to LUSMO use: P134.7 MHz S134.15 MHz (5) Segment from TOMAN to VERIN use: P134.2 MHz S133.35 MHz (6) NIL (7) VMR 069° 196.3NM						

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks	
1		2	3	4	5		6
L629		Route availability: (1) H24					
▲	DOLOX	044841N 1052247E					
			43.1NM	FL 460 FL 240		Odd ⁽¹⁾	[Class A] ⁽²⁾
▲	NOPAT	042313N 1044756E					
			52.2NM	FL 460 FL 240		Odd ⁽¹⁾	[Class A] ⁽²⁾
▲	VEPLI	035223N 1040542E					
			27.2NM	FL 460 FL 240		Odd ⁽¹⁾	[Class A] ⁽²⁾
▲	BUVAL (WSJC/MMFC FIR BDRY)	033622N 1034341E					
			22.6NM	FL 460 FL 240		Odd ⁽¹⁾	[Class A] ⁽²⁾
▲	PEKAN DVOR/DME (VPK)	032259N 1032524E					
Route Remarks: Lateral Limits: 10NM either side of line joining VPK DVOR/DME to BUVAL and 25NM either side of line joining BUVAL to DOLOX. Singapore ACC FREQ: P123.7 MHz S127.3 MHz Point/Segment Remarks: (2) NIL							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks	
1		2	3	4	5		6
L635		Route availability: (1) H24					
▲	MABLI	041717N 1061247E					
			59.9NM	FL 460 FL 240	Even ⁽¹⁾		[Class A] (2)
▲	SUSAR	035848N 1051547E					
			31.6NM	FL 460 FL 240	Even ⁽¹⁾		[Class A] (2)
▲	DUBSA	034901N 1044540E					
			39.7NM	FL 460 FL 240	Even ⁽¹⁾		[Class A] (2)
▲	UGPEK	033647N 1040752E					
			19.4NM	FL 460 FL 240	Even ⁽¹⁾		[Class A] (2)
▲	DOVOL (WSJC/WMFC FIR BDRY)	033047N 1034923E					
			25.2NM	FL 460 FL 240	Even ⁽¹⁾		[Class A] (2)
▲	PEKAN DVOR/DME (VPK)	032259N 1032524E					
<u>Route Remarks:</u> Lateral Limits: 10NM either side of line joining VPK DVOR/DME to DOVOL and 25NM either side of the line joining DOVOL to MABLI Singapore ACC FREQ: P123.7 MHz S127.3 MHz <u>Point/Segment Remarks:</u> (2) NIL							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks	
1		2	3	4	5		6
L642		Route availability: (1) H24					
▲ ESPOB (VVHM/WSJC FIR BDRY)		070000N 1053318E				(7)	
(10)			149.2NM	FL 460 FL 135		[Class A] (2) (3) (4)	
▲ ENREP		045224N 1041442E				(8)	
(10)			60.4NM	FL 460 FL 135	Odd ⁽¹⁾	Even ⁽¹⁾ [Class A] (5)	
▲ VEPLI		035223N 1040542E				(9)	
(10)			33.0NM	FL 460 FL 135	Odd ⁽¹⁾	Even ⁽¹⁾ [Class A] (5)	
▲ EGOLO (WSJC/WMFC FIR BDRY)		031934N 1040047E				(10)	
(10)			25.1NM	FL 460 FL 135	Odd ⁽¹⁾	Even ⁽¹⁾ [Class A] (6)	
▲ ROBMO		025440N 1035700E				(11)	
(10)			31.6NM	FL 460 FL 135	Odd ⁽¹⁾	Even ⁽¹⁾ [Class A] (6)	
▲ MERSING DVOR/DME (VMR)		022318N 1035218E					
Route Remarks:							
Lateral Limits:							
10NM either side of line joining VMR DVOR/DME to EGOLO and 25NM either side of line joining EGOLO to ESPOB.							
Bi-directional between VMR and ENREP.							
Point/Segment Remarks:							
(2) ADS-C service is available to suitably equipped aircraft operating outside radar cover (between ESPOB and ENREP) and not in the exclusive ADS-B airspace within Singapore FIR.							
(3) Uni-directional for southbound flights from ESPOB to ENREP. No PDC Flight Levels FL310, FL320, FL350, FL360, FL390, FL400 applicable. Other levels available with prior approval.							
(4) Segment from ESPOB to ENREP use: P134.35MHz S133.6MHz							
(5) Segment from ENREP to EGOLO use: P123.7 MHz S127.3 MHz							
(6) Segment from EGOLO to VMR use: P133.8 MHz S127.3 MHz							
(7) NIL							
(8) VMR 008° 150.0NM							
(9) VMR 008° 89.7NM							
(10) VMR 008° 56.6NM							
(11) VMR 008° 31.6NM							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks	
1		2	3	4	5	6	7
L644		Route availability: (1) H24					
▲	DUDIS (WSJC/VVHM FIR BDRY)	070000N 1064836E				(7)	
(10)		192° -	165.8NM	FL 460 FL 240	Odd ⁽¹⁾		[Class A] (2) (3)
▲	MABLI	041717N 1061247E				(7)	
(10)		169° -	45.9NM	FL 460 FL 240	Odd ⁽¹⁾		[Class A] (4)
▲	OPULA	033155N 1062118E				(7)	
(10)		169° -	10.8NM	FL 460 FL 240	Odd ⁽¹⁾		[Class A] (4)
▲	ONAPO	032116N 1062318E				(7)	
(10)		169° -	26.4NM	FL 460 FL 240	Odd ⁽¹⁾		[Class A] (4)
▲	OMLIV	025512N 1062812E				(7)	
(10)		169° -	24.2NM	FL 460 FL 240	Odd ⁽¹⁾		[Class A] (5)
▲	OMBAP	023116N 1063242E				(7)	
(10)		169° -	30.7NM	FL 460 FL 240	Odd ⁽¹⁾		[Class A] (5)
▲	OLSAM	020059N 1063824E				(7)	
(10)		169° -	18.3NM	FL 460 FL 240	Odd ⁽¹⁾		[Class A] (5)
▲	OBLOT	014256N 1064147E				(7)	
(10)		169° -	20.1NM	FL 460 FL 240	Odd ⁽¹⁾		[Class A] (5)
▲	OBGET	012307N 1064531E				(7)	
(10)		169° -	107.2NM	FL 460 FL 240	Odd ⁽¹⁾		[Class A] (6)
▲	KIKOR (WSJC/WIIZ FIR BDRY)	002244S 1070524E				(7)	
Route Remarks: Lateral Limits: 25NM either side of line joining DUDIS to KIKOR.							
Point/Segment Remarks: (2) ADS-C service is available to suitably equipped aircraft operating outside radar cover (between DUDIS and MABLI) and not in the exclusive ADS-B airspace within Singapore FIR. (3) Segment from DUDIS to MABLI use: P134.35 MHz S133.6 MHz (4) Segment from MABLI to OMLIV use: P134.7 MHz S134.15 MHz (5) Segment from OMLIV to OBGET use: P134.2 MHz S133.35 MHz (6) Segment from OBGET to KIKOR use: P134.4 MHz S128.1 MHz (7) NIL							

Route Designator {RNP Type}		[Route Usage Notes]					
Significant Point Name		Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
L649		Route availability: (1) H24					
▲ LAXOR (WSJC/RPHI FIR BDRY)		094937N 1144829E					
(10)			98.0NM	FL 460 FL 240		Even ⁽¹⁾	[Class A]
▲ URKET (WSJC/WBFC FIR BDRY)		081130N 1145000E					⁽²⁾
(10)			62.0NM	FL 460 FL 240		Even ⁽¹⁾	[Class A]
▲ DAKIX (WBFC/WSJC FIR BDRY)		070854N 1145054E					⁽³⁾
<u>Route Remarks:</u> Lateral Limits: 25NM either side of line joining DAKIX to LAXOR. Available only for flights departing from Brunei (WBSB), Labuan (WBKL) and Miri (WBGR) to Hong Kong (VHHH) only. No-PDC Flight Levels FL300 and FL380 applicable. ADS-C and CPDLC services are available to suitably equipped aircraft operating outside radar cover within the Singapore FIR.							
<u>Point/Segment Remarks:</u> (2) NIL (3) BRU 359° 136NM							

Route Designator {RNP Type}		[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates					Remarks
{RNP Type}	Track MAG	Dist NM	Upper limit Lower limit	FL series		Controlling unit Frequency {Airspace class} Remarks
	↓ ↑			↓	↑	
1	2	3	4	5	6	7
L762		Route availability: (1) H24				
▲ ASUNA	005948N 1030954E					(2)
(10)		66.2NM	FL 460 9500 FT ALT	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A]
▲ MIBEL (WIIZ/WSJC FIR BDRY)	012351N 1020816E					(2)
<u>Route Remarks:</u> Lateral Limits: 10NM either side of line joining ASUNA and MIBEL Available only for aircraft departing or arriving at airports within Singapore FIR. Singapore ACC FREQ: P133.25MHz S135.8MHz <u>Flight Planning:</u> Westbound - Aircraft originating only from airports within Singapore FIR to Medan and destinations beyond Jakarta FIR. Eastbound - Aircraft to destinations within Singapore FIR only. <u>Point/Segment Remarks:</u> (2) NIL						

Route Designator {RNP Type}		[Route Usage Notes]				
Significant Point Name		Significant Point Coordinates				Remarks
{RNP Type}	Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series		Controlling unit Frequency {Airspace class} Remarks
				↓	↑	
1	2	3	4	5	6	7
M522		Route availability: (1) H24				
▲ VINIK (WSJC/RPHI FIR BDRY)	083830N 1161348E					(2)
		27.5NM	FL 460 FL 135	Even ⁽¹⁾	Odd ⁽¹⁾	[Class A - ABV FL150 Class B - BLW FL150]
▲ NODIN (WSJC/WBFC FIR BDRY)	081100N 1161142E					(2)
<u>Route Remarks:</u> Portion of M522 within the Singapore FIR has been delegated to Kota Kinabalu ACC for provision of ATS Kinabalu ACC FREQ: 126.1 MHz <u>Point/Segment Remarks:</u> (2) NIL						

Route Designator {RNP Type}		[Route Usage Notes]				
	Significant Point Name	Significant Point Coordinates				Remarks
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks
1	2	3	4	5	6	
M630		Route availability: (1) H24				
▲	SUKRI	012306N 1025904E				
(5)			37.3NM	FL 460 5500 FT ALT	Odd ⁽¹⁾	[Class A - ABV FL150 Class B - BLW FL150]
Δ	BOBAG	010230N 1032954E				(2)
(5)			61.3NM	FL 460 5500 FT ALT	Odd ⁽¹⁾	[Class A - ABV FL150 Class B - BLW FL150]
▲	TANJUNG PINANG VOR/DME (TPG)	005413N 1043052E				
<u>Route Remarks:</u> Lateral Limits: 11.5NM either side of line joining SUKRI to TPG. Flight departing from aerodromes in Peninsular Malaysia and overflying WSJC are restricted to FL270 and above at waypoint SUKRI if the planned cruising level is FL270 or higher. <u>Flight Planning:</u> Southbound flight planning permitted for flights from Kuala Lumpur and airports beyond which are overflying beyond Singapore. Flights landing at Singapore Changi Airport to flight plan on A464. Singapore ACC FREQ: P133.25 MHz S135.8 MHz						
<u>Point/Segment Remarks:</u> (2) NIL						

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
M635		Route availability: (1) H24					
▲	TEKONG DVOR/DME (VTK)	012455N 1040120E					(4)
(10)			42.5NM	FL 460 5500 FT ALT	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A - ABV FL150 Class B - BLW FL150] (2)
▲	TANJUNG PINANG VOR/DME (TPG)	005413N 1043052E					
(10)			58.5NM	FL 460 5500 FT ALT	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A - ABV FL150 Class B - BLW FL150] (3)
▲	ATPOM	002425N 1052114E					
(10)			93.1NM	FL 460 5500 FT ALT	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A - ABV FL150 Class B - BLW FL150] (2)
▲	SURGA (WSJC/WIIZ FIR BDRY)	003657S 1063119E					
Route Remarks:							
Lateral Limits:							
25NM either side of line joining VTK to SURGA.							
Singapore ACC FREQ:							
P134.4 MHz							
S128.1 MHz							
Flight Planning:							
Flights overflying Singapore to destinations north of Kuala Lumpur and Subang are to flight plan via SURGA M635 TPG A464 SJ G579 VJB Y342 AROSO Y513.							
Flights overflying Singapore to land at Kuala Lumpur and Subang are to flight plan via SURGA M635 TPG A464 SJ G579 VJB A457.							
Point/Segment Remarks:							
(2)	NIL						
(3)	TPG 120.5° 58.5NM						
(4)	Kuala Lumpur / Singapore FIR boundary approximately 1.2NM north of VTK.						

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
M646		Route availability: (1) H24					
▲	KAMIN (WBFC/WSJC FIR BDRY)	023442N 1085536E					
(10)			69.6NM	FL 460 FL 240	Even ⁽¹⁾	Odd ⁽¹⁾	[Class A] (2)
▲	SABIP	020940N 1075044E					
(10)			26.1NM	FL 460 FL 240	Even ⁽¹⁾	Odd ⁽¹⁾	[Class A] (2)
▲	ESPIT	020011N 1072624E					
(10)			47.9NM	FL 460 FL 240	Even ⁽¹⁾	Odd ⁽¹⁾	[Class A] (2)
▲	OBL0T	014256N 1064147E					
(10)			58.5NM	FL 460 FL 240	Even ⁽¹⁾	Odd ⁽¹⁾	[Class A] (2)
▲	TOMAN	012147N 1054717E					
Route Remarks: Lateral Limits: 25NM either side of TOMAN to KAMIN.							
ADS-C and CPDLC services are available to suitably equipped aircraft operating outside radar cover (between SABIP and KAMIN) within the Singapore FIR.							
Singapore ACC FREQ: P134.2 MHz S133.35 MHz							
Point/Segment Remarks: (2) NIL							

Route Designator {RNP Type}		[Route Usage Notes]				
Significant Point Name		Significant Point Coordinates				Remarks
{RNP Type}	Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series		Controlling unit Frequency {Airspace class} Remarks
				↓	↑	
1	2	3	4	5	6	7
M753		Route availability: (1) H24				
▲ IPRIX (VVHM/WSJC FIR BDRY)	070000N 1040754E					
		127.2NM	FL 460 FL 155	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (2)
▲ ENREP	045224N 1041442E					
<u>Route Remarks:</u> Singapore ACC FREQ: P134.35 MHz S133.6 MHz ADS-C service is available to suitably equipped aircraft operating outside radar cover and not in the exclusive ADS-B airspace within the Singapore FIR. <u>Lateral Limits:</u> 25NM either side of line joining ENREP to IPRIX. <u>Point/Segment Remarks:</u> (2) NIL						

Route Designator {RNP Type}		[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates					Remarks
{RNP Type}	Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series		Controlling unit Frequency {Airspace class} Remarks
				↓	↑	
1	2	3	4	5	6	7
M754		Route availability: (1) H24				
▲ VINIK (WSJC/RPHI FIR BDRY)	083830N 1161348E					
		37.9NM	FL 460 FL 135	Even ⁽¹⁾	Odd ⁽¹⁾	[Class A-ABV FL150 Class B-BLW FL150] ⁽²⁾
▲ SUMLA (WSJC/MMFC FIR BDRY)	080242N 1160054E					
<u>Route Remarks:</u> Lateral Limits: 10NM either side of line joining SUMLA to VINIK. Portion of M754 within the Singapore FIR has been delegated to Kinabalu ACC for provision of ATS. Kinabalu ACC FREQ: 126.1 MHz <u>Point/Segment Remarks:</u> (2) BRU 019° 238.9NM						

Route Designator {RNP Type}		[Route Usage Notes]					
Significant Point Name		Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
M758		Route availability: (1) H24					
▲ PEKAN DVOR/DME (VPK)		032259N 1032524E					
			30.4NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (3)
▲ IDSEL (WMFC/WSJC FIR BDRY)		032432N 1035544E					
			11.1NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (4)
▲ URIGO		032505N 1040647E					
			24.8NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (4)
▲ VISAT		032620N 1043134E					
			41.1NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (4)
▲ MABAL		032826N 1051236E					
			35.7NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (4)
▲ ELGOR		033014N 1054818E					
			67.4NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (4)
▲ LUSMO		033341N 1065534E					
			164.6NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (2)
▲ TERIX		041521N 1093456E					
			140.5NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (2) (5)
▲ OLKIT (WSJC/WBFC FIR BDRY)		045010N 1115118E					
Route Remarks: Lateral Limits: 10NM either side of line joining VPK DVOR/DME to IDSEL and 25NM either side of line joining IDSEL to OLKIT.							
Point/Segment Remarks: (2) ADS-C and CPDLC services are available to suitably equipped aircraft operating outside radar cover (between LUSMO and OLKIT) within the Singapore FIR. (3) Segment from VPK to IDSEL use: P123.7 MHz S127.3 MHz (4) Segment from IDSEL to LUSMO use: P134.7 MHz S134.15 MHz (5) VJN 255° 258.0NM							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks	
1		2	3	4	5		6
M761		Route availability: (1) H24					
▲	PEKAN DVOR/DME (VPK)	032259N 1032524E					
			46.0NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (3)
▲	KETOD (WMFC/WSJC FIR BDRY)	031042N 1040942E					
			10.8NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (4)
▲	OTLON	030752N 1042006E					
			21.0NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (4)
▲	KILOT	030217N 1044023E					
			32.3NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (4)
▲	LIPRO	025342N 1051128E					
			118.8NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (5)
▲	BOBOB	022206N 1070558E					
			46.5NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (5)
▲	SABIP	020940N 1075044E					
			40.8NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (2) (5) (6)
▲	AGOBA (WSJC/WBFC FIR BDRY)	015840N 1083000E					
Route Remarks: Lateral Limits: 10NM either side of line joining VPK DVOR/DME to KETOD and 25NM either side of line joining KETOD to AGOBA. Portion of M761 within Singapore FIR between AGOBA and 1080000E has been delegated to Kuching ACC for provision of ATS. Kuching ACC FREQ: 134.5 MHz							
Point/Segment Remarks: (2) ADS-C and CPDLC services are available to suitably equipped aircraft operating outside radar cover (between SABIP and AGOBA) within the Singapore FIR. (3) Segment from VPK to KETOD use: P123.7 MHz S127.3 MHz (4) Segment from KETOD to LIPRO use: P134.7 MHz S134.15 MHz (5) Segment from LIPRO to AGOBA use: P134.2 MHz S133.35 MHz (6) VKG 285° 112.7NM							

Route Designator {RNP Type}		[Route Usage Notes]					
Significant Point Name		Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	7
M763		Route availability: (1) H24					
▲	ENREP	045224N 1041442E					(2)
			70.3NM	FL 460 FL 240	Even ⁽¹⁾	Odd ⁽¹⁾	[Class A]
▲	TAXUL (WMFC/WSJC FIR BDRY)	035035N 1034037E					(2)
			31.4NM	FL 460 FL 240	Even ⁽¹⁾	Odd ⁽¹⁾	[Class A]
▲	PEKAN DVOR/DME (VPK)	032259N 1032524E					
<u>Route Remarks:</u> Lateral Limits: 10NM either side of line joining VPK DVOR/DME to TAXUL and 25NM either side of line joining TAXUL to ENREP. Singapore ACC FREQ: P123.7 MHz S127.3 MHz <u>Point/Segment Remarks:</u> (2) NIL							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↗	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	7
M765		Route availability: (1) H24					
▲	IGARI	065612N 1033506E					
			53.3NM	FL 460 FL 135	Even ⁽¹⁾	Odd ⁽¹⁾	[Class B] ⁽²⁾
▲	VENLI (WMFC/WSJC FIR BDRY)	062848N 1024900E					
<u>Route Remarks:</u> Lateral Limits: 10NM either side of line joining VKB DVOR/DME to IGARI. Portion of M765 within the Singapore FIR has been delegated to Lumpur ACC for provision of ATS. Lumpur ACC FREQ: 132.6MHz							
<u>Point/Segment Remarks:</u> (2) VKB 058° 88.8NM							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks	
1		2	3	4	5		6
M767		Route availability: (1) H24					
▲	TEGID (RPHI/WSJC FIR BDRY)	085656N 1155143E				(2)	
(10)			242.5NM	FL 460 FL 205		[Class A]	
▲	TODAM	063138N 1123536E				(2)	
(10)			225.5NM	FL 460 FL 205		[Class A]	
▲	TERIX	041521N 1093456E				(2)	
(10)			186.8NM	FL 460 FL 205		[Class A]	
▲	BOBOB	022206N 1070558E				(2)	
(10)			99.0NM	FL 460 FL 205		[Class A]	
▲	TOMAN	012147N 1054717E				(2)	
<u>Route Remarks:</u> Lateral Limits: 25NM either side of line joining TOMAN to TEGID.							
ADS-C and CPDLC services are available to suitably equipped aircraft operating outside radar cover (between TEGID and BOBOB) within the Singapore FIR							
Singapore ACC FREQ: P134.2 MHz S133.35 MHz							
Uni-directional for south-west bound flights from TEGID to TOMAN. No PDC Flight Levels FL310, FL320, FL350, FL360, FL390, FL400 applicable. Other levels available with prior approval.							
<u>Point/Segment Remarks:</u> (2) NIL							

Route Designator {RNP Type}		[Route Usage Notes]				
Significant Point Name	Significant Point Coordinates					Remarks
{RNP Type}	Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1	2	3	4	5	6	
M768		Route availability: (1) H24				
▲ AKMON	081254N 1101306E					(2)
		96.9NM	FL 460 FL 135	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A]
▲ LAGOT	071632N 1113243E					(2)
		76.9NM	FL 460 FL 135	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A]
▲ TODAM	063138N 1123536E					(2)
		55.4NM	FL 460 FL 135	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A]
▲ ASISU (WSJC/WBFC FIR BDRY)	055906N 1132046E					(3)
<u>Route Remarks:</u> Lateral Limits: 25NM either side of line joining ASISU to AKMON. ADS-C and CPDLC services are available to suitably equipped aircraft operating outside radar cover within the Singapore FIR. <u>Point/Segment Remarks:</u> (2) NIL (3) BRU 305° 113.3NM						

Route Designator {RNP Type}		[Route Usage Notes]				
Significant Point Name		Significant Point Coordinates				Remarks
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6
M771		Route availability: (1) H24				
▲ DUDIS (WSJC/VVHM FIR BDRY)		070000N 1064836E				(7)
(10)			156.2NM	FL 460 FL 135		[Class A] (2) (3)
▲ DOLOX		044841N 1052247E				(8)
(10)			42.5NM	FL 460 FL 135		[Class A] (4)
▲ DAMOG		041225N 1050014E				(9)
(10)			27.5NM	FL 460 FL 135		[Class A] (4)
▲ DUBSA		034901N 1044540E				(10)
(10)			26.6NM	FL 460 FL 135		[Class A] (5)
▲ VISAT		032620N 1043134E				(11)
(10)			21.7NM	FL 460 FL 135		[Class A] (5)
▲ OTLON		030752N 1042006E				(12)
(10)			5.4NM	FL 460 FL 135		[Class A] (5)
▲ RAXIM (WMFC/WSJC FIR BDRY)		030318N 1041713E				(13)
(10)			47.0NM	FL 460 FL 135		[Class A] (6)
▲ MERSING DVOR/DME (VMR)		022318N 1035218E				

Route Remarks:Lateral Limits:

10NM either side of line joining VMR DVOR/DME to RAXIM and 25NM either side of line joining RAXIM to DUDIS.

Uni-directional for north-east bound flights from VMR to DUDIS. No PDC Flight Levels FL310, FL320, FL350, FL360, FL390, FL400 applicable. Other levels available with prior approval.

Point/Segment Remarks:

- (2) ADS-C service is available to suitably equipped aircraft operating outside radar cover (between DOLOX and DUDIS) and not in exclusive ADS-B airspace within the Singapore FIR.
- (3) Segment from DUDIS to DOLOX use:
P134.35 MHz
S133.6 MHz
- (4) Segment from DOLOX to DUBSA use:
P123.7 MHz
S127.3 MHz
- (5) Segment from DUBSA to RAXIM use:
P134.7 MHz
S134.15 MHz
- (6) Segment from RAXIM to VMR use:
P133.8 MHz
S127.3 MHz
- (7) NIL
- (8) VMR 031°
170.6NM
- (9) VMR 031°
128.1NM
- (10) VMR 032°
100.6NM
- (11) VMR 032°
74.0NM
- (12) VMR 032°
52.4NM
- (13) VMR 032°
47.0NM

Route Designator {RNP Type}		[Route Usage Notes]				
Significant Point Name		Significant Point Coordinates				Remarks
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5 6	7
M772		Route availability: (1) H24				
▲	LAXOR (WSJC/RPHI FIR BDRY)	094937N 1144829E				(2)
(10)		020° -	147.5NM	FL 460 FL 240	Even ⁽¹⁾	[Class A]
▲	BIDAG	073101N 1135544E				(2)
(10)		020° -	97.9NM	FL 460 FL 240	Even ⁽¹⁾	[Class A]
▲	ASISU (WBFC/WSJC FIR BDRY)	055906N 1132046E				(3)
<u>Route Remarks:</u> Lateral Limits: 25NM either side of line joining ASISU to LAXOR. Available only for flights departing from : - WIII and WIIIH to VHHH and airports in People's Republic of China. - WBGB, WBSB, WBGG, WBKL, WBGR and WBGS to VHHH only. ADS-C and CPDLC services are available to suitably equipped aircraft operating outside radar cover within the Singapore FIR.						
<u>Point/Segment Remarks:</u> (2) NIL (3) BRU 305° 113.3NM						

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
M774		Route availability: (1) H24					
▲	TANJUNG PINANG VOR/DME (TPG)	005413N 1043052E					(2)
			148.1NM	FL 460 5500 FT ALT	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A-ABV FL150 Class B-BLW FL150]
▲	OBDOS	002503N 1065551E					(3)
(10)			57.5NM	FL 460 5500 FT ALT	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A-ABV FL150 Class B-BLW FL150]
▲	KADAR (WSJC/WIIZ FIR BDRY)	000647S 1074342E					(2)
<u>Route Remarks:</u> Lateral Limits: 25NM either side of line joining TPG to KADAR. Singapore ACC FREQ: P134.4 MHz S128.1 MHz <u>Flight Planning:</u> Flights overflying Singapore to destinations north of Kuala Lumpur and Subang are to flight plan via KADAR M774 TPG A464 SJ G579 VJB Y342 AROSO Y513. Flights overflying Singapore to land at Kuala Lumpur and Subang are to flight plan via KADAR M774 TPG A464 SJ G579 VJB A457.							
<u>Point/Segment Remarks:</u> (2) NIL (3) TPG 101.3° 148.1NM							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
M904		Route availability: (1) H24					
▲	TIDAR (WSJC/VTBB FIR BDRY)	065230.15N 1024959.82E					
			20.0NM	FL 460 6500 FT ALT	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A (FL290 and ABV)] (2)
▲	ODONO	063613.82N 1030129.41E					
			33.0NM	FL 460 FL 145	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A (FL290 and ABV)] (2)
▲	UPRON	060903.41N 1032039.98E					
			93.0NM	FL 460 FL 245	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A (FL290 and ABV)] (2)
▲	ENREP	045224N 1041442E					
<u>Route Remarks:</u> Singapore ACC FREQ: P134.35 MHz S133.6 MHz ADS-C service is available to suitably equipped aircraft operating outside radar cover and not in the exclusive ADS-B airspace within the Singapore FIR. Lateral Limits: 25NM <u>Point/Segment Remarks:</u> (2) NIL							

Route Designator {RNP Type}		[Route Usage Notes]					
Significant Point Name		Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
N502		Route availability: (1) H24					
▲	BOBAG (R243/24 DME SJ)	010230N 1032954E					(2)
		335° -	105.3NM	FL 460 FL 275		Even ⁽¹⁾	
▲	PARDI	003400S 1041300E					(2)
<u>Route Remarks:</u> Lateral Limits: 10NM on the western side and 5NM on the eastern side of line joining BOBAG to PARDI. Singapore ACC FREQ: P134.4 MHz S128.1 MHz <u>Point/Segment Remarks:</u> (2) NIL							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks	
1		2	3	4	5	6	7
N875		Route availability: (1) H24					
▲	ENREP	045224N 1041442E					(6)
			44.1NM	FL 460 FL 245	Odd ⁽¹⁾	Even ⁽¹⁾	[Class B] (3)
▲	NOPAT	042313N 1044756E					(6)
			16.3NM	FL 460 FL 245	Odd ⁽¹⁾	Even ⁽¹⁾	[Class B] (3)
▲	DAMOG	041225N 1050014E					(6)
			20.6NM	FL 460 FL 245	Odd ⁽¹⁾	Even ⁽¹⁾	[Class B] (3)
▲	SUSAR	035848N 1051547E					(6)
			21.8NM	FL 460 FL 245	Odd ⁽¹⁾	Even ⁽¹⁾	[Class B] (4)
▲	MUMSO	034420N 1053213E					(6)
			21.3NM	FL 460 FL 245	Odd ⁽¹⁾	Even ⁽¹⁾	[Class B] (4)
▲	ELGOR	033014N 1054818E					(6)
			23.6NM	FL 460 FL 245	Odd ⁽¹⁾	Even ⁽¹⁾	[Class B] (4)
▲	LEBIN	031438N 1060604E					(6)
			79.5NM	FL 460 FL 245	Odd ⁽¹⁾	Even ⁽¹⁾	[Class B] (5)
▲	BOBOB	022206N 1070558E					(6)
			29.9NM	FL 460 FL 245	Odd ⁽¹⁾	Even ⁽¹⁾	[Class B] (5)
▲	ESPIT	020011N 1072624E					(6)
			48.3NM	FL 460 FL 245	Odd ⁽¹⁾	Even ⁽¹⁾	[Class B] (5)
▲	NIMIX	012452N 1075926E					(6)
			72.4NM	FL 460 FL 245	Odd ⁽¹⁾	Even ⁽¹⁾	[Class B] (2)
▲	ARUPA	003140N 1084846E					(7)
Route Remarks:							
Lateral Limits:							
25NM either side of line joining ENREP to ARUPA.							
Point/Segment Remarks:							
(2) ADS-C and CPDLC services are available to suitably equipped aircraft operating outside radar cover (between NIMIX and ARUPA) within the Singapore FIR.							
(3) Segment from ENREP to SUSAR use:							
P123.7 MHz							
S127.3 MHz							
(4) Segment from SUSAR to LEBIN use:							
P134.7 MHz							
S134.15 MHz							
(5) Segment from LEBIN to NIMIX use:							
P134.2 MHz							
S133.35 MHz							
(6) NIL							
(7) PNK 316°							
49.6NM							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks	
1		2	3	4	5	6	7
N884		Route availability: (1) H24					
▲ LAXOR (WSJC/RPHI FIR BDRY)		094937N 1144829E				(5)	
(10)			246.6NM	FL 460 6500 FT ALT		[Class A] (2)	
▲ LAGOT		071632N 1113243E				(5)	
(10)			354.3NM	FL 460 6500 FT ALT		[Class A] (2)	
▲ LUSMO		033341N 1065534E				(6)	
(10)			53.0NM	FL 460 6500 FT ALT		[Class A] (3)	
▲ LEBIN		031438N 1060604E				(7)	
(10)			58.5NM	FL 460 6500 FT ALT		[Class A] (3)	
▲ LIPRO		025342N 1051128E				(8)	
(10)			34.2NM	FL 460 6500 FT ALT		[Class A] (3)	
▲ LENDA (WSJC/WMFC FIR BDRY)		024124N 1043932E				(9)	
(10)			50.6NM	FL 460 6500 FT ALT		[Class A] (4)	
▲ MERSING DVOR/DME (VMR)		022318N 1035218E					
Route Remarks:							
Lateral Limits:							
5NM either side of line joining VMR DVOR/DME to LUSMO funnelling out at an angle of 5° from VMR to 25NM of either side of track. It then continues at this width until LAXOR.							
Uni-directional for east bound flights from VMR to LAXOR. No PDC Flight Levels FL310, FL320, FL350, FL360, FL390, FL400 applicable. Other levels available with prior approval.							
Not available for flight planning between VMR and LUSMO. Flight Plan via TOMAN L625 LUSMO.							
Point/Segment Remarks:							
(2) ADS-C and CPDLC services are available to suitably equipped aircraft operating outside radar cover (between LUSMO and LAXOR) within the Singapore FIR.							
(3) Segment from LUSMO to LENDA use: P134.7 MHz S134.15 MHz							
(4) Segment from LENDA to VMR use: P133.8 MHz S127.3 MHz							
(5) NIL							
(6) VMR 069° 196.3NM							
(7) VMR 069° 143.3NM							
(8) VMR069° 84.8NM							
(9) VMR 069° 50.6NM							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks	
1		2	3	4	5	6	7
N891		Route availability: (1) H24					
▲	IGARI (WSJC/VVHM FIR BDRY)	065612N 1033506E					(6)
			65.4NM	FL 460 FL 155	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (2)
▲	IKUMI	055338N 1035509E					(6)
			64.0NM	FL 460 FL 155	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (2)
▲	ENREP	045224N 1041442E					(7)
			75.5NM	FL 460 FL 155	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] (3)
▲	UGPEK	033647N 1040752E					(8)
			11.7NM	FL 460 FL 155	Even ⁽¹⁾	Odd ⁽¹⁾	[Class A] (3)
▲	URIGO	032505N 1040647E					(9)
			10.6NM	FL 460 FL 155	Even ⁽¹⁾	Odd ⁽¹⁾	[Class A] (3)
▲	MANIM (WMFC/WSJC FIR BDRY)	031430N 1040554E					(10)
			2.6NM	FL 460 FL 155	Even ⁽¹⁾	Odd ⁽¹⁾	[Class A] (4)
▲	OBDAB	031153N 1040538E					(11)
			106.4NM	FL 460 FL 155	Even ⁽¹⁾	Odd ⁽¹⁾	[Class A] (4)
▲	PAPA UNIFORM DVOR/DME (PU)	012523.99N 1035559.74E					(5)

Route Remarks:
ADS-C service is available to suitably equipped aircraft operating outside radar cover and not in the exclusive ADS-B airspace within the Singapore FIR

Lateral Limits:
5NM either side of line joining PU DVOR/DME to ENREP funnelling out at an angle of 5° from PU to 25NM of either side of track. It then continues at this width until WSJC/VVHM FIR BDRY.

Point/Segment Remarks:
(2) Segment from IGARI to ENREP use:
P134.35 MHz
S133.6 MHz
(3) Segment from ENREP to MANIM use:
P123.7 MHz
S127.3 MHz
(4) Segment from MANIM to PU use:
P133.8 MHz
S127.3 MHz
(5) WSJC/WMFC FIR boundary approximately 0.4NM North of PU.
(6) NIL
(7) PU 005°
206.8NM
(8) PU 005°
131.3NM
(9) PU 005°
119.6NM
(10) PU 005°
109.0NM
(11) PU 005°
106.4NM

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks	
1		2	3	4	5	6	7
N892		Route availability: (1) H24					
▲	MELAS (VVHM/WSJC FIR BDRY)	070518N 1080912E					
(10)			203.6NM	FL 460 FL 135			[Class A] (2) (3)
▲	MABLI	041717N 1061247E					(6)
(10)			52.1NM	FL 460 FL 135			[Class A] (4)
▲	MUMSO	034420N 1053213E					(7)
(10)			25.2NM	FL 460 FL 135			[Class A] (4)
▲	MABAL	032826N 1051236E					(8)
(10)			41.4NM	FL 460 FL 135			[Class A] (4)
▲	KILOT	030217N 1044023E					(9)
(10)			15.7NM	FL 460 FL 135			[Class A] (4)
▲	KIBOL WSJC/WMFC FIR BDRY	025224N 1042818E					(10)
(10)			28.1NM	FL 460 FL 135			[Class A] (5)
▲	PEKLA	023437N 1040618E					(11)
(10)			18.0NM	FL 460 FL 135			[Class A] (5)
▲	MERSING DVOR/DME (VMR)	022318N 1035218E					
Route Remarks: Lateral Limits: 10NM either side of line joining VMR DVOR/DME to KIBOL and 25NM either side of line joining KIBOL to MELAS. Uni-directional for south-west bound flights from MELAS to VMR. No PDC Flight Levels FL310, FL320, FL350, FL360, FL390, FL400 applicable. Other levels available with prior approval. Point/Segment Remarks: (2) ADS-C service is available to suitably equipped aircraft operating outside radar cover (between MELAS and MABLI) and not in the exclusive ADS-B airspace within the Singapore FIR. (3) Segment from MELAS to MABLI use: P134.35 MHz S133.6 MHz (4) Segment from MABLI to KIBOL use: P134.7 MHz S134.15 MHz (5) Segment from KIBOL to VMR use: P133.8 MHz S127.3 MHz (6) VMR 051° 180.6NM (7) VMR 051° 128.4NM (8) VMR 051° 103.2NM (9) VMR 051° 61.8NM (10) VMR 050° 46.1NM (11) VMR 051° 18.0NM							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks	
1		2	3	4	5		6
P501		Route availability: (1) H24					
▲	ARAMA (50DME SJ) (delegated airspace BDRY)	013654N 1030712E				(6)	
(10)		146° -	25.0NM	FL 460 9500 FT ALT	Odd ⁽¹⁾	[Class A-ABV FL150 Class B-BLW FL150] (2) (3)	
▲	ANBUS (WMFC/WSJC FIR BDRY)	011554N 1032100E				(6)	
		146° -	16.0NM	FL 460 9500 FT ALT	Odd ⁽¹⁾	[Class A-ABV FL150 Class B-BLW FL150] (2) (3)	
▲	BOBAG (R243/24 DME SJ)	010230N 1032954E				(6)	
		133° -	114.1NM	FL 460 FL 275	Odd ⁽¹⁾	(4) (5)	
▲	ANITO	001700S 1045200E				(6)	
Point/Segment Remarks:							
(2) Lateral Limits: 10NM on the western side and 5NM on the eastern side of line joining ARAMA to BOBAG.							
(3) Singapore ACC FREQ: P133.25 MHz S135.8 MHz							
(4) Lateral Limits: 10NM on the western side and 5NM on the eastern side of line joining BOBAG to ANITO.							
(5) Singapore ACC FREQ: P134.4 MHz S128.1 MHz							
(6) NIL							

Route Designator {RNP Type}		[Route Usage Notes]					
Significant Point Name		Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
Q801		Route availability: (1) H24					
▲	ESPOB (VVHM/WSJC FIR BDRY)	070000N 1053318E					
			143.0NM	FL 460 FL 200			[Class A]
▲	ESBUM	045210N 1042830E					
Route Remarks: Lateral Limits: 15NM either side of line joining ESPOB TO ESBUM. Uni-directional for southbound flights from ESPOB to ESBUM. No PDC Flight Levels FL310, F320, F350, FL360, FL390, FL400 applicable. Other levels available with prior approval. Singapore ACC FREQ: P134.35 MHz S133.6 MHz							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
Q802		Route availability: (1) H24					
▲	IPRIX (VVHM/WSJC FIR BDRY)	070000N 1040754E					
			130.0NM	FL 460 FL 200	Odd ⁽¹⁾		[Class A]
▲	ESBUM	045210N 1042830E					
			39.0NM	FL 460 FL 200	Odd ⁽¹⁾		[Class A]
▲	ELALO	041240N 1043329E					
<u>Route Remarks:</u> Lateral Limits: 15NM either side of line joining IPRIX to ELALO Singapore ACC FREQ: P134.35 MHz S133.6 MHz							

Route Designator {RNP Type}		[Route Usage Notes]				
	Significant Point Name	Significant Point Coordinates				Remarks
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6
7						
Q803		Route availability: (1) H24				
▲	UPRON	060903.41N 1032039.98E				
			87.0NM	FL 460 FL 240	Odd ⁽¹⁾	[Class A]
▲	IPDOL	045111N 1035920E				
			15.0NM	FL 460 FL 200	Odd ⁽¹⁾	[Class A]
▲	KEXOL	043930N 1040942E				
			36.0NM	FL 460 FL 200	Odd ⁽¹⁾	[Class A]
▲	ELALO	041240N 1043329E				
Route Remarks:						
Lateral Limits:						
15NM either side of line joining UPRON to ELALO						
Singapore ACC FREQ:						
P134.35 MHz						
S133.6 MHz						

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
T611		Route availability: (1) H24					
▲	IPRIX (VVHM/WSJC FIR BDRY)	070000N 1040754E					
			128.0NM	FL 460 FL 200		Even ⁽¹⁾	[Class A]
▲	IPDOL	045111N 1035920E					
			86.0NM	FL 460 FL 200		Even ⁽¹⁾	[Class A]
▲	IDSEL (WMFC/WSJC FIR BDRY)	032432N 1035544E					
Route Remarks: Lateral Limits: 15NM either side of line joining IDSEL to IPRIX. Singapore ACC FREQ: P123.7 MHz S127.3 MHz							

Route Designator {RNP Type}		[Route Usage Notes]					
Significant Point Name		Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
T612		Route availability: (1) H24					
▲ DOLOX		044841N 1052247E					
			121.0NM	FL 460 FL 200			[Class A]
▲ IDSEL (WMFC/WSJC FIR BDRY)		032432N 1035544E					
Route Remarks: Lateral Limits: 15NM either side of line joining IDSEL to DOLOX. Uni-directional for north-east bound flights from IDSEL to DOLOX. No PDC Flight Levels FL310, FL320, FL350, FL360, FL390, FL400 applicable. Other levels available with prior approval. Singapore ACC FREQ: P123.7 MHz S127.30 MHz							

Route Designator {RNP Type}		[Route Usage Notes]				
	Significant Point Name	Significant Point Coordinates				Remarks
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5 6	7
Y332		Route availability: (1) H24				
▲	TAXUL (WSJC/WMFC FIR BDRY)	035035N 1034037E				(2)
		192° -	42.1NM	FL 460 FL 245	Even ⁽¹⁾	
▲	PADLI	030918N 1033133E				(2)
Route Remarks: Lateral Limits: 10NM either side of line joining TAXUL to PADLI. Singapore ACC FREQ: P123.7 MHz S127.3 MHz Point/Segment Remarks: (2) NIL						

Route Designator {RNP Type}		[Route Usage Notes]					
Significant Point Name		Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	7
Y334		Route availability: (1) H24					
▲	DOVOL (WSJC/WMFC FIR BDRY)	033047N 1034923E				(2)	
		219° -	27.8NM	FL 460 FL 245	Even ⁽¹⁾		
▲	PADLI	030918N 1033133E				(2)	
Route Remarks: Lateral Limits: 10NM either side of line joining DOVOL to PADLI. Singapore ACC FREQ: P123.7 MHz S127.3 MHz Point/Segment Remarks: (2) NIL							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	7
Y335		Route availability: (1) H24					
▲	IDSEL (WMFC/WSJC FIR BDRY)	032432N 1035544E					
(2)		057° 237°	28.5NM	FL 460 FL 245	Even ⁽¹⁾	Odd ⁽¹⁾	⁽²⁾
▲	PADLI	030918N 1033133E					
<u>Route Remarks:</u> Lateral Limits: 10NM on either side of line joining IDSEL to PADLI. Singapore ACC FREQ: P123.7 MHz S127.3 MHz <u>Point/Segment Remarks:</u> (2) NIL							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	7
Y336		Route availability: (1) H24					
▲	KETOD (WMFC/WSJC FIR BDRY)	031042N 1040942E					
(2)		087° 267°	38.2NM	FL 460 FL 245	Even ⁽¹⁾	Odd ⁽¹⁾	
▲	PADLI	030918N 1033133E					
<u>Route Remarks:</u> Lateral Limits: 10NM on either side of line joining KETOD to PADLI. Singapore ACC FREQ: P123.7 MHz S127.3 MHz							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks	
1		2	3	4	5	6	7
Y339		Route availability: (1) H24					
Δ	AKOMA (20 DME PU)	014522N 1035443E					
(2)			38.3NM	FL 460 5500 FT ALT	Even ⁽¹⁾		[Class A-ABV FL150 Class B-BLW FL150]
Δ	AROSO	020846N 1032421E					
<u>Route Remarks:</u> Lateral Limits: 11.5NM either side of line joining AKOMA to AROSO.							
<u>Flight Planning</u> Flight planning permitted for flights departing from or overflying Singapore to destinations north of Kuala Lumpur and Subang airports. Flight planning to operate at FL220 and below to flight plan on A457.							
Singapore ACC FREQ: P133.25 MHz S135.8 MHz							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	
Y342		Route availability: (1) H24					
▲	JOHOR BAHRU DVOR/DME (VJB)	013950.4N 1033939.2E					
(5)			32.6NM	FL 460 4500 FT	Even ⁽¹⁾		[Class A-ABV FL150 Class B-BLW FL150]
Δ	AROSO	020846N 1032421E					
Route Remarks: Lateral Limits: 10NM either side of line joining VJB to AROSO.							

Route Designator {RNP Type}		[Route Usage Notes]				
	Significant Point Name	Significant Point Coordinates				Remarks
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	FL series ↓ ↑	Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5 6	7
Y514		Route availability: (1) H24				
Δ	VIRID	031728.05N 1031318.04E				
(2)			34.57	FL 460 11000 FT ALT	Odd ⁽¹⁾	[Class A] ⁽²⁾
▲	NUFFA	025341.40N 1033829.80E				
Route Remarks: Singapore ACC FREQ: P123.7MHz S127.3MHz Flight Planning Arrivals into Changi to flight plan via Y514 - NUFFA - PIBAP - PASPU. After PASPU, expect radar vectors. All other flights to flight plan via Y514 - NUFFA - BIKTA - B469 Point/Segment Remarks: (2) NIL						





ENR 3.3 OTHER ROUTES

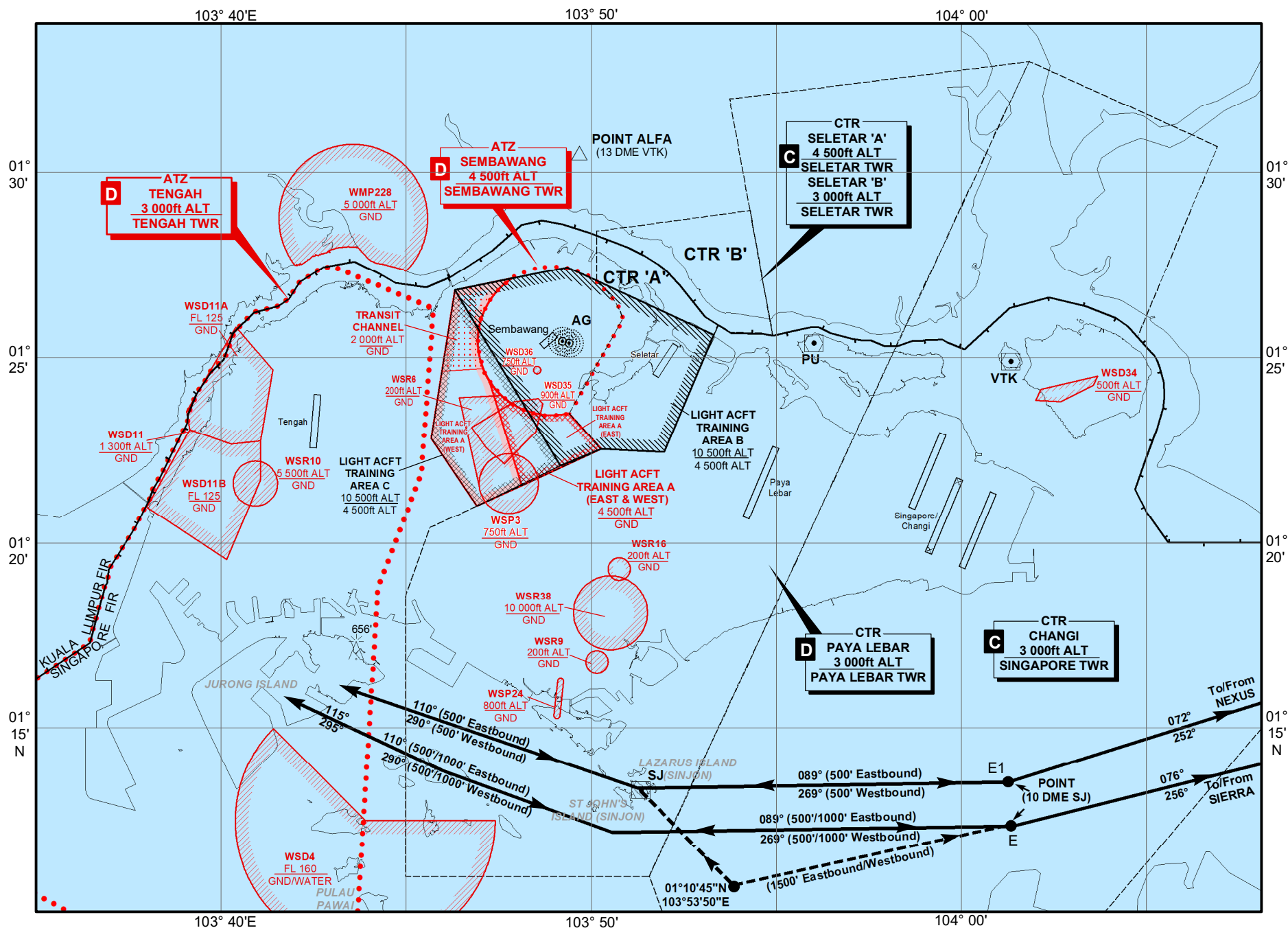


NIL (not applicable).



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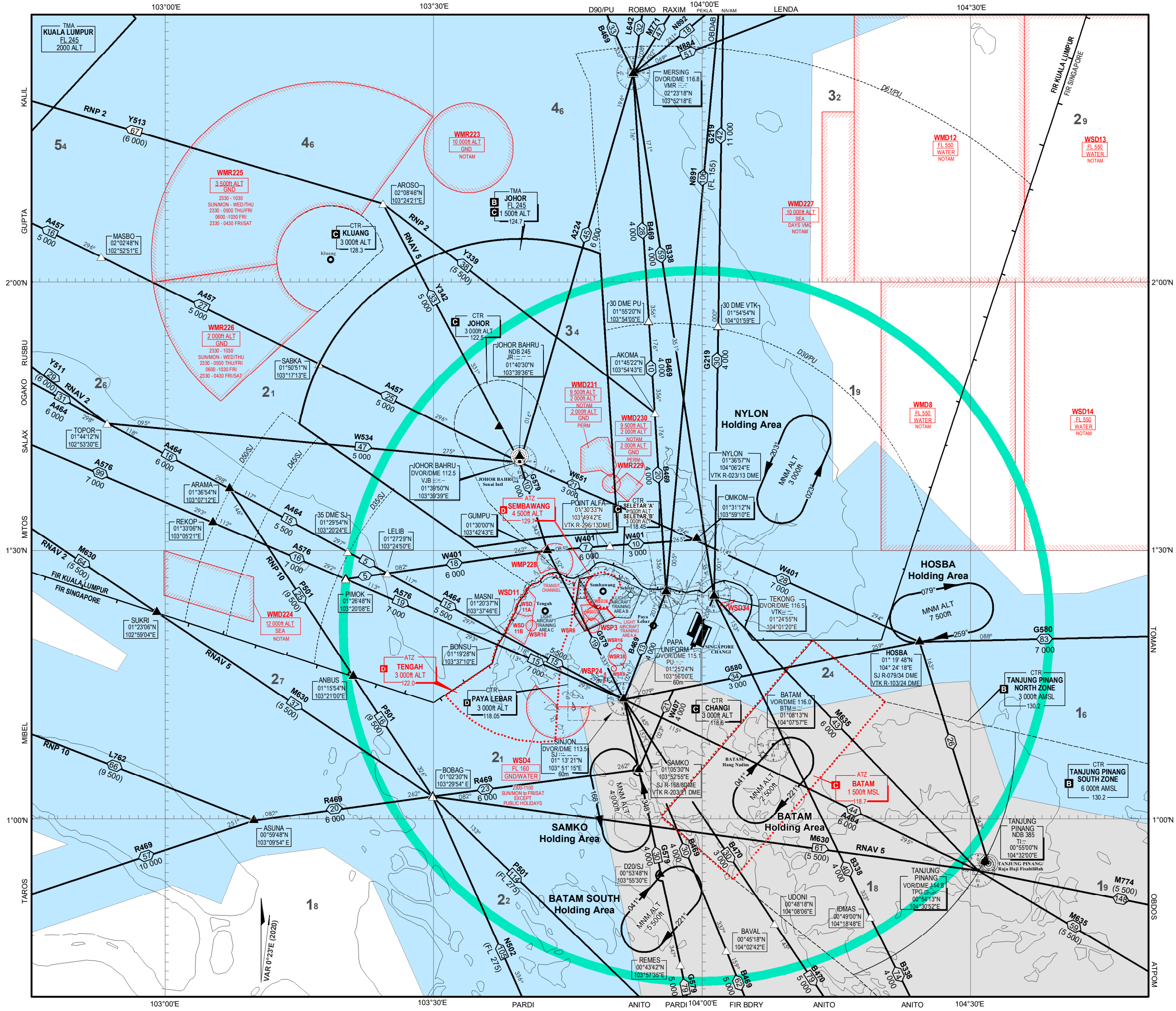
VMC CROSSING BY MILITARY AIRCRAFT



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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 Navalid	D35/SJ
Radio Navigation Aid	Name Identification and frequency Geographical Coordinates Elevation of DME site SINJON DVOR/DME 113.5 SJ 113.5 01°19'21"N 103°51'15"E 60m
Collocated VOR and DME Radio Navigation Aids	Compass rose oriented on the chart to Magnetic North
Restricted Airspace (P - Prohibited, R - Restricted, D - Danger)	Identification of area Nationally 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 terrain 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.

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.

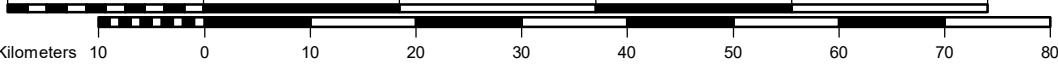
Pilots who may not be able to comply with the speed limits specified above for reasons of flight safety and/or weather should inform ATC and state the speed(s) acceptable.

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	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
TWR	APP		124.05
			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



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
WSD36	Rifle Range	750ft 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

* 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

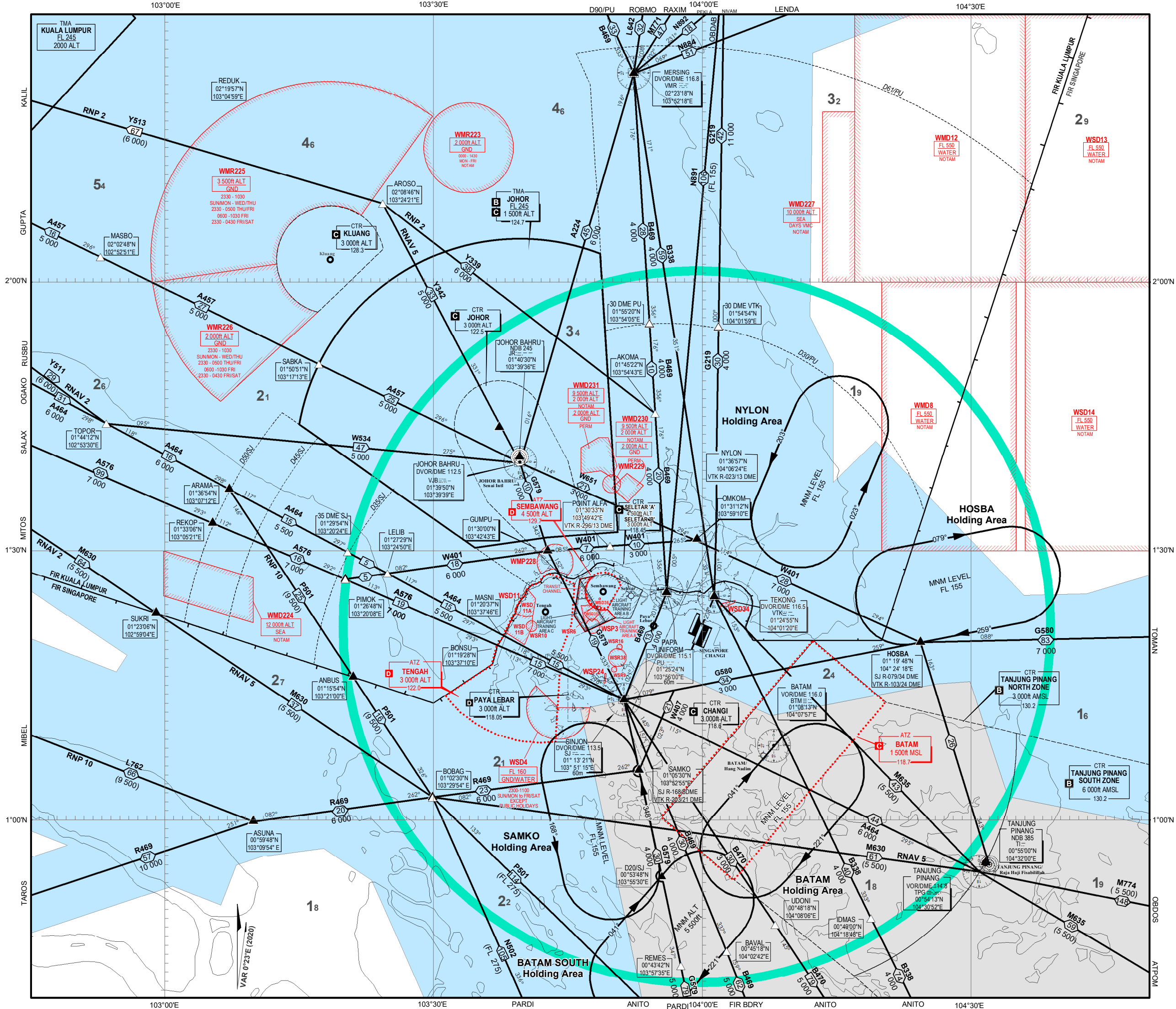
(A) GENERAL WARNING

- 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.

* In Transit Channel

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) 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 TENGGAH 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 Naval	D35/SJ
Radio Navigation Aid	Name Identification and frequency Geographical Coordinates Elevation of DME site SINJON DVOR/DME 113.5 SJ 113.5 01°19'21"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

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 terrain 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.

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.

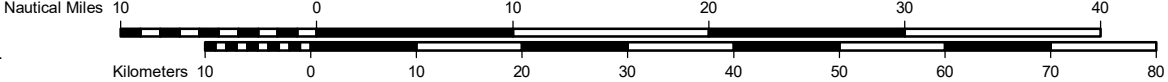
Pilots who may not be able to comply with the speed limits specified above for reasons of flight safety and/or weather should inform ATC and state the speed(s) acceptable.

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	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
TWR	APP		124.05
			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



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
WSD36	Rifle Range	750ft 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
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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
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SPECIAL NOTE :-

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(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.

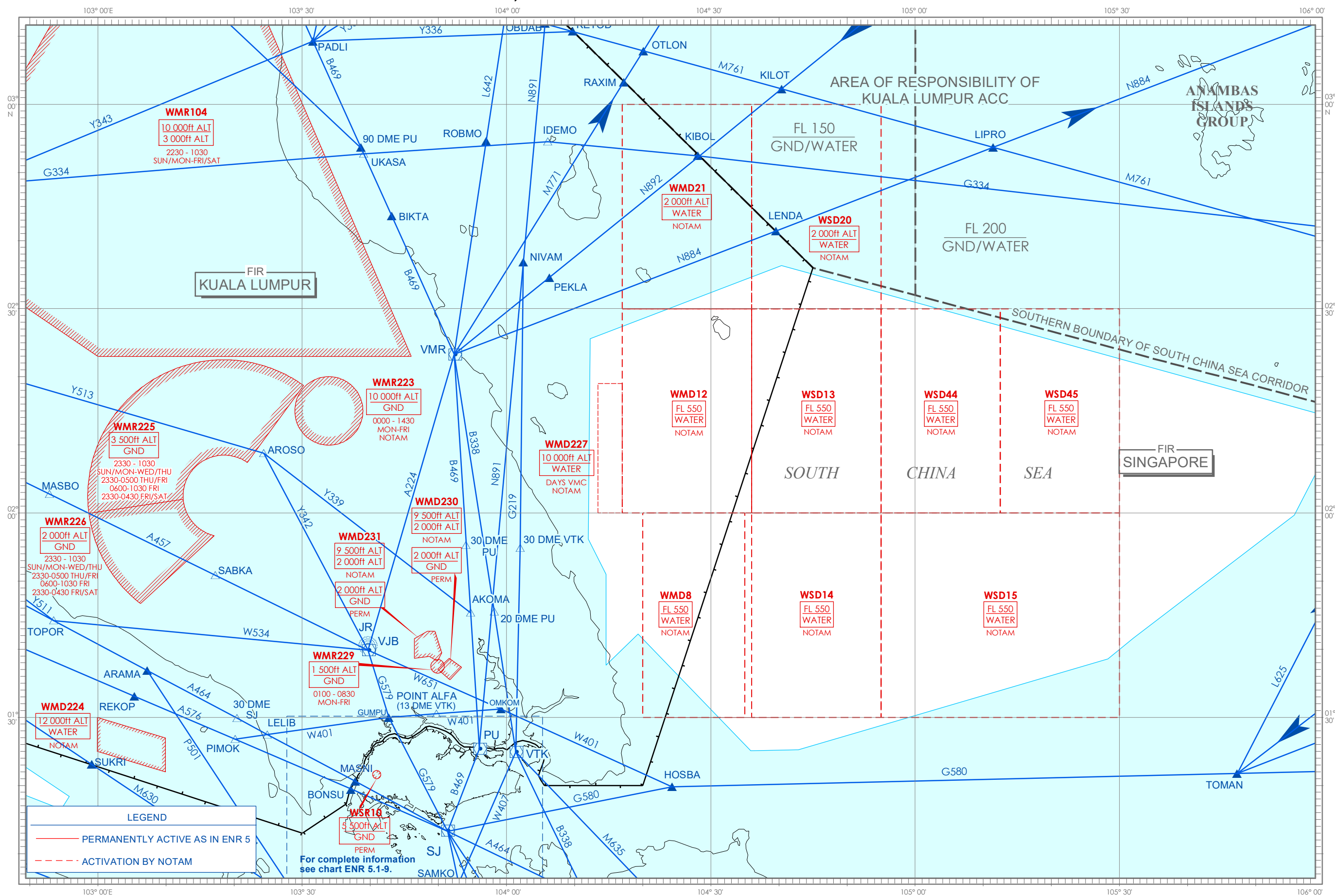
2. AEROMODELLING AND KITE FLYING

(A) GENERAL WARNING

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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.
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* In Transit Channel

PROHIBITED, RESTRICTED AND DANGER AREAS - CHART 1



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LEGEND

Aerodrome

Flight Information Region (FIR)

Home of FIR
Upper limit
Lower limit
Unit providing service

Terminal Control Area (TMA)

Home of TMA
Airspace Classification
Upper limit
Lower limit
Radio frequency (yes)

Control Zone (CTR)

Home of CTR
Airspace Classification
Upper limit
Lower limit
Radio frequency (yes)

ATS route

Route designator
Magnetic track
Distance in nautical miles
Minimum flight altitude (Flight level)
Upper limit (Flight level)
Required navigation performance

ATS route reporting point by-pass

(No report is required on this route)

Reporting Point (REP)

Compulsory

On Request

ATS/MET reporting point (MPF)

Compulsory

On Request

Restricted Airspace

(P-Prohibited, R-Restricted, D-Danger)

Identification of area
Laterally within
Vertical limits

Collocated VOR and DME navigation aids (VOR/DME)

Compass rose mentioned on the chart is for Magnetic North

Identification for radio navigation aids (NAVAID)

Name
NAVAID, frequency, identification or call sign
Geographical coordinates in WGS 84
Recursion of DME side (to the nearest 30m)

COF at mid-point between VOR are not shown

Area Minimum Altitude (AMA)

Each 2° 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 terrain and obstacles in the quadrilateral. It is represented in thousands and hundreds of feet above mean sea level.

Example : 3 500 feet

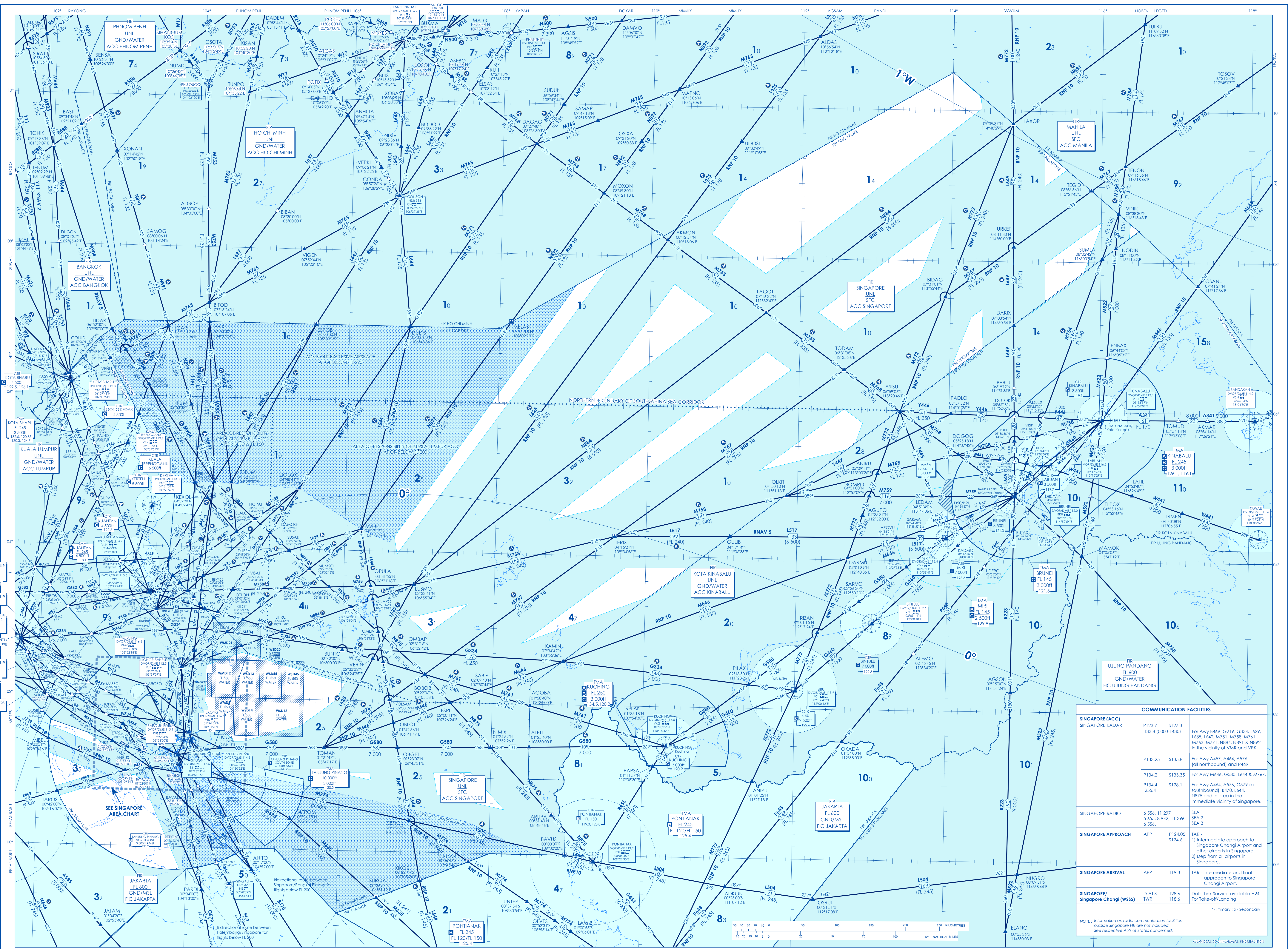
WSJC/WMMC/RB RDRY REPORTING POINTS		
TAXUL	MANIM	
03 59 52H	03 14 30N	FL 35
104 00 37E	104 05 54E	1322
BUVAL	KETOD	1242.2
06 56 22N	03 10 42N	
103 43 41E	109 49 42E	
DOVOL	BAXIM	
03 50 47H	03 05 18N	
104 49 23E	104 17 13E	
IDSEL	KIBOL	
03 24 02N	02 52 24N	
105 55 44E	104 28 18E	
EGOLO	LEMDA	
03 19 34H	02 41 24N	
104 00 47E	104 39 32E	

AIRSPACE CLASSIFICATION IN THE SINGAPORE FIR			
Airspace		Levels	Classification
Controlled airspace		FL 150 to FL 460	A
		Surface to FL 150	B
Controlled airspace more than 100 nm seaward from the shoreline		Lower limit to FL 460	A
Control Zones (CIRs)	Changi CIR		C
	Paya Lebar CIR	Surface to upper limit	D
	Selebar CIR		C
ATZs		Surface to upper limit	D
Uncontrolled airspace			G*

CAUTION

Consult respective NOTAMs and AIPs of States
concerned for the latest information
and
the Civil Aviation Authority of Singapore does not
accept responsibility for any errors or omissions in
the information shown outside of Singapore FIR

MAGNETIC INFORMATION FOR THE YEAR 2020



COMMUNICATION FACILITIES			
SINGAPORE (ACC)			
SINGAPORE RADAR	P132.7	5127.3	For Arwy 8469, G219, G334, L629, L635, L642, M751, M758, M761, M743, M771, N88A, N891 & N892 in the vicinity of VMR and VPK.
	P133.25	5135.8	For Arwy A457, A464, A576 (all northbound) and R469
	P134.2	5133.35	For Arwy M646, G580, L644 & M767.
	P134.4	5128.1	For Arwy A464, A576, G579 (all southbound), B470, L644, N875 and in area in the immediate vicinity of Singapore.
SINGAPORE RADIO	6 556, 11 297 5 655, 8 942, 11 396 6 556.	SEA 1 SEA 2 SEA 3	
SINGAPORE APPROACH	AFP	P124.05 5124.6	TAR - 1) Intermediate approach to Singapore Changi Airport and other airports in Singapore. 2) Dep. from all airports in Singapore.
SINGAPORE ARRIVAL	AFP	119.3	TAR - Intermediate and final approach to Singapore Changi Airport.
SINGAPORE / Singapore Changi (WSSS)	D-TWIS 128.6	118.6	Data Link Service available H24. For Take-off/landing

NOTE : Information on radio communication facilities outside Singapore FIR are not included.
See respective AIPs of States concerned.

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WSSS AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	Use of aircraft stand ID signs, TWY guidelines and visual docking/parking guidance system of aircraft stands.
←	Taxiing guidance signs at all intersections with TWY and RWY at all holding positions. Apron markings at aircraft stands. Nose-in guidance at aircraft stands. For information on Safegate Aircraft Docking Guidance System, Taxiing Guidance System at Singapore Changi Airport, refer to WSSS AD 2.9. Aircraft stand manoeuvring guidance lights are provided at aircraft stands at Terminal 3, Terminal 4 and South Aprons.
2	RWY and TWY markings and LGT.
←	<u>RWY 02L and RWY 02C/20C</u> RWY LGT: refer to WSSS AD 2.14 and WSSS AD 2.15. TWY LGT: Blue lights on TWY curved edges. Blue TWY edge markers along selected straight TWY edge sections. Red stop bar at TWY INT controllable on/off. Red stop bar lights at Pattern "A" RWY HLDG PSN entrances to RWY are controllable on/off and are supplemented with elevated RWY guard lights and RWY designation sign at the sides. Internally lighted mandatory or information TWY signboards. "MIL" destination signs on the west of RWY 02L/20R indicate the direction to aircraft movement area for military use only. Alternate green and yellow taxiway centreline lights along taxiways within ILS sensitive zone in the vicinity of the runway and green taxiway centreline lights with selective controls along taxi-routes to/from main RWY and aprons. On the west of RWY 02L/20R, no taxiway centreline lights. MARKING AIDS: THR, touchdown zone, RWY centreline, RWY side stripe, RWY designations, aiming point markings, TWY centreline, taxi holding positions – all taxiways, apron markings.
←	<u>RWY 20R</u> RWY LGT: refer to WSSS AD 2.14 and WSSS AD 2.15. TWY LGT: same as for RWY 02L and RWY 02C/20C. MARKING AIDS: Pre-threshold centreline, transverse stripe for displaced THR, THR, touchdown zone, RWY centreline, RWY side stripe, RWY designations, aiming point markings, TWY centreline, taxi holding positions – all taxiways, apron markings.
←	<u>RWY 02R/20L</u> RWY LGT: refer to WSSS AD 2.14 and WSSS AD 2.15. TWY LGT: Blue lights on TWY curved edges. Blue TWY edge markers along selected straight TWY edge sections. Red stop bar lights at TWY INT are controllable on/off. Red stop bar lights at Pattern "A" RWY HLDG PSN entrances to RWY are controllable on/off and are supplemented with elevated RWY guard lights and RWY designation sign at the sides. Red stop bar lights at Pattern "B" RWY HLDG PSN before entry into the RWY ILS sensitive area are controllable on/off with Category I/II RWY HLDG PSN sign. Internally lighted mandatory or information TWY signboards. "MIL" destination signs on the east of RWY 02R/20L indicate the direction to aircraft movement area for military use only. On the west of RWY 02R/20L, alternate green and yellow taxiway centreline lights along taxiways within ILS sensitive zone in the vicinity of the runway and green taxiway centreline lights with selective controls along taxi-routes to/from main RWY and aprons. On the east of RWY 02R/20L, no taxiway centreline lights. MARKING AIDS: THR, touchdown zone, RWY centreline, RWY side stripe, RWY designations, aiming point markings, TWY centreline, taxi holding positions – all taxiways, apron markings.
3	<i>Stop bars:</i> Stop bars where appropriate.
4	<i>Remarks:</i> Where Red stop bar is not present at the TWY INT, Yellow INTERMEDIATE HLDG PSN LGT will be used at TWY INT and switched on between sunset and sunrise or during periods of poor visibility.

1 ADB SAFEGATE AIRCRAFT DOCKING GUIDANCE SYSTEM - SAFEDOCK

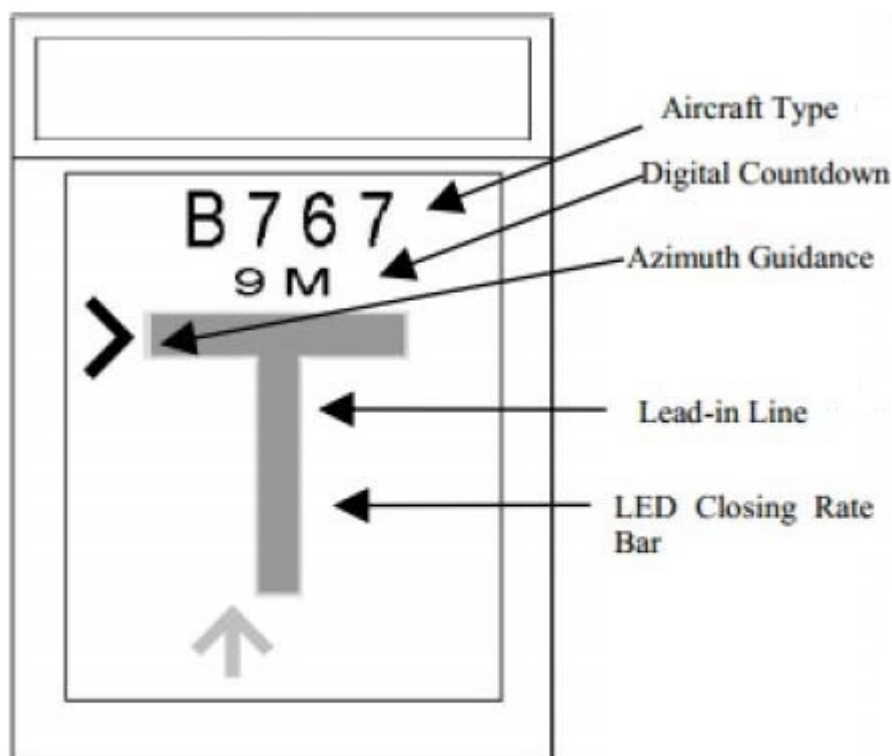
1.1 INTRODUCTION

- 1.1.1 The ADB Safegate Aircraft Docking Guidance System (ADGS) - SAFEDOCK is a fully automatic aircraft docking guidance system installed at the contact aircraft stands at Terminals 1, 2, 3 and 4, and at the remote aircraft stands at South Apron of Singapore Changi Airport.

1.2 DESCRIPTION OF SYSTEM

- 1.2.1 The system is based on a laser scanning technique and it tracks both the lateral and longitudinal position of the aircraft. This 3D technique allows the system to identify the incoming aircraft and check it against the one selected by the operator to ensure that the pilot is provided with the correct stop indication for the aircraft.
- 1.2.2 The system is operated only in the Automatic Mode. When the system fails, the aircraft is to be marshalled into the stand manually.
- 1.2.3 Azimuth guidance, continuous closing rate information, aircraft type, etc., are shown to the pilot on a single display clearly visible for both pilot and co-pilots. Figure A shows the Display and Laser Scanning Unit mounted on the terminal in front of the aircraft stand.

LED DISPLAY AND LASER SCANNING UNIT



Safedock Type 1

Figure A

AERODROME CHART - ICAO

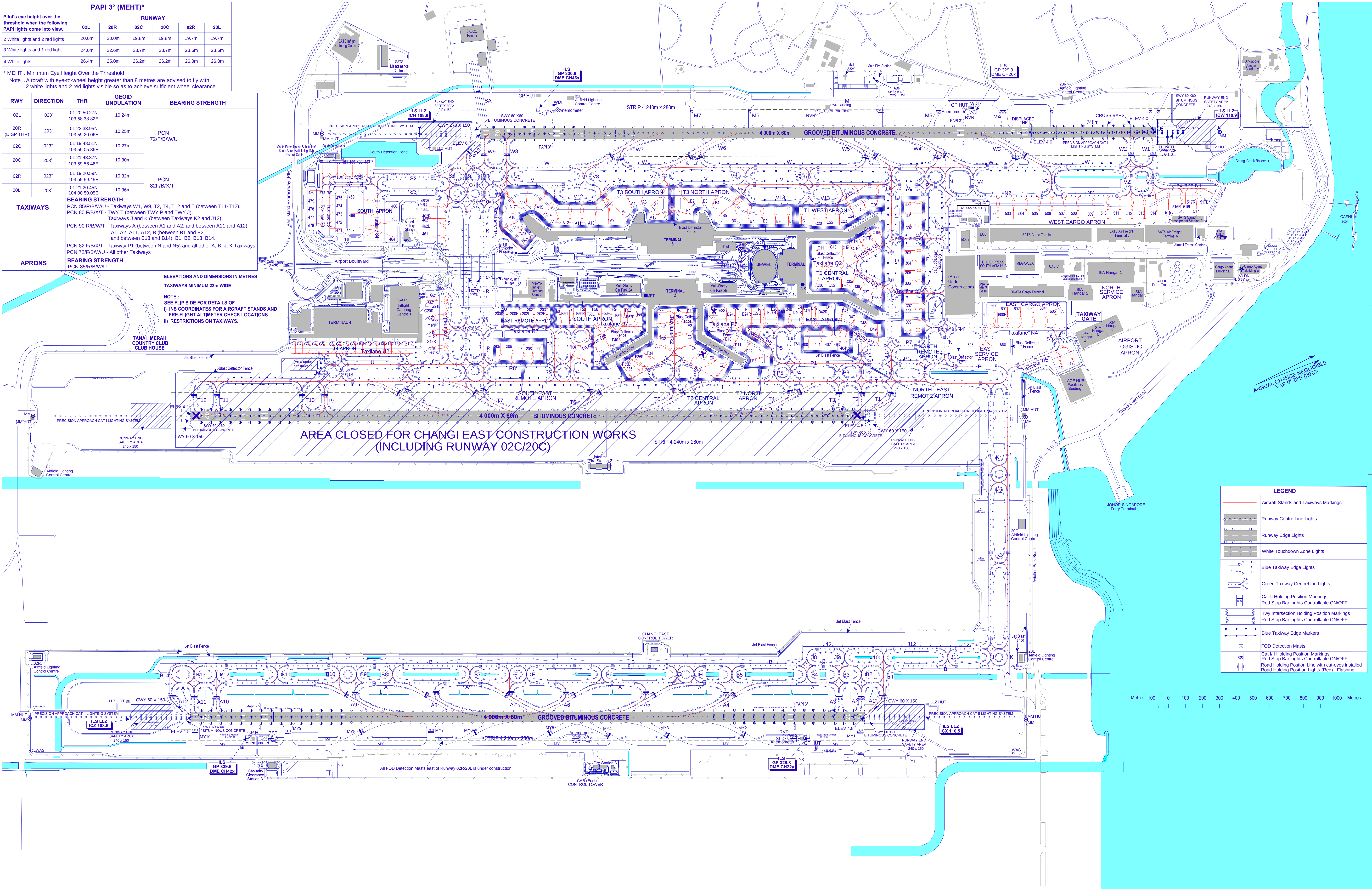
01° 21' 33"N
103° 59' 22"E

AERODROME ELEVATION 6.66m

TWR 118.6 / 118.25 / 131.4
GND 124.3 / 121.85 / 121.725 / 127.275
DELIVERY 121.65 / 119.6

RAMP TWR 122.55 (GMC 4 EAST)
GND 122.65 (GMC 4 WEST)

SINGAPORE/SINGAPORE CHANGI



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	5.13m (16.83ft)
	B9	01 21 42.19	103 59 16.16	5.13m (16.83ft)
	B10	01 21 44.47	103 59 17.12	5.15m (16.90ft)
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	5.09m (16.70ft)
	C13	01 21 49.63	103 59 24.75	5.03m (16.50ft)
	C15	01 21 51.89	103 59 25.70	5.06m (16.60ft)
	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	5.08m (16.67ft)
	D32	01 21 46.75	103 59 31.08	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)
T2 SOUTH APRON	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)
	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)
EAST REMOTE APRON	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 19.70	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)
	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)
NORTH REMOTE APRON	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-EAST 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 33.06	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)
	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)
WEST CARGO APRON	404	01 21 45.45	103 59 42.98	4.20m (13.78ft)
	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)
T4 APRON	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	4.95m (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 17.74	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)	

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/L ARAMA ONE BRAVO ARRIVAL ARAMA 1B

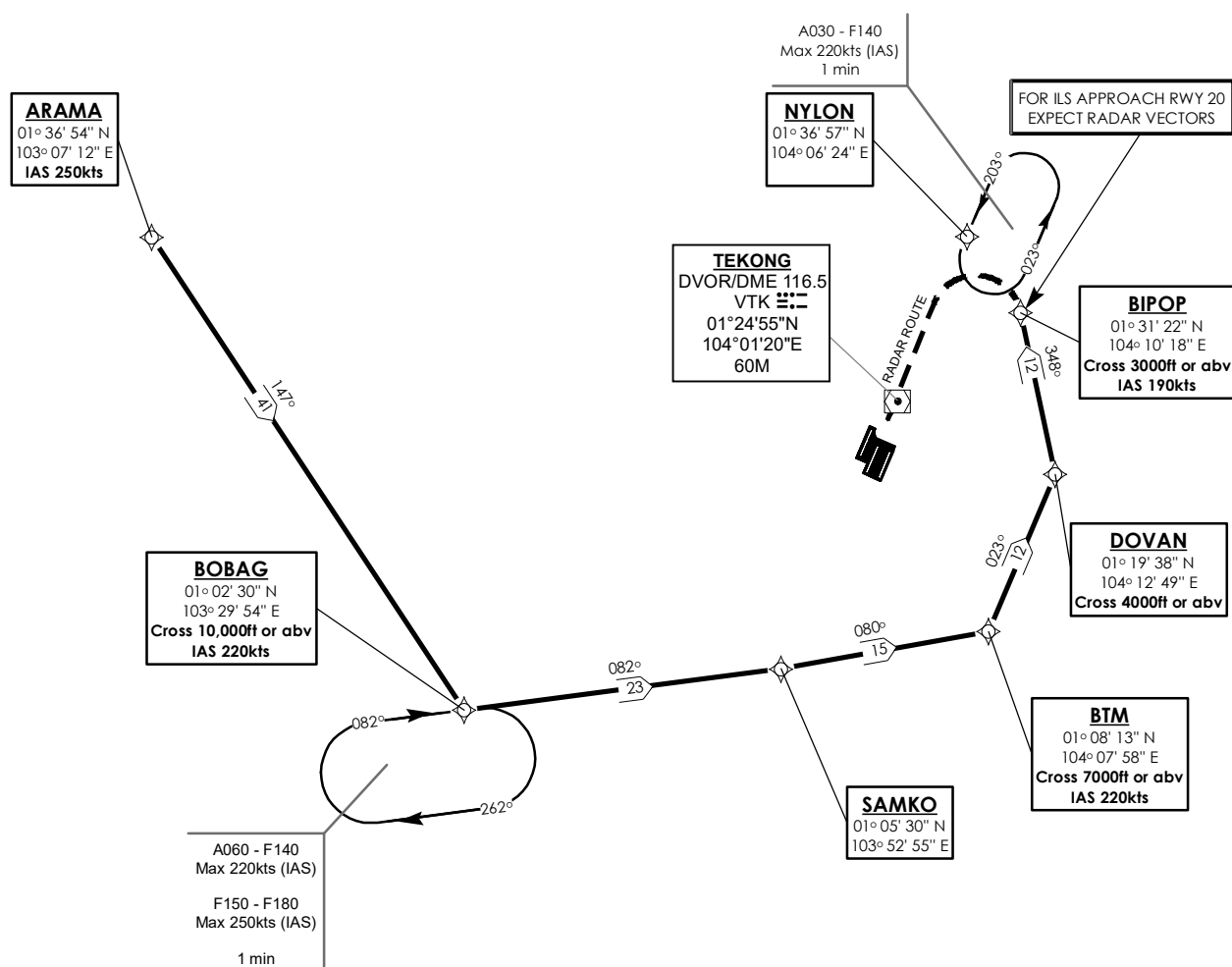
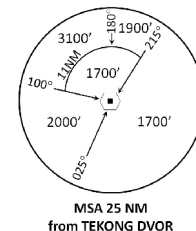
ELEV, ALT IN FEET
BEARINGS, TRACKS AND
RADIALS ARE MAGNETIC
VAR 0°23'E (2020)

DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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



ARAMA 1B (STAR) RNAV GNSS RWY 20R/20C/20L - 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] -	IF	N
	BOBAG [A100+; K220; L] -	TF	N
	SAMKO [L] -	TF	N
	BTM [A070+; K220; L] -	TF	N
	DOVAN [A040+; L] -	TF	N
	BIPOP [A030+; K190]	TF	N

Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	ARAMA	-	-	-	-	-	K250	RNAV1
TF	BOBAG	-	147(147.4)	-0.4	L	A100+	K220	RNAV1
TF	SAMKO	-	082(082.4)	-0.4	L	-	-	RNAV1
TF	BTM	-	080(080.4)	-0.4	L	A070+	K220	RNAV1
TF	DOVAN	-	023(023.4)	-0.4	L	A040+	-	RNAV1
TF	BIPOP	-	348(348.4)	-0.4	-	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/L ASUNA ONE BRAVO ARRIVAL ASUNA 1B

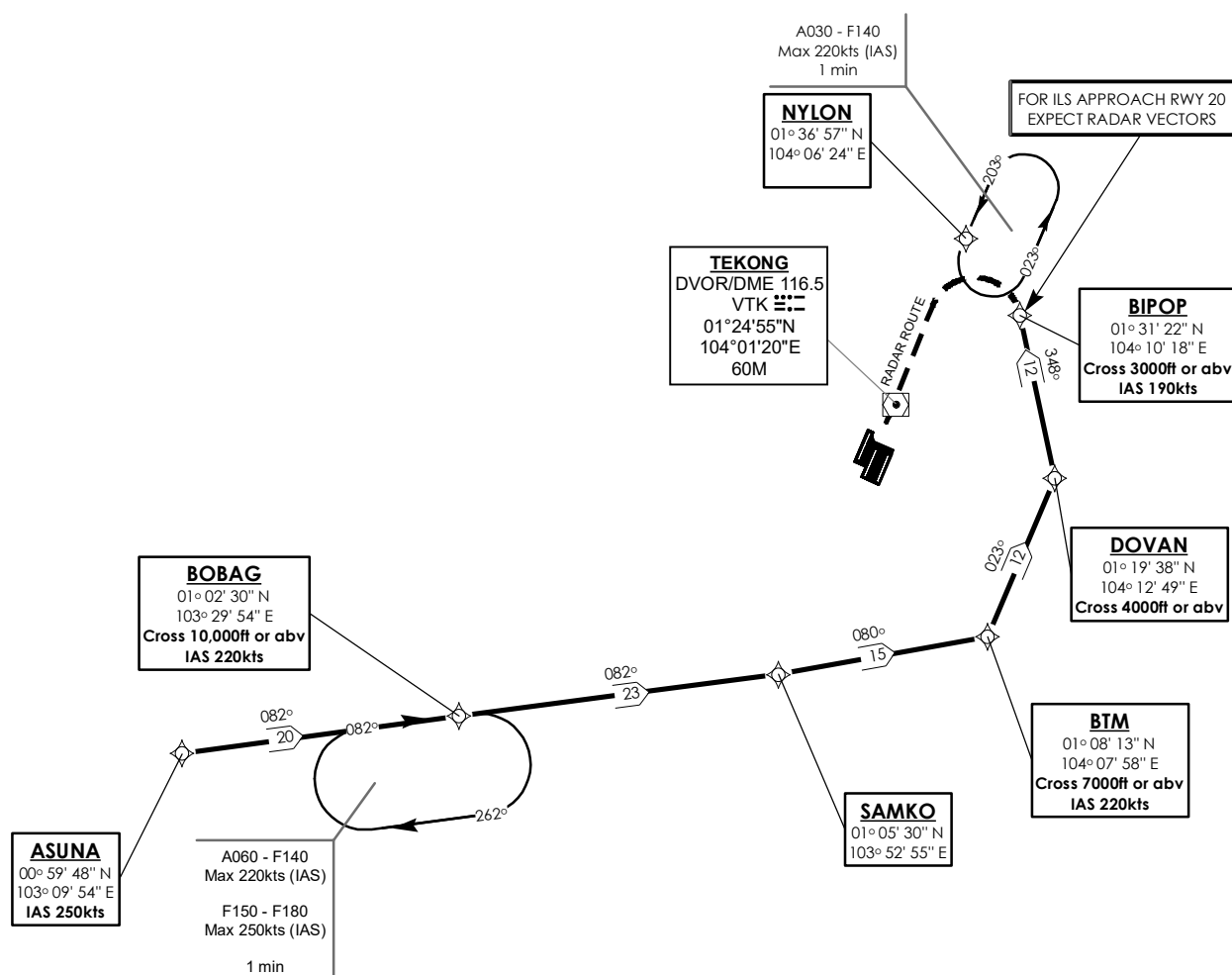
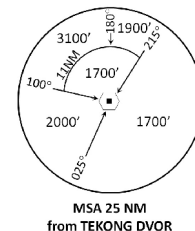
ELEV, ALT IN FEET
BEARINGS, TRACKS AND
RADIALS ARE MAGNETIC
VAR 0°23'E (2020)

DISTANCES IN NM

NOTE: RADAR REQUIRED

NOTE: RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

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



ASUNA 1B (STAR) RNAV GNSS RWY 20R/20C/20L - 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] -	IF	N
	BOBAG [A100+; K220] -	TF	N
	SAMKO [L] -	TF	N
	BTM [A070+; K220; L] -	TF	N
	DOVAN [A040+; L] -	TF	N
	BIPOP [A030+; K190]	TF	N

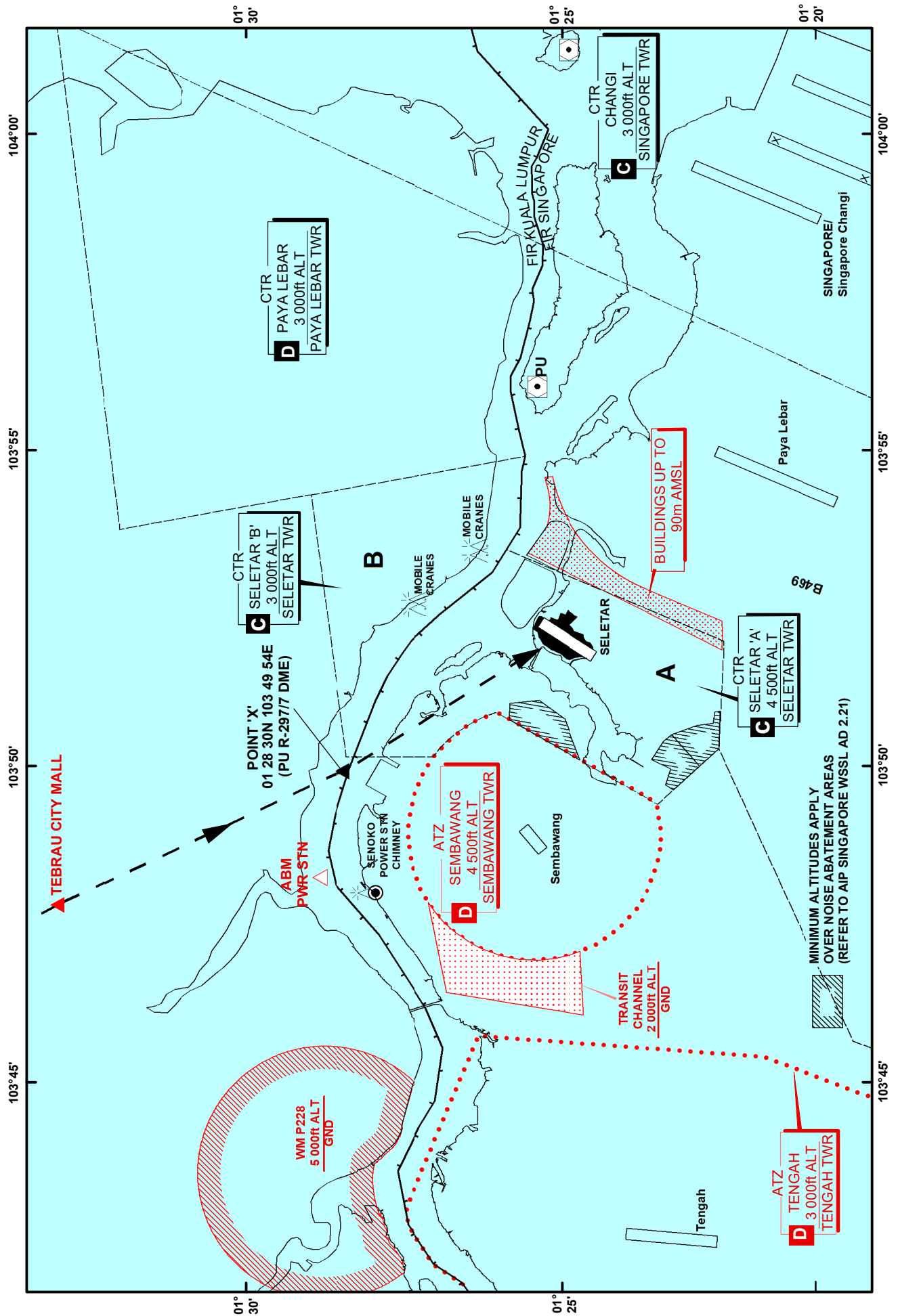
Tabular Descriptions

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Magnetic Variation	Turn Direction	Altitude	Speed Limit	Navigation Spec
IF	ASUNA	-	-	-	-	-	K250	RNAV1
TF	BOBAG	-	082(082.4)	-0.4	-	A100+	K220	RNAV1
TF	SAMKO	-	082(082.4)	-0.4	L	-	-	RNAV1
TF	BTM	-	080(080.4)	-0.4	L	A070+	K220	RNAV1
TF	DOVAN	-	023(023.4)	-0.4	L	A040+	-	RNAV1
TF	BIPOP	-	348(348.4)	-0.4	-	A030+	K190	RNAV1

RADIO COMMUNICATIONS FAILURE PROCEDURE

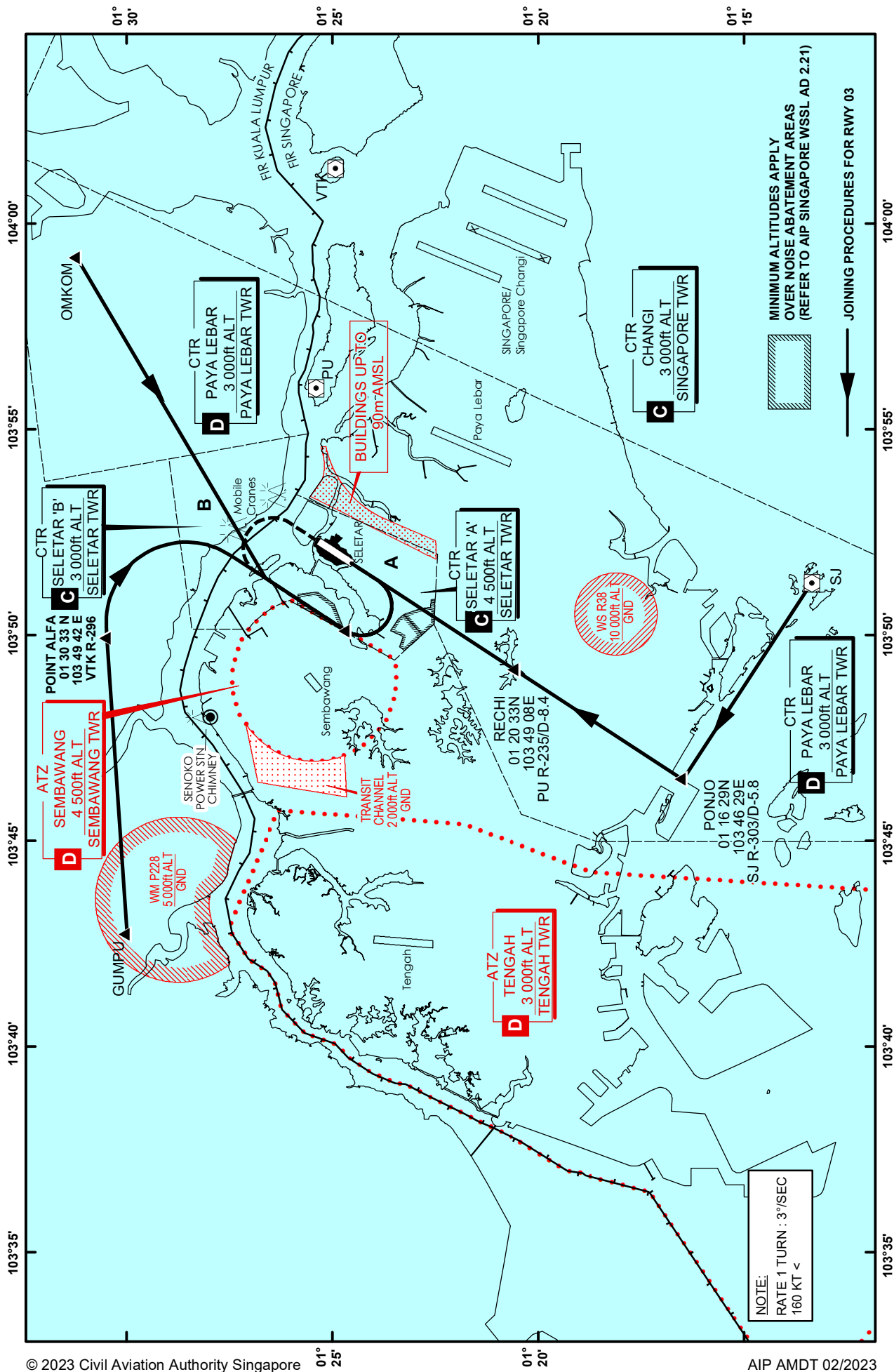
1	SET TRANSPONDER TO MODE A/C CODE 7600
2	When cleared via ASUNA 1B by Singapore ATC (a) Maintain last assigned flight level or altitude and proceed on ASUNA 1B to BIPOP, then direct to NYLON (b) From NYLON commence descent and carry out appropriate landing procedure for RWY 20 as close as possible to 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

SELETAR AERODROME JOINING PROCEDURE (VFR FLIGHTS) FROM JOHOR BAHRU



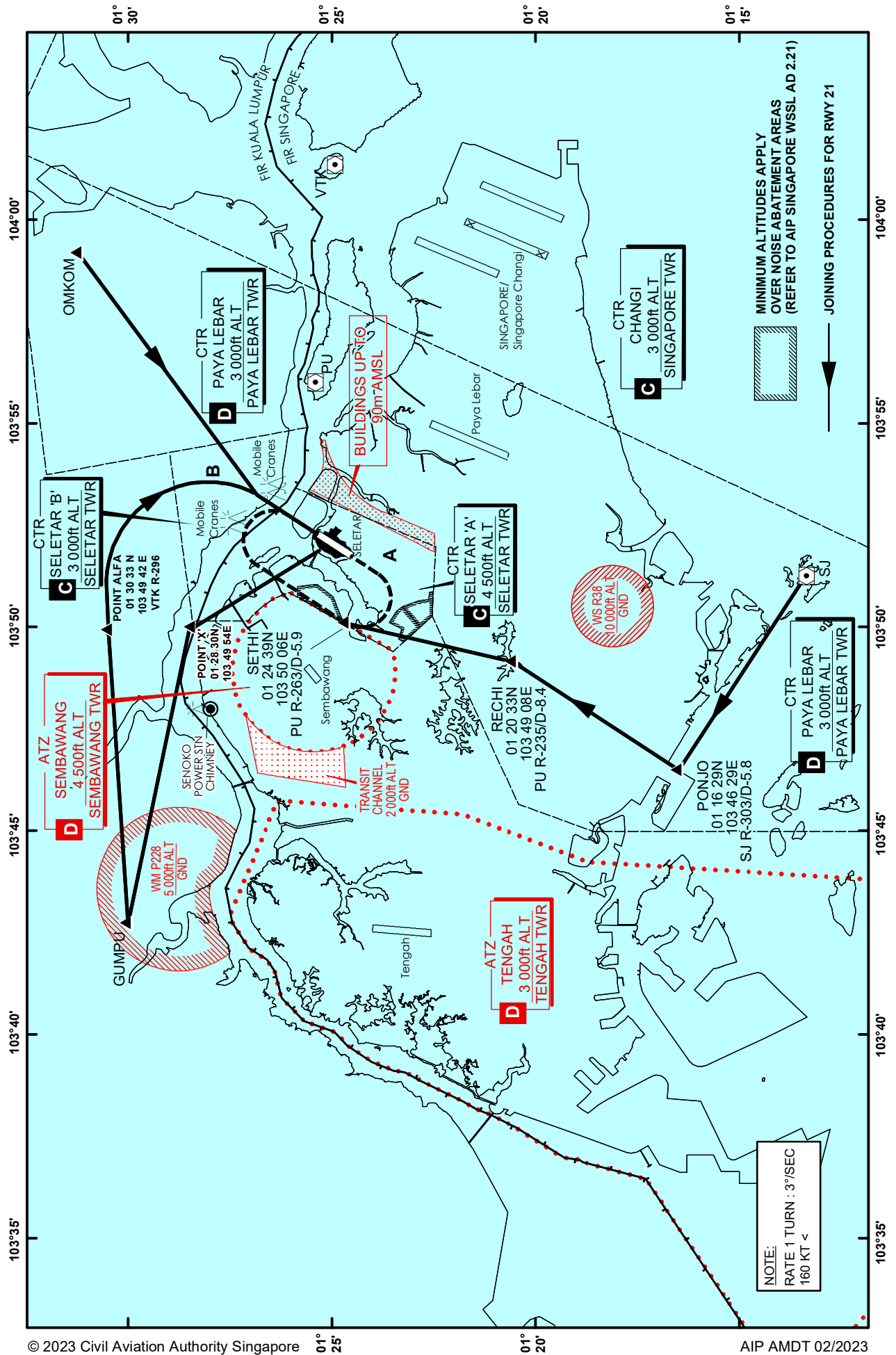
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SELETAR AERODROME JOINING PROCEDURE (IFR FLIGHTS) FROM GUMPU, OMKOM AND SJ - RUNWAY 03



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SELETAR AERODROME JOINING PROCEDURE (IFR FLIGHTS) FROM GUMPU, OMKOM AND SJ - RUNWAY 21



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