

Contact Post: REPUBLIC OF SINGAPORE AERONAUTICAL INFORMATION SERVICES Civil Aviation Authority of Singapore Singapore Changi Airport P.O. Box 1 Singapore 918141 Tel: (65) 6955 0400 Fax: (65) 6441 0221 AFS: WSSSYNYX Email: caas_singaporeais@caas.gov.sg URL: https://www.caas.gov.sg URL: https://aim-sg.caas.gov.sg	eAIP  Civil Aviation Authority of Singapore	AIP AMENDMENT 01/2026 <i>Effective date</i> 22 JAN 2026 <i>Publication date</i> 22 JAN 2026
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1 Significant information and changes

1.1 Singapore FIR

a) Amendments to the following ATS routes in ENR 3.2 - Area Navigation Routes:

- i) ATS route M763 - Segment between TAXUL and VPK removed.
- ii) ATS route Y332 - Route removed.

b) Amendments to the following aeronautical charts:

- i) ENR 2.1-6
- ii) ENR 2.1-10
- iii) ENR 5.1-6
- iv) ERC 6-1

c) Amendments to ENR 4.4 - Name-Code Designators for Significant points:

- i) Updates to the ATS routes column for waypoints PADLI and TAXUL.

1.2 Singapore Changi Airport

a) Renamed 'Aerodrome Advisory Chart' to 'Aerodrome Hotspots' - AD-2-WSSS-ADC-3 chart.

2 This amendment incorporates information contained in the listed AIP Supplements and NOTAM, which are hereby superseded:

AIP Supplements

Nil

NOTAM

Nil

AMENDED PAGES

To be removed			To be inserted		
GEN			GEN		
	GEN 0.2-1	27 NOV 2025		GEN 0.2-1	22 JAN 2026
	GEN 0.3-1	27 NOV 2025		GEN 0.3-1	22 JAN 2026
	GEN 0.3-2	27 NOV 2025		GEN 0.3-2	22 JAN 2026
	GEN 0.3-3	27 NOV 2025		GEN 0.3-3	22 JAN 2026
	GEN 0.3-4	27 NOV 2025		GEN 0.3-4	22 JAN 2026
	GEN 0.3-5	27 NOV 2025		GEN 0.3-5	22 JAN 2026
	GEN 0.3-6	27 NOV 2025		GEN 0.3-6	22 JAN 2026
	GEN 0.3-7	27 NOV 2025			
	GEN 0.4-1	27 NOV 2025		GEN 0.4-1	22 JAN 2026
	GEN 0.4-2	27 NOV 2025		GEN 0.4-2	22 JAN 2026
	GEN 0.4-3	27 NOV 2025		GEN 0.4-3	22 JAN 2026
	GEN 0.4-4	27 NOV 2025		GEN 0.4-4	22 JAN 2026
	GEN 1.7-2	27 NOV 2025		GEN 1.7-2	22 JAN 2026
	GEN 2.3-2	12 JUN 2025		GEN 2.3-2	22 JAN 2026
	GEN 2.3-3	12 JUN 2025		GEN 2.3-3	22 JAN 2026
	GEN 2.3-4	12 JUN 2025		GEN 2.3-4	22 JAN 2026
	GEN 2.3-5	12 JUN 2025		GEN 2.3-5	22 JAN 2026
	GEN 2.3-6	12 JUN 2025			
	GEN 3.1-3	27 NOV 2025		GEN 3.1-3	22 JAN 2026
	GEN 3.4-5	27 NOV 2025		GEN 3.4-5	22 JAN 2026
	GEN 3.4-6	12 JUN 2025		GEN 3.4-6	22 JAN 2026
	GEN 4.1-1	12 JUN 2025		GEN 4.1-1	22 JAN 2026
ENR			ENR		
	ENR 1.8-1	27 NOV 2025		ENR 1.8-1	22 JAN 2026
	ENR 1.8-15	12 JUN 2025		ENR 1.8-15	22 JAN 2026
	ENR 1.8-25	12 JUN 2025		ENR 1.8-25	22 JAN 2026
	ENR 1.9-1	27 NOV 2025		ENR 1.9-1	22 JAN 2026
	ENR 2.1-5	27 NOV 2025		ENR 2.1-5	22 JAN 2026
	ENR 2.1-6	27 NOV 2025		ENR 2.1-6	22 JAN 2026
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	ENR 2.1-9	27 NOV 2025		ENR 2.1-9	22 JAN 2026
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	ENR 3.2-45	12 JUN 2025		ENR 3.2-45	22 JAN 2026
	ENR 3.2-46	12 JUN 2025		ENR 3.2-46	22 JAN 2026
	ENR 3.2-47	12 JUN 2025		ENR 3.2-47	22 JAN 2026
	ENR 3.2-48	12 JUN 2025		ENR 3.2-48	22 JAN 2026
	ENR 3.2-49	12 JUN 2025		ENR 3.2-49	22 JAN 2026
	ENR 3.2-50	12 JUN 2025		ENR 3.2-50	22 JAN 2026
	ENR 3.2-51	12 JUN 2025			
	ENR 4.4-7	12 JUN 2025		ENR 4.4-7	22 JAN 2026
	ENR 4.4-8	12 JUN 2025		ENR 4.4-8	22 JAN 2026
	ENR 4.4-9	12 JUN 2025		ENR 4.4-9	22 JAN 2026
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	ERC-6-1 En-Route Chart-1	27 NOV 2025		ERC-6-1 En-Route Chart-1	22 JAN 2026

To be removed			To be inserted		
AD			AD		
	AD 2.WSSS-12	27 NOV 2025		AD 2.WSSS-12	22 JAN 2026
	AD 2.WSSS-19	27 NOV 2025		AD 2.WSSS-19	22 JAN 2026
	AD 2.WSSS-42	12 JUN 2025		AD 2.WSSS-42	22 JAN 2026
	AD 2.WSSS-43	12 JUN 2025		AD 2.WSSS-43	22 JAN 2026
	AD 2.WSSS-47	02 OCT 2025		AD 2.WSSS-47	22 JAN 2026
	AD-2-WSSS-ADC-3	02 OCT 2025		AD-2-WSSS-ADC-3	22 JAN 2026
	AD-2-WSSS-AOC-1	07 AUG 2025		AD-2-WSSS-AOC-1	22 JAN 2026
	AD 2.WSAT-4	12 JUN 2025		AD 2.WSAT-4	22 JAN 2026

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GEN 0.2 RECORD OF AIP AMENDMENTS

AIP AMENDMENT

NR/Year	Publication Date	Effective date	Inserted by
03/2025	12 JUN 2025	12 JUN 2025	
04/2025	07 AUG 2025	07 AUG 2025	
05/2025	02 OCT 2025	02 OCT 2025	
06/2025	27 NOV 2025	27 NOV 2025	
01/2026	22 JAN 2026	22 JAN 2026	

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GEN 0.3 RECORD OF CURRENT AIP SUPPLEMENTS

NR/Year	Subject	AIP section(s) affected	Period of Validity	Cancellation record
059/2020	SINGAPORE CHANGI AIRPORT – LONG TERM CLOSURE OF AIRCRAFT STAND E20 AT TERMINAL 2, SINGAPORE CHANGI AIRPORT		2020/08/25 2026/12/30	
083/2024	SINGAPORE CHANGI AIRPORT- DECOMMISSIONING OF AIRCRAFT STANDS E1 AND F30 AND TEMPORARY CLOSURE OF TAXILANES R1,R2,R3 AND AIRCRAFT STANDS E2,E3,E4,F31,F32,F33 AND F34 DUE TO CONSTRUCTION WORK ACTIVITIES AT TERMINAL 2		2024/05/09 2028/01/03	
174/2024	SINGAPORE CHANGI AIRPORT – CLOSURE OF TAXIWAYS ASSOCIATED WITH RUNWAY 02R/20L		2024/11/28 2027/12/22	
176/2024	SINGAPORE CHANGI AIRPORT - USE OF CONSTRUCTION LASERS, LOCATIONS OF AUTOMATIC TOTAL STATIONS AND CONCRETE BLOCKS TO SUPPORT CONSTRUCTION ACTIVITIES AT TERMINAL 2		2024/10/28 2026/10/05	
034/2025	PAYA LEBAR AIRPORT – FLAT TOP CRANES		2025/02/17 2026/01/31	
038/2025	SINGAPORE CHANGI AIRPORT – CLOSURE OF AIRCRAFT STAND 604 AT EAST CARGO APRON		2025/04/17 2026/02/19	
040/2025	PAYA LEBAR AIRPORT – MOBILE CRANE		2025/03/11 2026/03/20	
043/2025	PAYA LEBAR AIRPORT – CRANES		2025/03/11 2026/02/12	
044/2025	PAYA LEBAR AIRPORT – CRANES		2025/03/11 2026/01/31	
049/2025	PAYA LEBAR AIRPORT – CRANES		2025/03/11 2026/12/31	
050/2025	PAYA LEBAR AIRPORT – CRANES		2025/04/10 2026/03/01	
051/2025	PAYA LEBAR AIRPORT – CRANES		2025/04/10 2026/03/05	
052/2025	PAYA LEBAR AIRPORT – CRANES		2025/04/10 2026/03/07	
054/2025	PAYA LEBAR AIRPORT – CRANES		2025/04/10 2026/03/05	
055/2025	PAYA LEBAR AIRPORT – CRANES		2025/04/10 2026/03/27	
064/2025	SINGAPORE CHANGI AIRPORT – APPLY MINIMUM THRUST AT EAST CARGO APRON		2025/05/05 2026/02/28	
065/2025	SINGAPORE CHANGI AIRPORT – TEMPORARY FIXED OBJECTS AT AIRCRAFT STAND 504 AND STRIPS OF RUNWAY 02L/20R, TAXIWAYS N2, W, W3, M4, AND M, USE OF SURVEY LASERS, SOLAR PANELS AND CONCRETE SLABS		2025/05/26 2027/08/31	
067/2025	PAYA LEBAR AIRPORT – CRANE		2025/05/15 2026/04/14	
068/2025	PAYA LEBAR AIRPORT – CRANES		2025/05/15 2026/04/17	

NR/Year	Subject	AIP section(s) affected	Period of Validity	Cancellation record
069/2025	PAYA LEBAR AIRPORT – CRANES		2025/05/15 2026/04/22	
070/2025	PAYA LEBAR AIRPORT – CRANES		2025/05/15 2026/04/26	
071/2025	PAYA LEBAR AIRPORT – CRANES		2025/05/15 2026/04/17	
075/2025	PAYA LEBAR AIRPORT – CRANES		2025/05/15 2026/05/01	
076/2025	PAYA LEBAR AIRPORT – CRANES		2025/05/15 2026/05/01	
078/2025	PAYA LEBAR AIRPORT – CRANES		2025/05/15 2026/05/01	
079/2025	PAYA LEBAR AIRPORT – CRANES		2025/05/15 2026/05/02	
080/2025	PAYA LEBAR AIRPORT – CRANES		2025/05/15 2026/05/01	
083/2025	PAYA LEBAR AIRPORT – CRANES		2025/05/29 2026/12/31	
084/2025	PAYA LEBAR AIRPORT – CRANE		2025/05/29 2026/12/31	
085/2025	PAYA LEBAR AIRPORT – CRANES		2025/07/31 2026/08/01	
086/2025	PAYA LEBAR AIRPORT – CRANE		2025/06/19 2026/07/31	
088/2025	PAYA LEBAR AIRPORT – CRANE		2025/06/19 2026/01/31	
090/2025	PAYA LEBAR AIRPORT – CRANES		2025/06/19 2026/05/16	
091/2025	SINGAPORE CHANGI AIRPORT – CHANGES TO PILOT DISPLAY INFORMATION ON THE AIRCRAFT DOCKING GUIDANCE SYSTEM(ADGS) - PILOT DISPLAY UNIT (PDU)		2025/08/07 PERM	
093/2025	PAYA LEBAR AIRPORT – CRANES		2025/07/10 2026/06/01	
094/2025	PAYA LEBAR AIRPORT – CRANES		2025/07/10 2026/06/03	
095/2025	PAYA LEBAR AIRPORT – CRANE		2025/07/10 2026/06/05	
096/2025	PAYA LEBAR AIRPORT – CRANE		2025/07/10 2026/01/31	
098/2025	PAYA LEBAR AIRPORT – CRANE		2025/07/10 2026/01/31	
099/2025	PAYA LEBAR AIRPORT – CRANE		2025/07/10 2026/01/31	
100/2025	PAYA LEBAR AIRPORT – CRANES		2025/07/10 2026/06/06	
102/2025	PAYA LEBAR AIRPORT – CRANES		2025/07/10 2026/06/06	
103/2025	PAYA LEBAR AIRPORT – CRANES		2025/07/10 2026/06/06	
104/2025	PAYA LEBAR AIRPORT – CRANES		2025/07/10 2026/06/06	
105/2025	PAYA LEBAR AIRPORT – CRANES		2025/07/10 2026/06/09	

NR/Year	Subject	AIP section(s) affected	Period of Validity	Cancellation record
106/2025	PAYA LEBAR AIRPORT – CRANES		2025/07/10 2026/06/09	
108/2025	PAYA LEBAR AIRPORT – CRANE		2025/07/10 2026/12/31	
109/2025	PAYA LEBAR AIRPORT – CRANES		2025/07/10 2026/06/13	
111/2025	PAYA LEBAR AIRPORT – CRANE		2025/07/10 2026/01/31	
112/2025	PAYA LEBAR AIRPORT – CRANES		2025/07/10 2026/06/19	
113/2025	PAYA LEBAR AIRPORT – CRANES		2025/07/10 2026/06/20	
114/2025	PAYA LEBAR AIRPORT – CRANE		2025/07/10 2026/12/21	
116/2025	PAYA LEBAR AIRPORT – CRANE		2025/07/10 2026/06/25	
117/2025	PAYA LEBAR AIRPORT – CRANES		2025/07/10 2026/06/30	
119/2025	SINGAPORE CHANGI AIRPORT – UPDATED INFORMATION AND DATA FOR RUNWAY 02R/20L		2025/09/04 2026/02/18	
120/2025	SINGAPORE CHANGI AIRPORT – UPDATED CLOSURE SCHEDULES FOR RUNWAY 02L/20R AND RUNWAY 02C/20C		2025/09/04 2027/03/31	
122/2025	PAYA LEBAR AIRPORT – CRANES		2025/08/14 2026/07/16	
123/2025	PAYA LEBAR AIRPORT – CRANE		2025/08/14 2026/01/31	
124/2025	PAYA LEBAR AIRPORT – CRANES		2025/08/14 2026/07/11	
125/2025	PAYA LEBAR AIRPORT – CRANES		2025/08/14 2026/07/17	
126/2025	PAYA LEBAR AIRPORT – CRANE		2025/08/14 2026/01/31	
128/2025	PAYA LEBAR AIRPORT – CRANE		2025/08/14 2026/07/10	
129/2025	PAYA LEBAR AIRPORT – CRANE		2025/08/14 2026/07/07	
133/2025	PAYA LEBAR AIRPORT – CRANE		2025/08/14 2026/07/04	
134/2025	SINGAPORE CHANGI AIRPORT – TEMPORARY CLOSURE OF TAXILANE N4 BEHIND AIRCRAFT STAND 604 AND DOWNGRADE OF AIRCRAFT STAND 603 TO CODE C		2025/10/02 2026/05/14	
135/2025	PAYA LEBAR AIRPORT – CRANE		2025/09/11 2026/08/26	
136/2025	PAYA LEBAR AIRPORT – CRANE		2025/09/11 2026/01/31	
137/2025	PAYA LEBAR AIRPORT – CRANE		2025/09/11 2026/08/31	
138/2025	PAYA LEBAR AIRPORT – CRANE		2025/09/11 2026/08/28	
140/2025	PAYA LEBAR AIRPORT – CRANE		2025/09/11 2026/08/28	

NR/Year	Subject	AIP section(s) affected	Period of Validity	Cancellation record
141/2025	PAYA LEBAR AIRPORT – CRANE		2025/09/11 2026/08/28	
142/2025	PAYA LEBAR AIRPORT – CRANE		2025/09/11 2026/10/30	
143/2025	PAYA LEBAR AIRPORT – CRANE		2025/09/11 2026/08/19	
144/2025	PAYA LEBAR AIRPORT – CRANE		2025/09/11 2026/08/01	
146/2025	SINGAPORE CHANGI AIRPORT – CLOSURE OF AIRCRAFT STAND 504 AT WEST CARGO APRON		2025/10/30 2027/01/21	
147/2025	SINGAPORE CHANGI AIRPORT – LONG TERM CLOSURE OF AIRCRAFT STAND E5 AT TERMINAL 2, SINGAPORE CHANGI AIRPORT		2025/10/30 2026/05/29	
149/2025	PAYA LEBAR AIRPORT – CRANES		2025/10/09 2026/09/30	
150/2025	PAYA LEBAR AIRPORT – CRANES		2025/10/09 2026/09/30	
151/2025	PAYA LEBAR AIRPORT – CRANES		2025/10/09 2026/09/30	
152/2025	PAYA LEBAR AIRPORT – CRANES		2025/10/09 2026/09/21	
153/2025	PAYA LEBAR AIRPORT – CRANE		2025/10/09 2026/04/22	
154/2025	PAYA LEBAR AIRPORT – CRANES		2025/10/09 2026/09/15	
155/2025	PAYA LEBAR AIRPORT – CRANES		2025/10/09 2026/09/15	
156/2025	PAYA LEBAR AIRPORT – CRANES		2025/10/09 2026/06/16	
157/2025	PAYA LEBAR AIRPORT – CRANES		2025/10/09 2026/09/16	
158/2025	PAYA LEBAR AIRPORT – CRANES		2025/10/09 2026/09/01	
159/2025	IMPLEMENTATION OF AUTOMATIC DEPENDENT SURVEILLANCE BROADCAST (ADS-B) OUT EXCLUSIVE AIRSPACE IN THE SINGAPORE FIR		2025/11/27 PERM	
160/2025	SINGAPORE CHANGI AIRPORT – CHANGES TO PILOT DISPLAY INFORMATION ON THE ADGS PDU		2025/11/27 PERM	
161/2025	FLYING DISPLAYS IN CONJUNCTION WITH THE SINGAPORE AIRSHOW 2026 EXHIBITION FROM THURSDAY 29 JANUARY TO SUNDAY 08 FEBRUARY 2026		2026/01/29 2026/02/08	
162/2025	SEMBAWANG AERODROME – CRANES		2025/12/02 2026/06/22	
163/2025	SINGAPORE CHANGI AIRPORT – OPERATIONALISATION OF EXTENDED TAXILANE N1		2026/02/19 PERM	
164/2025	SINGAPORE CHANGI AIRPORT – LONG TERM CLOSURE OF AIRCRAFT STAND E6 AND TAXILANE R1		2026/01/22 2026/05/31	
165/2025	SELETAR AIRPORT – CLOSURE OF HELICOPTER LANDING AREA		2025/12/24 2026/12/31	

NR/Year	Subject	AIP section(s) affected	Period of Validity	Cancellation record
001/2026	SINGAPORE CHANGI AIRPORT – STEEL AND FRANGIBLE FRAMES		2026/01/02 2026/03/26	
002/2026	SINGAPORE CHANGI AIRPORT – UPDATED INFORMATION AND DATA FOR RUNWAY 02R/20L		2026/02/19 2026/08/05	
003/2026	SEMBAWANG AERODROME – CRANES		2026/01/08 2026/12/02	
004/2026	SEMBAWANG AERODROME – CRANES		2026/01/08 2026/11/14	
005/2026	SEMBAWANG AERODROME – CRANES		2026/01/08 2026/10/31	
006/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/12/31	
007/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/03/31	
008/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/12/31	
009/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/12/31	
010/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/12/31	
011/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/12/30	
012/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/11/21	
013/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/12/14	
014/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/12/16	
015/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/12/14	
016/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/12/14	
017/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/07/01	
018/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/12/02	
019/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/12/01	
020/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/12/01	
021/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/11/30	
022/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/06/30	
023/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/09/30	
024/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/11/29	
025/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/11/29	
026/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/11/29	
027/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/11/27	

NR/Year	Subject	AIP section(s) affected	Period of Validity	Cancellation record
028/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/05/30	
029/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/11/24	
030/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/11/06	
031/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/03/17	
032/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/08/15	
033/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/11/14	
034/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/11/14	
035/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/04/30	
036/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/11/11	
037/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/06/30	
038/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/04/30	
039/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/04/30	
040/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/10/31	
041/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/02/27	
042/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/05/24	
043/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/01/31	
044/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/01/31	
045/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/10/24	
046/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/01/31	
047/2026	PAYA LEBAR AIRPORT – CRANE		2026/01/08 2026/10/14	
048/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/10/14	
049/2026	PAYA LEBAR AIRPORT – CRANES		2026/01/08 2026/06/30	
050/2026	FLYING DISPLAYS IN CONJUNCTION WITH THE SINGAPORE AIRSHOW 2026 EXHIBITION FROM THURSDAY 29 JANUARY TO SUNDAY 08 FEBRUARY 2026		2026/01/29 2026/02/08	
051/2026	PAYA LEBAR AIRPORT – FRANGIBLE TOWERS		2026/01/31 2027/12/31	

GEN 0.4 CHECKLIST OF AIP PAGES

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GEN 0.3-3	22 JAN 2026	GEN 2.5-1	27 NOV 2025	ENR 1.1-3	12 JUN 2025
GEN 0.3-4	22 JAN 2026	GEN 2.5-2	12 JUN 2025	ENR 1.1-4	12 JUN 2025
GEN 0.3-5	22 JAN 2026	GEN 2.5-3	27 NOV 2025	ENR 1.1-5	12 JUN 2025
GEN 0.3-6	22 JAN 2026	GEN 2.6-1	12 JUN 2025	ENR 1.1-6	12 JUN 2025
GEN 0.4-1	22 JAN 2026	GEN 2.6-2	12 JUN 2025	ENR 1.1-7	27 NOV 2025
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AD-2-WSSS-SID-62-2	31 OCT 2024	SELETAR		AD-2-WSAT-ADC-1-1	17 JUN 2021
AD-2-WSSS-SID-63-1	31 OCT 2024	AD 2.WSSL-1	02 OCT 2025	WSAG - SEMBAWANG	
AD-2-WSSS-SID-63-2	31 OCT 2024	AD 2.WSSL-2	12 JUN 2025	AD 2.WSAG-1	12 JUN 2025
AD-2-WSSS-SID-64-1	31 OCT 2024	AD 2.WSSL-3	12 JUN 2025	AD 2.WSAG-2	12 JUN 2025
AD-2-WSSS-SID-64-2	31 OCT 2024	AD 2.WSSL-4	02 OCT 2025	AD 2.WSAG-3	12 JUN 2025
AD-2-WSSS-STAR-1-1	31 OCT 2024	AD 2.WSSL-5	02 OCT 2025	WMKJ - JOHOR BAHRU	
AD-2-WSSS-STAR-1-2	31 OCT 2024	AD 2.WSSL-6	02 OCT 2025	AD 2.WMKJ-1	12 JUN 2025
AD-2-WSSS-STAR-2-1	31 OCT 2024	AD 2.WSSL-7	12 JUN 2025	WIDD - BATAM/HANG NADIM	
AD-2-WSSS-STAR-2-2	31 OCT 2024	AD 2.WSSL-8	12 JUN 2025	(INDONESIA)	
AD-2-WSSS-STAR-3-1	31 OCT 2024	AD 2.WSSL-9	12 JUN 2025	AD 2.WIDD-1	12 JUN 2025
AD-2-WSSS-STAR-3-2	31 OCT 2024	AD 2.WSSL-10	12 JUN 2025	WIDN - TANJUNGPINANG /	
AD-2-WSSS-STAR-4-1	31 OCT 2024	AD 2.WSSL-11	12 JUN 2025	RAJA HAJI FISABILILLAH	
AD-2-WSSS-STAR-4-2	31 OCT 2024	AD 2.WSSL-12	12 JUN 2025	(INDONESIA)	
AD-2-WSSS-STAR-5-1	31 OCT 2024	AD 2.WSSL-13	12 JUN 2025	AD 2.WIDN-1	07 AUG 2025
AD-2-WSSS-STAR-5-2	31 OCT 2024	AD 2.WSSL-14	12 JUN 2025	WIDT - TANJUNG BALAI	
AD-2-WSSS-STAR-6-1	31 OCT 2024	AD 2.WSSL-15	12 JUN 2025	KARIMUN/ RAJA HAJI	
AD-2-WSSS-STAR-6-2	31 OCT 2024	AD 2.WSSL-16	12 JUN 2025	ABDULLAH (INDONESIA)	
AD-2-WSSS-STAR-7-1	31 OCT 2024	AD 2.WSSL-17	12 JUN 2025	AD 2.WIDT-1	12 JUN 2025
AD-2-WSSS-STAR-7-2	31 OCT 2024	AD 2.WSSL-18	12 JUN 2025		
AD-2-WSSS-STAR-8-1	31 OCT 2024	AD 2.WSSL-19	12 JUN 2025		
AD-2-WSSS-STAR-8-2	31 OCT 2024	AD-2-WSSL-ADC-1-1	27 NOV 2025		
AD-2-WSSS-STAR-9-1	31 OCT 2024	AD-2-WSSL-ADC-1-2	27 NOV 2025		
AD-2-WSSS-STAR-9-2	31 OCT 2024	AD-2-WSSL-ADC-2-1	27 NOV 2025		
AD-2-WSSS-STAR-10-1	31 OCT 2024	AD-2-WSSL-ADC-3-1	26 DEC 2024		
AD-2-WSSS-STAR-10-2	31 OCT 2024	AD-2-WSSL-AOC-1-1	16 JUL 2020		
AD-2-WSSS-STAR-11-1	31 OCT 2024	AD-2-WSSL-AOC-2-1	16 JUL 2020		
AD-2-WSSS-STAR-11-2	31 OCT 2024	AD-2-WSSL-VAC-1-1	05 SEP 2024		
AD-2-WSSS-STAR-12-1	31 OCT 2024	AD-2-WSSL-VAC-2-1	05 SEP 2024		
AD-2-WSSS-STAR-12-2	31 OCT 2024	AD-2-WSSL-VAC-3-1	05 SEP 2024		
AD-2-WSSS-STAR-13-1	31 OCT 2024	AD-2-WSSL-VAC-4-1	05 SEP 2024		
AD-2-WSSS-STAR-13-2	31 OCT 2024	AD-2-WSSL-VDC-1-1	20 FEB 2025		
AD-2-WSSS-STAR-14-1	31 OCT 2024	AD-2-WSSL-VDC-1-2	20 FEB 2025		
AD-2-WSSS-STAR-14-2	31 OCT 2024	AD-2-WSSL-VDC-2-1	20 FEB 2025		
AD-2-WSSS-STAR-15-1	31 OCT 2024	AD-2-WSSL-VDC-2-2	20 FEB 2025		
AD-2-WSSS-STAR-15-2	31 OCT 2024	AD-2-WSSL-VFR-1-1	31 OCT 2024		
AD-2-WSSS-STAR-16-1	31 OCT 2024	AD-2-WSSL-IFR-1-1	31 OCT 2024		
AD-2-WSSS-STAR-16-2	31 OCT 2024	AD-2-WSSL-IFR-2-1	31 OCT 2024		
AD-2-WSSS-STAR-17-1	31 OCT 2024	WSAP - PAYA LEBAR			
AD-2-WSSS-STAR-17-2	31 OCT 2024	AD 2.WSAP-1	12 JUN 2025		
AD-2-WSSS-STAR-18-1	31 OCT 2024	AD 2.WSAP-2	12 JUN 2025		
AD-2-WSSS-STAR-18-2	31 OCT 2024	AD 2.WSAP-3	12 JUN 2025		
AD-2-WSSS-STAR-19-1	31 OCT 2024	AD 2.WSAP-4	12 JUN 2025		
AD-2-WSSS-STAR-19-2	31 OCT 2024	AD 2.WSAP-5	12 JUN 2025		
AD-2-WSSS-IAC-1-1	20 FEB 2025	AD 2.WSAP-6	12 JUN 2025		
AD-2-WSSS-IAC-2-1	20 FEB 2025	AD 2.WSAP-7	02 OCT 2025		
AD-2-WSSS-IAC-3-1	20 FEB 2025	AD 2.WSAP-8	02 OCT 2025		
AD-2-WSSS-IAC-5-1	20 FEB 2025	AD 2.WSAP-9	02 OCT 2025		
AD-2-WSSS-IAC-6-1	20 FEB 2025	AD 2.WSAP-10	02 OCT 2025		
AD-2-WSSS-IAC-7-1	20 FEB 2025	AD-2-WSAP-ADC-1-1	16 JUL 2020		
AD-2-WSSS-IAC-9-1	20 FEB 2025	AD-2-WSAP-ADC-2-1	16 JUL 2020		
AD-2-WSSS-IAC-9-2	20 FEB 2025	AD-2-WSAP-AOC-1-1	24 MAR 2022		
AD-2-WSSS-IAC-10-1	20 FEB 2025	AD-2-WSAP-IAC-1-1	20 FEB 2025		
AD-2-WSSS-IAC-10-2	20 FEB 2025	AD-2-WSAP-IAC-2-1	20 FEB 2025		
AD-2-WSSS-IAC-11-1	20 FEB 2025	AD-2-WSAP-IAC-3-1	20 FEB 2025		
AD-2-WSSS-IAC-11-2	20 FEB 2025	AD-2-WSAP-IAC-4-1	20 FEB 2025		
AD-2-WSSS-IAC-12-1	20 FEB 2025	AD-2-WSAP-IAC-5-1	20 FEB 2025		
AD-2-WSSS-IAC-12-2	20 FEB 2025	AD-2-WSAP-IAC-6-1	20 FEB 2025		
AD-2-WSSS-IAC-13-1	20 FEB 2025	WSAT - TENGAH			
AD-2-WSSS-IAC-13-2	20 FEB 2025	AD 2.WSAT-1	12 JUN 2025		
AD-2-WSSS-IAC-14-1	31 OCT 2024	AD 2.WSAT-2	02 OCT 2025		
AD-2-WSSS-IAC-14-2	31 OCT 2024	AD 2.WSAT-3	02 OCT 2025		

GEN 1.7 DIFFERENCES FROM ICAO STANDARDS, RECOMMENDED PRACTICES AND PROCEDURES

ANNEX 1 Personnel Licensing, 13th Edition

Chapter 2

2.3.3.1.2

Due to local geographical constraints and boundary, it is not possible to complete one cross-country flight totalling not less than 270km (150NM) in the course of which full-stop landings at two different aerodromes are made. In such cases, a Private Pilot Licence with restriction to fly within Singapore only will be issued.

2.8.2.1

Singapore issues two types of ratings for flying instructors: Flying Instructor Rating and Assistant Flying Instructor Rating. Both ratings meet the ICAO standards for flying instructors. Newly qualified instructors are issued with an Assistant Flying Instructor Rating, and may qualify for a Flying Instructor Rating after acquiring additional flying and instructional experience.

An Assistant Flying Instructor Rating does not entitle the holder to:

- a) give flying instructions unless under the supervision of a person holding a Flying Instructor Rating; or
- b) give directions in respect of the student pilot's first solo day/night flight and first solo cross-country day/night flight.

2.9.1.1

The applicant for a Commercial Pilot Licence (Gliders) shall not be less than 18 years of age.

2.10.1.1

The applicant for a Private Pilot Licence (Balloons and Airships) shall not be less than 17 years of age. The applicant for a Commercial Pilot Licence (Balloons and Airships) shall not be less than 18 years of age.

ANNEX 2 Rules of the Air, 11th Edition

- NIL Difference

DOC 4444

Procedures for Air Navigation Services - Air Traffic Management, 15th Edition (PANS-ATM)

- NIL Difference

DOC 7030

Regional Supplementary Procedures, 5th Edition

MID/ASIA REGIONAL SUPPLEMENTARY PROCEDURES

1.2.1

Flights shall be conducted in accordance with the Instrument Flight Rules (even when not operating in instrument meteorological conditions) when operated:

- a) Above FL200.

ANNEX 3

Meteorological Service for International Air Navigation, 20th Edition

- NIL Difference

ANNEX 4

Aeronautical Charts, 11th Edition

- NIL Difference

ANNEX 5

Units of Measurement to be used in Air and Ground Operations, 5th Edition

- NIL Difference

ANNEX 6

Operation of Aircraft

Part I

(International Commercial Air Transport - Aeroplanes) - 11th Edition

Chapter 12

- 12.4(b) Singapore regulations do not require all cabin crew to be trained on the use of automated external defibrillator (AED). However, the regulations require that at least one senior cabin crew on board every aircraft carrying AED to be trained on the use of AED.

Part II (International General Aviation - Aeroplanes) - 10th Edition
- NIL Difference

Part III (International Operations - Helicopters) - 10th Edition
- NIL Difference

ANNEX 7 Aircraft Nationality and Registration Marks, 6th Edition
- NIL Difference.

ANNEX 8 Airworthiness of Aircraft, 12th Edition
- NIL Difference

ANNEX 9 Facilitation, 17th Edition

Chapter 3

3.16.1 Singapore adopts an electronic visa system (e-Visa) to retrieve information to verify the identity of the visa holder.

3.29 Singapore requires all travellers, including Singapore Citizens, Permanent Residents, Long-Term Pass holders and foreign visitors, to complete an electronic SG Arrival Card (SGAC) before/upon arrival in Singapore.

3.51 Singapore may allow the entry of an inadmissible person under special circumstances; for instance, to seek emergency medical treatment. In such cases, the airlines shall continue to be responsible for the custody and care of the passenger and eventual repatriation.

3.71 With effect from 27 Aug 2007, air crew who arrive in Singapore on crew duty and seeking temporary entry into Singapore are required to produce their passports for immigration clearance. However, their passports will not be endorsed. Crew who are nationals of countries that require visa to enter Singapore will continue to be exempted from the visa requirements if they arrive in Singapore as part of their crew duty or to join their assigned flights for the purpose of performing their crew duty.

Chapter 5

5.9.1 Under Singapore's regulations, the cost of custody and care of inadmissible persons pending their removal shall be borne by the aircraft operator.

5.18 The obligations, responsibilities, and costs associated with the removal of deportees are a shared responsibility. Singapore works closely with foreign diplomatic missions to facilitate the removal of deportees.

5.23 A valid travel document is required before any special consideration can be given to the admission of such persons. For Permanent Residents, entry permit and valid Travelling documents are required before entry is granted.

5.29 The required travel document to facilitate the return of the national will be issued upon confirmation of the person's Singapore Citizenship status.

ANNEX 10 Aeronautical Telecommunications

Volume I (Radio Navigation Aids) - 7th Edition

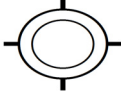
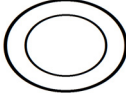
Volume II (Communication Procedures including those with PANS status) - 7th Edition

GEN 2.3 CHART SYMBOLS

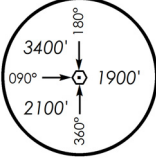
The aeronautical symbols used on charts contained in the AIP and other aeronautical charts series listed in GEN 3.2 are shown below. They correspond in every respect to the internationally agreed symbols contained in ICAO Annex 4 - Aeronautical Charts, Tenth Edition and the Aeronautical Chart Manual Doc 8697-AN/889. A number of symbols, not yet internationally recognised, are also included.

1 AERODROMES

1.1 Charts other than approach charts

Civil (land)	
Joint civil and military (land)	
Military (land)	

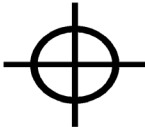
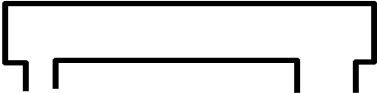
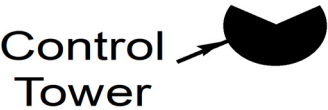
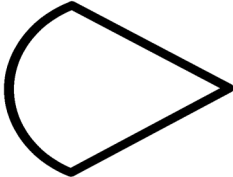
1.2 Approach charts

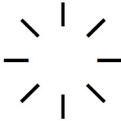
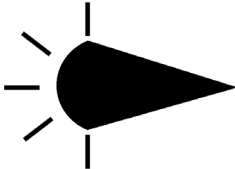
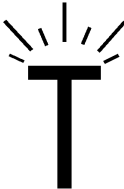
The aerodrome on which the procedure is based	
Aerodromes affecting the traffic pattern on the aerodrome on which the procedure is based	
MINIMUM SECTOR ALTITUDE (MSA) MSA provides 300m (984ft) obstacle clearance and rounding the resulting value up to next higher 30m (100ft) increment, within a radius of 46km (25NM) of the homing facility on which the instrument approach is based.	
DME distance Distance in nautical miles to DME Identification of radio navigation aid	$\frac{8 \text{ DME}}{\text{VTK}}$
VOR radial Radial bearing from, and identification of, VOR	$\text{--- R 295 VTK ---} \rightarrow$
Radio Marker Beacon Elliptical	
Instrument landing system ILS - PLAN VIEW	
Instrument landing system ILS -PROFILE	

1.3 Aerodrome Charts

Hard surface runway	
Stopway	
Clearway	

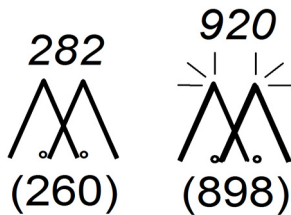
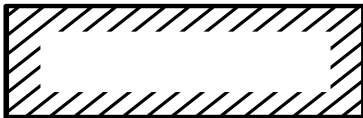
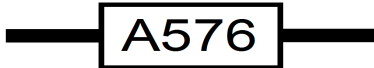
2 AERODROME INSTALLATIONS AND LIGHTS

Aerodrome reference point (ARP)	
Taxiways and parking areas	
Control tower	
Barrette	
Runway visual range (RVR) observation site	

Obstacle light	
Aeronautical ground light	
Wind direction indicator (lighted)	
Landing direction indicator (lighted)	

3 MISCELLANEOUS

Spot elevation	
Obstacles	187  (165) Lighted 197  (175)

Group obstacles Note: Numerals in italics indicate elevation of top of obstacle above sea level. Upright numerals in parentheses indicate height above specified datum.	
Restricted airspace (prohibited, restricted or danger areas)	
Common boundary of two areas	
ATS route - ATS route designator	
ATS route - Two ways airway	
ATS route - One way airway	
Scale-break (on ATS route)	
ATS route reporting point by-pass (No report is required on this route)	

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Each NOTAM is assigned a 4-digit serial number preceded by the letter 'A' indicating the series, followed by a stroke and 2 digits indicating the year of issue. The serial numbers begin with 0001 every year. A checklist of current NOTAMs is issued every month via the AFS. Additionally, a monthly plain language list of valid NOTAM, including indications of the latest AIP Amendment, AIP Supplement, AIC issued and a checklist of current AIP Supplements is also retrievable online at <https://aim-sg.caas.gov.sg>

NOTAM are exchanged with other International NOTAM offices (NOF) as follows:

NOTAM exchanged with other NOF (R=Received only, S=Sent only, EAD=Received from/Sent to European AIS Database)		
Abu Dhabi	Jakarta	Paro (R)
Addis Ababa	Jeddah	Phnom Penh (R)
Almaty (EAD)	Johannesburg	Plaisance
Amman (EAD)	Kabul	Port Moresby
Amsterdam (EAD)	Karachi	Praha (S)
Ankara (EAD)	Kathmandu	Pyongyang
Antananarivo	Khartoum (R)	Riga (EAD)
Athinai	Kobenhavn (EAD)	Roma
Baghdad	Kolkata	Sanaa
Bahrain	Kuala Lumpur	Sarajevo (S)
Baku (EAD)	Kuwait	Seoul
Bangkok	Kyiv (EAD)	Shannon (EAD)
Beijing	Lisboa (EAD)	Sofia
Beograd (EAD)	Ljubljana (EAD)	Stockholm (EAD)
Brasilia (S)	Lobamba (R)	Taipei
Brazzaville (R)	London (EAD)	Tallinn (EAD)
Brunei	Luqa (EAD)	Tbilisi (EAD)
Bruxelles (EAD)	Macao	Tehran
Bucuresti (EAD)	Madrid (EAD)	Tel Aviv
Budapest (EAD)	Mahe	Tirana (EAD)
Cairo (S)	Male	Tokyo
Canberra	Manila (EAD)	Tripoli
Chennai	Maseru (R)	Vientiane
Christchurch	Minsk (EAD)	Vilnius (EAD)
Colombo	Moskva	Warsaw (S)(EAD)
Damascus (R)	Mumbai	Washington
Dar es-Salaam(R)	Muscat	Wien (EAD)
Dhaka	Nadi	Windhoek (R)
Frankfurt (EAD)	Nairobi	Yangon
Ha Noi	New Delhi	Yerevan (S) (EAD)
Harare	Nicosia (EAD)	Zagreb (EAD)
Helsinki (EAD)	Ottawa	Zurich
Hong Kong	Paris (EAD)	

SNOWTAM

Series S (SNOWTAM) comprises information concerning the presence or cessation of hazardous conditions due to snow, ice, slush, frost, standing water or water associated with snow, slush, ice or frost on the movement area.

SNOWTAM is issued for Singapore Changi Airport and Seletar Airport in accordance with ICAO PANS-AIM (Doc 10066), Appendix 4 by the International NOTAM Office (NOF).

Pre-flight Information Bulletin (PIB), a recapitulation of valid NOTAM in plain language, can be retrieved from AIM-SG URL: <https://aim-sg.caas.gov.sg>

3.1.3.6 Aeronautical Information Circular (AIC)

Aeronautical Information Circular (AIC) contains information on the long-term forecast of major change in legislation, regulations, procedures or facilities; information of a purely explanatory or advisory nature liable to affect flight safety; and information or notification of an explanatory or advisory nature concerning technical, legislative or purely administrative matters which is inappropriate to the AIP or NOTAM, and is published as required.

Each AIC is numbered consecutively on a calendar year basis. The year, indicated by 2 digits, is a part of the serial number of the AIC. A checklist of current AIC is issued in the form of an AIC once a year.

3.1.3.7 Aeronautical Charts

Aeronautical charts are a visual representation of a portion of the Earth specifically designated to meet the needs of air navigation.

3.1.3.8 Sale of publications

The Aeronautical Information Products can be accessed freely via AIM-SG URL: <https://aim-sg.caas.gov.sg>.

3.1.4 AIRAC SYSTEM

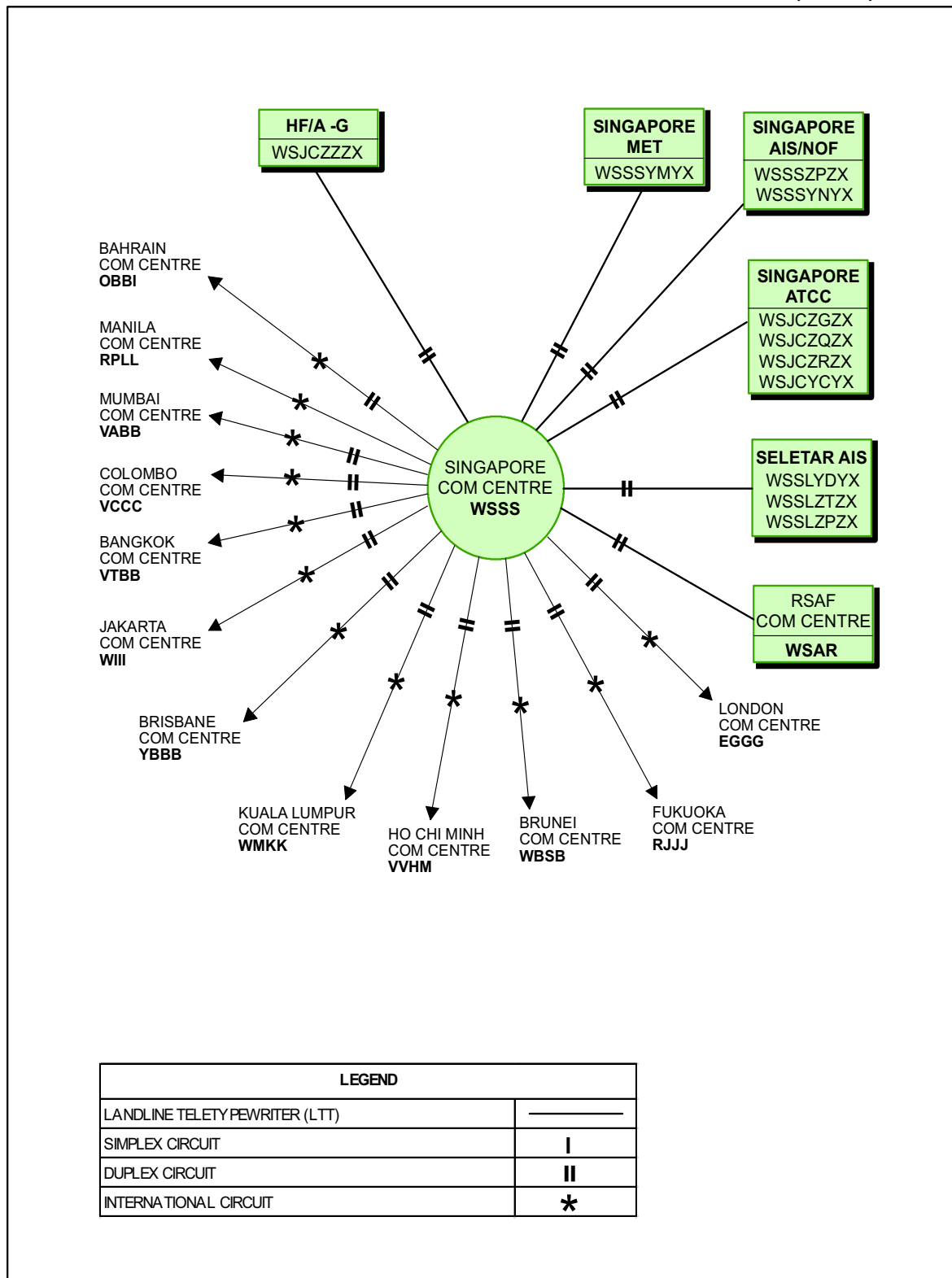
3.1.4.1 In order to control and regulate operationally significant changes requiring amendments to charts, route manuals, etc., such changes, whenever possible, will be issued on predetermined dates according to the AIRAC SYSTEM. This type of information will be published in an AIRAC AIP Supplement.

3.1.4.2 AIRAC information will be issued so that the information will be received by the user not later than 28 days, and for major changes not later than 56 days, before the effective date. The table below indicates AIRAC effective dates for Years 2022 to 2026:

AIRAC Effective Dates				
Year 2022	Year 2023	Year 2024	Year 2025	Year 2026
27 January	26 January	25 January	23 January	22 January
24 February	23 February	22 February	20 February	19 February
24 March	23 March	21 March	20 March	19 March
21 April	20 April	18 April	17 April	16 April
19 May	18 May	16 May	15 May	14 May
16 June	15 June	13 June	12 June	11 June
14 July	13 July	11 July	10 July	09 July
11 August	10 August	08 August	07 August	06 August
08 September	07 September	05 September	04 September	03 September
06 October	05 October	03 October	02 October	01 October
03 November	02 November	31 October	30 October	29 October
01 December	30 November	28 November	27 November	26 November
29 December	28 December	26 December	25 December	24 December

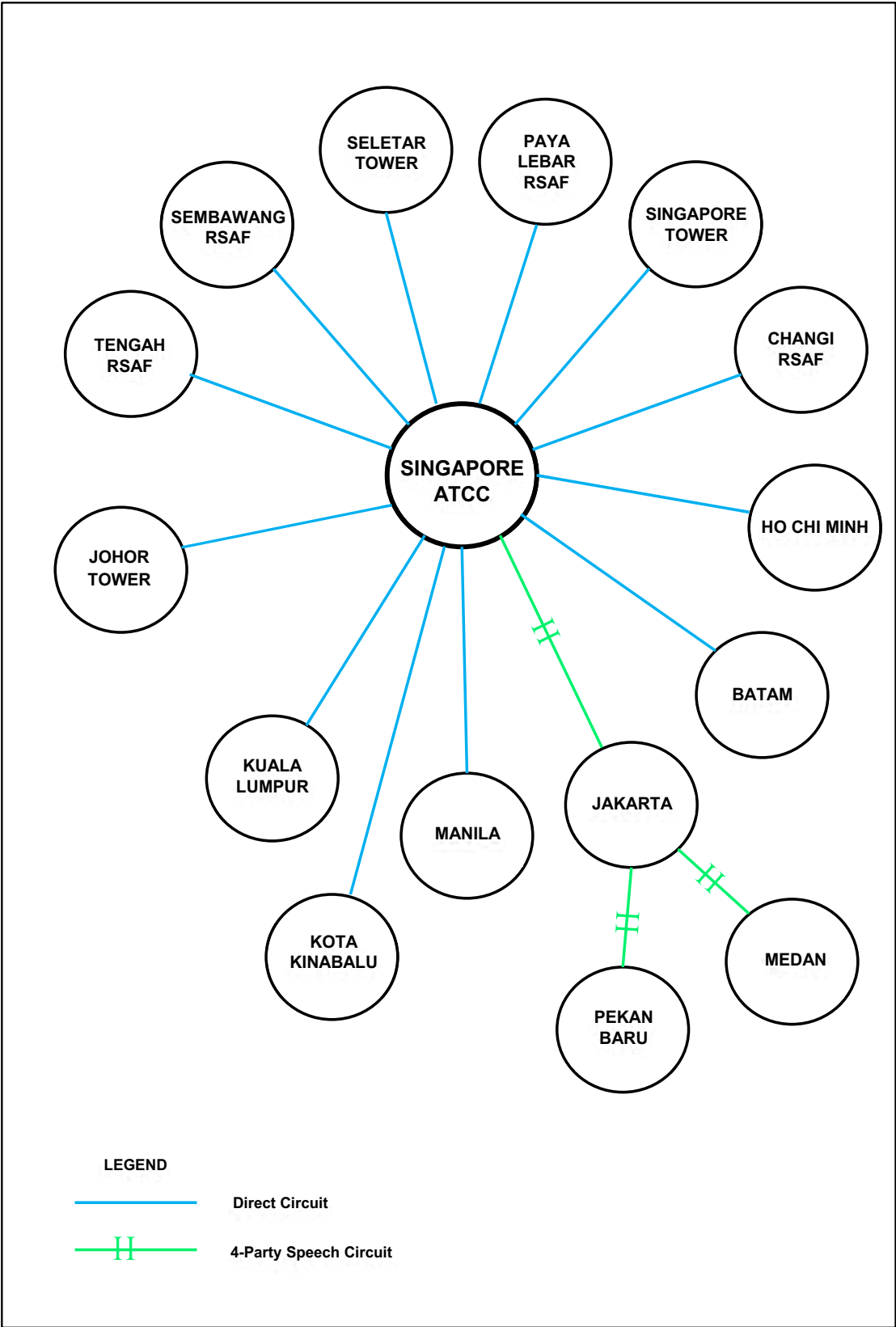
3.1.4.3 A TRIGGER NOTAM will be originated giving a brief description of the contents of the AIRAC AIP Supplement, the effective date and time, and the reference number of the AIRAC AIP Supplement. This trigger NOTAM will come into force on the same effective date and time as the AIRAC AIP Supplement and will remain in force until 14 days after the effective date.

**AERONAUTICAL FIXED SERVICES -
AERONAUTICAL FIXED TELECOMMUNICATIONS NETWORK (AFTN)
AIR TRAFFIC SERVICES (ATS) MESSAGE HANDLING SERVICES (AMHS)**



CHANGES : Amended VVTS to VVHM

AERONAUTICAL FIXED SERVICES - TELEPHONE



GEN 4 CHARGES FOR AERODROMES/HELIPORT AND AIR NAVIGATION SERVICES

GEN 4.1 AERODROME CHARGES

1 AIRPORT FEES AND CHARGES APPLICABLE AT SINGAPORE CHANGI AIRPORT

1.1 These charges are set out in the website of the airport operator, Changi Airport Group (Singapore) Pte Ltd: <https://www.changiairport.com/content/dam/changiairport/sg/corporate/evergreen/resources/forms-and-manuals/documents/list-of-fees-and-charges.pdf>

1.2 Exemption from payment of any Singapore Changi Airport charges are set out in the CAAS (Licensing of Airport Operators) Regulations 2009, accessible from the link below: [https://www.caas.gov.sg/docs/default-source/docs---legal/civil-aviation-authority-of-singapore-\(licensing-o.pdf](https://www.caas.gov.sg/docs/default-source/docs---legal/civil-aviation-authority-of-singapore-(licensing-o.pdf)

2 AIRPORT FEES AND CHARGES APPLICABLE AT SELETAR AIRPORT

2.1 These charges are set out in the website of the airport operator, Changi Airport Group (Singapore) Pte Ltd: <https://www.seletarairport.com/fees-charges.html>

2.2 Exemption from payment of any Seletar Airport charges are set out in the CAAS (Licensing of Airport Operators) Regulations 2009, accessible from the link below: [https://www.caas.gov.sg/docs/default-source/docs---legal/civil-aviation-authority-of-singapore-\(licensing-o.pdf](https://www.caas.gov.sg/docs/default-source/docs---legal/civil-aviation-authority-of-singapore-(licensing-o.pdf)

3 HANGAR FEES

3.1 Hangar facilities at Singapore Changi Airport are managed by Singapore Airlines Ltd. Information on hangar fees may be obtained from Singapore Airlines (SIA).

3.2 Hangar facilities at Seletar Airport are managed by JTC's tenants. Information on hangar fees may be obtained directly from the tenants.

4 NOISE RELATED ITEMS

4.1 Please refer to AIP Singapore, Aerodrome sections of the respective airports.

5 GROUND HANDLING SERVICE CHARGES

5.1 The ground handling services at Singapore Changi Airport have been out-sourced by the airport operator, Changi Airport Group (Singapore) Pte Ltd to the licensed ground handlers. Unlike the other 2 licensed ground handlers, SIA Engineering Company Limited is licenced to provide only a subset of the apron handling services. Please contact the following licensed ground handlers for information on ground handling services and related charges:

DNATA Singapore Pte Ltd https://www.dnata.com/en/contact-us
SATS Ltd https://www.sats.com.sg/about-sats/contact-us
SIA Engineering Company Limited https://www.siaec.com.sg/contact_us.html

5.2 The ground handling services at Seletar Airport have been out-sourced by the airport operator, Changi Airport Group (Singapore) Pte Ltd to the licensed ground handlers. Please contact the licensed ground handlers for information on ground handling services and related charges. The licensed ground handlers' contact details are set out in the website of the airport operator, Changi Airport Group (Singapore) Pte Ltd: <https://www.seletarairport.com/ground-handling-agents-at-seletar-airport.html>

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ENR 1.8 REGIONAL SUPPLEMENTARY PROCEDURES**1 RVSM PROCEDURES IN THE SINGAPORE FIR AND AIRSPACE WHERE ATS IS PROVIDED BY SINGAPORE (SEE ENR 2.1)****1.1 IMPLEMENTATION OF FLOS (FLIGHT LEVEL ORIENTATION SCHEME) AND FLAS (FLIGHT LEVEL ALLOCATION SCHEME) IN THE WESTERN PACIFIC/SOUTH CHINA SEA AREA**

1.1.1 In order to minimise flight level transition requirements for flights entering and leaving the Western Pacific / South China Sea area, the following flight level arrangements will be implemented simultaneously and permanently:

- a) a single alternate FLOS (i.e. 'east odd flight levels, west even flight levels') in compliance with the Table "RVSM-FEET" of Appendix 3 of ICAO Annex 2 and in accordance with the FLOS in surrounding areas;
- b) special high capacity arrangements for six unidirectional parallel routes (L625, L642, M767, M771, N884 and N892) that involve the use of odd and even flight levels in the same direction of flight; and
- c) an associated FLAS agreed between affected ACCs to facilitate ATC 'No-PDC' operations.

1.1.2 Non-RVSM approved aircraft shall fly below RVSM airspace unless prior approval has been obtained from the ACC concerned for such aircraft to operate in RVSM airspace. In the assignment of cruising level in RVSM airspace, RVSM-approved aircraft shall be given priority over non-RVSM approved aircraft.

1.1.3 When an RVSM-approved aircraft reports that it is no longer RVSM-compliant before the transfer of control point, the transferring ACC shall immediately notify the receiving ACC of this fact and provide conventional vertical separation of 2,000ft between this aircraft and the other aircraft.

1.2 RVSM OPERATIONAL APPROVAL AND MONITORING

1.2.1 Operators must obtain airworthiness and operational approval from the State of Registry or State of the Operator, as appropriate, to conduct RVSM operations. The requirement for operators to qualify for RVSM operational approval can be found at:

<https://www.caas.gov.sg/legislation-regulations/guidelines-advisory/air-operations>

Each aircraft operating in RVSM airspace shall hold a valid RVSM approval. RVSM approval issued for one region will always be valid for RVSM operations in another region provided specific restrictions have not been imposed on the operator by the State of the Operator or State of Registry. The Monitoring Agency for Asia Region (MAAR) monitors operator compliance with State approvals requirements by performing periodic scrutiny checks using Traffic Sample Data and the RVSM approvals record (<https://www.aerothai.co.th/maar/approvals.php>)

1.2.2 Operators are required to participate in the RVSM aircraft monitoring program. This is an essential element of the RVSM implementation program in that it confirms that the aircraft altitude-keeping performance standard is being met. Monitoring accomplished for other regions can be used to fulfil the monitoring requirements for the Asia/Pacific Region. The information on height-keeping performance monitoring options can be found at:

<https://www.aerothai.co.th/maar/>

1.3 ACAS II AND TRANSPONDER EQUIPAGE

1.3.1 Aircraft operating in RVSM airspace shall be equipped with an airborne collision avoidance system (ACAS II) and to operate the ACAS system in accordance with the relevant provisions of ICAO Annex 10, Volume IV, Chapter 4.

1.4 IN-FLIGHT PROCEDURES WITHIN RVSM AIRSPACE

1.4.1 Before entering RVSM airspace, the pilot should review the status of required equipment. The following equipment should be operating normally:

- a. two primary altimetry systems;
- b. one automatic altitude-keeping device; and
- c. one altitude-alerting device.

1.4.2 The pilot must notify ATC whenever the aircraft:

- a. is no longer RVSM compliant due to equipment failure; or
- b. experiences loss of redundancy of altimetry systems; or
- c. encounters turbulence that affects the capability to maintain flight level.

See Appendix A for pilot and controller actions in contingency scenarios.

1.4.3 During cleared transition between levels, the aircraft should not overshoot or undershoot the assigned FL by more than 150ft (45m).

1.4.4 Except in an ADS or radar environment, pilots shall report reaching any altitude assigned within RVSM airspace.

1.5 SPECIAL PROCEDURES FOR IN-FLIGHT CONTINGENCIES IN OCEANIC AIRSPACE

Introduction

1.5.1 Although all possible contingencies cannot be covered, the procedures in 1.5.4, 1.5.5 and 1.5.6 provide for the more frequent cases such as:

- a. the inability to comply with assigned clearance due to meteorological conditions (1.5.6 refers);
- b. en-route diversion across the prevailing traffic flow (for example, due to medical emergencies (1.5.4 and 1.5.5 refer)); and
- c. the loss of, or significant reduction in, the required navigation capability when operating in an airspace where the navigation performance accuracy is a prerequisite to the safe conduct of flight operations, or pressurization failure (1.5.4 and 1.5.5 refer).

1.5.2 The pilot shall take action as necessary to ensure the safety of the aircraft, and the pilot's judgement shall determine the sequence of actions to be taken, having regard to the prevailing circumstances. Air traffic control shall render all possible assistance.

General Procedures

Note.- Figure 1.5-1 provides an aid for understanding and applying the contingency procedures contained in Section 1.5

1.5.3 If an aircraft is unable to continue the flight in accordance with its ATC clearance, a revised clearance shall be obtained, whenever possible, prior to initiating any action.

1.5.4 If prior clearance cannot be obtained, the following contingency procedures should be employed until a revised clearance is received. In general terms, the aircraft should be flown at an offset level and on an offset track where other aircraft are less likely to be encountered. Specifically, the pilot shall:

- a. leave the cleared track or ATS route by initially turning at least 30 degrees to the right or to the left, in order to establish and maintain a parallel, same direction track or ATS route offset 5.0 NM. The direction of the turn should be based on one or more of the following factors:
 - 1) aircraft position relative to any organized track or ATS route system;
 - 2) the direction of flights and flight levels allocated on adjacent tracks;
 - 3) the direction to an alternate airport;
 - 4) any strategic lateral offset being flown; and
 - 5) terrain clearance.

3.5.2 Longitudinal Separation

- a. 80NM RNAV or 10 minutes (or less) Mach Number Technique (MNT) separation minima may be applied between aircraft in situations where DCPC could not be maintained or when RCP240 / RSP180 performance requirement could not be complied.

Note: The maximum ADS-C periodic reporting interval of 12 minutes shall be used for RNP 4 approved aircraft.

- b. 50NM longitudinal separation may be applied between RNP10 approved aircraft on RNAV routes L642, L762, M635, M767, M768, M771, M774 and N884 which either LOGON to CPDLC or are within VHF radio range.
- c. 30NM longitudinal separation may be applied between RNP 4 approved aircraft on RNAV routes M767 and N884 which are LOGON to CPDLC.

3.6 OPERATORS' PROCEDURES

3.6.1 The operator shall ensure in-flight procedures, crew manuals and training programmes are established in accordance with RNP 10 or RNP 4 navigation requirements.

3.7 CONTINGENCY PROCEDURES (including WEATHER DEVIATION)

3.7.1 Contingency procedures, including weather deviation, shall be in accordance with the provisions contained in ENR 1.8 paragraphs 1 and 6.

4 NO-PRE-DEPARTURE CO-ORDINATION (NO PDC) PROCEDURES

4.1 INTRODUCTION

4.1.1 No Pre-Departure Co-ordination (No PDC) procedures apply to flights departing from airports within Bangkok, Ha Noi, Ho Chi Minh, Hong Kong, Jakarta, Kota Kinabalu, Kuala Lumpur, Manila, Phnom Penh, Sanya, Singapore, Taipei, Ujung Pandang and Vientiane FIRs operating on RNAV and ATS routes over the South China Sea.

4.1.2 No Pre-Departure Co-ordination (No PDC) levels and FPL route shall be omitted in content of ATC clearance for departures from Singapore Changi Airport on ATS routes A457, B466 and B469/M751 to destinations in Peninsular Malaysia and Thailand, as well as to Medan Polonia.

4.2 NO PDC FLIGHT LEVEL ALLOCATION

4.2.1 Flight Level Allocation Scheme (FLAS) for Western Pacific / South China Sea Area:

ATS Route	No-PDC Flight Levels (Other levels available with prior approval)	Remarks
G334	Eastbound - FL250, FL270 Westbound - FL260, FL280	
G580	Eastbound - FL270, FL290, FL330 Westbound - FL280, FL300, FL340	
L517	FL280, FL300, FL340	
L625	FL310, FL320, FL350, FL360, FL390, FL400	
L642	FL310, FL320, FL350, FL360, FL390, FL400	
L644	Southbound - FL330, FL410	
B469 / M751	FL280, FL300, FL320, FL340, FL360, FL380, FL400	For flights to/from airports within Bangkok FIR
M753	Northbound - FL260, FL300, FL380 Southbound - FL270, FL330	
M754	Northbound - FL300, FL340, FL380 Southbound - FL290, FL330, FL370, FL410	
M758	Eastbound - FL270, FL290, FL330 Westbound - FL280, FL300, FL340	
M761	Eastbound - FL270, FL290, FL330 Westbound - FL280, FL300, FL340	
M767	FL310, FL320, FL350, FL360, FL390, FL400	
M768	Eastbound - FL270, FL330, FL410 Westbound - FL300, FL380	
M771	FL310, FL320, FL350, FL360, FL390, FL400	

ATS Route	No-PDC Flight Levels (Other levels available with prior approval)	Remarks
M772	Northbound - FL300, FL380	
N875	Eastbound - FL290, FL330, FL370 Westbound - FL300, FL340, FL380	
N884	FL310, FL320, FL350, FL360, FL390, FL400	
N891	Northbound - FL260, FL300, FL380 Southbound - FL330	
N892	FL310, FL320, FL350, FL360, FL390, FL400	

4.2.2 FLAS for Large Scale Weather Deviations (LSWD) in Western Pacific / South China Sea Area as applicable by Singapore ACC:

Flight Level Allocation (LSWD)	ATS Route and Direction of Flight					
	L642	M771	N892	L625	N884	M767
	SW	NE	SW	NE	NE	SW
410						
400	400		400			400
390		390		390	390	
380						
370						
360	360		360			360
350		350		350	350	
340						
330						
320	320		320			320
310		310		310	310	
300						
290						

4.2.3 Aircraft requesting FL280, FL300 and FL320 on ATS routes L510, L759, L515/M770, N571, N571/N877, P628 and P574 will be assigned No-PDC FL280. Succeeding aircraft on the same route will be assigned FL280 with 10 minutes longitudinal separation provided there is no closing speed with the preceding aircraft. Additional longitudinal separation as appropriate shall be provided by ATC for the faster aircraft following a slower aircraft on the same route.

4.2.4 For aircraft operating on ATS routes L510, N571, P574 and P628, which are equipped with Automatic Dependent Surveillance – Contract (ADS-C) and Controller-Pilot Data Link Communication (CPDLC), 7 minutes longitudinal separation will be applied between pair(s) of suitably equipped aircraft on the same route provided there is no closing speed with the preceding aircraft.

4.2.5 For aircraft on N571 or N571/ N877, the first aircraft from Singapore or Kuala Lumpur to be over GUNIP can expect its requested flight level.

4.2.6 For aircraft on M770, the first aircraft from Singapore or Kuala Lumpur to be over the Kuala Lumpur / Bangkok FIR boundary can expect its requested flight level.

4.2.7 For aircraft on L759, the first aircraft from Singapore or Kuala Lumpur to be over the Kuala Lumpur / Bangkok FIR boundary can expect its requested flight level.

4.2.8 For aircraft on P628, the first aircraft from Singapore or Kuala Lumpur to be over VPL can expect its requested flight level.

CR	ATS Route	Direction	FLAS	ACC	Transfer of Communication (TOC)	Remarks
CRH-1	N891 (XONAN - IGARI)	North	FL300	Ha Noi ACC	At IGARI, contact Ha Noi ACC: - VHF: 120.9 / 133.85	International operators may choose to avoid the Ho Chi Minh FIR by using alternate ATS routes in other FIRs.
		South	FL330	Ha Noi ACC	At IGARI, contact Singapore ATC: - ADS / CPDLC: Logon WSJC - VHF: 134.9 / 134.35 - HF: 6556 / 8942	
CRH-2	M753 (OSOTA - IPRIX)	North	FL270	Ha Noi ACC	At IPRIX, contact Ha Noi ACC: - VHF: 120.9	International operators may choose to avoid the Ho Chi Minh FIR by using alternate ATS routes in other FIRs.
		South	FL260	Ha Noi ACC	At IPRIX, contact Singapore ATC: - ADS / CPDLC: Logon WSJC - VHF: 134.9 / 134.35 - HF: 6556 / 8942	
CRH-3	R468 / M768 (SAPEN - TSH - AKMON)	East	FL270	Ha Noi ACC	At AKMON, contact Singapore ATC: - ADS / CPDLC: Logon WSJC - HF: 6556 / 8942	International operators may choose to avoid the Ho Chi Minh FIR by using alternate ATS routes in other FIRs.
		West	FL380	Ha Noi ACC	At AKMON, contact Ha Noi ACC: - VHF: 133.05 / 119.35 - HF: 6556 / 8942	
CRH-4	L642 (EXOTO - ESPOB)	West	FL310 FL320 FL390 FL400	Ha Noi ACC	At ESPOB, contact Singapore ATC: - ADS / CPDLC: Logon WSJC - VHF: 134.9 / 134.35 - HF: 6556 / 8942	International operators may choose to avoid the Ho Chi Minh FIR by using alternate ATS routes in other FIRs.
CRH-5	M771 (DUDIS - DONDA)	East	FL310 FL320 FL390 FL400	Ha Noi ACC	At DUDIS, contact Ha Noi ACC: - VHF: 133.05 / 119.35 - HF: 6556 / 8942	International operators may choose to avoid the Ho Chi Minh FIR by using alternate ATS routes in other FIRs.
CRH-6	N892 (MIGUG - MELAS)	West	FL310 FL320 FL390 FL400	Ha Noi ACC	At MELAS, contact Singapore ATC: - ADS / CPDLC: Logon WSJC - VHF: 134.9 / 134.35 - HF: 6556 / 8942	International operators may choose to avoid the Ho Chi Minh FIR by using alternate ATS routes in other FIRs.
CRH-7	L625 (AKMON - ARESI)	East	FL310 FL320 FL390 FL400	Ha Noi ACC	At AKMON, contact Ha Noi ACC: - VHF: 133.05 / 119.35 - HF: 6556 / 8942	International operators may choose to avoid the Ho Chi Minh FIR by using alternate ATS routes in other FIRs.

7.10.3 Between Singapore and Kota Kinabalu FIR

7.10.3.1 To be developed

7.10.4 Between Singapore and Kuala Lumpur FIR

7.10.4.1 To be developed

7.11 TRAFFIC INFORMATION BROADCASTS BY AIRCRAFT (TIBA)

7.11.1 Introduction and applicability of broadcasts

7.11.1.1 Traffic information broadcasts by aircraft are intended to permit reports and relevant supplementary information of an advisory nature to be transmitted by pilots on a designated VHF radiotelephone (RTF) frequency for the information of pilots of other aircraft in the vicinity.

7.11.1.2 TIBAs shall be introduced only when necessary and as a temporary measure.

7.11.1.3 The broadcast procedures shall be applied in designated airspace where:

- a. there is a need to supplement collision hazard information provided by air traffic services outside controlled airspace; or
- b. there is a temporary disruption of normal air traffic services.

7.11.1.4 Such airspaces shall be identified by the States responsible for provision of air traffic services within these airspaces, if necessary with the assistance of the appropriate ICAO Regional Office(s), and duly promulgated in aeronautical information publications or NOTAM, together with the VHF RTF frequency, the message formats and the procedures to be used. Where, in the case of paragraph 7.11.1.3 a., more than one State is involved, the airspace should be designated on the basis of regional air navigation agreements and promulgated in Doc 7030.

7.11.1.5 When establishing a designated airspace, dates for the review of its applicability at intervals not exceeding 12 months should be agreed by the appropriate ATS authority(ies).

7.11.2 Details of broadcasts

VHF RTF frequency to be used

7.11.2.1 The VHF RTF frequency to be used shall be determined and promulgated on a regional basis. However, in the case of temporary disruption occurring in controlled airspace, the States responsible may promulgate, as the VHF RTF frequency to be used within the limits of that airspace, a frequency used normally for the provision of air traffic control service within that airspace.

7.11.2.2 Where VHF is used for air-ground communications with ATS and an aircraft has only two serviceable VHF sets, one should be tuned to the appropriate ATS frequency and the other to the TIBA frequency.

Listening watch

7.11.2.3 A listening watch shall be maintained on the TIBA frequency 10 minutes before entering the designated airspace until leaving this airspace. For an aircraft taking off from an aerodrome located within the lateral limits of the designated airspace, listening watch should start as soon as appropriate after take-off and be maintained until leaving the airspace.

Time of broadcasts

7.11.2.4 A broadcast shall be made:

- a. 10 minutes before entering the designated airspace or, for a pilot taking off from an aerodrome located within the lateral limits of the designated airspace, as soon as appropriate after take-off;
- b. 10 minutes prior to crossing a reporting point;
- c. 10 minutes prior to crossing or joining an ATS route;
- d. at 20-minute intervals between distant reporting points;
- e. 2 to 5 minutes, where possible, before a change in flight level;
- f. at the time of a change in flight level; and
- g. at any other time considered necessary by the pilot.

Forms of broadcast

7.11.2.5 The broadcasts other than those indicating changes in flight level, i.e. the broadcasts referred to in paragraph 7.11.2.4 a., b., c., d. and g., should be in the following form:

ALL STATIONS (necessary to identify a traffic information broadcast)
(call sign)

ENR 1.9 AIR TRAFFIC FLOW MANAGEMENT (ATFM)

1 AIR TRAFFIC FLOW MANAGEMENT (ATFM)

1.1 ATFM is a service to complement the safe, orderly and efficient delivery of Air Traffic Services (ATS) by regulating air traffic flow to match the prevailing capacity at a given airport or airspace. Through ATFM, airspace users (AUs) and ATS units (ATSUs) can be made aware of predicted delays so that timely adjustment to operations and flight schedules could be made accordingly. ATFM measure such as Ground Delay Programme (GDP), Minimum Departure Interval (MDI) and Miles-in-Trail (MIT) are some of the methods to achieve the objectives of ATFM as defined in ICAO's Manual on Collaborative ATFM (Doc 9971).

1.2 For Singapore FIR and airspace where ATS is provided by Singapore (see ENR 2.1), ATFM services are provided by Civil Aviation Authority of Singapore (CAAS) from the Singapore ATFM Unit (ATFMU) operating on a 24-hour basis. The services comprise the planning and implementation of ATFM measures to balance demand and capacity. The review of the effectiveness of ATFM measures are carried out through the conduct of post operation analysis. The implementation of ATFM measures will be coordinated with AUs and ATSUs through Collaborative Decision Making (CDM) processes and agreed operating procedures.

2 ATFM OPERATIONS FOR FLIGHTS ARRIVING AT SINGAPORE CHANGI AIRPORT

2.1 Where necessary, ATFM measures will be applied for flights scheduled to arrive at Singapore Changi Airport (WSSS).

2.2 Flights departing from the following airports may be subjected to ATFM measures:

States/Administrations	Airport
Cambodia	VDTI, VDSA, VDSV
China	ZGGG, ZGSZ, ZJHK, ZJSY
Hong Kong	VHHH, VMMC
Indonesia	WIII, WADD, WARR
Malaysia	WBGG, WBKK, WMKI, WMKJ, WMKK, WMKL, WMKP, WMSA
Myanmar	VYMD, VYNT, VYYY
Philippines	RPLL, RPLC, RPVM, RPSP
Republic of Korea	RKSI, RKSS, RPKK, RKPC, RKTN, RKNW
Thailand	VTBS, VTSP, VTBD, VTBU, VTCC, VTCT, VTSB, VTSG, VTSM, VTSS, VTUD
Vietnam	VVHM, VVNB, VVDN, VVCI, VVCR, VVPQ, VVVD, VVVH, VVPB, VVCT, VVDL

2.3 When ATFM measures are applied, the Singapore ATFMU will assign Calculated Take-Off Times (CTOTs) to flights departing from the airports listed in paragraph 2.2 planning to arrive into Singapore Changi Airport.

2.4 AUs and ATSUs are advised to refer to the Air Traffic Flow Management (ATFM) Portal to access CTOTs and/or other pertinent ATFM information via the Civil Aviation Authority Singapore (CAAS) Webpage, link provided: <http://www.caas.gov.sg/e-services/air-traffic-flow-management>

2.5 Compliance to CTOT during the ATFM operation is important, it contributes to the realisation of the ATFM plan. It would assist in the reduction of the need for tactical airborne delay, promoting a safer and more efficient operating environment for AOs and AUs.

2.6 All AUs planning to arrive into WSSS shall:

- file and submit FPLs at least 3 hours before the Estimated Off Block Time (EOBT);
- transmit the appropriate ATS messages (CHG / DLA) when the EOBT changes by more than 15 minutes; and
- transmit CNL message if the flight is cancelled after the submission of FPL.

2.7 FPLs and ATS messages shall be addressed to WSJCZQZX.

3 ATFM OPERATIONS FOR FLIGHTS PLANNING TO OPERATE WITHIN THE SINGAPORE FIR AND AIRSPACE WHERE ATS IS PROVIDED BY SINGAPORE (SEE ENR 2.1)

3.1 The Singapore ATFMU may implement ATFM measures to facilitate ATC of flow restrictions originated by downstream ATSUs, with the aim to provide a higher level of predictability for AUs and affected upstream ATSUs when operating in the Singapore FIR and airspace where ATS is provided by Singapore (see ENR 2.1). For example, flow restriction on a given ATS

route in a form of Minutes-in-trail MINIT at downstream segments would be converted into CTOT, and/or Calculated Time Over (CTO) at a given waypoint within the Singapore FIR and airspace where ATS is provided by Singapore (see ENR 2.1).

3.2 Procedures for flight plan submission for such ATFM facilitation would be coordinated tactically by the Singapore ATFMU with AUs and affected upstream ATSUs. The transmit of the appropriate ATS messages would take reference from para 2.6 in the above.

Note: In general, Singapore ATFMU would request for FPL to be filed and submitted within 1 hour from the notification of the activation of ATFM measure.

3.3 FPLs and ATS messages should be addressed to WSJCZQZX.

4 SINGAPORE ATFMU CONTACT INFORMATION AND WEB CONFERENCE

4.1 When ATFM measure are implemented, Singapore ATFMU will open a CDM channel for AUs and affected ATSUs through an active web conferencing facilities and ATFM helpdesk thereafter to facilitate operational queries from AUs relating to the ATFM measure.

4.2 The contact details of the Singapore ATFMU are as follows:

Email: CAAS_ATFMU@caas.gov.sg

Phone: (+65) 62414143, (+65) 62414142

Fax: (+65) 62414034

5 BAY OF BENGAL COOPERATIVE ATFM (BOBCAT)

5.1 INTRODUCTION

5.1.1 BOBCAT service is provided by Aeronautical Radio of Thailand LTD (AEROTHAI) from the Bangkok Air Traffic Flow Management Unit (ATFMU) for westbound flights intending to transit Kabul FIR between 2000 UTC and 2359 UTC daily. The service provided includes calculation, promulgation, and management of mandatory Calculated Take-Off Time (CTOT) and flight level, ATS route, and Calculated Time Over (CTO) at entry waypoint for entry into Kabul FIR for each affected flight.

5.1.2 The Bangkok ATFMU operates on a 24-hour basis and is responsible for westbound flights entering the Kabul FIR at specified times, flight levels and ATS routes in accordance with paragraph 5.2. The objectives of this ATFM service are to:

- a. Reduce ground and en-route delays;
- b. Maximise capacity and optimize the flow of air traffic through Kabul FIR;
- c. Provide an informed choice of routing and flight level selection;
- d. Alleviate unplanned in-flight re-routing and technical stops; and
- e. Assist regional Air Navigation Service Providers (ANSPs) in planning for and managing workload in handling increased air traffic flow through Kabul FIR.

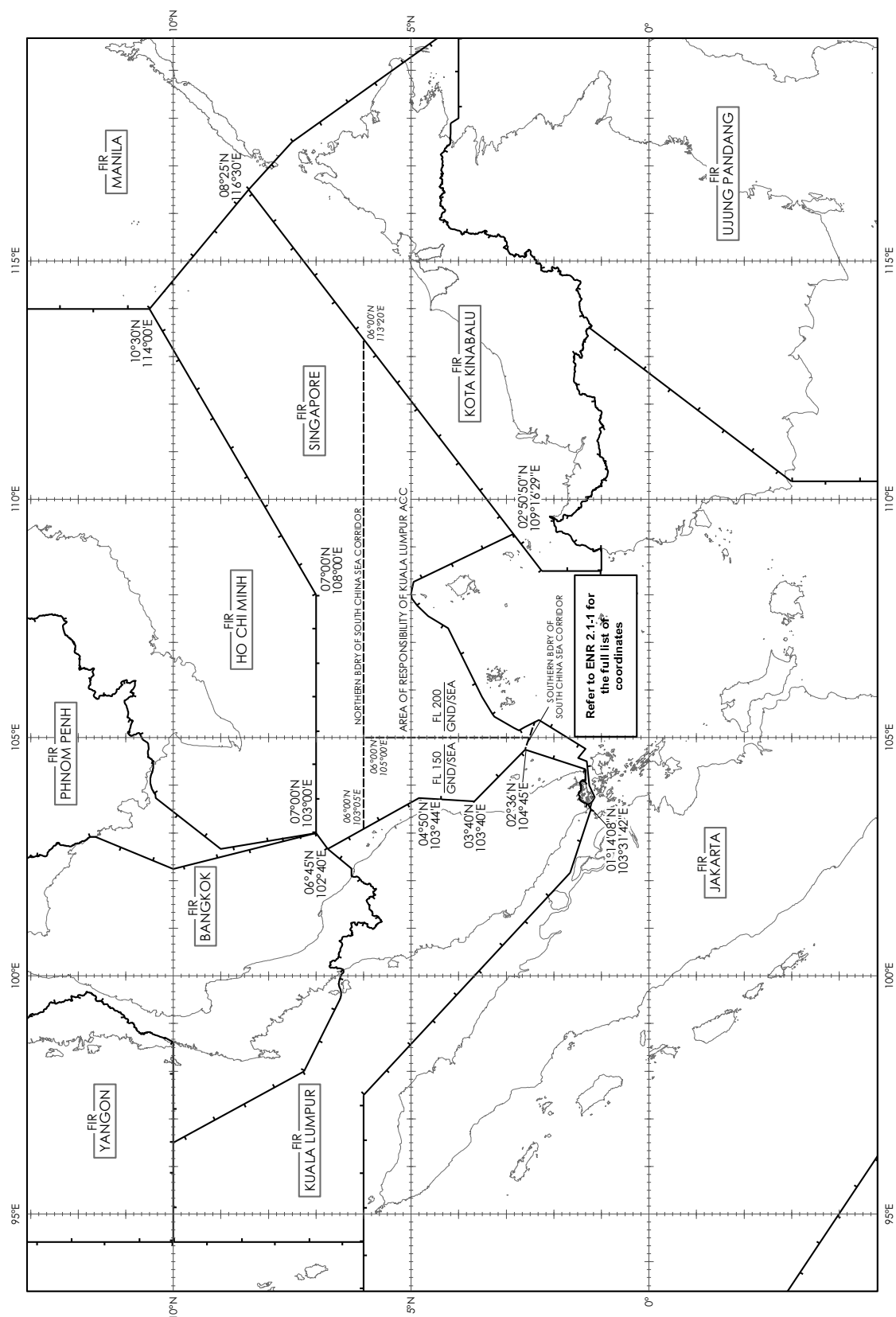
5.1.3 Bangkok ATFMU utilises the automated, web-based BOBCAT in providing ATFM service in Kabul FIR. These responsibilities will be managed in coordination with airspace users and Singapore ATC in the Singapore FIR and airspace where ATS is provided by Singapore (see ENR 2.1).

5.2 ATFM AFFECTED ATS ROUTES, FLIGHT LEVELS AND APPLICABLE HOURS

5.2.1 All westbound flights intending to enter Kabul FIR between 2000 UTC and 2359 UTC daily on ATS routes and flight levels specified in the Table below shall comply with the BOBCAT procedures. This includes a mandatory requirement for all flights to obtain a specific ATFM slot allocation - CTOT, CTO at Kabul FIR entry waypoint, allocated flight level and allocated ATS route from Bangkok ATFMU for entry into Kabul FIR.

Routing through the Kabul FIR	Metering Waypoint	Flight Level
M875 – TAPIS – L509	LAJAK	FL300, FL320, FL340, FL360, FL380, FL400
N644	DOBAT	FL320, FL340, FL360, FL380, FL400
L750	BIROS	FL320, FL340, FL360, FL380, FL400
P628	ASLUM	FL320, FL340, FL360, FL380, FL400
UL333	SERKA	FL320, FL340, FL360, FL380, FL400

SINGAPORE AND ADJACENT FLIGHT INFORMATION REGIONS

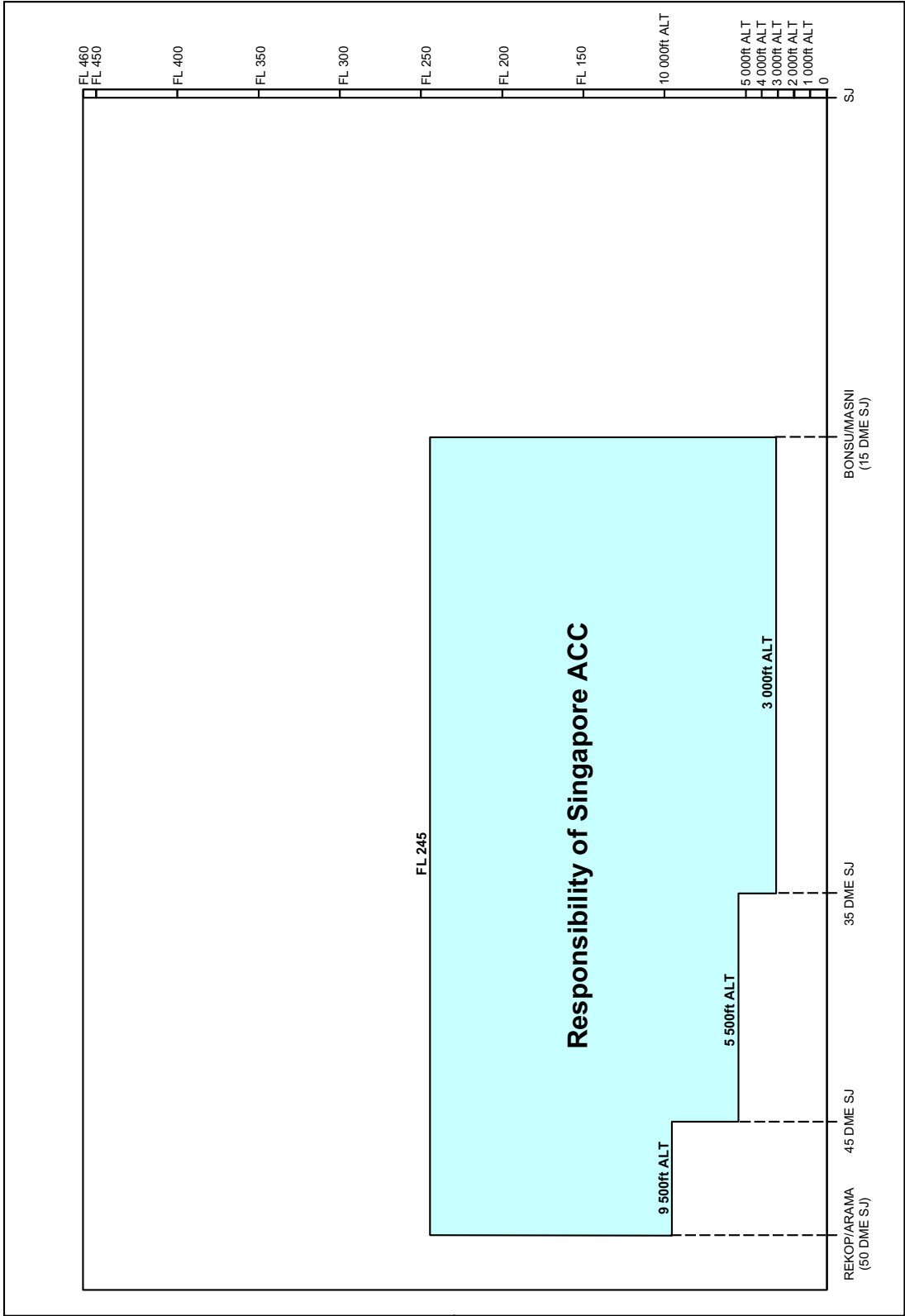


This is a detailed aeronautical chart of the Kuantan, Kuala Lumpur, and Johor regions in Malaysia. The chart is oriented with North at the top and includes latitude and longitude markings along the edges. Key features include:

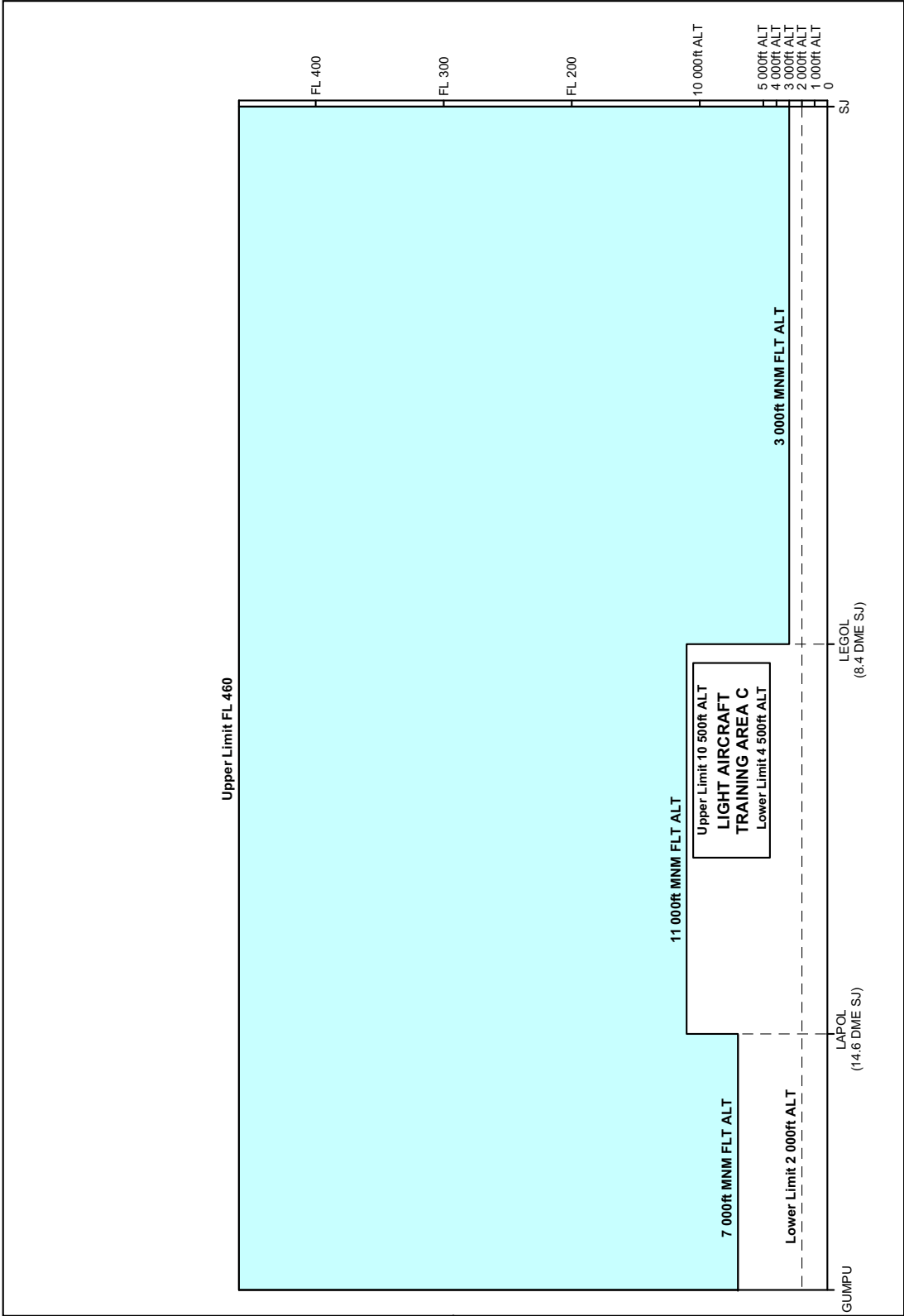
- Airports:** Kuantan (VKN), Kuala Lumpur (VTL), Johor (JHB), and several smaller airports like BEKSO, Y349, Y512, Y514, Y343, Y513, Y511, Y510, Y339, Y342, Y338, Y337, Y336, Y335, Y334, Y333, Y332, Y331, Y330, Y329, Y328, Y327, Y326, Y325, Y324, Y323, Y322, Y321, Y320, Y319, Y318, Y317, Y316, Y315, Y314, Y313, Y312, Y311, Y310, Y309, Y308, Y307, Y306, Y305, Y304, Y303, Y302, Y301, Y300, Y299, Y298, Y297, Y296, Y295, Y294, Y293, Y292, Y291, Y290, Y289, Y288, Y287, Y286, Y285, Y284, Y283, Y282, Y281, Y280, Y279, Y278, Y277, Y276, Y275, Y274, Y273, Y272, Y271, Y270, Y269, Y268, Y267, Y266, Y265, Y264, Y263, Y262, Y261, Y260, Y259, Y258, Y257, Y256, Y255, Y254, Y253, Y252, Y251, Y250, Y249, Y248, Y247, Y246, Y245, Y244, Y243, Y242, Y241, Y240, Y239, Y238, Y237, Y236, Y235, Y234, Y233, Y232, Y231, Y230, Y229, Y228, Y227, Y226, Y225, Y224, Y223, Y222, Y221, Y220, Y219, Y218, Y217, Y216, Y215, Y214, Y213, Y212, Y211, Y210, Y209, Y208, Y207, Y206, Y205, Y204, Y203, Y202, Y201, Y200, Y199, Y198, Y197, Y196, Y195, Y194, Y193, Y192, Y191, Y190, Y189, Y188, Y187, Y186, Y185, Y184, Y183, Y182, Y181, Y180, Y179, Y178, Y177, Y176, Y175, Y174, Y173, Y172, Y171, Y170, Y169, Y168, Y167, Y166, Y165, Y164, Y163, Y162, Y161, Y160, Y159, Y158, Y157, Y156, Y155, Y154, Y153, Y152, Y151, Y150, Y149, Y148, Y147, Y146, Y145, Y144, Y143, Y142, Y141, Y140, Y139, Y138, Y137, Y136, Y135, Y134, Y133, Y132, Y131, Y130, Y129, Y128, Y127, Y126, Y125, Y124, Y123, Y122, Y121, Y120, Y119, Y118, Y117, Y116, Y115, Y114, Y113, Y112, Y111, Y110, Y109, Y108, Y107, Y106, Y105, Y104, Y103, Y102, Y101, Y100, Y99, Y98, Y97, Y96, Y95, Y94, Y93, Y92, Y91, Y90, Y89, Y88, Y87, Y86, Y85, Y84, Y83, Y82, Y81, Y80, Y79, Y78, Y77, Y76, Y75, Y74, Y73, Y72, Y71, Y70, Y69, Y68, Y67, Y66, Y65, Y64, Y63, Y62, Y61, Y60, Y59, Y58, Y57, Y56, Y55, Y54, Y53, Y52, Y51, Y50, Y49, Y48, Y47, Y46, Y45, Y44, Y43, Y42, Y41, Y40, Y39, Y38, Y37, Y36, Y35, Y34, Y33, Y32, Y31, Y30, Y29, Y28, Y27, Y26, Y25, Y24, Y23, Y22, Y21, Y20, Y19, Y18, Y17, Y16, Y15, Y14, Y13, Y12, Y11, Y10, Y9, Y8, Y7, Y6, Y5, Y4, Y3, Y2, Y1, Y0, Y-1, Y-2, Y-3, Y-4, Y-5, Y-6, Y-7, Y-8, Y-9, Y-10, Y-11, Y-12, Y-13, Y-14, Y-15, Y-16, Y-17, Y-18, Y-19, Y-20, Y-21, Y-22, Y-23, Y-24, Y-25, Y-26, Y-27, Y-28, Y-29, Y-30, Y-31, Y-32, Y-33, Y-34, Y-35, Y-36, Y-37, Y-38, Y-39, Y-40, Y-41, Y-42, Y-43, Y-44, Y-45, Y-46, Y-47, Y-48, Y-49, Y-50, Y-51, Y-52, Y-53, Y-54, Y-55, Y-56, Y-57, Y-58, Y-59, Y-60, Y-61, Y-62, Y-63, Y-64, Y-65, Y-66, Y-67, Y-68, Y-69, Y-70, Y-71, Y-72, Y-73, Y-74, Y-75, Y-76, Y-77, Y-78, Y-79, Y-80, Y-81, Y-82, Y-83, Y-84, Y-85, Y-86, Y-87, Y-88, Y-89, Y-90, Y-91, Y-92, Y-93, Y-94, Y-95, Y-96, Y-97, Y-98, Y-99, Y-100, Y-101, Y-102, Y-103, Y-104, Y-105, Y-106, Y-107, Y-108, Y-109, Y-110, Y-111, Y-112, Y-113, Y-114, Y-115, Y-116, Y-117, Y-118, Y-119, Y-120, Y-121, Y-122, Y-123, Y-124, Y-125, Y-126, Y-127, Y-128, Y-129, Y-130, Y-131, Y-132, Y-133, Y-134, Y-135, Y-136, Y-137, Y-138, Y-139, Y-140, Y-141, Y-142, Y-143, Y-144, Y-145, Y-146, Y-147, Y-148, Y-149, Y-150, Y-151, Y-152, Y-153, Y-154, Y-155, Y-156, Y-157, Y-158, Y-159, Y-160, Y-161, Y-162, Y-163, Y-164, Y-165, Y-166, Y-167, Y-168, Y-169, Y-170, Y-171, Y-172, Y-173, Y-174, Y-175, Y-176, Y-177, Y-178, Y-179, Y-180, Y-181, Y-182, Y-183, Y-184, Y-185, Y-186, Y-187, Y-188, Y-189, Y-190, Y-191, Y-192, Y-193, Y-194, Y-195, Y-196, Y-197, Y-198, Y-199, Y-200, Y-201, Y-202, Y-203, Y-204, Y-205, Y-206, Y-207, Y-208, Y-209, Y-210, Y-211, Y-212, Y-213, Y-214, Y-215, Y-216, Y-217, Y-218, Y-219, Y-220, Y-221, Y-222, Y-223, Y-224, Y-225, Y-226, Y-227, Y-228, Y-229, Y-230, Y-231, Y-232, Y-233, Y-234, Y-235, Y-236, Y-237, Y-238, Y-239, Y-240, Y-241, Y-242, Y-243, Y-244, Y-245, Y-246, Y-247, Y-248, Y-249, Y-250, Y-251, Y-252, Y-253, Y-254, Y-255, Y-256, Y-257, Y-258, Y-259, Y-260, Y-261, Y-262, Y-263, Y-264, Y-265, Y-266, Y-267, Y-268, Y-269, Y-270, Y-271, Y-272, Y-273, Y-274, Y-275, Y-276, Y-277, Y-278, Y-279, Y-280, Y-281, Y-282, Y-283, Y-284, Y-285, Y-286, Y-287, Y-288, Y-289, Y-290, Y-291, Y-292, Y-293, Y-294, Y-295, Y-296, Y-297, Y-298, Y-299, Y-300, Y-301, Y-302, Y-303, Y-304, Y-305, Y-306, Y-307, Y-308, Y-309, Y-310, Y-311, Y-312, Y-313, Y-314, Y-315, Y-316, Y-317, Y-318, Y-319, Y-320, Y-321, Y-322, Y-323, Y-324, Y-325, Y-326, Y-327, Y-328, Y-329, Y-330, Y-331, Y-332, Y-333, Y-334, Y-335, Y-336, Y-337, Y-338, Y-339, Y-340, Y-341, Y-342, Y-343, Y-344, Y-345, Y-346, Y-347, Y-348, Y-349, Y-350, Y-351, Y-352, Y-353, Y-354, Y-355, Y-356, Y-357, Y-358, Y-359, Y-360, Y-361, Y-362, Y-363, Y-364, Y-365, Y-366, Y-367, Y-368, Y-369, Y-370, Y-371, Y-372, Y-373, Y-374, Y-375, Y-376, Y-377, Y-378, Y-379, Y-380, Y-381, Y-382, Y-383, Y-384, Y-385, Y-386, Y-387, Y-388, Y-389, Y-390, Y-391, Y-392, Y-393, Y-394, Y-395, Y-396, Y-397, Y-398, Y-399, Y-400, Y-401, Y

CHANGES : Amendment of ATS Routes M763 and Y332 where TAXUL and PADLI are located.

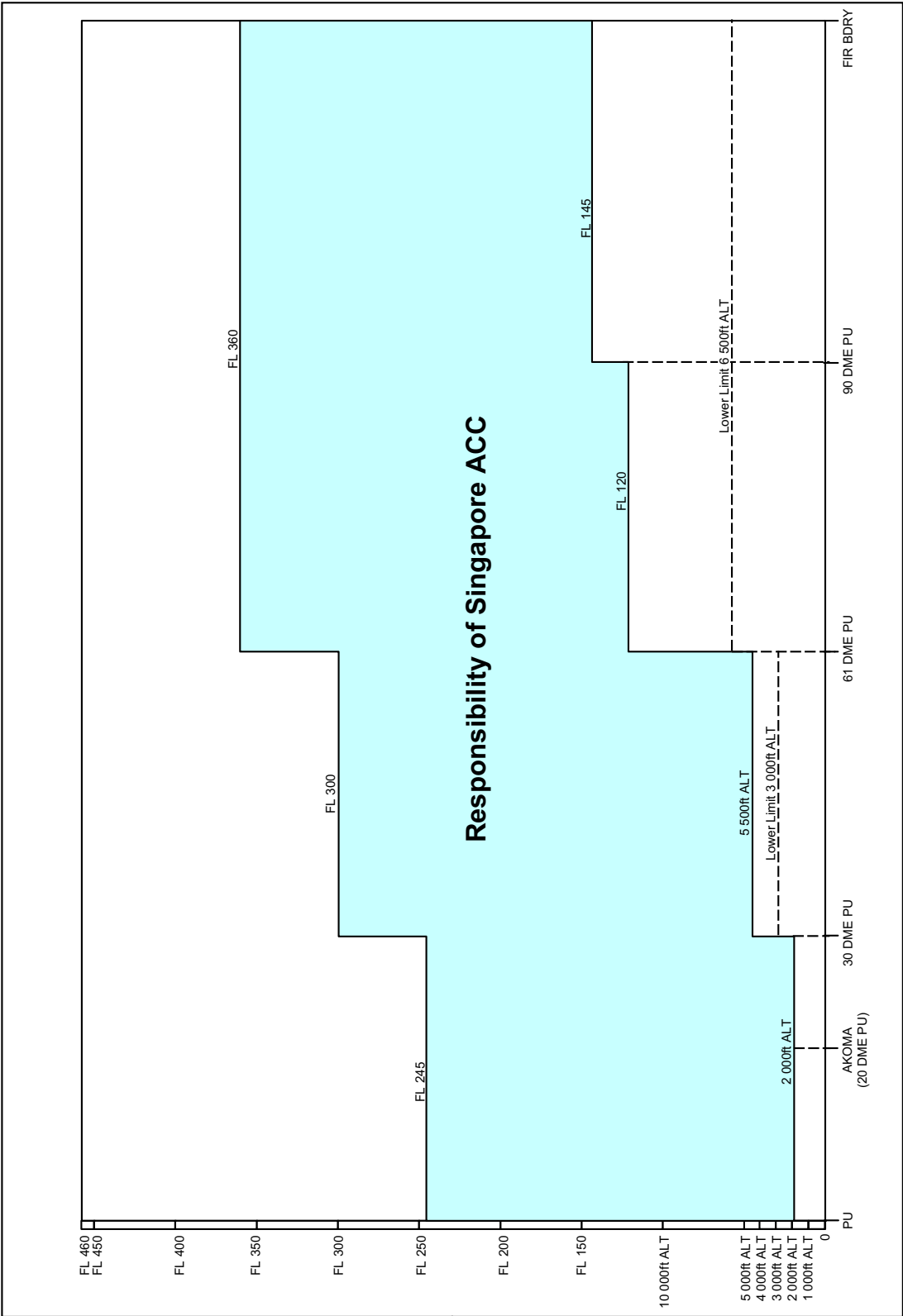
LONGITUDINAL CROSS-SECTION OF SECTOR 1
SJ-REKOP/ARAMA (50 DME SJ)

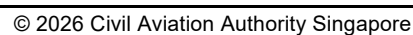


LONGITUDINAL CROSS-SECTION OF G579
FROM GUMPU TO SJ



LONGITUDINAL CROSS-SECTION OF SECTOR 2
PU-SINGAPORE/LUMPUR FIR BOUNDARY





Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates					Remarks
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	Direction of cruising levels		Controlling unit Frequency {Airspace class} Remarks
					↓	↑	
1		2	3	4	5	6	7
M761		Route availability: (1) H24					
▲	PEKAN DVOR/DME (VPK)	032259N 1032524E					
		105° 285°	46.0NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] ⁽²⁾
▲	KETOD (WMFC/WSJC FIR BDRY)	031042N 1040942E					
		105° 285°	10.8NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] ⁽³⁾
▲	OTLON	030752N 1042006E					
		105° 285°	21.0NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] ⁽³⁾
▲	KILOT	030217N 1044023E					
		105° 285°	32.3NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] ⁽³⁾
▲	LIPRO	025342N 1051128E					
		105° 285°	2.4NM	FL 460 FL 240	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] ⁽³⁾
▲	BOPVA (WSJC/WIIF FIR BDRY) (Delegated airspace BDRY)	025303N 1051349E					
		105° 285°	30.9NM	FL 600 FL 245	Odd ⁽¹⁾	Even ⁽¹⁾	[Class A] ⁽³⁾⁽⁴⁾
▲	OSERU (Delegated airspace BDRY)	024450N 1054334E					
<u>Route remarks:</u> -							
<u>Point/Segment Remarks:</u> (2) Segment from VPK to KETOD use: P123.7 MHz S127.3 MHz (3) Segment from KETOD to OSERU use: P134.7 MHz S134.15 MHz (4) Flights above FL370 between BOPVA and OSERU, see AIP Indonesia ENR2.1							

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

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

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	Direction of cruising levels ↓ ↑		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⁾	
▲	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> -							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	Direction of cruising levels ↓ ↑		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							
<u>Point/Segment Remarks:</u> -							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	Direction of cruising levels ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	7
Y339		Route availability: (1) H24					
△	AKOMA (20 DME PU)	014522N 1035443E					
(2)			38.3NM	FL 460 5500 FT ALT	Even ⁽¹⁾		[Class A-ABV FL150 Class B-BLW FL150]
△	AROSO	020846N 1032421E					
<u>Route remarks:</u> Lateral Limits: 11.5NM either side of line joining AKOMA to AROSO. Flight Planning Flights departing from or overflying Singapore FIR to destinations north of WMKK and WMSA are to flight plan via Y339. Flights landing at WMKK and WMSA, or flights operating at FL220 and below, refer to A457. Singapore ACC FREQ: P133.25 MHz S135.8 MHz							
<u>Point/Segment Remarks:</u> -							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	Direction of cruising levels ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	7
Y342		Route availability: (1) H24					
▲	JOHOR BAHRU DVOR/DME (VJB)	013950N 1033939E					
			32.6NM	FL 460 4500 FT ALT	Even ⁽¹⁾		[Class A-ABV FL150 Class B-BLW FL150]
△	AROSO	020846N 1032421E					
<u>Route remarks:</u> Lateral Limits: 10NM either side of line joining VJB to AROSO. Flight Planning Flights overflying Singapore FIR to destinations north of WMKK and WMSA are to flight plan via Y342. Flights landing at WMKK and WMSA, refer to A457.							
<u>Point/Segment Remarks:</u> -							

Route Designator {RNP Type}		[Route Usage Notes]					
	Significant Point Name	Significant Point Coordinates				Remarks	
{RNP Type}		Track MAG ↓ ↑	Dist NM	Upper limit Lower limit	Direction of cruising levels ↓ ↑		Controlling unit Frequency {Airspace class} Remarks
1		2	3	4	5	6	7
Y514		Route availability: (1) H24					
△	VIRID	031728N 1031318E					
(2)			34.6NM	FL 460 11000 FT ALT	Odd ⁽¹⁾		[Class A]
▲	NUFFA	025341N 1033830E					
<u>Route remarks:</u> 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 <u>Point/Segment Remarks:</u> -							

Name-code designator	Coordinates	ATS route or other route	Terminal Area
1	2	3	4
MASNI	012037N 1033746E	A464	
MELAS	070518N 1080912E	N892	
MIBEL	012351N 1020816E	L762	SID-WSSS
MOLVO	012955N 1040227E		SID-WSSS
MOXIB	012933N 1040315E		SID-WSSS
MUMDU	010521N 1042714E		SID-WSSS
MUMSO	034420N 1053213E	N875, N892	
NIVAM	023650N 1040228E	G219	
NIXEB	013943N 1061040E	M767	
NODIN	081100N 1161142E	M522	
NOPAT	042313N 1044756E	L629, N875	
NUFFA	025341N 1033830E	Y514	
NYLON	013657N 1040624E		HLDG ID, IAC-WSSS, SID-WSSS, STAR-WSSS
OBDAB	031153N 1040538E	N891	
OBDOS	002503N 1065551E	M774, T22	
ODONO	063614N 1030129E	M904	
OLKIT	045010N 1115118E	M758	
OLMUT	030306N 1053558E	N884	
OLNUB	011110N 1035147E	G579	
OMDUD	005847N 1035714E	B469, M630	
OMKOM	013112N 1035910E	W401, W651	
OPULA	033155N 1062118E	M758	
OSERU	024450N 1054334E	M761	
OTLAL	004209N 1053052E	M774	
OTLON	030752N 1042006E	M761, M771	
PADLI	030918N 1033133E	B469, Y334, Y335, Y336	

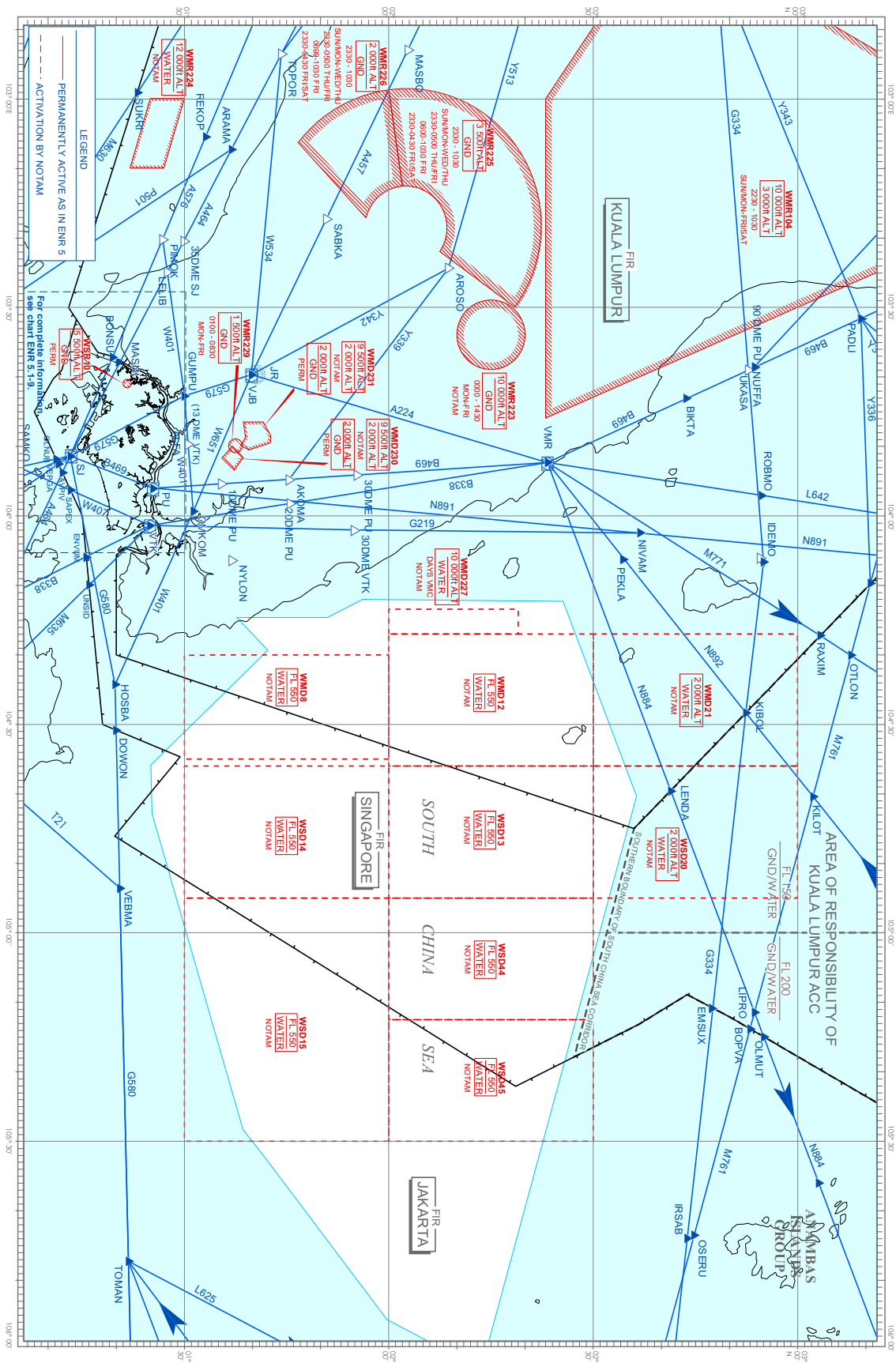
Name-code designator	Coordinates	ATS route or other route	Terminal Area
1	2	3	4
PALGA	011059N 1034759E		STAR-WSSS
PAMSI	010459N 1034845E		STAR-WSSS
PARDI	003400S 1041300E	G579, N502	
PASPU	015915N 1040618E		STAR-WSSS
PEKLA	023437N 1040618E	N892	
PIBAP	023023N 1040618E		STAR-WSSS
PIMOK	012648N 1032008E	A576, W401	
POSOG	002024N 1041323E	B469, P501	
POSUB	012725N 1040748E		STAR-WSSS
POVEB	011344N 1040130E		SID-WSSS
RAXIM	030318N 1041713E	M771	
REKOP	013306N 1030521E	A576	
REMES	004342N 1035735E	G579	HLDG ID, STAR-WSSS
REPOV	001623N 1040300E	G579	HLDG ID, STAR-WSSS
RILRI	044343N 1082239E	N884	
ROBMO	025440N 1035700E	L642	
SABKA	015051N 1031713E	A457	SID-WSSS
SALRU	011701N 1040802E		SID-WSSS
SAMKO	010530N 1035255E	R469, W407	HLDG ID, STAR-WSSS, SID-WSSS
SANAT	010749N 1035930E		STAR-WSSS
SAPEX	011316N 1035617E	W407	
SEBVO	011258N 1043448E		SID-WSSS
SUKRI	012306N 1025904E	M630	
SUMLA	080242N 1160054E	M754	
SURGA	003657S 1063119E	M635, T23, T24	
SUSAR	035848N 1051547E	L635, N875	

Name-code designator	Coordinates	ATS route or other route	Terminal Area
1	2	3	4
TAROS	004200N 1021612E	R469	SID-WSSS
TAXUL	035035N 1034037E	M763	
TEBUN	011455N 1031557E		STAR-WSSS
TEGID	085656N 1155143E	M767	
TERIX	041521N 1093456E	L517, M758, M767	
TIDAR	065230N 1025000E	M904	
TODAM	063138N 1123536E	M767, M768	
TOMAN	012147N 1054717E	G580, L625, M646, M767, T21	SID-WSSS, STAR-WSSS
TOPOR	014412N 1025330E	W534	
TUSNU	003403N 1022109E	W22	
TUSPI	003301N 1040959E		HLDG ID
UDONI	004818N 1040806E	B470	
UGEBO	003813N 1052432E	T22, T23	HLDG ID, STAR-WSSS
UGPEK	033647N 1040752E	L635, N891	
UKIBO	011758N 1035924E		SID-WSSS
UKLIS	034234N 1085149E	M767	
UNSID	011600N 1040955E	M635	
UPLAM	025043N 1063319E	L625	
UPRON	060903N 1032040E	M904, Q803	
UPSAN	004536N 1045439E		HLDG ID
UPTL	005925N 1040730E		SID-WSSS
UPVUN	033022N 1055053E	M758	
URIGO	032505N 1040647E	M758, N891	
URKET	081130N 1145000E	L649	
UXATI	003348N 1035933E	G579, P501	
UXEDA	015449N 1060423E	L625	

Name-code designator	Coordinates	ATS route or other route	Terminal Area
1	2	3	4
VABRI	013115N 1040358E		IAC-WSSS
VAMPO	005833N 1032525E		HLDG ID, STAR-WSSS
VANBU	010643N 1042740E		SID-WSSS
VASTI	004320N 1043406E		SID-WSSS
VEBMA	012030N 1045332E	T21	SID-WSSS
VEGLO	025502N 1051457E	N884	
VENLI	062848N 1024900E	M765	
VENUN	013206N 1061351E	M646	
VEPGA	011131N 1035232E	B470	
VEPLI	035223N 1040542E	L629, L642	
VERIN	023332N 1062425E	L625	
VEXEL	005904N 1034254E		STAR-WSSS
VIBOG	004310N 1034302E		SID-WSSS
VIGUD	011328N 1035730E		SID-WSSS
VILEV	012729N 1040222E		IAC-WSSS
VIMAL	010942N 1042353E		STAR-WSSS
VINIK	083830N 1161348E	M522, M754	
VIRET	003940N 1043511E		SID-WSSS
VIRID	031728N 1031318E	Y514	
VISAT	032620N 1043134E	M758, M771	
VOVOS	011123N 1032651E		SID-WSSS

Identification, Name and Lateral Limits	Upper Limit Lower Limit	Remarks (time of activity, type of restriction, nature of hazard, risk of interception)
1	2	3
DANGER AREAS		
WMD231 ULU TIRAM (NORTH) 013815N 1034950E - 013927N 1035028E - 014238N 1034929E - 014239N 1034822E - 014133N 1034627E - 013840N 1034627E - 013858N 1034840E - 013815N 1034950E	<u>2000 FT ALT *</u> GND	Artillery Firing Range. Active: PERM * When activity necessitates raising upper limit to 9,500ft ALT, 48hr prior notice will be given by NOTAM. (refer to AIP Malaysia)

PROHIBITED, RESTRICTED AND DANGER AREAS - CHART 1



ENROUTE CHART - ICAO

LEGEND

Aerodrome

Flight Information Region (FIR)

Name of FIR: SINGAPORE
Upper limit: UNL
Lower limit: GND/WATER
Unit providing service: ACC SINGAPORE

Terminal Control Area (TMA)

Name of TMA: KUCHING
Airspace Classification: A
Upper limit: FL 250
Lower limit: 3 000ft
Radio frequency (MHz): 134.5, 120.2

Control Zone (CTR)

Name of CTR: 032°
Airspace Classification: 3 000ft
Upper limit: 120.2
Radio frequency (MHz): 120.2

ATS route

Route designator: 1642
Magnetic track: 032°
Distance in nautical miles: 7 000/FL 140
Minimum flight altitude (MFL) (Height level): 7 000/FL 140
Lower limit (ft) (Height level): (7 000) (FL 140)
Required navigation performance: RNP 10

ATS route reporting point by-pass
(No report is required on this route)

Reporting Point (REP)

Compulsory: ▲
On Request: △

ATS/MET reporting point (MRP)

Compulsory: ▲
On Request: △

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

Identification of area: N200
Nationality letter: FL 400
Vertical limits: WATER

Note: Restricted airspace outside Singapore FIR are not shown

Collocated VOR and DME navigation aids (VOR/DME)

Compass rose oriented north to the chart to Magnetic North

Identification for radio navigation aids (NAVAID)

Name: SINGAPORE
NAVAID frequency, identification or call sign: DME/VOR/DME 113.3
Geographical coordinates in WGS-84: 01° 12' N, 103° 27' E
Elevation of DME site (to the nearest 30m): 65m

COP 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 **35**

Abbreviations

A: Airway in which Mach Number Technique and RNAV are applied (Refer to pages ENR 1.6-13 to 1.8-18)
B: Inbound and Outbound flight exempted from reporting aircraft observations of these points.

WS/C/WM/C FIR BDRY REPORTING POINTS	
TAXUL 03 50 35N 104 03 57E	MANIM 03 14 30N 104 05 54E
BUVAL 03 56 22N 104 03 41E	KETOD 03 10 42N 104 09 42E
DOVOL 03 50 47N 104 09 23E	BAKIM 03 03 18N 104 17 13E
IRSL 03 24 52N 105 55 44E	KIBOL 02 52 24N 106 28 18E
EGOLO 03 19 54N 104 04 47E	LENDA 02 41 24N 104 39 32E

RVSIM SEPARATION AVAILABLE
SINGAPORE FIR
BTN FL 250 AND FL 410 (Inclusive)

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
		C
Control zones (CTR)s	Changi CTR	C
	Paya Lebar CTR	B
ATIs	Seletar CTR	B
		C
Uncontrolled airspace		C2

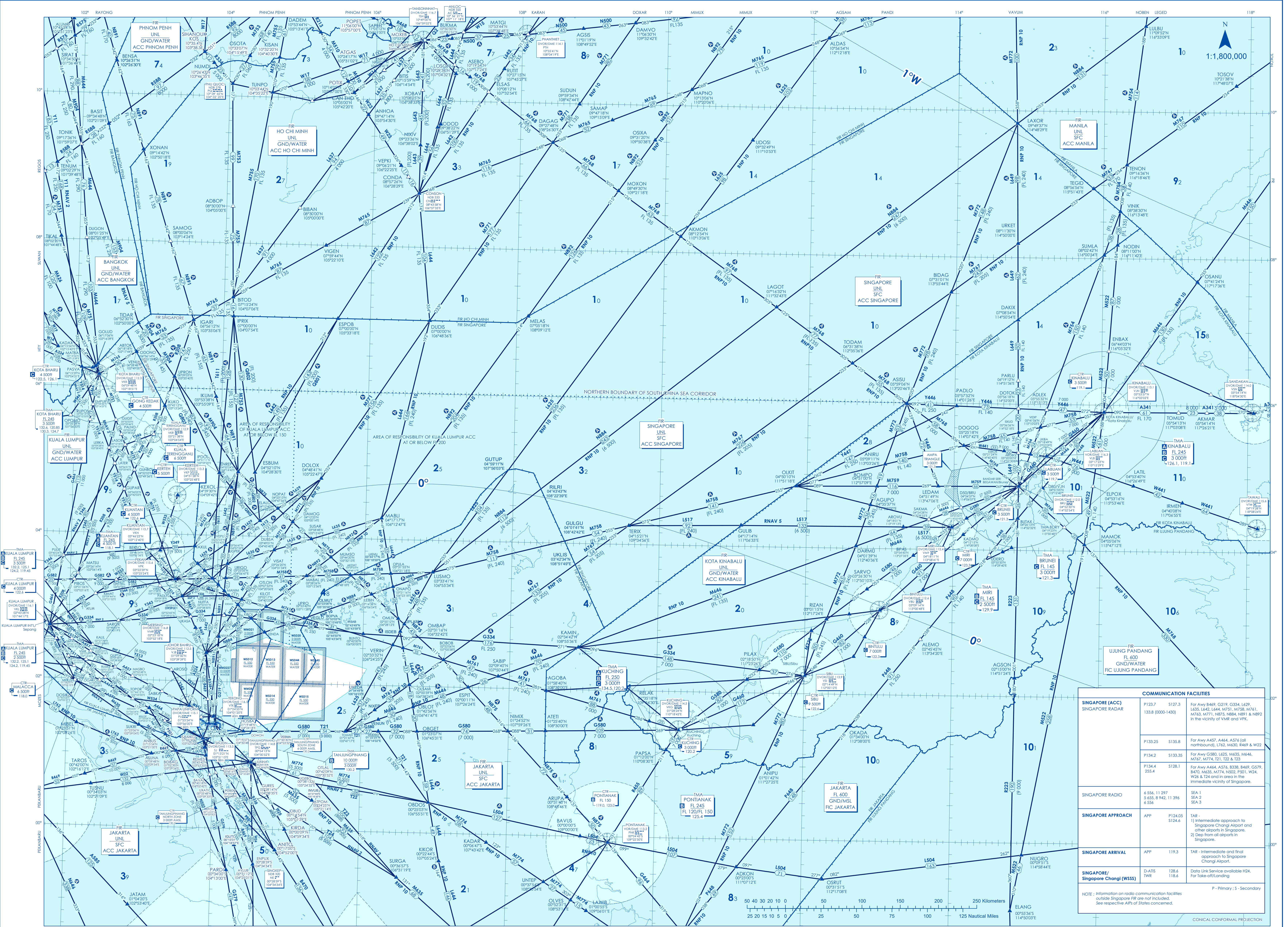
* Aircraft operating in Light Aircraft Training Areas A, B and C (please refer to AIP Singapore page ENR 5.2-1) are required to have continuous two-way communications with the appropriate ATIS authority.

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

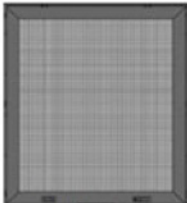
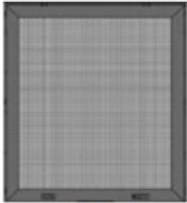
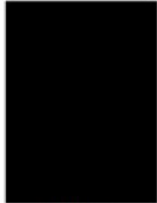
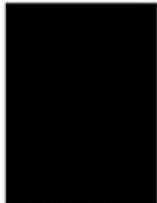
MAGNETIC INFORMATION FOR THE YEAR 2020

MAY 2020



CHANGES: Editorial changes within Singapore, Jakarta and Kota Kinabalu FIR.
Amendment of ATS Routes M763 and Y332 where TAXUL and PADU are located

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Description	Display on ADGS
No Display Pilot should stop the aircraft immediately if the display goes black, for power failure (see figure 1) or system failure (see figure 2), during the docking process. The aircraft is to be manually marshalled into the aircraft stand.	Safedock Type 1  Figure 1  Figure 2 Safedock FleX  Figure 1  Figure 2
Safety Backup (SBU) Stop - When a non-recoverable error has occurred during the docking due to either 1. Hardware failure; 2. Aircraft more than +/- 0.5 meters off the centerline when two (2) meters or less to stop-position; or 3. System Failure - Pilot are to stop the aircraft immediately when seeing the "SBU STOP" display or when given the stop sign by the aircraft marshaller or is unsure of the information displayed during the docking process.	Safedock Type 1  Safedock FleX 
View Blocked When the view towards the aircraft is hindered, the display will show "WAIT VIEW BLOCK" Pilot are to stop the aircraft immediately or when given the stop sign by the aircraft marshaller or is unsure of the information displayed during the docking process.	Safedock Type 1  Safedock FleX 

Description	Display on ADGS
Gate Block - When an object is found to be blocking the view from the ADGS toward the aircraft, the display will show "WAIT GATE BLOCK". Pilot are to stop the aircraft immediately or when the stop sign by the aircraft marshaller or is unsure of the information displayed during the docking process.	Safedock Type 1  Safedock Flex 

2 PROCEDURES FOR START-UP AND PUSHBACK OF AIRCRAFT

- 2.1 Ground crew shall ensure that the area behind an aircraft is clear of vehicles, equipment and other obstructions before the start-up or pushback of aircraft commences.
- 2.2 When it becomes necessary to vary a procedure to expedite aircraft movements, Ground Movement Controller ("Singapore Ground") shall issue specific instructions to the pilot.
- 2.3 When the pilot is ready for start-up and pushback, he shall seek confirmation from the ground crew that there is no hazard to his aircraft starting up. He shall then notify Singapore Ground that he is ready for pushback. On being told by Singapore Ground that pushback is approved, he shall co-ordinate with the ground crew for the start-up and pushback of the aircraft.
- 2.4 The lead-in lines are for aircraft nose-in guidance. For aircraft stands without dedicated pushback lines, ground crew may use the lead-in lines for pushback guidance.
- 2.5 For more information, refer to Airport Operations Centre System (AOCS) at <http://aocs.changiairport.com/cpos/home> for detailed pushback procedures.

3 ADVANCED MULTILATERATION SYSTEM

3.1 INTRODUCTION

3.1.1 The Multilateration System is a new surveillance system which is able to detect and identify all Mode S equipped aircraft and vehicles moving on the airport surface even during bad weather conditions such as heavy rain. It will integrate with the current radar-based ground surveillance system as part of the Advanced-Surface Movement Guidance and Control System (A-SMGCS) at Singapore Changi Airport. This will enhance the efficiency and safety at the airport.

3.2 CARRIAGE OF MODE-S SSR TRANSPONDER

3.2.1 Carriage and operation of Mode-S transponder is required for all civil aircraft operating at Singapore Changi Airport. The Mode-S transponder shall comply, at least, to the requirements of Level 2 as prescribed in ICAO Annex 10 Volume IV (Amendment 77 or later) Standards and Recommended Practices.

3.3 MULTILATERATION SYSTEM OUTLINE

- 3.3.1 The Multilateration System uses multiple receivers to pick up "squitters" transmitted by aircraft or vehicle Mode S transponders. It calculates the position of an aircraft or a vehicle by comparing the time its "squitter" arrives at each receiver.
- 3.3.2 The System will derive the identity of an aircraft by selectively interrogating its transponder to receive its assigned Mode A code or extracting its aircraft identification [that is, the ICAO callsign used in flight and inserted in the Flight Management System (FMS) or the Transponder Control Panel], if available, from its squitter. For transponder equipped vehicles, the system will derive their respective identities from the unique Mode S addresses contained in their squitters.

3.4 AIRCRAFT REQUIREMENTS

3.4.1 The Multilateration System is essentially passive. It relies on aircraft transponders squittering at all times when moving on the airfield. At present, some aircraft checklist procedures instruct pilots to turn off the transponder shortly after leaving the runway on arrival and, not to switch it on until reaching the runway holding point for departure. This is in line with the requirement that Mode A/C transponders should not transmit on the ground, which does not apply to Mode S transmissions.

Remarks	
14	
1) Open-air drains, demarcated by frangible poles, within the runway strip of RWY 02R/20L. 2) Not in use military hookwire system embedded in runway pavement at 490m from RWY 02R and RWY 20L thresholds. 3) Frangible End Around Taxiway (EAT) visual screens located at the approach/take-off end of RWY 02C and RWY 20C do not penetrate the obstacle limitation surfaces of RWY 02C/20C. The EAT visual screens are marked in diagonal red-white stripes and installed with additional red obstacle lights. The EAT visual screens are intended to help pilots operating on RWY 02C/20C to differentiate between an aircraft crossing the runway or taxiing on end-around taxiways TWY K and TWY L. 4) Scheduled Closure of RWY 02L/20R a) BTN 1700-2100UTC on every SUN and WED of the month (preventive maintenance work). In the event of emergency, RWY will be re-opened within 30 minutes. b) A 5-minute inspection conducted within the periods BTN 0100-0359UTC 0500-0759UTC 0800-1059UTC daily. 5) Scheduled Closure of RWY 02C/20C a) BTN 1700-2100UTC on every MON of the month (preventive maintenance work). In the event of emergency, RWY will be re-opened within 30 minutes. b) A 5-minute inspection conducted within the periods BTN 0100-0359UTC 0500-0759UTC 0800-1059UTC daily. 6) Scheduled Closure of RWY 02R/20L a) BTN 1700-2100UTC on every TUES and FRI of the month (preventive maintenance work). In the event of emergency, RWY will be re-opened within 30 minutes. b) A 5-minute inspection conducted within the periods BTN 0100-0359UTC 0500-0759UTC 0800-1059UTC daily. 7) Additional Inspection and Maintenance Closures a) On days when there is a scheduled 4-hour runway closure BTN 1700-2100UTC I. 10-minute inspection conducted within the period BTN 1500-1610UTC on the operational runway(s); II. 15-minute inspection conducted within the period BTN 2300-2359UTC on the operational runway(s); III. 5-minute inspection conducted within the period BTN 2300-2359UTC on the re-opened runway. b) On days when there is no scheduled 4-hour runway closure BTN 1700-2100UTC I. RWY 02L/20R i. 5-minute inspection conducted BTN 2300-2305UTC ii. 30-minute maintenance will be conducted BTN 1830-1900UTC II. RWY 02C/20C i. 5-minute inspection conducted BTN 2315-2320UTC ii. 60-minute maintenance will be conducted BTN 2000-2100UTC III. RWY 02R/20L i. 5-minute inspection conducted BTN 2330-2335UTC ii. 60-minute maintenance will be conducted BTN 2100-2130UTC	

WSSS AD 2.13 DECLARED DISTANCES

RWY Designator	Intersection Departures	TORA (m)	TODA (m)	ASDA (m)	LDA (m)	Remarks
1	2	3	4	5	6	7
20R	Not applicable	4000	4270	4060	3260	THR displaced by 740m southwards
	W2	3842	4112	3902	Not applicable	
	W3	3026	3296	3086	Not applicable	
02L	Not applicable	4000	4270	4060	4000	NIL
	W8	3842	4112	3902	Not applicable	
	W7	3026	3296	3086	Not applicable	

RWY Designator	Intersection Departures	TORA (m)	TODA (m)	ASDA (m)	LDA (m)	Remarks
1	2	3	4	5	6	7
20C	Not applicable	4000	4060	4060	4000	NIL
	T3	3808	3868	3868	Not applicable	
	T4	3421	3481	3481	Not applicable	
	T5	2721	2781	2781	Not applicable	
	D3	3842	3902	3902	Not applicable	
	D4	3502	3562	3562	Not applicable	
	D5	3027	3087	3087	Not applicable	
	D6	2552	2612	2612	Not applicable	
02C	Not applicable	4000	4060	4060	4000	NIL
	T11	3842	3902	3902	Not applicable	
	T10	3329	3389	3389	Not applicable	
	T9	3197	3257	3257	Not applicable	
	T8	2551	2611	2611	Not applicable	
	D12	3842	3902	3902	Not applicable	
	D11	3480	3540	3540	Not applicable	
	D10	2877	2937	2937	Not applicable	
	D9	2402	2462	2462	Not applicable	
20L	Not applicable	4000	4060	4060	4000	NIL
	A3	3842	3902	3902	Not applicable	
	A4	3027	3087	3087	Not applicable	
	A5	2552	2612	2612	Not applicable	
02R	Not applicable	4000	4060	4060	4000	NIL
	A10	3842	3902	3902	Not applicable	
	A9	2877	2937	2937	Not applicable	
	A8	2402	2462	2462	Not applicable	

Note: Intersection departures are allowed subject to the following:

- a) initiated by pilot and approved by ATC, traffic permitting.
- b) ATC is able to keep aircraft visual at all times

ATS Route	RNAV-1 STAR	Remarks and Flight Planning Requirement
N891	ELALO	N891 ENREP DCT ELALO
N892 ¹	MABAL	MELAS DCT MABAL
R469	ASUNA	NIL
Note: The LEBAR STAR serves as a transition option to the STARs listed above. This is to facilitate arrivals joining downwind to the west of Singapore Changi Airport. ATC may clear arrivals to join the LEBAR STAR when air traffic permits.		
¹ Refer to ENR 1.3 and ENR 3.2 for Direct Routing Operations (DRO) flight planning procedures.		

19.2.2 All RNAV-1 (GNSS) STARs terminate at the initial approach fix (IAF). Arrivals can expect radar vectors for approach to the respective runways.

19.3 DEPARTURES

19.3.1 All departing aircraft will be cleared on the appropriate RNAV-1 (GNSS) SIDs or radar departure to join the planned ATS route and shall climb initially to 3,000ft.

19.3.2 RNAV-1 (GNSS) SIDs will be assigned to departures from Singapore Changi Airport that flight plan on the following ATS routes:

ATS Route	RNAV-1 SID	Remarks and Flight Planning Requirements
A457	MASBO	NIL
B470	ANITO	NIL
G580 / M646	TOMAN	NIL
L625 / N884	TOMAN	NIL
L762	MIBEL	NIL
M751	MERSING	NIL
M753	MERSING	VMR L642 EGOLO DCT IPRIX ² Expect radar vectors or further ATC clearance on approaching VMR.
M771	MERSING	VMR DOLOX M771 Expect radar vectors or further ATC clearance on approaching VMR.
N884	Not applicable	Not available for flight planning between VMR and LUSMO. Flight plan via TOMAN L625 LUSMO N884.
N891	MERSING	VMR ENREP N891 Expect radar vectors or further ATC clearance on approaching VMR.
R469	TAROS	NIL
T21 / L504	DODSO	Departures joining ATS route L504 to flight plan via DODSO T21 OBDOS.
T21 / M774	DODSO	Departures joining ATS route M774 to flight plan via DODSO T21 OBDOS.
T24 / M635	IDBUD	Departures joining ATS route M635 to flight plan via IDBUD T24 SURGA M635.
W26	KIRDA	NIL
Y513	AROSO	Flight planning permitted for flights departing from or overflying Singapore to destinations north of Kuala Lumpur and Subang Airports. For flights operating at FL220 and below, to flight plan on A457.
² Refer to ENR 1.3 and ENR 3.2 for Direct Routing Operations (DRO) flight planning procedures.		

19.4 VERTICAL AND SPEED RESTRICTIONS

19.4.1 Pilots shall comply with an ATC assigned level. Pilots shall also adhere to the vertical and speed restrictions depicted on the SIDs and STARs. ATC clearance will take precedence when the ATC clearance does not allow the pilots to adhere to the vertical and speed restrictions depicted on the SIDs and STARs.

19.5 OPERATORS' PROCEDURES

19.5.1 The operator shall ensure that in-flight procedures, crew manuals and training programmes are established in accordance with RNAV-1 (GNSS) navigation requirements.

19.5.2 Pilots shall inform ATC when on-board equipment does not meet the RNAV-1 (GNSS) navigation requirements. Pilots can then expect radar vector from ATC.

20 COORDINATES OF SID/STAR WAYPOINTS (WGS84 DATUM)

Name	Coordinates	Radius/Distance from VTK	Radius/Distance from SJ
ABVIP	010008.00N 1035032.00E	VTK R-203.5 / D27.0	SJ R-183.5 / D13.2
ADPON	011203.00N 1040514.00E	VTK R-163.1 / D13.4	SJ R-95.3 / D14.1
AGROT	010108.00N 1035808.00E	VTK R-187.7 / D24	SJ R-150.8 / D14.0
AGVAR	014719.00N 1034145.00E	VTK R-318.8 / D29.8	SJ R-344.3 / D35.3
AKMET	015355.00N 1034339.00E	VTK R-328.6 / D34.0	SJ R-349.3 / D41.3
AKOMA	014522.00N 1035443.00E	VTK R-342.0 / D21.4	SJ R-6.2 / D32.0
ALFA	013033.00N 1034942.00E	VTK R-295.7 / D12.9	SJ R-354.8 / D17.2
ANITO	001700.00S 1045200.00E	VTK R-153.4 / D113.4	SJ R-146.0 / D108.6
ARAMA	013654.00N 1030712.00E	VTK R-282.4 / D55.5	SJ R-298.0 / D50.0
AROSO	020846.00N 1032421.00E	VTK R-319.9 / D57.4	SJ R-334.0 / D61.7
ASITI	004906.00N 1035042.00E	VTK R-196.6 / D37.2	SJ R-181.3 / D24.1
ASOMI	010142.00N 1040207.00E	VTK R-178.1 / D23.1	SJ R-136.9 / D15.9
ASUNA	005948.00N 1030954.00E	VTK R-244.1 / D57.3	SJ R-252.0 / D43.6
ATLEX	010302.00N 1033331.00E	VTK R-232 / D-35.4	SJ R-240 / D20.5
ATRUM	013256.00N 1040057.00E	VTK R-357.3 / D8.0	SJ R-26.1 / D21.8
BETBA	013302.00N 1035331.00E	VTK R-316.1 / D11.3	SJ R-6.3 / D19.8
BIDUS	013554.05N 1035754.86E	VTK R-326.0 / D13.2	SJ R-6.9 / D22.6
BIPOP	013121.83N 1041018.03E	VTK R-54.5 / D11.0	SJ R-46.8 / D26.2
BISOV	004229.00N 1025214.00E	VTK R-238.6 / D81.1	SJ R-242.6 / D66.6
BITAM	010813.00N 1040757.00E	VTK R-158.3 / D17.9	SJ R-107 / D17.5
BOBAG	010230.00N 1032954.00E	VTK R-234.7 / D38.6	SJ R-243.2 / D24
BOKIP	010421.00N 1034353.00E	VTK R-220.5 / D27.0	SJ R-219.5 / D11.6
DODSO	012225.00N 1061402.00E	VTK R-91 / D154.3	SJ R-86.4 / D143.3
DOVAN	011938.00N 1041249.00E	VTK R-114.6 / D12.7	SJ R-73.9 / D22.5
DUBOT	010846.00N 1040103.00E	VTK R-181 / D16.1	SJ R-115 / D10.8
DUMUP	005430.00N 1035516.00E	VTK R-191.4 / D30.9	SJ R-167.9 / D19.2
ELALO	041240.00N 1043329.00E	VTK R-10.6 / D169.9	SJ R-13.4 / D183.3
EMRIX	012606.00N 1041040.00E	VTK R-83.0 / D9.4	SJ R-57.0 / D23.2
ERVIV	010445.00N 1041013.00E	VTK R-156.1 / D22	SJ R-114.3 / D20.8
GIXEM	004920.00N 1042539.00E	VTK R-145.5 / D43	SJ R-124.8 / D41.9
GOTGA	012013.00N 1044200.00E	VTK R-96.6 / D41	SJ R-82.3 / D51.3
GUMPU	013000.00N 1034243.20E	VTK R-285.1 / D19.3	SJ R-332.6 / D18.6
GUNUD	011042.00N 1050618.00E	VTK R-102.3 / D66.6	SJ R-92 / D75.2
GURES	002814.00N 1043835.00E	VTK R-146.4 / D67.5	SJ R-133.3 / D65.2
HOSBA	011947.80N 1042417.50E	VTK R-102.5 / D23.6	SJ R-79 / D33.7
IBASU	005751.00N 1033410.00E	VTK R-225.3 / D38.3	SJ R-228 / D23.1
IBIVA	011351.00N 1035637.00E	VTK R-203.1 / D12.0	SJ R-84.3 / D5.3
IBIXU	011621.00N 1035740.00E	VTK R-203.2 / D9.3	SJ R-64.4 / D7.0
IDBUD	001454.00N 1050139.00E	VTK R-139.1 / D92.2	SJ R-129.5 / D91.4
IDKIV	005652.00N 1041333.00E	VTK R-156.3 / D30.5	SJ R-126.3 / D27.7
IGNON	010847.00N 1041257.00E	VTK R-144.1 / D19.8	SJ R-101.8 / D22.2
IGOSI	005645.00N 1040644.00E	VTK R-169.1 / D28.6	SJ R-136.8 / D22.7
IKIRO	000849.00N 1044420.00E	VTK R-150.4 / D87.1	SJ R-140.4 / D83.4
ISGIL	004246.00N 1031257.00E	VTK R-229.1 / D64.1	SJ R-231.6 / D49
ISNOM	010629.00N 1035826.00E	VTK R-189 / D18.6	SJ R-133.6 / D9.9

Name	Coordinates	Radius/Distance from VTK	Radius/Distance from SJ
KANLA	034556.00N 1043606.00E	VTK R-13.8 / D144.5	SJ R-16.5 / D158.3
KARTO	011124.00N 1053343.00E	VTK R-98.3 / D93.5	SJ R-91.1 / D102.6
KEXAS	011019.00N 1044818.00E	VTK R-107.2 / D49.2	SJ R-93.0 / D57.2
KILOT	030217.00N 1044023.00E	VTK R-22.0 / D104.5	SJ R-24.4 / D119.0
KIRDA	000009.00N 1045934.00E	VTK R-145.4 / D102.7	SJ R-136.8 / D100.1
LAVAX	010950.00N 1042714.00E	VTK R-120.1 / D30.0	SJ R-95.5 / D36.2
LEDOX	011642.00N 1035651.00E	VTK R-208.6 / D9.4	SJ R-58.5 / D6.5
LELIB	012729.00N 1032450.00E	VTK R-274.0 / D36.6	SJ R-298.0 / D30.0
LETGO	011411.00N 1035548.00E	VTK R-207.3 / D12.1	SJ R-79.1 / D4.6
MABAL	032826.00N 1051236.00E	VTK R-30.1 / D142.1	SJ R-31.2 / D157.2
MASBO	020248.00N 1025251.00E	VTK R-299.0 / D78.3	SJ R-310.2 / D76.6
MIBEL	012351.00N 1020816.00E	VTK R-269.5 / D113.2	SJ R-275.8 / D103.7
MOLVO	012955.00N 1040227.00E	VTK R-12.8 / D5.1	SJ R-34.2 / D20
MOXIB	012933.00N 1040315.00E	VTK R-22.7 / D5	SJ R-36.7 / D20.1
MUMDU	010521.00N 1042714.00E	VTK R-126.9 / D32.4	SJ R-102.5 / D36.9
NYLON	013656.90N 1040623.80E	VTK R-23 / D13	SJ R-32.9 / D30.0
PALGA	011059.00N 1034759.00E	VTK R-223.8 / D19.3	SJ R-235.1 / D4.1
PAMSI	010459.00N 1034845.00E	VTK R-212.3 / D23.6	SJ R-197.2 / D8.7
PASPU	015915.00N 1040618.00E	VTK R-8.3 / D34.5	SJ R-18.3 / D48.1
PIBAP	023023.00N 1040618.00E	VTK R-4.4 / D65.3	SJ R-11.1 / D78.1
POSUB	012725.00N 1040748.00E	VTK R-69.0 / D6.9	SJ R-49.8 / D21.7
POVEB	011344.00N 1040130.00E	VTK R-179.2 / D11.1	SJ R-87.9 / D10.3
PU	012524.00N 1035600.00E	VTK R-275.2 / D5.4	SJ R-21.1 / D13.0
REMES	004342.00N 1035735.00E	VTK R-185.2 / D41.2	SJ R-167.9 / D30.2
REPOV	001623.00N 1040300.00E	VTK R-178.6 / D68.2	SJ R-168.3 / D57.9
RWY 02R DER	012122.00N 1040051.00E	VTK R-187.8 / D3.6	SJ R-50.3 / D12.5
RWY 02C DER	012145.00N 1035957.00E	VTK R-203.3 / D3.4	SJ R-45.8 / D12.1
RWY 02L DER	012305.00N 1035933.00E	VTK R-224.1 / D2.5	SJ R-40.6 / D12.8
RWY 20C DER	011942.00N 1035905.00E	VTK R-203 / D5.7	SJ R-50.8 / D10.1
RWY 20R DER	012047.00N 1035835.00E	VTK R-213.7 / D4.9	SJ R-44.8 / D10.4
RWY 20L DER	011919.00N 1035959.00E	VTK R-193.7 / D5.7	SJ R-55.8 / D10.6
SABKA	015051.00N 1031713.00E	VTK R-300.4 / D51.2	SJ R-317.7 / D50.7
SALRU	011701.00N 1040802.00E	VTK R-139.5 / D10.3	SJ R-77.8 / D17.2
SAMKO	010529.51N 1035254.86E	VTK R-203.5 / D21.1	SJ R-168 / D8
SANAT	010748.79N 1035929.76E	VTK R-186.1 / D17.1	SJ R-123.7 / D9.9
SEBVO	011258.00N 1043448.00E	VTK R-109.5 / D35.6	SJ R-90.5 / D43.6
SJ (SINJON)	011321.34N 1035115.22E	-	-
SURGA	003657.00S 1063119.00E	VTK R-129.1 / D193.3	SJ R-124.6 / D194.3
TAROS	004200.00N 1021612.00E	VTK R-247.9 / D139.4	SJ R-251.9 / D100.2
TEBUN	011455.00N 1031557.00E	VTK R-257.7 / D46.5	SJ R-272.5 / D35.4
TOMAN	012147.00N 1054717.00E	VTK R-91.7 / D106.2	SJ R-85.9 / D116.5
UGEBO	003813.00N 1052432.00E	VTK R-119.1 / D95.4	SJR-110.5 / D99.8
UKIBO	011758.00N 1035924.00E	VTK R-195.7 / D7.2	SJ R-60.6 / D9.4
UPTTEL	005925.00N 1040730.00E	VTK R-166.3 / D26.1	SJ R-130.5 / D21.4
VAMPO	005833.00N 1032525.00E	VTK R-233.9 / D44.5	SJ R-240.4 / D29.8
VANBU	010643.00N 1042740.00E	VTK R-124.5 / D32	SJ R-100.3 / D37.1

Name	Coordinates	Radius/Distance from VTK	Radius/Distance from SJ
VASTI	004320.00N 1043406.00E	VTK R-141.6 / D52.8	SJ R-124.8 / D52.3
VEBMA	012030.00N 1045332.00E	VTK R-94.8 / D52.5	SJ R-83.5 / D57.8
VEXEL	005904.00N 1034254.00E	VTK R-215.7 / D31.7	SJ R-210.5 / D16.5
VIBOG	004310.00N 1034302.00E	VTK R-203.8 / D45.4	SJ R-195.3 / D31.2
VIGUD	011328.00N 1035730.00E	VTK R-198.6 / D69.7	SJ R-89 / D6.2
VIMAL	010942.00N 1042353.00E	VTK R-123.8 / D27.2	SJ R-96.4 / D22.9
VIRET	003940.00N 1043511.00E	VTK R-143 / D56.4	SJ R-127.3 / D55.3
VMR	022318.00N 1035218.00E	VTK R-351.2 / D58.8	SJ R-0.9 / D69.6
VOVOS	011123.00N 1032651.00E	VTK R-248.7 / D37.1	SJ R-265.4 / D24.5
VTK (TEKONG)	012455.36N 1040120.17E	-	-

21 SID / STAR PHRASEOLOGIES

21.1 SID / STAR phraseologies allow ATC and pilot to communicate and understand detailed clearance information that would otherwise require long and potentially complex transmissions. To eliminate safety risk due to a mismatch between ATC and pilot expectations when SID / STAR phraseologies are used, and what certain terms may mean, ICAO has published Amendment 7-A to Doc 4444, PANS- ATM to harmonise the core phraseologies that positively reinforce the lateral, vertical and speed requirements embedded in a SID or STAR that will continue to apply, unless explicitly cancelled or amended by the controller.

21.2 The core phraseologies are:

- i. CLIMB VIA SID TO (level)
- ii. DESCEND VIA STAR TO (level)

21.3 These require the aircraft to:

- i. Climb / descend to the cleared level in accordance with published level restrictions;
- ii. Follow the lateral profile of the procedure; and
- iii. Comply with published speed restrictions or ATC-issued speed control instructions as applicable.

21.4 Phraseologies for removal of speed or level restrictions are:

- i. CLIMB VIA SID TO (level), CANCEL SPEED RESTRICTION(S)
- ii. DESCEND VIA STAR TO (level), CANCEL LEVEL RESTRICTION(S) AT (point(s))

21.5 These phraseologies mean that:

- i. The lateral profile of the procedure continue to apply and
- ii. Speed or level restrictions which have not been referred to will continue to apply.

21.6 Phraseologies for variations to the lateral profile of the SID / STAR are:

- i. PROCEED DIRECT (waypoint), or
- ii. VECTORING

21.7 These phraseologies mean that speed and level restrictions associated with the bypassed waypoints are cancelled.

21.8 Phraseology to clear aircraft to return to SID / STAR is: REJOIN SID / STAR

21.9 This phraseology means that speed and level restrictions associated with the waypoint where the rejoin occurs, as well as those associated with all subsequent waypoints must be complied with.

21.10 The term 'VIA' will no longer be used when issuing lateral routing clearances.

22 LIGHT AIRCRAFT OPERATIONS

22.1 Light aircraft operations into and out of Singapore Changi Airport may be approved subject to the following conditions:

- a) Prior permission has been granted;
- b) Aircraft is suitably equipped;
- c) Pilot is appropriately rated;
- d) Subject to ATC.

22.2 Flight notification shall be given by filing a flight plan.

24.2.7 Aircraft can expect to maintain speed 180 knots at base turn or earlier till 8NM from touchdown.

24.3 BREAK-OUT MANOEUVRE

24.3.1 When an aircraft is observed to have not established on the appropriate Localizer course or deviated from its course towards the NTZ, ATC will instruct the aircraft to return immediately to the correct Localizer course with the following radiotelephony phraseology:

“YOU HAVE CROSSED THE LOCALIZER, TURN LEFT (or RIGHT) IMMEDIATELY AND RETURN TO THE LOCALIZER”

or

“TURN LEFT (or RIGHT) TO RETURN TO LOCALIZER COURSE”

24.3.2 When ATC observed aircraft to be penetrating or will penetrate the NTZ, ATC will instruct the aircraft on the adjacent Localizer course to alter course to avoid the deviating aircraft with the following radiotelephony phraseology:

“TRAFFIC ALERT, TURN LEFT (or RIGHT) IMMEDIATELY HEADING (degrees), CLIMB AND MAINTAIN (altitude)”

24.4 PILOT NOTIFICATION AND CONDITIONS FOR OPERATIONS

24.4.1 Simultaneous approaches to parallel runways operation will be broadcasted on ATIS during the active period.

24.4.2 Simultaneous approaches to the parallel runways will be suspended in the event of adverse weather or any other conditions that may affect the safe conduct of such approaches to the parallel runways.

WSSS AD 2.23 ADDITIONAL INFORMATION

1 BIRD CONCENTRATION IN THE VICINITY OF THE AIRPORT

1.1 A number of varieties of birds are found in Singapore throughout the year. The larger birds commonly found in Singapore Changi Airport include the following:

- cattle egrets (weighing approximately 400g each)
- intermediate egrets (weighing approximately 500g each)
- brahminy kites (weighing approximately 600g each)
- grey herons (weighing approximately 1500g each)
- white-bellied sea eagle (weighing approximately 2900g each)

1.2 There could be an increase in bird activities during the migratory months of September to March. During this period, migratory birds may use the airport as their feeding ground.

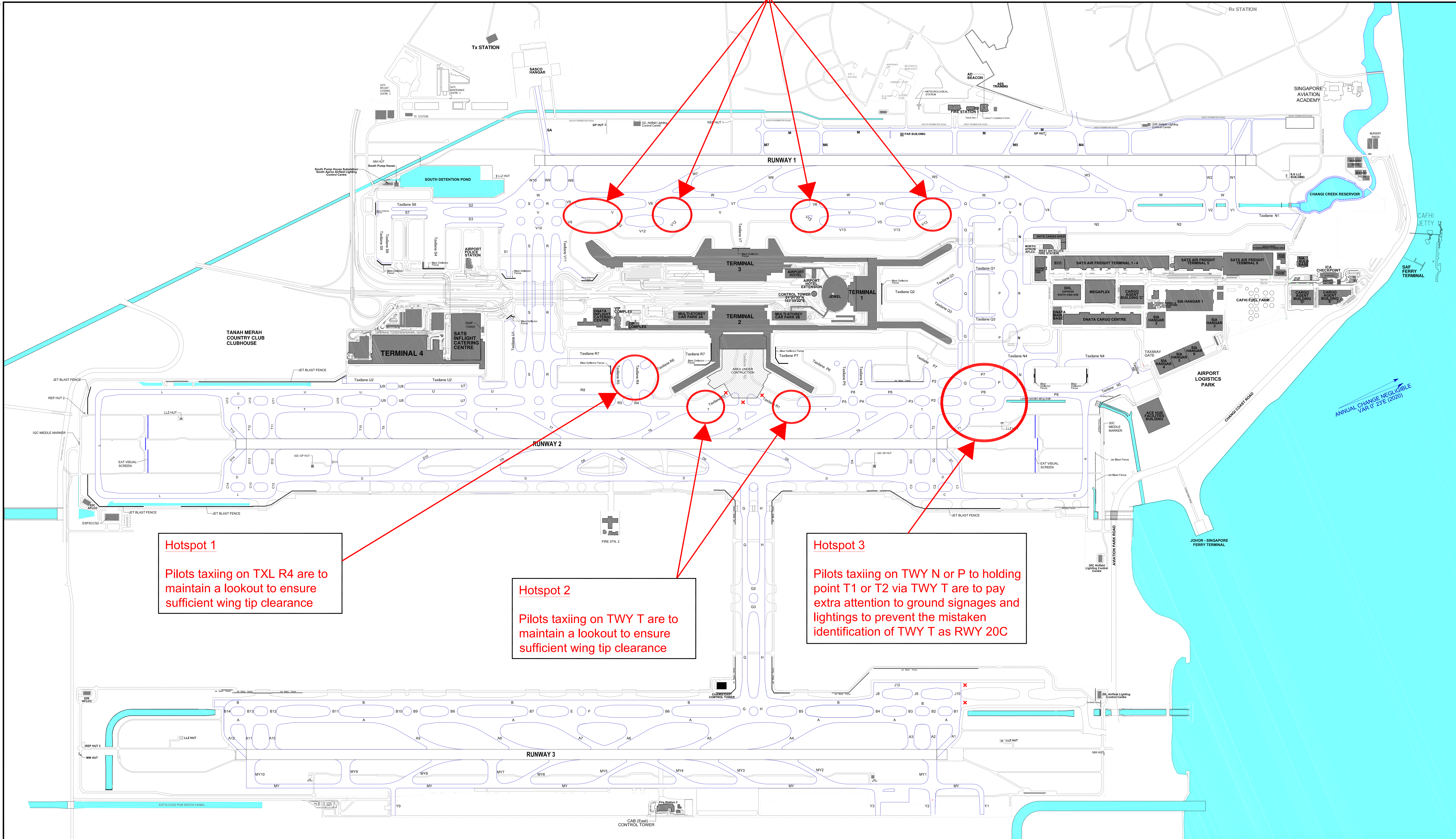
1.3 Various active dispersal devices generating light, sound or cracking effects are used for bird dispersal to mitigate wildlife hazards where necessary within Singapore Changi Airport (such as handheld laser device, long range acoustic device, scarecrow, stock-whip, pyrotechnic, etc.).

WSSS AD 2.24 CHARTS RELATED TO AN AERODROME

LOCATIONS OF RUNWAY 02L/20R, RUNWAY 02C/20C AND RUNWAY 02R/20L AT WSSS	AD-2-WSSS-ADC-1
AERODROME CHART - ICAO	AD-2-WSSS-ADC-2
AERODROME HOTSPOTS - ICAO	AD-2-WSSS-ADC-3
AERODROME OBSTACLE CHART ICAO - TYPE A - RWY 02L/20R	AD-2-WSSS-AOC-1
AERODROME OBSTACLE CHART - ICAO - TYPE A - RWY 02C/20C	AD-2-WSSS-AOC-2
AERODROME OBSTACLE CHART - ICAO - TYPE B	AD-2-WSSS-AOC-3
AERODROME OBSTACLE CHART ICAO - TYPE A - RWY 02R/20L	AD-2-WSSS-AOC-4
PRECISION APPROACH TERRAIN CHART - ICAO - RWY 02L	AD-2-WSSS-PATC-1
PRECISION APPROACH TERRAIN CHART - ICAO - RWY 20C	AD-2-WSSS-PATC-2
PRECISION APPROACH TERRAIN CHART - ICAO - RWY 02R	AD-2-WSSS-PATC-3
Precision Approach Terrain Chart - ICAO - RWY 20L	AD-2-WSSS-PATC-4
PRECISION APPROACH TERRAIN CHART - ICAO - RWY 02C	AD-2-WSSS-PATC-5
RNAV (GNSS) SID - RWY 02C - ANITO 7A	AD-2-WSSS-SID-1
RNAV(GNSS) SID - RWY 20C - ANITO 8B	AD-2-WSSS-SID-2
RNAV(GNSS) SID - RWY 02R - ANITO 1C	AD-2-WSSS-SID-3

RNAV (GNSS) SID - RWY 20L - ANITO 1D	AD-2-WSSS-SID-4
RNAV (GNSS) SID - RWY 02L - ANITO 7E	AD-2-WSSS-SID-5
RNAV (GNSS) SID - RWY 20R - ANITO 8F	AD-2-WSSS-SID-6
RNAV (GNSS) SID - RWY 02C - AROSO 3A	AD-2-WSSS-SID-7
RNAV (GNSS) SID - RWY 20C - AROSO 5B	AD-2-WSSS-SID-8
RNAV (GNSS) SID - RWY 02R - AROSO 1C	AD-2-WSSS-SID-9
RNAV (GNSS) SID - RWY 20L - AROSO 1D	AD-2-WSSS-SID-10
RNAV (GNSS) SID - RWY 02L - AROSO 3E	AD-2-WSSS-SID-11
RNAV (GNSS) SID - RWY 20R - AROSO 5F	AD-2-WSSS-SID-12
RNAV (GNSS) SID - RWY 02C - DODSO 1A	AD-2-WSSS-SID-13
RNAV(GNSS) SID - RWY 20C - DODSO 1B	AD-2-WSSS-SID-14
RNAV (GNSS) SID - RWY 02R - DODSO 1C	AD-2-WSSS-SID-15
RNAV (GNSS) SID - RWY 20L - DODSO 1D	AD-2-WSSS-SID-16
RNAV (GNSS) SID - RWY 02L - DODSO 1E	AD-2-WSSS-SID-17
RNAV (GNSS) SID - RWY 20R - DODSO 1F	AD-2-WSSS-SID-18
RNAV (GNSS) SID - RWY 02C - IDBUD 1A	AD-2-WSSS-SID-19
RNAV (GNSS) SID - RWY 20C - IDBUD 1B	AD-2-WSSS-SID-20
RNAV (GNSS) SID - RWY 02R - IDBUD 1C	AD-2-WSSS-SID-21
RNAV (GNSS) SID - RWY 20L - IDBUD 1D	AD-2-WSSS-SID-22
RNAV (GNSS) SID - RWY 02L - IDBUD 1E	AD-2-WSSS-SID-23
RNAV (GNSS) SID - RWY 20R - IDBUD 1F	AD-2-WSSS-SID-24
RNAV (GNSS) SID - RWY 02C - KIRDA 1A	AD-2-WSSS-SID-25
RNAV (GNSS) SID - RWY 20C - KIRDA 1B	AD-2-WSSS-SID-26
RNAV (GNSS) SID - RWY 02R - KIRDA 1C	AD-2-WSSS-SID-27
RNAV (GNSS) SID - RWY 20L - KIRDA 1D	AD-2-WSSS-SID-28
RNAV (GNSS) SID - RWY 02L - KIRDA 1E	AD-2-WSSS-SID-29
RNAV (GNSS) SID - RWY 20R - KIRDA 1F	AD-2-WSSS-SID-30
RNAV (GNSS) SID - RWY 02C - MASBO 3A	AD-2-WSSS-SID-31
RNAV (GNSS) SID - RWY 20C - MASBO 5B	AD-2-WSSS-SID-32
RNAV (GNSS) SID - RWY 02R - MASBO 1C	AD-2-WSSS-SID-33
RNAV (GNSS) SID - RWY 20L - MASBO 1D	AD-2-WSSS-SID-34
RNAV (GNSS) SID - RWY 02L - MASBO 3E	AD-2-WSSS-SID-35
RNAV (GNSS) SID - RWY 20R - MASBO 5F	AD-2-WSSS-SID-36
RNAV (GNSS) SID - RWY 02C - VMR 6A	AD-2-WSSS-SID-37
RNAV (GNSS) SID - RWY 20C - VMR 9B	AD-2-WSSS-SID-38
RNAV (GNSS) SID - RWY 02R - VMR 1C	AD-2-WSSS-SID-39
RNAV (GNSS) SID - RWY 20L - VMR 1D	AD-2-WSSS-SID-40
RNAV (GNSS) SID - RWY 02L - VMR 6E	AD-2-WSSS-SID-41
RNAV (GNSS) SID - RWY 02R - VMR 9F	AD-2-WSSS-SID-42
RNAV (GNSS) SID - RWY 02C - MIBEL 1A	AD-2-WSSS-SID-43
RNAV (GNSS) SID - RWY 20C - MIBEL 1B	AD-2-WSSS-SID-44
RNAV (GNSS) SID - RWY 02R - MIBEL 1C	AD-2-WSSS-SID-45
RNAV (GNSS) SID - RWY 20L - MIBEL 1D	AD-2-WSSS-SID-46
RNAV (GNSS) SID - RWY 02L - MIBEL 1E	AD-2-WSSS-SID-47
RNAV (GNSS) SID - RWY 20R - MIBEL 1F	AD-2-WSSS-SID-48
RNAV (GNSS) SID - RWY 02C - TAROS 1A	AD-2-WSSS-SID-49
RNAV (GNSS) SID - RWY 20C - TAROS 1B	AD-2-WSSS-SID-50
RNAV (GNSS) SID - RWY 02R - TAROS 1C	AD-2-WSSS-SID-51
RNAV (GNSS) SID - RWY 20L - TAROS 1D	AD-2-WSSS-SID-52
RNAV (GNSS) SID - RWY 02L - TAROS 1E	AD-2-WSSS-SID-53
RNAV (GNSS) SID - RWY 20R - TAROS 1F	AD-2-WSSS-SID-54
RNAV (GNSS) SID - RWY 02C - TOMAN 3A	AD-2-WSSS-SID-55
RNAV (GNSS) SID - RWY 20C - TOMAN 5B	AD-2-WSSS-SID-56
RNAV (GNSS) SID - RWY 02R - TOMAN 1C	AD-2-WSSS-SID-57
RNAV (GNSS) SID - RWY 20L - TOMAN 1D	AD-2-WSSS-SID-58
RNAV (GNSS) SID - RWY 02L - TOMAN 3E	AD-2-WSSS-SID-59
RNAV (GNSS) SID - RWY 20R - TOMAN 5F	AD-2-WSSS-SID-60
RNAV (GNSS) SID - RWY 20C - VOVOS 1B	AD-2-WSSS-SID-61
RNAV (GNSS) SID - RWY 20L - VOVOS 1D	AD-2-WSSS-SID-62
RNAV (GNSS) SID - RWY 20R - VOVOS 1F	AD-2-WSSS-SID-63
RNAV (GNSS) SID - RWY 02R/20L - CHA 1C / CHA 1D	AD-2-WSSS-SID-64
RNAV(GNSS) STAR - RWY 02L/02C/02R - ARAMA 1A	AD-2-WSSS-STAR-1
RNAV(GNSS) STAR - RWY 20R/20C/20L - ARAMA 1B	AD-2-WSSS-STAR-2
RNAV(GNSS) STAR - RWY 02L/02C/02R - ASUNA 2A	AD-2-WSSS-STAR-3

AERODROME HOTSPOTS

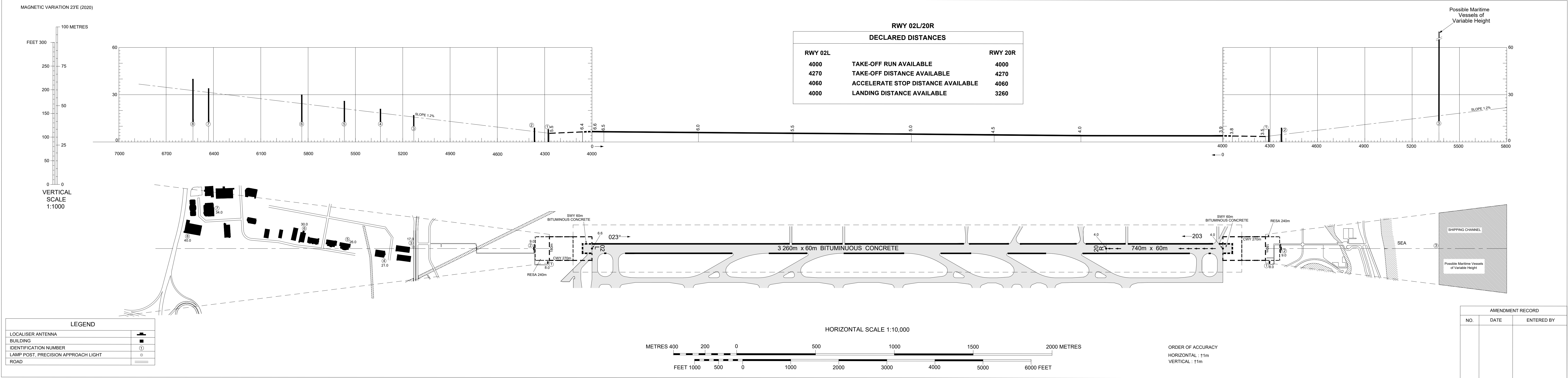


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DIMENSIONS AND ELEVATIONS IN METRES

AERODROME OBSTACLE CHART - ICAO
TYPE A (OPERATING LIMITATIONS)

SINGAPORE/Singapore Changi



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<i>Designation RWY NR</i>	<i>TRUE & MAG BRG</i>	<i>Dimensions of RWY (m)</i>	<i>Strength (PCR) and surface of RWY and SWY</i>	<i>THR coordinates</i>	<i>THR elevation and highest elevation of TDZ of precision APCH RWY</i>
1	2	3	4	5	6
36	004.5	2743 x 46	PCR 573/F/B/X/U	-	50 FT

12	<i>Remarks</i>	a) Intensive fixed wing flying operation east of runway. b) Helizone adjacent east of runway up to 800ft QNH. c) Arrestor Barrier both ends of runway. d) Hookwire cable installed 366m inwards from each end of runway. e) Intense bird activity after rain, and up to 2 hour after dusk and dawn.
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WSAT AD 2.13 DECLARED DISTANCES

<i>RWY Designator</i>	<i>TORA (m)</i>	<i>TODA (m)</i>	<i>ASDA (m)</i>	<i>LDA (m)</i>	<i>Remarks</i>
1	2	3	4	5	6
18	2743	3115	2743	2743	Nil
36	2743	3030	2743	2743	Nil

WSAT AD 2.14 APPROACH AND RUNWAY LIGHTING

<i>RWY</i>	<i>APCH LGT Type, LEN INTST</i>	<i>THR LGT colour WBAR</i>	<i>VASIS (MEHT) PAPI</i>	<i>TDZ LGT LEN</i>	<i>RCL LGT, LEN, spacing, colour, INTST</i>	<i>RWY edge LGT, LEN, spacing, colour, INTST</i>	<i>RWY End LGT, colour WBAR</i>	<i>SWY LGT, LEN colour</i>	<i>Remarks</i>
1	2	3	4	5	6	7	8	9	10
18	High INTST white centreline and two bars, PAPI, Sequenced flashing lights	GREEN	4 units PAPI on each side of RWY at 3 Glide Slope	Nil	Nil	High INTST omni-directional white variable INTST	RED	Nil	Distance to run markers illuminated
36	High INTST white centreline and five bars, PAPI, Sequenced flashing lights	GREEN	4 units PAPI on each side of RWY at 3 Glide Slope	Nil	Nil	High INTST omni-directional white variable INTST	RED	Nil	Distance to run markers illuminated

WSAT AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

<i>TWY Lighting</i>	blue edge lights
<i>IBN</i>	012400.00N 1034254.00E 012400.00N 1034254.00E, FLG R 'TN', operating hours HN and IMC.
<i>Remarks</i>	WDI lighted. Dispersal area floodlights

WSAT AD 2.17 ATS AIRSPACE

1	<i>Designation and Lateral Limits</i>	TENGAH ATZ 010842N 1034336E thence clockwise around the arc of radius 14 NM centred on 012242N 1034203E to 011351N 1033117E thence east along the Singapore - Kuala Lumpur FIR boundary to 012728N 1034302E 012620N 1034544E 012150N 1034524E 011845N 1034414E 010842N 1034336E.
2	<i>Vertical Limits</i>	SFC to 3000 FT ALT

3	<i>Airspace Classification</i>	D
4	<i>ATS Unit Callsign Language(s)</i>	TENGAH APPROACH English
5	<i>Transition altitude</i>	11000 FT (3,350m)
6	<i>Remarks</i>	Controlling Authority: Tengah Approach <u>During Aerodrome operating hours:</u> Contact Tengah APP on 130.0 MHz, 263.4 MHz or 122.0 MHz <u>Outside Aerodrome operating hours:</u> Contact SATCC (RSAF element) on 123.4MHz or 288.2MHz

WSAT AD 2.18 ATS COMMUNICATION FACILITIES

<i>Service designation</i>	<i>Call sign</i>	<i>Frequency P - Primary S - Secondary</i>	<i>Hours of operation</i>	<i>Remarks</i>
APP	TENGAH APPROACH	P130.0 MHz P263.4 MHz S122.0 MHz	BTN 2300-1100 SUN/ MON to THU/FRI; and On SUN, Public holidays and outside the above times, PPR from RSAF HQ via Tengah Ops.	Nil
TWR	TENGAH TOWER	P122.0 MHz P282.5 MHz S263.4 MHz		
	TENGAH GROUND	122.0 Mhz 337.8 MHz		
	TENGAH TALKDOWN	130.0 MHz 290.8 Mhz 328.5 MHz		
Flight Information Service	SINGAPORE RADAR	119.1 MHz	H24	Nil
APP	SINGAPORE APPROACH	P124.05 MHz S124.6 MHz S126.3 MHz	H24	TAR – flow control service provided for ARR/DEP ACFT. Intermediate approach to Singapore Changi AP and other airports in Singapore. DEP from all airports in Singapore.

WSAT AD 2.19 RADIO NAVIGATION AND LANDING AIDS

RADIO NAVIGATION AND LANDING AIDS					
<i>Type of Aid</i>	<i>IDENT</i>	<i>FREQ</i>	<i>OPR Hour</i>	<i>Coordinates</i>	<i>Remarks</i>
TACAN	TNG	CH86X	2300-1100 from SUN/ MON to THU/FRI; SUN, Public holidays and outside the above times prior permission required from RSAF HQ via Tengah Operations.	012336.00N 1034242.00E	043° MAG 0.55km from ARP Maint Period: 0001-0900 second SAT of EV month
SINJON DVOR/DME	SJ	113.5 MHz CH82X	H24	011321.34N 1035115.22E	201° MAG 14.5km from THR RWY 02 (Paya Lebar) Antenna HGT: 190ft AMSL. Coverage 200NM Maint Period: 0200-0600 third THU of EV month