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AMDT
03/2017
Effective date
27 APR 2017
Publication date
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wp-AMDT-2017-03

1. SIGNIFICANT INFORMATION AND CHANGES

1.1 Singapore Changi Airport

- a. Application of ATFM measures for flights scheduled to arrive at Singapore Changi Airport from airports in Cambodia, China, Hong Kong, Indonesia, Malaysia, Philippines and Thailand
- b. Changes to the ATC-pilot phraseologies used when operating on standard instrument departure (SID) /standard instrument arrival (STAR) route

2. THIS AMENDMENT INCORPORATES INFORMATION CONTAINED IN THE FOLLOWING WHICH ARE HEREBY SUPERSEDED:

NOTAMs:

A1495/16 dated 28/06/16
A0597/17 dated 07/03/17
A0746/17 dated 21/03/17
A0809/17 dated 24/03/17
A0836/17 dated 27/03/17
A0917/17 dated 31/03/17

AIP Supplements:

027/2017 dated 17/01/17
029/2017 dated 20/01/17
030/2017 dated 01/03/17
037/2017 dated 23/03/17

Amended Pages

GEN 0.2-1:	: <i>replace.</i>
GEN 0.3-1/2:	: <i>replace.</i>
GEN 0.3-3/4:	: <i>replace.</i>
GEN 0.3-5:	: <i>replace.</i>
GEN 0.4-1/2:	: <i>replace.</i>
GEN 0.4-3:	: <i>replace.</i>
GEN 0.6-1/2:	: <i>replace.</i>
GEN 1.2-3/4:	: <i>replace.</i>
GEN 1.2-5/6:	: <i>replace.</i>
GEN 1.2-7:	: <i>remove.</i>
GEN 3.2-3/4:	: <i>replace.</i>
ENR 0.6-3/4:	: <i>replace.</i>
ENR 0.6-5/6:	: <i>replace.</i>
ENR 1.9-1/2:	: <i>replace.</i>
ENR 1.9-3/4:	: <i>replace.</i>
ENR 1.9-5:	: <i>replace.</i>
ENR 1.10-1/2:	: <i>replace.</i>

ENR 3.6-1/2: : *replace.*
ENR 4.4-3/4: : *replace.*
ENR 4.4-5/6: : *replace.*
AD 0.6-1/2: : *replace.*
AD 0.6-3/4: : *replace.*
AD 0.6-5/6: : *replace.*
AD 0.6-7: : *replace.*
AD 2.WSSS-1/2: : *replace.*
AD 2.WSSS-3/4: : *replace.*
AD 2.WSSS-9/10: : *replace.*
AD 2.WSSS-11/12: : *replace.*
AD 2.WSSS-13/14: : *replace.*
AD 2.WSSS-15/16: : *replace.*
AD 2.WSSS-17/18: : *replace.*
AD 2.WSSS-19/20: : *replace.*
AD 2.WSSS-21/22: : *replace.*
AD 2.WSSS-23/24: : *replace.*
AD 2.WSSS-25/26: : *replace.*
AD 2.WSSS-27/28: : *replace.*
AD 2.WSSS-29/30: : *replace.*
AD 2.WSSS-31/32: : *replace.*
AD 2.WSSS-33/34: : *replace.*
AD 2.WSSS-35/36: : *replace.*
AD 2.WSSS-37/38: : *replace.*
AD 2.WSSS-39/40: : *replace.*
AD 2.WSSS-41/42: : *replace.*
AD 2.WSSS-43/44: : *replace.*
AD 2.WSSS-45/46: : *replace.*
AD 2.WSSS-47/48: : *replace.*
AD 2.WSSS-49/50: : *replace.*
AD 2.WSSS-51/52: : *replace.*
AD 2.WSSS-53/54: : *replace.*
AD 2.WSSS-55/56: : *replace.*
AD 2.WSSS-57/58: : *replace.*
AD 2.WSSS-59/60: : *replace.*
AD 2.WSSS-61/62: : *insert.*
AD 2.WSSS-63/64: : *insert.*
AD 2.WSSS-65/66: : *insert.*
AD-2-WSSS-ADC-2: : *replace.*
AD 2.WSSL-1/2: : *replace.*
AD-2-WSSL-AOC-1: : *replace.*
AD-2-WSAP-IAC-6: : *replace.*

GEN 0.2 RECORD OF AIP AMENDMENTS**AIP AMENDMENT**

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

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GEN 0.3 RECORD OF CURRENT AIP SUPPLEMENTS

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
218/2014	Paya Lebar AP - Luffer Cranes	AD	01 AUG 2014 / 30 DEC 2017	
219/2014	Paya Lebar AP - Luffer Cranes	AD	01 AUG 2014 / 31 DEC 2017	
220/2014	Paya Lebar AP - Hammerhead and Luffer Cranes	AD	01 AUG 2014 / 31 DEC 2017	
221/2014	Paya Lebar AP - Luffer Crane	AD	01 AUG 2014 / 31 DEC 2017	
222/2014	Paya Lebar AP - Luffer Cranes	AD	01 AUG 2014 / 31 DEC 2017	
21/2015	Paya Lebar AP - Saddle Crane	AD	02 JAN 2015 / 04 DEC 2017	
22/2015	Paya Lebar AP - Luffer Cranes	AD	02 JAN 2015 / 09 DEC 2017	
23/2015	Paya Lebar AP - Topless Cranes	AD	02 JAN 2015 / 31 DEC 2017	
24/2015	Paya Lebar AP - Luffer Crane	AD	02 JAN 2015 / 31 DEC 2017	
25/2015	Paya Lebar AP - Hammerhead Cranes	AD	02 JAN 2015 / 31 DEC 2017	
68/2015	Paya Lebar AP - Luffer Crane	AD	16 APR 2015 / 07 JUL 2017	
69/2015	Paya Lebar AP - Tower Cranes	AD	16 APR 2015 / 31 JUL 2017	
70/2015	Paya Lebar AP - Luffer Cranes and Saddle Cranes	AD	16 APR 2015 / 19 AUG 2017	
71/2015	Paya Lebar AP - Tower Cranes	AD	16 APR 2015 / 10 SEP 2017	
72/2015	Paya Lebar AP - Tower Cranes	AD	16 APR 2015 / 10 SEP 2017	
73/2015	Paya Lebar AP - Saddle Cranes	AD	16 APR 2015 / 09 OCT 2017	
74/2015	Paya Lebar AP - Topless Cranes and Luffer Crane	AD	16 APR 2015 / 31 DEC 2017	
75/2015	Paya Lebar AP - Hydraulic Crawler Cranes	AD	16 APR 2015 / 07 JAN 2018	
76/2015	Paya Lebar AP - Tower Cranes	AD	16 APR 2015 / 31 MAR 2018	
77/2015	Paya Lebar AP - Saddle Cranes	AD	16 APR 2015 / 01 MAY 2018	
81/2015	Paya Lebar AP - Hammerhead Cranes	AD	16 APR 2015 / 29 APR 2017	
82/2015	Paya Lebar AP - Topless Cranes	AD	16 APR 2015 / 10 MAY 2017	
109/2015	Singapore Changi AP - Shortening of Runway 20C approach lighting to 720m to facilitate the construction of the northern end-around-taxiway	AD	02 OCT 2015 / 31 OCT 2018	
122/2015	Paya Lebar AP - Topless Cranes	AD	01 JUL 2015 / 30 JUN 2017	
123/2015	Paya Lebar AP - Topless Cranes	AD	01 JUL 2015 / 30 JUN 2017	
124/2015	Paya Lebar AP - Luffer Cranes	AD	01 JUL 2015 / 30 JUN 2017	
125/2015	Paya Lebar AP - Luffer Crane	AD	01 JUL 2015 / 01 JUL 2017	

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
126/2015	Paya Lebar AP - Luffer Crane	AD	01 JUL 2015 / 30 DEC 2017	
127/2015	Tengah AD - Topless Cranes and Luffer Crane	AD	01 SEP 2015 / 31 AUG 2017	
128/2015	Tengah AD - Topless Cranes	AD	01 SEP 2015 / 31 AUG 2017	
129/2015	Tengah AD - Luffer Crane	AD	01 JUL 2015 / 31 DEC 2017	
130/2015	Sembawang AD - Luffer Cranes	AD	01 JUL 2015 / 31 DEC 2017	
131/2015	Paya Lebar AP - Topless Cranes	AD	01 JUL 2015 / 31 DEC 2017	
132/2015	Paya Lebar AP - Cranes	AD	01 JUL 2015 / 12 APR 2018	
133/2015	Paya Lebar AP - Luffer Crane and Topless Crane	AD	01 JUL 2015 / 30 JUN 2018	
134/2015	Paya Lebar AP - Luffer Cranes	AD	01 JUL 2015 / 30 JUN 2018	
135/2015	Tengah AD - Luffer Cranes	AD	01 JUL 2015 / 30 JUN 2018	
138/2015	Paya Lebar AP- Luffer Crane	AD	03 AUG 2015 / 30 JUN 2017	
139/2015	Paya Lebar AP- Topless Cranes and Luffer Crane	AD	03 AUG 2015 / 30 JUN 2017	
140/2015	Paya Lebar AP - Luffer Cranes	AD	03 AUG 2015 / 30 DEC 2017	
141/2015	Paya Lebar AP - Saddle Crane	AD	03 AUG 2015 / 30 DEC 2017	
142/2015	Paya Lebar AP - Topless Cranes	AD	03 AUG 2015 / 31 AUG 2018	
155/2015	Paya Lebar AP - Luffer Crane	AD	21 SEP 2015 / 31 MAY 2017	
156/2015	Paya Lebar AP - Topless Cranes	AD	21 SEP 2015 / 01 JUN 2017	
157/2015	Paya Lebar AP- Luffer Crane	AD	21 SEP 2015 / 14 AUG 2017	
158/2015	Paya Lebar AP - Hammerhead and Luffer Cranes	AD	21 SEP 2015 / 30 JUN 2017	
159/2015	Paya Lebar AP - Luffer Cranes	AD	21 SEP 2015 / 31 JUL 2017	
160/2015	Paya Lebar AP - Luffer Cranes	AD	21 SEP 2015 / 15 AUG 2018	
161/2015	Paya Lebar AP - Luffer Cranes	AD	21 SEP 2015 / 01 SEP 2018	
162/2015	Sembawang AD - Topless Cranes	AD	31 OCT 2015 / 31 OCT 2018	
004/2016	Singapore Changi Airport - Shortening of Runway 02C Approach Lighting System to 810M to Facilitate southern End-Round-Taxiway Construction	AD	01 JUN 2016 / 30 APR 2020	
025/2016	Paya Lebar AP - Luffer Cranes	AD	04 MAR 2016 / 31 DEC 2017	
026/2016	Paya Lebar AP - Topless Cranes	AD	04 MAR 2016 / 31 DEC 2017	
027/2016	Paya Lebar AP - Topless Cranes and Luffer Cranes	AD	04 MAR 2016 / 31 DEC 2017	
028/2016	Paya Lebar AP - Tower Cranes	AD	04 MAR 2016 / 26 MAR 2018	
029/2016	Paya Lebar AP - Luffer Cranes	AD	04 MAR 2016 / 01 JUN 2018	

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
030/2016	Paya Lebar AP - Saddle Cranes	AD	04 MAR 2016 / 17 JUN 2018	
031/2016	Paya Lebar AP - Saddle Cranes	AD	04 MAR 2016 / 31 DEC 2018	
032/2016	Paya Lebar AP - Luffer Crane	AD	04 MAR 2016 / 31 DEC 2018	
033/2016	Paya Lebar AP - Luffer Crane	AD	04 MAR 2016 / 31 DEC 2018	
034/2016	Paya Lebar AP - Saddle Cranes	AD	04 MAR 2016 / 31 DEC 2018	
036/2016	Paya Lebar AP - Luffer Crane	AD	04 MAR 2016 / 01 AUG 2017	
037/2016	Paya Lebar AP - Mobile Cranes and Crawler Cranes	AD	04 MAR 2016 / 07 JAN 2018	
039/2016	Paya Lebar AP - Topless Cranes	AD	04 MAR 2016 / 31 JAN 2019	
047/2016	Seletar Airport - Construction of New Sunken Glide Path Building, Service Road and Associated Works at Northeast Apron	AD	14 JUL 2016 / 01 JUL 2017	
054/2016	Paya Lebar AP - Crawler Cranes	AD	04 AUG 2016 / 22 MAY 2017	
055/2016	Paya Lebar AP - Mobile Crane and Crawler Crane	AD	04 AUG 2016 / 30 JUN 2017	
056/2016	Paya Lebar AP - Mobile Crane and Crawler Cranes	AD	04 AUG 2016 / 30 JUL 2017	
057/2016	Paya Lebar AP - Mobile Crane	AD	04 AUG 2016 / 31 JUL 2017	
058/2016	Paya Lebar AP - Saddle Cranes	AD	04 AUG 2016 / 15 NOV 2017	
059/2016	Paya Lebar AP - Luffer Crane	AD	04 AUG 2016 / 31 DEC 2017	
060/2016	Paya Lebar AP - Luffer Crane	AD	04 AUG 2016 / 31 MAY 2018	
061/2016	Paya Lebar AP - Luffer Crane and Topless Crane	AD	04 AUG 2016 / 29 JUN 2018	
062/2016	Paya Lebar AP - Luffer Cranes	AD	04 AUG 2016 / 31 JUL 2018	
063/2016	Paya Lebar AP - Topless Cranes	AD	04 AUG 2016 / 31 DEC 2018	
064/2016	Paya Lebar AP - Topless Cranes	AD	04 AUG 2016 / 31 DEC 2018	
065/2016	Paya Lebar AP - Luffer Crane	AD	04 AUG 2016 / 31 DEC 2018	
066/2016	Paya Lebar AP - Piling Rig and Crawler Crane	AD	04 AUG 2016 / 01 AUG 2018	
067/2016	Paya Lebar AP - Topless Cranes and Luffer Crane	AD	04 AUG 2016 / 31 MAR 2019	
068/2016	Paya Lebar AP - Topless Cranes and Luffer Cranes	AD	04 AUG 2016 / 01 JUN 2019	
069/2016	Paya Lebar AP - Saddle Cranes	AD	04 AUG 2016 / 30 JUN 2019	
070/2016	Paya Lebar AP - Luffer Cranes and Topless Cranes	AD	04 AUG 2016 / 31 DEC 2019	
073/2016	Paya Lebar AP - Crawler Cranes	AD	04 AUG 2016 / 22 MAY 2017	
074/2016	Paya Lebar AP - Luffer Cranes	AD	04 AUG 2016 / 04 JUL 2017	
075/2016	Paya Lebar AP - Topless Cranes	AD	04 AUG 2016 / 31 OCT 2017	

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
089/2016	Seletar AP- Partial closure of Taxiway EC and Taxiway EC2 due to new aircraft stands and service road construction and associated works	AD	01 NOV 2016 / 31 MAR 2018	
008/2017	Paya Lebar Airport - Topless Cranes	AD	10 JAN 2017 / 31 MAY 2017	
009/2017	Paya Lebar Airport - Mobile Cranes and Topless Cranes	AD	10 JAN 2017 / 30 JUN 2017	
010/2017	Sembawang Aerodrome - Mobile Crane	AD	10 JAN 2017 / 30 JUN 2017	
011/2017	Paya Lebar Airport - Mobile Cranes and Piling Rigs	AD	10 JAN 2017 / 30 JUN 2017	
012/2017	Paya Lebar Airport - Luffer Cranes	AD	10 JAN 2017 / 31 JUL 2017	
013/2017	Paya Lebar Airport - Crawler Crane	AD	10 JAN 2017 / 01 AUG 2017	
014/2017	Paya Lebar Airport - Crawler Cranes	AD	10 JAN 2017 / 27 SEP 2017	
015/2017	Paya Lebar Airport - Mobile Crane	AD	10 JAN 2017 / 30 NOV 2017	
016/2017	Paya Lebar Airport - Topless Cranes	AD	10 JAN 2017 / 31 JAN 2018	
017/2017	Sembawang Aerodrome - Crawler Crane	AD	10 JAN 2017 / 28 FEB 2018	
018/2017	Paya Lebar Airport - Piling Machine	AD	10 JAN 2017 / 06 JUN 2018	
019/2017	Paya Lebar Airport - Topless Cranes	AD	10 JAN 2017 / 06 DEC 2018	
021/2017	Paya Lebar Airport - Luffer Cranes	AD	10 JAN 2017 / 01 JUN 2017	
022/2017	Paya Lebar Airport - Topless Cranes	AD	10 JAN 2017 / 31 DEC 2018	
023/2017	Paya Lebar Airport - Luffer Crane	AD	10 JAN 2017 / 31 DEC 2018	
024/2017	Paya Lebar Airport - Topless Cranes and Luffer Cranes	AD	10 JAN 2017 / 31 DEC 2018	
025/2017	Paya Lebar Airport - Topless Cranes	AD	10 JAN 2017 / 21 NOV 2019	
026/2017	Paya Lebar Airport - Luffer Crane	AD	10 JAN 2017 / 08 DEC 2019	
031/2017	Airspace Closure Kuala Lumpur and Singapore FIRs Exercise BERSAMA SHIELD 17 010001UTC to 081100UTC MAY 2017	AD/FIR	01 MAY 2017 / 08 MAY 2017	
032/2017	RSAF Aerial Flypast prior to and on Singapore's National Day, 09th August 2017	AD/FIR	03 JUN 2017 / 12 AUG 2017	
034/2017	Singapore Changi Airport - Works schedule and movement area restrictions pertaining to diversion of airside services and soil improvement works	AD	24 MAR 2017 / 28 OCT 2017	
035/2017	Seletar Airport - Installation of runway intrusion detection system (RIDS) and cable pulling works	AD	13 MAR 2017 / 13 JUN 2017	
036/2017	Singapore Changi Air[port - Flight plan requirements and restrictions	AD	25 MAY 2017 UFN	
038/2017	Singapore Changi Airport - Revision to aircraft stands E27 and opening of new multiple aircraft receiving stands (MARS) E27L AND E27R at Terminal 2	AD	28 APR 2017 UFN	
039/2017	Paya Lebar Airport - Mobile Crane	AD	13 APR 2017 / 30 MAY 2017	

NR/Year	Subject	AIP section(s) affected	Period of validity (from/to)	Cancellation record
040/2017	Paya Lebar Airport - Mobile Crane	AD	13 APR 2017 / 31 MAY 2017	
041/2017	Paya Lebar Airport - Luffer Crane	AD	13 APR 2017 / 31 DEC 2017	
042/2017	Sembawang Aerodrome - Crawler Cranes	AD	13 APR 2017 / 31 DEC 2017	
043/2017	Singapore Changi Airport - Crawler Cranes	AD	13 APR 2017 / 31 DEC 2017	
044/2017	Paya Lebar Airport - Mobile Cranes and Crawler Cranes	AD	13 APR 2017 / 07 JAN 2018	
045/2017	Sembawang Aerodrome - Topless Crane	AD	13 APR 2017 / 28 FEB 2018	
046/2017	Sembawang Aerodrome - Mobile Cranes	AD	13 APR 2017 / 15 MAR 2018	
047/2017	Paya Lebar Airport - Luffer Cranes and Topless Cranes	AD	13 APR 2017 / 31 AUG 2018	
048/2017	Paya Lebar Airport - Luffer Crane	AD	13 APR 2017 / 31 DEC 2018	
049/2017	Paya Lebar Airport - Mobile Cranes	AD	13 APR 2017 / 31 DEC 2018	
050/2017	Paya Lebar Airport - Luffer Crane	AD	13 APR 2017 / 31 DEC 2018	
051/2017	Paya Lebar Airport - Mobile Cranes	AD	13 APR 2017 / 05 MAR 2019	
052/2017	Paya Lebar Airport - Topless Cranes	AD	13 APR 2017 / 14 MAR 2019	
053/2017	Paya Lebar Airport - Luffer Crane	AD	13 APR 2017 / 14 MAR 2019	
054/2017	Paya Lebar Airport - Luffer Crane	AD	13 APR 2017 / 23 MAR 2019	
055/2017	Paya Lebar Airport - Topless Cranes and Luffer Crane	AD	13 APR 2017 / 31 MAR 2019	
056/2017	Paya Lebar Airport - Topless Cranes	AD	13 APR 2017 / 30 APR 2019	
057/2017	Paya Lebar Airport - Luffer Cranes	AD	13 APR 2017 / 14 JAN 2020	
058/2017	Paya Lebar Airport - Topless Cranes	AD	13 APR 2017 / 26 OCT 2020	
059/2017	Paya Lebar Airport - Mobile Crane	AD	13 APR 2017 / 30 JUN 2017	
060/2017	Paya Lebar Airport - Mobile Cranes	AD	13 APR 2017 / 30 JUN 2017	
061/2017	Tengah Aerodrome - Mobile Cranes and Topless Cranes	AD	13 APR 2017 / 02 JUL 2017	
062/2017	Tengah Aerodrome - Topless Crane and Luffer Crane	AD	13 APR 2017 / 31 MAR 2018	
063/2017	Paya Lebar Airport - Topless Cranes and Luffer Crane	AD	13 APR 2017 / 15 APR 2019	
064/2017	Paya Lebar Airport - Mobile Crane	AD	27 APR 2017 / 31 AUG 2017	
065/2017	Paya Lebar Airport - Topless Cranes	AD	27 APR 2017 / 20 DEC 2017	
066/2017	Paya Lebar Airport - Luffer Cranes	AD	27 APR 2017 / 31 DEC 2017	
067/2017	Sembawang Aerodrome - Topless Crane	AD	27 APR 2017 / 01 FEB 2020	
068/2017	Paya Lebar Airport - Obstacles	AD	27 APR 2017 / 26 OCT 2020	

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GEN 0.4 CHECKLIST OF AIP PAGES

Part 1 – General (GEN)							
GEN 0		GEN 3.3-1	12 NOV 2015	ENR 1.7-1	12 NOV 2015		
GEN 0.1-1	12 NOV 2015	GEN 3.3-2	21 JUL 2016	ENR 1.7-2	12 NOV 2015		
GEN 0.1-2	10 NOV 2016	GEN 3.4-1	12 NOV 2015	ENR 1.7-3	12 NOV 2015		
GEN 0.1-3	21 JUL 2016	GEN 3.4-2	02 MAR 2017	ENR 1.7-4	12 NOV 2015		
GEN 0.2-1	27 APR 2017	GEN 3.4-3	02 MAR 2017	ENR 1.7-5	12 NOV 2015		
GEN 0.3-1	27 APR 2017	GEN 3.4-4	02 MAR 2017	ENR 1.7-6	12 NOV 2015		
GEN 0.3-2	27 APR 2017	GEN 3.4-5	12 NOV 2015	ENR 1.7-7	12 NOV 2015		
GEN 0.3-3	27 APR 2017	GEN 3.4-7	21 JUL 2016	ENR 1.7-8	12 NOV 2015		
GEN 0.3-4	27 APR 2017	GEN 3.4-9	21 JUL 2016	ENR 1.7-9	12 NOV 2015		
GEN 0.3-5	27 APR 2017	GEN 3.5-1	12 NOV 2015	ENR 1.8-1	12 NOV 2015		
GEN 0.4-1	27 APR 2017	GEN 3.5-2	21 JUL 2016	ENR 1.8-2	02 MAR 2017		
GEN 0.4-2	27 APR 2017	GEN 3.5-3	12 NOV 2015	ENR 1.8-3	12 NOV 2015		
GEN 0.4-3	27 APR 2017	GEN 3.5-4	12 NOV 2015	ENR 1.8-4	12 NOV 2015		
GEN 0.5-1	05 JAN 2017	GEN 3.5-5	15 SEP 2016	ENR 1.8-5	12 NOV 2015		
GEN 0.6-1	27 APR 2017	GEN 3.5-6	12 NOV 2015	ENR 1.8-6	12 NOV 2015		
GEN 0.6-2	15 SEP 2016	GEN 3.5-7	12 NOV 2015	ENR 1.8-7	12 NOV 2015		
GEN 0.6-3	15 SEP 2016	GEN 3.5-8	12 NOV 2015	ENR 1.8-8	12 NOV 2015		
GEN 1		GEN 3.6-1	12 NOV 2015	ENR 1.8-9	12 NOV 2015		
GEN 1.1-1	10 NOV 2016	GEN 3.6-2	12 NOV 2015	ENR 1.8-10	12 NOV 2015		
GEN 1.1-2	05 JAN 2017	GEN 3.6-3	12 NOV 2015	ENR 1.8-11	12 NOV 2015		
GEN 1.2-1	15 SEP 2016	GEN 3.6-4	12 NOV 2015	ENR 1.8-12	12 NOV 2015		
GEN 1.2-2	15 SEP 2016	GEN 3.6-5	21 JUL 2016	ENR 1.8-13	12 NOV 2015		
GEN 1.2-3	27 APR 2017	GEN 4		ENR 1.8-14	12 NOV 2015		
GEN 1.2-4	27 APR 2017	GEN 4.1-1	15 SEP 2016	ENR 1.8-15	12 NOV 2015		
GEN 1.2-5	27 APR 2017	GEN 4.2-1	12 NOV 2015	ENR 1.8-16	12 NOV 2015		
GEN 1.2-6	27 APR 2017	GEN 4.2-2	12 NOV 2015	ENR 1.8-17	12 NOV 2015		
GEN 1.3-1	21 JUL 2016	GEN 4.2-3	12 NOV 2015	ENR 1.8-18	12 NOV 2015		
GEN 1.3-2	12 NOV 2015	GEN 4.2-4	12 NOV 2015	ENR 1.8-19	12 NOV 2015		
GEN 1.3-3	12 NOV 2015	GEN 4.2-5	12 NOV 2015	ENR 1.8-20	12 NOV 2015		
GEN-1.3-5	21 JUL 2016	GEN 4.2-6	12 NOV 2015	ENR 1.8-21	12 NOV 2015		
GEN-1.3-7	21 JUL 2016	Part 2 – EN-ROUTE (ENR)		ENR 1.8-22	02 MAR 2017		
GEN 1.4-1	12 NOV 2015	ENR 0		ENR 1.8-23	12 NOV 2015		
GEN 1.4-2	12 NOV 2015	ENR 0.6-1	05 JAN 2017	ENR 1.8-24	12 NOV 2015		
GEN 1.4-3	12 NOV 2015	ENR 0.6-2	02 MAR 2017	ENR 1.8-25	05 JAN 2017		
GEN 1.5-1	12 NOV 2015	ENR 0.6-3	05 JAN 2017	ENR 1.8-26	05 JAN 2017		
GEN 1.6-1	12 NOV 2015	ENR 0.6-4	27 APR 2017	ENR 1.8-27	05 JAN 2017		
GEN 1.6-2	12 NOV 2015	ENR 0.6-5	27 APR 2017	ENR 1.8-28	05 JAN 2017		
GEN 1.6-3	12 NOV 2015	ENR 0.6-6	27 APR 2017	ENR 1.8-29	05 JAN 2017		
GEN 1.7-1	10 NOV 2016	ENR 1		ENR 1.8-30	05 JAN 2017		
GEN 1.7-2	12 NOV 2015	ENR 1.1-1	12 NOV 2015	ENR 1.8-31	05 JAN 2017		
GEN 1.7-3	10 NOV 2016	ENR 1.1-2	12 NOV 2015	ENR 1.9-1	27 APR 2017		
GEN 1.7-4	10 NOV 2016	ENR 1.1-3	12 NOV 2015	ENR 1.9-2	27 APR 2017		
GEN 1.7-5	10 NOV 2016	ENR 1.1-4	12 NOV 2015	ENR 1.9-3	27 APR 2017		
GEN 2		ENR 1.1-5	12 NOV 2015	ENR 1.9-4	27 APR 2017		
GEN 2.1-1	12 NOV 2015	ENR 1.1-6	12 NOV 2015	ENR 1.9-5	27 APR 2017		
GEN 2.1-2	05 JAN 2017	ENR 1.1-7	12 NOV 2015	ENR 1.10-1	27 APR 2017		
GEN 2.2-1	02 MAR 2017	ENR 1.1-8	12 NOV 2015	ENR 1.10-2	12 NOV 2015		
GEN 2.2-2	02 MAR 2017	ENR 1.1-9	12 NOV 2015	ENR 1.10-3	12 NOV 2015		
GEN 2.2-3	02 MAR 2017	ENR 1.1-10	10 NOV 2016	ENR 1.11-1	12 NOV 2015		
GEN 2.2-4	05 JAN 2017	ENR 1.1-11	12 NOV 2015	ENR 1.12-1	12 NOV 2015		
GEN 2.2-5	10 NOV 2016	ENR 1.1-12	12 NOV 2015	ENR 1.12-2	12 NOV 2015		
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3.3 DOCUMENTARY REQUIREMENTS FOR CLEARANCE OF AIRCRAFT

3.3.1 It is necessary that the undermentioned aircraft documents be submitted by airline operators for clearance on entry and departure of their aircraft to and from Singapore. All documents listed below must follow the ICAO standard format as set forth in the relevant appendices to ICAO Annex 9. They are acceptable in English only and must be completed in legible handwriting. No visas are required in connection with such documents.

3.3.2 *Aircraft Documents Requirements (arrival/departure)*

Required by	<u>General Declaration</u>	<u>Passenger Manifest</u>	<u>Cargo Manifest</u>
Immigration	2	2	-
Customs	1	1	1
Health	1	1	-

- a. *One copy of the General Declaration is endorsed and returned by Customs, signifying clearance.*
- b. *If no passengers are embarking (disembarking) and no articles are laden (unladen), no aircraft documents except copies of the General Declaration need be submitted to the above authorities.*

4 CIVIL NON-SCHEDULED FLIGHTS**4.1 PROCEDURES****4.1.1 Overflights**

4.1.1.1 Prior notification is necessary. Subject to the observance of the terms of the Convention on International Civil Aviation, Singapore facilitates overflights by civil aircraft registered in any ICAO Contracting States with which Singapore has diplomatic relations provided adequate advance notification shall have been given.

4.1.1.2 Notification by flight plan addressed to the Singapore Air Traffic Control Centre (WSJCZQZX) if received at least 2 hours in advance of the aircraft's arrival into the Singapore Flight Information Region will normally be accepted as advance notification in this respect.

4.1.1.3 In all other cases, prior permission must be sought and obtained through diplomatic means from the Ministry of Foreign Affairs, Republic of Singapore.

4.1.2 Non-Traffic or Technical Landings

4.1.2.1 Prior notification is necessary. Subject to the observance of the terms of the Convention on International Civil Aviation, Singapore facilitates such non-traffic or technical landings by civil aircraft registered in any ICAO Contracting States with which Singapore has diplomatic relations provided adequate advance notification shall have been given.

4.1.2.2 Notification by flight plan addressed to the Singapore Air Traffic Control Centre (WSJCZQZX) if received at least 2 hours in advance of the aircraft's arrival at Singapore Changi Airport or Seletar Aerodrome or 2 hours prior to entering the Singapore Flight Information Region whichever is the earlier will normally be accepted as advance notification in this respect.

← 4.1.2.3 All business aviation aircraft shall park in a nose-in position and be pushed back with the aid of an aircraft tow-bar and tow-tractor. Reverse thrust or variable pitch propellers shall not be used. The aircraft must carry its own tow-bar. The aircraft operator may make arrangements with the ground handling agent to provide the tow-bar. The aircraft shall be required to be towed to another aircraft stand should the need arise.

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

4.1.2.5 All business aviation flights must engage a ground handling agent at Singapore Changi Airport.

4.1.2.6 In all other cases, prior permission must be sought and obtained through diplomatic means from the Ministry of Foreign Affairs, Republic of Singapore.

4.1.2.7 All non-traffic aircraft are to submit a copy of the Certificate of Airworthiness to CAAS, after each landing, by facsimile at 6545 6519 or by email to CAAS_AFO_FOS@caas.gov.sg

4.1.3 Application for Traffic Landings and Uplifts (Non-Scheduled Flights)

4.1.3.1 All non-scheduled flights are subject to prior approval.

4.1.3.2 Only the operator may apply for permission to operate a non-scheduled flight. The following information should be submitted together with the application:

- a. Name, address and nationality of operator;
- b. Name, address and business of charterer;
- c. Type, registration mark and carrying capacity of aircraft;
- d. Aircraft documents listed in para 3.2.5;
- e. Nature of flight including details of whether the flight is to carry passengers or cargo or both;
 - i. for passenger flights: points of origin and destination of passengers, purpose of flight e.g. special event charter, inclusive tours and own-use charter; and the names of passengers.
 - ii. for cargo flights: the origin, destination, description, quantities and dimensions of cargo; outbound/inbound or transshipment, as well as whether any item is perishable or classified as dangerous, explosive or munitions of war. (Please see regulations concerning importation, transshipment and exportation of cargo in subsection GEN 1.4).
- f. Details of route, points of landing and final destination;
- g. Date and time of arrival at, and departure from Singapore (Please see para 4.1.3.4 below);
- h. Name, address and telephone number of operator's local agent and ground handling agent;
- i. Name and address of consignees and consignors, where applicable;
- j. Any other information that may be relevant to the proposed operations.

4.1.3.3 All applications must be submitted via <http://www.caas.gov.sg/atlas>

The complete application and its supporting documents must reach the Civil Aviation Authority of Singapore Air Transport Division via the weblink provided at least 3 working days prior to the aircraft's arrival or departure into/from Singapore to be considered for a "normal permit". Operators who wish to obtain a permit under 3 working days may submit their applications. Such applications must reach the Air Transport Division at least 24 hours before the proposed flight to be considered for an "express permit". Applicants for express permits should alert the Air Transport Duty Officer at +65 98331775. Applications will not be considered if insufficient notice is given (not applicable for emergency flights e.g. flights on humanitarian grounds).

4.1.3.4 Operators, other than operators of business aviation aircraft as stated in para 4.1.3.5, should schedule their arrivals and departures at Singapore Changi Airport outside the hours 0001 to 0200 UTC (0801-1000 LT) and 0900 to 1559 UTC (1700-2359 LT). Subject to approval (depending on aircraft stand availability), aircraft may be permitted to remain on the ground during the above times on condition that the aircraft vacates the aircraft stand if the need arises. *(Please see GEN 4.1 para 1.5 b) regarding off-peak discount of 40% on landing charges).*

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

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

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

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

4.1.3.9 All business aviation flights must engage a ground handling agent at Singapore Changi Airport.

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

4.1.3.11 **Permit Fees**

(a) Normal Permits

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

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

- iii. S\$326 for 5 one-way or return flights but not more than 10 such flights; or
- iv. S\$810 for more than 10 one-way or return flights.

(b) Express Permits

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

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

Note 1: "Working Day" means:

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

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

Definitions:

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

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

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

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

4.2 DOCUMENTARY REQUIREMENTS FOR CLEARANCE OF AIRCRAFT

- 4.2.1 Same requirements as for SCHEDULED FLIGHTS.

4.3 PERMIT CONDITIONS

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

4.4 APPLICATION FOR DIPLOMATIC CLEARANCE FOR FOREIGN STATE AIRCRAFT

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

- 4.4.1.1 Except where otherwise agreed, all Foreign State aircraft intending to land at or overfly Singapore are to obtain diplomatic clearance for such landing or overflight from the Ministry of Foreign Affairs, giving information as in para 4.4.2.

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

4.4.2 Information to be provided when applying for Diplomatic Clearance

- 4.4.2.1 All applications for diplomatic clearance should contain the following information:

- a. Name of Mission/Organisation;
- b. Liaison Officer;
- c. Telephone Number;
- d. Number and Type of Aircraft;
- e. Callsign;
- f. Aircraft Registration;
- g. Full flight itinerary;
- h. Route after entering and before leaving Singapore FIR;
- i. Date of Arrival;
- j. Time of Arrival;
- k. Date of Departure;
- l. Time of Departure;
- m. Arrival from;
- n. Departing to;
- o. Airfield requested;

- p. Name of Pilot;
- q. Number of Crew;
- r. Number of Passengers;
- s. If VIP flight, Name of VIP and number of other officials;
- t. Purpose;
- u. Photograph and sensory equipment if any;
- v. Nature of freight or cargoes carried if any;
- w. Dangerous cargoes, if any (e.g. arms, ammunition, explosives, toxic chemicals);
- x. Types of services required (e.g. type of fuel, APU/GPU, ground handling etc.);
- y. Additional/Special request

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

5 APPLICATION FOR TEST FLIGHTS

- 5.1 All applications for test flights are subject to prior approval.
- 5.2 All applications are to be made at least 2 working days but not more than 2 weeks in advance. If notice is not complied with, the application may not be considered.
- 5.3 Applicants should provide details as listed in items a. to e. below and ensure that the documents as listed in items f. to h. of the aircraft undergoing test flights remain valid during the period of operation:
- a. Aircraft Registration;
 - b. Aircraft Callsign;
 - c. Aircraft Type;
 - d. Date / Time / Duration of flight;
 - e. Point of Departure and Arrival;
 - f. Certificate of Registration;
 - g. Certificate of Airworthiness;
 - h. A Permit to Fly, issued by CAAS, in the absence of a valid Certificate of Airworthiness.

- 5.4 All applications should be submitted to:

Post:

Duty Manager, Singapore Air Traffic Control Centre
Civil Aviation Authority of Singapore
60 Biggin Hill Road, Singapore 509950

Email: caas_atops@caas.gov.sg

Fax: 65457526

- 5.5 Details on flight planning for test flights are listed at ENR 1.10 FLIGHT PLANNING.

6 AIRCRAFT BANNED FROM OPERATIONS AT SINGAPORE AERODROMES

- 6.1 The Antonov-12 aircraft is banned from all operations to/from Singapore aerodromes due to concerns over its continuing airworthiness.

k. Visual Approach Chart - ICAO

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

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

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

5 LIST OF AERONAUTICAL CHARTS AVAILABLE

GEN 3.2.5 LIST OF AERONAUTICAL CHARTS AVAILABLE							
<i>Title of Chart Series</i>	<i>Scale</i>	<i>Name and/or number</i>		<i>Price (\$)</i>	<i>Date</i>		
World Aeronautical Chart ICAO (WAC)	1:1 000 000	WAC 2860		In AIP	21 JUL 16		
Enroute Chart ICAO (ENRC)		ERC 6-1		In AIP	02 MAR 17		
Instrument Approach Chart ICAO (IAC)	1:400 000	Singapore Changi					
		RWY 02L - ICW ILS/DME	AD-2-WSSS-IAC-1	In AIP	05 JAN 17		
		RWY 02C - ICE ILS/DME	AD-2-WSSS-IAC-2	In AIP	05 JAN 17		
		RWY 20R - ICH ILS/DME	AD-2-WSSS-IAC-5	In AIP	05 JAN 17		
		RWY 20C - ICC ILS/DME	AD-2-WSSS-IAC-6	In AIP	05 JAN 17		
		RWY 20C - VTK DVOR/DME	AD-2-WSSS-IAC-7	In AIP	05 JAN 17		
		RWY 02L - RNAV(GNSS)	AD-2-WSSS-IAC-9	In AIP	05 JAN 17		
		RWY 02C - RNAV(GNSS)	AD-2-WSSS-IAC-10	In AIP	05 JAN 17		
		RWY 20R - RNAV(GNSS)	AD-2-WSSS-IAC-11	In AIP	05 JAN 17		
		RWY 20C - RNAV(GNSS)	AD-2-WSSS-IAC-12	In AIP	05 JAN 17		
		Paya Lebar					
		RWY 20 - PU DVOR/DME	AD-2-WSAP IAC-1	In AIP	05 JAN 17		
		RWY 02 - PU DVOR/DME	AD-2-WSAP IAC-2	In AIP	05 JAN 17		
		RWY 20 - IPS ILS/DME	AD-2-WSAP IAC-3	In AIP	05 JAN 17		
		RWY 02 - IPN ILS/DME	AD-2-WSAP IAC-4	In AIP	05 JAN 17		
		RWY 02 - RNAV(GNSS)	AD-2-WSAP-IAC-5	In AIP	05 JAN 17		
		RWY 20 - RNAV(GNSS)	AD-2-WSAP-IAC-6	In AIP	27 APR 17		
Visual Approach Chart ICAO (VAC)	1:400 000	Singapore Changi		AD-2-WSSS-VAC-1	In AIP	10 NOV 16	
		Seletar					
		RWY 03	AD-2-WSSL-VAC-1	In AIP	02 MAR 17		
		RWY 21	AD-2-WSSL-VAC-2	In AIP	05 JAN 17		
		RWY 03	AD-2-WSSL-VAC-3	In AIP	02 MAR 17		
RWY 21	AD-2-WSSL-VAC-4	In AIP	02 MAR 17				
Visual Departure Chart	1:100 000	Seletar					
		RWY 03	AD-2-WSSL-VDC-1	In AIP	02 MAR 17		
		RWY 21	AD-2-WSSL-VDC-2	In AIP	02 MAR 17		
Aerodrome Chart ICAO (AC)		Singapore Changi		AD-2-WSSS-ADC-2	In AIP	27 APR 17	
		Seletar		AD-2-WSSL-ADC-1	In AIP	02 MAR 17	
		Paya Lebar		AD-2-WSAP-ADC-1	In AIP	12 NOV 15	
Aerodrome Obstacle Chart ICAO TYPE A (AOC)	1:10 000	Singapore Changi					
		RWY 20R/02L	AD-2-WSSS-AOC-1	In AIP	02 MAR 17		
	1:10 000	RWY 20C/02C	AD-2-WSSS-AOC-2	In AIP	21 JUL 16		
	1:10 000	Seletar					
		RWY 03/21	AD-2-WSSL-AOC-1	In AIP	27 APR 17		
1:20 000	Paya Lebar						
RWY 20/02	AD-2-WSAP-AOC-1	In AIP	10 NOV 16				
Aerodrome Obstacle Chart ICAO TYPE B (AOC)	1:25 000	Singapore Changi					
		RWY 02L/20R and 02C/20C	AD-2-WSSS-AOC-3	In AIP	31 MAR 16		
	1:12 500	Seletar					
RWY 03/21		AD-2-WSSL-AOC-2	In AIP	05 JAN 17			
Precision Approach Terrain Chart ICAO (PATC)	1:2 500	Singapore Changi					
		RWY 02L	AD-2-WSSS-PATC-1	In AIP	02 MAR 17		
		RWY 20C	AD-2-WSSS-PATC-2	In AIP	02 MAR 17		

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ENR 1.9 AIR TRAFFIC FLOW MANAGEMENT (ATFM)

1 AIR TRAFFIC FLOW MANAGEMENT (ATFM)

← 1.1 ATFM is a service established with the objective to assist air traffic services to be delivered in a safe, orderly and efficient manner by regulating air traffic flow to match the prevailing capacity at a given airport or airspace. ATFM provides indication of the predicted airborne delay and allows airspace user (AU) to determine the delay intent for the predicted amount of airborne delay to be absorbed in different phases of the flight. This enables airspace operators (AOs) and AUs to have better predictability of traffic flow and allow airlines to plan their connecting flight schedule 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, ATFM services are provided by Civil Aviation Authority of Singapore (CAAS) from the Singapore ATFM Unit (ATFMU). The services comprise the planning and implementation of ATFM measures to balance demand and capacity and the conduct of post operation analysis of the compliance to the ATFM measures. ATFM measures implemented by Singapore and other arrival ATFMU will be coordinated with AUs and AOs through CDM processes and agreed operating procedure.

← 2 DAILY ATFM OPERATIONS FOR FLIGHTS ARRIVING AT SINGAPORE CHANGI AIRPORT

2.1 ATFM operations will be carried out on a 24-hour basis. 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:

ANSP	Airport
Cambodia	VDPP
China	ZGGG, ZGSZ, ZJHK, ZJSY
Hong Kong	VHHH
Indonesia	WIII, WADD, WARR
Malaysia	WBGG, WBGR, WBKK, WMKC, WMKI, WMKJ, WMKK, WMKL, WMKP, WMSA
Philippines	RPLL
Thailand	VTBS, VTSP, VTBD, VTCC, VTSG, VTSM, VTSS

2.3 When ATFM measures are applied, flights departing from the airports listed in paragraph 2.2 planning to arrive into Singapore Changi Airport shall adhere to their assigned Calculated Take-Off Times (CTOTs). The compliance to CTOT is important to ensure success in reducing the airborne holding.

2.4 All airspace users planning to arrive into WSSS should:

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

2.5 FPLs and ATS messages should be addressed to WSJCZQZX.

2.6 Singapore ATFM Unit will provide ATFM helpdesk to answer operational queries from airspace users. The contact details are as follows:

Singapore ATFM Unit
 Email: CAAS_ATFMU@caas.gov.sg
 Phone: (065) 6422 7001
 Web Conference Helpdesk link: <https://wemeet.adobeconnect.com/caasatfm>

3 BAY OF BENGAL COOPERATIVE ATFM (BOBCAT)

3.1 INTRODUCTION

3.1.1 The States of the ICAO Asia/Pacific Region within the Bay of Bengal, South Asia and Pakistan airspace have implemented an automated Air Traffic Flow Management (ATFM) service under the auspices of the ICAO Bay of Bengal ATS Coordination Group - ATFM Task Force.

3.2 PROVISION OF ATFM SERVICES

- 3.2.1 ATFM services are provided by Aeronautical Radio of Thailand LTD (AEROTHAI) from the Bangkok Air Traffic Flow Management Unit (ATFMU) at Bangkok ACC. ATFM services will be limited to calculation, promulgation and management of mandatory Calculated Take-Off Time (CTOT) and Kabul FIR flight level, ATS route and entry fix time, Calculated Time-Over (CTO) for each affected flight.
- 3.2.2 Singapore ATC retains responsibility for the tactical management of flights that are subject to ATFM. In discharging tactical responsibilities, Singapore ATC will manage non-ATFM compliant flights using delayed pushback and start clearances, non-preferred routes and/or flight levels, enroute holding and/or diversion around Kabul FIR.
- 3.2.3 The ATFMU utilises the automated web based Bay of Bengal Cooperative ATFM System (BOBCAT) system in meeting its ATFM responsibilities. These responsibilities will be managed in coordination with aircraft operators and Singapore ATC in the Singapore FIR.
- 3.2.4 The 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 2.3. The objectives of these ATFM services 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 future workload in the light of forecast increased traffic flows through Kabul FIR.

3.3 ATFM AFFECTED ATS ROUTES, FLIGHT LEVELS AND APPLICABLE HOURS

- 3.3.1 All westbound flights intending to enter Kabul FIR between 2000UTC and 2359UTC daily on ATS routes and flight levels specified in the Table below shall comply with the BOBCAT ATFM procedure. This includes a mandatory requirement to obtain 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
L509 - M875	LAJAK	FL300, FL320, FL340, FL360, FL380, FL400
M875	SITAX	FL280
N644	PAVLO	FL280, FL300, FL320, FL340, FL360, FL380, FL400
L750	ROSIE	FL280, FL300, FL320, FL340, FL360, FL380, FL400
P628	ASLUM	FL320, FL340, FL360, FL380, FL400
N638 - P628	SERKA	FL280, FL300

- 3.3.2 Flights that plan to enter Kabul FIR without an ATFM slot allocation will be accommodated only after flights with slots have been processed. Such flights should expect delayed pushback and start clearances, non-preferred routes and/or flight levels, enroute holding and/or diversion around Kabul FIR.
- 3.3.3 In order to ensure availability of slots for westbound departures from designated airports in northern India and Pakistan, departures from these airports are given priority for FL280 in the slot allocation. This does not preclude these flights from requesting higher flight levels with initial slot request.
- 3.3.4 The following flights are exempted from the ATFM procedures:
- a. Flights experiencing an emergency, including aircraft subjected to unlawful interference;
 - b. Flights on search and rescue or firefighting missions;
 - c. Urgent medical evacuation flights or humanitarian flights specifically declared by State medical authorities that flight delays would put the life of patients aboard at risk; and
 - d. Flights with "Head of State" status.

Note: After medical flights have completed their mission, they should be subjected to ATFM measures. Scheduled passenger transfer flights are, by their nature, non-urgent and should not be given priority under normal operational situation.

- 3.3.5 Flights exempted from ATFM procedures shall indicate the exemption in their flight plan as follows: (Field 18 - ATFM EXMP).
- 3.3.6 Singapore AIS shall forward the flight plan information to Bangkok ATFMU at AFTN address VTBBZDZX.

3.4 MANDATORY CTOT AND KABUL FIR SLOT ALLOCATION

- 3.4.1 Affected flights shall obtain the mandatory Kabul FIR slot allocation - CTOT, CTO at Kabul FIR entry waypoint, allocated flight level and allocated ATS route from the BOBCAT system. The CTOT and Kabul slot allocation will enable ANSPs to tactically control westbound flights transiting the Kabul FIR at specified times by assigning minimum spacing requirements at established gateway fix points in the vicinity of the eastern boundary of the Kabul FIR.
- 3.4.2 The application, calculation and distribution of CTOT and Kabul FIR entry waypoint slot allocations will be managed via internet access to the BOBCAT system in accordance with the ATFM operating procedures in paragraph 2.5.

← 3.5 BOBCAT OPERATING PROCEDURES

- ← 3.5.1 All affected flights are required to submit their slot requests to the BOBCAT system by logging onto <https://www.bobcat.aero> between 0100UTC and 1159UTC on the day of flight and completing the electronic templates provided.
- 3.5.2 Affected aircraft operators who do not have dedicated BOBCAT username / password access should complete the application form provided and fax it to the ATFMU as soon as possible.

← 3.6 SLOT ALLOCATION PROCESS

- ← 3.6.1 The slot allocation process is divided into 3 phases, namely the slot request submission, initial slot allocation and finally the slot distribution to aircraft operators and ANSPs.

← Slot Request Submission

- 3.6.2 Slot requests including preferred ATS route, flight level and Maximum Acceptable Delay (MAD) should be lodged between 0001UTC and 1159UTC on the day of flight. Slot requests may subsequently be amended prior 1200UTC, which is the cut-off time. Aircraft operators are encouraged to submit additional slot request options in case their first choice is not available. This may include variations to ATS route, flight level and MAD.
- 3.6.3 Slot requests shall be for flight parameters that are able to be met by the flight. For example, flights requesting a slot at FL390 must be able to transit Kabul FIR at FL390. Flights subsequently unable to meet the slot parameters (flight level, ATS route or CTO at entry waypoint) should expect non-preferred routes and / or flight levels, enroute holding and / or diversion around Kabul FIR.
- 3.6.4 As BOBCAT will allocate FL280 on a priority basis to facilitate departures from northern India and Pakistan underneath overflying traffic, flights departing these points are encouraged to include FL280 as at least one slot request preference.
- 3.6.5 Flights that were not allocated a slot in the initial slot allocation, are not satisfied with the allocated slot or did not submit a slot request should select slots from the listing of remaining unallocated slots available immediately after slot distribution has been completed.

← Slot Allocation and Distribution

- ← 3.6.6 Slot allocation will commence at the cut-off time at 1200UTC. BOBCAT will process and generate the slot allocation based on the information submitted in the slot requests. Notification of slot allocation will be made not later than 1230UTC via the ATFMU website. Alternative arrangements for notification of slot distribution (e.g. e-mail, fax, telephone) should be coordinated with the ATFMU.
- 3.6.7 After the slot allocation has been published at <https://www.bobcat.aero>, aircraft operators can:
- ← a. use the slot allocation result for ATS flight planning purposes;
 - ← b. cancel the allocated slot; and / or
 - c. change slot allocation to another available slot in the published list of unallocated slots.
- 3.6.8 Singapore ATC and AIS can also view the slot allocation results at <https://www.bobcat.aero>.

← 3.7 SUBMISSION OF ATS FLIGHT PLAN

- 3.7.1 Once aircraft operators are in receipt of the slot allocation, they shall submit the ATS flight plan using the time, ATS route and flight level parameters of the BOBCAT allocated slot.
- 3.7.2 In addition to the normal addressees, Singapore AIS will also address the flight plan (FPL) and related ATS messages (e.g. DLA, CNL, CHG) to the ATFMU via AFTN address VTBBZDZX for all flights that have submitted a slot request.

← **3.8 AIRCRAFT OPERATOR / PILOT-IN-COMMAND AND ANSP RESPONSIBILITIES**

←

Aircraft Operator / Pilot-in-Command

3.8.1 In accordance with ICAO PANS-ATM provisions, it is the responsibility of the Pilot-in-Command (PIC) and the aircraft operator to ensure that the aircraft is ready to taxi in time to meet any required departure time. PIC shall be kept informed by their aircraft operators of the CTOT, CTO at Kabul FIR entry waypoint and flight parameters (route / level) allocated by BOBCAT.

3.8.2 The PIC, in collaboration with ATC, shall arrange take-off as close as possible to the CTOT in order to meet the allocated CTO at Kabul FIR entry waypoint.

← ANSPs

←

3.8.3 In accordance with ICAO PANS-ATM provisions, flights with an ATFM slot allocation should be given priority for take-off to facilitate compliance with the CTOT.

3.8.4 CTOT shall be included as part of the initial ATC clearance. In collaboration with PIC, Singapore ATC shall ensure that every opportunity and assistance is granted to a flight to meet the CTOT and allocated CTO at Kabul FIR entry waypoint.

← **3.9 COORDINATION BETWEEN AIRCRAFT OPERATOR / PILOT-IN-COMMAND, ANSPs AND BANGKOK ATFMU**

←

3.9.1 The PIC shall include the CTOT in the initial ATC clearance request.

3.9.2 PIC shall adjust cruise flight to comply with slot parameters at the Kabul FIR entry waypoint, requesting appropriate ATC clearances including speed variations in accordance with the published AIP requirements.

3.9.3 Prior to departure, in circumstances where it becomes obvious that the allocated Kabul FIR entry waypoint slot parameters will not be met, a new slot allocation should be obtained as soon as possible and via the most expeditious means (e.g. via coordination between flight dispatcher, PIC, Singapore ATC and Bangkok ATFMU). Early advice that the Kabul FIR slot parameters will be missed also enables the slots so vacated to be efficiently reassigned to other flights.

3.9.4 Prior to departure and after the aircraft has left the gate, in the event that the aircraft is unable to meet the Kabul FIR entry waypoint slot parameters, when requested by the PIC, Singapore ATC shall assist the PIC to coordinate with the ATFMU for a revised slot allocation.

3.9.5 The ATFMU (VTBBZDZX) shall be included in the list of AFTN addressees for NOTAMs regarding any planned activities that may affect slot availability (e.g. reservation of airspace / closure of airspace, non-availability of routes, etc.).

3.9.6 The ATFMU (VTBBZDZX) shall be included in the list of AFTN addressees for ATS messages (e.g. FPL, DEP, DLA, CHG, CNL) relating to flights subject to ATFM procedures.

3.9.7 A missed slot results in dramatically increased coordination workload for ATC and PIC and should be avoided. To minimise coordination workload in obtaining a revised slot allocation, the following procedures are recommended:

- ←
- ←
- a. If the flight is still at the gate, coordination should take place via aircraft operators / flight dispatchers to ATFMU;
 - b. If the flight has left the gate, coordination to ATFMU may also take place via the ATS unit presently communicating with the flight.

3.10 BASIC COMPUTER REQUIREMENT

3.10.1 Aircraft operators and Singapore ATC are required to have computer equipment capable of connecting to the BOBCAT website <https://www.bobcat.aero> via the internet and satisfying the following minimum technical requirements:

- ←
- a. A personal computer of any operating system with the following characteristics:
 - i. Processor: minimum CPU clock speed of 150MHz;
 - ii. Operating System: any that operates one of the following web browsers (i.e. Windows 2000 / XP, Linux, Unix, or Mac OS);

- iii. Web Browser: Internet Explorer 5.5 or newer, Mozilla 1.0 or newer, Mozilla Firefox 1.0 or newer, Netscape 7 or newer;
- iv. RAM: 64MB or larger (depending on operating system);
- v. Hard Disk Space: minimum of 500MB or larger (depending on operating system);
- vi. Monitor Display Resolution: minimum of 800 x 600 pixels; and
- vii. Internet Connection: 56Kbps modem or faster.

3.11 ATFM USERS HANDBOOK

- 3.11.1 Supporting documentation, including detailed information in respect of the ATFM operations described above and other pertinent information has been included in the Bay of Bengal and South Asia ATFM Handbook (the "ATFM Users Handbook"), available at <https://www.bobcat.aero>
- 3.11.2 ANSPs and aircraft operators shall ensure that they are conversant with and able to apply the relevant procedures described in the ATFM Users Handbook.

← 3.12 CONTINGENCY PROCEDURES

- ← 3.12.1 In the event that an aircraft operator or Singapore ATC is unable to access the ATFMU website, the ATFMU shall be contacted via the alternative means (telephone, fax, AFTN) described in paragraph 2.13.
- 3.12.2 Contingency procedures for submission of slot request, including activation of Contingency Slot Request Templates (CSRT), are included in the ATFM Users Handbook.
- 3.12.3 In the event of system failure of BOBCAT, ATFMU shall notify all parties concerned and advise that ATFM slot allocation procedures are suspended. In this event, all parties concerned will revert to the existing ATM procedures as applicable outside the daily period of ATFM metering.

← 3.13 ATFM SYSTEM FAULT REPORTING

- ← 3.13.1 An ATFM system fault is defined as a significant occurrence affecting an ATS unit, an aircraft operator or ATFMU resulting from the application of ATFM procedures.
- 3.13.2 Aircraft operators and Singapore ATC experiencing an ATFM system fault should complete an ATFM System Fault Report Form from the ATFM Users Handbook and forward it to the ATFMU at the address indicated on the form. The ATFMU will analyse all reports, make recommendations / suggestions as appropriate and provide feedback to the parties concerned to enable remedial action.

← 3.14 ADDRESS OF AIR TRAFFIC FLOW MANAGEMENT UNIT (ATFMU)

- ← 3.14.1 The ATFMU may be contacted as follows:

←

Unit Name	: Bangkok ATFMU
Telephone	: +66-2-287-8024, +66-2-287-8025
Fax	: +66-2-287-8027
Tel/Fax	: +66-2-287-8026
E-mail	: atfmu@bobcat.aero
AFTN	: VTBBZDZX
Website	: https://www.bobcat.aero

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ENR 1.10 FLIGHT PLANNING

1 PROCEDURES FOR SUBMISSION OF A FLIGHT PLAN

1.1 *Requirement for submission of a Flight Plan*

- 1.1.1 The pilot-in-command or airline operator shall submit a flight plan to ATC via the AFS or the AIM system (registration required) for the following flights:
- Flights on airways, associated holding areas and all other controlled airspaces whether IFR or VFR;
 - Any flight or portion thereof to be provided with air traffic control service;
 - Any flight within or into designated areas, or along designated routes to facilitate co-ordination with appropriate military units or with air traffic service units in adjacent States in order to avoid the possible need for interception for the purpose of identification;
 - Any flight across international borders.
- 1.1.2 The pilot-in-command or the airline operator shall use the ICAO flight plan form except for where a flight is planned to be conducted in the Seletar aerodrome circuit or departing Seletar aerodrome for Light Aircraft Training Areas A, B and C. Details of the flight shall be submitted by electronic mail using a standard form which can be retrieved from webpage: <https://fpl-1.caasaim.gov.sg/>
- 1.1.3 For a flight that will be operating within Singapore only (except for flights mentioned in paragraph 1.1.2, the pilot-in-command or the operator shall submit the ICAO flight plan using the automated AIM-SG system and to include Military ATC addressee WSARYWYX. If for any reason a flight plan is not approved, the pilot-in-command shall contact RSAF AOC at 67683702 for clarification.
- 1.1.4 The pilot-in-command or the operator of IFR flight operating out of Seletar is required to file via KK.
- 1.1.5 VFR flight operating between Seletar and Johor Bahru shall route via Point X (012830N1034954E), Tebrau City Mall (013259N1034748E), Felda Ulu Tebrau (013751N1034510E) and vice versa.

1.2 *Requirement for submission of a Flight Plan for Test Flights*

- 1.2.1 Test flights shall be conducted on Airway G580 between HOSBA and NIMIX to minimise disruption to civil scheduled flight movements and to facilitate the test flight operations.
- 1.2.2 A flight plan shall be submitted for a test flight at least one hour before departure. The pilot-in-command or the operator shall include in Item 18 of the flight plan 'RMK/TEST FLT APPROVED BY ATC'.
- 1.2.3 The pilot-in-command shall maintain a 2-way VHF communication with Singapore ATC on the assigned VHF frequency at all times.
- 1.2.4 The pilot-in-command of the test flight shall adhere to ATC instructions at all times. Test flight manoeuvres are subject to ATC clearance, real-time coordination and traffic.
- ← 1.2.5 Procedures for application to conduct test flights are provided on page GEN 1.2-6 paragraph 5.

1.3 *Lead time for filing flight plans and flight plan associated messages*

- 1.3.1 Flight plan shall be filed 120 hours, or five days, at the earliest but no later than 60 minutes prior to departure (estimated off-block time).
- 1.3.2 In the event of a delay of 30 minutes in excess of the estimated off-block time, the flight plan should be amended or a new flight plan submitted and the old flight plan cancelled, whichever is applicable. To indicate a delay to a flight, a DLA or a CHG message may be used depending on the circumstances.
- 1.3.3 The old flight plan shall be cancelled and a new flight plan shall be submitted when changes are made to any one of the following fields:
7/Aircraft Identification, 15/Route and/or 16/Destination Aerodrome.
- 1.3.4 A flight plan submitted in flight on HF RTF shall be submitted at least 20 minutes (or if on VHF RTF at least 10 minutes) prior to the intended point of entry into a control zone, control area, advisory area or advisory route.
- 1.3.5 A pilot-in-command may change from an IFR flight plan to a VFR flight plan by reporting "CANCELLING MY IFR FLIGHT" when weather conditions indicate that the remainder of the flight can be conducted under VFR. [However, within Singapore, all flights whether IFR or VFR shall be regulated in accordance with instrument flight rules.] (see note 2 below).

1.3.6 ATC will acknowledge:
“IFR flight cancelled at.....(time)” or

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

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

Note:

- 1) The fact that pilot flying in VMC does not by itself constitute cancellation of an IFR flight plan.
- 2) Within the Singapore/Johor Airspace Complex and Control Zones all flights are regulated in accordance with IFR separation standards.

1.4 Persons on board (POB)

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

1.5 DATA LINK Communication

1.5.1 Aircraft using data link communications (page ENR 1.1-15) must insert one or more of the following letters in Item 10a of their flight plan to indicate serviceable COM aid equipment and capabilities available:

- J1** CPDLC ATN VDL Mode 2
- J2** CPDLC FANS 1/A HF DL
- J3** CPDLC FANS 1/A VDL Mode A
- J4** CPDLC FANS 1/A VDL Mode 2
- J5** CPDLC FANS 1/A SATCOM (INMARSAT)
- J6** CPDLC FANS 1/A SATCOM (MTSAT)
- J7** CPDLC FANS 1/A SATCOM (Iridium)

1.6 RNAV Approved Aircraft

1.6.1 Aircraft flying on RNAV routes A464, A576, B470, G334, L625, L642, L644, M646, M751, M753, M758, M761, M767, M768, M771, M772, M774, N875, N884, N891 and N892 (see page ENR 1.8-13) must be RNAV equipped and should annotate their flight plan as follows:

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

1.6.2 Aircraft flying on RNAV routes L642(CHEUNG CHAU-MERSING), L644 (DUDIS-KIKOR), M771(MERSING-CHEUNG CHAU), M772(ASISU-LAXOR), N892 (HENGCHUN-MERSING), L625(TOMAN-MEVIN), N884 (MERSING-MANILA) and M767(JOMALIG-TOMAN) (see page ENR 1.8-17) must be RNP 10 approved and shall indicate in their flight plan:

- Item 10 - “R” where R = PBN approved
- Item 18 - PBN/A1 where A1 = RNAV 10 (RNP 10)

1.6.3 Operators of aircraft unable to meet the RNP 10 requirements (see page ENR 1.8-17) and wishing to operate at or above FL290 on RNAV routes specified in paragraph 1.6.2 shall annotate their flight plan as follows:

Item 18 - insert “RMK/REQ FL (insert level)” where FL = the preferred flight level (subject to ATC co-ordination)

ENR 3.6 ENROUTE HOLDING

<i>HLDG ID/FIX/WPT Coordinates</i>	<i>INBD TR (*Mag)</i>	<i>Direction of Procedure Turn</i>	<i>MAX IAS</i>	<i>MNM-MAX HLDG Level</i>	<i>Time (min)</i>	<i>Controlling Unit and Frequency</i>
1	2	3	4	5	6	7
BOBAG 38.6 DME VTK R-234.7 24.0 DME SJ R-243.2 010230N 1032954E	083	Right	250kt*	FL 140 6000 FT ALT	1	Singapore ACC 124.05 MHz (PRI) 124.6 MHz (SRY)
BOBAG 38.6 DME VTK R-234.7 24.0 DME SJ R-243.2 010230N 1032954E	083	Right	250kt*	FL 180 FL 150	1	Singapore ACC 133.25 MHz (PRI) 135.8 MHz (SRY)
ELALO 041240N 1043329E	174	Left	300kt	FL 350 FL 280	1.5	Singapore ACC 123.7 MHz (PRI) 127.3 MHz (SRY)
HOSBA (HHA) - Low Level 34 DME SJ R-079 24 DME VTK R-103 011947.8N 1042417.5E	259	Right	230kt*	FL 140 7000 FT ALT	1	Singapore ACC 120.3 MHz (PRI) 124.6 MHz (SRY)
HOSBA (HHA) - High Level 34 DME SJ R-079 24 DME VTK R-103 011947.8N 1042417.5E	259	Right	265kt*	FL 250 FL 150	1.5	Singapore ACC 134.4 MHz (PRI) 128.1 MHz (SRY) 255.4 MHz
IKIMA - High Level 67.9 DME VTK R-127.6 70.5 DME SJ R-115.1 004314N 1045500E	291	Right	250kt*	FL 250 FL 150	1.5	Singapore ACC 134.4 MHz (PRI) 128.1 MHz (SRY)
KARTO - High Level 93.5 DME VTK R-098.3 102.6 DME SJ R-091.1 011124N 1053343E	269	Left	280kt*	FL 310 FL 260	1.5	Singapore ACC 134.2 MHz (PRI) 133.35 MHz(SRY)
KILOT 030217N 1044023E	227	Left	250kt	FL 270 FL 220	1.5	Singapore ACC 134.7 MHz (PRI) 134.15 MHz (SRY)
LAMA - Low Level 7 DME PU R-024 013149.5N 1035850.3E	204	Right	230kt*	FL 140 2500 FT ALT	1	Singapore ACC 120.3 MHz (PRI) 124.6 MHz (SRY)
LAVAX - Low Level 36 DME SJ R-095.5 010950N 1042714E	269	Left	220kt	FL 140 7000 FT ALT	1	Singapore ACC 120.3 MHz (PRI) 124.6 MHz (SRY)
MABAL - High Level 142.1 DME VTK R-030.1 157.2 DME SJ R-031.2 032826N 1051236E	231	Left	300kt*	FL 350 FL 280	1.5	Singapore ACC 123.7 MHz (PRI) 127.3 MHz (SRY)
NYLON (NHA) - Low Level 13 DME VTK R-023 013656.9N 1040623.8E	203	Left	220kt*	FL 140 3000 FT ALT	1	Singapore ACC 120.3 MHz (PRI) 124.6 MHz(SRY)
NYLON (NHA) - High Level 13 DME VTK R-023 013656.9N 1040623.8E	203	Left	265kt*	FL 250 FL 150	1.5	Singapore ACC 120.3 MHz (PRI) 124.6 MHz (SRY)
REMES- Low Level 30 DME SJ R-168 004342N 1035735E	348	Right	220kt	FL 140 6000 FT ALT	1	Singapore ACC 120.3 MHz (PRI) 124.6 MHz (SRY)
REPOV- High Level 68.2 DME VTK R-178.6 57.9 DME SJ R-168.3 001623N 1040300E	348	Left	250kt*	FL 250 FL 150	1.5	Singapore ACC 134.4 MHz (PRI) 128.1 MHz(SRY)

<i>HLDG ID/FIX/WPT Coordinates</i>	<i>INBD TR (*Mag)</i>	<i>Direction of Procedure Turn</i>	<i>MAX IAS</i>	<i>MNM-MAX HLDG Level</i>	<i>Time (min)</i>	<i>Controlling Unit and Frequency</i>
1	2	3	4	5	6	7
SAMKO (SHA) - Low Level 8 DME SJ R-168 21 DME VTKR-203.5 010529.5N 1035254.9E	348	Left	220kt*	FL 140 4000 FT ALT	1	Singapore ACC 120.3 MHz (PRI) 124.6 MHz (SRY)
SAMKO (SHA) - High Level 8 DME SJ R-168 21 DME VTK R-203.5 010529.5N 1035254.9E	348	Left	265kt*	FL 250 FL 150	1.5	Singapore ACC 120.3 MHz (PRI) 124.6 MHz (SRY)
SINJON - Low Level SJ DVOR/DME 011319.28N 1035120.08E	348	Right	230kt*	FL 140 4500 FT ALT	1	Singapore ACC 120.3 MHz (PRI) 124.6 MHz (SRY)

* Maximum speed of 280kt in conditions of turbulence subject to ATC clearance.

<i>Name-code designator</i>	<i>Co-ordinates</i>	<i>ATS route or other route</i>	<i>Terminal Area</i>
1	2	3	4
HOSBA	011948N 1042418E	G580, W401	HLDG ID
IBIBI	011503N 1035707E		SID-WSSS
IBIVA	011351N 1035637E		SID-WSSS
IBIXU	011621N 1035740E		SID-WSSS
IBULA	005036N 1043600E		STAR-WSSS
IDMAS	004900N 1041848E	B338	
IDSEL	032432N 1035544E	M758, T611, T612, Y335	SID-WSSS
IDUNA	012305.80N 1035933.58E		IAC-WSSS
IDURO	012639.84N 1040103.94E		IAC-WSSS
IDVAS	012934.66N 1040217.75E		IAC-WSSS
IGARI	065610N 1033506E	R208, M765, N891	
IGNON	010847N 1041257E		STAR-WSSS
IGULA	013232.27N 1040332.66E		IAC-WSSS
IKAGO	003816N 1052931E		STAR-WSSS
IKIMA	004314N 1045500E		HLDG ID, STAR-WSSS
IKUKO	054512N 1031324E	R208	
IKUMI	055338N 1035509E	N891	
IPDOL	045111N 1035920E	Q803, T611	
IPNAK	013711.93N 1040530.83E		IAC-WSSS
IPRIX	070000N 1040755E	M753, Q802, T611	
KADAR	000647S 1074342E	M774	
KAKSA	011702.58N 1035757.92E		IAC-WSSS
KAMIN	023442N 1085536E	G334, M646	
KANLA	034556N 1043606E		STAR-WSSS
KARTO	011124N 1053343E		HLDG ID, STAR-WSSS,
KASPO	011507.15N 1035709.20E		IAC-WSSS
KETOD	031042N 1040942E	M761, Y336	
KEXAS	011019N 1044818E		STAR-WSSS
KEXOL	043930N 1040942E	Q803	
KIBOL	025229N 1042805E	G334, N892	
KIKOR	002244S 1070524E	L644	
KILOT	030217N 1044023E	M761, N892	STAR-WSSS
KIMER	011105.74N 1035527.30E		IAC-WSSS
LAGOT	071632N 1113243E	M768, N884	
LAGUS	011915.29N 1035854.00E		IAC-WSSS
LAPOL	012622N 1034435E	G579	
LASIN	011538.25N 1035722.39E		IAC-WSSS

<i>Name-code designator</i>	<i>Co-ordinates</i>	<i>ATS route or other route</i>	<i>Terminal Area</i>
1	2	3	4
LAVAX	010950N 1042714E		HLDG ID, STAR-WSSS,
LAXOR	094937N 1144829E	L649 , M772 , N884	
LEBIN	031438N 1060604E	N875 , N884	
LEDOX	011642N 1035651E		SID-WSSS
LEGAS	011524N 1035618E		SID-WSSS
LEGOL	012053N 1034723E	G579	
LELIB	012729N 1032450E	A464 , W401	SID-WSSS, STAR-WSSS
LELON	011243.51N 1035608.62E		IAC-WSSS
LEND A	024124N 1043932E	N884	
LEPNA	010648.29N 1035338.82E		IAC-WSSS
LETGO	011411N 1035548E		SID-WSSS
LIDVA	010505.67N 1035255.38E		IAC-WSSS
LIPRO	025342N 1051128E	M761 , N884	
LUSMO	033341N 1065534E	L625 , M758 , N884	
LUXOL	011802.73N 1035823.38E		IAC-WSSS
MABAL	032826N 1051236E	M758 , N892	HLDG ID, STAR-WSSS
MABLI	041717N 1061247E	L635 , L644 , N892	
MANIM	031431N 1040553E	N891	
MASBO	020248N 1025251E	A457	SID-WSSS
MASNI	012037N 1033746E	A464	
MELAS	070520N 1080911E	N892	
MESOG	020103N 1031240E	B466	
MUMSO	034420N 1053213E	N875 , N892	
NIMIX	012452N 1075926E	G580 , N875	
NIVAM	023650N 1040228E	G219	
NODIN	081100N 1161142E	M522	
NOPAT	042313N 1044756E	L629 , N875	
NYLON	013656.90N 1040623.80E		HLDG ID, IAC-WSSS, SID-WSSS, STAR-WSSS
OB DAB	031153N 1040538E	N891	
OB DOS	002503N 1065551E	L504 , M774	STAR-WSSS
OBGET	012307N 1064531E	G580 , L644	
OBLOT	014256N 1064147E	L644 , M646	
ODONO	063613.82N 1030129.41E	M904	
OLKIT	045010N 1115118E	M758	
OLSAM	020059N 1063824E	L644	
OMBAP	023116N 1063242E	L644	
OMLIV	025512N 1062812E	L644	

<i>Name-code designator</i>	<i>Co-ordinates</i>	<i>ATS route or other route</i>	<i>Terminal Area</i>
1	2	3	4
ONAPO	032116N 1062318E	L644	
OPULA	033155N 1062118E	L644	
OTLON	030752N 1042006E	M761 , M771	
PADLI	030918N 1033133E	B469 , Y332 , Y333 , Y334 , Y335 , Y336	
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	,
POSUB	012725N 1040748E		STAR-WSSS,
RAXIM	030318N 1041713E	M771	
REDUK	021957N 1030459E	R325	
REKOP	013306N 1030521E	A576	
REMES	004342N 1035735E	G579	HLDG ID, STAR-WSSS
REPOV	001623N 1040300E	G579	HLDG ID, STAR-WSSS
ROBMO	025440N 1035700E	L642	
RUVIK	011422N 1042033E		SID-WSSS, STAR-WSSS
SABIP	020940N 1075044E	M646 , M761	
SABKA	015051N 1031713E	A457	SID-WSSS
SAMKO	010529.5N 1035254.9E	R469 , W407	HLDG ID, STAR-WSSS,
SANAT	010749N 1035930E		STAR-WSSS,
SUKRI	012306N 1025904E	M630	
SUMLA	080242N 1160054E	M754	
SURGA	003657S 1063119E	M635	
SUSAR	035848N 1051547E	L635 , N875	
TAROS	004200N 1021607E	R469	
TAXUL	035035N 1034037E	M763 , Y332	
TEGID	085656N 1155143E	M767	
TERIX	041521N 1093456E	L517 , M758 , M767	
TIDAR	065230.15N 1024959.82E	M904	
TODAM	063138N 1123536E	M767 , M768	
TOKIM	012933N 1040315E		SID-WSSS
TOMAN	012147N 1054717E	G580 , L625 , M646 , M767	SID-WSSS, STAR-WSSS
TOPOM	012955N 1040227E		SID-WSSS
TOPOR	014412N 1025330E	W534	

<i>Name-code designator</i>	<i>Co-ordinates</i>	<i>ATS route or other route</i>	<i>Terminal Area</i>
1	2	3	4
UDONI	004818N 1040806E	B470	
UGPEK	033647N 1040752E	L635, N891	
UPRON	060903.41N 1032039.98E	M904, Q803	
URIGO	032505N 1040647E	M758, N891	
VABRI	013114.96N 1040357.78E		IAC-WSSS
VENIX	002156S 1060521E		SID-WSSS
VENLI	062848N 1024900E	M765	
VENPA	002141N 1044955E		SID-WSSS
VEPLI	035223N 1040542E	L629, L642	
VERIN	023332N 1062425E	L625	
VILEV	012729.10N 1040222.42E		IAC-WSSS
VINIK	083830N 1161348E	M522, M754	
VISAT	032620N 1043134E	M758, M771	

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WSAT AD 2.7	SEASONAL AVAILABILITY - CLEARING	AD 2.WSAT-2
WSAT AD 2.8	APRONS, TAXIWAYS AND CHECK LOCATIONS/POSITIONS DATA	AD 2.WSAT-2
WSAT AD 2.9	[NIL] SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS	NIL
WSAT AD 2.10	AERODROME OBSTACLES	AD 2.WSAT-2
WSAT AD 2.11	[NIL] METEOROLOGICAL INFORMATION PROVIDED	NIL
WSAT AD 2.12	RUNWAY PHYSICAL CHARACTERISTICS	AD 2.WSAT-3
WSAT AD 2.13	DECLARED DISTANCES	AD 2.WSAT-3
WSAT AD 2.14	APPROACH AND RUNWAY LIGHTING	AD 2.WSAT-3
WSAT AD 2.15	OTHER LIGHTING, SECONDARY POWER SUPPLY	AD 2.WSAT-3
WSAT AD 2.16	[NIL] HELICOPTER LANDING AREA	NIL
WSAT AD 2.17	ATS AIRSPACE	AD 2.WSAT-4
WSAT AD 2.18	ATS COMMUNICATION FACILITIES	AD 2.WSAT-5
WSAT AD 2.19	RADIO NAVIGATION AND LANDING AIDS	AD 2.WSAT-5
WSAT AD 2.20	LOCAL TRAFFIC REGULATIONS - USE OF RSAF TENGAH AIR BASE AS AN EMERGENCY DIVERSION AERODROME FOR SINGAPORE CHANGI AIRPORT	AD 2.WSAT-7
1	INTRODUCTION	AD 2.WSAT-7
2	MANNING OF TENGAH AIR BASE	AD 2.WSAT-7
3	OPERATIONAL SERVICES	AD 2.WSAT-7

4	PASSENGER CLEARANCE	AD 2.WSAT-7
5	SECURITY	AD 2.WSAT-7
6	AIRCRAFT STAND ALLOCATION	AD 2.WSAT-7
7	COMMUNICATIONS	AD 2.WSAT-7
8	FUEL	AD 2.WSAT-8
9	AIRCRAFT SERVICES	AD 2.WSAT-8
10	RESCUE AND FIRE FIGHTING FACILITIES	AD 2.WSAT-8
11	FULL EMERGENCY/CRASH PROCEDURE	AD 2.WSAT-8
12	ATC SERVICE OUTSIDE OPERATING HOURS	AD 2.WSAT-8
WSAT AD 2.21	[NIL] NOISE ABATEMENT PROCEDURES	NIL
WSAT AD 2.22	[NIL] FLIGHT PROCEDURES	NIL
WSAT AD 2.23	[NIL] ADDITIONAL INFORMATION	NIL
WSAT AD 2.24	CHARTS RELATED TO AN AERODROME	AD 2.WSAT-8
WSAG	SEMBAWANG	
WSAG AD 2.1	AERODROME LOCATION INDICATOR AND NAME	AD 2.WSAG-1
WSAG AD 2.2	AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA	AD 2.WSAG-1
WSAG AD 2.3	OPERATIONAL HOURS	AD 2.WSAG-1
WSAG AD 2.4	[NIL] HANDLING SERVICES AND FACILITIES	NIL
WSAG AD 2.5	[NIL] PASSENGER FACILITIES	NIL
WSAG AD 2.6	RESCUE AND FIRE FIGHTING SERVICES	AD 2.WSAG-1
WSAG AD 2.7	[NIL] SEASONAL AVAILABILITY - CLEARING	NIL
WSAG AD 2.8	APRON, TAXIWAYS AND CHECK LOCATIONS/POSITIONS DATA	AD 2.WSAG-1
WSAG AD 2.9	[NIL] SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS	NIL
WSAG AD 2.10	AERODROME OBSTACLES	AD 2.WSAG-2
WSAG AD 2.11	[NIL] METEOROLOGICAL INFORMATION PROVIDED	NIL
WSAG AD 2.12	RUNWAY PHYSICAL CHARACTERISTICS	AD 2.WSAG-2
WSAG AD 2.13	DECLARED DISTANCES	AD 2.WSAG-2
WSAG AD 2.14	[NIL] APPROACH AND RUNWAY LIGHTING	NIL
WSAG AD 2.15	OTHER LIGHTING, SECONDARY POWER SUPPLY	AD 2.WSAG-2
WSAG AD 2.16	[NIL] HELICOPTER LANDING AREA	NIL
WSAG AD 2.17	ATS AIRSPACE	AD 2.WSAG-2
WSAG AD 2.18	COMMUNICATION FACILITIES	AD 2.WSAG-3
WSAG AD 2.19	RADIO NAVIGATION AND LANDING AIDS	AD 2.WSAG-3
WSAG AD 2.20	[NIL] LOCAL TRAFFIC REGULATIONS	NIL
WSAG AD 2.21	[NIL] NOISE ABATEMENT PROCEDURES	NIL
WSAG AD 2.22	[NIL] FLIGHT PROCEDURES	NIL
WSAG AD 2.23	[NIL] ADDITIONAL INFORMATION	NIL
WSAG AD 2.24	[NIL] CHARTS RELATED TO AN AERODROME	NIL
WMKJ	JOHOR BAHRU	
WMKJ AD 2.1	AERODROME LOCATION INDICATOR AND NAME	AD 2.WMKJ-1
WMKJ AD 2.2	[NIL] AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA	NIL
WMKJ AD 2.3	[NIL] OPERATIONAL HOURS	NIL
WMKJ AD 2.4	[NIL] HANDLING SERVICES AND FACILITIES	NIL
WMKJ AD 2.5	[NIL] PASSENGER FACILITIES	NIL
WMKJ AD 2.6	[NIL] RESCUE AND FIRE FIGHTING SERVICES	NIL
WMKJ AD 2.7	[NIL] SEASONAL AVAILABILITY - CLEARING	NIL

WMKJ AD 2.8	[NIL] APRONS, TAXIWAYS AND CHECK LOCATIONS DATA	NIL
WMKJ AD 2.9	[NIL] SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS	NIL
WMKJ AD 2.10	[NIL] AERODROME OBSTACLES	NIL
WMKJ AD 2.11	[NIL] METEOROLOGICAL INFORMATION PROVIDED	NIL
WMKJ AD 2.12	[NIL] RUNWAY PHYSICAL CHARACTERISTICS	NIL
WMKJ AD 2.13	[NIL] DECLARED DISTANCES	NIL
WMKJ AD 2.14	[NIL] APPROACH AND RUNWAY LIGHTING	NIL
WMKJ AD 2.15	[NIL] OTHER LIGHTING, SECONDARY POWER SUPPLY	NIL
WMKJ AD 2.16	[NIL] HELICOPTER LANDING AREA	NIL
WMKJ AD 2.17	ATS AIRSPACE	AD 2.WMKJ-1
WMKJ AD 2.18	[NIL] ATS COMMUNICATION FACILITIES	NIL
WMKJ AD 2.19	[NIL] RADIO NAVIGATION AND LANDING AIDS	NIL
WMKJ AD 2.20	[NIL] LOCAL TRAFFIC REGULATIONS	NIL
WMKJ AD 2.21	[NIL] NOISE ABATEMENT PROCEDURES	NIL
WMKJ AD 2.22	[NIL] FLIGHT PROCEDURES	NIL
WMKJ AD 2.23	[NIL] ADDITIONAL INFORMATION	NIL
WMKJ AD 2.24	[NIL] CHARTS RELATED TO AN AERODROME	NIL
WIDD BATAM/HANG NADIM (INDONESIA)		
WIDD AD 2.1	AERODROME LOCATION INDICATOR AND NAME	AD 2.WIDD-1
WIDD AD 2.2	[NIL] AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA	NIL
WIDD AD 2.3	[NIL] OPERATIONAL HOURS	NIL
WIDD AD 2.4	[NIL] HANDLING SERVICES AND FACILITIES	NIL
WIDD AD 2.5	[NIL] PASSENGER FACILITIES	NIL
WIDD AD 2.6	[NIL] RESCUE AND FIRE FIGHTING SERVICES	NIL
WIDD AD 2.7	[NIL] SEASONAL AVAILABILITY - CLEARING	NIL
WIDD AD 2.8	[NIL] APRONS, TAXIWAYS AND CHECK LOCATIONS DATA	NIL
WIDD AD 2.9	[NIL] SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS	NIL
WIDD AD 2.10	[NIL] AERODROME OBSTACLES	NIL
WIDD AD 2.11	[NIL] METEOROLOGICAL INFORMATION PROVIDED	NIL
WIDD AD 2.12	[NIL] RUNWAY PHYSICAL CHARACTERISTICS	NIL
WIDD AD 2.13	[NIL] DECLARED DISTANCES	NIL
WIDD AD 2.14	[NIL] APPROACH AND RUNWAY LIGHTING	NIL
WIDD AD 2.15	[NIL] OTHER LIGHTING, SECONDARY POWER SUPPLY	NIL
WIDD AD 2.16	[NIL] HELICOPTER LANDING AREA	NIL
WIDD AD 2.17	ATS AIRSPACE	AD 2.WIDD-1
WIDD AD 2.18	ATS COMMUNICATION FACILITIES	AD 2.WIDD-1
WIDD AD 2.19	[NIL] RADIO NAVIGATION AND LANDING AIDS	NIL
WIDD AD 2.20	[NIL] LOCAL TRAFFIC REGULATIONS	NIL
WIDD AD 2.21	[NIL] NOISE ABATEMENT PROCEDURES	NIL
WIDD AD 2.22	[NIL] FLIGHT PROCEDURES	NIL
WIDD AD 2.23	[NIL] ADDITIONAL INFORMATION	NIL
WIDD AD 2.24	CHARTS RELATED TO AN AERODROME	AD 2.WIDD-2
WIDN TANJUNG PINANG/RAJA HAJI FISABILILLAH (INDONESIA)		
WIDN AD 2.1	AERODROME LOCATION INDICATOR AND NAME	AD 2.WIDN-1
WIDN AD 2.2	[NIL] AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA	NIL
WIDN AD 2.3	[NIL] OPERATIONAL HOURS	NIL

WIDN AD 2.4	[NIL] HANDLING SERVICES AND FACILITIES	NIL
WIDN AD 2.5	[NIL] PASSENGER FACILITIES	NIL
WIDN AD 2.6	[NIL] RESCUE AND FIRE FIGHTING SERVICES	NIL
WIDN AD 2.7	[NIL] SEASONAL AVAILABILITY – CLEARING	NIL
WIDN AD 2.8	[NIL] APRONS, TAXIWAYS AND CHECK LOCATIONS DATA	NIL
WIDN AD 2.9	[NIL] SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS	NIL
WIDN AD 2.10	[NIL] AERODROME OBSTACLES	NIL
WIDN AD 2.11	[NIL] METEOROLOGICAL INFORMATION PROVIDED	NIL
WIDN AD 2.12	[NIL] RUNWAY PHYSICAL CHARACTERISTICS	NIL
WIDN AD 2.13	[NIL] DECLARED DISTANCES	NIL
WIDN AD 2.14	[NIL] APPROACH AND RUNWAY LIGHTING	NIL
WIDN AD 2.15	[NIL] OTHER LIGHTING, SECONDARY POWER SUPPLY	NIL
WIDN AD 2.16	[NIL] HELICOPTER LANDING AREA	NIL
WIDN AD 2.17	ATS AIRSPACE	AD 2.WIDN-1
WIDN AD 2.18	ATS COMMUNICATION FACILITIES	AD 2.WIDN-1
WIDN AD 2.19	[NIL] RADIO NAVIGATION AND LANDING AIDS	NIL
WIDN AD 2.20	[NIL] LOCAL TRAFFIC REGULATIONS	NIL
WIDN AD 2.21	[NIL] NOISE ABATEMENT PROCEDURES	NIL
WIDN AD 2.22	[NIL] FLIGHT PROCEDURES	NIL
WIDN AD 2.23	[NIL] ADDITIONAL INFORMATION	NIL
WIDN AD 2.24	CHARTS RELATED TO AN AERODROME	AD 2.WIDN-1

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

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AD 2 AERODROMES**WSSS — SINGAPORE / SINGAPORE CHANGI INTL****WSSS AD 2.1 AERODROME LOCATION INDICATOR AND NAME**

WSSS — SINGAPORE / SINGAPORE CHANGI INTL

WSSS AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP coordinates and site at AD</i>	012133.16N 1035921.57E (Control Tower)
2	<i>Direction and distance from (city)</i>	17.2km North-East from City Centre (The Fullerton Hotel, Singapore)
3	<i>Elevation/Reference temperature</i>	6.66 M / 32.6°C
4	<i>Geoid Undulation (AD elevation position)</i>	10.29 M
5	<i>MAG VAR /Annual change</i>	0°26' E (2015) / Negligible
6	<i>AD Administration, address, telephone, telefax, AFS</i>	
	CHANGI AIRPORT GROUP (SINGAPORE) PTE LTD Singapore Changi Airport P.O.Box 168, SINGAPORE 918146 Tel: (65)65956868 AFS: WSSSYAYX	
7	<i>Types of traffic permitted</i>	IFR
8	<i>Remarks</i>	
	<p>a. Not available to all non-scheduled civil aircraft types of 40-seater or below except in special circumstances. Aircraft larger than the above category shall not plan their arrival between 0900-1559UTC.</p> <p>b. Aircraft shall leave nose-in position (90 degrees) with the aid of aircraft tow tractors. Reverse thrust or variable pitch propellers shall not be used. Aircraft operators shall make suitable arrangements.</p> <p>c. Prior permission required for aircraft not equipped with radiotelephony.</p> <p>d. A subsonic jet aircraft, unless otherwise exempted, is not permitted to operate in Singapore unless it possesses a noise certificate stating that it meets the noise standards of ICAO Annex 16, Volume 1, Chapter 3, or equivalent. The noise certificate may also take the form of a suitable statement contained in another document approved by the State of Registry of the aircraft.</p> <p>e. RVR minima for CAT II ILS operations is limited to 350m due to runway and taxiway light spacing requirements on the airfield.</p> <p>f. Frangible poles are installed for the purpose of identifying 90m away from the centreline of RWY 02L/20R and RWY 02C/20C</p>	

WSSS AD 2.3 OPERATIONAL HOURS

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

WSSS AD 2.4 HANDLING SERVICES AND FACILITIES

1	<i>Cargo Handling Facilities</i>	Cargo terminals equipped with advanced storage stacker, material and pallet container handling systems, computerised cargo information, data and documentation systems. By arrangement with airlines.
2	<i>Fuel / Oil Types</i>	JET A1 (for aircraft). Oils: Various by arrangement with fuel companies.
3	<i>Fuelling Facilities / Capacity</i>	Hydrant refueling
4	<i>Hangar space for visiting aircraft</i>	By arrangement with SIA Engineering Company (SIAEC) or ST Aerospace Services Co.
5	<i>Repair facilities for visiting aircraft</i>	Maintenance and repairs for commercial aircraft up to and including A380 is by arrangement.
6	<i>Remarks</i>	<p>a. Marshalling Service: No pilot shall taxi an aircraft on its own into a gate/stand without the aid of a docking system or a marshaller.</p> <p>b. Oxygen and related servicing: Oxygen for all cabin and aircraft system. No CO₂ recharging facilities.</p>

WSSS AD 2.5 PASSENGER FACILITIES

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

WSSS AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD category for fire fighting</i>	CAT10 (No facilities for foaming of runways)
2	<i>Rescue equipment</i>	Adequately provided as recommended by ICAO.
3	<i>Capability for removal of disabled aircraft</i>	Four 25-ton (Type G) and two 40-ton (Type F) pneumatic elevators, two 80-ton hydraulic recovery jacks, one set of tethering equipment and other accessory equipment. Capable of handling all wide-bodied aircraft. Provided by SIA at Tel:(65)65416329 or (65)65427116.
4	<i>Remarks</i>	All Airport Emergency Service personnel are trained in rescue and fire-fighting as well as medical first-aid.

WSSS AD 2.7 SEASONAL AVAILABILITY - CLEARING



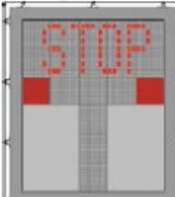
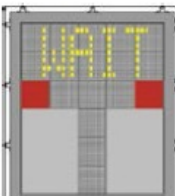
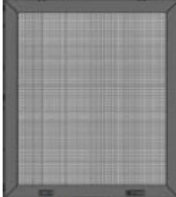
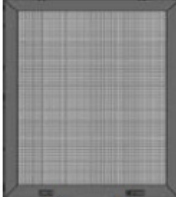
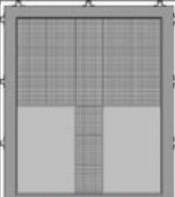
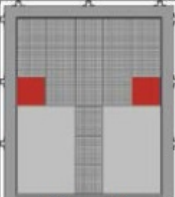
There is no requirement for clearing. The aerodrome is available throughout the year.

WSSS AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS/POSITIONS DATA

1	<i>Apron surface and strength</i>	RWY 02L/20R RWY 02C/20C	<i>Surface:</i> <i>Strength:</i>	Concrete PCN 85/R/B/W/U
2	<i>Taxiway width, surface and strength</i>	RWY 02L/20R RWY 02C/20C	<i>Width:</i>	45m (147ft) Taxiway V2; 35m (115ft) Taxiways NC3, EP and WP; 25m (82ft) Taxiway EP (from Taxilanes B1 and B3); 23m (75ft) Taxiway SA; 30m (100ft) All other Taxiways
			<i>Surface:</i>	Cement Concrete - Taxiways W1, W9, E1, E3, E11 and EP (between E10 and E11); Bituminous Concrete - All other Taxiways
			<i>Strength:</i>	PCN 85/R/B/W/U - Taxiways W1, W9, E1, E3, E11 and EP (between E10 and E11); PCN 72/F/B/W/U - All other Taxiways
3	<i>ACL location and elevation</i>	See AD-2.WSSS-ADC-2/Chart (flip side) for coordinates and elevations of aircraft stands.		
4	<i>INS checkpoints</i>			
5	<i>Remarks</i>	NIL		

WSSS AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	<p><i>Use of aircraft stand ID signs, TWY guidelines and visual docking/parking guidance system of aircraft stands.</i></p> <p>Taxiing guidance signs at all intersections with TWY and RWY at all holding positions. Guidelines at apron. Nose-in guidance at aircraft stands. For information on Safegate Aircraft Docking Guidance System, Aircraft Parking Restrictions, Procedures for Start-up and Pushback of Aircraft, Pushback Procedures for Aircraft (Diagrams), Taxiing Guidance System at Singapore Changi Airport, refer to WSSS AD 2-9.</p> <p>Aircraft stand manoeuvring guidance lights are provided at aircraft stands at Terminal 3, Terminal 4 and South Aprons.</p>
2	<p><i>RWY and TWY markings and LGT</i></p> <p>RWY 02L/02C and RWY 20C</p> <p>RWY LGT: refer to WSSS AD 2-14 to WSSS AD 2-15.</p> <p>TWY LGT: Blue LGT on TWY curved edges, selected straight TWY edge sections and apron TWY edges only. Blue TWY edge markers along selected straight TWY edge sections. Red stop bar at TWY INT controllable on/off. Red stop bar LGT at TWY HLDG PSN entrances to RWY are controllable on/off and are supplemented with elevated RWY guard LGT at the sides.</p> <p>Internally/externally lighted mandatory or information TWY signboards.</p> <p>Yellow TWY centre line markings, supplemented by green centre line LGT with selective control along rapid exit TWY, taxi-routes to and from main RWY and aprons.</p> <p>MARKING AIDS: THR, touchdown zone, centre line, side stripe, RWY designations, aiming point markings, TWY centre line, taxi holding positions - all taxiways, apron guide lines.</p> <p>For positions of aircraft nosewheel in relation to stopbar and description of the Safegate Aircraft Docking Guidance System - refer to WSSS AD 2-9.</p>
	<p>RWY 20R</p> <p>RWY LGT: refer to WSSS AD 2-14 to WSSS AD 2-15.</p> <p>TWY LGT: same as for RWY 02L/02C and RWY 20C.</p> <p>MARKING AIDS: Pre-threshold centre-line, transverse stripe for displaced THR, RWY designations, THR, touchdown zone, aiming point marking, RWY centre-line and stripe marking aids.</p>
3	<p><i>Stop bars:</i> Stop bars where appropriate.</p>
4	<p><i>Remarks:</i> Nil</p>

Description	Display on ADGS	
<p>Overshooting</p> <ul style="list-style-type: none"> To avoid overshooting, pilots are advised to approach the stop position slowly and observe the closing rate information displayed. Pilots should stop the aircraft immediately when seeing the “STOP” or “WAIT” display or when given the stop sign by the aircraft marshaller or is unsure of the information displayed during the docking process. 	<p>Safedock Type 1</p>  	<p>Safedock Type 2</p>  
<p>No Display</p> <ul style="list-style-type: none"> 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. 	<p>Safedock Type 1</p>  <p>Figure 1</p>  <p>Figure 2</p>	<p>Safedock Type 2</p>  <p>Figure 1</p>  <p>Figure 2</p>

2 AIRCRAFT PARKING RESTRICTIONS

2.1 TERMINAL 1 AIRCRAFT STANDS

Aircraft types that can be parked at stands (→) are as follows:

Stands	C1	C11	C13	C15	C16	C17	C18	C19	C20	C22	C23	C24	C25	C26
A300	→		→	→	→	→	→					→	→	
A310	→		→	→	→	→	→			→	→	→	→	
A319	→	→	→	→	→	→	→	→	→	→	→	→	→	→
A320	→	→	→	→	→	→	→	→	→	→	→	→	→	→
A321	→	→	→	→	→	→	→	→	→	→	→	→	→	→
A332	→		→	→		→	→		→	→	→	→	→	→
A333	→		→	→		→	→		→	→	→	→	→	→
A342	→		→	→		→	→		→	→	→	→	→	→
A343	→		→	→		→	→		→	→	→	→	→	→
A345	→		→	→					→	→	→	→	→	→
A346			→									→		
A359	→		→	→					→	→	→	→	→	→
A380											→		→	→
B707	→		→	→										
B717	→		→	→	→	→	→	→						
B727	→		→							→				
B737	→	→	→	→	→	→	→	→	→	→	→	→	→	→
B747	→		→	→					→	→	→	→	→	→
B74S	→		→	→									→	
B757	→		→	→	→	→	→			→	→	→	→	
B762	→			→	→	→	→		→	→	→	→	→	→
B763	→			→	→	→	→		→	→	→	→	→	→
B772	→		→	→		→	→		→	→	→	→	→	→
B773	→		→	→					→	→	→	→	→	→
B773ER	→		→	→					→	→	→	→	→	→
B788	→		→	→		→			→	→	→		→	→
B789	→		→	→		→			→	→	→	→	→	→
BA146			→											
DC10	→			→		→	→						→	
DC9			→	→										
F100	→		→	→	→	→	→	→						
IL62	→		→	→	→	→	→						→	
IL86	→		→	→	→	→	→						→	
IL96	→		→	→	→	→	→						→	
L101	→			→		→	→						→	
MD11	→			→		→	→			→	→	→	→	
MD80/82	→		→	→	→	→	→	→					→	
MD83			→	→	→	→	→	→						
MD88	→		→	→	→	→	→	→					→	

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2.2 TERMINAL 1 AIRCRAFT STANDS

Aircraft types that can be parked at stands (→) are as follows:

Stands	D30	D32	D34	D35	D36	D37	D38	D40	D41	D42	D42L & D42R	D44	D46	D47	D48	D49
A300		→		→	→	→		→	→			→	→	→	→	→
A310		→		→	→	→		→	→			→	→	→	→	→
A319	→	→	→	→	→	→	→	→	→		→	→	→	→	→	→
A320	→	→	→	→	→	→	→	→	→		→	→	→	→	→	→
A321	→	→	→	→	→	→	→	→	→		→	→	→	→	→	→
A332		→	→		→	→		→	→	→		→	→	→	→	→
A333		→	→		→	→		→	→	→		→	→	→	→	→
A342		→	→		→	→		→	→			→	→	→	→	→
A343		→	→		→	→		→	→	→		→	→	→	→	→
A345		→	→					→	→			→	→	→	→	→
A346		→	→										→			→
A359		→	→						→	→		→	→	→	→	→
A380													→			→
B707		→							→			→				
B717		→		→	→	→	→		→			→	→	→	→	
B727		→							→			→				
B737	→	→	→	→	→	→	→	→	→		→	→	→	→	→	→
B747		→	→					→	→			→	→	→	→	→
B74S		→							→			→	→	→	→	→
B757		→		→	→	→		→	→			→	→	→	→	→
B762		→	→	→	→	→		→	→	→		→	→	→	→	→
B763		→	→	→	→	→		→	→	→		→	→	→	→	→
B772		→	→		→	→		→	→	→		→	→	→	→	→
B773		→	→						→	→		→				→
B773ER		→	→						→	→		→				→
B788		→	→					→	→	→		→	→			→
B789		→	→			→		→	→	→		→	→		→	→
BA146		→														
DC10					→	→			→			→	→	→	→	→
DC9		→														
F100		→		→	→	→	→		→			→		→	→	
IL62		→		→	→	→			→			→	→	→	→	→
IL86		→		→	→	→			→			→	→	→	→	→
IL96		→		→	→	→			→			→	→	→	→	→
L101					→	→			→			→	→	→	→	→
MD11					→	→			→			→	→	→	→	→
MD80		→		→	→	→	→		→			→	→	→	→	→
MD82		→		→	→	→	→		→			→	→	→	→	→
MD83		→	→	→	→	→	→	→	→	→		→	→	→	→	→
MD88		→		→	→	→	→		→			→	→	→	→	→

←

2.3 TERMINAL 2 AIRCRAFT STANDS

Aircraft types that can be parked at stands (↗) are as follows:

Stands	E1	E2	E3	E4	E5	E6	E7	E8	E10	E11	E12	E20	E22	E24	E24L	E24R	E26	E27	E28
← A300		↗		↗	↗	↗		↗		↗	↗			↗			↗	↗	
← A310	↗	↗		↗	↗	↗	↗	↗		↗	↗			↗			↗	↗	
A319	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗		↗	↗	↗	↗	↗
A320	↗	↗	↗	↗	↗	↗	↗	↗		↗	↗	↗	↗		↗	↗	↗	↗	↗
A321			↗		↗									↗		↗	↗	↗	↗
A332			↗	↗	↗			↗		↗	↗	↗	↗	↗			↗	↗	↗
A333			↗	↗	↗			↗		↗	↗	↗	↗	↗			↗	↗	↗
← A342			↗	↗	↗			↗		↗	↗			↗			↗	↗	
A343			↗	↗	↗			↗		↗	↗		↗	↗			↗	↗	↗
← A345			↗	↗	↗			↗		↗	↗			↗			↗	↗	
A346				↗	↗			↗											
A359			↗	↗	↗			↗		↗	↗	↗	↗	↗			↗	↗	↗
A380					↗			↗		↗									
B707																		↗	↗
← B727	↗	↗		↗	↗	↗		↗		↗	↗			↗			↗	↗	
B737	↗	↗	↗	↗	↗	↗	↗	↗		↗	↗	↗	↗		↗	↗	↗	↗	↗
B747			↗	↗	↗			↗		↗	↗	↗	↗	↗			↗	↗	↗
B748					↗			↗		↗									
← B74S				↗	↗			↗		↗	↗			↗			↗	↗	
← B757	↗	↗		↗	↗	↗		↗		↗	↗			↗			↗	↗	
B762	↗	↗	↗	↗	↗	↗		↗		↗	↗	↗	↗	↗			↗	↗	↗
B763	↗	↗	↗	↗	↗	↗		↗		↗	↗	↗	↗	↗			↗	↗	↗
B772			↗	↗	↗			↗		↗	↗	↗	↗	↗			↗	↗	↗
B772LR			↗							↗									
B773				↗	↗	↗		↗		↗			↗	↗			↗	↗	↗
B773ER				↗	↗			↗		↗			↗	↗			↗	↗	↗
B788			↗	↗	↗			↗		↗	↗	↗	↗	↗			↗	↗	↗
B789			↗	↗	↗			↗		↗	↗	↗	↗	↗			↗	↗	↗
← DC10				↗	↗	↗		↗		↗	↗						↗	↗	
← DC9																			
← F70	↗	↗		↗	↗	↗	↗	↗	↗	↗	↗			↗					
F100																		↗	↗
IL62																		↗	↗
IL86																		↗	↗
IL96																		↗	↗
L101				↗	↗	↗		↗		↗	↗						↗	↗	
MD11				↗	↗	↗		↗		↗	↗						↗	↗	
MD80																		↗	↗
MD82																		↗	↗
MD83															↗	↗		↗	
← MD88																		↗	↗

2.4 TERMINAL 2 AIRCRAFT STANDS

Aircraft types that can be parked at stands (→) are as follows:

Stands	F30	F31	F32	F33	F34	F35	F36	F37	F40	F41	F42	F50	F52	F54	F56	F58	F59	F60
← A300		→	→		→				→	→		→	→	→	→	→	→	
← A310		→	→	→	→				→	→		→	→	→	→	→	→	→
A319	→	→	→	→	→		→	→	→	→	→	→		→		→		→
A320	→	→	→	→	→		→	→	→	→	→	→		→		→		→
A332		→			→				→	→	→	→	→	→	→	→	→	→
A333		→			→				→	→	→	→	→	→	→	→	→	→
← A342		→			→				→	→			→	→	→	→	→	→
A343		→			→				→	→	→		→	→	→	→	→	→
← A345		→			→				→	→			→	→	→	→	→	→
A346											→							→
A359		→				→					→	→		→	→	→	→	→
A380		→									→							→
B707												→		→			→	→
← B727	→	→	→	→	→			→	→	→		→		→	→	→	→	→
B737	→	→	→	→	→		→	→	→	→	→	→		→		→		→
B747		→			→				→	→	→	→	→	→	→	→	→	→
B748		→									→							→
← B74S		→			→				→	→				→	→	→	→	→
← B757		→	→	→	→				→	→		→	→	→	→	→	→	→
B762		→	→		→	→			→	→	→	→	→	→	→	→	→	→
B763		→	→		→	→			→	→	→	→	→	→	→	→	→	→
B772		→		→	→				→	→	→	→	→	→	→	→	→	→
B772LR														→		→		→
B773										→	→			→	→	→	→	→
B773ER										→	→			→	→	→	→	→
B788		→		→	→	→					→	→	→	→	→	→	→	→
B789		→		→	→	→					→	→	→	→	→	→	→	→
← DC10					→					→				→	→	→	→	→
DC9												→		→	→	→		
← F70	→	→	→	→	→				→	→		→		→	→	→	→	→
← L101					→					→				→	→	→	→	→
← MD11					→					→				→	→	→	→	→
← MD87												→		→				

Stands	F35L	F35R	F52L	F52R	F56L	F56R	F59L	F59R
A319	→	→	→	→	→	→	→	→
A320	→	→	→	→	→	→	→	→
A321	→	→	→	→	→	→	→	→
B737	→	→						
B737(100-500)			→	→	→	→	→	→
B737(600-900)			→	→	→	→		→
MD83			→	→	→	→	→	→

2.5 TERMINAL 3 AIRCRAFT STANDS

Aircraft types that can be parked at stands (✈) are as follows:

Stands	A1	A2	A3	A4	A5	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21
A300		✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈		
A310		✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈		
A319		✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈		
A320		✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈		
A321		✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈		
A332	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈		✈
A333	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
A343	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈		✈	✈	✈	✈	✈	✈
A345	✈	✈	✈	✈	✈		✈	✈	✈	✈	✈		✈	✈				
A346		✈		✈	✈		✈	✈	✈	✈	✈							
A359	✈	✈	✈	✈	✈		✈	✈	✈	✈	✈	✈		✈				
A380		✈		✈	✈		✈											
B737			✈			✈		✈	✈	✈	✈		✈	✈	✈	✈		
B744	✈	✈	✈	✈	✈		✈	✈	✈	✈	✈		✈	✈				
B788		✈		✈	✈		✈	✈	✈	✈		✈	✈	✈	✈	✈	✈	✈
B789	✈	✈		✈	✈		✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
B757		✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈		
B767		✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈		
B772	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
B772LR											✈			✈				
B773		✈		✈	✈		✈	✈	✈	✈	✈							
B773ER		✈		✈	✈		✈	✈	✈	✈	✈							

Stands	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
A300		✈	✈	✈	✈	✈	✈	✈	✈	✈
A310		✈	✈	✈	✈	✈	✈	✈	✈	✈
A319		✈	✈	✈	✈	✈	✈	✈	✈	✈
A320		✈	✈	✈	✈	✈	✈	✈	✈	✈
A321		✈	✈	✈	✈	✈	✈	✈	✈	✈
A332	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
A333	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
A343	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
A345	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
A359	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
A346		✈		✈	✈		✈			
A380		✈		✈	✈		✈			
B707									✈	✈
B737			✈			✈				
B744	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
B788	✈	✈	✈	✈	✈		✈	✈	✈	✈
B789	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
B757		✈	✈	✈	✈	✈	✈	✈	✈	✈
B767		✈	✈	✈	✈	✈	✈	✈	✈	✈
B772	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
B773		✈		✈	✈	✈	✈	✈	✈	✈
B773ER		✈		✈	✈	✈	✈	✈	✈	✈

← 2.6

TERMINAL 4 AIRCRAFT STANDS

Aircraft types that can be parked at stands (→) are as follows:

Stands	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17
ATR72-500	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
A318	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
A319	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
A320	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
A321	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
B733	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
B734	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
B735	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
B736	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
B737	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
B738	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
B739	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
DHC7	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→

Stands	G18	G18L	G18R	G19	G19L	G19R	G20	G20L	G20R	G21	G21L	G21R	701	702
ATR72-500													→	→
A306	→			→			→			→				
A318		→	→		→	→		→	→		→	→	→	→
A319		→	→		→	→		→	→		→	→	→	→
A320		→	→		→	→		→	→		→	→	→	→
A321		→	→		→	→		→	→		→	→	→	→
A332	→			→			→			→				
A333	→			→			→			→				
A343	→			→			→			→				
A345	→			→			→			→				
A346	→			→			→							
A359	→			→			→			→				
A388	→			→			→			→				
B733		→	→		→	→		→	→		→	→	→	→
B734		→	→		→	→		→	→		→	→	→	→
B735		→	→		→	→		→	→		→	→	→	→
B736		→	→		→	→		→	→		→	→	→	→
B737		→	→		→	→		→	→		→	→	→	→
B738		→	→		→	→		→	→		→	→	→	→
B739		→	→		→	→		→	→		→	→	→	→
B744	→			→			→			→				
B748	→			→			→			→				
B752	→			→			→			→				
B762	→			→			→			→				
B763	→			→			→			→				
B772	→			→			→			→				
B773	→			→			→			→				
B773ER	→			→			→			→				
B788	→			→			→			→				
B789	→			→			→			→				
DHC7													→	→
MD11	→			→			→			→				

2.7 SOUTH APRON

Aircraft types that can be parked at stands (✈) are as follow:

Stands	461	462	462L	462R	463	463L	463R
A306	✈	✈			✈		
A310	✈	✈			✈		
A318	✈		✈	✈		✈	✈
A319	✈		✈	✈		✈	✈
A320	✈		✈	✈		✈	✈
A321	✈		✈	✈		✈	✈
A332	✈	✈			✈		
A333	✈	✈			✈		
A342	✈	✈			✈		
A343	✈	✈			✈		
A345	✈	✈			✈		
A346	✈	✈			✈		
A359	✈	✈			✈		
A380		✈			✈		
B733	✈		✈	✈		✈	✈
B734	✈		✈	✈		✈	✈
B735	✈		✈	✈		✈	✈
B736			✈	✈		✈	✈
B737	✈		✈	✈		✈	✈
B738	✈		✈	✈		✈	✈
B739	✈		✈	✈		✈	✈
B744	✈	✈			✈		
B752	✈	✈			✈		
B753		✈			✈		
B762	✈	✈			✈		
B763	✈	✈			✈		
B764	✈	✈			✈		
B772	✈	✈			✈		
B773	✈	✈			✈		
B773ER	✈	✈			✈		
B788	✈	✈			✈		
B789	✈	✈			✈		

2.8

REMOTE STANDS

Aircraft types that can be parked at stands (→) are as follows:

Stands	200	200L	200R	201	202	202L	202R	203	205	206	207	208	209
A300, A310	→			→	→			→	→	→	→	→	→
A319, A320		→	→	→		→	→	→	→	→	→	→	→
A321		→	→			→	→						
A330, A342	→			→	→			→	→	→			
A343, A345	→			→	→			→	→	→			
A359	→			→	→			→	→	→			
A380													
AT72	→			→	→			→	→	→	→	→	→
B707, B727	→			→	→			→	→	→	→	→	→
B737		→	→	→		→	→	→	→	→	→	→	→
B747, B74S, B788	→			→	→			→	→	→			
B748													
B757	→			→	→			→	→	→	→	→	→
B767, B772, B773	→			→	→			→	→	→			
B773ER	→			→	→			→	→	→			
B789	→			→	→			→	→	→			
DC8													
DC10	→			→	→			→	→	→			
DHC7											→	→	→
F70	→			→	→			→	→	→	→	→	→
IL62	→			→	→			→	→	→			
L101	→			→	→			→	→	→			
MD11	→			→	→			→	→	→			
MD83				→				→	→	→	→	→	→

Stands	300	301	302	303	304	305	306	307	308	309	310	400	401	402	403	404
A300, A310	→	→	→	→	→	→	→			→	→	→	→	→		
A319, A320	→	→	→	→	→	→	→			→	→	→	→	→	→	
A330, A342	→		→								→	→	→			
A343, A345	→		→								→	→	→			
A359	→		→								→					
AT72				→	→	→	→									
B707	→	→	→	→	→	→	→			→	→	→	→	→		
B727	→	→	→	→	→	→	→			→	→	→	→	→	→	
B737 (100-500)	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
B737 (600-900)	→	→	→	→	→	→	→			→	→	→	→	→	→	
B747	→		→								→	→	→			
B74S, B788	→		→								→	→	→			
B757, B767	→	→	→	→	→	→	→			→	→	→	→	→		
B772, B773	→		→								→	→	→			
B773ER	→		→								→	→	→			
B789	→		→								→	→	→			
DC10	→		→				→				→	→	→			
DC8	→	→	→	→	→	→	→			→	→					
F70	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
L101	→		→				→				→	→	→			
MD11	→		→				→				→	→	→			
MD83												→	→	→	→	

2.9 CARGO STANDS

Aircraft types that can be parked at stands (↗) are as follows:

Stands	502	503	504	505	506	507	508	509	510 to 515	600	600L	600R	601	602	603	604	605	611	612
A300	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗			
A306																		↗	↗
A310	↗	↗	↗	↗	↗	↗	↗	↗	↗				↗	↗	↗	↗		↗	↗
A319											↗	↗					↗		
A320											↗	↗					↗		
A321											↗	↗					↗		
A330													↗	↗	↗	↗		↗	↗
A332	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗			
A333	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗			
A342	↗	↗	↗	↗	↗	↗	↗	↗	↗				↗	↗	↗	↗		↗	↗
A343	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗		↗	↗
A345	↗							↗	↗	↗									
A346	↗							↗	↗	↗									
A359	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗			
A380	↗							↗											
AN24	↗							↗											
B707	↗	↗	↗	↗	↗	↗	↗	↗					↗	↗	↗	↗			
B727	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗		↗	↗
B737	↗	↗	↗	↗	↗	↗	↗	↗	↗		↗	↗	↗	↗	↗	↗	↗	↗	↗
B744	↗	↗	↗	↗	↗	↗	↗	↗		↗			↗	↗					
B747	↗	↗	↗	↗	↗	↗	↗	↗	↗				↗	↗	↗	↗			
B748						↗	↗	↗							↗	↗			
B74S	↗	↗	↗	↗	↗	↗	↗	↗					↗	↗	↗	↗			
B752																		↗	↗
B753																		↗	↗
B757	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗			
B762	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗		↗	↗
B763	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗		↗	↗
B764	↗	↗	↗					↗	↗	↗					↗	↗			
B772	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗		↗	↗
B772LR	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗		↗	↗
B773	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗			
B773ER	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗			
B777F																		↗	↗
B788	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗		↗	↗
B789	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗		↗	↗
DC8	↗	↗	↗	↗	↗	↗	↗	↗					↗	↗	↗	↗		↗	↗
DC10	↗	↗	↗	↗	↗	↗	↗	↗	↗				↗	↗	↗	↗		↗	↗
IL62	↗	↗	↗	↗	↗	↗	↗	↗					↗	↗	↗	↗		↗	↗
IL86	↗	↗	↗	↗	↗	↗	↗	↗					↗	↗	↗	↗		↗	↗
L101	↗	↗	↗	↗	↗	↗	↗	↗	↗				↗	↗	↗	↗		↗	↗
MD11	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗		↗	↗

Stands	516	516L	516R	517	517L	517R
A300	→			→		
A310	→			→		
A319		→	→		→	→
A320		→	→		→	→
A321		→	→		→	→
A332	→			→		
A333	→			→		
A342	→			→		
A343	→			→		
A345	→			→		
A346	→			→		
A359	→			→		
A388	→			→		
AN124	→			→		
B727	→			→		
B737		→	→		→	→
B747	→			→		
B748	→			→		
B757	→			→		
B762	→			→		
B763	→			→		
B764	→			→		
B772	→			→		
B772LR	→			→		
B773	→			→		
B773ER	→			→		
B788	→			→		
B789	→			→		
DC10	→			→		
L101	→			→		
MD11	→			→		

3 PROCEDURES FOR START-UP AND PUSHBACK OF AIRCRAFT

- 3.1 Ground crew must ensure that the area behind an aircraft is clear of vehicles, equipment and other obstructions before the start-up or pushback of aircraft commences.
- 3.2 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 the Ground Movement Controller (Callsign: 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.
- 3.3 The following table describes the procedures for the pushback of aircraft from the various aircraft stands. When it becomes necessary to vary a procedure to expedite aircraft movements, Singapore Ground will issue specific instructions to the pilot.
- 3.4 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.

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
T3 WEST		
← A1	<p>The aircraft shall be pushed back following the pushback line onto Taxilane V6 until its nosewheel is at the "EOP A1" position. The aircraft shall then be towed forward onto Taxilane V6 to face West until its nosewheel is at the "EOT A1, A2, B1, B2" position. The aircraft may breakaway from there. Engine start up is not permitted during standard pushback.</p> <p><u>Alternate Pushback Procedure (To Face North)</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane V6, following Taxilane V6 centreline onto TWY WA to face North until the nose of the aircraft is behind the stopbar behind aircraft stand A2. The aircraft may breakaway from there. This alternate pushback procedure can only be exercised if the auxiliary power unit of aircraft is unserviceable.</p> <p><u>Alternate Pushback Procedure (To Face South)</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane V6, following Taxilane V6 centreline onto TWY WA to face South until the nose of the aircraft is behind the stopbar behind aircraft stand B2. The aircraft may breakaway from there. This alternate pushback procedure can only be exercised if the auxiliary power unit of aircraft is unserviceable.</p>	<p>Standard pushback approved.</p> <p>Pushback approved, to face North on TWY WA.</p> <p>Pushback approved, to face South on TWY WA.</p>
← A2	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane V6 to face West until its nosewheel is at the "EOP A2, B2" position. The aircraft shall then be towed forward until its nosewheel is at the "EOT A1, A2, B1, B2" position. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure (Pushback Facing North)</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto TWY WA to face North until the nose of the aircraft is behind the stopbar behind aircraft stand A2. The aircraft may breakaway from there. This alternate pushback procedure can only be exercised if the auxiliary power unit of aircraft is unserviceable.</p> <p><u>Alternate Pushback Procedure (Pushback Facing South)</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto TWY WA to face South until the nose of the aircraft is behind the stopbar behind aircraft stand B2. The aircraft may breakaway from there. This alternate pushback procedure can only be exercised if the auxiliary power unit of aircraft is unserviceable.</p>	<p>Standard pushback approved.</p> <p>Pushback approved, to face North on TWY WA.</p> <p>Pushback approved, to face South on TWY WA.</p>
A3	<p>The aircraft (on idle thrust) shall be pushed back onto TWY WA to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY WA centreline. The aircraft may breakaway from there.</p>	<p>Pushback approved, to face North (or South).</p>

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
← A4	The aircraft (on idle thrust) shall be pushed back following the pushback line onto TWY WA to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY WA centreline. The aircraft may breakaway from there.	Pushback approved, to face North (or South).
← A5, A9	The aircraft (on idle thrust) shall be pushed back: <ul style="list-style-type: none"> • following the pushback line onto TWY U2 to face North until the nose of the aircraft is behind the stopbar behind aircraft stand A10. The aircraft may breakaway from there. <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY U2 followed by TWY WA to face South until the nose of the aircraft is behind the stopbar behind aircraft stand A4. The aircraft may breakaway from there. 	Pushback approved, to face North. Pushback approved, to face South.
← A10	The aircraft (on idle thrust) shall be pushed back: <ul style="list-style-type: none"> • onto TWY U2 to face North until the nose of the aircraft is behind the stopbar behind aircraft stand A10. The aircraft may breakaway from there. <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY U2 followed by TWY WA to face South until the nose of the aircraft is behind the stopbar behind aircraft stand A4. The aircraft may breakaway from there. 	Pushback approved, to face North. Pushback approved, to face South.
← A11	The aircraft (on idle thrust) shall be pushed back: <ul style="list-style-type: none"> • onto TWY U2 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY U2 centreline. The aircraft shall then be towed forward until the nose of the aircraft is behind the stopbar behind aircraft stand A10. The aircraft may breakaway from there. <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY U2 to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY U2 centreline. The aircraft shall then be towed forward until the nose of the aircraft is behind the stopbar behind aircraft stand A12. The aircraft may breakaway from there. 	Pushback approved, to face North. Pushback approved, to face South.
← A12	The aircraft (on idle thrust) shall be pushed back: <ul style="list-style-type: none"> • onto TWY U2 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY U2 centreline. The aircraft shall then be towed forward until the nose of the aircraft is behind the stopbar behind aircraft stand A10. The aircraft may breakaway from there. <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY U2 to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY U2 centreline. The aircraft may breakaway from there. 	Pushback approved, to face North. Pushback approved, to face South.
← A13, A14, A15	The aircraft (on idle thrust) shall be pushed back: <ul style="list-style-type: none"> • onto TWY U2 followed by TWY WA to face North until the nose of the aircraft is behind the stopbar behind aircraft stand A16. The aircraft may breakaway from there. <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY U2 to face South until the nose of the aircraft is behind the stopbar behind aircraft stand A12. The aircraft may breakaway from there. 	Pushback approved, to face North. Pushback approved, to face South.

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
← A16	The aircraft (on idle thrust) shall be pushed back onto TWY WA to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY WA centreline. The aircraft may breakaway from there.	Pushback approved, to face North (or South).
← A17	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY V8 to face West until its nosewheel is at the "EOP A17" position behind aircraft stand A17. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY WA to face South until the nose of the aircraft is behind the stopbar behind aircraft stand A16. The aircraft may breakaway from there. 	<p>Pushback approved, to face West.</p> <p>Pushback approved, to face South.</p>
← A18	The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane U4 to face West until the nose of the aircraft is behind the stopbar behind aircraft stand A18. The aircraft may breakaway from there.	Standard pushback approved.
← A19	The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane U4 to face West until its nosewheel is at the "EOP A19" position behind aircraft stand A19. The aircraft may breakaway from there.	Standard pushback approved.
← A20	The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane U4 to face West until its nosewheel is at the "EOP A20" position behind aircraft stand A20. The aircraft may breakaway from there.	Standard pushback approved.
← A21	The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane U4 until its nosewheel is at the "EOP A21" position. The aircraft shall then be towed forward to face West until the nose of the aircraft is behind the stopbar behind aircraft stand A18. The aircraft may breakaway from there.	Standard pushback approved.
← B1	<p>The aircraft shall be pushed back following the pushback line until its nosewheel is at the "EOP B1" position. The aircraft shall then be towed forward onto Taxilane V6 to face West until its nosewheel is at the "EOT A1, A2, B1, B2" position. The aircraft may breakaway from there. Engine start up is not permitted during standard pushback.</p> <p><u>Alternate Pushback Procedure (To Face North)</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane V6, following Taxilane V6 centreline onto TWY WA to face North until the nose of the aircraft is behind the stopbar behind aircraft stand A2. The aircraft may breakaway from there. This alternate pushback procedure can only be exercised if the auxiliary power unit of aircraft is unserviceable.</p> <p><u>Alternate Pushback Procedure (To Face South)</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane V6, following Taxilane V6 centreline onto TWY WA to face South until the nose of the aircraft is behind the stopbar behind aircraft stand B2. The aircraft may breakaway from there. This alternate pushback procedure can only be exercised if the auxiliary power unit of aircraft is unserviceable.</p>	<p>Standard pushback approved.</p> <p>Pushback approved, to face North on TWY WA.</p> <p>Pushback approved, to face South on TWY WA.</p>

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
B2	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane V6 to face West until its nosewheel is at the "EOP A2, B2" position. The aircraft shall then be towed forward until its nosewheel is at the "EOT A1, A2, B1, B2" position. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure (To Face North)</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto TWY WA to face North until the nose of the aircraft is behind the stopbar behind aircraft stand A2. The aircraft may breakaway from there. This alternate pushback procedure can only be exercised if the auxiliary power unit of aircraft is unserviceable.</p> <p><u>Alternate Pushback Procedure (To Face South)</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto TWY WA to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY WA centreline. The aircraft may breakaway from there. This alternate pushback procedure can only be exercised if the auxiliary power unit of aircraft is unserviceable.</p>	Standard pushback approved.
← B3	<p>The aircraft (on idle thrust) shall be pushed back onto TWY WA to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY WA centreline. The aircraft may breakaway from there.</p>	Pushback approved, to face North (or South).
← B4	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto TWY WA to face North (or South) until its nosewheel is at the intersection of the aircraft stand pushback line and TWY WA centreline. The aircraft may breakaway from there.</p>	Pushback approved, to face North (or South).
← B5, B6	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY U1 to face North, following TWY U1 centreline onto TWY WA until the nose of the aircraft is behind the stopbar behind aircraft stand B4. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • following the pushback line onto TWY U1 to face South until the nose of the aircraft is behind the stopbar behind aircraft stand B7. The aircraft may breakaway from there. 	Pushback approved, to face North.
← B7	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY U1 to face North, following TWY U1 centreline onto TWY WA until the nose of the aircraft is behind the stopbar behind aircraft stand B4. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY U1 to face South until the nose of the aircraft is behind the stopbar behind aircraft stand B7. The aircraft may breakaway from there. 	Pushback approved, to face North.
← B8	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY U1 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY U1 centreline. The aircraft shall then be towed forward until its nosewheel is at the intersection of aircraft stand B9 lead-in line and TWY U1 centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY U1 to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY U1 centreline. The aircraft may breakaway from there. 	Pushback approved, to face North.
←		Pushback approved, to face South.

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
B9, B10	The aircraft (on idle thrust) shall be pushed back onto TWY U1 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY U1 centreline. The aircraft may breakaway from there.	Pushback approved, to face North (or South).
<u>T1 WEST</u>		
C1, C20, C22	The aircraft (on idle thrust) shall be pushed back onto TWY U1 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY U1 centreline. The aircraft may breakaway from there.	Pushback approved, to face North (or South).
C23	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY U1 to face North until the nose of the aircraft is behind the stopbar line behind aircraft stand C22. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY U1 to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY U1 centreline. The aircraft may breakaway from there. 	<p>Pushback approved, to face North.</p> <p>Pushback approved, to face South.</p>
C24, C25	The aircraft (on idle thrust) shall be pushed back onto TWY U1 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY U1 centreline. The aircraft may breakaway from there.	Pushback approved, to face North (or South).
C26	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY WA to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY WA centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY WA to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY WA centreline. The aircraft shall then be towed forward until its nosewheel is at the "EOT C26" position behind aircraft stand C26. The aircraft may breakaway from there. 	<p>Pushback approved, to face North.</p> <p>Pushback approved, to face South.</p>
<u>T1 CENTRAL</u>		
C11	The aircraft (on idle thrust) shall be pushed back following the pushback line to face North until its nosewheel is at the "EOP 21" position. The aircraft shall then be towed forward following the tow line onto Taxilane N2 until its nosewheel is at the "EOT 22A" position. The aircraft may breakaway from there.	Standard pushback approved.
C13	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane N2 to face North until its nosewheel is at the "EOP 22" position. The aircraft shall then be towed forward until its nosewheel is at the "EOT 22A" position. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N2 to face South followed by Taxilane N3 until the nose of the aircraft is behind the stopbar line behind aircraft stand D35. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N2 to face South followed by Taxilane N1 until the nose of the aircraft is behind the stopbar line behind aircraft stand C16. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p> <p>Pushback approved, to face South on Taxilane N3.</p> <p>Pushback approved, to face South on Taxilane N1.</p>

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
C15	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane N2 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane N2 centreline. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N2 to face South followed by Taxilane N3 until the nose of the aircraft is behind the stopbar line behind aircraft stand D35. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N2 to face South followed by Taxilane N1 until the nose of the aircraft is behind the stopbar line behind aircraft stand C16. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p> <p>Pushback approved, to face South on Taxilane N3.</p> <p>Pushback approved, to face South on Taxilane N1.</p>
C16	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto Taxilane N1 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane N1 centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto Taxilane N1 to face South until the nose of the aircraft is behind the stopbar line behind aircraft stand C16 . The aircraft may breakaway from there. <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N1 to face North until the nose of the aircraft is behind the stopbar behind aircraft stand C15 on Taxilane N2. The aircraft may breakaway from there.</p>	<p>Pushback approved, to face North.</p> <p>Pushback approved, to face South.</p> <p>Pushback approved, to face North on Taxilane N2.</p>
C17	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N1 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane N1 centreline. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N1 to face North until the nose of the aircraft is behind the stopbar behind aircraft stand C15 on Taxilane N2. The aircraft may breakaway from there.</p>	<p>Pushback approved, to face North (or South).</p> <p>Pushback approved, to face North on Taxilane N2.</p>
C18	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N1 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane N1 centreline. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N1 to face North until the nose of the aircraft is behind the stopbar behind aircraft stand C15 on Taxilane N2. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p> <p>Pushback approved, to face North on Taxilane N2.</p>
C19	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N1 to face North until the nose of the aircraft is behind the stopbar behind aircraft stand C18. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
D30	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line to face North until its nosewheel is at the "EOP 20" position. The aircraft shall then be towed forward onto Taxilane N2 until its nosewheel is at the "EOT 22A" position. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
D32	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane N2 to face North until its nosewheel is at the "EOP 22" position. The aircraft shall then be towed forward until its nosewheel is at the "EOT 22A" position. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N2 to face South followed by Taxilane N3 until the nose of the aircraft is behind the stopbar line behind aircraft stand D35. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N2 to face South followed by Taxilane N1 until the nose of the aircraft is behind the stopbar line behind aircraft stand C16. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p> <p>Pushback approved, to face South on Taxilane N3.</p> <p>Pushback approved, to face South on Taxilane N1.</p>
D34	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane N2 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane N2 centreline. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N2 to face South followed by Taxilane N3 until the nose of the aircraft is behind the stopbar line behind aircraft stand D35. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N2 to face South followed by Taxilane N1 until the nose of the aircraft is behind the stopbar line behind aircraft stand C16. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p> <p>Pushback approved, to face South on Taxilane N3.</p> <p>Pushback approved, to face South on Taxilane N1.</p>
D35	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto Taxilane N3 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane N3 centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto Taxilane N3 to face South until the nose of the aircraft is behind the stopbar line behind aircraft stand D35 . The aircraft may breakaway from there. <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N3 to face North until the nose of the aircraft is behind the stopbar behind aircraft stand D34 on Taxilane N2. The aircraft may breakaway from there.</p>	<p>Pushback approved, to face North.</p> <p>Pushback approved, to face South.</p> <p>Pushback approved, to face North on Taxilane N2.</p>
D36	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N3 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane N3 centreline. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N3 to face North until the nose of the aircraft is behind the stopbar behind aircraft stand D34 on Taxilane N2. The aircraft may breakaway from there.</p>	<p>Pushback approved, to face North (or South).</p> <p>Pushback approved, to face North on Taxilane N2.</p>

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
D37	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N3 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane N3 centreline. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N3 to face North until the nose of the aircraft is behind the stopbar behind aircraft stand D34 on Taxilane N2. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p> <p>Pushback approved, to face North on Taxilane N2.</p>
D38	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane N3 to face North until the nose of the aircraft is behind the stopbar behind aircraft stand D37. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
<u>T1 EAST</u>		
D40, D41	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane A6 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane A6 centreline. The aircraft may breakaway from there.</p>	<p>Pushback approved, to face North (or South).</p>
D42	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane A6 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane A6 centreline. The aircraft may breakaway from there.</p>	<p>Pushback approved, to face North (or South).</p>
D42L, D42R	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane A6 to face North (or South) until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane A6 centreline. The aircraft may breakaway from there.</p>	<p>Pushback approved, to face North (or South).</p>
D44, D46, D47, D48	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane A6 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane A6 centreline. The aircraft may breakaway from there.</p>	<p>Pushback approved, to face North (or South).</p>
D49	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto Taxilane A6 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane A6 centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto Taxilane A6 to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane A6 centreline. The aircraft shall then be towed forward until its nosewheel is on the "EOT D49" position behind aircraft stand D49. The aircraft may breakaway from there 	<p>Pushback approved, to face North.</p> <p>Pushback approved, to face South.</p>
<u>T2 NORTH</u>		
E8	<p>The aircraft (on idle thrust) shall be pushed back onto TWY A4 to face East until its nosewheel is at "EOP 14" position. The aircraft shall then be towed forward to "EOT 15" position. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
E10	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane A6 to face North until its nosewheel is at the "EOP 19" position. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
E11	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane A6 to face North until its nosewheel is at the intersection of Taxilane A6 and Taxilane A5 centreline. The aircraft shall then be towed forward following Taxilane A5 centreline to "EOT 16" position. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane A6 to face North until its nosewheel is at the "EOP 19A" position behind aircraft stand E24. The aircraft shall then be towed forward to "EOT 18B" position behind aircraft stand E26. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p> <p>Pushback approved, to face North on Taxilane A6.</p>
E12	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane A5 to face North until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane A5 centreline. The aircraft shall then be towed forward until its nosewheel is at the "EOT 16" position. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane A5 followed by Taxilane A6 to face North until its nosewheel is at the intersection of Taxilane A6 and Taxilane A5 centreline. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p> <p>Pushback approved, to face North on Taxilane A6.</p>
E20	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line until its nosewheel is at the "EOP 17" position. The aircraft shall then be towed forward following the tow line onto Taxilane A6 to face North until its nosewheel is at the "EOT 18A" position. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
E22	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane A6 to face North until its nosewheel is at "EOP 19" position. The aircraft shall then be towed forward until its nosewheel is at the "EOT 18" position. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
E24	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane A6 to face North until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane A6 centreline. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
E24L, E24R	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane A6 to face North until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane A6 centreline. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
E26	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane A6 to face North until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane A6 centreline. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
E27, E28	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane A6 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane A6 centreline. The aircraft may breakaway from there.</p>	<p>Pushback approved, to face North (or South).</p>
T2 CENTRAL		
E1	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line to face East until its nosewheel is at the "EOP 12" position. The aircraft shall then be towed forward onto Taxilane B2 until its nosewheel is at the "EOT 9" position. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
E2	The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane B2 to face East until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane B2 centreline. The aircraft shall then be towed forward to "EOT 9" position. The aircraft may breakaway from there.	Standard pushback approved.
E3	The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane B2 to face East until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane B2 centreline. The aircraft may breakaway from there.	Standard pushback approved.
E4	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane B2 to face East until its nosewheel is at the "EOP 8" position. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane B1 to face South until its nosewheel is at the "EOP 13A" position. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane B3 to face North until its nosewheel is at the "EOP 7A" position. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p> <p>Pushback approved, to face South on Taxilane B1.</p> <p>Pushback approved, to face North on Taxilane B3.</p>
E5, E6	The aircraft (on idle thrust) shall be pushed back onto Taxilane B1 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane B1 centreline. The aircraft shall then be towed forward until the nose of the aircraft is behind the stopbar behind aircraft stand E6. The aircraft may breakaway from there.	Standard pushback approved.
E7	The aircraft (on idle thrust) shall be pushed back onto Taxilane B1 to face North until the nose of the aircraft is behind the stopbar behind aircraft stand E6. The aircraft may breakaway from there.	Standard pushback approved.
F30	The aircraft (on idle thrust) shall be pushed back following the pushback line to face East until its nosewheel is at the "EOP 11" position. The aircraft shall then be towed forward onto Taxilane B2 until its nosewheel is at the "EOT 9" position. The aircraft may breakaway from there.	Standard pushback approved.
F31	The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane B2 to face East until its nosewheel is at "EOP 10" position. The aircraft shall then be towed forward to "EOT 9" position. The aircraft may breakaway from there.	Standard pushback approved.
F32	The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane B2 to face East until its nosewheel is at "EOT 9" position. The aircraft may breakaway from there.	Standard pushback approved.

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
F33	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane B2 to face East until its nosewheel is at the "EOP 8" position. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane B1 to face South until its nosewheel is at the "EOP 13A" position. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto Taxilane B3 to face North until its nosewheel is at the "EOP 7A" position. The aircraft may breakaway from there.</p>	Standard pushback approved.
F34	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane B3 to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane B3 centreline. The aircraft shall then be towed forward until the nose of the aircraft is behind the stopbar behind aircraft stand F35. The aircraft may breakaway from there.</p>	Standard pushback approved.
F35, F35R	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane B3 to face South until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane B3 centreline. The aircraft may breakaway from there.</p>	Standard pushback approved.
F35L	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane B3 to face South until the nose of the aircraft is behind the stopbar behind aircraft stand F35. The aircraft may breakaway from there.</p>	Standard pushback approved.
F36	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane B3 to face South until the nose of the aircraft is behind the stopbar behind aircraft stand F35. The aircraft may breakaway from there.</p>	Standard pushback approved.
<u>T2 SOUTH</u>		
F37	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C2 to face South until its nosewheel is at the "EOT 4" position. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back onto TWY C1 to face East until its nosewheel is at the "EOP 5" position. The aircraft may breakaway from there.</p>	Standard pushback approved.
F40	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C6 to face South until its nosewheel is at the "EOP 2" position. The aircraft shall then be towed forward until its nosewheel is at the "EOT 3" position. The aircraft may breakaway from there.</p>	Standard pushback approved.
F41	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C2 to face South until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane C2 centreline. The aircraft shall then be towed forward until its nosewheel is at the "EOT 4" position. The aircraft may breakaway from there.</p> <p><u>Alternate Pushback Procedure</u></p> <p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C2 to face South, following Taxilane C2 centreline onto Taxilane C6 until its nosewheel is at the intersection of Taxilane C2 and Taxilane C6 centreline. The aircraft may breakaway from there.</p>	Standard pushback approved.
		Pushback approved, to pushback onto Taxilane C6.

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
F42	<p><u>Main pushback procedure (for all aircraft wingspan)</u></p> <p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C2 to face South until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane C2 centreline. The aircraft shall then be towed forward until its nosewheel is at the "EOT 4" position. The aircraft may breakaway from there.</p> <p><u>Alternate pushback procedure (for all aircraft types except A380)</u></p> <p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C2 to face South, following Taxilane C2 centreline onto Taxilane C6 until its nosewheel is at the intersection of Taxilane C2 and Taxilane C6 centreline. The aircraft may breakaway from there.</p> <p><u>Alternate pushback procedure (for A380 aircraft)</u></p> <p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C2 to face South until its nosewheel is at the "EOP 4A" position. The aircraft shall then be towed forward following the tow line until its nosewheel is at the "EOT 4B" position on Taxilane C6, behind aircraft stand F59. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p> <p>Pushback approved, to pushback onto Taxilane C6.</p> <p>Pushback approved, to pushback onto Taxilane C6.</p>
F50	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line until its nosewheel is at the "EOP 1" position. The aircraft shall then be towed forward following the tow line onto Taxilane C6 to face South until its nosewheel is at the "EOT 3" position. The aircraft may breakaway from there.</p>	Standard pushback approved.
F52	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C6 to face South until its nosewheel is at the "EOP 2" position. The aircraft shall then be towed forward until its nosewheel is at the "EOT 3" position. The aircraft may breakaway from there.</p>	Standard pushback approved.
F52L	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C6 to face South until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane C6 centreline. The aircraft may breakaway from there.</p>	Standard pushback approved.
F52R	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C6 to face South until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane C6 centreline. The aircraft shall then be towed forward until its nosewheel is at the "EOT" position. The aircraft may breakaway from there.</p>	Standard pushback approved.
F54	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C6 to face South until its nosewheel is at the intersection of Taxilane C2 and Taxilane C6 centreline. The aircraft may breakaway from there.</p>	Standard pushback approved.
F56	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane C6 to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane C6 centreline. The aircraft may breakaway from there.</p>	Standard pushback approved.
F56L, F56R	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C6 to face South until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane C6 centreline. The aircraft may breakaway from there.</p>	Standard pushback approved.
F58	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane C6 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane C6 centreline. The aircraft may breakaway from there.</p>	Pushback approved, to face North (or South).
F59	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane C6 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane C6 centreline. The aircraft may breakaway from there.</p>	Pushback approved, to face North (or South).

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
F59L, F59R	The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C6 to face North (or South) until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane C6 centreline. The aircraft may breakaway from there.	Pushback approved, to face North (or South).
F60	The aircraft (on idle thrust) shall be pushed back onto Taxilane C6 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane C6 centreline. The aircraft may breakaway from there.	Pushback approved, to face North (or South).
<u>T4 APRON</u>		
← G1	The aircraft (on idle thrust) shall be pushed back to face West until its nosewheel is at the "EOP-G1" position. The aircraft shall then be towed forward onto Taxilane L5 to face North until its nosewheel is abeam aircraft stand G3. The aircraft may breakaway from there.	Pushback approved, to face North on Taxilane L5.
← G2	The aircraft (on idle thrust) shall be pushed back onto Taxilane L5 to face North until its nosewheel is at the "EOP-G2" position. The aircraft may breakaway from there.	Pushback approved, to face North on Taxilane L5.
← G3, G4	The aircraft (on idle thrust) shall be pushed back onto Taxilane L5 to face North until its nosewheel is at the intersection of the pushback line and centreline of Taxilane L5. The aircraft may breakaway from there.	Pushback approved, to face North on Taxilane L5.
← G5, G6, G7, G8, G9, G10, G11, G12, G13	The aircraft (on idle thrust) shall be pushed back onto Taxilane L5 to face North or South until its nosewheel is at the intersection of the pushback line and centreline of Taxilane L5. The aircraft may breakaway from there.	Pushback approved, to face North or South on Taxilane L5.
← G14, G15	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane L5 to</p> <ul style="list-style-type: none"> • face North until its nosewheel is at the intersection of the pushback line and centreline of Taxilane L5. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • face South until its nosewheel is at the intersection of the pushback line and centreline of Taxilane L5. The aircraft shall then be towed forward along the centreline of Taxilane L5 until its nosewheel is at the "EOT-G14, G15" position behind aircraft stand G14. The aircraft may breakaway from there. 	<p>Pushback approved, to face North on Taxilane L5.</p> <p>Pushback approved, to face South on Taxilane L5.</p>
← G16, G17	The aircraft (on idle thrust) shall be pushed back onto Taxilane L5 to face North until its nose is behind the stopbar behind aircraft stand G15. The aircraft may breakaway from there.	Pushback approved, to face North on Taxilane L5.
← G18, G18L, G18R, G19, G19L, G19R	The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane L4 centreline to face East until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane L4 centreline. The aircraft may breakaway from there.	Standard pushback approved.
← G20, G20L, G20R	The aircraft (on idle thrust) shall be pushed back onto Taxilane L4 centreline to face East until its nosewheel is at the intersection of the aircraft stand pushback line and centreline of Taxilane L4. The aircraft may breakaway from there.	Pushback approved, to face East on Taxilane L4.
← G21, G21R	The aircraft (on idle thrust) shall be pushed back to face East until its nosewheel is at the "EOP" position. The aircraft shall then be towed forward until its nosewheel is at the "EOT" position on Taxilane L4 centreline. The aircraft may breakaway from there.	Standard pushback approved.

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
← G21L	The aircraft (on idle thrust) shall be pushed back onto Taxilane L4 centreline to face East until its nosewheel is at the intersection of the aircraft stand pushback line and centreline of Taxilane L4. The aircraft shall then be towed forward along the centreline of Taxilane L4 until its nosewheel is at the "EOT" position. The aircraft may breakaway from there.	Pushback approved, to face East on Taxilane L4.
← 701, 702	The aircraft (on idle thrust) shall be pushed back onto Taxilane L5 to face North until its nosewheel is at the intersection of the aircraft stand pushback line and taxilane L5 centreline. The aircraft may breakaway from there.	Pushback approved, to face North on taxilane L5.
<u>EAST REMOTE</u>		
← 200	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto Taxilane C6 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane C6 centreline. The aircraft shall then be towed forward until its nosewheel is at the intersection of aircraft stand 201 lead-in line and Taxilane C6 centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto Taxilane C6 to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane C6 centreline. The aircraft may breakaway from there. 	<p>Pushback approved, to face North.</p> <p>Pushback approved, to face South.</p>
← 200L	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • following the pushback line onto Taxilane C6 to face North until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane C6 centreline. The aircraft shall then be towed forward until its nosewheel is abeam aircraft stand 200. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • following the pushback line onto Taxilane C6 to face South until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane C6 centreline. The aircraft may breakaway from there. 	<p>Pushback approved, to face North.</p> <p>Pushback approved, to face South.</p>
← 200R	The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane C6 to face North (or South) until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane C6 centreline. The aircraft may breakaway from there.	Pushback approved, to face North (or South).
← 201	The aircraft (on idle thrust) shall be pushed back onto Taxilane C6 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane C6 centreline. The aircraft may breakaway from there.	Pushback approved, to face North (or South).
← 202	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto Taxilane C6 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane C6 centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto Taxilane C6 to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane C6 centreline. The aircraft may breakaway from there. 	<p>Pushback approved, to face North.</p> <p>Pushback approved, to face South.</p>
← 202L, 202R	The aircraft (on idle thrust) shall be pushed back onto Taxilane C6 to face North (or South) until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane C6 centreline. The aircraft may breakaway from there.	Pushback approved, to face North (or South).

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
← ← ← ←	<p>203 The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto Taxilane C6 to face North until the nose of the aircraft is behind the stopbar behind aircraft stand 203. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto Taxilane C6 to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane C6 centreline. The aircraft may breakaway from there. 	<p>Pushback approved, to face North.</p> <p>Pushback approved, to face South.</p>
<u>SOUTH-EAST REMOTE</u>		
← ← ← ←	<p>205 The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY C7 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY C7 centreline. The aircraft shall then be towed forward until its nosewheel is at the intersection of aircraft stand 206 lead-in line and TWY C7 centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY C7 to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY C7 centreline. The aircraft may breakaway from there. 	<p>Pushback approved, to face North.</p> <p>Pushback approved, to face South.</p>
←	<p>206, 207, 208 The aircraft (on idle thrust) shall be pushed back onto TWY C7 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY C7 centreline. The aircraft may breakaway from there.</p>	<p>Pushback approved, to face North (or South).</p>
← ← ← ←	<p>209 The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY C7 to face North until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY C7 centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY C7 to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY C7 centreline. The aircraft shall then be towed forward until its nosewheel is at the intersection of aircraft stand 208 lead-in line and TWY C7 centreline. The aircraft may breakaway from there. 	<p>Pushback approved, to face North.</p> <p>Pushback approved, to face South.</p>
<u>NORTH REMOTE</u>		
← ← ← ←	<p>300 The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY NC2 to face East until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft shall then be towed forward until its nosewheel is at the intersection of aircraft stand 301 lead-in line and TWY NC2 centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY NC2 to face West until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft may breakaway from there. 	<p>Pushback approved, to face East.</p> <p>Pushback approved, to face West.</p>
←	<p>301 The aircraft (on idle thrust) shall be pushed back onto TWY NC2 to face East (or West) until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft may breakaway from there.</p>	<p>Pushback approved, to face East (or West).</p>

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
← ← ← ←	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY NC2 to face East until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY NC2 to face West until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft shall then be towed forward until its nosewheel is at the intersection of aircraft stand 301 lead-in line and TWY NC2 centreline. The aircraft may breakaway from there. 	<p>Pushback approved, to face East.</p> <p>Pushback approved, to face West.</p>
← ← ← ←	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY NC2 to face East until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft shall then be towed forward until its nosewheel is at the intersection of aircraft stand 304 lead-in line and TWY NC2 centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY NC2 to face West until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft may breakaway from there. 	<p>Pushback approved, to face East.</p> <p>Pushback approved, to face West.</p>
← ←	<p>The aircraft (on idle thrust) shall be pushed back onto TWY NC2 to face East (or West) until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft may breakaway from there.</p>	<p>Pushback approved, to face East (or West).</p>
← ← ← ←	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY NC2 to face East until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY NC2 to face West until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft shall then be towed forward until its nosewheel is at the intersection of aircraft stand 305 lead-in line and TWY NC2 centreline. The aircraft may breakaway from there. 	<p>Pushback approved, to face East.</p> <p>Pushback approved, to face West.</p>
← ← ← ←	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY NC2 to face East until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft shall then be towed forward until the nose of the aircraft is behind the stopbar behind aircraft stand 309. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY NC2 to face West until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft may breakaway from there. 	<p>Pushback approved, to face East.</p> <p>Pushback approved, to face West.</p>

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
← ← ← ←	<p>309 The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY NC2 to face East until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY NC2 to face West until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft shall then be towed forward until the nose of the aircraft is behind the stopbar behind aircraft stand 307. The aircraft may breakaway from there. 	<p>Pushback approved, to face East.</p> <p>Pushback approved, to face West.</p>
← ← ← ←	<p>310 The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY NC2 to face East until the nose of the aircraft is behind the stopbar behind aircraft stand 309. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY NC2 to face West until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY NC2 centreline. The aircraft shall then be towed forward until the nose of the aircraft is behind the stopbar behind aircraft stand 307. The aircraft may breakaway from there. 	<p>Pushback approved, to face East.</p> <p>Pushback approved, to face West.</p>
← <u>NORTH-EAST REMOTE</u>		
← ←	<p>400, 401, 402, 403, 404 The aircraft (on idle thrust) shall be pushed back onto Taxilane A6 to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane A6 centreline.</p>	<p>Pushback approved, to face North (or South).</p>
← <u>SOUTH APRON</u>		
←	<p>461 The aircraft (on idle thrust) shall be pushed back onto TWY S1 to face west until its nosewheel is at EOP position. The aircraft shall then be towed forward until its nosewheel is at the EOT position. The aircraft may breakaway from there. There shall be no simultaneous aircraft pushback from aircraft stands 462, 462L, 462R, 463, 463L and 463R.</p>	<p>Pushback approved, to face west.</p>
←	<p>462 The aircraft (on idle thrust) shall be pushed back onto TWY S1 to face west until its nosewheel is at the intersection of the aircraft stand pushback line and TWY S1 centreline. The aircraft may breakaway from there. There shall be no simultaneous aircraft pushback from aircraft stands 461, 462L, 462R, 463, 463L and 463R.</p>	<p>Pushback approved, to face west.</p>
←	<p>462L The aircraft (on idle thrust) shall be pushed back onto TWY S1 to face west until its nosewheel is at the intersection of the aircraft stand pushback line and TWY S1 centreline. The aircraft may breakaway from there. There shall be no simultaneous aircraft pushback from aircraft stands 461, 462, 462R, 463, 463L and 463R.</p>	<p>Pushback approved, to face west.</p>
←	<p>462R The aircraft (on idle thrust) shall be pushed back onto TWY S1 to face west until its nosewheel is at the intersection of the aircraft stand pushback line and TWY S1 centreline. The aircraft may breakaway from there. There shall be no simultaneous aircraft pushback from aircraft stands 461, 462, 462L, 463, 463L and 463R.</p>	<p>Pushback approved, to face west.</p>
←	<p>463 The aircraft (on idle thrust) shall be pushed back onto TWY S1 to face west until its nosewheel is at the intersection of the aircraft stand pushback line and TWY S1 centreline. The aircraft may breakaway from there. There shall be no simultaneous aircraft pushback from aircraft stands 461, 462, 462L, 462R, 463L and 463R.</p>	<p>Pushback approved, to face west.</p>

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
← 463L	The aircraft (on idle thrust) shall be pushed back onto TWY S1 to face west until its nosewheel is at the intersection of the aircraft stand pushback line and TWY S1 centreline. The aircraft may breakaway from there. There shall be no simultaneous aircraft pushback from aircraft stands 461, 462, 462L, 462R, 463 and 463R.	Pushback approved, to face west.
← 463R	The aircraft (on idle thrust) shall be pushed back onto TWY S1 to face west until the nose of the aircraft is behind the stopbar behind aircraft stand 463L. The aircraft may breakaway from there. There shall be no simultaneous aircraft pushback from aircraft stands 461, 462, 462L, 462R, 463 and 463L.	Pushback approved, to face west.
<u>WEST CARGO</u>		
← 502, 503, 504, 505, 506, 507, 508, 509, 510	The aircraft (on idle thrust) shall be pushed back onto TWY WC to face North (or South) until its nosewheel is at the intersection of the aircraft stand lead-in line and TWY WC centreline. The aircraft may breakaway from there.	Pushback approved, to face North (or South).
← 511	The aircraft (on idle thrust) shall be pushed back: <ul style="list-style-type: none"> <li>• onto TWY WC to face North until the nose of the aircraft is behind the stopbar behind aircraft stand 511. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> <li>• onto TWY WC to face South until the nosewheel of the aircraft is at the intersection of the aircraft stand lead-in line and TWY WC centreline. The aircraft shall then be towed forward until the nosewheel is at the "EOT" position behind aircraft stand 510. The aircraft may breakaway from there. 	Pushback approved, to face North.
← 512	The aircraft (on idle thrust) shall be pushed back: <ul style="list-style-type: none"> <li>• onto TWY WC to face North until the nose of the aircraft is behind the stopbar behind aircraft stand 511. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> <li>• onto TWY WC to face South until the nosewheel of the aircraft is at the intersection of the aircraft stand lead-in line and TWY WC centreline. The aircraft shall then be towed forward until the nosewheel is at the "EOT" position behind aircraft stand 510. The aircraft may breakaway from there. 	Pushback approved, to face North.
← 513	The aircraft (on idle thrust) shall be pushed back: <ul style="list-style-type: none"> <li>• onto TWY WC to face North until the nosewheel of the aircraft is at the intersection of the aircraft stand lead-in line and TWY WC centreline. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> <li>• onto TWY WC to face South following TWY WC centreline onto Taxilane WD until the nose of the aircraft is behind the stopbar behind aircraft stand 515 on Taxilane WD. The aircraft may breakaway from there. 	Pushback approved, to face North.

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
← ← ← ←	<p>The aircraft (on idle thrust) shall be pushed back:</p> <ul style="list-style-type: none"> • onto TWY WC to face North until the nose of the aircraft is behind the stopbar behind aircraft stand 513. The aircraft may breakaway from there. <p><u>OR</u></p> <ul style="list-style-type: none"> • onto TWY WC to face South following TWY WC centreline onto Taxilane WD until the nose of the aircraft is behind the stopbar behind the aircraft stand 515 on Taxilane WD. The aircraft may breakaway from there. 	<p>Pushback approved, to face North.</p> <p>Pushback approved, to face South.</p>
←	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane WD to face South until the nose of the aircraft is behind the stopbar behind aircraft stand 515. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
←	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane WD to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane WD centreline. The aircraft shall then be towed forward until the nose of the aircraft is behind the stopbar behind aircraft stand 515. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
←	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane WD to face South until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane WD centreline. The aircraft shall then be towed forward until the nose of the aircraft is behind the stopbar behind aircraft stand 515. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
←	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane WD to face South until its nosewheel is at the "EOP 517" position. The aircraft shall then be towed forward until the nose of the aircraft is behind the stopbar behind aircraft stand 515. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
←	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane WD to face South until its nosewheel is at the "EOP 517L" position. The aircraft shall then be towed forward until the nose of the aircraft is behind the stopbar behind aircraft stand 515. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
←	<p>The aircraft (on idle thrust) shall be pushed back following the pushback line onto Taxilane WD to face South until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane WD centreline. The aircraft shall then be towed forward until the nose of the aircraft is behind the stopbar behind aircraft stand 515. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
←	<p><u>EAST CARGO</u></p>	
←	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane EA to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane EA centreline. The aircraft may break away from there.</p>	<p>Standard pushback approved.</p>
←	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane EA to face South until its nosewheel is at the intersection of the aircraft stand pushback line and Taxilane EA centreline. The aircraft may break away from there.</p>	<p>Standard pushback approved.</p>
←	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane EA to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane EA centreline. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>
←	<p>The aircraft (on idle thrust) shall be pushed back onto Taxilane EA to face South until its nosewheel is at the intersection of the aircraft stand lead-in line and Taxilane EA centreline. The aircraft shall then be towed forward until its nosewheel is at the "EOT" position behind aircraft stand 602. The aircraft may breakaway from there.</p>	<p>Standard pushback approved.</p>

APRON/ ACFT STANDS	PUSHBACK PROCEDURES	PHRASEOLOGY USED BY SINGAPORE GROUND
← 604	The aircraft (on idle thrust) shall be pushed back onto Taxilane EA to face South until its nosewheel is at the "EOP" position behind aircraft stand 604. The aircraft shall then be towed forward until its nosewheel is at the "EOT" position behind aircraft stand 602. The aircraft may breakaway from there.	Standard pushback approved.
← 605	The aircraft (on idle thrust) shall be pushed back onto Taxilane EC to face West until its nosewheel is at the "EOP" position on Taxilane EC. The aircraft shall then be towed forward following Taxilane EC centreline onto Taxilane EA until its nosewheel is at the "EOT" position behind aircraft stand 602. The aircraft may breakaway from there.	Standard pushback approved.
← 611, 612	The aircraft (on idle thrust) shall be pushed back to face North until its nosewheel is at the "EOP" position. The aircraft shall then be towed forward following Taxilane EC centreline onto Taxilane EA until its nosewheel is at the "EOT" position behind aircraft stand 602. The aircraft may breakaway from there. Engine start-up is not permitted during standard pushback.	Standard pushback approved.
←	<u>Alternate pushback procedure</u>	
←	The aircraft (on idle thrust) shall be pushed back to face North until its nosewheel is at the "EOP" position. Engine start -up is permitted only on the port engine. The aircraft shall then be towed forward following Taxilane EC centreline onto Taxilane EA until its nosewheel is at the "EOT" position behind aircraft stand 602. The aircraft may breakaway from there. This alternate pushback procedure can only be exercised if the auxiliary power unit of the aircraft is unserviceable.	Alternate pushback approved.

4 ADVANCED MULTILATERATION SYSTEM

4.1 INTRODUCTION

4.1.1 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.

4.2 CARRIAGE OF MODE-S SSR TRANSPONDER

4.2.1 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.

4.3 MULTILATERATION SYSTEM OUTLINE

4.3.1 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.

4.3.2 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.

4.4 AIRCRAFT REQUIREMENTS

4.4.1 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.

4.4.2 For the Multilateration System to work effectively, all aircraft Mode S transponders need to transmit Mode S squitters at all times when moving on the airfield, starting immediately prior to pushback, and for arrival aircraft until they are stationary at the aircraft stands. The Mode S transponders should not respond to All-Call interrogations, but should respond to addressed interrogations.

4.5 PROCEDURES/ACTIONS REQUIRED BY PILOTS

4.5.1 The Multilateration System needs to receive squitters and to acquire the Mode A code of a Mode S equipped aircraft at all times when it is on the ground. This is to enable detection and identification of the aircraft (from its Mode A code or ICAO callsign) as soon as it pushes back. Hence, the following actions from pilots are required.

4.5.2 Pre-Pushback / Taxi

- a. Pilots will be required to enter an assigned Mode A code at start-up. This code will be either a discrete or non-discrete code (a conspicuity code, e.g. 1000).
- b. Pilots shall ensure that the aircraft transponder is operating (that is, XPNDR or the equivalent according to specific installation, AUTO if available, not OFF or STBY) and the assigned Mode A code is selected prior to the request for pushback or taxi, whichever is earlier.
- c. Whenever the aircraft is capable of reporting aircraft identification, the aircraft identification must also be entered prior to the request for pushback or taxi, whichever is earlier, through the FMS or the Transponder Control Panel. Flight crew must use the 3-letter ICAO designator of the operator, followed by flight identification number (for example, BAW123, SIA002).

4.5.3 After Landing

- a. Pilots shall ensure that the aircraft transponder is operating (that is, XPNDR or the equivalent according to specific installation, AUTO if available, not OFF or STBY) after landing, and continuously until the aircraft is stationary at the aircraft stand.
- b. Pilots shall ensure that the assigned Mode A code is not changed until the aircraft is stationary at the aircraft stand. (The system requires it for identification of the aircraft).

5 AIRFIELD GROUND LIGHTING CONTROL AND MONITORING SYSTEM (AGLCMS) AND MARKINGS

5.1 INTRODUCTION

5.1.1 The taxiing guidance system at Singapore Changi Airport consists of stop bars and selectable segments of green taxiway centreline lights. The system is designed to provide pilots with visual guidance while taxiing during night operations and during periods of low visibility. It is controlled by the Ground Movement Controller (GMC) at Changi Control Tower using the Airfield Ground Lighting Control and Monitoring System (AGLCMS).

5.2 ROUTE SELECTION AND PRIORITY

5.2.1 When a taxiing route is selected on the AGLCMS, corresponding segments of taxiway centreline lights on the manoeuvring area are switched on automatically. When two or more routes are selected, the system will give priority to the first route and activate red stopbar lights across conflicting routes, as necessary. A segment of the centreline lights of the conflicting routes that cut across the first route will also be suppressed. The GMC has the option of over-riding the taxiing route priority by selecting or deselecting the appropriate stopbar lights.

5.2.2 All taxiing guidance lights on taxiways leading to the runways terminate at the runway holding positions where, by default, red stopbar lights remain on unless deselected by the runway controller. When deselected, these stopbar lights will re-activate automatically after 50 seconds. Pilots shall not cross any lighted red stopbar lights.

5.2.3 Pilots shall enter / cross the runway or taxiway only when both the following conditions are met:
The crew have

- a. received positive ATC clearance to enter / cross the runway or taxiway, and
- b. observed that the red stop-bar lights are turned off.

5.3 INFORMATION AND MANDATORY SIGNS/MARKINGS

5.3.1 When following the directional guidance provided by the green taxiway centreline lights and red stop bar lights, pilots are advised to also navigate their taxi route with reference to information and mandatory signs/markings provided at the airport so as to maintain situational awareness of their whereabouts at all times.

5.4 TAXI INSTRUCTIONS USING THE GREEN TAXIWAY CENTRELINE LIGHTS

5.4.1 ATC will use the phraseology "Taxi on the greens" when issuing a clearance to pilots to taxi along the directional guidance provided by the green taxiway centreline lights.

WSSS AD 2.10 AERODROME OBSTACLES

IN APPROACH / TKOF AREAS			IN CIRCLING AREA AND AT AD		
RWY/Area affected	OBST type, ELEV, Markings/LGT	Coordinates	OBST type, ELEV, Markings/LGT	Coordinates	
1	2	3	1	2	
a) RWY 20R APCH RWY 02L TKOF	Mast HGT ranging fm 98ft AMSL and above.	Shipping channel aprx1290m from THR RWY 20R.	a) Surface wind direction sleeves	LOC at each end of RWY adjacent to GP hut	
b) RWY 20C APCH RWY 02C TKOF	Mast HGT ranging fm 98ft AMSL and above.	Shipping channel aprx 2630m from THR RWY 20C.	b) PAR hut	Besides RWY 02L/20R, opposite the PTB	
c) RWY 02L/20R APCH RWY 02L/20R TKOF RWY 02C/20C APCH RWY 02C/20C TKOF	ILS LLZ co-located with LLZ antennas.	Within the RWY strip.	c) Frangible PAR reflectors	Located at ends of RWY 02L/20R	
d) RWY 20R APCH	Two antennae, HGT 72ft AMSL, marked and LGTD	012311N 1035928E	d) GP huts co-located with GP antennas	Within the RWY strip	
e) RWY 20R APCH	Antenna, HGT 88ft AMSL, marked and LGTD	012315N 1035931E	e) Antenna, HGT 82ft AMSL, marked and LGTD	012036N 1035819E	
f) RWY 02L APCH	Antenna, HGT 82ft AMSL, marked and LGTD	012051N 1035827E	f) Antenna, HGT 85ft AMSL, marked and LGTD	012039N 1035821E	

IN APPROACH / TKOF AREAS			IN CIRCLING AREA AND AT AD		
RWY/Area affected	OBST type, ELEV, Markings/LGT	Coordinates	OBST type, ELEV, Markings/LGT	Coordinates	
1	2	3	1	2	
g) RWY 02L APCH	Pole, HGT 128ft AMSL, marked and LGTD	011859N 1035748E	g) Antenna, HGT 78ft AMSL, marked and LGTD	012042N 1035823E	
h) RWY 02L APCH	Pole, HGT 160ft AMSL, marked and LGTD	012058N 1035814E	h) Antenna, HGT 82ft AMSL, marked and LGTD	012053N 1035827E	
i) RWY 02L APCH	Pole, HGT 131ft AMSL, marked and LGTD	012038N 1035848E	i) Antenna, HGT 78ft AMSL, marked and LGTD	012049N 1035826E	
j) RWY 20L APCH	Shipping channel	Aprx1600m from THR RWY 20L.	j) Frangible poles, HGT 9ft AMSL	Installed APRX 200m from centre of RET to identify 58m away from TWY WP CL towards RWY 02L/20R	

Obstacles in the APCH/TKOF areas, circling area and at the aerodrome are shown on the AOC, IAC and VAC.

WSSS AD 2.11 METEOROLOGICAL INFORMATION PROVIDED

1	Associated MET Office	Singapore Changi (WSSS)
2	Hours of service	H24
3	Office responsible for TAF preparation Periods of validity	Singapore Changi (WSSS) 12, 30
4	Type of landing forecast, Interval of issuance	TREND
5	Briefing/consultation provided	P
6	Flight documentation, Language used	Charts or Tabular forms, English
7	Charts and other information available for briefing or consultation	S, U, P
8	Supplementary equipment available for providing information	HRPT: High Resolution Picture Transmission APT: Automatic Picture Transmission MDWR: MET Doppler Weather Radar MAINT: Second WED of every month BTN 0200-0900 ALTN period: THU following the second WED.
9	ATS units provided with information	Singapore ACC, Singapore RCC
10	Additional information	Tel: 65422837 (MET Office)

WSSS AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designations RWY NR	TRUE BRG	Dimensions of RWY	Strength (PCN) and surface of RWY and SWY	THR coordinates (THR Geoid Undulation)	THR elevation and highest elevation of TDZ of precision APCH RWY
1	2	3	4	5	6
02L	023.02°	4000 M x 60 M	72/F/B/W/U Bituminous concrete	012056.26N 1035838.83E (10.29 M)	6.66 M 6.23 M
20R(Threshold displaced by 740m southwards)	203.02°	4000 M x 60 M	72/F/B/W/U Bituminous concrete	012233.95N 1035920.06E (10.29 M)	4.01 M 4.31 M
02C	023.03°	4000 M x 60 M	72/F/B/W/U Bituminous concrete	011943.51N 1035905.86E (10.28 M)	4.32 M 4.52 M
20C	203.03°	4000 M x 60 M	72/F/B/W/U Bituminous concrete	012143.37N 1035956.46E (10.28 M)	4.58 M 4.56 M

Slope of RWY-SWY Transverse / Longitudinal	SWY Dimensions (m)	CWY Dimensions (m)	STRIP dimensions (m)	OFZ	Remarks
7	8	9	10	11	12
RWY 02L 0.76 / 0.24%	60 X 60	270 X 150	4240 X 300	Yes	Scheduled closure of runways (see below)
RWY 20R 1.45 / 0.25%	60 X 60	270 X 150	4240 X 300		
RWY 02C 1.50 / 0.03%	60 X 60	60 X 150	4240 X 300		
RWY 20C 1.38 / 0.07%	60 X 60	60 X 150	4240 X 300		

Remarks (continued from above)

Scheduled Closure of RWY 02L/20R

- 1a) BTN 1630-2200 on every MON and THU of the month (*preventive maintenance work*).
In the event of an emergency, RWY will be re-opened within 30 minutes.
- 1b) BTN 0225-0240 0630-0635 1000-1005 2300-2305 daily (*inspection*).
In the event of an emergency, RWY will be re-opened within 5 minutes.

Scheduled Closure of RWY 02C/20C

- 2a) BTN 1630-2200 on every first, second and fourth WED of the month (*preventive maintenance work*).
In the event of an emergency, RWY will be re-opened within 30 minutes.
- 2b) BTN 0300-0315 0650-0655 1020-1025 2320-2325 daily (*inspection*).
In the event of emergency, RWY will be re-opened within 5 minutes.

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	3850	4120	3910	Not applicable	
	W3	3050	3320	3110	Not applicable	
	W4	2600	2870	2660	Not applicable	
	W5	2150	2420	2210	Not applicable	
02L	Not applicable	4000	4270	4060	4000	Nil
	W8	3850	4120	3910	Not applicable	
	W7	3050	3320	3110	Not applicable	
	W6	2600	2870	2660	Not applicable	
20C	Not applicable	4000	4060	4060	4000	Nil
	E2	3850	3910	3910	Not applicable	
	E3	3425	3485	3485	Not applicable	
	E4	2750	2810	2810	Not applicable	
	E5	2250	2310	2310	Not applicable	
02C	Not applicable	4000	4060	4060	4000	Nil
	E10	3850	3910	3910	Not applicable	
	E9	3345	3405	3405	Not applicable	
	E8	3205	3265	3265	Not applicable	
	E7	2555	2615	2615	Not applicable	
	E6	2105	2165	2165	Not applicable	

Note: Intersection departures are allowed subject to the following:

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

WSSS AD 2.14 APPROACH AND RUNWAY LIGHTING

<i>RWY</i>	<i>APCH LGT Type, LEN, Intensity</i>	<i>THR LGT colour WBAR</i>	<i>PAPI (MEHT)</i>	<i>TDZ LGT LEN</i>	<i>RWY Centreline LGT, LEN, spacing, colour, INTST</i>	<i>RWY Edge LGT, LEN, spacing, colour, INTST</i>	<i>RWY End LGT colour</i>	<i>SWY LGT colour</i>
1	2	3	4	5	6	7	8	9
02L	CAT II High Intensity approach lighting (900m) consisting of extended centreline and Red row barrettes, 2 crossbars, 2 approach beacons and sequenced flashing lights.	Green supplemented by Green wing-bar and 2 THR ident lights.	PAPI 003° located either side of RWY, 422m behind RWY THR. 2 White LGT and 2 Red LGT (20.6m), 3 White LGT and 1 Red LGT (23.1m), 4 White LGT (25.6m). ACFT with eye-to-wheel height greater than 8m are advised to fly with 2 White and 2 Red LGT visible so as to achieve sufficient wheel clearance.	White	Inset High Intensity centreline lights as follow: From THR to 900m from RWY end: White, 300m to 900m from RWY end: ALTN Red/ White, 300m to RWY end: Red.	Bi-directional raised White/Amber edge lights.	Red	Elevated Red
20R	CAT I High Intensity approach lighting (900m) distance coded centreline lights showing variable White and crossbars at 150m, 300m, 450m, 600m and 750m.	Green supplemented by Green wing-bar and 2 THR ident lights.	PAPI 003° located either side of RWY, 410m from THR. 2 White LGT and 2 Red LGT (20.0m), 3 White LGT and 1 Red LGT (22.6m), 4 White LGT (25.0m). ACFT with eye-to-wheel height greater than 8m are advised to fly with 2 White and 2 Red LGT visible so as to achieve sufficient wheel clearance.	Nil	Inset High Intensity centreline lights as follow: From THR to 900m from RWY end: White, 300m to 900m from RWY end: ALTN Red/ White, 300m to RWY end: Red.	Red RWY edge lights in the direction of Rwy 20R before the displaced THR. Bi-directional raised White/Amber edge lights after the displaced THR.	Red	Elevated Red
02C	CAT I High Intensity reduced approach lighting (810m) consisting of centreline barrettes showing variable White, 1 crossbar, 2 approach beacons and sequenced flashing lights.	Green supplemented by Green wing-bar and 2 THR ident lights.	PAPI 003° located either side of RWY, 418m from THR. 2 White LGT and 2 Red LGT (19.8m), 3 White LGT and 1 Red LGT (23.7m), 4 White LGT (26.2m). ACFT with eye-to-wheel height greater than 8m are advised to fly with 2 White and 2 Red LGT visible so as to achieve sufficient wheel clearance.	Nil	Inset High Intensity centreline lights as follow: From THR to 900m from RWY end: White, 300m to 900m from RWY end: ALTN Red/ White, 300m to RWY end: Red.	Bi-directional raised White/Amber edge lights.	Red	Elevated Red

RWY	APCH LGT Type, LEN, Intensity	THR LGT colour WBAR	PAPI (MEHT)	TDZ LGT LEN	RWY Centreline LGT, LEN, spacing, colour, INTST	RWY Edge LGT, LEN, spacing, colour, INTST	RWY End LGT colour	SWY LGT colour
1	2	3	4	5	6	7	8	9
20C	CAT II High Intensity reduced approach lighting (720m) consisting of extended centreline and Red row barrettes, 2 crossbars, 2 approach beacons and sequenced flashing lights.	Green supplemented by Green wing-bar and 2 THR ident lights.	PAPI 003° located left side of RWY, 418m from THR. 2 White LGT and 2 Red LGT (19.8m), 3 White LGT and 1 Red LGT (23.7m), 4 White LGT (26.2m). ACFT with eye-to-wheel height greater than 8m are advised to fly with 2 White and 2 Red LGT visible so as to achieve sufficient wheel clearance.	White	Inset High Intensity centreline lights as follow: From THR to 900m from RWY end: White, 300m to 900m from RWY end: ALTN Red/White, 300m to RWY end: Red.	Bi-directional raised White/Amber edge lights.	Red	Elevated Red

WSSS AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

1	<i>ABN/IBN location, characteristics and hours of operation</i>	ABN: 012209.22N 1035858.47E (western side of RWY 02L/20R) ALTN FLG W G EV 2.3 SEC, OPR hours HN + IMC IBN: 012301.28N 1035959.52E (top of building N of SIA hangar) FLG G 'CH' EV 7 SEC, OPR hours HN + IMC
2	<i>LDI location and LGT Anemometer location and LGT</i>	Pressure tube anemometer and wind vane situated 345m west of middle of RWY 02L/20R. Cup anemometers and wind vanes at ends and middle of both runways. Windsocks at ends of both runways. Transmissometers at both ends and in the middle of both runways
3	<i>TWY Edge and Centreline Lighting</i>	RWY 02L/20R and RWY 02C/20C: Blue lights on TWY curved edges and apron TWY edges and Green centreline lights on all TWY.
4	<i>Secondary power supply/switch-over time</i>	Automatic standby generator power supply AVBL for airfield lighting with switchover time of 1 second during Category II low visibility operations.
5	<i>Remarks</i>	Vehicles painted yellow or displaying chequered red/white or orange/white flag at highest point of vehicle

WSSS AD 2.16 HELICOPTER LANDING AREA

Refer to [ENR 3.4](#)

WSSS AD 2.17 ATS AIRSPACE

1	<i>Designation and Lateral Limits</i>	CHANGI CTR 013300N 1040149E 013042N 1040654E 012542N 1040448E thence along Kuala Lumpur/Singapore FIR BDRY to 012000N 1041218E 010018N 1035524E 011100N 1035134E 013300N 1040149E
2	<i>Vertical Limits</i>	SFC to 3,000ft ALT
3	<i>Airspace Classification</i>	C
4	<i>ATS Unit Callsign Language(s)</i>	Singapore Tower English
5	<i>Transition Altitude</i>	11000 FT (3,350m)
6	<i>Remarks</i>	A helicopter shall not be operated within the Changi CTR unless prior permission has been obtained from the Director-General of Civil Aviation, CAAS. Email to caas_atc_ansp@caas.gov.sg

WSSS AD 2.18 ATS COMMUNICATION FACILITIES

<i>Service Designation</i>	<i>Call sign</i>	<i>Frequency (P-Pri, S-Sec)</i>	<i>Hours of operation</i>	<i>Remarks</i>	
ACC	Singapore Radar	P123.7 MHz S127.3 MHz	H24	for ATS Routes B469, G219, G334, R208, L625, L629, L635, L642, L644, M751, M753, M758, M761, M763, M771, N884, N891 and N892.	
		133.8 MHz	0000-1430		
		P133.25 MHz S135.8 MHz	H24	for ATS Routes A457, A464, A576, B466, R325 (all northbound) and R469.	
		P134.2 MHz S133.35 MHz			for ATS Routes , G580, L644, M646 and M767
		P134.4 MHz S128.1 MHz 255.4 MHz			for ATS Routes A464, A576, G579 (all southbound), B470, L644, N875 and in area in the immediate vicinity of Singapore.
		124.05 MHz	0000-1530	Flow control service provided for ARR/DEP ACFT	
	MAINT Period: Monthly - EV third SAT 1601-2359				
Singapore Radio	6556 kHz 11297 kHz	H24	SEA 1, Emission: A3AJ. SSB suppressed carrier, SATCOM service available		
	5655 kHz 8942 kHz 11396 kHz		SEA 2, Emission: A3AJ. SSB suppressed carrier, SATCOM service available		
	6556 kHz		SEA 3, Emission: A3AJ. SSB suppressed carrier, SATCOM service available		
APP	Singapore Approach	P120.3 MHz S124.6 MHz	H24	TAR - Intermediate approach to Singapore Changi AP and other airports in Singapore. DEP from all airports in Singapore.	
	Singapore Arrival	119.3 MHz		TAR - Intermediate and final approach to Singapore Changi Airport.	
ASR I MAINT Period: Monthly, EV first SAT 1601-2359 ASR II MAINT Period: Monthly, EV fourth SAT 1601-2359					

<i>Service Designation</i>	<i>Call sign</i>	<i>Frequency (P-Pri, S-Sec)</i>	<i>Hours of operation</i>	<i>Remarks</i>
TWR	Singapore Tower	118.6 MHz	H24 0000-1600	for TKOF/LDG. for ACFT OPR on RWY 02L/20R
		118.25 MHz	0000-1600	for ACFT OPR on RWY 02C/20C
	Singapore Ground	124.3 MHz	1600-0000 0000-1600	for start-up / push-back / taxiing of all aircraft for ground movement of aircraft west of Terminal 3
		121.725 MHz	0000-1700 2100-0000	for ground movement of aircraft east of Terminal 2
		121.85 MHz	0000-1800 2300-0000	for ground movement of aircraft north of Terminal 1
	Singapore Delivery	129.95 MHz	H24	for ground emergency
	Singapore Delivery	121.65 MHz	H24	for Pre-flight check/ATC clearance
Changi Tower / Changi Apron	121.9 MHz	H24	for vehicular movements on taxiways and runways. Towing of all aircraft and requests for engine runs on apron and taxiways, excluding runways, will be regulated by Changi Apron.	
D-ATIS	Singapore Changi Airport Information	128.6 MHz	H24	Data Link Service available. AP IDENT WSSS Messages comply with ARINC 623 Standards. Updating of data: H+00 to H+10 and H+30 to H+40

WSSS AD 2.19 RADIO NAVIGATION AND LANDING AIDS

<i>Type of aid and Variation</i>	<i>Ident</i>	<i>Frequency</i>	<i>OPR Hr</i>	<i>Position of Transmitting Antenna Coordinates</i>	<i>DME Transmitting Antenna Elevation / Remarks</i>
1	2	3	4	5	6 & 7
SINJON DVOR/DME	SJ	113.5 MHz CH82X	H24	011319.28N 1035120.08E	201° MAG 14.5km from THR RWY 02 (Paya Lebar). Antenna HGT: 194ft AMSL. Coverage 200NM. EM: F1. Maintenance period: Third Thursday of every month between 0200-0600
TEKONG DVOR/DME	VTK	116.5 MHz CH112X	H24	012455.36N 1040120.17E	023° MAG 6.4km from THR RWY 20C (Singapore Changi). Antenna HGT: 150ft AMSL. Coverage 200NM. EM: F1 Maintenance Period: Third Friday of every month between 0200-0600
RWY 20C ILS LLZ	ICC	109.7MHz	H24	011932.48N 1035901.20E	Located 368m (1207ft) from THR RWY 02C, along RWY centreline. Course width 3.38°. EM: A0/A2. Maintenance Period: May - October Second Friday of every month between 1600-2300 November - April Second Friday of every month between 0200-0900
RWY 20C ILS GP	-	333.2MHz	H24	012131.73N 1035955.72E	Located 338m (1109ft) from THR RWY 20C on left side of RWY, 120m (394ft) from RWY centreline. GP angle 3°. HGT of ILS reference datum: 17m (56ft) EM: A0/A2
RWY 20C ILS DME	ICC	CH34X	H24	012131.73N 1035955.72E	DME co-located with GP. EM: P9
RWY 20C ILS MM	-	75MHz	H24	012211.94N 1040008.52E	Located 957m (3140ft) from THR RWY 20C along extended centreline of RWY. No back beam.

Type of aid and Variation	Ident	Frequency	OPR Hr	Position of Transmitting Antenna Coordinates	DME Transmitting Antenna Elevation / Remarks
1	2	3	4	5	6 & 7
RWY 02C ILS LLZ	ICE	108.3MHz	H24	012154.41N 1040001.08E	Located 368m (1207ft) from THR RWY 20C, along RWY centreline. Course width 3.38°. EM: A0/A2. Maintenance Period: May - October Second Friday of every month between 0200-0900 November - April Second Saturday of every month between 0200-0900
RWY 02C ILS GP	-	334.1MHz	H24	011952.11N 1035913.68E	Located 338m (1109ft) from THR RWY 02C on left side of RWY, 120m (394ft) from RWY centreline. GP angle 3°. HGT of ILS reference datum: 18m (58ft) EM: A0/A2
RWY 02C ILS DME	ICE	CH20X	H24	011952.11N 1035913.68E	DME co-located with GP. EM: P9
RWY 02C ILS MM	-	75MHz	H24	011915.04N 1035853.83E	Located 945m (3100ft) from THR RWY 02C along extended centreline of RWY. No back beam.
RWY 20R ILS LLZ	ICH	108.9MHz	H24	012045.23N 1035834.17E	Located 368m (1207ft) from THR RWY 02L, along centreline of the RWY. Course width 3.38°. EM: A0/A2. Maintenance Period: May - October First Saturday of every month between 0200-0900 November - April First Friday of every month between 0200-0900
RWY 20R ILS GP	-	329.3MHz	H24	012225.54N 1035912.29E	Located 330m (1083ft) from displaced THR RWY 20R on right side of the RWY, 120m (394ft) from RWY centreline. GP angle 3°. HGT of ILS REF datum: 17m (56ft) EM: A0/A2
RWY 20R ILS DME	ICH	CH26X	H24	012225.54N 1035912.29E	DME co-located with GP. Rwy 20R ILS DME not available beyond 15 degrees west of RWY 20R centreline below 2500ft. EM: P9
RWY 20R ILS MM	-	75MHz	H24	012307.50N 1035934.23E	Located 1122m (3681ft) from displaced THR RWY 20R, along centreline of the RWY.
RWY 02L ILS LLZ	ICW	110.9MHz	H24	012307.03N 1035934.03E	Located 1105m (3625ft) from displaced THR RWY 20R, along centreline of RWY. Course width 2.81°. EM:A0/A2 Maintenance Period: May - October First Friday of every month between 0200-0900 November - April First Saturday of every month between 0200-0900
RWY 02L ILS GP	-	330.8MHz	H24	012108.34N 1035838.94E	Located 343m (1125ft) from THR RWY 02L on left side of RWY, 143m (469ft) from RWY centreline. GP angle 3°. HGT of ILS Reference datum: 18m (58ft) EM:A0/A2
RWY 02L ILS DME	ICW	CH46X	H24	012108.34N 1035838.94E	DME co-located with GP EM:P9
RWY 02L ILS MM	-	75MHz	H24	012027.53N 1035826.70E	Located 957m (3140ft) from THR RWY 02L along extended centreline of RWY. No back beam.

WSSS AD 2.20 LOCAL TRAFFIC REGULATIONS

1 DESIGNATION OF PAYA LEBAR AIRPORT AS AN ALTERNATE AERODROME FOR SINGAPORE CHANGI AIRPORT

Please refer to pages WSAP AD 2-5 to WSAP AD 2-7 for details.

2 WRONG APPROACHES AND LANDINGS OF AIRCRAFT BOUND FOR SINGAPORE CHANGI AND PAYA LEBAR AIRPORTS

2.1 INTRODUCTION

2.1.1 The attention of all pilots is drawn to the existence of Paya Lebar Airport close to Singapore Changi Airport. The runway at Singapore Changi Airport is orientated in the same true bearing as the runway at Paya Lebar Airport i.e. 023°/203°. Due to the close proximity of these two runways, pilots are cautioned against mistaking Paya Lebar Airport for the runway of Singapore Changi Airport and thus making an inadvertent visual landing or approach to land at Paya Lebar.

2.1.2 Erroneous approaches or landings usually occurred during the hours of darkness. In almost every instance, the weather prevailing at the time of the incident was generally good or fair.

2.1.3 There is intensive local flying at Paya Lebar and Seletar during the day and night. Thus, the risk of collision is very great if a wrong approach is made to any of the above two airports. Likewise, wrong approaches into Singapore Changi Airport can also be disastrous.

2.2 POINTS TO BEAR IN MIND WHEN APPROACHING SINGAPORE CHANGI AIRPORT OR PAYA LEBAR

2.2.1 The following points are highlighted to serve as a guide to assist pilots in making a correct approach into Singapore Changi Airport or Paya Lebar Airport and should be remembered and followed:

- a. The runways at Singapore Changi Airport and Paya Lebar Airport are identically aligned on 02/ 20. Therefore exercise extreme vigilance when leaving NYLON or SAMKO Holding Areas inbound and maintain correct tracks to the respective runways as listed below.
- b. Adhere strictly to IFR procedures even in VMC which calls for a procedure turn over NYLON Holding Area or SAMKO Holding Area as prescribed.
- c. Make full use of all available navigational and landing aids available and positively identify every aid used.
- d. Switch to the correct ILS localizer frequency at Singapore Changi Airport under all conditions.

2.3 AERODROME CHARACTERISTICS OF SINGAPORE CHANGI AND PAYA LEBAR AIRPORTS

2.3.1 Tabulated below are details of aerodrome characteristics of Singapore Changi Airport and Paya Lebar Airport which indicate the similarities and significant differences for ease of identification by pilots operating into these two airports.

Aeronautical Service	PAYA LEBAR Airport	SINGAPORE CHANGI Airport	Significant Differences and Remarks
Magnetic heading of RWY	02/20	02L/20R 02C/20C	Exercise caution due to similar RWY alignment
Approach Lights	RWY 02 Modified Calvert High INTST with centreline and 3 crossbars. High INTST white LGT with brilliancy control and sequenced flashing lights.	RWY 02L Precision APCH LGT CAT II. Extended centreline with red side row barettes, 2 crossbars, 2 APCH beacons and sequenced flashing lights.	
	RWY 20 Modified Calvert High INTST with centreline and 3 crossbars. High INTST white LGT with brilliancy control and sequenced flashing lights.	RWY 20R Precision APCH LGT CAT I. Centreline barettes flashing white, 2 APCH beacons and sequenced flashing lights. (refer to chart AD-2-WSSS-ADC-2)	

Aeronautical Service	PAYA LEBAR Airport	SINGAPORE CHANGI Airport	Significant Differences and Remarks
ILS	RWY 20 - Nil	RWY 20R IDENT ICH No back beam LLZ 108.9 MHz GP 329.3 MHz	
	RWY 02 - Nil	RWY 02L IDENT ICW No back beam LLZ 110.9 MHz GP 330.8 MHz	
IBN	Flashing R 'PL' HN and IMC	Flashing G 'CH' HN and IMC	
ABN	Nil	ALTN Flashing W G every 2.3 SEC	

WSSS AD 2.21 NOISE ABATEMENT PROCEDURES

- 1.1 To alleviate the problem of noise, all aircraft on AWY G579 between SINJON (SJ) and JAYBEE (JB) shall operate at/above 5,000ft.
- 1.2 The Standard Instrument Departure routes for aircraft departing on RWY 20R/20C are for the purpose of noise abatement in addition to being used for air traffic control.
- 1.3 Departures on RWY 20R are restricted between 1600-2200UTC. This restriction is not applicable when RWY 20C/02C is unavailable because of maintenance works or for other reasons.
- 1.4 Unless it is necessary for operational or safety reasons, when using engine reverse, arrivals on RWY 02L/20R between 1600-2200UTC may not exceed idle reverse thrust.

WSSS AD 2.22 FLIGHT AND GROUND PROCEDURES

1 LOW VISIBILITY PROCEDURES (LVP) FOR CATEGORY II ILS OPERATIONS

1.1 Introduction

- 1.1.1 Category II ILS approaches will be made available at Singapore Changi Airport to authorised flights during prolonged periods of low visibility, except during thunderstorms. RVR minima for CAT II ILS operations is limited to 350m due to runway and taxiway light spacing requirements on the airfield.

1.2 Authorisation for Category II ILS Approaches

- 1.2.1 Operators who wish to conduct Category II ILS operations at Singapore Changi Airport must have obtained operational approval from the relevant State of Operator and be authorised by the Civil Aviation Authority of Singapore.

1.3 Category II ILS Runways

- 1.3.1 At Singapore Changi Airport, Category II ILS approaches are available only on RWY 02L and RWY 20C, which are also equipped with precision approach Category II lighting system. When required, pilots making Category II ILS approaches to Singapore Changi Airport should refer to the procedures in the Instrument Approach Charts AD-2-WSSS-IAC-1 to AD-2-WSSS-IAC-11 and the Precision Approach Terrain Charts for RWY 02L and RWY 20C at AD-2-WSSS-PATC-1 and AD-2-WSSS-PATC-2 respectively.

1.4 Initiation of Category II ILS Operations

- 1.4.1 Preparations will be made to implement LVP for Category II ILS operations at Singapore Changi Airport during prolonged period of low visibility, except during thunderstorms, when the RVR drops below 800 metres.
- 1.4.2 Availability of the Category II ILS approaches will be made known through NOTAM and ATIS broadcasts as well as air traffic control radio communications.

- 1.4.3 During LVP operations, aircraft will not be cleared for Category II ILS approach if any of the ILS or approach/runway lights fall below Category II requirements. Aircraft will not be cleared for landing if the Touchdown Zone RVR is unserviceable.

1.5 ILS Sensitive Areas

- 1.5.1 Upon landing, pilots shall report to Changi Tower once the aircraft has cleared the runway and has passed the ILS sensitive areas demarcated by alternate yellow and green lights along the centrelines of Rapid Exit Taxiways and Cross Taxiways.

1.6 Termination of LVP for Category II ILS Operations

- 1.6.1 LVP for Category II ILS operations will be terminated when RVR has improved above 800 metres. Termination of LVP for Category II ILS operations will be made known through NOTAM and ATIS broadcasts as well as air traffic control radio communications.

1.7 Operations of flights Not Authorised for Category II ILS Operations

- 1.7.1 During Category II ILS operations, if the RVR is 550 metres or above, flights not authorised for Category II ILS operations may continue to make approaches and land. Airlines planning to operate flights not authorised for Category II ILS operations into Changi shall monitor the METAR to ascertain the RVR values when launching their flights and be prepared to divert if the RVR is below 550 metres.

2 RUNWAY UTILISATION

2.1 Runway-in-use

- 2.1.1 The runway-in-use (Departure/Arrival) is selected by Aerodrome Control as the optimum for general purposes and to maximise runway utilisation. If the assigned runway is unsuitable for a particular operation, the pilot can obtain permission from ATC to use another runway but should anticipate delay.

2.2 Departures

- 2.2.1 Pilots should arrange their taxi such that they are ready to depart without delay on reaching the runway holding point. As standard ICAO wake turbulence separation is being applied, pilots are to advise ATC early if more time is needed for the aircraft to be ready for departure. When informed, ATC will be able to make changes in the departure sequence, if necessary, to minimise delays to other succeeding departures.
- 2.2.2 Pilots should complete cockpit checks prior to line-up for departure and keep any checks on the runway to a minimum.
- 2.2.3 Conditional line-up clearance may be used by ATC to facilitate an expeditious flow of traffic. On receipt of line-up clearance, pilots should taxi into position promptly without delay. Unless given instructions to line-up and wait, pilots should be ready and prepared to depart without stopping. On receipt of take-off clearance, pilots to commence take-off roll without delay.

2.3 Clearance for Immediate Take-Off

- 2.3.1 A pilot receiving the ATC instruction 'cleared for immediate take-off' is required to act as follows:
- if waiting clear of the runway, taxi immediately on to it and begin take-off run immediately without stopping the aircraft;
 - if already lined-up on the runway, take-off without delay;
 - if unable to comply with the instruction, inform ATC immediately.

2.4 Arrivals - Minimum Runway Occupancy Time (ROT)

- 2.4.1 Arriving aircraft upon landing are reminded that it is imperative to vacate the runway as quickly as practicable to enable ATC to apply minimum spacing on final approach and minimise the occurrence of "go-arounds".
- 2.4.2 To achieve minimum ROT and reduce missed approaches due to occupied runway, pilots should vacate the runway via the first available exit taxiway corresponding to operational requirements, or as instructed by ATC. If an exit taxiway other than the first available exit taxiway is required, pilots shall advise the Tower Controller on first contact.
- 2.4.3 To enhance planning, pilots can make reference to the Landing Exit Distance (LED), the distance from threshold to the furthest edge of the exit taxiway:

RWY	Exit Taxiway (LED in metres)	Remarks
20R	<u>W6*(1655)</u> , <u>W7*(2123)</u> and W8 (3061)	Note 1: Recommended exit taxiways are bold and underlined. Note 2: * Indicates Rapid Exit Taxiway (RET) and maximum design ground speed for the exit taxiway is 50kts.
20C	<u>E6*(1948)</u> , <u>E7*(2391)</u> and E8 (3152)	
02L	<u>W5*(1966)</u> , <u>W4*(2491)</u> and W3* (2876)	
02C	<u>E5*(2055)</u> , <u>E4*(2565)</u> and E3* (3267)	

- 2.4.4 Pilots can expect initial taxi instructions from the Runway Controller before clearing the exit taxiway. Aircraft vacating the runway-in-use should not stop on the exit taxiway until the entire aircraft has passed the runway holding point.
- 2.4.5 BTN 0830-1030 daily estimated delays of about 15 minutes can be expected for arrivals into Singapore Changi Airport.

2.5 Land after Procedures

- 2.5.1 Normally, only one aircraft is permitted to land or take-off on the runway-in-use at any one time. However, when the traffic sequence is two successive landing aircraft, the second aircraft may be allowed to land before the first aircraft has cleared the runway-in-use provided:
- the runway is long enough;
 - during daylight hours;
 - the second aircraft will be able to see the first aircraft clearly and continuously until it is clear of the runway;
 - the second aircraft has been warned.

2.5.2 ATC will provide this warning in the landing clearance as shown in para 2.7.

2.5.3 Responsibility for ensuring adequate separation between the two aircraft rests with the pilot of the second aircraft.

2.6 Special Landing Procedures

- 2.6.1 Special landing procedures may be in force at Singapore Changi Airport in conditions shown as follows:
- When the runway-in-use is temporarily occupied by other traffic, landing clearance may be issued to an arriving aircraft provided that at the time the aircraft crosses the threshold of the runway-in-use the following separation distances will exist:
 - Landing following landing - The preceding landing aircraft will be clear of the runway-in-use or will be at least 2,500m from the threshold of the runway-in-use.
 - Landing following departure - The departing aircraft will be airborne and at least 2,500m from the threshold of the runway-in-use, or if not airborne, will be at least 2,500m from the threshold of the runway-in-use.
- 2.6.2 These procedures will be used only under the following conditions:
- during daylight hours;
 - visibility of at least 5km;
 - cloud ceiling of 1,500ft in the departure/missed approach area;
 - ATC is satisfied that the pilot of the next arriving aircraft will be able to observe continuously the relevant traffic;
 - no unfavourable surface wind conditions (including significant tailwind, windshear, turbulence, etc);
 - when the runway is dry and free of all precipitants such that there is no evidence that the braking action may be adversely affected.

2.7 Phraseology

2.7.1 When issuing a landing clearance following the application of these procedures, ATC will issue the second aircraft with the following instructions:

.... (call sign) after the landing / departing (Aircraft Type) Runway(Designator) cleared to land.

3 AIRPORT COLLABORATIVE DECISION MAKING (A-CDM) MODE OF OPERATIONS

- 3.1 A-CDM aims to optimise airport operations by having an efficient turnaround process and improving the predictability of operational events. It also helps to improve gate management, flight punctuality, reduce apron taxiway and holding point congestion which is beneficial to all airport partners. A-CDM involves sharing of accurate and timely operational information amongst airport partners through different airport systems and improving work processes by implementing a set of operational procedures.

3.2 The A-CDM procedures apply to all scheduled flights departing Singapore Changi Airport except for VVIP, CASEVAC, SAR and aircraft on special tasks. ATC shall have full discretion in conduct of such operations.

3.3 Definition of commonly used terms in A-CDM

- a. Target Off Block Time (TOBT) – The time an aircraft operator (AO) or ground handling agent (GHA) estimates that an aircraft will be ready, all doors closed, boarding bridge removed, pushback vehicle available and ready to start-up / pushback immediately upon receipt of clearance from ATC.
- b. Target Start Up Approval Time (TSAT) – The time provided by ATC that an aircraft can expect start-up / push back approval.
- c. Calculated Take Off Time (CTOT) – A time calculated as a result of tactical slot allocation, at which a flight is expected to become airborne.

4 A-CDM PRE-DEPARTURE PROCEDURES

4.1 Singapore Changi Airport's A-CDM portal will automatically calculate a system TOBT for each departure flight taking into account the estimated or actual in-block time (EIBT / AIBT), minimum turnaround time (MTT) and scheduled time of departure (STD)

4.2 If the calculated TOBT (EIBT / AIBT + MTT) is earlier than STD, the system will take the STD as TOBT.

4.3 If the calculated TOBT (EIBT / AIBT + MTT) is later than STD, the amount of turnaround delay that system predicts is equal to TOBT – STD.

4.4 AO are required to assess the system generated TOBT at 40 minutes prior to departure and update it if the prediction of departure readiness is different. Thereafter, TOBT needs to be monitored and updated constantly if it is expected to differ by 5 minutes or more until the flight commences pushback. AO can consider delegating the responsibility of TOBT submission to their ground handling agent (GHA) subject to prior internal arrangements between AO and GHA.

4.5 TOBT shall be updated through the following systems:

- a. Airport Operations Centre System (AOCS) A-CDM web based portal; or
- b. Gate Message Input Display (GMID) at boarding rooms;

4.6 AO/GHA is encouraged to update TOBT through ONLY one of the above systems in order to avoid any chance of a miscommunication.

4.7 TOBT information is available through the following channels:

- a. AOCS A-CDM portal;
- b. GMID;
- c. Aircraft Docking Guidance System (ADGS) at contact stands;
- d. Radio communication with GHA or AO.

4.8 The Pre-Departure Sequencer (PDS) will calculate the TSAT automatically by taking into account factors such as TOBT, calculated take-off time (CTOT), variable taxi times (VTT), wake turbulence category, departure separation, etc. A pre-departure sequence is determined from the calculated TSATs, thus the accuracy of TOBT is vital to an optimal TSAT.

4.9 Flights with an invalid or expired TOBT will be instructed by ATC to update TOBT when requesting for clearance. For non-compliant flights, delays can be expected. AO or GHA are strongly encouraged to update TOBT as soon as any expected delay to the aircraft readiness for pushback is made available to avoid unnecessary hold-ups.

4.10 TSAT information is available through the following channels:

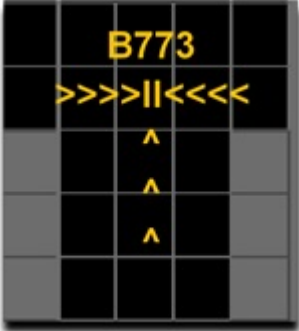



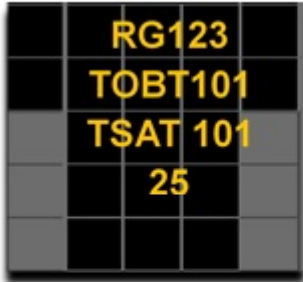

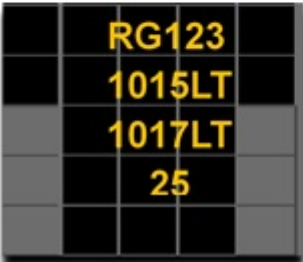
- a. AOCS A-CDM portal;
- b. GMID;
- c. ADGS at contact stands;
- d. Radio communication with GHA or AO;
- e. ATC - Upon issuance of ATC clearance (for flights parked at aircraft stands without ADGS).




5 A-CDM START-UP PROCEDURES

5.1 Pilot shall ensure aircraft is ready for pushback at TOBT.

5.2 Pilot to maintain communication with the AO / GHA as they are responsible for updating the TOBT. Notify the AO / GHA to update the TOBT if it is expected to differ by 5 minutes or more.

- 5.3 Pilot to contact Ground Movement Planner (Clearance Delivery) and request for ATC clearance within 5 minutes of TOBT using the following phraseology:
- Callsign
 - Destination
 - Proposed flight level and alternate level, if any
 - Parking position
- a. Pilot shall only request for ATC clearance provided aircraft is ready to pushback at TOBT. Any updates to TOBT after receipt of ATC clearance will result in cancellation of clearance issued as the ATC clearance validity is based on the initial TOBT.
- 5.4 ATC will advise the pilot whether the proposed flight level or other alternate flight level is available and an ATC clearance will be issued accordingly. If pre-departure coordination with an adjacent unit or centre is required, the pilot will be instructed to standby.
- 5.5 ATC will update TSAT changes if any, during issuance of ATC clearances. Note that TSAT displayed on ADGS may not be final and can be revised due to en-route clearance restrictions, ground congestion or flow measures.
- 5.6 Pilot shall request for pushback from Ground Movement Control within 5 minutes of TSAT after obtaining ATC clearance, or as directed by ATC.
- a. ATC may swap pushback sequence based on real-time readiness of aircrafts to maximise apron and runway capacity and reduce the overall delay to traffic as and when required.
- b. At the end of pushback, the departing aircraft must have all engines started and be ready to taxi immediately, unless otherwise instructed by ATC.
- Note: The first aircraft to taxi may not necessarily be the first aircraft to take-off as distances between aircraft stands and the departure runway vary.
- 5.7 A flight issued with gate hold (TSAT>TOBT) but chooses to commence pushback before the assigned time will be allowed to do so subject to traffic. However, the flight should not expect an earlier departure time as the planned pre-departure sequence will be maintained.
- 5.8 If a flight is unable to pushback by TSAT + 5 minutes due to the aircraft being unready, ATC clearance and TSAT will be cancelled. Pilot must notify the AO / GHA to update the TOBT for a new TSAT before requesting for a new ATC clearance. This also applies to aircraft returning back to blocks after pushback.
- a. ATC will inform the aircraft when a clearance is cancelled using the phraseology; "(Callsign of aircraft) your ATC clearance and TSAT is cancelled (reason). Update TOBT before requesting for new clearance".
- b. Flight may also have its ATC clearance cancelled if it develops a technical problem after pushback and is unable to taxi for prolonged duration.
- 5.9 Non-compliance of initial TSAT may result in an aircraft losing its existing position in the pre- departure sequence. Delay can be expected as a result of re-sequencing based on new TOBT input.
- 5.10 If delay in pushback is due to ground traffic movement or ATC clearance restrictions, the ATC clearance and TSAT will remain valid even if it exceeds TSAT + 5 minutes. TOBT need not be updated for such situations.
- 5.11 In the event that A-CDM mode of operations need to be cancelled due to any reason, the termination will be communicated to relevant parties through email by the airport operator and a NOTAM will be issued by ATC. Pilot shall follow the non-CDM procedures detailed in para 12.
- 6 A-CDM INFORMATION VIA AIRCRAFT DOCKING GUIDANCE SYSTEM (ADGS)**
- 6.1 All contact stands in Singapore Changi Airport will have ADGS. The fundamental operation and usage of ADGS still remain the same for flight crew. Additional information which includes TOBT, TSAT and TOBT count-down timer will be displayed in local times as part of the improvements to support A-CDM operations.

Aircraft Docking Guidance System (ADGS)	
Description	Display on ADGS
<p>Aircraft arrival to stand</p> <ul style="list-style-type: none"> No change in existing functionality and display 	
<p>40 minutes prior to TOBT</p> <ul style="list-style-type: none"> ADGS will display TOBT submitted by AO / GHA and a count down timer (2 digits) to TOBT in minutes As ADGS can only display up to 7 characters per line, the displayed message will be scrolling. Timings displayed will be in Local Time (LT) TOBT timings will change instantly if there is an update done by AO / GHA 	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Snapshot 1</p>  </div> <div style="text-align: center;"> <p>Snapshot 2</p>  </div> </div> <div style="text-align: center; margin-top: 20px;"> <p>Snapshot 3</p>  </div>
<p>25 minutes prior to TOBT</p> <ul style="list-style-type: none"> ADGS will display TSAT derived by PDS As ADGS can only display up to 7 characters per line, the displayed message will be scrolling. TSAT timings may change as the PDS is continuously optimising push back times based on real time traffic conditions 	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Snapshot 1</p>  </div> <div style="text-align: center;"> <p>Snapshot 2</p>  </div> </div> <div style="text-align: center; margin-top: 20px;"> <p>Snapshot 3</p>  </div>

Aircraft Docking Guidance System (ADGS)	
Description	Display on ADGS
<p>Aircraft departure from stand</p> <ul style="list-style-type: none"> • ADGS will display the actual off-block time (AOBT) • As ADGS can only display up to 7 characters per line, the displayed message will be scrolling • TOBT, TSAT and TOBT countdown timer will be removed • AOBT display will be removed 3 minutes after AOBT 	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Snapshot 1</p>  </div> <div style="text-align: center;"> <p>Snapshot 2</p>  </div> </div> <div style="text-align: center; margin-top: 20px;">  <p>Snapshot 3</p> </div>

7 CONTACT AND INFORMATION

- 7.1 Please contact the airport operator, Changi Airport Group (CAG), at a-cdm@changiairport.com for application of AOCS A-CDM and GMID account or if you have any queries.
- 7.2 Aircraft operators may also contact their ground handling agent directly on queries regarding TOBT submission.

8 ASSIGNMENT OF FLIGHT LEVELS TO AIRCRAFT DEPARTING FROM SINGAPORE CHANGI AIRPORT

- 8.1 Assignment of flight levels to departing aircraft is made on a best-planned-best-served basis (with reference to TOBT for ATC clearance request detailed in para 5.3). Aircraft will normally be assigned the level requested unless an alternate level is offered after coordination with the adjacent ATC centres.
- 8.2 Departing flights from Singapore requesting FL280 or FL320 on L759, M770, N571, N571/N877 or P628 will be cleared as follows:
 - a. Aircraft departing Singapore will be cleared to FL280;
 - b. Succeeding aircraft on the same route will be cleared to FL280 with 10min longitudinal separation provided there is no closing speed with the preceding aircraft;
 - c. Additional longitudinal separation as appropriate shall be imposed by ATC when the succeeding aircraft is faster than the preceding aircraft on the same route;
 - d. The first aircraft from either Singapore or Kuala Lumpur to be over GUNIP on N571 or N571/N877, the Kuala Lumpur/Bangkok FIR boundary on M770 or L759 and VPL on P628 can expect its requested flight level

9 DELAY IN PUSHBACK AND/OR TAXIING DUE TO OTHER AIRCRAFT

- 9.1 Delays may be expected for the second aircraft to pushback and to taxi when two or more aircraft are parked either adjacent to one another or close together. However, it will retain its ATC clearance even if the 5 minutes grace period allowed for under para 5.8 is exceeded.

Note: The TSAT may not be able to predict delays arising from apron congestion as traffic movement on ground is dynamic and situations may change on a real time basis depending on aircraft readiness. ATC will facilitate pushback as soon as possible when traffic permits.

10 DELAY IN TAKE-OFF DUE TO RESTRICTIONS IN THE ATC CLEARANCE

- 10.1 The ATC clearance may require an aircraft to arrive at a reporting point at a specified time and level or to depart a number of minutes behind a preceding traffic to establish the appropriate longitudinal separation. Such delay will not deprive a departing aircraft of its ATC clearance even though the 5 minutes grace period allowed for under para 5.8 is exceeded.

11 DELAY DUE TO OVERFLIGHTS

- 11.1 These are flights operating through Singapore FIR without landing at Singapore Changi Airport. Depending on their positions, a departing aircraft requesting the same level may have to accept an alternate level or may have to delay its departure in order to establish the prescribed separation.

12 NON-CDM MODE OF OPERATIONS

- 12.1 The non-CDM procedures is applicable for non-scheduled flights departing Changi Airport or when TOBT and TSAT references used in A-CDM mode of operations become unavailable due to system issues or maintenance.
- 12.2 If TOBT cannot be submitted or it is unavailable through different channels stated in para 4.5,
- a. Pilots shall notify ATC when the aircraft is ready to pushback within 5 minutes.
 - b. ATC will advise the pilot whether the proposed flight level or other alternate flight level is available and an ATC clearance will be issued accordingly. If pre-departure coordination with an adjacent unit or centre is required, the pilot will be instructed to standby.
 - c. Once flight level is accepted by the pilot and an ATC clearance issued, the aircraft must be pushed back within 5 minutes from the time the ATC clearance is accepted unless other ATC restrictions are imposed. The ATC clearance will be cancelled on expiry of the 5 minutes grace period. This also applies to situations when aircraft return to blocks after pushback or develop technical issues and is unable to continue taxi.
 - d. Pilots who are ready to depart following the cancellation of an ATC clearance will adopt the procedures as if it is the first time they are ready to depart.
- 12.3 If TSAT is unavailable through different means stated in para 4.10,
- a. AO and GHA shall continue to submit TOBT and pilots shall request for ATC clearance 5 minutes within TOBT stated in para 5.3
 - b. ATC will revert to the gate hold procedures stated in para 13 and issue estimated pushback times accordingly.

13 GATE HOLD PROCEDURES FOR DEPARTING AIRCRAFT (DURING NON-CDM MODE OF OPERATIONS)

- 13.1 Whenever there are about five to seven departing aircraft at the runway holding point, subsequent pushback of departures will be regulated such that the Ground Movement Planner (GMP) on VHF frequency 121.65MHz will start to issue pilots with Expected Pushback Time (EPT) as TSAT used in A-CDM operations is not available. The determination of EPT will take into account an aircraft's parking stand as well as taxi time to the runway-in-use holding point.
- 13.2 When an EPT is issued, pilots will be instructed to either remain on GMP frequency or to monitor Singapore Ground Movement Control frequencies (124.3MHz, 121.725MHz or 121.85MHz). It should be noted that when instructed to monitor the Singapore Ground Movement Control frequencies, pilots shall not establish contact with the Singapore Ground Movement Control, rather, pilots shall maintain listening watch on the assigned Singapore Ground Movement Control frequency and wait for pushback instruction. This is to prevent unnecessary frequency congestion.
- 13.3 A flight issued with an EPT but chooses to commence pushback before the assigned time will be allowed to do so subject to traffic. However, the flight should not expect an earlier departure time as the planned pre-departure sequence will be maintained.
- 13.4 In a situation when a departing aircraft is occupying a gate that has been assigned to an arriving aircraft, the departing aircraft will be instructed by GMP to contact Singapore Ground Movement Control for pushback for the purpose of better gate utilisation.
- 13.5 To maximise runway utilisation, departure sequence will be planned on the basis of increasing runway throughput so as to enhance overall efficiency.

14 GROUND MOVEMENT PLANNER ON VHF 121.65MHz

- 14.1 The frequency shall be used for aircraft pre-flight checks and ATC clearances. Pilot-in-command to make his initial call from the parked position on this frequency.

15 GROUND MOVEMENT CONTROL ON VHF 124.3MHz, 121.85MHz AND 121.725MHz

- 15.1 This frequency shall be used for aircraft start-up/push-back clearance.
- 15.2 Unless otherwise instructed by ATC, the pilot-in-command shall prior to starting engines listen out on the Ground Movement Control frequency on 124.3MHz, 121.85MHz or 121.725MHz.
- 15.3 The pilot-in-command shall:
- a. Request and obtain taxi instructions prior to taxiing;
Note: ATC clearance, including the assigned SSR code will normally be issued prior to push back. Pilot shall squawk the SSR code immediately when airborne.
 - b. Change from Ground Movement Control frequency to the Runway Control frequency when instructed (118.6MHz or 118.25MHz). It should be noted that when instructed to monitor Singapore Tower frequencies, pilots shall not establish contact with Singapore Tower; rather, pilots shall maintain a listening watch on the assigned Singapore Tower frequency and wait for instruction. This is to prevent unnecessary frequency congestion.
- 15.4 Departing aircraft will be instructed when to change from 118.6MHz or 118.25MHz to Singapore Departure frequency 120.3MHz.
- 15.5 In the case of the aircraft having landed, the pilot-in-command shall change from 118.6MHz or 118.25MHz to 124.3MHz, 121.85MHz or 121.725MHz immediately upon instructed by ATC after clearing the runway. He shall maintain watch on 124.3MHz, 121.85MHz or 121.725MHz for taxiing and parking instructions until he arrives at his aircraft stand.

16 TAXIING

- 16.1 Taxi clearance given by Singapore Ground Movement Control will relate to movement on the manoeuvring area, but excluding the marshalling area.
- 16.2 Aircraft taxiing on the manoeuvring area will be regulated by ATC to avoid or reduce possible conflict and will be provided with traffic information and alerting service. ATC shall apply taxiing clearance limits whenever necessary.
- 16.3 The taxiway routes to be used by aircraft after landing or when taxiing for departure will be specified by ATC. The issuance by ATC of a taxi route to an aircraft does not relieve the pilot-in-command of the responsibility to maintain separation with other aircraft on the manoeuvring area or to comply with ATC directions intended to regulate aircraft on the manoeuvring area.
- 16.4 Pilots are reminded to always use minimum power when starting engines, when manoeuvring within the apron area or when manoeuvring from apron taxiways to other parts of the aerodrome. It is especially critical when commencing to taxi that break-away thrusts are kept to an absolute minimum and then be reduced to idle thrusts as soon as possible.

17 TAKE-OFF AND LANDING

17.1 Departing aircraft will normally be directed by ATC to use the full length of the runway for take-off. On obtaining an ATC clearance the aircraft shall enter the runway via designated taxiways:

RWY 02C - TWY E10 or E11

RWY 02L - TWY W8, W9 or W10

RWY 20C - TWY E1, E2

RWY 20R - TWY W1, W2

17.2 The pilot-in-command shall not take-off or land without a clearance from Aerodrome Control.

17.3 The pilot-in-command shall not run-up on the runway in use unless authorised by Aerodrome Control. Engine run-ups in the holding pan or taxiway holding point clear of the runway in use may be carried out subject to approval by Aerodrome Control.

17.4 After landing, the pilot-in-command shall vacate the runway by the shortest suitable route and to contact Singapore Ground Movement Control who will issue specific taxi route instructions to its assigned aircraft stand.

17.5 Aircraft with radio communication failure shall vacate the runway and stop on the taxiway and watch for light signals from Aerodrome Control.

18 RNAV_(GNSS) SIDs and STARs**18.1 INTRODUCTION**

18.1.1 The RNAV_(GNSS) SIDs and STARs are designed in accordance with the ICAO RNAV_(GNSS) Departure and Arrival criteria as stipulated in the ICAO PANS-OPS (Doc 8168) Volume II.

18.1.2 For RNAV_(GNSS) SIDs and STARs operations, the aircraft shall be GNSS-equipped and the navigation systems shall meet ICAO RNP-1 standard of accuracy, or equivalent, such as JAA TGL 10 or FAA AC 90-96A Appendix 2 - Precision Area Navigation (P-RNAV).

18.1.3 To avoid proliferation of SIDs and STARs, the basic RNAV SIDs and STARs have been modified to follow similar tracks as the RNAV_(GNSS) SIDs and STARs using the same set of SIDs and STARs identification.

18.1.4 Operators/pilots who are not approved to fly the RNAV_(GNSS) SIDs and STARs shall fly the alternate basic RNAV SIDs and STARs or expect radar vectors from ATC.

18.2 ARRIVALS

18.2.1 STARs are presented in diagrammatic and textual format on a chart which comprises two main elements:

- a. A TRANSITION route; and
- b. An ARRIVAL route.

18.2.2 A TRANSITION starts at a waypoint on the ATS route and then requires VOR/DME or RNAV tracking to position the aircraft for the ARRIVAL route.

18.2.3 All arriving aircraft are required to follow the appropriate TRANSITION and ARRIVAL routes. The TRANSITION routes are as follows:

ATS Route	Transition	Transition Route	RNAV STAR
A464 (southbound to Singapore)	ARAMA	ARAMA-BOBAG	BOBAG ARRIVAL
A576(southbound to Singapore)	REKOP	REKOP - BOBAG	
R469	No transition	No transition	
B469 (southbound to Singapore)	BIKTA	BIKTA - PIBAP - PASPU	PASPU ARRIVAL
L642	VEPLI	VEPLI - VINIL - PIBAP - PASPU	
N892	MABAL	MABAL - KILOT - VINIL - PIBAP - PASPU	
G579	No transition	No transition	REMES ARRIVAL
L504	OBDOS	OBDOS-IKAGO-IKIMA-IBULA-LAVAX	LAVAX ARRIVAL
M635	SURGA	SURGA-IKAGO-IKIMA-IBULA-LAVAX	
M774	OBDOS	OBDOS-IKAGO-IKIMA-IBULA-LAVAX	
M767 / G580	TOMAN	TOMAN-KARTO-KEXAS-LAVAX	
M646 / G580			
G580			
Note: Aircraft landing at Singapore Changi Airport operating on N891, M753 and L642 shall flight plan only on L642 after ENREP			

18.2.4 Additional elements on the STAR chart include the following:

- Vertical restrictions*, designed to contain aircraft in controlled airspace and to separate aircraft from obstacles and to avoid, to the degree possible, conflict with departing traffic.
- Speed restrictions*, designed for flow control purposes.
- Minimum safe altitude (MSA)* within 25NM of VTK and SJ DVOR/DME. The MSA provides a minimum of 1000ft vertical clearance within 5NM of any obstacle.

18.2.5 Arrivals to Singapore Changi Airport can expect radar vectors to intercept the localizer for an ILS approach after the initial approach fix on the RNAV STARs.

18.2.6 STARs shall be issued by ATC in the following order:

- ARRIVAL identifier;
- TRANSITION identifier;
- Runway-in-use;
- An assigned level

Example:

<Callsign>cleared to Singapore via PASPU 1A ARRIVAL, VEPLI TRANSITION, Runway 02, maintain / descend to flight level one five zero.

18.3 DEPARTURES

18.3.1 All departing aircraft will be cleared on the appropriate RNAV_(GNSS) SID and shall climb initially to 3,000ft.

18.3.2 Operators are to note that RNAV_(GNSS) SIDs VENPA 1A and VENPA 1B will be assigned to departures from Singapore Changi Airport that flight plan to destinations south of Singapore on ATS routes L504, M635 and M774.

The TRANSITION routes are:

ATS Route	Transition	Transition Route	RNAV SID
L504	BAVUS	VENPA - ATKAX - BAVUS	VENPA DEPARTURE
M635	SURGA	VENPA - VENIX - SURGA	VENPA DEPARTURE
M753	No transition	IDSEL - T611 - IPRIX - M753	IDSEL DEPARTURE
M771	No transition	IDSEL - T612 - DOLOX - M771	IDSEL DEPARTURE
M774	KADAR	VENPA - ATKAX -KADAR	VENPA DEPARTURE
N884	Not available for flight planning between VMR and LUSMO. Flight plan via TOMAN L625 LUSMO		TOMAN DEPARTURE

18.4 TRANSITION

18.4.1 Aircraft may be radar vectored off a Transition / RNAV SID / RNAV STAR. Such aircraft will subsequently be given an instruction to intercept the appropriate Transition / RNAV SID / RNAV STAR.

18.5 VERTICAL AND SPEED RESTRICTIONS

18.5.1 Pilots shall comply with an ATC assigned level. Pilots shall also adhere to the vertical and speed restrictions depicted on the cleared Transition and RNAV_(GNSS)SIDs / 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 Transition and RNAV_(GNSS)SIDs / STARs.

18.6 OPERATORS' PROCEDURES

18.6.1 The operator shall ensure that in-flight procedures, crew manuals and training programmes are established in accordance with RNAV requirements.

18.6.2 Pilots shall inform ATC when on-board equipment does not meet the requirements of RNAV. Pilots can then expect radar vector from ATC.

19 COORDINATES OF SID/STAR WAYPOINTS (WGS84 DATUM)

	Name	Latitude	Longitude	Radius/Distance from VTK	Radius/Distance from SJ
←	ABVIP	010008N	1035032E	VTK R-203.5 / D27.0	SJ R-183.5 / D13.2
←	ADMIM	005733N	1033033E	VTK R-228.4 / D41.2	SJ R-232.8 / D26.1
←	AGROT	010108N	1035808E	VTK R-187.7 / D24.0	SJ R-150.8 / D14.0
←	AGVAR	014719N	1034145E	VTK R-318.8 / D29.8	SJ R-344.3 / D35.3
←	AKMET	015355N	1034339E	VTK R-328.6 / D34.0	SJ R-349.3 / D41.3
	AKOMA	014522N	1035443E	VTK R-342.0 / D21.4	SJ R-006.2 / D32.0
←	ALFA	013033N	1034942E	VTK R-295.7 / D12.9	SJ R-354.8 / D17.2
	ANITO	001700S	1045200E	VTK R-153.4 / D113.4	SJ R-146.0 / D108.6
	ARAMA	013654N	1030712E	VTK R-282.4 / D55.5	SJ R-298.0 / D50.0
←	AROSO	020846N	1032421E	VTK R-319.9 / D57.4	SJ R-334.0 / D61.7
	ASUNA	005948N	1030954E	VTK R-244.1 / D57.3	SJ R-252.0 / D43.6
←	ATKAX	000512N	1065946E	VTK R-113.9 / D195.5	SJ R-109.7 / D200.6
←	ATRUM	013256N	1040057E	VTK R-357.3 / D8.0	SJ R-026.1 / D21.8
←	BAVUS	000000N	1090000E	VTK R-105.9 / D310.5	SJ R-103.4 / D317.3
←	BELVA	025341N	1033836E	VTK R-345.6 / D91.2	SJ R-352.5 / D100.7
←	BETBA	013302N	1035331E	VTK R-316.1 / D11.3	SJ R-006.3 / D19.8
←	BIBVI	024336N	1040618E	VTK R-003.5 / D78.4	SJ R-009.6 / D91.1
	BIDUS	013554N	1035755E	VTK R-326.0 / D13.2	SJ R-006.9 / D22.6
	BIPOP	013122N	1041018E	VTK R-054.5 / D11.0	SJ R-046.8 / D26.2
	BOBAG	010230N	1032954E	VTK R-234.7 / D38.6	SJ R-243.2 / D24.0
	BOKIP	010421N	1034353E	VTK R-220.5 / D27.0	SJ R-219.5 / D11.6
	BTM	010813N	1040758E	VTK R-158.2 / D17.9	SJ R-107.0 / D17.5
←	DIVSA	011105N	1040303E	VTK R-172.9 / D13.9	SJ R-100.8 / D11.9
←	DOGRA	010525N	1041423E	VTK R-146.2 / D23.5	SJ R-108.9 / D24.4
	DOKTA	012606N	1041040E	VTK R-083.0 / D9.4	SJ R-057.0 / D23.2
←	DONDI	011252N	1035855E	VTK R-191.3 / D12.3	SJ R-093.4 / D7.6
	DOSNO	004757N	1041409E	VTK R-160.8 / D39.0	SJ R-137.8 / D34.1
←	DOSPA	011459N	1040441E	VTK R-161.4 / D10.5	SJ R-082.9 / D13.5
	DOVAN	011938N	1041249E	VTK R-114.6 / D12.7	SJ R-073.9 / D22.5
←	ELALO	041240N	1043329E	VTK R-010.6 / D169.9	SJ R-013.4 / D183.3
←	HOSBA	011948N	1042418E	VTK R-102.5 / D23.6	SJ R-079.0 / D33.7
←	IBIBI	011503N	1035707E	VTK R-203.1 / D10.7	SJ R-073.4 / D6.0
←	IBIVA	011351N	1035637E	VTK R-203.1 / D12.0	SJ R-084.3 / D5.3
←	IBIXU	011621N	1035740E	VTK R-203.2 / D9.3	SJ R-064.4 / D7.0
←	IBULA	005036N	1043600E	VTK R-134.5 / D48.7	SJ R-116.8 / D50.2
←	IDSEL	032432N	1035544E	VTK R-357.3 / D119.1	SJ R-002.0 / D130.6
	IGNON	010847N	1041257E	VTK R-144.1 / D19.8	SJ R-101.8 / D22.2
	IKAGO	003816N	1052931E	VTK R-117.7 / D99.8	SJ R-109.5 / D104.4
	IKIMA	004314N	1045500E	VTK R-127.6 / D67.9	SJ R-115.1 / D70.5

Name	Latitude	Longitude	Radius/Distance from VTK	Radius/Distance from SJ
JB (JAYBEE)	013000N	1034242E	VTK R-285.1 / D19.3	SJ R-332.6 / D18.6
← KADAR	000647S	1074342E	VTK R-112.4 / D240.5	SJ R-109.0 / D245.8
KANLA	034556N	1043606E	VTK R-013.8 / D144.5	SJ R-016.5 / D158.3
KARTO	011124N	1053343E	VTK R-098.3 / D93.5	SJ R-091.1 / D102.6
KEXAS	011019N	1044818E	VTK R-107.2 / D49.2	SJ R-093.0 / D57.2
KILOT	030217N	1044023E	VTK R-022.0 / D104.5	SJ R-024.4 / D119.0
LAVAX	010950N	1042714E	VTK R-120.1 / D30.0	SJ R-095.5 / D36.2
← LEDOX	011642N	1035651E	VTK R-208.6 / D9.4	SJ R-058.5 / D6.5
← LEGAS	011524N	1035618E	VTK R-207.9 / D10.8	SJ R-067.3 / D5.4
LELIB	012729N	1032450E	VTK R-274.0 / D36.6	SJ R-298.0 / D30.0
← LETGO	011411N	1035548E	VTK R-207.3 / D12.1	SJ R-079.1 / D4.6
MABAL	032826N	1051236E	VTK R-030.1 / D142.1	SJ R-031.2 / D157.2
← MASBO	020248N	1025251E	VTK R-299.0 / D78.3	SJ R-310.2 / D76.6
NYLON	013657N	1040624E	VTK R-023.0 / D13.0	SJ R-032.9 / D30.0
← OBDOS	002503N	1065551E	VTK R-108.9 / D184.5	SJ R-104.7 / D190.7
← PALGA	011059N	1034759E	VTK R-223.8 / D19.3	SJ R-235.1 / D4.1
← PAMSI	010459N	1034845E	VTK R-212.3 / D23.6	SJ R-197.2 / D8.7
PASPU	015915N	1040618E	VTK R-008.3 / D34.5	SJ R-018.3 / D48.1
PIBAP	023023N	1040618E	VTK R-004.4 / D65.3	SJ R-011.1 / D78.1
POSUB	012725N	1040748E	VTK R-069.0 / D6.9	SJ R-049.8 / D21.7
← PU	012524N	1035600E	VTK R-275.2 / D5.4	SJ R-021.1 / D13.0
REMES	004342N	1035735E	VTK R-185.2 / D41.2	SJ R-167.9 / D30.2
REPOV	001623N	1040300E	VTK R-178.6 / D68.2	SJ R-168.3 / D57.9
← RUVIK	011422N	1042033E	VTK R-118.8 / D21.9	SJ R-088.0 / D29.2
RWY 02C DER	012152N	1040000E	VTK R-203.5 / D3.3	SJ R-046.0 / D12.2
RWY 02L DER	012305N	1035933E	VTK R-224.1 / D2.5	SJ R-040.6 / D12.8
RWY 20C DER	011935N	1035902E	VTK R-203.3 / D5.8	SJ R-051.5 / D10.0
RWY 20R DER	012047N	1035835E	VTK R-213.7 / D4.9	SJ R-044.8 / D10.4
← SABKA	015051N	1031713E	VTK R-300.4 / D51.2	SJ R-317.7 / D50.7
SAMKO	010530N	1035255E	VTK R-203.5 / D21.1	SJ R-168.0 / D8.0
SANAT	010749N	1035930E	VTK R-186.1 / D17.1	SJ R-123.7 / D9.9
SJ (SINJON)	011319N	1035120E	-	-
← SURGA	003657S	1063119E	VTK R-129.1 / D193.3	SJ R-124.6 / D194.3
TOKIM	012933N	1040315E	VTK R-022.7 / D5.0	SJ R-036.7 / D20.1
TOMAN	012147N	1054717E	VTK R-091.7 / D106.2	SJ R-085.9 / D116.5
TOPOM	012955N	1040227E	VTK R-012.8 / D5.1	SJ R-034.2 / D20.0
VENIX	002156S	1060521E	VTK R-130.6 / D163.5	SJ R-125.3 / D164.3
VENPA	002141N	1044955E	VTK R-142.3 / D79.6	SJ R-131.2 / D78.1
VMR	022318N	1035218E	VTK R-351.2 / D58.8	SJ R-000.9 / D69.6
VTK (TEKONG)	012455N	1040120E	-	-

20 SID / STAR PHRASEOLOGIES

- 20.1 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.
- 20.2 The core phraseologies are:
- CLIMB VIA SID TO (level)
 - DESCEND VIA STAR TO (level)
- 20.3 These require the aircraft to:
- 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.

20.4 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))

20.5 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.

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

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

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

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

20.9 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.

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

21 ARRIVING AIRCRAFT

21.1 The pilot-in-command of an arriving aircraft shall contact the appropriate Approach Control Unit 10 minutes before entering the CTR or ATZ.

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.

22.3 All such operations will be regulated in accordance with IFR procedures.

23 SIMULTANEOUS INDEPENDENT PARALLEL APPROACHES

23.1 Introduction

23.1.1 Simultaneous independent parallel approaches will be implemented daily between 0000UTC and 1500UTC to optimize runway utilization and enhance air traffic efficiency.

← 23.2 Procedures for simultaneous independent parallel approaches

23.2.1 To ensure safe operations between aircraft on parallel approaches, Normal Operating Zones (NOZs) are established for each extended runway centreline and a No Transgression Zone (NTZ) is established between the NOZs.

← 23.2.2 ATC will vector arriving flights into Singapore Changi Airport from the final waypoint of the respective STARs to the respective NOZs.

23.2.3 Within the NOZ, ATC shall provide a minimum vertical separation of 1,000ft or 3NM surveillance separation between pairs of aircraft until both aircraft are established on the ILS Localizer course.

23.2.4 ATC is not required to provide separation between aircraft on adjacent ILS Localizers and will monitor aircraft for deviation from the approach path.

- 23.2.5 Aircraft can expect to maintain altitude 3,500ft till Glide Path Interception for Runway 20R / 02L and 2,500ft till Glide Path Interception for Runway 20C / 02C. This is to ensure the necessary vertical separation prior to establishing on the respective ILS Localizer course.
- 23.2.6 Aircraft can expect the following radiotelephony phraseology when intercepting the ILS:
- a. to intercept the Localizer before clearing for ILS
- “TURN LEFT (RIGHT) HEADING (three digits) MAINTAIN (altitude) REPORT ESTABLISHED ON THE LOCALIZER RUNWAY (number) LEFT (CENTRE / RIGHT)”**
- followed by ...
- “MAINTAIN (altitude), CLEARED FOR ILS APPROACH RUNWAY (number) LEFT (CENTRE/RIGHT)”**
- or
- b. to intercept ILS
- “TURN LEFT (RIGHT) HEADING (three digits) MAINTAIN (altitude) CLEARED FOR ILS APPROACH RUNWAY (number) LEFT (CENTRE / RIGHT)”**
- 23.2.7 Aircraft can expect to maintain speed 180kt at base turn or earlier till 8NM from touchdown.

23.3 *Break-out manoeuvre*

- 23.3.1 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”

- 23.3.2 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)”**

23.4 *Pilot notification and conditions for operations*

- 23.4.1 Simultaneous approaches to parallel runways operation will be broadcasted on ATIS during the active period.
- ← 23.4.2 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 300g each)
 - grey herons (weighing approximately 500g each)
 - brahminy kites (weighing approximately 600g each)
- 1.2 There could be an increase in bird activities during the migratory months of September to April. During this period, migratory birds may use the airport as their feeding ground.
- 1.3 Handheld laser device, long range acoustic device and alternating amplified bird cries of distress are used for bird dispersal within Singapore Changi Airport.

WSSS AD 2.24 CHARTS RELATED TO AN AERODROME

Location of RWY 02R/20L in relation to RWY 02L/20R and RWY 02C/20C	AD-2-WSSS-ADC-1
Aerodrome Chart - ICAO	AD-2-WSSS-ADC-2
Aerodrome Advisory Chart - 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
Precision Approach Terrain Chart - ICAO - RWY 02L	AD-2-WSSS-PATC-1
Precision Approach Terrain Chart - ICAO - RWY 20C	AD-2-WSSS-PATC-2
RNAV_(GNSS) SIDs and STARs - Introduction	
RNAV _(GNSS) SID - RWY 02L/20R - ANITO 6E/ANITO 6F	AD-2-WSSS-SID-1 to 1.1
RNAV _(GNSS) SID - RWY 02C/20C - ANITO 6A / ANITO 6B	AD-2-WSSS-SID-2 to 2.1
RNAV _(GNSS) SID - RWY 02L/20R - ADMIM 1E / ADMIM 2F	AD-2-WSSS-SID-3 to 3.1
RNAV _(GNSS) SID - RWY 02C/20C - ADMIM 1A / ADMIM 2B	AD-2-WSSS-SID-4 to 4.1
RNAV _(GNSS) SID - RWY 02L/20R - TOMAN 2E / TOMAN 3F	AD-2-WSSS-SID-5 to 5.1
RNAV _(GNSS) SID - RWY 02C/20C - TOMAN 2A / TOMAN 3B	AD-2-WSSS-SID-6 to 6.1
RNAV _(GNSS) SID - RWY 02L/20R - BAVUS 1E / BAVUS 2F	AD-2-WSSS-SID-7 to 7.1
RNAV _(GNSS) SID - RWY 02C/20C - BAVUS 1A / BAVUS 2B	AD-2-WSSS-SID-8 to 8.1
RNAV _(GNSS) SID - RWY 02L/20R - AROSO 2E / AROSO 3F	AD-2-WSSS-SID-9 to 9.1
RNAV _(GNSS) SID - RWY 02L/20R - MASBO 2E / MASBO 3F	AD-2-WSSS-SID-10 to 10.1
RNAV _(GNSS) SID - RWY 02C/20C - AROSO 2A / AROSO 3B	AD-2-WSSS-SID-11 to 11.1
RNAV _(GNSS) SID - RWY 02C/20C - MASBO 2A / MASBO 3B	AD-2-WSSS-SID-12 to 12.1
RNAV _(GNSS) SID - RWY 02L/20R - MERSING 5E / MERSING 7F	AD-2-WSSS-SID-13 to 13.1
RNAV _(GNSS) SID - RWY 02C/20C - MERSING 5A / MERSING 7B	AD-2-WSSS-SID-14 to 14.1
RNAV _(GNSS) SID - RWY 02C/20C - VENIX 1A / VENIX 2B	AD-2-WSSS-SID-15 to 15.1
RNAV _(GNSS) SID - RWY 02L/20R - VENIX 1E / VENIX 2F	AD-2-WSSS-SID-16 to 16.1
RNAV _(GNSS) SID - RWY 02C/20C - KADAR 1A / KADAR 2B	AD-2-WSSS-SID-17 to 17.1
RNAV _(GNSS) SID - RWY 02L/20R - KADAR 1E / KADAR 2F	AD-2-WSSS-SID-18 to 18.1
RNAV _(GNSS) SID - RWY 02C/20C - IDSEL 1A / IDSEL 1B	AD-2-WSSS-SID-19 to 19.1
RNAV _(GNSS) SID - RWY 02L/20R - IDSEL 1 E / IDSEL 1F	AD-2-WSSS-SID-20 to 20.1
RNAV _(GNSS) STAR - RWY 02L/02C - ARAMA 1A	AD-2-WSSS-STAR-1 to 1.1
RNAV _(GNSS) STAR - RWY 02L/02C - ASUNA 1A	AD-2-WSSS-STAR-2 to 2.1
RNAV _(GNSS) STAR - RWY 20R/20C - ARAMA 1B	AD-2-WSSS-STAR-3 to 3.1
RNAV _(GNSS) STAR - RWY 20R/20C - ASUNA 1B	AD-2-WSSS-STAR-4 to 4.1
RNAV _(GNSS) STAR - RWY 02L/02C - KARTO 1A	AD-2-WSSS-STAR-5 to 5.1
RNAV _(GNSS) STAR - RWY 02L/02C - OBDOS 1A	AD-2-WSSS-STAR-6 to 6.1
RNAV _(GNSS) STAR - RWY 20R/20C - KARTO 1B	AD-2-WSSS-STAR-7 to 7.1
RNAV _(GNSS) STAR - RWY 20R/20C - OBDOS 1B	AD-2-WSSS-STAR-8 to 8.1
RNAV _(GNSS) STAR - RWY 20R/20C - LELIB 3B	AD-2-WSSS-STAR-9 to 9.1
RNAV _(GNSS) STAR - RWY 02L/02C - BELVA 1A	AD-2-WSSS-STAR-10 to 10.1
RNAV _(GNSS) STAR - RWY 02L/02C - MABAL 2A	AD-2-WSSS-STAR-11 to 11.1
RNAV _(GNSS) STAR - RWY 20R/20C - BELVA 1B	AD-2-WSSS-STAR-12 to 12.1
RNAV _(GNSS) STAR - RWY 20R/20C - MABAL 2B	AD-2-WSSS-STAR-13 to 13.1
RNAV _(GNSS) STAR - RWY 02L - LEBAR 2A	AD-2-WSSS-STAR-14 to 14.1
RNAV _(GNSS) STAR - RWY 20R - LEBAR 2B	AD-2-WSSS-STAR-15 to 15.1
RNAV _(GNSS) STAR - RWY 02L/02C - REPOV 1A	AD-2-WSSS-STAR-16 to 16.1
RNAV _(GNSS) STAR - RWY 02L/02C - SURGA 1A	AD-2-WSSS-STAR-17 to 17.1
RNAV _(GNSS) STAR - RWY 20R/20C - REPOV 1B	AD-2-WSSS-STAR-18 to 18.1
RNAV _(GNSS) STAR - RWY 20R/20C - SURGA 1B	AD-2-WSSS-STAR-19 to 19.1
RNAV _(GNSS) STAR - RWY 02L/02C - ELALO 1A	AD-2-WSSS-STAR-20 to 20.1
RNAV _(GNSS) STAR - RWY 20R/20C - ELALO 1B	AD-2-WSSS-STAR-21 to 21.1
Instrument Approach Chart - ICAO - RWY 02L - ICW ILS/DME	AD-2-WSSS-IAC-1
Instrument Approach Chart - ICAO - RWY 02C - ICE ILS/DME	AD-2-WSSS-IAC-2
Instrument Approach Chart - ICAO - RWY 20R - ICH ILS/DME	AD-2-WSSS-IAC-5
Instrument Approach Chart - ICAO - RWY 20C - ICC ILS/DME	AD-2-WSSS-IAC-6
Instrument Approach Chart - ICAO - RWY 20C - VTK DVOR/DME	AD-2-WSSS-IAC-7
Instrument Approach Chart - ICAO - RWY 02L - RNAV _(GNSS)	AD-2-WSSS-IAC-9
Instrument Approach Chart - ICAO - RWY 02C - RNAV _(GNSS)	AD-2-WSSS-IAC-10
Instrument Approach Chart - ICAO - RWY 20R - RNAV _(GNSS)	AD-2-WSSS-IAC-11

Instrument Approach Chart - ICAO - RWY 20C - RNAV _(GNSS)	AD-2-WSSS-IAC-12
Visual Approach Chart - ICAO	AD-2-WSSS-VAC-1

AERODROME CHART - ICAO

01° 21' 33"N
103° 59' 22"E

AERODROME ELEVATION 6.66m

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

SINGAPORE/SINGAPORE CHANGI

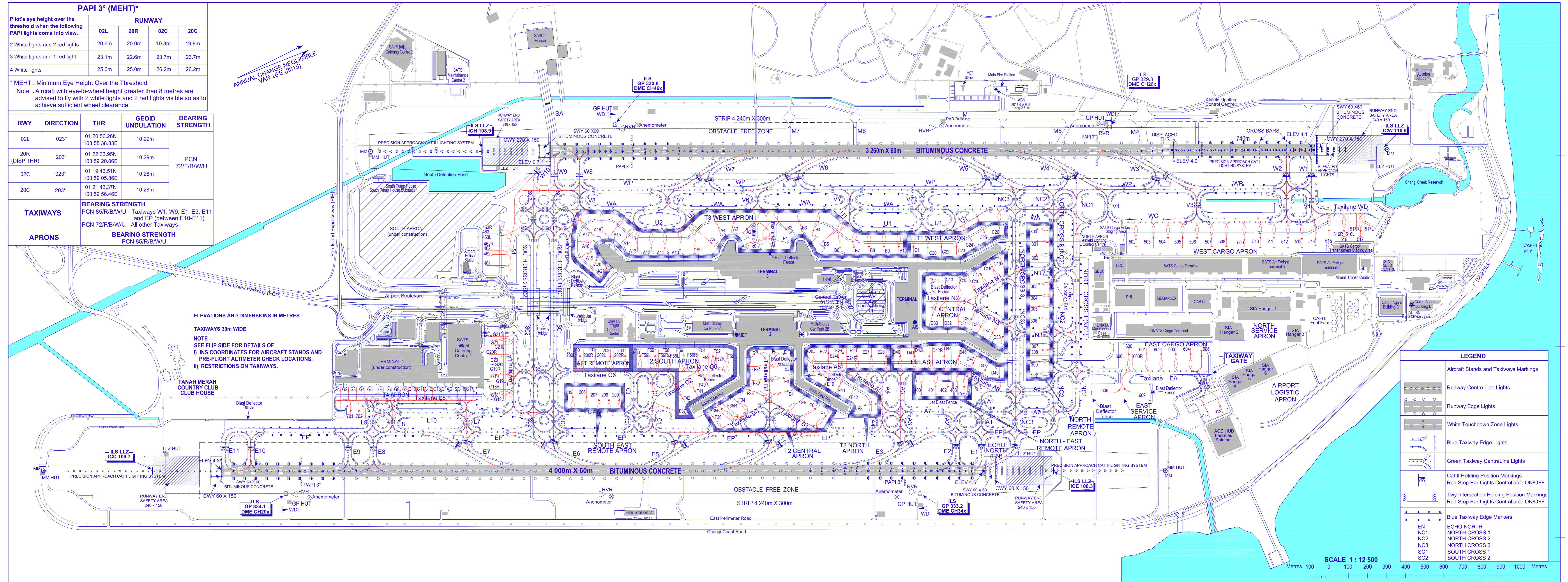
PAPI 3° (MEHT)*				
Pilot's eye height over the threshold when the following PAPI lights come into view.	RUNWAY			
	02L	20R	02C	20C
2 White lights and 2 red lights	20.6m	20.0m	19.8m	19.8m
3 White lights and 1 red light	23.1m	22.6m	23.7m	23.7m
4 White lights	25.6m	25.0m	26.2m	26.2m

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

RWY	DIRECTION	THR	GEOID UNDULATION	BEARING STRENGTH
02L	023°	01 20 56.28N 103 58 38.83E	10.29m	PCN 72/F/B/W/U
20R (DISP THR)	203°	01 22 33.95N 103 59 20.06E	10.29m	
02C	023°	01 19 43.51N 103 59 05.86E	10.28m	
20C	203°	01 21 43.37N 103 59 56.46E	10.28m	

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

APRONS BEARING STRENGTH
PCN 85/R/B/W/U



LEGEND

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

EN ECHO NORTH
NC1 NORTH CROSS 1
NC2 NORTH CROSS 2
NC3 NORTH CROSS 3
SC1 SOUTH CROSS 1
SC2 SOUTH CROSS 2

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

LOCATION	STAND NR	NORTH LAT	EAST LONG	ELEVATION	
T3 WEST APRON	A1	01 21 21.52	103 59 06.25	4.75m (15.58ft)	
	A2	01 21 21.75	103 59 04.00	4.65m (15.26ft)	
	A3	01 21 19.96	103 59 02.79	4.69m (15.29ft)	
	A4	01 21 17.61	103 59 02.54	4.79m (15.72ft)	
	A5	01 21 15.50	103 59 03.62	4.86m (15.94ft)	
	A9	01 21 12.56	103 59 03.65	5.02m (16.47ft)	
	A10	01 21 10.34	103 59 02.40	5.04m (16.54ft)	
	A11	01 21 07.93	103 59 01.41	5.25m (17.22ft)	
	A12	01 21 05.76	103 59 00.49	5.38m (17.65ft)	
	A13	01 21 03.59	103 58 59.58	5.48m (17.98ft)	
	A14	01 21 01.66	103 58 57.59	5.57m (18.27ft)	
	A15	01 21 00.77	103 58 55.41	5.46m (17.91ft)	
	A16	01 20 59.27	103 58 54.20	5.51m (18.08ft)	
	A17	01 20 57.25	103 58 54.06	5.23m (17.16ft)	
	A18	01 20 55.87	103 58 55.25	5.37m (17.62ft)	
	A19	01 20 55.26	103 58 55.25	5.40m (17.72ft)	
	A20	01 20 56.09	103 58 58.83	5.45m (17.88ft)	
	A21	01 20 57.10	103 59 00.80	5.49m (18.01ft)	
T3 NORTH APRON	B1	01 21 26.86	103 59 08.37	4.82m (15.81ft)	
	B2	01 21 28.18	103 59 06.82	4.68m (15.35ft)	
	B3	01 21 30.33	103 59 07.30	4.65m (15.26ft)	
	B4	01 21 32.03	103 59 08.60	4.75m (15.58ft)	
	B5	01 21 32.98	103 59 10.89	4.80m (15.75ft)	
	B6	01 21 35.15	103 59 13.16	4.96m (16.27ft)	
	B7	01 21 37.65	103 59 13.93	4.97m (16.31ft)	
	B8	01 21 39.94	103 59 15.20	5.09m (16.70ft)	
	B9	01 21 42.19	103 59 16.16	5.13m (16.83ft)	
	B10	01 21 44.47	103 59 17.12	5.10m (16.73ft)	
T1 WEST APRON	C1	01 21 46.75	103 59 18.08	5.09m (16.70ft)	
	C20	01 21 48.83	103 59 19.23	5.08m (16.67ft)	
	C22	01 21 51.00	103 59 20.13	5.15m (16.90ft)	
	C23	01 21 53.56	103 59 20.77	5.08m (16.67ft)	
	C24	01 21 56.54	103 59 20.97	4.89m (16.04ft)	
	C25	01 21 59.12	103 59 20.59	4.99m (16.37ft)	
C26	01 22 01.48	103 59 20.76	5.01m (16.44ft)		
T1 CENTRAL APRON	C11	01 21 47.42	103 59 23.82	5.07m (16.63ft)	
	C13	01 21 49.64	103 59 24.75	5.05m (16.57ft)	
	C15	01 21 51.90	103 59 25.71	5.05m (16.57ft)	
	C16	01 21 53.63	103 59 26.42	4.91m (16.11ft)	
	C17	01 21 55.83	103 59 26.07	5.03m (16.50ft)	
	C18	01 21 57.86	103 59 25.75	4.99m (16.37ft)	
	C19	01 21 59.79	103 59 25.63	4.95m (16.24ft)	
	D30	01 21 44.54	103 59 30.14	5.09m (16.70ft)	
	D32	01 21 46.73	103 59 31.07	5.08m (16.67ft)	
D34	01 21 49.03	103 59 32.04	5.07m (16.63ft)		
D35	01 21 50.87	103 59 32.82	5.02m (16.47ft)		
D36	01 21 51.98	103 59 34.52	5.06m (16.60ft)		
D37	01 21 53.37	103 59 36.28	4.97m (16.31ft)		
D38	01 21 54.58	103 59 37.77	4.99m (16.37ft)		
T1 EAST APRON	D40	01 21 38.13	103 59 32.89	5.07m (16.63ft)	
	D41	01 21 40.30	103 59 33.81	5.07m (16.63ft)	
	D42	01 21 42.77	103 59 34.58	5.15m (16.89ft)	
	D42L	01 21 42.00	103 59 34.47	5.12m (16.79ft)	
	D42R	01 21 43.45	103 59 34.44	5.21m (17.09ft)	
	D44	01 21 44.97	103 59 35.44	5.14m (16.86ft)	
	D46	01 21 47.40	103 59 36.72	5.08m (16.67ft)	
	D47	01 21 49.19	103 59 38.89	4.93m (16.17ft)	
	D48	01 21 50.80	103 59 40.77	4.97m (16.31ft)	
	D49	01 21 52.23	103 59 42.35	4.98m (16.34ft)	
	T2 NORTH APRON	E8	01 21 27.99	103 59 38.45	4.68m (15.35ft)
		E10	01 21 24.15	103 59 32.67	4.71m (15.45ft)
		E11	01 21 25.57	103 59 34.37	4.78m (15.68ft)
		E12	01 21 27.20	103 59 36.42	4.75m (15.58ft)
E20		01 21 24.36	103 59 27.08	5.04m (16.54ft)	
E22		01 21 26.64	103 59 28.04	5.07m (16.63ft)	
E24		01 21 29.01	103 59 29.06	5.09m (16.70ft)	
E24L		01 21 28.32	103 59 28.77	5.10m (16.73ft)	
E24R	01 21 29.53	103 59 29.28	5.08m (16.67ft)		
E26	01 21 31.19	103 59 29.96	5.08m (16.67ft)		
E27	01 21 33.46	103 59 30.93	5.03m (16.50ft)		
E28	01 21 35.74	103 59 31.89	5.08m (16.67ft)		
T2 CENTRAL APRON	E1	01 21 20.02	103 59 25.58	4.91m (16.11ft)	
	E2	01 21 19.28	103 59 27.30	4.90m (16.08ft)	
	E3	01 21 18.44	103 59 29.27	4.82m (15.81ft)	
	E4	01 21 18.10	103 59 31.70	4.80m (15.75ft)	
	E5	01 21 19.56	103 59 33.72	4.90m (16.08ft)	
	E6	01 21 21.22	103 59 35.93	4.84m (15.88ft)	
	E7	01 21 22.48	103 59 37.46	4.73m (15.52ft)	
F30	01 21 14.71	103 59 23.33	4.92m (16.14ft)		
F31	01 21 13.87	103 59 25.30	4.91m (16.11ft)		
F32	01 21 13.03	103 59 27.26	4.85m (15.91ft)		
F33	01 21 11.30	103 59 28.54	4.91m (16.11ft)		
F34	01 21 08.98	103 59 28.96	4.92m (16.14ft)		
F35	01 21 06.60	103 59 29.55	4.91m (16.11ft)		
F35L	01 21 06.06	103 59 30.13	4.74m (15.55ft)		
F35R	01 21 06.96	103 59 29.05	5.04m (16.54ft)		
F36	01 21 04.34	103 59 29.67	4.82m (15.81ft)		

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

LOCATION	STAND NR	NORTH LAT	EAST LONG	ELEVATION	
T2 SOUTH APRON	F37	01 20 59.83	103 59 27.87	4.75m (15.58ft)	
	F40	01 21 05.62	103 59 25.34	4.85m (15.91ft)	
	F41	01 21 03.19	103 59 25.58	4.82m (15.81ft)	
	F42	01 21 00.61	103 59 25.96	4.72m (15.49ft)	
	F50	01 21 10.69	103 59 21.32	5.03m (16.50ft)	
	F52	01 21 08.51	103 59 20.40	5.11m (16.77ft)	
	F52L	01 21 07.82	103 59 20.11	5.16m (16.93ft)	
	F52R	01 21 09.04	103 59 20.62	5.08m (16.67ft)	
	F54	01 21 06.14	103 59 19.40	5.22m (17.13ft)	
	F56	01 21 03.96	103 59 18.48	5.30m (17.39ft)	
	F56L	01 21 03.27	103 59 18.18	5.42m (17.78ft)	
	F56R	01 21 04.49	103 59 18.70	5.34m (17.52ft)	
	F58	01 21 01.58	103 59 17.47	5.49m (18.01ft)	
	F59	01 20 59.41	103 59 16.55	5.64m (18.50ft)	
F59L	01 20 58.72	103 59 16.26	5.67m (18.60ft)		
F59R	01 20 59.93	103 59 16.78	5.60m (18.37ft)		
F60	01 20 56.91	103 59 15.50	5.77m (18.93ft)		
EAST REMOTE APRON	200	01 20 47.83	103 59 11.67	6.23m (20.44ft)	
	200L	01 20 46.91	103 59 11.92	6.29m (20.64ft)	
	200R	01 20 48.35	103 59 11.89	6.18m (20.28ft)	
	201	01 20 49.99	103 59 12.62	5.96m (19.55ft)	
	202	01 20 52.34	103 59 13.57	5.94m (19.49ft)	
	202L	01 20 51.65	103 59 13.28	5.76m (18.90ft)	
	202R	01 20 52.87	103 59 13.79	5.73m (18.80ft)	
	203	01 20 54.52	103 59 14.47	5.92m (19.42ft)	
	SOUTH-EAST REMOTE APRON	205	01 20 43.91	103 59 17.06	4.77m (15.65ft)
		206	01 20 46.08	103 59 17.98	4.76m (15.62ft)
207		01 20 47.91	103 59 18.88	4.74m (15.55ft)	
208		01 20 49.48	103 59 19.54	4.74m (15.55ft)	
209		01 20 51.06	103 59 20.21	4.75m (15.58ft)	
NORTH REMOTE APRON	300	01 22 06.95	103 59 22.67	4.53m (14.86ft)	
	301	01 22 06.41	103 59 24.69	4.93m (16.17ft)	
	302	01 22 05.21	103 59 26.75	4.97m (16.31ft)	
	303	01 22 03.55	103 59 31.40	5.32m (17.45ft)	
	304	01 22 02.84	103 59 33.06	5.35m (17.55ft)	
	305	01 22 02.14	103 59 34.71	5.30m (17.39ft)	
	306	01 22 01.41	103 59 36.42	5.16m (16.93ft)	
	307	01 21 59.39	103 59 40.36	5.16m (16.93ft)	
	308	01 21 58.96	103 59 41.35	5.10m (16.73ft)	
	309	01 21 58.52	103 59 43.17	5.06m (16.60ft)	
310	01 21 57.42	103 59 44.96	4.74m (15.55ft)		
NORTH-EAST REMOTE APRON	400	01 21 38.71	103 59 40.14	4.31m (14.14ft)	
	401	01 21 40.98	103 59 41.10	4.31m (14.14ft)	
	402	01 21 42.85	103 59 41.89	4.30m (14.11ft)	
	403	01 21 44.37	103 59 42.53	4.29m (14.07ft)	
	404	01 21 45.45	103 59 42.98	4.20m (13.78ft)	
WEST CARGO APRON	502	01 22 22.23	103 59 31.62	4.35m (14.27ft)	
	503	01 22 24.98	103 59 32.78	4.29m (14.07ft)	
	504	01 22 27.26	103 59 33.74	4.29m (14.07ft)	
	505	01 22 29.54	103 59 34.70	4.32m (14.17ft)	
	506	01 22 31.81	103 59 35.66	4.38m (14.37ft)	
	507	01 22 34.11	103 59 36.64	4.36m (14.30ft)	
	508	01 22 36.41	103 59 37.61	4.29m (14.07ft)	
	509	01 22 39.12	103 59 38.76	4.09m (13.42ft)	
	510	01 22 41.37	103 59 40.18	4.19m (13.75ft)	
	511	01 22 43.54	103 59 41.09	4.22m (13.85ft)	
	512	01 22 45.71	103 59 42.01	4.24m (13.91ft)	
	513	01 22 47.89	103 59 42.92	4.26m (13.98ft)	
	514	01 22 50.19	103 59 43.54	4.36m (14.30ft)	
	515	01 22 52.90	103 59 43.20	4.09m (13.43ft)	
516	01 22 55.39	103 59 43.97	4.04m (13.28ft)		
516L	01 22 56.24	103 59 43.80	3.96m (12.99ft)		
516R	01 22 54.93	103 59 43.25	3.95m (12.97ft)		
517	01 22 58.02	103 59 45.08	4.05m (13.27ft)		
517L	01 22 58.83	103 59 44.99	3.98m (13.05ft)		
517R	01 22 57.55	103 59 44.35	3.96m (12.98ft)		
EAST CARGO APRON	600	01 22 14.12	103 59 48.10	4.25m (13.94ft)	
	600L	01 22 13.28	103 59 48.27	4.22m (13.83ft)	
	600R	01 22 14.58	103 59 48.81	4.15m (13.60ft)	
	601	01 22 16.52	103 59 49.27	4.27m (14.01ft)	
	602	01 22 18.80	103 59 50.23	4.30m (14.11ft)	
	603	01 22 21.15	103 59 51.02	4.29m (14.07ft)	
	604	01 22 23.46	103 59 51.99	4.31m (14.14ft)	
	605	01 22 25.19	103 59 52.75	4.27m (14.01ft)	
	EAST SERVICE APRON	606	01 22 10.00	103 59 52.53	2.43m (7.97ft)
		609	01 22 12.95	103 59 55.04	2.91m (9.55ft)
ACEHUB	611	01 22 22.14	104 00 02.87	4.01m (13.16ft)	
	612	01 22 24.50	104 00 02.87	3.91m (12.83ft)	
SOUTH APRON	461	01 20 39.67	103 58 52.75	5.92m (19.42ft)	
	462	01 20 40.69	103 58 50.37	5.92m (19.42ft)	
	462L	01 20 40.41	103 58 51.02	5.92m (19.42ft)	
	462R	01 20 40.97	103 58 49.71	5.92m (19.42ft)	
	463	01 20 41.80	103 58 47.76	5.92m (19.42ft)	
	463L	01 20 41.52	103 58 48.42	5.92m (19.42ft)	
	463R	01 20 42.06	103 58 47.17	5.92m (19.42ft)	

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

LOCATION	STAND NR	NORTH LAT	EAST LONG	ELEVATION
T4 APRON	G1	01 20 07.58	103 59 00.97	3.95m (12.96ft)
	G2	01 20 08.88	103 59 01.52	3.95m (12.96ft)
	G3	01 20 10.18	103 59 02.07	3.95m (12.96ft)
	G4	01 20 11.48	103 59 02.07	3.94m (12.93ft)
	G5	01 20 12.77	103 59 03.17	3.94m (12.93ft)
	G6	01 20 14.49	103 59 03.89	3.93m (12.89ft)
	G7	01 20 15.70	103 59 04.57	3.89m (12.76ft)
	G8	01 20 17.01	103 59 05.12	3.85m (12.63ft)
	G9	01 20 18.31	103 59 05.67	3.85m (12.63ft)
	G10	01 20 19.60	103 59 06.22	3.86m (12.66ft)
	G11	01 20 20.90	103 59 06.77	3.84m (12.60ft)
	G12	01 20 22.20	103 59 07.31	3.83m (12.57ft)
	G13	01 20 23.50	103 59 07.86	3.82m (12.53ft)
	G14	01 20 24.79	103 59 08.41	3.83m (12.57ft)
	G15	01 20 26.09	103 59 08.96	3.88m (12.73ft)
	G16			

WSSL — SINGAPORE / SELETAR**WSSL AD 2.1 AERODROME LOCATION INDICATOR AND NAME**

WSSL — SINGAPORE / SELETAR

WSSL AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP Coordinates and Site at AD</i>	012501.04N 1035203.52E
2	<i>Direction and distance from (city)</i>	006°, 14.6km from city centre (The Fullerton Hotel, Singapore)
3	<i>Elevation/Reference Temperature</i>	14 M (46ft) / 33.5°C
4	<i>Geoid Undulation</i>	9.78 M
5	MAG VAR	0°26' E (2015)
6	<i>AD Administration, Address, Telephone, Telefax, AFS</i>	<p>Address: CHANGI AIRPORTGROUP (S) PTE LTD SELETAR AIRPORT BUILDING 556, WEST CAMP SINGAPORE 797794</p> <p>TEL: (65)64810017, Fax: (65)64811190 (Airport Manager) TEL: (65)64812909, Fax: (65)64833044 (AIS) TEL: (65)64812893, Fax: (65)64831656 (Control Tower) TEL: (65)64815077, 97533361 FAX: (65)64831754 (Airside Operations Unit)</p> <p>AFS: WSSLYDYX</p>
7	<i>Types of Traffic Permitted</i>	IFR and VFR
8	<i>Remarks</i>	<p>a. Scheduled Closure Periods for RWY 03/21: see AIP page WSSL AD 2-5.</p> <p>b. PPR for aircraft not equipped with RTF.</p> <p>c. A subsonic jet aircraft, unless otherwise exempted, is not permitted to operate in Singapore unless it possesses a noise certificate stating that it meets the noise standards of ICAO Annex 16, Volume 1, Chapter 3, or equivalent. The noise certificate may also take the form of a suitable statement contained in another document approved by the State of Registry of the aircraft.</p> <p>d. Direct transit area. Overnight transit in Singapore city.</p> <p>e. All arriving and departing aircraft are required to appoint a licensed Ground Handling Agent (GHA). List of Seletar GHAs can be downloaded from URL - http://www.seletarairport.com/ground-handling-agents-at-seletar-airport.html</p>

WSSL AD 2.3 OPERATIONAL HOURS

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

WSSL AD 2.4 HANDLING SERVICES AND FACILITIES

1	<i>Cargo Handling Facilities</i>	Provided by handling agent.
2	<i>Fuel / Oil Types</i>	AVGAS 100LL, JET A1
3	<i>Fuelling Facilities / Capacity</i>	MON to FRI BTN 0030-1030; SAT, SUN and Public holidays BTN 0030-0930 Contact during operating hours: TEL: (65)64811522 or (65)64846681 FAX: (65)64812159 Contact after operating hours: HP: (65)91294161 or (65)91284143
4	<i>Hangar space for visiting aircraft</i>	By arrangement with handling agent.
5	<i>Repair facilities for visiting aircraft</i>	By arrangement with handling agent.
6	<i>Remarks</i>	Nil

WSSL AD 2.5 PASSENGER FACILITIES

1	<i>Hotels</i>	Nil
2	<i>Restaurants</i>	Nil
3	<i>Transportation</i>	Handling agent provides its own transport service for passengers and crew between airport and city. Public buses and private hired taxis are available at airport terminal.
4	<i>Medical Facilities</i>	Nil
5	<i>Bank and Post Office</i>	Nil
6	<i>Tourist Office</i>	Nil
7	<i>Remarks</i>	Nil

WSSL AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

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

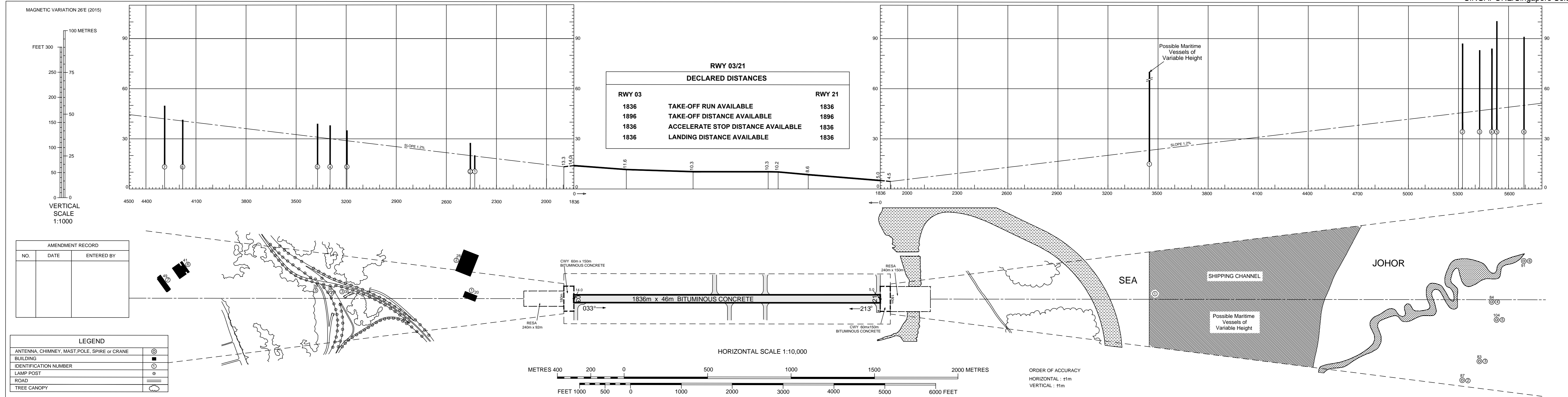
WSSL AD 2.7 SEASONAL AVAILABILITY - CLEARING

The aerodrome is available throughout the year

DIMENSIONS AND ELEVATIONS IN METRES

**AERODROME OBSTACLE CHART - ICAO
TYPE A (OPERATING LIMITATIONS)**

SINGAPORE/Singapore Seletar



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INSTRUMENT APPROACH CHART

AERODROME ELEV 65ft

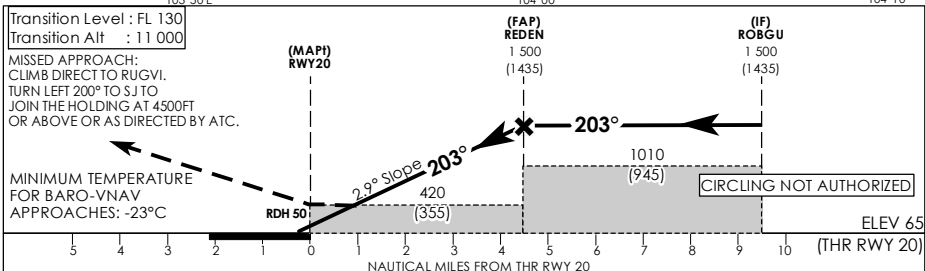
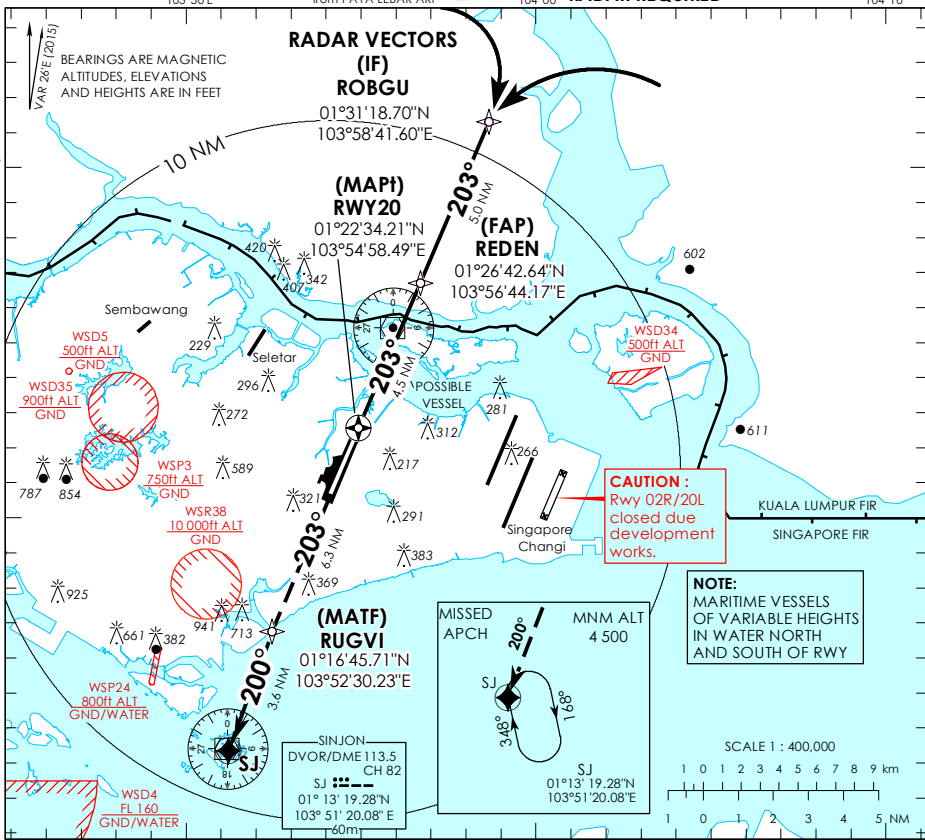
HEIGHT RELATED TO THR RWY 20 - 65ft



ATIS Paya Lebar	148.9
Singapore APP	120.3
Paya Lebar APP	119.9 298.0
Paya Lebar TWR	118.05 263.1
GND CON	121.7 296.0

SINGAPORE/PAYA LEBAR RNAV (GNSS) RWY 20

RADAR REQUIRED



Category of Aircraft	OCA (OCH)						
	A	B	C	D			
LNAV/VNAV	2.5%	420 (355)					
LNAV	2.5%	420 (355)					
Fix	ROBGU	REDEN	RWY20	RUGVI	SINJON		
Altitude (Height)	1500 (1435)	1500 (1435)	420 (355)	1030 (965)	1580 (1515)		
Speed	knots	80	100	120	140	160	180
FAP - MAP1 4.5 nm	min : s	3 : 23	2 : 42	2 : 15	1 : 56	1 : 41	1 : 30
Rate of descent/GS	ft/min	410	513	615	718	821	923

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