

AIRSIDE WORKS PROCEDURE MANUAL

FOR CHANGI AIRPORT

Compiled by

Standards and Health Unit Engineering & Development Cluster

Version 31/2024

15 April 2024

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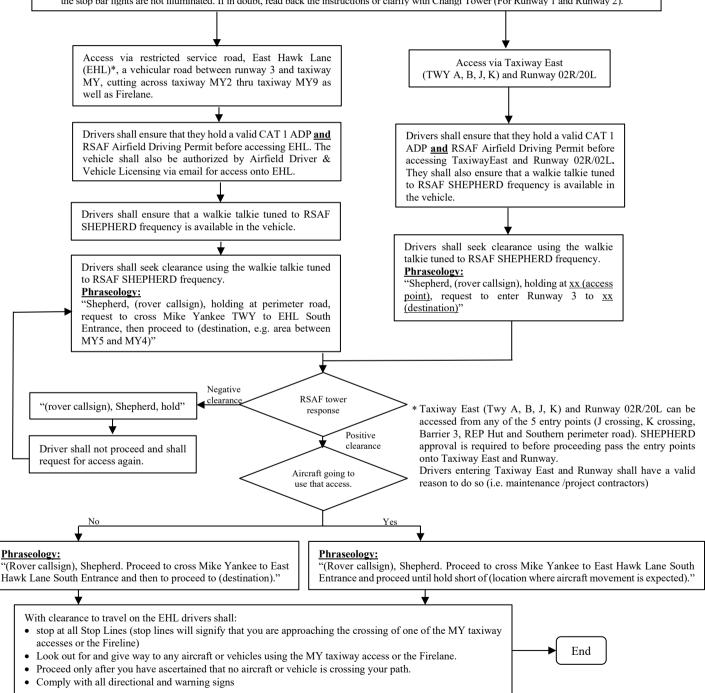
15 SAFETY INSPECTION FRAMEWORK (DEVELOPMENT / PROJECT)

AWP/34
PROJECT)

PROCEDURE 1: PROCEDURE FOR DRIVERS ACCESSING VICINITY OF RUNWAY 3

The CAT 1 / CAT 1(R) drivers accessing runway 3 vicinity shall:

- check that the two (2) yellow flashing lights on their rovers are serviceable before entering the runway 3 vicinity.
- check the serviceability of the radio set by establishing a comms check with Changi Apron at least once a day at the start of the shift.
- check the serviceability of the transponder by observing that the green LED is blinking (2 times per sec).
- contact Changi Tower (For Runway 1 and Runway 2)/Changi East Tower (For Runway 3) through radio set on the frequency listed in Airside
 Works Procedure Manual Procedure 1, before the planned runway access. Please refer to the document on "CAT1 Airside Driving Theory
 Handbook" Standard Phraseology for further details.
- shall ensure that RT set had been tuned and RT set shall be clearly labelled to indicate Ground Frequency and Runway Frequency.
- only enter the runway upon receiving clear approval from Changi Tower (For Runway 1 and Runway 2)/Changi East Tower (For Runway 3) and the stop bar lights are not illuminated. If in doubt, read back the instructions or clarify with Changi Tower (For Runway 1 and Runway 2).



PROCEDURE 2: NORMAL OPENING OF TAXIWAY/TAXILANE CLOSURE

The work parties* under the direction of CAG Project Officer/CAG REP Officer shall ensure that all the work parties target to finish their work and clear from the runway/taxiway/taxilane at least 30min before the end of the planned runway/taxiway/taxilane closure period.

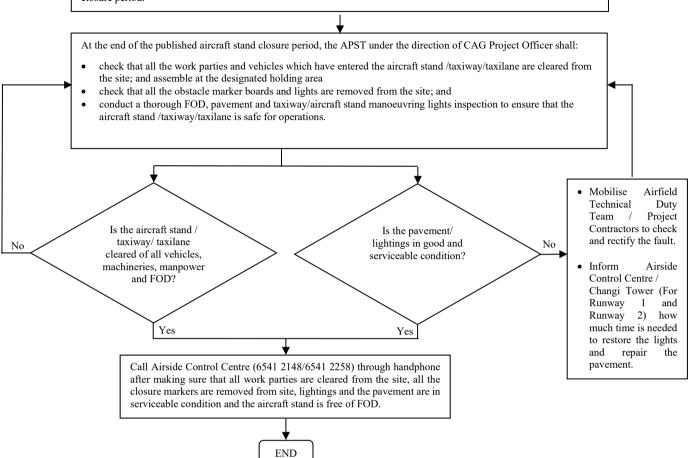
The APST under the direction of CAG Project Officer/CAG REP Officer shall carry out inspection of runway lighting (including rapid exit taxiway and exit taxiway lights)/taxiway lightings 30 minutes before the end of the planned runway/taxiway/taxilane closure period. At the end of the published runway/taxiway/taxilane closure period, the APST/CAG Project Officer/authorised RTO under the direction of CAG Project Officer/CAG REP Officer shall: conduct a thorough FOD, pavement and runway/taxiway/taxilane lighting inspection to ensure that the runway is safe for operations. check that all the work parties and vehicles which have entered the runway/taxiway/taxilane are cleared from the site; and assemble at designated holding area account for manpower strength of all work parties check that all the closed runway/taxiway/taxilane markings, obstacle marker boards and lights are removed from the site Mobilise Airfield Technical Duty Team Project Contractor to Is runway/taxiway Are all runway/ check and rectify /taxilane cleared of taxiway/ taxilane the fault. No all vehicles, lightings operational Inform Changi machinery. and pavement in Tower (For personnel and FOD? good condition? Runway 1 and Runway 2) how long is needed to restore the lights. Inform FMC to Yes Yes contact CAG Officer incharge. For Runway/Taxiway/Taxilane: Contact Changi Tower (For Runway 1 and Runway 2) (121.9MHz) through radio set. The phraseology to be used shall be "Changi Tower (For Runway 1 and Runway 2), I have checked that all work parties, machines and equipment have vacated from the runway/taxiway/taxilane and the area is free of FOD and the pavement and airfield lightings are in good and serviceable condition.". For Runway: Work parties to report to CAG REP Officer to sign-out from REP & return all vehicles/machinery tags. Refer to Procedure 2 for procedure on Runway re-opening.

END

^{*}Work parties includes, but are not limited to CAG staff, authorized RTO and/or safety personnel and other resident site staff engaged to represent CAG.

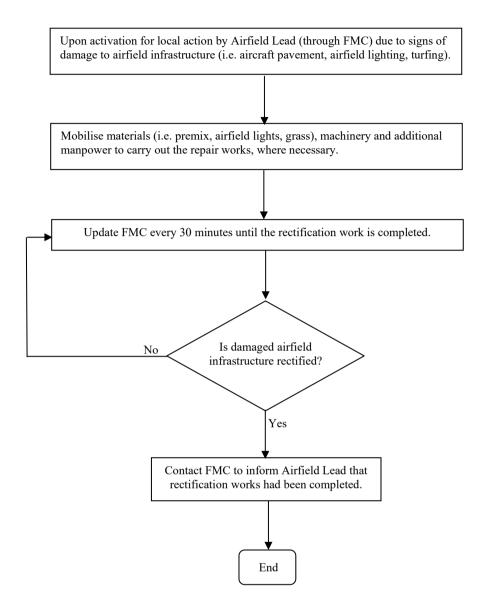
PROCEDURE 3: NORMAL OPENING OF AIRCRAFT STAND CLOSURE

The work parties under the direction of CAG Project Officer shall ensure that all the work parties* target to finish their work and clear from the aircraft stand/taxiway/taxilane at least 15 minutes before the end of the planned aircraft stand closure period.



^{*}Work parties includes, but are not limited to CAG staff, authorized RTO and/or safety personnel and other resident site staff engaged to represent CAG.

PROCEDURE 4: MOBILISATION OF WORK PARTIES UPON LOCAL ACTION ACTIVATION



PROCEDURE 5: RESPONSE TO LEAKAGE INCIDENT ON RUNWAY/TAXIWAY/TAXILANE/AIRCRAFT STAND / ROADWAY

For Aircraft Stand/Roadway: FMC receives For Runway/Taxiway/Taxilane: Changi Tower (For Runway 1 and Runway 2) receives notification of notification of hydraulic spillage and activates aircraft hydraulic or fuel leakage and activates Airside Management Centre (AMC), AES, FMC and/or APST to check the site. Airside Management Centre (AMC) and the cleaning contractor. FMC shall contact APST if the hydraulic leakage is at aircraft stand. Where aircraft pavement/airfield lighting are damaged, AES updates Changi Tower (For Runway 1 and FMC shall also inform relevant CAG Engineering & AES to Runway 2) of the extent of hydraulic leakage. Changi Development Cluster Team Leaders and maintenance No Tower (For Runway 1 and Runway 2) shall inform confirm if contractor (see attached contact list). FMC to activate AMC, APST, the cleaning fuel leakage Airside Management Centre shall compile incident report contractors. The affected area shall be closed where is involved. capturing location of incident and chronology of events. The particulars of the responsible party (e.g. flight no./ callsign, aircraft registration no., aircraft type, etc.), where traceable, shall also be included. Airside Management Centre shall endorse the incident report AES updates, Changi The cleaning contractor shall prepared and forward copies to the following parties for Tower (For Runway 1 and inform APST and FMC of progress follow-up action: Runway 2) who shall close of cleaning works on site. Team Leaders of Engineering & Development the affected area. Cluster / Airfield Systems, Aircraft Pavement Team FMC shall provide regular updates AES shall follow up with and Airfield Lighting Team of site status and inform Changi necessary action to contain CAG Chief Legal Officer. Tower (For Runway 1 and Runway and remove the fuel leak. The Airside Safety Inspection Teams/Airfield Lighting Shift 2) when cleaning works have Tower Changi (For Team shall arrange to carry out repairs or replacement. completed. Runway 1 and Runway 2) The APST shall also inform Changi Tower (For Runway 1 shall be informed by AES and Runway 2) to close the affected area for repairs when the site is ready for replacement or for the cleaning contractor /AES to proceed operations. with cleaning works. * The APST Team shall take photos of the incident on site where necessary for proper record. The APST shall update FMC/Changi Tower (For Runway 1 and Runway 2) regularly. The cleaning contractor shall When repairs/cleaning works have been completed, the APST inform FMC of progress of shall carry out a FOD, pavement and lighting inspection cleaning works on site. before declaring the area open for operations. The APST shall also update FMC upon completion of the Upon works completion, inspection to be carried out with Standard phraseology shall be used when communicating AMC officer. with Changi Tower (For Runway 1 and Runway 2): i) For access into taxiway, use the word "REQUEST PERMISSION TO PROCEED TO TAXIWAY" ii) For access into runway, use the word "REQUEST The Airside Management and Team Leaders of Airfield Systems of PERMISSION TO ENTER RUNWAY". Engineering & Development Cluster in-charge of the respective areas of iii) Once out from runways and taxiways, use the word maintenance shall feedback to Legal Division on any claims arising from 'VACATED FROM RUNWAY OR TAXIWAY the hydraulic leakage incident. m) All Rovers and Runway Sweepers shall only enter the These should, as far as possible, be substantiated with works order taxiway and runway upon receiving clear approval from (capturing labour and materials expended) issued to contractors for the Changi Tower (For Runway 1 and Runway 2), read back the cleaning or repair job carried out and be submitted within one week of instructions and to clarify with Changi Tower (For Runway receiving the incident report. 1 and Runway 2) if in doubt. Legal Division shall write to claim against the responsible party and would inform CAG's Underwriters where deemed necessary. Legal Division shall inform Finance Division to bill the responsible party in order to recover the repair/ cleaning costs incurred. END

* For temporary closure purposes, the APST shall carry a minimum of 4 sets of heavy-duty, rubber type cones, chequered flags and red fixed lights to demarcate the closed area.

Additional Note: If there is hydraulic fluid leakage on the runway, friction test is required to be carried out.

Depending on the extent of the leakage, the APST shall make an assessment on the risk to re-open the runway without first conducting a friction test. An example of risk which can be mitigated without first conducting a friction test is when a spillage is localized in area and has been thoroughly cleaned up. If in doubt, the APST should still take the safer approach to determine the need to conduct a friction test before re-opening of the runway. For aircraft accident a friction test shall be carried out. If after conducting the friction test and the result shows that the friction level along any 100m section is measured to be 0.34 or less at test speed of 95km/h or to be at 0.50 or less at test speed of 65km/h, the APST shall notify the Airfield Lead and inform the Team Leader of CAG E&D Airfield Systems, Aircraft Pavement Team to take immediate action to arrange for the removal of rubber deposits.

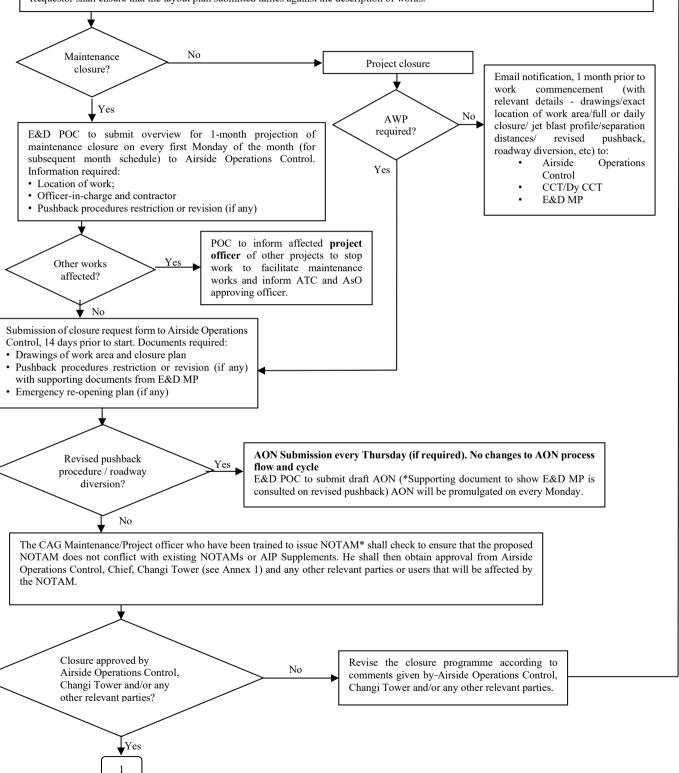
LIST OF CONTACT PERSONS FOR AIRCRAFT HYDRAULIC LEAKAGE INCIDENT ON RUNWAY/TAXIWAY/TAXILANE/AIRCRAFT STAND

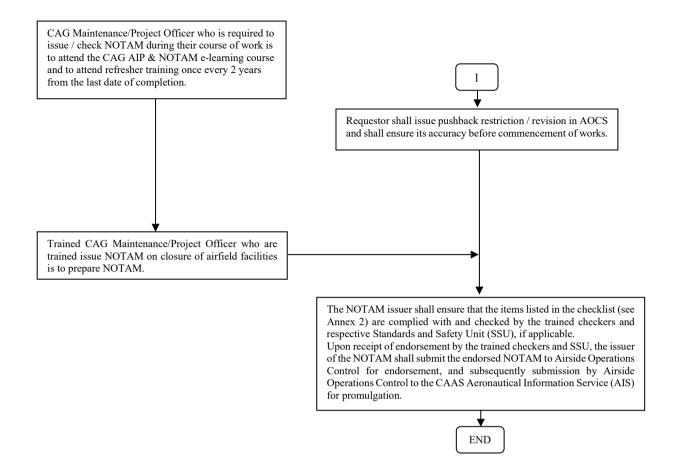
Chang	zi Tower	
1	Duty Tower Watch Manager	Tel: 6541 2416/2417
Airpo	rt Emergency Service (AES)	
2	Station 1 Watch Tower	Tel: 6541 2526
3	Station 2 Watch Tower	Tel: 6541 2544
4	Station 3	Tel: 6541 2531
FMC		
5	Duty Supervisor	Tel: 6541 2424
Airsid	e Operations Control	
6	Airside Control Centre (ACC)	Tel: 8533 4558 / 6541 2151
7	Airside Management Centre (AMC)	Tel: 6541 2273 / 2275
CAG	Engineering & Development Cluster	L
8	Team Leader, Airfield Systems, Aircraft Pavement Team	HP: 8191 9223
9	Team Leader, Airfield Lighting Team	HP: 9457 7373
Prime	ch A&P Pte Ltd	
10	Contractor's Manager	HP: 8784 1517
11	Contractor's Duty Phone	HP: 9735 0216

PROCEDURE 6: APPLYING TAXIWAY/TAXILANE/ AIRCRAFT STAND CLOSURE TO CARRY OUT MAINTENANCE/PROJECT WORK

The requestor shall submit taxiway/taxilane/aircraft stand closure programme to the CAG Maintenance/Project Officer for approval. CAG Maintenance/Project Officer who have been trained to issue NOTAM shall go through the Changi Aerodrome Manual (CAM) Part 4.1 on Aerodrome Reporting before preparing the NOTAM.

A layout plan using the aerodrome chart in the AIP, clearly showing the proposed areas to be closed is to be attached with the closure programme. Requestor shall ensure that the layout plan submitted tallies against the description of works.





Additional Notes:

- (a) Approval from Changi Tower is not required for closure of aircraft stand (i.e. provided that no runway/taxiway/taxilane is required).
- (b) Application for stand closure is via online gate closure portal <u>at least 10 working days</u> before the proposed date of closure. Submission not fulfilling the required lead time requirement via the portal will be evaluated on a case-by-case basis.

_____/ Rover _____

(Signature & Date)

Annex 1

Twy Closure Approval No:

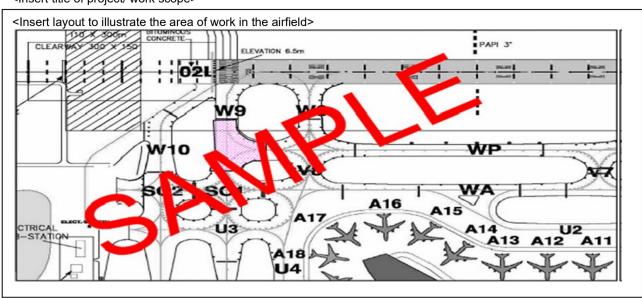
CLOSURE PROGRAMME

<Insert title of project/ work scope>

For clarification, please call handphone:

CAG (Project officer): _

(Signature & Date)



LEGEND	CLOSUF	RE LOCATION	DATE	TIME (L/T)	REMARKS (FULL/DAILY)
Requested B	y:	Supported By:	•	Approved By:	
(Compa	any)	CAG Engi	neering &	xilane Only)	
		Relevant Group		Chief Changi Tower(WEST)	SVP, Airside Operations Control
(Name	e)	(Nai	me)	(Name)	(Name)

Contractor: _

Colour code	
: Taxiway/taxilane closure	
: Work area	
: Stand Closure - (no aircraft parking)	
: Stand restriction - (for layover only/no movements/no engine run)
: Advisory Note - aircraft pushback restrictions	
NOTE: The description of work under closure location and the inserted la	ıy

(Signature & Date)

NOTE: The description of work under closure location and the inserted layout (use AIP Aerodrome chart) must tally, and NOTAM accordingly

(Signature & Date)

Anı	nex 2 AIRSIDE WORKS PROCEDURE MANUAL FO	OR CHANGI AIRPORT
File F	Reference:	
СНЕ	CCKLIST FOR NOTAM / AIP SUPPLEMENT / AIP AMENDMENT / AERONAUTICAL CIRCULAR PROMULGATION	L INFORMATION
Pro	ject Title:	
Req	questing Section: Work Location:	
	Before Promulgation	
S/No	Item	Please Circle / Respond
1	Have you checked whether the aeronautical data and information of the draft NOTAM / AIP Supplement / AIP Amendment / Aeronautical Information Circular impacts safety and efficien the airside's operations (eg. runway closure, longer taxiing route, pushback restriction/revision obstacles, etc.)?	
2	Have mitigation measures for the impact on safety of operations in the airside, arising fron NOTAM / AIP Supplement / AIP Amendment / Aeronautical Information Circular, been reviand fully endorsed in the form of a risk assessment?	
3	Have you ensured that the necessary safety provisions (e.g. visual aids, closure markings / mar obstacle lights, etc.) will be in place on site to support the NOTAM / AIP Supplement / Amendment / Aeronautical Information Circular?	
4	Have you consulted Changi Tower / Airside Operations Control / relevant AIP Subject Owner the proposed changes / activities before drafting the NOTAM / AIP Supplement / AIP Amend / Aeronautical Information Circular?	
5	Have you checked that the aeronautical data and information of the draft NOTAM / AIP Supple / AIP Amendment / Aeronautical Information Circular in association with the proposed char activities is correct and not in conflict with any of the existing NOTAMs / AIP Supplements / Amendments / Aeronautical Information Circulars?	inges /
6	Have you checked that the phrasing of the aeronautical data and information of the draft NOT AIP Supplement / AIP Amendment / Aeronautical Information Circular is accurate and complete	lete? Yes / No
7	Have you ensured that all areas affected by the changes are visually indicated on existing chart(t(s) for Yes / No

Issuer of NOTAM/AIP Supplement/AIP Amendment:		Checker of NOTAM/AIP Supplement/AIP Amendment:				
Name / Designation Checked by SSU:	Signature / Date	Name / Designation	Signature / Date			
Name / Designation	Signature / Date					

Have you confirmed that the aeronautical charts comply with the requirements stated in Annex 4 Aeronautical charts?

Name/ Designation of officer assigned to check the site when the NOTAM / AIP Supplement / AIP Amendment is effected

Contact Number

Yes / No

	After Promulgation						
1	Have you checked that the promulgated NOTAM / AIP Supplement / AIP Amendment / Aeronautical Information Circular is correct?	Yes					
2	Have you provided the NOTAM / AIP Supplement / AIP Amendment / Aeronautical Information Circular reference number and attached it with this Checklist as a supporting document?	Yes Ref No:					
If your a	answer to any of the above items is "No", please give the reason(s) below: -						

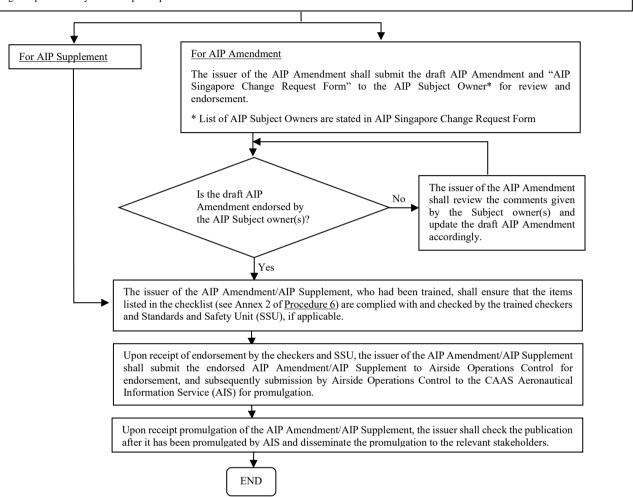
Issuer of NOTAM/AIP Supple	ment/AIP Amendment:	Checker of NOTAM/AIP Supplem	ent/AIP Amendment:
Name / Designation	Signature / Date	Name / Designation	Signature / Date

Note:

- For content of NOTAM which takes effect less than 1 day, the issuer of NOTAM shall inform Airside Safety Inspection Team (Changi) / Aircraft Pavement & Airfield Lighting Inspection Teams (Seletar) via phone and fax immediately after the NOTAM is promulgated.
- 2. Only those officers have been trained can issue NOTAM.
- 3. The checker of NOTAM/AIP Supplement/AIP Amendment shall be officers who have undergone training.
- The checker of the NOTAM/AİP Supplement/AIP Amendment cannot be the issuer of the same NOTAM/AIP Supplement/AIP Amendment.
- 5. NOTAM / AIP Supplement / AIP Amendment Promulgation Form must be attached to this checklist.
- 6. NOTAM / AIP Supplement / AIP Amendment Promulgation Form shall be checked by the respective SSU before submission.
- 7. Project officers shall consult Airside Operations Control, prepare AIP and all the necessary supporting documents, and submit to Airside Operations Control within the publication timeline as stipulated in Changi Aerodrome Manual. Airside Operations Control shall be responsible for the final submission to CAAS, AIS.
- 8. For NOTAM promulgation only Maintenance works carried out by Team Leaders of E&D Airfield Systems, Pavement section and AFL section need not be endorsed by SSU. However, the issuer has to complete the checklist before sending the NOTAM to CAAS AIS and ASIT (Changi) / Aircraft Pavement & Airfield Lighting Inspection Teams (Seletar).

PROCEDURE 7: PREPARING AND DISSEMINATING AIP AMENDMENT/AIP SUPPLEMENT

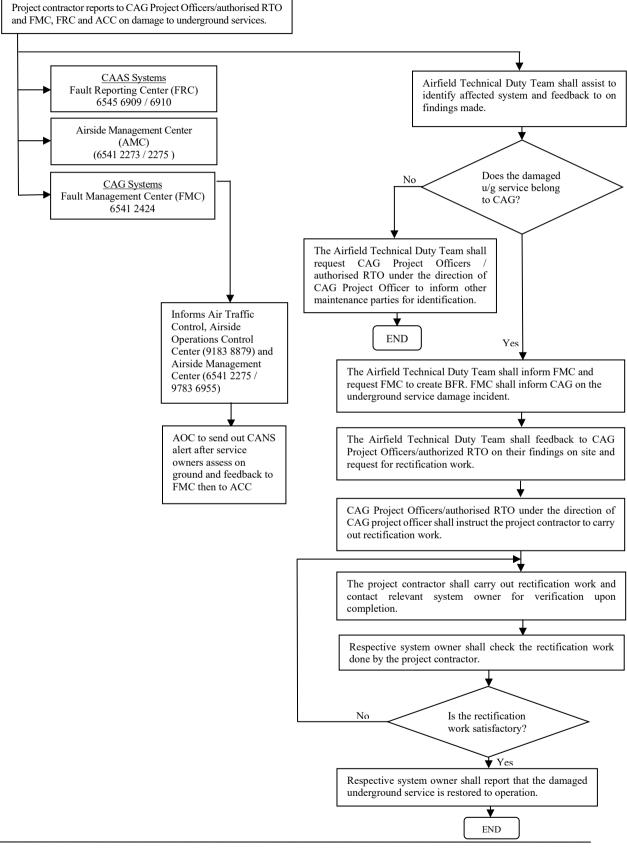
CAG Maintenance/Project Officer who have been trained to issue AIP amendment / AIP Supplement* shall go through the <u>Changi Aerodrome Manual (CAM) Part 4.1 on Aerodrome Reporting</u> before preparing a draft AIP Amendment / AIP Supplement and carry out a risk assessment on the impact of the proposed changes / activities, e.g. construction work to airside facilities, if applicable. Reference should be made to the AIP guide published by CAG Airport Operations Control Division.



Additional Note:

- For newly constructed / rehabilitated aircraft parking stands, early confirmation on the data by the licensed surveyor through email would be
 established prior to submission of endorsed as-built drawings.
- Project / maintenance officer shall ensure that updates in the AIP and aerodrome manuals are made whenever there are changes to the infrastructure.
- For permanent changes to the information contained in the AIP, or completion of new airfield infrastructure (e.g. new taxiway / new aircraft stand etc.), CAG Maintenance/Project Officer shall inform Master Planning (Airfield Capacity Planning team) to update the changes in the Changi Aerodrome Manual (CAM) and in AIP Singapore accordingly.
- For AIP/AIP supplement promulgation, the form shall only be signed off if a proper safety assessment has been carried out where applicable.
- For permanent changes that are put up using NOTAMs, an additional "AIP Singapore Change Request Form" is needed to submit to AIS for AIP
 amendment.
- For permanent changes that are put up using AIP Supplement, an additional "AIP Singapore Change Request Form" is needed to submit to AIS for AIP amendment.
- For amendment on WSSS AD2.24 Aerodrome Chart AD-2-WSSS-ADC-2, in parallel with the submission to CAAS AIS, the issuer of the AIP amendment shall extend a copy to AES (for their update of the crash map).

PROCEDURE 8: RESPONSE BY PROJECT CONTRACTOR TO UNDERGROUND SERVICE DAMAGE BY PROJECT CONTRACTOR DURING EXCAVATION WORK



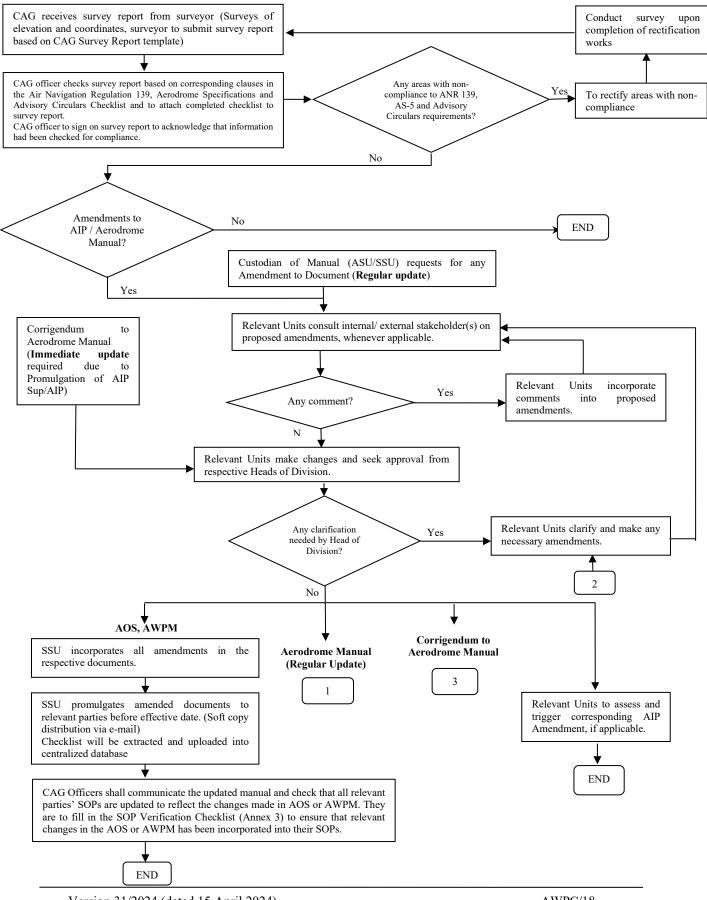
PROCEDURE 9: PROCEDURE FOR CANCELLING TAXIWAY/TAXILANE/AIRCRAFT STAND CLOSURE OUTSIDE CAG NORMAL WORKING HOURS

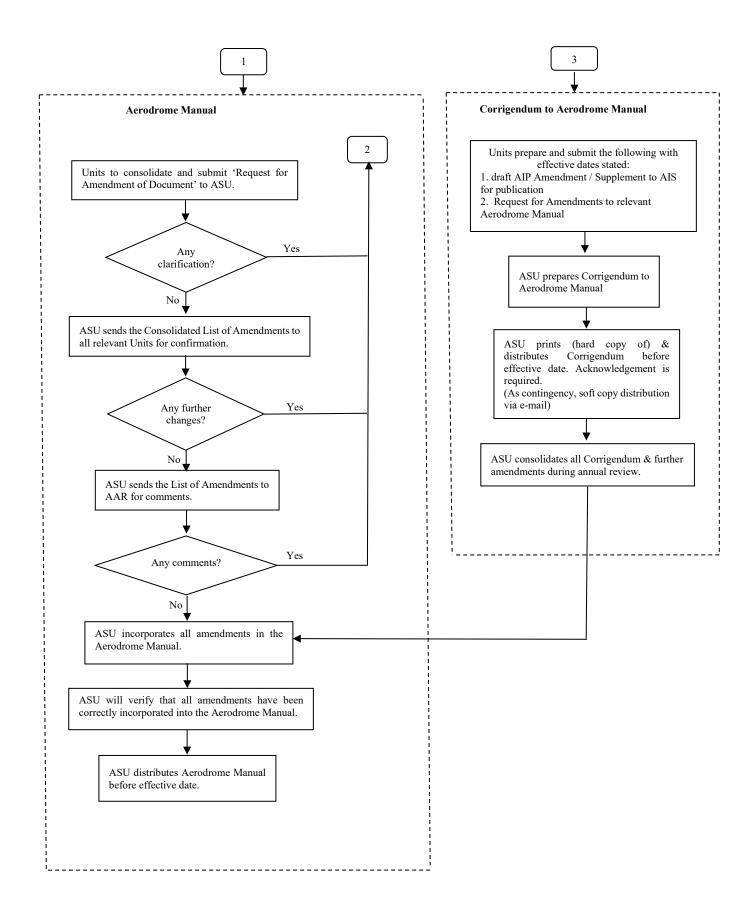
The Maintenance/Project contractor has requested and obtained approval for a taxiway/taxilane/aircraft stand closure through CAG Officer. Due to unforeseen circumstances, the contractor requests to cancel the pre-arranged closure on the day of the closure which happens to be outside CAG normal working hours.

The Maintenance/Project contractor shall inform the respective CAG Officer/authorised RTO under the direction of CAG Project Officer and make known his intent to cancel the pre-arranged closure. CAG Officer/authorised RTO under the direction of CAG Project Officer, upon notification by the contractor, shall convey the message to Changi Tower (For Runway 1 and Runway 2) (6541 2416) and FMC (6541 2424), giving his full name, area of work to be cancelled (provide NOTAM number if available) and handphone number in the event that clarification needs to be sought. CAG Officer (listed in CAG Authorised name list) shall call and email AIS to issue a NOTAM to cancel the pre-arranged runway/taxiway/taxilane/aircraft stand closure. (use standard email format and indicate the NOTAM number to be cancelled). Standard email format: (AIS contact number: 6595 6056) Caas ATCSOA@caas.gov.sg Caas ATCSOB@caas.gov.sg Caas ATCSOC@caas.gov.sg Caas ATCSOD@caas.gov.sg CAAS-ATSATCSO-WSALL@CAAS.gov.sg Dear AIS officer. As per our tele-conversation. Due to last minute unforeseen circumstances. We would like to cancel the closure on runway/taxiway/taxilane/aircraft stand_ . As such we would like to seek your assistance to issue a NOTAM to cancel existing NOTAM A return reply via this email is appreciated. Regards Upon receiving the request for cancellation, AIS shall reply the email with a new NOTAM number confirming that the original NOTAM has been cancelled. Upon receiving the reply from AIS, CAG Officer/authorised RTO under the direction of CAG Project Officer shall inform Changi Tower (For Runway 1 and Runway 2), the NOTAM issuer and all affect parties. **END** Note:

- 1) If the Original NOTAM contains several other dates and which will be cancelled together with the runway/taxiway/taxilane/aircraft stand to be closed, then the issuer of the NOTAM shall re-issue a new NOTAM for the rest of the remaining dates.
- 2) There is no requirement to cancel the NOTAM if the CAG Officer/authorised RTO so decides to re-open the runway/taxiway/taxilane/aircraft stand earlier after it has been closed according to the approved timing.

PROCEDURE 10: PROCESS FLOW ON UPDATING OF AERODROME MANUAL, AIRPORT OPERATIONAL AND SAFETY(AOS), AIRSIDE WORKS PROCEDURE MANUAL (AWPM)





Annex 3

Version 31/2024 (dated 15 April 2024)

SOP Verification Checklist



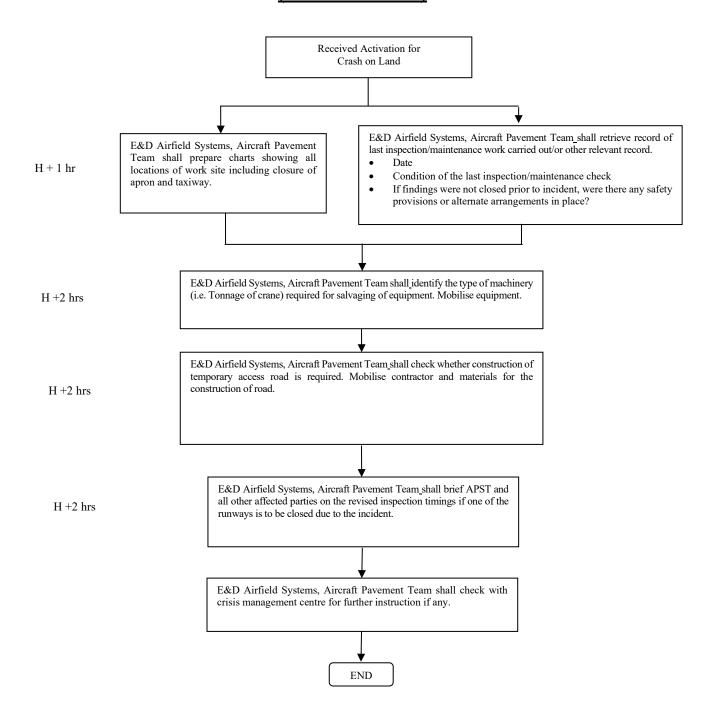
The purpose of this checklist is to ensure that work parties had implemented the latest requirements, where relevant, as stipulated in CAG's procedures such as the Airport Operational and Safety Requirement Manual (AOS) or Airside Works Procedure Manual (AWPM) as and when a new revision to the manual or SOP is promulgated.

CAG project / maintenance officer shall attach excerpts of the affected SOP from work parties for documentation of such changes made.

CAG Manual AOS AWPM* Revision Manual Revision Date * Delete where applicable Remarks Reference number in list of Clause reference in Not Not (Reason for not implementing / implemented with reference to work parties' SOP **Implemented** amendment form **CAG Manual Implemented Applicable** and to include work parties' SOP clause reference number) Check by (CAG) Date Scope of Work

AWPC/20

PROCEDURE 11: RESPONSE TO CRASH ON LAND WITHIN CHANGI AIRPORT WITHIN AES TURN-OUT AREA (RUNWAY 1 or 2)



PROCEDURE 12: PROCESS FLOW ON COMMISSIONING AND HANDING OVER UPON COMPLETION OF PROJECT AT MOVEMENT AREA

Upon completion of any airside project work, the contractor shall conduct inspections, testing & commissioning works with CAG Maintenance/Project officers. The inspections and testing and commissioning works shall be carried out in accordance to the requirements spelt out in the contract specifications and the findings/ results shall be recorded in the inspections, testing and commissioning forms.



Upon certifying that the project has been completed satisfactorily, the CAG Maintenance/Project officer shall inform the respective parties responsible for taking over the new facility for operations and maintenance and arrange for a handing over inspection with the users. CAG maintenance / project officer shall ensure that the new aircraft movement area remains inaccessible to aircraft by marking it as a closed aircraft movement area until the handing and taking over process has completed.



This list below shall serve as a guide for areas to be checked, acknowledged and taken over by respective parties. The project officer shall consult all the respective system owners for their detailed handing/taking over checklist prior to handing over. Civil work*

- Pavement condition
- Quality of dimension airfield marking
- Drainage, turfing
- FOD

Airfield Lighting System*

- Airfield Lighting
- Taxiway guidance signs
- Aircraft Stand Manoeuvring Guidance Light System
- Airfield Lighting Control System

CAFHI*

- Fuel pits available for the intended aircraft types

PLB/ADGS*

- PLB serviceability, including fixed gangway and movable arms
- PLB security doors
- PLB obstacle lights
- ADGS serviceability
- INS sign
- Aircraft stand bay indicator sign

Floodlights*

- Floodlights and lighting levels
- Obstacle lights on high mast
- Earth Receptacle & Lightning Protection

CCTV *

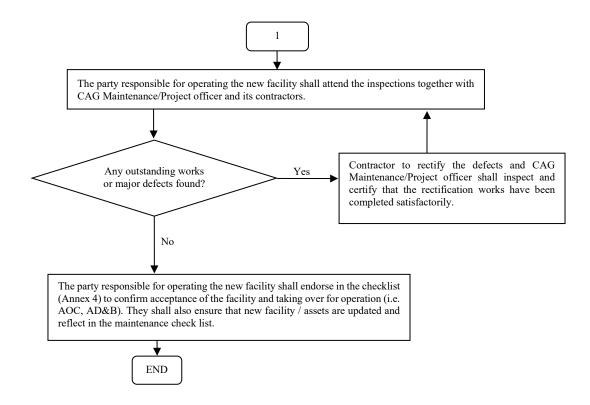
- CCTV on high mast, if any

Master Planning *

- Safety separation distances
- Safety distance to object
- Marking and lighting of obstacles
- Sizing of the ESA and EPS is sufficient for the ground handler
- 2nd layer of checks on as-built drawings, to ensure compliance to Air Navigation Regulation 139, Aerodrome Specifications and Advisory Circulars upon completion of markings, guidance sign and other visual aids modification or construction.

*if applicable





Annex 4

Checklist for Commissioning of Airside Infrastructure and Works

oject Tit	le:		
	* Runway / Taxiway	:	
	Aircraft Parking Stand	:	
	Other Works	:	
	Other Works	•	



No	Facility / Equipment	Compliance / Functionality Checked	Check Status	Checked By	Signed / Date	Maint Checklist Updated?	Remarks / Comments Addressed
1	<u>Civil Works</u>						
1.1	Condition of Runway / Taxiway pavement		*Acceptable / To Rectify / NA			*Yes / No	
1.2	Runway / Taxiway ground markings dimension in accordance to specifications		*Acceptable / To Rectify / NA			*Yes / No	
1.3	Condition of Parking Stand pavement		*Acceptable / To Rectify / NA			*Yes / No	
1.4	Parking Stand ground markings dimension in accordance to specifications		*Acceptable / To Rectify / NA			*Yes / No	
1.5	Stop-line markings dimension in accordance to specifications for each aircraft type		*Acceptable / To Rectify / NA			*Yes / No	
1.6	Primary and Secondary Roadway		*Acceptable / To Rectify / NA			*Yes / No	
1.7	Roadway ground markings dimension in accordance to specifications		*Acceptable / To Rectify / NA			*Yes / No	
1.8	Jet blast deflector		*Acceptable / To Rectify / NA			*Yes / No	
1.9	Drains		*Acceptable / To Rectify / NA			*Yes / No	

No	Facility / Equipment	Compliance / Functionality Checked	Check Status	Checked By	Signed / Date	Maint Checklist Updated?	Remarks / Comments Addressed
1.10	Turfing		*Acceptable / To Rectify / NA			*Yes / No	
2	PLB / ADGS						
2.1	Fixed gangway serviceability		*Acceptable / To Rectify / NA			*Yes / No	
2.2	PLB serviceability		*Acceptable / To Rectify / NA			*Yes / No	
2.3	PLB security doors		*Acceptable / To Rectify / NA			*Yes / No	
2.4	PLB red obstacle lights		*Acceptable / To Rectify / NA			*Yes / No	
2.5	PLB safety zone ground markings dimension in accordance to specifications		*Acceptable / To Rectify / NA			*Yes / No	
2.6	ADGS display & control panel		*Acceptable / To Rectify / NA			*Yes / No	
2.7	INS sign constructed in accordance to specifications		*Acceptable / To Rectify / NA			*Yes / No	
2.8	Bay indicator sign constructed in accordance to specifications		*Acceptable / To Rectify / NA			*Yes / No	
2.9	Gate Operating System (GOS) updated		*Acceptable / To Rectify / NA			*Yes / No	
3	ANCILLARY BUILDING SERVICES AND M&E SYSTEMS						
3.1	Apron Floodlight & lighting levels To attached lux level reading and check against specifications as stipulated in Air Navigation Regulation 139, Aerodrome Specifications and Advisory Circulars.		*Acceptable / To Rectify / NA			*Yes / No	
3.2	Apron floodlight OG box + plinth		*Acceptable / To Rectify / NA			*Yes / No	
3.3	Lightning protection shelter		*Acceptable / To Rectify / NA			*Yes / No	

No	Facility / Equipment	Compliance / Functionality Checked	Check Status	Checked By	Signed / Date	Maint Checklist Updated?	Remarks / Comments Addressed
3.4	Earth receptacle		*Acceptable / To Rectify / NA			*Yes / No	
3.5	OBS lights for jet blast fence		*Acceptable / To Rectify / NA			*Yes / No	
4	AFL system / ALCS						
4.1	Runway / Taxiway centerline and edge lights To attached specifications of installation.		*Acceptable / To Rectify / NA			*Yes / No	
4.2	Airfield mandatory and information signs constructed in accordance to specifications in terms of dimension and luminance		*Acceptable / To Rectify / NA			*Yes / No	
4.3	Airfield Lighting Control System (ALCS) updated		*Acceptable / To Rectify / NA			*Yes / No	
4.4	Aircraft Stand Manoeuvering Guidance Light System		*Acceptable / To Rectify / NA			*Yes / No	
4.5	Guidance signs are designed and constructed in compliance with Air Navigation Regulation 139, Aerodrome Specifications and Advisory Circulars / ICAO Annex 14		*Acceptable / To Rectify / NA			*Yes / No	
5	<u>CCTV</u>						
5.1	Camera Coverage of Aircraft Parking Stand/Runway/Taxiway		*Acceptable / To Rectify / NA			*Yes / No	
6	<u>Fuel hydrant system</u>						
6.1	Underground fuel hydrant pit location		*Acceptable / To Rectify / NA			*Yes / No	
6.2	Dimension of markings for hydrant pits in accordance to specifications		*Acceptable / To Rectify / NA			*Yes / No	
6.3	Height of protrusion of fuel pit above pavement level		*Acceptable / To Rectify / NA			*Yes / No	
6.4	CAFHI infrastructure has been commissioned in line with relevant JIG Standards. CAFHI to send CAG confirmation by the project consultant that the relevant commissioning tests have been conducted and are satisfactory		*Acceptable / To Rectify / NA			*Yes / No	

No	Facility / Equipment	Compliance / Functionality Checked	Check Status	Checked By	Signed / Date	Maint Checklist Updated?	Remarks / Comments Addressed
6.5	CAFHI Hansa test bay closure matrix and test plans has been updated. CAFHI to send CAG: Updated Hansa test bay closure matrix Confirmation that Hansa test plans and parameters has been recalibrated and updated		*Acceptable / To Rectify / NA			*Yes / No	
7	Compliance checks						
7.1	Safety separation distances between runway / taxiway		*Acceptable / To Rectify / NA			*Yes / No	
7.2	Safety separation distances to object		*Acceptable / To Rectify / NA			*Yes / No	
7.3	Marking and lighting of obstacles		*Acceptable / To Rectify / NA			*Yes / No	
7.4	Sizing of the ESA/EPA at parking stand		*Acceptable / To Rectify / NA			*Yes / No	
7.5	Geographical WGS-84 survey requirements		*Acceptable / To Rectify / NA			*Yes / No	
7.6	Markings for ERA, ABL for parking stand		*Acceptable / To Rectify / NA			*Yes / No	
7.7	Pavement slope compliance to Air Navigation Regulation 139, Aerodrome Specifications and Advisory Circulars		*Acceptable / To Rectify / NA			*Yes / No	
8	<u>Documentation</u>						
8.1	Issuance of NOTAM		*Acceptable / To Rectify / NA			*Yes / No	
8.2	Issuance of AON		*Acceptable / To Rectify / NA			*Yes / No	
8.3	Submission of AIS publication (AUP Supp, AIP amdt) Project officer to ensure that information submitted is aligned with updates to the aerodrome manual.		*Acceptable / To Rectify / NA			*Yes / No	
8.4	Update to Aerodrome Manual (CAM / SAM) Project officer to ensure that information submitted is aligned with updates to the AIP / AIP Supp.		*Acceptable / To Rectify / NA			*Yes / No	
9	<u>Others</u>						

No	Facility / Equipment	Compliance / Functionality Checked	Check Status	Checked By	Signed / Date	Maint Checklist Updated?	Remarks / Comments Addressed
9.1	Operational item (pushback procedure in AOCS)		*Acceptable / To Rectify / NA			*Yes / No	
9.2	Operational item (fire extinguisher at parking stand)		*Acceptable / To Rectify / NA			*Yes / No	
9.3	Operational item (FOD bin)		*Acceptable / To Rectify / NA			*Yes / No	
9.4	Others (to specify:		*Acceptable / To Rectify / NA			*Yes / No	

*Note:

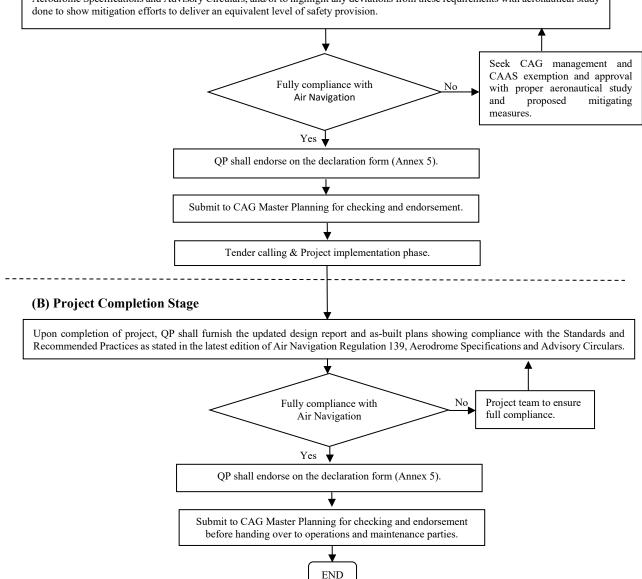
- Handover shall only commence upon approval from CAAS, AAR
- All items checked should be compliant to Air Navigation Regulation 139, Aerodrome Specifications and Advisory Circulars and critical dimension (i.e. Marking font size, safety distances, e.t.c) shall be recorded.
- As-built drawings to be attached once available and uploaded into internal drawing management system (i.e. Newforma for E&D), after handing-over.

Hand Over E&D / CE PDCO)	Taking Over	Witness By	
ection :	(Operations) Division :	Company	:
ame :	 Name :	Name	:
esignation :	Designation :	Designation	:
ignature :	Signature :	Signature	:
Date / Time :	Date / Time : way / Taxilane / Aircraft Parking Stand / Others: (Date / Time	:)
nfrastructure Type: <u>*Runway/ Taxi</u> Hand Over	way / Taxilane / Aircraft Parking Stand / Others: (Taking Over	Date / Time Witness By	: <u>)</u>
nfrastructure Type: <u>*Runway/ Taxi</u> Hand Over E&D / CE PDCO)	way / Taxilane / Aircraft Parking Stand / Others: (:
nfrastructure Type: <u>*Runway/ Taxi</u>	way / Taxilane / Aircraft Parking Stand / Others: (Taking Over (E&D Maintenance)	Witness By	:
nfrastructure Type: *Runway/ Taxi land Over E&D / CE PDCO) ection :	Taking Over (E&D Maintenance) Division :	Witness By Company	:
nfrastructure Type: *Runway/ Taxi land Over E&D / CE PDCO) ection : lame :	Taking Over (E&D Maintenance) Division : Name :	Witness By Company Name	:

PROCEDURE 13: PROCESS FLOW ON DESIGN CHECK TO ENSURE COMPLIANCE TO CAAS AIR NAVIGATION REGULATION 139, AERODROME SPECIFICATIONS AND ADVISORY CIRCULARS

(A) Before Tender Calling Stage

The design consultant Qualified Person (QP) shall furnish CAG the airfield design report and plans before tender calling to confirm full compliance with the Standards and Recommended Practices as stated in the latest edition of Air Navigation Regulation 139, Aerodrome Specifications and Advisory Circulars, and/or to highlight any deviations from these requirements with aeronautical study done to show mitigation efforts to deliver an equivalent level of safety provision.



Annex 5

DECLARATION ON COMPLIANCE TO CAAS AIR NAVIGATION REGULATION 139, AERODROME SPECIFICATIONS AND ADVISORY CIRCULARS FOR AIRFIELD DESIGN AT CHANGI AND SELETAR AIRPORTS

(A) INFORMATION ON PR	ROPOSED DEVELOPMENT/PRO	DJECT
Proposed Development / Project	t :	
Location:		
(B) DECLARATION BY DE	ESIGN CONSULTANT QUALIFII	ED PERSON
The design consultant Qualified Pe	erson (QP) hereby declares that:	
For the proposed airfield related de		
	t and plan(s) (<u>Tender / As-Built</u>)* con	
	es as stated in the latest edition of the	2
_	tions and Advisory Circulars (versi	
· ·	f Singapore (CAAS), unless otherwis	e stated below;
o. The complete list of non-co	ompliances are:	
Air Navigation Regulation	Details of Non-Compliance	Remarks
139, Aerodrome	-	
Specifications and Advisory		
Circulars Clause		
Note: to submit on a separate po	age if necessary	
DESIGN QUALIFIED PERSON	N	
Name:	Designation:	
Signature:	Date:	

Company Stamp: _____

(C) CHECK BY CAG'S MASTER PLANNING

Note: to submit on a separate page if necessary

This is to certify that the design report and plan(s) submitted by the appointed design consultant have been checked to ensure that:

For the proposed airfield related development: The consultant's submitted design report and plan(s) (Tender / As-Built)* comply fully with the Standards and Recommended Practices as stated in the latest edition of the Air Navigation Regulation 139, Aerodrome Specifications and Advisory Circulars (version: _____) published by the Civil Aviation Authority of Singapore (CAAS). The relevant chapter(s) checked are: Air Navigation Regulation 139, Aerodrome Specifications and Advisory Circulars Chapter / Clauses Plantical Characteristics

Clauses

Physical Characteristics
Obstacle Restriction and Removal
Visual Aids for Navigation
Visual Aids for Denoting Obstacles
Visual Aids for Denoting Restricted Use Areas
Electrical Systems
Aerodrome Operational Services, Equipment and Installations
Others (please specify:

Others (please specify:

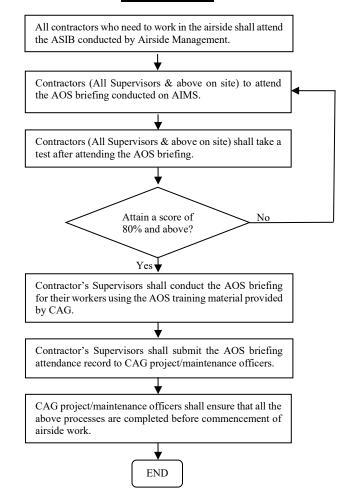
Additional aeronautical studies done to provide equivalent level of safety for any non-compliances. The following aeronautical studies reports for the non-compliances identified are attached:

Nos	Air Navigation Regulation 139 Specifications and Advisory Circular		Report Reference No.
CHECK	KED BY		
Name: _		Designation: _	
Signatur	e:	Date:	
ENDOR	RSED BY		
Name: _		Designation: _	
Signatur	e:	Date:	

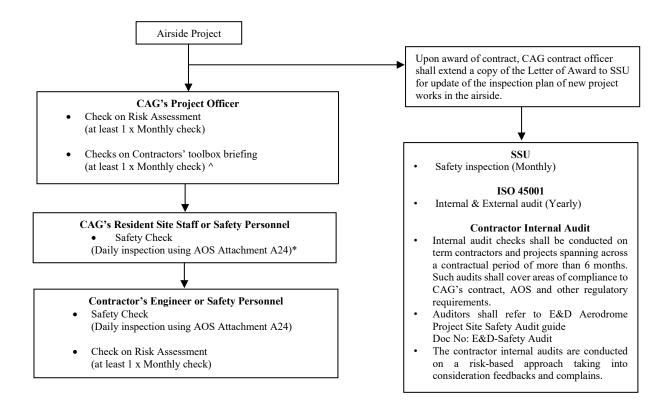
Version 31/2024 (dated 15 April 2024)

* Delete where applicable

PROCEDURE 14: SAFETY BRIEFING WORKFLOW FOR AIRSIDE SAFETY INDUCTION BRIEFING (ASIB) & AIRPORT OPERATIONAL SAFETY REQUIREMENTS (AOS) BRIEFING



PROCEDURE 15: SAFETY INSPECTION FRAMEWORK (DEVELOPMENT / PROJECT)



* On days that the site supervisory personnel are not at work due to public holidays or weekends, the contractor shall assign a person holding a supervisory post or minimally a safety coordinator, to conduct the checks on behalf of the site supervisory personnel. Information of person who has conducted the check on public holidays or weekends shall be indicated on the daily inspection checklist.

To ensure the quality of the checks, photographs of critical check items such as closure markers and markings, obstacle lights and chequered flags shall be taken and forwarded to the site supervisory personnel for verification. Site supervisory personnel shall then attach the photographs and endorse on the checklist on the next working day.

CAG's Project Officer are advised to utilize a copy of the approved risk assessment form to conduct the checks. Mitigation measures checked shall be indicated on the RA with date that it was inspected. Project Officers are also advised to indicate explicitly the checks done or when any mitigation measure has been completed. Where practicable based on progress and scope of work, project officers shall complete checks for every single line item on the RA within a period of 1 year, except for work activities which have not commence. This is to ensure that every line item is checked within a reasonable timeframe. The team lead for the project, shall also conduct checks on the completeness of the RA checks by the project officer once every quarter. CAG's Project Officer can exercise their own discretion when conducting such checks if the records are kept in a manner that provides traceability and ensure completeness of check.

CAG's appointed site representative is to conduct checks on contractor's toolbox briefing at least once a week, signing off on the attendance record only when they are physically present for the briefing session and had verified the accuracy of contents briefed against what is recorded.