AC FCL-13 (Rev 0)
25 March 2022

Civil Aviation Authority of Singapore

Advisory Circular

REACTIVATION TRAINING PROGRAMMES FOR MULTI-CREW CERTIFICATED AIRCRAFT

GENERAL
Advisory Circulars (ACs) are issued by the Director-General of Civil Aviation (DGCA) from time to time to provide practical guidance or certainty in respect of the statutory requirements for aviation safety. ACs contain information about standards, practices and procedures acceptable to CAAS. An AC may be used, in accordance with section 11 of the Air Navigation Act 1966 (ANA), to demonstrate compliance with a statutory requirement. The revision number of the AC is indicated in parenthesis in the suffix of the AC number.

PURPOSE
This AC provides guidance in developing type rating reactivation training programmes for multi-crew certificated aircraft.

APPLICABILITY
This AC is applicable to a person (e.g. Aviation Training Organisation) intending to provide or providing a reactivation training programme required in Singapore Air Safety Publication Part 2 (SASP 2).

RELATED REGULATIONS
SASP 2 Chapter 10
SASP 2 Chapter 11

CANCELLATION
This is the first AC issued on the subject.

EFFECTIVE DATE
This AC is effective from 25 March 2022.

OTHER REFERENCES
Nil.

1. INTRODUCTION

1.1 A flight crew licence holder whose Aircraft Rating has lapsed may be required to complete a reactivation training programme. SASP 2 stipulates three types of reactivation training programmes, depending on the period for which the licence had lapsed:

(a) Abbreviated Reactivation programme;

(b) Reactivation Programme; and

(c) Full Type Rating course

2. GENERAL GUIDELINES IN DESIGNING A REACTIVATION TRAINING PROGRAMME

2.1 In developing a reactivation training programme, the organisation should consider the following:

(a) the period for which the Aircraft Rating had lapsed;

(b) the aircraft manufacturer's training programme or recommended training for such cases of lapsed Aircraft Rating; and

(c) the key competencies that need to be demonstrated as Pilot Flying (PF) or Pilot Monitoring (PM) in the Aircraft Rating Test.

3. TRAINING PROGRAMME SYLLABUS

3.1 The following table describes the training syllabus that each type of training programme should entail:

Type of Training Programmes	SASP 2 Requirements	Description
(a) Abbreviated Reactivation Training Programme	For a Singapore pilot licence holder who applies to renew an Aircraft Rating with period of lapse of more than a year but not exceeding 5 years; or For a pilot converting a foreign licence which the foreign Aircraft Rating has lapsed not exceeding a year	An Abbreviated Reactivation Training Programme should cover all critical, normal and non-normal situations that can be expected during flying operations (see **Appendix A**). The organisation conducting the Abbreviated Reactivation Training Programme should ensure that the pilot is competent in his/her knowledge on aircraft systems, even though the Aircraft Type Technical Examination is not mandated. This programme typically comprises of at least 4 sessions in a Flight Simulation Training Device Type VII.

(b) Reactivation Training Programme	For a Singapore pilot licence holder who applies to renew an Aircraft Rating with a period of lapse of more than 5 years but not exceeding 10 years; or For a pilot converting a foreign licence which the foreign Aircraft Rating has lapsed more than a year but not exceeding 5 years	A Reactivation Training Programme is typically based on the aircraft manufacturer's full type rating course but with the possible omission of the procedural training in the Flight Training Device (FTD). It is longer than the Abbreviated Reactivation programme but shorter than a full type rating course. Organisations may design this programme differently but should contain all the exercises listed in **Appendix B**.
(c) Full Type Rating Course	For a Singapore pilot licence holder who applies to renew an Aircraft Rating with a period of lapse of more than 10 years; or For a pilot converting a foreign licence which the foreign Aircraft Rating has lapsed more than 5 years	As required in Appendix J – Type Rating Training Programme of the SASP 10 on Approval of an Aviation Training Organisation.

APPENDIX A: ABBREVIATED REACTIVATION TRAINING PROGRAMME

Items	Training Device to be Used	Aircraft Rating Test	Instrument Rating Test
Knowledge			
Knowledge of Aircraft systems, memory items and limitations	OTD	1.1	-
Cold weather Operations	OTD	1.1	-
Take-off, Climb			
Preflight before departure including: – Threats and error management (TEM) – Altimeter setting	OTD		Part I
Engine start malfunctions	Type IV or VII	1.1	-
Taxying	Type VII		Part I
Pre-departure checks	Type VII		Part I
Take-off procedure: – normal – crosswind	Type VII	2.2	Part I
Climbing: After Take-off checks	Type VII	-	Part I
High Altitude			
Above FL300, manually fly aircraft with power to exceed speed limit, recover to level altitude and stabilise	Type VII	2.6	-
Stalls and recovery: (i) Clean stall (ii) During a turn in approach configuration with gear down, reduce airspeed until onset of buffet or stall warning and recover	Type VII	2.5	-
Handling using autopilot and flight director (may be conducted combined with other items)	Type VII	-	Part II Part III
Flight Management (FMS)			
Flight management (flight log, routine checks including fuel, systems and icing)	Type VII	1.1	Part I
Instrument flight Departure IFR	Type VII	-	Part I
Holding procedures (FMS)	Type VII	-	Part II
3D operations to decision height/altitude (DH/A) of 200 ft or to higher minima if required by the approach procedure	Type VII	-	Part III B
2D operations to minimum descent height/altitude (MDH/A)	Type VII	-	Part III A
Landing			
Arrival and landing	Type VII	-	Part III
Visual circuit OEI using manual thrust landing	Type VII	2.13	-
Flapless landing		2.17 2.18	-
Crosswind landing	Type VII	2.20	-
Go-around from minimum height	Type VII	2.16	-

Abnormal Procedures			
Abnormal and emergency procedures (This section may be combined with other items) (Engine Failure in cruise, emergency descent, Unreliable airspeed indication, EGPWS caution and warning, windshear, windshear ahead, TCAS warnings, emergency evacuation, SMOKE removal, double hydraulic failure)	Type VII	2.8 TCAS 2.9 Emergency descent 2.21 Windshear	-
Rejected take-off at a reasonable speed before reaching V1	Type VII	2.1	-
Simulated emergencies: (i) fire or smoke in flight; and (ii) systems' malfunctions	Type VII	2.3 2.7	-
Asymmetric Flight			
Simulated asymmetric flight (This section may be combined with other items) Simulated engine failure during take-off	Type VII	2.4	Part V
Asymmetric approach and go-around	Type VII	2.15	Part V
Asymmetric approach and full-stop landing	Type VII	2.11	-
Upset Prevention Recovery Training			
Manual flight with and without flight directors (no autopilot, no autothrust/autothrottle, and at different control laws, where applicable	Type VII	-	-
Recovery from stall events in: – take-off configuration – clean configuration at low altitude – clean configuration near maximum operating altitude; and – landing configuration	Type VII	2.5 High Altitude 2.10 Landing configuration	-
The following upset exercises: – recovery from nose-high at various bank angles; and – recovery from nose-low at various bank angles.	Type VII	-	-
Go-around with all engines operating* from various stages during an instrument approach	Type VII	-	-
Rejected landing with all engines operating: – from various heights below DH/MDH 50 ft above the runway threshold – after touchdown (baulked landing)	Type VII	-	-
Flight exercises including simulated failure of the flight instruments and recoveries from unusual attitudes.	Type VII	-	-

General items			
ATC liaison – compliance, R/T procedures		-	All parts
Use of Anti-Ice/De-Ice equipment		1.1	All parts

The following symbols mean:	
OTD	Other training devices may be used for this exercise.
*	The starred items shall be flown solely by reference to instruments.
#	To establish or maintain PBN privileges, one approach shall be an RNP APCH.

APPENDIX B: REACTIVATION TRAINING PROGRAMME

Items	Training Device	Aircraft Rating Test	Instrument Rating Test
Knowledge			
Knowledge of Aircraft systems, memory items and limitations	OTD	1.1	-
Performance	OTD	1.1	-
Cold weather Operations	OTD	1.1	-
Take-off, Climb			
Preflight before departure including: – Threats and error management (TEM) – Altimeter setting	OTD	-	Part I
Pre-start checks		-	Part I
External (The training shall be complemented by supervised aircraft inspection.)	OTD	-	-
Internal	OTD	-	-
Engine start malfunctions	Type VII	1.1	-
Taxying	Type VII	-	Part I
Pre-departure checks:	Type VII	-	Part I
Take-off procedure: – normal and – crosswind	Type VII	2.2	Part I
Climbing: – After Take Off checks	Type VII	-	Part I
High Altitude			
Above FL300, manually fly aircraft with power to exceed speed limit. Recover to level altitude and stabilise	Type VII	2.6	-
Stalls and recovery: (i) clean stall; (ii) During a turn in approach configuration with gear down, reduce airspeed until onset of buffet or stall warning and recover	Type VII	2.5	-
Handling using autopilot and flight director (may be combined with other items	Type VII	-	Part II Part III

Flight Management (FMS)			
Flight management (flight log, routine checks including fuel, systems and icing)	Type VII	1.1	Part I
Instrument flight Departure IFR	Type VII	-	Part I
Holding procedures (FMS)	Type VII	-	Part II
3D operations to decision height/altitude (DH/A) of 200 ft or to higher minima if required by the approach procedure	Type VII	-	Part III B
2D operations to minimum descent height/altitude (MDH/A)	Type VII	-	Part III A
Failure of localiser or glideslope	Type VII	-	Part III Part IV
Landing			
Arrival and landing	Type VII	-	Part III
Visual circuit OEI using manual thrust landing	Type VII	2.13	-
Flapless landing	Type VII	2.17 2.18	-
Crosswind landing	Type VII	2.20	-
Go-around from minimum height	Type VII	2.16	-
Night go-around and landing	Type VII	2.17	-
Abnormal Procedures			
Abnormal and emergency procedures (May be combined with other items) (Loss of braking, Emergency descent, Unreliable airspeed indication, EGPWS caution and warning, windshear, windshear ahead, TCAS warnings, emergency evacuation, SMOKE removal, double hydraulic failure)	Type VII	2.8 TCAS 2.9 Emergency descent 2.21 Windshear	-
Rejected take-off at a reasonable speed before reaching V1	Type VII	2.1	-
Simulated emergencies: (i) fire or smoke in flight; and (ii) systems' malfunctions	Type VII	2.3 2.7	-
Engine shutdown and restart	Type VII	-	-
Asymmetric Flight			
Simulated asymmetric flight (May be combined with other items.) Simulated engine failure during take-off	Type VII	2.4	Part V
Asymmetric approach and go-around	Type VII	2.15	Part V
Asymmetric approach and full-stop landing	Type VII	2.11	-

Upset Prevention Recovery Training			
Manual flight with and without flight directors (no autopilot, no autothrust/autothrottle, and at different control laws, where applicable	Type VII	-	-
At different speeds (including slow flight) and altitudes within the FSTD training envelope.	Type VII	-	-
Steep turns using 45° bank, 180° to 360° left and right	Type VII	-	-
Upset recovery training Recovery from stall events in: – take-off configuration – clean configuration at low altitude – clean configuration near maximum operating altitude; and – landing configuration	Type VII	2.5 High Altitude 2.10 Landing configuration	-
The following upset exercises: – recovery from nose-high at various bank angles – recovery from nose-low at various bank angles	Type VII	-	-
Go-around with all engines operating* from various stages during an instrument approach	Type VII	-	-
Rejected landing with all engines operating: – from various heights below DH/MDH 50 ft above the runway threshold – after touchdown (baulked landing)	Type VII	-	-
Flight exercises including simulated failure of the flight instruments and recoveries from unusual attitudes.	Type VII	-	-
General Items			
ATC liaison – compliance, R/T procedures		-	All parts
Use of Anti-Ice/De-Ice equipment		1.1	All parts

The following symbols mean:	
OTD	Other training devices may be used for this exercise.
*	The starred items shall be flown solely by reference to instruments.
#	To establish or maintain PBN privileges, one approach shall be an RNP APCH.