



The Civil Aviation Authority of Thailand

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Compliance Checklist for AOC Operations Manual – Part D

Operator Name: | |

Application n. : | |

Date: | |

(EU) Commission Regulation Reference that are transposed into TCAR OPS Regulation:

- Reg. N°965/2012 & related AMCs/GMs
- Reg. N°1178/2011 & related AMCs/GMs
- Reg. N°2023/217 (M26)
- Reg. N°2021/2237(M21)
- Reg. N°2021/1296
- Reg. N°2020/2036
- Reg. N°2019/1387
- Reg. N°2019/1384
- Reg. N° 2018/1042
- Reg. N°1332/2011
- Reg. N°300/2008
- Reg. N°923/2012
- Reg. N°376/2014 & 2015/1018

CONTENTS — CAT OPERATIONS

(a) *The OM should contain at least the following information, where applicable, as relevant for the area and type of operation:*

OM-D - TRAINING

1 Description of scope: Training syllabi and checking programmes for all operations personnel assigned to operational duties in connection with the preparation and/or conduct of a flight.

2 Content: Training syllabi and checking programmes should include the following:

2.1 for flight crew, all relevant items prescribed in Annex IV (Part-CAT), Annex V (Part-SPA) and ORO.FC

2.2 for cabin crew, all relevant items prescribed in Annex IV (Part-CAT), Annex V (Part-CC) of Commission Regulation (EU) 1178/2011 and ORO.CC

2.3 for technical crew, all relevant items prescribed in Annex IV (Part-CAT), Annex V (Part-SPA) and ORO.TC

2.4 for operations personnel concerned, including crew members:

(a) all relevant items prescribed in SPA.DG Subpart G of Annex IV (SPA.DG); and

(b) all relevant items prescribed in Annex IV (Part-CAT) and ORO.SEC; and

2.5 for operations personnel other than crew members (e.g., dispatcher, handling personnel, etc.), all other relevant items prescribed in Annex IV (Part-CAT) and in this Annex pertaining to their duties.

3 Procedures:

3.1 Procedures for training and checking.

3.2 Procedures to be applied in the event that personnel do not achieve or maintain the required standards.

3.3 Procedures to ensure that abnormal or emergency situations requiring the application of part or all of the abnormal or emergency procedures, and simulation of instrument meteorological conditions (IMC) by artificial means are not simulated during CAT operations.

4 Description of documentation to be stored and storage periods.

(a) *If there are sections that, because of the nature of the operation, do not apply, it is recommended that operators maintain the numbering system described in ORO.MLR.101 and above and insert 'Not applicable' or 'Intentionally blank' where appropriate.*

PA = Prior Approval; A = Applicable, NA = Not Applicable; Reference – OM reference; C = Compliant, NC = Not Compliant

Item N°	Reference	Item	A/NA	Reference	Compliance Criteria	C/NC	Remarks
1.	ORO.MLR.100 (k)	The operator shall ensure that all personnel are able to understand the language in which those parts of the OM which pertain to their duties and responsibilities are written.					<i>Explanation of gaps or differences</i>
2.	ORO.MLR.100 (k)	The content of the OM shall be presented in a form that can be used without difficulty and observes human factors principles.					
0 ADMINISTRATION AND CONTROL OF OPERATIONS MANUAL							
3.	AMC3 ORO.MLR.100 ORO.GEN.110 (a) ORO.MLR.100	0.1 <u>Introduction</u> (a) A statement that the manual complies with all applicable regulations and with the terms and conditions of the applicable Air Operator Certificate.			The content of the OM shall reflect the requirements set out in Annex III (Part-ORO), Annex IV (Part-CAT) and Annex V (Part-SPA), as applicable, and shall not contravene the conditions contained in the operations specifications to the air operator certificate (AOC).		
4.	AMC3 ORO.MLR.100 ORO.GEN.110 (b)	(b) A statement that the manual contains operational instructions that are to be complied with by the relevant personnel.			Every flight shall be conducted in accordance with the provision of the ops manual.		
5.	AMC3 ORO.MLR.100 ORO.MLR.101	(c) A list and brief description of the various parts, their contents, applicability and use.			The main structure of the OM shall be as follows: (a) Part A: General/Basic, comprising all non-type-related operational policies, instructions and procedures; (b) Part B: Aircraft operating matters, comprising all type-related instructions and procedures, taking into account differences between types/classes, variants or individual aircraft used by the operator; (c) Part C: Commercial air transport operations, comprising route/role/area and aerodrome/operating site instructions and information; (d) Part D: Training, comprising all training instructions for personnel required for a safe operation.		
6.	AMC3 ORO.MLR.100	(d) Explanations and definitions of terms and words needed for the use of the manual.			Definitions to be checked according TCAR OPS Part DEF.		
7.	AMC3 ORO.MLR.100	0.2 <u>System of amendment and revision</u>			For amendments required to be notified in		

Item N°	Reference	Item	A/NA	Reference	Compliance Criteria	C/NC	Remarks
	ORO.MLR.100	(a) Details of the person(s) responsible for the issuance and insertion of amendments and revisions.			<p>accordance with ORO.GEN.115(b) and ORO.GEN.130(c), the operator shall supply the competent authority with intended amendments in advance of the effective date; and</p> <p>For amendments to procedures associated with prior approval items in accordance with ORO.GEN.130, approval shall be obtained before the amendment becomes effective.</p> <p>When immediate amendments or revisions are required in the interest of safety, they may be published and applied immediately, provided that any approval required has been applied for.</p>		
8.	AMC3 ORO.MLR.100 ORO.MLR.100	(b) A record of amendments and revisions with insertion dates and effective dates.			The operator shall incorporate all amendments and revisions required by the competent authority.		
9.	AMC3 ORO.MLR.100 ORO.MLR.100	(c) A statement that handwritten amendments and revisions are not permitted except in situations requiring immediate amendment or revision in the interest of safety.					
10.	AMC3 ORO.MLR.100 ORO.MLR.100	(d) A description of the system for the annotation of pages and their effective dates.					
11.	AMC3 ORO.MLR.100 ORO.MLR.100	(e) A list of effective pages.					
12.	AMC3 ORO.MLR.100 ORO.MLR.100	(f) Annotation of changes (on text pages and, as far as practicable, on charts and diagrams).			The OM shall be kept up to date. All personnel shall be made aware of the changes that are relevant to their duties.		
13.	AMC3 ORO.MLR.100 ORO.MLR.100 AMC1 ORO.MLR.100	(g) Temporary revisions.			The operator should describe the conditions for temporary revisions.		
14.	AMC3 ORO.MLR.100 ORO.AOC.150 ORO.MLR.100	(h) A description of the distribution system for the manuals, amendments and revisions.			<p>The operator shall be capable of distributing operational instructions and other information without delay.</p> <p>All operations personnel shall have easy access to the portions of the OM that are relevant to their duties.</p>		

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					<p>The OM shall be kept up to date. All personnel shall be made aware of the changes that are relevant to their duties.</p> <p>Each crew member shall be provided with a personal copy of the relevant sections of the OM pertaining to their duties. Each holder of an OM, or appropriate parts of it, shall be responsible for keeping their copy up to date with the amendments or revisions supplied by the operator.</p>		
ORGANISATION AND RESPONSIBILITY							
15.	AMC3 ORO.MLR.100	Organizational structure.			A description of the organizational structure, including the general organogram.		
16.	AMC3 ORO.MLR.100	Nominated persons			The name of the nominated crew training person		
17.	AMC3 ORO.MLR.100	Responsibilities and duties of management personnel			A description of the nominated crew training person function and responsibilities should be included.		
1 DESCRIPTION OF SCOPE							
18.	AMC3 ORO.MLR.100	Description of scope			Training syllabi and checking programmes for all operations personnel assigned to operational duties in connection with the preparation and/or conduct of a flight.		
2 TRAINING SYLLABI & CHECKING PROGRAMMES							
2.1 FLIGHT CREW							
19.	ORO.FC.145 (a)	Provision of training, checking and assessment			Training shall be conducted in accordance with the training programmes and syllabi established by the operator in the OM.		
20.	ORO.FC.145(b)	Provision of training – Mandatory elements			When establishing the training programmes and syllabi, the operator shall include the relevant elements defined in the mandatory elements for the relevant type that are provided in the operational suitability data in accordance with EASA Part 21 or any equivalent material acceptable to the CAAT.		
21.	AMC1 ORO.FC.145(b)	Provision of training – Non-Mandatory elements			When establishing the training programmes and		

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					syllabi, the operator shall include the relevant elements defined in the non-mandatory (recommendation) elements for the relevant type that are provided in the operational suitability data in accordance with EASA Part 21 or any equivalent material acceptable to the CAAT.		
22.	ORO.FC.145(c)	Provision of training – Approval by competent authority			In the case of CAT operations, training and checking programmes, including syllabi and the use of the means to deliver the programme such as individual flight simulation training devices (FSTDs) and other training solutions, shall be approved by the competent authority.		
23.	ORO.FC.145 (d)	Provision of training – Use of FSTD			The FSTD used to meet the requirements of this Subpart shall be qualified in accordance with TCAR PEL and it shall replicate the aircraft used by the operator, as far as practicable. Differences between the FSTD and the aircraft shall be described and addressed through a briefing or training, as appropriate.		
24.	ORO.FC.145 (e)	Provision of training – Changes to FSTD			The operator shall establish a system to adequately monitor changes to the FSTD and to ensure that those changes do not affect the adequacy of the training programmes.		
25.	AMC1 ORO.FC.145(d)	Provision of training – Use of FSTD			The operator should classify any differences between the aircraft and FFS in accordance with the Air Transport Association (ATA) chapters as follows: <ul style="list-style-type: none"> - Level A differences - Level B differences - Level C differences - Level D differences See AMC1 ORO.FC.145(d) for more details.		
26.	ORO.FC.146 (a)	Personnel providing training, checking and assessment			All training, checking and assessment required in this Subpart shall be conducted by appropriately qualified personnel.		
27.	ORO.FC.146 (b)	Personnel providing training, checking and assessment – Flight and Flight Simulation Training and Checking			In the case of flight and flight simulation training, checking and assessment, the personnel that provide		

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					the training and conduct the checking or assessment shall be qualified in accordance with TCAR PEL Part FCL. Additionally, the personnel providing training and conducting checking towards specialised operations shall be suitably qualified for the relevant operation.		
28.	ORO.FC.146 (c)	Personnel providing training, checking and assessment – Evidence Based Training			<p>For an EBT programme, the personnel that performs assessment and provides training shall:</p> <p>(1) hold an Annex I (Part-FCL) instructor or examiner certificate.</p> <p>(2) complete the operator's EBT instructor standardisation programme. This shall include an initial standardisation programme and a recurrent standardisation programme.</p> <p>Completion of the operator's EBT initial standardisation will qualify the instructor to perform EBT practical assessment.</p>		
29.	AMC1.ORO.FC.146 (c)	Personnel providing training, checking and assessment – EBT Instructor – Initial Standardisation Programme			<p>(a) Before delivering the operator's EBT programme, the instructor should complete an EBT instructor initial standardisation programme composed of:</p> <p>(1) EBT instructor training; and</p> <p>(2) EBT assessment of competence.</p>		
30.	AMC1.ORO.FC.146 (c)	Personnel providing training, checking and assessment – EBT Instructor Training			<p>(b) The EBT instructor training course should be delivered by at least one pilot who is or has been an EBT instructor, and who has demonstrated proficiency to train the elements specified in point (c) below.</p> <p>(c) The EBT instructor training course should comprise theoretical and practical training. At the completion of EBT instructor training, the instructor should:</p> <p>(1) have knowledge of EBT, including the following underlying principles:</p> <p>(i) competency-based training;</p> <p>(ii) learning from positive performance;</p>		

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					<ul style="list-style-type: none"> (iii) building resilience; and (iv) data-driven training; (2) demonstrate knowledge of the structure of an EBT module; (3) demonstrate knowledge of the method of training delivery for each phase of an EBT module; (4) demonstrate knowledge of the principles of adult learning and how they relate to EBT; (5) conduct objective observations based on a competency framework, and document evidence of observed performance; (6) relate specific performance observations of competencies; (7) analyse trainee performance to determine competency-based training needs and recognise strengths; (8) evaluate performance using a competency-based grading system; (9) apply appropriate teaching styles during simulator training to accommodate trainee learning needs; (10) facilitate trainee learning, focusing on specific competency-based training needs; and (11) conduct a debrief using facilitation techniques. (d) An instructor may be given credits for parts of point (c) if the instructor has demonstrated competencies in those topics. 		
31.	AMC1.ORO.FC.146 (c)	Personnel providing training, checking and assessment – EBT Instructor Assessment of Competence			<ul style="list-style-type: none"> (e) Prior to conducting assessment and training within an EBT programme, the EBT instructor should complete an EBT assessment of competence where the EBT instructor delivers: <ul style="list-style-type: none"> (1) an evaluation phase (EVAL) and a manoeuvres training phase (MT); or (2) a scenario-based training phase (SBT) 		

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					<p>(f) The assessment of competence has a validity period of 3 years counted from the end of the month the assessment of competence was conducted.</p> <p>(g) The EBT assessment of competence should be conducted by a person nominated by the operator, who:</p> <p>(1) is qualified in accordance with TCAR PEL Part FCL to conduct an assessment of competence; and</p> <p>(2) has completed the EBT instructor standardisation.</p> <p>(h) The EBT assessment of competence may be combined with the assessment of competence required in TCAR PEL Part FCL.</p>		
32.	AMC2.ORO.FC.146 (c)	Personnel providing training, checking and assessment – EBT Instructor Recurrent Standardisation Programme			<p>The EBT instructor should:</p> <p>(a) conduct six EVAL or SBT phases of an EBT module (or a combination of both) every 36 months.</p> <p>One of the EVAL or SBT should take place in the period of 12 months immediately preceding the expiry date. The 36-month period should be counted from the end of the month the module was taken. If this has not been fulfilled, the EBT instructor should complete an EBT assessment of competence. When the module is undertaken within the last 12 months of the validity period,</p> <p>the new period should be counted from the original expiry date;</p> <p>(b) receive annual recurrent standardisation. The recurrent standardisation should include:</p> <p>(1) refresher EBT training; and</p> <p>(2) concordance training; and</p> <p>(c) complete an assessment of competence every 3 years. When the assessment of competence is conducted within the 12 months preceding the expiry date, the next assessment of competence should be completed within 36 calendar months of the original expiry date of the previous assessment of</p>		

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					competence.		
33.	ORO.FC.146 (d)	Personnel providing training, checking and assessment – Evidence Based Training – Line Evaluation			Notwithstanding point (b), the line evaluation of competence may be conducted by a suitably qualified commander nominated by the operator that is standardised in EBT concepts and the assessment of competencies (line evaluator).		
34.	ORO.FC.146 (e)	Personnel providing training, checking and assessment – Aircraft/FSTD Training - Qualifications of instructor			Notwithstanding point (b), the aircraft/FSTD training and the operator proficiency check may be conducted by a suitably qualified commander holding a FI/TRI/SFI certificate and nominated by the operator for any of the following operations: (1) CAT operations of helicopters meeting the criteria defined in point ORO.FC.005(b)(2); (2) CAT operations of other than complex motor-powered helicopters by day and over routes navigated by reference to visual landmarks; (3) CAT operations of performance class B aeroplanes that do not meet the criteria defined in point ORO.FC.005(b)(1).		
35.	ORO.FC.146 (f)	Personnel providing training, checking and assessment – Aircraft/FSTD training – Qualifications of instructor – contd.			Notwithstanding point (b), the aircraft/FSTD training and the demonstration of competence/operator proficiency check may be conducted by a suitably qualified pilot-in-command/commander nominated by the operator for any of the following operations: (1) specialised operations; (2) CAT operations of aeroplanes meeting the criteria defined in point ORO.FC.005(b)(1).		
36.	ORO.FC.146 (g)	Personnel providing training, checking and assessment – Line Check – Qualifications			Notwithstanding point (b), the line check may be conducted by a suitably qualified commander nominated by the operator.		
37.	ORO.FC.146 (h)	Personnel providing training, checking and assessment – Notification to the authority			The operator shall inform the competent authority about the persons nominated under points (e) to (g).		

Command course						
38.	ORO.FC.205 (a)	Command course - Content			<p>(a) For aeroplane and helicopter operations, the command course shall include at least the following elements:</p> <p>(1) training in an FSTD, which includes line oriented flight training (LOFT) and/or flight training;</p> <p>(2) the OPC, operating as commander;</p> <p>(3) command responsibilities training;</p> <p>(4) line training as commander under supervision, for a minimum of:</p> <p style="padding-left: 40px;">(i) 10 flight sectors, in the case of aeroplanes; and</p> <p style="padding-left: 40px;">(ii) 10 hours, including at least 10 flight sectors, in the case of helicopters;</p> <p>(5) completion of a line check as commander and demonstration of adequate knowledge of the route or area to be flown and of the aerodromes, including alternate aerodromes, facilities and procedures to be used; and</p> <p>(6) CRM training.</p>	
39.	AMC1 ORO.FC.205 (e)	Command course – Combined upgrading & conversion course for helicopter			<p>If a pilot is converting from one helicopter type or variant to another when upgrading to commander:</p> <p>(a) the command course should also include a conversion course in accordance with ORO.FC.220; and</p> <p>(b) additional flight sectors should be required for a pilot transitioning onto a new type of helicopter.</p>	
40.	AMC1 ORO.FC.115	Command course – CRM training			<p>The operator should ensure that elements of CRM training are integrated into the command course, as specified in Table 1 of (g) AMC1 ORO.FC.115.</p>	

Route, area & aerodrome knowledge						
41.	ORO.FC.105 (c)	Route, area & aerodrome knowledge			<p>The commander or the pilot, to whom the conduct of the flight may be delegated, shall have had initial</p>	

					familiarisation training of the route or area to be flown and of the aerodromes, facilities and procedures to be used. This route/area and aerodrome knowledge shall be maintained by operating at least once on the route or area or to the aerodrome within a 12-month period.		
42.	AMC1 ORO.FC.105(b)(2);(c) §(a)	Route, area & aerodrome knowledge – Route & area			Area and route training should include knowledge of: (i) terrain and minimum safe altitudes; (ii) seasonal meteorological conditions; (iii) meteorological, communication and air traffic facilities, services and procedures; (iv) search and rescue procedures where available; and (v) navigational facilities associated with the area or route along which the flight is to take place.		
43.	AMC1 ORO.FC.105(b)(2);(c) §(a)(4)	Route, area & aerodrome knowledge – Route & area			Depending on the complexity of the area or route, as assessed by the operator, the following methods of familiarisation should be used: (i) for the less complex areas or routes, familiarisation by self-briefing with route documentation, or by means of programmed instruction; and (ii) in addition, for the more complex areas or routes, in-flight familiarisation as a pilot-in-command/commander or co-pilot under supervision, observer, or familiarisation in a flight simulation training device (FSTD) using a database appropriate to the route concerned.		
44.	AMC1 ORO.FC.105(b)(2);(c) §(b)	Route, area & aerodrome knowledge – Aerodrome			Aerodrome training should include knowledge of obstructions, physical layout, lighting, approach aids and arrival, departure, holding and instrument approach procedures, applicable operating minima and ground movement considerations.		
45.	AMC1 ORO.FC.105(b)(2);(c) §(c)	Route, area & aerodrome knowledge – Aerodrome category B			The commander should be briefed, or self-briefed by means of programmed instruction, on the category B aerodrome(s) concerned. <u>The completion of the briefing should be recorded.</u> This recording may be accomplished after completion or confirmed by the commander before departure on a flight involving		

					category B aerodrome(s) as destination or alternate aerodromes.		
46.	AMC1 ORO.FC.105(b)(2);(c) §(d)	Route, area & aerodrome knowledge – Aerodrome category C			The commander should be briefed and visit the aerodrome as an observer and/or undertake instruction in a suitable FSTD. <u>The completion of the briefing, visit and/or instruction should be recorded.</u>		
47.	AMC1 ORO.FC.105(c) §(a) §(b)	Route, area & aerodrome knowledge – Recency			(a) The 12-month period should be counted from the last day of the month: (1) when the familiarisation training was undertaken; or (2) of the latest operation on the route or area to be flown and of the aerodromes, facilities and procedures to be used. (b) When the operation is undertaken within the last 3 calendar months of that period, the new 12-month period should be counted from the original expiry date.		
48.	AMC2 ORO.FC.105(c)	Route, area & aerodrome knowledge – Recency – Perfo class B aeroplanes			In the case of CAT operations with performance class B aeroplanes operating under visual flight rules (VFR) by night or instrument flight rules (IFR), the knowledge should be maintained as follows: (a) except for operations to the most demanding aerodromes, by completion of at least 10 flight sectors within the area of operation during the preceding 12 months in addition to any required self-briefing; (b) operations to the most demanding aerodromes may be performed only if: (1) the pilot-in-command/commander has been qualified at the aerodrome within the preceding 36 months by a visit as an operating flight crew member or as an observer; (2) the approach is performed in visual meteorological conditions (VMC) from the applicable minimum sector altitude; and		

					(3) an adequate self-briefing has been made prior to the flight.		
49.	ORO.FC.105 CAT.POL.A.240	Route, area & aerodrome knowledge – Increased bank angles			The flight crew shall obtain adequate knowledge of the route to be flown and of the procedures to be used.		
50.	ORO.FC.105 CAT.POL.A.245/345	Route, area & aerodrome knowledge – Steep approach			For each aerodrome at which steep approach operations are to be conducted, pilot qualification and special aerodrome familiarisation shall be taken into consideration.		
51.	ORO.FC.105 CAT.POL.A.250/350	Route, area & aerodrome knowledge – Short landing			The pilot experience, training and special aerodrome familiarisation requirements shall be specified and met.		
52.	CAT.OP.MPA.303 & 311 AMC 1 CAT.OP.MPA.303 & 311	In-flight check of the landing distance at time of arrival – aeroplanes & Reporting on runway braking action Refer to GM1 CAT.OP.MPA.303 & 311 for Syllabus details.			Flight crew members should be trained on the use of the RCR, on the use of performance data for the assessment of the LDTA and on reporting braking action using the AIREP format.		
53.	CAT.POL A.255 (b)(2)(iv) AMC1 CAT.POL.A.255(b)(2)(iv)	Reduced landing distance operations (Performance Class A) Crew training programme is split into these four elements - - Ground Training - FSTD Training and/or Flight Training - Conversion Training - Recurrent Training and Checking			The operator shall ensure that flight crew training programmes for reduced required landing distance operations include ground training, flight simulation training device (FSTD).		
54.	CAT.POL.A.355 (b)(6) AMC1 CAT.POL.A.355 (b)(5) and (b)(6)	Reduced landing distance operations (Performance Class B) Training programme should include – - Initial Training - Recurrent Training			The operator shall establish - an adequate aerodrome training and checking programme for the flight crew is established; - the flight crew is qualified and has recency in reduced required landing distance operations at the aerodrome concerned;		

CRM - Generalities							
55.	ORO.FC.115	CRM Training			(a) Before operating, the flight crew member shall have received CRM training, appropriate to his/her role, as specified in the operations manual.		

					(b) Elements of CRM training shall be included in the aircraft type or class training and recurrent training as well as in the command course.		
56.	AMC1 ORO.FC.115	CRM – General - Training environment			CRM training should be conducted in the non-operational environment (classroom and computer-based) and in the operational environment (flight simulation training device (FSTD) including other training solutions described in CS-FSTD when available and aircraft). Tools such as group discussions, team task analysis, team task simulation and feedback should be used.		
57.	AMC1 ORO.FC.115	CRM – General - Classroom training			Whenever possible, classroom training should be conducted in a group session away from the pressures of the usual working environment, so that the opportunity is provided for flight crew members to interact and communicate in an environment conducive to learning.		
58.	AMC1 ORO.FC.115	CRM – General – Computer-based training (CBT)			Computer-based training should not be conducted as a stand-alone training method but may be conducted as a complementary training method. Complementary training method in the context of EBT: advanced CBT following the aviation blended learning environment, such as virtual reality, chatbots, interactive scenario instructors, etc. may serve as the principal method to deliver training in the non-operational environment. In such case, the classroom training may be the complementary method.		
59.	AMC1 ORO.FC.115	CRM – General – Practical Parts			Whenever practicable, parts of the CRM training should be conducted in FSTDs that reproduce a realistic operational environment and permit interaction. This includes but is not limited to line-oriented flight training (LOFT) scenarios.		
60.	AMC1 ORO.FC.115	CRM – General – Integration in Training			CRM principles should be integrated into relevant parts of flight crew training and operations including checklists, briefings, abnormal and emergency procedures.		
61.	AMC1 ORO.FC.115	CRM – Management system			CRM training should address hazards and risks identified by the operator’s management system		

					described in ORO.GEN.200.	
62.	AMC1 ORO.FC.115	CRM – Competency-based			Whenever practicable, the compliance-based approach concerning CRM training may be substituted by a competency-based approach such as evidence-based training. In this context, CRM training should be characterised by a performance orientation, with emphasis on standards of performance and their measurement, and the development of training to the specified performance standards.	
63.	AMC1 ORO.FC.115	CRM – Contracted CRM training			If the operator chooses not to establish its own CRM training, another operator, a third party or a training organisation may be contracted to provide the training in accordance with ORO.GEN.205. In case of contracted CRM training, the operator should ensure that the content of the course covers the specific culture, the type of operations and the associated procedures of the operator. When crew members from different operators attend the same course, the CRM training should be specific to the relevant flight operations and to the trainees concerned.	
64.	AMC1 ORO.FC.115	CRM – Syllabus – Automation and philosophy on the use of automation			<p>(i) The CRM training should include training in the use and knowledge of automation, and in the recognition of systems and human limitations associated with the use of automation. The operator should, therefore, ensure that the flight crew member receives training on:</p> <p>(A) the application of the operations policy concerning the use of automation as stated in the operations manual; and</p> <p>(B) system and human limitations associated with the use of automation, giving special attention to issues of mode awareness, automation surprises and over-reliance including false sense of security and complacency.</p> <p>(ii) The objective of this training should be to provide appropriate knowledge, skills and attitudes for managing and operating automated systems. Special attention should be given to how automation increases the need for crews to have a common understanding of the way in which the system</p>	

					<p>performs, and any features of automation that make this understanding difficult.</p> <p>(iii) If conducted in an FSTD, the training should include automation surprises of different origin (system- and pilot-induced).</p>		
65.	AMC1 ORO.FC.115	CRM – Syllabus – Monitoring and intervention			<p>Flight crew should be trained in CRM-related aspects of operation monitoring before, during and after flight, together with any associated priorities. This CRM training should include guidance to the pilot monitoring on when it would be appropriate to intervene, if felt necessary, and how this should be done in a timely manner. Reference should be made to the operator procedures for structured intervention as specified in the operations manual.</p>		
66.	AMC1 ORO.FC.115 GM5 ORO.FC.115	CRM – Syllabus – Resilience development			<p>CRM training should address the main aspects of resilience development. The training should cover:</p> <p>(i) Mental flexibility</p> <p>Flight crew should be trained to:</p> <p>(A) understand that mental flexibility is necessary to recognise critical changes;</p> <p>(B) reflect on their judgement and adjust it to the unique situation;</p> <p>(C) avoid fixed prejudices and over-reliance on standard solutions; and</p> <p>(D) remain open to changing assumptions and perceptions.</p> <p>(ii) Performance adaptation</p> <p>Flight crew should be trained to:</p> <p>(A) mitigate frozen behaviours, overreactions and inappropriate hesitation; and</p> <p>(B) adjust actions to current conditions.</p> <p>See GM5 ORO.FC.115 for more details.</p>		
67.	AMC1 ORO.FC.115	CRM – Syllabus – Surprise and startle effect			<p>CRM training should address unexpected, unusual and stressful situations. The training should cover:</p>		

					<p>(i) surprises and startle effects; and</p> <p>(ii) management of abnormal and emergency situations, including:</p> <p>(A) the development and maintenance of the capacity to manage crew resources;</p> <p>(B) the acquisition and maintenance of adequate automatic behavioural responses; and</p> <p>(C) recognising the loss and re-building situation awareness and control.</p>		
68.	AMC1 ORO.FC.115	CRM – Syllabus – Cultural differences			<p>CRM training should cover cultural differences of multinational and cross-cultural crews.</p> <p>This includes recognising that:</p> <p>(i) different cultures may have different communication specifics, ways of understanding and approaches to the same situation or problem;</p> <p>(ii) difficulties may arise when crew members with different mother tongue communicate in a common language which is not their mother tongue; and</p> <p>(iii) cultural differences may lead to different methods for identifying a situation and solving a problem.</p>		
69.	AMC1 ORO.FC.115	CRM – Syllabus – Operator’s safety culture and company culture			<p>CRM training should cover the operator’s safety culture, its company culture, the type of operations and the associated procedures of the operator. This should include areas of operations that may lead to particular difficulties or involve unusual hazards.</p>		
70.	AMC1 ORO.FC.115	CRM – Syllabus – Case studies			<p>(i) CRM training should cover aircraft type-specific case studies, based on the information available within the operator’s management system, including:</p> <p>(A) accident and serious incident reviews to analyse and identify any associated non-technical causal and contributory factors, and instances or examples of lack of CRM; and</p> <p>(B) analysis of occurrences that were well managed.</p> <p>(ii) If relevant aircraft type-specific or operator-specific case studies are not available, the operator</p>		

					should consider other case studies relevant to the scale and scope of its operations.	
71.	AMC2 ORO.FC.115	CRM – Single pilot			<p>For single-pilot helicopter operations with technical crew, AMC1 ORO.FC.115 should be applied.</p> <p>For single-pilot operations other than those specified in (a), AMC1 ORO.FC.115 should be applied with the following differences:</p> <p>(1) Relevant training</p> <p>Training should cover the relevant CRM training, i.e. initial operator’s training, the operator conversion course and recurrent training.</p> <p>(2) Relevant training elements</p> <p>CRM training should focus on the elements specified in Table 1 of (g) of AMC1 ORO.FC.115 which are relevant to single-pilot operations. Therefore, single-pilot CRM training should include, among others:</p> <p>(i) situation awareness;</p> <p>(ii) workload management;</p> <p>(iii) decision-making;</p> <p>(iv) resilience development;</p> <p>(v) surprise and startle effect; and</p> <p>(vi) effective communication and coordination with other operational personnel and ground services.</p> <p>(3) Computer-based training</p> <p>Notwithstanding (a)(3) of AMC1 ORO.FC.115, computer-based training may be conducted as a stand-alone training method.</p> <p>(4) Operation with ELA2 aircraft</p> <p>Notwithstanding (1) and (2), for operations with ELA2 aircraft the relevant CRM training and its duration should be determined by the operator, based on the aircraft type and the complexity of the operation.</p>	
Initial CRM						

72.	ORO.FC.215	Initial operator's CRM training			<p>(a) The flight crew member shall have completed an initial CRM training course <u>before</u> commencing unsupervised line flying.</p> <p>(c) If the flight crew member has not previously received theoretical training in human factors to the ATPL level, he/she shall complete, before or combined with the initial CRM training, a theoretical course provided by the operator and based on the human performance and limitations syllabus for the ATPL as established in Part-FCL.</p>		
73.	ORO.FC.215 AMC1 ORO.FC.115	Initial operator's CRM training – Content			<p>(1) The flight crew member should complete the initial operator's CRM training once. When the type of operation of a new operator is not different, the new operator should not be required to provide the initial operator's CRM training to this flight crew member a second time.</p> <p>(2) The initial training should cover all elements specified in Table 1 of (g) AMC1 ORO.FC.115.</p>		
74.	GM3 ORO.FC.115	Initial operator's CRM training – minimum time			<p>Initial operator's CRM training for multi-pilots operations: 18 training hours with a minimum of 12 training hours in classroom training.</p> <p>initial operator's CRM training for single-pilot operations: 6 training hours.</p>		
CRM Instructor							
75.	ORO.FC.215 AMC3 ORO.FC.115	CRM Instructor - Introduction			<p>The provisions described below:</p> <p>(1) should be fulfilled by flight crew CRM instructors responsible for classroom CRM training; and</p> <p>(2) are not applicable to:</p> <p>(i) instructors, holding a certificate in accordance with Part-FCL, who conduct CRM training in the operational environment; and</p> <p>(ii) instructors or instructors conducting training other than CRM training, but integrating CRM elements into this training.</p>		
76.	ORO.FC.215 AMC3 ORO.FC.115	CRM Instructor - Qualification			<p>(1) A training and standardisation programme for flight crew CRM instructors should be established.</p>		

				<p>(2) A flight crew CRM instructor, in order to be suitably qualified, should:</p> <ul style="list-style-type: none"> (i) have adequate knowledge of the relevant flight operations; (ii) have adequate knowledge of human performance and limitations (HPL), whilst: <ul style="list-style-type: none"> (A) having obtained a commercial pilot licence in accordance with Part-FCL; or (B) having followed a theoretical HPL course covering the whole syllabus of the HPL examination; (iii) have completed flight crew initial operator's CRM training; (iv) have received training in group facilitation skills; (v) have received additional training in the fields of group management, group dynamics and personal awareness; and (vi) have demonstrated the knowledge, skills and credibility required to train the CRM training elements in the non-operational environment, as specified in Table 1 of AMC1 ORO.FC.115. <p>(3) The following qualifications and experiences are also acceptable for a flight crew CRM instructor in order to be suitably qualified:</p> <ul style="list-style-type: none"> (i) A flight crew member holding a recent qualification as a flight crew CRM instructor may continue to be a flight crew CRM instructor after the cessation of active flying duties if he/she maintains adequate knowledge of the relevant flight operations. (ii) A former flight crew member may become a flight crew CRM instructor if he/she maintains adequate knowledge of the relevant flight operations and fulfils the provisions of (2)(ii) to (2)(vi). (iii) An experienced CRM instructor may become a flight crew CRM instructor if he/she demonstrates adequate knowledge of the relevant flight operations 	
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				and fulfils the provisions of (2)(ii) to (2)(vi).	
77.	<p>ORO.FC.215</p> <p>AMC3 ORO.FC.115</p>	CRM instructor - Training		<p>(1) Training of flight crew CRM instructors should be both theoretical and practical. Practical elements should include the development of specific instructor skills, particularly the integration of CRM into line operations.</p> <p>(2) The basic training of flight crew CRM instructors should include the training elements for flight crew, as specified in Table 1 of AMC1 ORO.FC.115. In addition, the basic training should include the following:</p> <ul style="list-style-type: none"> (i) introduction to CRM training; (ii) operator's management system; (iii) characteristics, as applicable: <p>(A) of the different types of CRM trainings (initial, recurrent, etc.);</p> <p>(B) of combined training; and</p> <p>(C) related to the type of aircraft or operation; and</p> <ul style="list-style-type: none"> (iv) assessment. <p>(3) The refresher training of flight crew CRM instructors should include new methodologies, procedures and lessons learned.</p> <p>(4) Instructors, holding a certificate in accordance with Part-FCL, who are also CRM instructors, may combine the CRM instructor refresher training with instructor refresher training.</p> <p>(5) Instructors for other-than complex motor-powered aircraft should be qualified as flight crew CRM instructors for this aircraft category with no additional training, as specified in (2) and (3) when:</p> <ul style="list-style-type: none"> (i) holding a certificate in accordance Part-FCL; and (ii) fulfilling the provisions of (b)(2) or (b)(3). <p>(6) The training of flight crew CRM instructors should be conducted by flight crew CRM instructors with a minimum of 3 years' experience. Assistance may be</p>	

				provided by experts in order to address specific areas.	
78.	ORO.FC.215 AMC3 ORO.FC.115 GM7 ORO.FC.115	CRM instructor - Assessment		<p>(1) A flight crew CRM instructor should be assessed by the operator when conducting the first CRM training course. This first assessment should be valid for a period of 3 years.</p> <p>(2) The operator should ensure that the process for the assessment is included in the operations manual describing methods for observing, recording, interpreting and debriefing the flight crew CRM instructor. All personnel involved in the assessment must be credible and competent in their role.</p> <p>See GM7 ORO.FC.115</p>	
79.	ORO.FC.215 AMC3 ORO.FC.115	CRM instructor – Recency and renewal		<p>(1) For recency of the 3-year validity period, the flight crew CRM instructor should:</p> <ul style="list-style-type: none"> (i) conduct at least 2 CRM training events in any 12-month period; (ii) be assessed within the last 12 months of the 3-year validity period by the operator; and (iii) complete CRM instructor refresher training within the 3-year validity period. <p>(2) The next 3-year validity period should start at the end of the previous period.</p> <p>(3) For renewal, i.e. when a flight crew CRM instructor does not fulfil the provisions of (1), he/she should, before resuming as flight crew CRM instructor:</p> <ul style="list-style-type: none"> (i) comply with the qualification provisions of (b) and (d); and (ii) complete CRM instructor refresher training. 	
80.	GM3 ORO.FC.115	CRM instructor – Minimum times		<p>(i) basic training:</p> <ul style="list-style-type: none"> (A) 18 training hours for trainees holding an instructor certificate for complex motor-powered aircraft, as specified in Part-FCL, which includes 25-hour training in teaching and learning; or (B) 30 training hours for trainees who do not hold an instructor certificate as specified in (A); and 	

					(ii) refresher training: 6 training hours.		
CRM assessment							
81.	AMC1 ORO.FC.115	Assessment of CRM skills			<p>(1) Assessment of CRM skills is the process of observing, recording, interpreting and debriefing crews and crew member's performance using an accepted methodology in the context of the overall performance.</p> <p>(2) The flight crew member's CRM skills should be assessed in the operational environment, but not during CRM training in the non-operational environment. Nevertheless, during training in the non-operational environment, feedback from the flight crew CRM instructor or from trainees on individual and crew performance may be given to the crew members concerned.</p>		
82.	AMC1 ORO.FC.115	Assessment of CRM skills			<p>The assessment of CRM skills should:</p> <p>(i) include debriefing the crew and the individual crew member;</p> <p>(ii) serve to identify additional training, where needed, for the crew or the individual crew member; and</p> <p>(iii) be used to improve the CRM training system by evaluating de-identified summaries of all CRM assessments.</p>		
83.	AMC1 ORO.FC.115	Assessment of CRM skills			<p>Prior to the introduction of CRM skills assessment, a detailed description of the CRM methodology, including the required CRM standards and the terminology used for the assessment, should be published in the operations manual.</p>		
84.	AMC1 ORO.FC.115	CRM Assessment – Methodology			<p>The assessment should be based on the following principles:</p> <p>(i) only observable behaviours are assessed;</p> <p>(ii) the assessment should positively reflect any CRM skills that result in enhanced safety; and</p> <p>(iii) assessments should include behaviour that results in an unacceptable reduction in safety margin.</p>		

85.	GM6 ORO.FC.115	CRM Assessment – Methodology – NOTECHS			<p>(a) NOTECHS (non-technical skills) is a validated method for assessing flight crew CRM skills. The NOTECHS framework consists of four main categories:</p> <p>(1) Cooperation: Cooperation is the ability to work effectively in a crew.</p> <p>(2) Leadership and managerial skills: Effective leadership and managerial skills help to achieve joint task completion within a motivated, fully functioning team through coordination and persuasiveness.</p> <p>(3) Situation awareness: Situation awareness relates to one’s ability to accurately perceive what is in the flight crew compartment and outside the aircraft. It is also one’s ability to comprehend the meaning of different elements in the environment and the projection of their status in the near future.</p> <p>(4) Decision-making: Decision-making is the process of reaching a judgement or choosing an option.</p> <p>(b) Each of the four categories is subdivided into elements and behavioural markers. The elements are specified in Table 1 of GM6 ORO.FC.115 with examples of behavioural markers (effective behaviour). The behavioural markers are assessed by a rating scale to be established by the operator.</p>		
86.	AMC1 ORO.FC.115	Assessment of CRM skills			Operators should establish procedures, including additional training, to be applied in the event that flight crew members do not achieve or maintain the required CRM standards.		

Operator conversion training							
87.	ORO.FC.120	Operator conversion training			<p>(a) In the case of aeroplane or helicopter operations, the flight crew member shall complete the operator conversion training course before commencing unsupervised line flying:</p> <p>(1) when changing to an aircraft for which a new type or class rating is required;</p> <p>(2) when joining an operator.</p>		

					(b) The operator conversion training course shall include training on the equipment installed on the aircraft as relevant to flight crew members' roles.		
88.	ORO.FC.220	Operator conversion training – General			The flight crew member shall complete: (1) the operator proficiency check and the emergency and safety equipment training and checking before commencing line flying under supervision (LIFUS); and (2) the line check upon completion of line flying under supervision. For performance class B aeroplanes, LIFUS may be performed on any aeroplane within the applicable class.		
89.	AMC1 ORO.FC.220	Operator conversion training – General			The operator conversion training should include, in the following order: (i) ground training and checking , including aircraft systems, and normal, abnormal and emergency procedures; (ii) emergency and safety equipment training and checking , (completed before any flight training in an aircraft commences); (iii) flight training and checking (aircraft and/or FSTD); and (iv) line flying under supervision and line check .		
90.	AMC1 ORO.FC.220	Operator conversion training – General			When the flight crew member has not previously completed an operator's conversion course, he/she should undergo general first-aid training and, if applicable, ditching procedures training using the equipment in water.		
91.	AMC1 ORO.FC.220	Operator conversion training – General			Where the emergency drills require action by the non-handling pilot, the check should additionally cover knowledge of these drills.		
92.	AMC1 ORO.FC.220	Operator conversion training – General			The operator's conversion may be combined with a new type/class rating training as required by TCAR PEL Part FCL.		
93.	ORO.FC.220	Operator conversion training – ZFTT			For aeroplanes, pilots that have been issued a type rating based on a zero flight-time training (ZFTT)		

				<p>course shall:</p> <p>(1) commence line flying under supervision not later than 21 days after the completion of the skill test or after <u>appropriate training</u> provided by the operator. The content of such training shall be described in the OM;</p> <p>(2) complete six take-offs and landings in a FSTD not later than 21 days after the completion of the skill test under the supervision of a type rating instructor for aeroplanes (TRI(A)) occupying the other pilot seat. The number of take-offs and landings may be reduced when credits are defined in the data established in accordance with EASA Part 21 or any equivalent material acceptable by the CAAT. If these take-offs and landings have not been performed within 21 days, the operator shall provide <u>refresher training</u>. The content of such training shall be described in the OM;</p> <p>(3) conduct the first four take-offs and landings of the LIFUS in the aeroplane under the supervision of a TRI(A) occupying the other pilot seat. The number of take-offs and landings may be reduced when credits are defined in the data established in accordance with EASA Part 21 or any equivalent material acceptable by the CAAT.</p>		
94.	ORO.FC.220	Operator conversion training – Flying duties		<p>Once an operator conversion course has been commenced, the FCM shall not be assigned to flying duties on another type or class of aircraft until the course is completed or terminated. Crew members operating only performance class B aeroplanes may be assigned to flights on other types of performance class B aeroplanes during conversion courses to the extent necessary to maintain the operation. Crew members may be assigned to flights on single-engined helicopters during an operator conversion course on a single-engined helicopter, provided that the training is unaffected.</p>		
95.	ORO.FC.220	Operator conversion training – Amount of training		<p>The amount of training required by the FCM for the operator’s conversion course shall be determined in accordance with the standards of qualification and experience specified in the OM, taking into account</p>		

				his/her previous training and experience.		
96.	AMC1 ORO.FC.220	Operator conversion training – Ground training		<p>(1) Ground training should comprise a properly organised programme of ground instruction supervised by training staff with adequate facilities, including any necessary audio, mechanical and visual aids. Self-study using appropriate electronic learning aids, computer-based training (CBT), etc., may be used with adequate supervision of the standards achieved. However, if the aircraft concerned is relatively simple, unsupervised private study may be adequate if the operator provides suitable manuals and/or study notes.</p> <p>(2) The course of ground instruction should incorporate formal tests on such matters as aircraft systems, performance and flight planning, where applicable.</p>		
97.	AMC1 ORO.FC.220	Operator conversion training – Emergency & safety equipment training and checking		Emergency and safety equipment training should take place in conjunction with cabin/technical crew undergoing similar training with emphasis on coordinated procedures and two-way communication between the flight crew compartment and the cabin.		
98.	AMC1 ORO.FC.220	Operator conversion training – Emergency & safety equipment training and checking		<p>On the initial conversion course and on subsequent conversion courses as applicable, the following should be addressed:</p> <ul style="list-style-type: none"> (i) Instruction on first-aid in general (initial conversion course only); instruction on first-aid as relevant to the aircraft type of operation and crew complement, including those situations where no cabin crew is required to be carried (initial and subsequent). (ii) Aero-medical topics (hypoxia, hyperventilation, contamination of skin/eyes by aviation fuel or hydraulic or other fluids, hygiene and food poisoning and malaria) (iii) The effect of smoke in an enclosed area and actual use of all relevant equipment in a simulated smoke-filled environment. (iv) Actual fire fighting, using equipment representative of that carried in the aircraft on an actual or simulated fire except that, with 		

					<p>Halon extinguishers, an alternative extinguisher may be used.</p> <p>(v) The operational procedures of security, rescue and emergency services.</p> <p>(vi) Survival information appropriate to their areas of operation (e.g. polar, desert, jungle or sea) and training in the use of any survival equipment required to be carried.</p> <p>(vii) A comprehensive drill to cover all ditching procedures where flotation equipment is carried. This should include practice of the actual donning and inflation of a life-jacket, together with a demonstration or audio-visual presentation of the inflation of life-rafts and/or slide-rafts and associated equipment. This practice should, on an initial conversion course, be conducted using the equipment in water, although previous certified training with another operator or the use of similar equipment will be accepted in lieu of further wet-drill training.</p> <p>(viii) Instruction on the location of emergency and safety equipment, correct use of all appropriate drills, and procedures that could be required of flight crew in different emergency situations. Evacuation of the aircraft (or a representative training device) by use of a slide where fitted should be included when the operations manual procedure requires the early evacuation of flight crew to assist on the ground.</p>	
99.	AMC1 ORO.FC.220	Operator conversion training – Flight training			<p>Flight training should be conducted to familiarise the flight crew member thoroughly with all aspects of limitations and normal, abnormal and emergency procedures associated with the aircraft and should be carried out by suitably qualified class and type rating instructors and/or examiners. For specific operations, such as steep approaches, ETOPS, or operations based on QFE, additional training should be carried out, based on any additional elements of training defined for the aircraft type in the data in accordance with EASA Part 21 or any equivalent material acceptable by the CAAT, where they exist.</p>	

100.	AMC1 ORO.FC.220	Operator conversion training – Flight training			In planning flight training on aircraft with a flight crew of two or more, particular emphasis should be placed on the <u>practice of LOFT</u> with emphasis on CRM, and the use of crew coordination procedures, including coping with <u>incapacitation</u> .		
101.	AMC1 ORO.FC.220	Operator conversion training – Flight training			Normally, the same training and practice in the flying of the aircraft should be given to co-pilots as well as commanders. The ‘flight handling’ sections of the syllabus for commanders and co-pilots alike should include all the requirements of the operator proficiency check required by ORO.FC.230.		
102.	AMC1 ORO.FC.220	Operator conversion training – Flight training			Unless the type rating training programme has been carried out in an FSTD usable for ZFTT, the training should include at least three take-offs and landings in the aircraft.		
103.	AMC1 ORO.FC.220	Operator conversion training – LIFUS			Following completion of flight training and checking as part of the operator’s conversion course, each flight crew member should operate a minimum number of sectors and/or flight hours under the supervision of a flight crew member nominated by the operator.		
104.	AMC1 ORO.FC.220	Operator conversion training – LIFUS			The minimum flight sectors/hours should be specified in the operations manual and should be determined by the following: (i) previous experience of the flight crew member; (ii) complexity of the aircraft; and (iii) the type and area of operation.		
105.	AMC1 ORO.FC.220	Operator conversion training – LIFUS			For performance class B aeroplanes, the amount of LIFUS required is dependent on the complexity of the operations to be performed.		
106.	GM1 ORO.FC.220	Operator conversion training – LIFUS - Aeroplanes			The following minimum figures for details to be flown under supervision are guidelines for operators to use when establishing their individual requirements: (1) turbo-jet aircraft (i) co-pilot undertaking first operator conversion course: (A) total accumulated 100 hours or minimum 40 flight		

				sectors; (ii) co-pilot upgrading to commander: (A) minimum 20 flight sectors when converting to a new type; (B) minimum 10 flight sectors when already qualified on the aeroplane type.		
107.	AMC1 ORO.FC.220	Operator conversion training – Passenger handling for operations where no cabin crew is required		Other than general training on dealing with people, emphasis should be placed on the following: (1) advice on the recognition and management of passengers who appear or are intoxicated with alcohol, under the influence of drugs or aggressive; (2) methods used to motivate passengers and the crowd control necessary to expedite an aircraft evacuation; and (3) the importance of correct seat allocation with reference to aircraft mass and balance. Particular emphasis should also be given on the seating of special categories of passengers.		
108.	AMC1 ORO.FC.220	Operator conversion training – Discipline and responsibilities, for operations where no cabin crew is required		Emphasis should be placed on discipline and an individual's responsibilities in relation to: (1) his/her ongoing competence and fitness to operate as a crew member with special regard to flight and duty time limitation (FTL) requirements; and (2) security procedures.		
109.	AMC1 ORO.FC.220	Operator conversion training – Passenger briefing/safety demonstrations, for operations where no cabin crew is required		Training should be given in the preparation of passengers for normal and emergency situations.		
110.	ORO.FC.220	Operator conversion training – CRM training		CRM training shall be integrated into the operator conversion training course.		
111.	AMC1 ORO.FC.115	Operator conversion training – CRM training		When the flight crew member undertakes a conversion course with a change of aircraft type or change of operator, elements of CRM training should be integrated into all appropriate phases of the operator's conversion course, as specified in Table 1 of (g) AMC1 ORO.FC.115.		

112.	AMC1 ORO.FC.115&215	Operator conversion training – Use of automation		<p>(1) The operator conversion course should include training in the use and knowledge of automation and in the recognition of systems and human limitations associated with the use of automation. The operator should therefore ensure that the FCM receives training on:</p> <p>(i) the application of the operations policy concerning the use of automation as stated in the operations manual; and</p> <p>(ii) system and human limitations associated with the use of automation.</p> <p>(2) The objective of this training should be to provide appropriate knowledge, skills and behavioural patterns for managing and operating automated systems. Special attention should be given to how automation increases the need for crews to have a common understanding of the way in which the system performs, and any features of automation that make this understanding difficult.</p>		
113.	AMC1 ORO.FC.220&230	Operator conversion training – Upset prevention & recovery training – Complex motor-powered aeroplanes with a MOPSC of more than 19		<p>Upset prevention training should:</p> <p>(1) consist of ground training and flight training in an FSTD or an aeroplane;</p> <p>(2) include upset prevention elements from Table 1 of AMC1 ORO.FC.220&230 for the conversion training course.</p> <p>The operator should ensure that personnel providing FSTD UPRT are competent and current to deliver the training, and understand the capabilities and limitations of the device used.</p>		
114.	AMC2 ORO.FC.220&230	Operator conversion training – Upset prevention & recovery training – Complex motor-powered aeroplanes with a MOPSC of 19 or less		<p>Upset prevention training should:</p> <p>(1) consist of ground training and flight training in an FSTD or an aeroplane;</p> <p>(2) include upset prevention elements from Table 1 of AMC1 ORO.FC.220&230 for the conversion training course.</p> <p>The operator should ensure that personnel providing FSTD UPRT are competent and current to deliver the training, and understand the capabilities and</p>		

					limitations of the device used.		
115.	ORO.FC.320	Operator conversion training and checking			The operator conversion course shall include an operator proficiency check.		
116.	ORO.FC.325	Equipment and procedure training and checking			If a flight crew member undergoes equipment and procedure training that requires training on a suitable FSTD or the aircraft, with regard to standard operating procedures related to a specialised operation, the flight crew member shall undergo an operator proficiency check.		
117.	ORO.FC.330	Recurrent training and checking — operator proficiency check			<p>(a) Each flight crew member shall complete recurrent training and operator proficiency checks. In the case of specialised operations, the recurrent training and checking shall cover the relevant aspects associated with the specialised tasks described in the operations manual.</p> <p>(b) Appropriate consideration shall be given when operations are undertaken under IFR or at night.</p> <p>(c) The validity period of the operator proficiency check shall be 12 calendar months.</p>		

Differences training & familiarisation training							
118.	ORO.FC.125	Differences training and familiarisation training			<p>(a) Flight crew members shall complete differences or familiarisation training when required by Part-FCL and when changing equipment or procedures requiring additional knowledge on types or variants currently operated.</p> <p>(b) The OM shall specify when such differences or familiarisation training is required.</p>		
119.	AMC1 ORO.FC.125	Differences training and familiarisation training			<p>(a) Differences training requires additional knowledge and training on the aircraft or an appropriate training device. It should be carried out:</p> <p>(1) when introducing a significant change of equipment and/or procedures on types or variants currently operated; and</p> <p>(2) in the case of aeroplanes, when operating another variant of an aeroplane of the same type or another type of the same class currently operated; or</p>		

					<p>(3) in the case of helicopters, when operating a variant of a helicopter currently operated.</p> <p>(b) Familiarisation training requires only the acquisition of additional knowledge. It should be carried out when:</p> <p>(1) operating another helicopter or aeroplane of the same type; or</p> <p>(2) when introducing a significant change</p>		
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Recurrent training & checking							
120.	ORO.FC.130	Recurrent training and checking			<p>(a) Each FCM shall complete annual recurrent flight and ground training relevant to the type or variant of aircraft on which he/she operates, including training on the location and use of all emergency and safety equipment carried.</p> <p>(b) Each FCM shall be periodically checked to demonstrate competence in carrying out normal, abnormal and emergency procedures.</p>		
121.	ORO.FC.230	Recurrent training and checking			Each flight crew member shall complete recurrent training and checking relevant to the type or variant, and associated equipment of aircraft on which they operate		
122.	ORO.FC.230	Recurrent training and checking			Each FCM shall undergo ground training and flight training in an FSTD or an aircraft, or a combination of FSTD and aircraft training, at least every 12 calendar months.		
123.	AMC1 ORO.FC.230	Recurrent training and checking			For operations with other-than-complex motor-powered aeroplanes, all training and checking should be relevant to the type of operation and class of aeroplane on which the flight crew member operates with due account taken of any specialised equipment used.		
124.	ORO.FC.230	Recurrent training and checking - Validity			When the training or checks are undertaken within the last 3 months of the validity period, the new validity period shall be counted from the original expiry date.		

125.	AMC1 ORO.FC.230	Recurrent training and checking – Helicopters			In the case of single-pilot operations with helicopters, the OPC, LC and E&SE checking should be performed in the single-pilot role on a particular helicopter type in an environment representative of the operation.		
126.	AMC1 ORO.FC.230	Recurrent training and checking – Use of FSTD			Training and checking provide an opportunity to practice abnormal/emergency procedures that rarely arise in normal operations and should be part of a structured programme of recurrent training. This should be carried out in an FSTD whenever possible.		
127.	AMC1 ORO.FC.230	Recurrent training and checking – Use of FSTD			The line check should be performed in the aircraft. All other training and checking should be performed in an FSTD, or, if it is not reasonably practicable to gain access to such devices, in an aircraft of the same type or in the case of emergency and safety equipment training, in a representative training device. The type of equipment used for training and checking should be representative of the instrumentation, equipment and layout of the aircraft type operated by the FCM.		
128.	AMC1 ORO.FC.230	Recurrent training and checking – Use of FSTD			Because of the unacceptable risk when simulating emergencies such as engine failure, icing problems, certain types of engine(s) (e.g. during continued take-off or go-around, total hydraulic failure), or because of environmental considerations associated with some emergencies (e.g. fuel dumping) these emergencies should preferably be covered in an FSTD. If no FSTD is available, these emergencies may be covered in the aircraft using a safe airborne simulation, bearing in mind the effect of any subsequent failure, and the exercise must be preceded by a comprehensive briefing.		
129.	AMC1 ORO.FC.230	Recurrent training and checking – Ground training			(i) The ground training programme should include: (A) aircraft systems (which systems are covered and when); (B) operational procedures and requirements, including ground de-icing/anti-icing and pilot incapacitation; and (C) accident/incident and occurrence review. (ii) Knowledge of the ground training should be verified by a questionnaire or other suitable methods.		

					(iii) When the ground training is conducted within 3 calendar months prior to the expiry of the 12 calendar months period, the next ground and refresher training should be completed within 12 calendar months of the original expiry date of the previous training.		
130.	AMC1 ORO.FC.230	Recurrent training and checking – Ground training – Personnel			Ground training should be provided by suitably qualified personnel.		
131.	AMC1 ORO.FC.230	Recurrent training and checking – Aircraft/FSTD training			The aircraft/FSTD training programme should be established in a way that all major failures of aircraft systems and associated procedures will have been covered in the preceding 3 year period. (which failure and when, which failures are major for the A/C considered)		
132.	AMC1 ORO.FC.230	Recurrent training and checking – Aircraft/FSTD training			When engine-out manoeuvres are carried out in an aircraft, the engine failure should be simulated.		
133.	AMC1 ORO.FC.230	Recurrent training and checking – Aircraft/FSTD training			Aircraft/FSTD training may be combined with the operator proficiency check.		
134.	AMC1 ORO.FC.230	Recurrent training and checking – Aircraft/FSTD training			When the aircraft/FSTD training is conducted within 3 calendar months prior to the expiry of the 12 calendar months period, the next aircraft/FSTD training should be completed within 12 calendar months of the original expiry date of the previous training.		
135.	AMC1 ORO.FC.230	Recurrent training and checking – Aircraft/FSTD training – Helicopters			(A) Where a suitable FSTD is available, it should be used for the aircraft/FSTD training programme. If the operator is able to demonstrate, on the basis of a compliance and risk assessment, that using an aircraft for this training provides equivalent standards of training with safety levels similar to those achieved using an FSTD, the aircraft may be used for this training to the extent necessary. (B) The recurrent training should include the following additional items, which should be completed in an FSTD: - settling with power and vortex ring; - loss of tail rotor effectiveness.		

136.	AMC1 ORO.FC.230	Recurrent training and checking – Aircraft/FSTD training – Personnel			Aircraft/FSTD training should be provided by a flight instructor (FI), type rating instructor (TRI) or class rating instructor (CRI) or, in the case of the FSTD content, a synthetic flight instructor (SFI), providing that the FI, TRI, CRI or SFI satisfies the operator's experience and knowledge requirements sufficient to instruct on the required items.		
137.	ORO.FC.230	Recurrent training and checking – OPC			Each FCM shall complete OPCs as part of the <u>normal crew complement</u> to demonstrate competence in carrying out normal, abnormal and emergency procedures.		
138.	ORO.FC.230	Recurrent training and checking – OPC – IFR			When the flight crew member will be required to operate under IFR, the operator proficiency check shall be conducted without external visual reference, as appropriate.		
139.	ORO.FC.230	Recurrent training and checking – OPC – Validity			The validity period of the operator proficiency check shall be six (6) calendar months . The proficiency check shall be undertaken before commencing CAT operations.		
140.	ORO.FC.230	Recurrent training and checking – OPC – Validity VFR day			For operations under VFR by day of performance class B aeroplanes conducted during seasons not longer than 8 consecutive months, one OPC shall be sufficient.		
141.	AMC1 ORO.FC.230	Recurrent training and checking – OPC			Once every 12 months the OPC may be combined with the proficiency check for revalidation or renewal of the aircraft type rating.		
142.	AMC1 ORO.FC.230	Recurrent training and checking – OPC			Operator proficiency checks should be conducted by a type rating examiner (TRE) or a synthetic flight examiner (SFE), as applicable.		
143.	AMC1 ORO.FC.230	Recurrent training and checking – OPC – Aeroplanes			Where applicable, operator proficiency checks should include the following manoeuvres as pilot flying : (A) rejected take-off when an FSTD is available to represent that specific aeroplane, otherwise touch drills only; (B) take-off with engine failure between V1 and V2 (take-off safety speed) or, if carried out in an aeroplane, at a safe speed above V2; (C) 3D approach operation to minima with, in the		

				<p>case of multi-engine aeroplanes, one-engine-inoperative;</p> <p>(D) 2D approach operation to minima;</p> <p>(E) at least one of the 3D or 2D approach operations should be an RNP APCH or RNP AR APCH operation;</p> <p>(F) missed approach on instruments from minima with, in the case of multi-engined aeroplanes, one-engine-inoperative;</p> <p>(G) landing with one-engine-inoperative. For single-engine aeroplanes a practice forced landing is required.</p>		
144.	AMC1 ORO.FC.230	Recurrent training and checking – OPC – Helicopters		<p>(A) Where applicable, operator proficiency checks should include the abnormal/emergency procedures listed in AMC1 ORO.FC.230.</p> <p>(B) For pilots required to engage in IFR operations, proficiency checks include the additional abnormal/emergency procedures listed in AMC1 ORO.FC.230.</p>		
145.	AMC1 ORO.FC.230	Recurrent training and checking – OPC – Helicopters		<p>(C) Before a flight crew member without a valid instrument rating is allowed to operate in VMC at night, he/she should be required to undergo a proficiency check at night. Thereafter, each second proficiency check should be conducted at night.</p>		
146.	AMC1 ORO.FC.230	Recurrent training and checking – OPC – Personnel		<p>OPC should be provided by a type rating examiner (TRE), class rating examiner (CRE) or, if the check is conducted in an FSTD, a TRE, CRE or a synthetic flight examiner (SFE), trained in CRM concepts and the assessment of CRM skills.</p>		
147.	AMC1 ORO.FC.220&230	Operator recurrent training – Upset prevention & recovery training – Complex motor-powered aeroplanes with a <u>MOPSC of more than 19</u>		<p><u>Upset prevention training should:</u></p> <p>(1) consist of ground training and flight training in an FSTD or an aeroplane;</p> <p>(2) include upset prevention elements in Table 1 of AMC1 ORO.FC.220&230 for the recurrent training programme at least every 12 calendar months, such that all the elements are covered over a period not exceeding 3 years.</p> <p><u>Upset recovery training should:</u></p>		

					<p>(1) consist of ground training and flight training in an FFS qualified for the training task;</p> <p>(2) be completed from each seat in which a pilot's duties require him/her to operate; and</p> <p>(3) include the recovery exercises in Table 2 AMC1 ORO.FC.220&230 for the recurrent training programme, such that all the exercises are covered over a period not exceeding 3 years.</p> <p>The operator should ensure that personnel providing FSTD UPRT are competent and current to deliver the training, and understand the capabilities and limitations of the device used.</p>		
148.	AMC2 ORO.FC.220&230	Operator recurrent training – Upset prevention & recovery training – Complex motor-powered aeroplanes with a <u>MOPSC of 19 or less</u>			<p><u>Upset prevention training should:</u></p> <p>(1) consist of ground training and flight training in an FSTD or an aeroplane;</p> <p>(2) include upset prevention elements in Table 1 of AMC1 ORO.FC.220&230 for the recurrent training programme at least every 12 calendar months, such that all the elements are covered over a period not exceeding 3 years.</p> <p><u>Upset recovery training should:</u></p> <p>(1) consist of ground training and flight training in an FFS qualified for the training task; if available</p> <p>(2) be completed from each seat in which a pilot's duties require him/her to operate; and</p> <p>(3) include the recovery exercises in Table 2 AMC1 ORO.FC.220&230 for the recurrent training programme, such that all the exercises are covered over a period not exceeding 3 years.</p> <p>The operator should ensure that personnel providing FSTD UPRT are competent and current to deliver the training, and understand the capabilities and limitations of the device used.</p>		
149.	ORO.FC.230	Recurrent training and checking – Line check			Each flight crew member shall complete a line check on the aircraft. The validity period of the line check shall be 12 calendar months.		

150.	ORO.FC.230	Recurrent training and checking – Line check			Line checks may be conducted by a suitably qualified commander nominated by the operator, trained in CRM concepts and the assessment of CRM skills.		
151.	AMC1 ORO.FC.230	Recurrent training and checking – Line check			Line checks should establish the ability to perform satisfactorily a complete line operation, including pre-flight and post-flight procedures and use of the equipment provided, as specified in the operations manual. The route chosen should be such as to give adequate representation of the scope of a pilot's normal operations. When weather conditions preclude a manual landing, an automatic landing is acceptable. The commander, or any pilot who may be required to relieve the commander, should also demonstrate his/her ability to 'manage' the operation and take appropriate command decisions.		
152.	AMC1 ORO.FC.230	Recurrent training and checking – Line check			CRM assessment alone should not be used as a reason for a failure of the line check.		
153.	AMC1 ORO.FC.230	Recurrent training and checking – Line check			When pilots are assigned duties as pilot flying and pilot monitoring, they should be checked in both functions.		
154.	AMC1 ORO.FC.230	Recurrent training and checking – Line check – Personnel			Line checks should be conducted by a commander nominated by the operator. The operator should inform the competent authority about the persons nominated. The person conducting the line check should occupy an observer's seat where installed. His/her CRM assessments should solely be based on observations made during the initial briefing, cabin briefing, flight crew compartment briefing and those phases where he/she occupies the observer's seat.		
155.	AMC1 ORO.FC.230	Recurrent training and checking – Line check – Aeroplanes			In the case of long haul operations where additional operating flight crew are carried, the person may fulfil the function of a cruise relief pilot and should not occupy either pilot's seat during take-off, departure, initial cruise, descent, approach and landing.		
156.	AMC1 ORO.FC.230	Recurrent training and checking – Line check			Where a pilot is required to operate as <u>pilot flying</u> and <u>pilot monitoring</u> , he/she should be checked on one flight sector as pilot flying and on another flight		

				sector as pilot monitoring. However, where the operator's procedures require integrated flight preparation, integrated cockpit initialisation and that each pilot performs both flying and monitoring duties on the same sector, then the line check may be performed on a single flight sector.	
157.	ORO.FC.230	Recurrent training and checking – Emergency & safety equipment training & checking		Each FCM shall complete training and checking on the location and use of all emergency and safety equipment carried. The validity period of an emergency and safety equipment check shall be 12 calendar months.	
158.	AMC1 ORO.FC.230	Recurrent training and checking – Emergency & safety equipment training		(i) Emergency and safety equipment training may be combined with emergency and safety equipment checking and should be conducted in an aircraft or a suitable alternative training device.	
159.	AMC1 ORO.FC.230	Recurrent training and checking – Emergency & safety equipment training		(ii) <u>Every year</u> the emergency and safety equipment training programme should include the following: (A) actual donning of a life-jacket, where fitted; (B) actual donning of protective breathing equipment, where fitted; (C) actual handling of fire extinguishers of the type used; (D) instruction on the location and use of all emergency and safety equipment carried on the aircraft; (E) instruction on the location and use of all types of exits; (F) security procedures.	
160.	AMC1 ORO.FC.230	Recurrent training and checking – Emergency & safety equipment training		(iii) <u>Every 3 years</u> the programme of training should include the following: (A) actual operation of all types of exits; (B) demonstration of the method used to operate a slide where fitted; (C) actual fire-fighting using equipment representative of that carried in the aircraft on an actual or simulated fire except that, with Halon	

				<p>extinguishers, an alternative extinguisher may be used;</p> <p>(D) the effects of smoke in an enclosed area and actual use of all relevant equipment in a simulated smoke-filled environment;</p> <p>(E) actual handling of pyrotechnics, real or simulated, where applicable;</p> <p>(F) demonstration in the use of the life-rafts where fitted. In the case of helicopters involved in extended over water operations, demonstration and use of the life-rafts.</p> <p>(G) particularly in the case where no cabin crew is required, first-aid, appropriate to the aircraft type, the kind of operation and crew complement.</p>		
161.	AMC1 ORO.FC.230	Recurrent training and checking – Emergency & safety equipment training		(iv) The successful resolution of aircraft emergencies requires interaction between flight crew and cabin/technical crew and emphasis should be placed on the importance of effective coordination and two-way communication between all crew members in various emergency situations.		
162.	AMC1 ORO.FC.230	Recurrent training and checking – Emergency & safety equipment training		(v) Emergency and safety equipment training should include joint practice in aircraft evacuations so that all who are involved are aware of the duties other crew members should perform. When such practice is not possible, combined flight crew and cabin/technical crew training should include joint discussion of emergency scenarios.		
163.	AMC1 ORO.FC.230	Recurrent training and checking – Emergency & safety equipment training		(vi) Emergency and safety equipment training should, as far as practicable, take place in conjunction with cabin/technical crew undergoing similar training with emphasis on coordinated procedures and two-way communication between the flight crew compartment and the cabin.		
164.	AMC1 ORO.FC.230	Recurrent training and checking – Emergency & safety equipment training – Personnel		Emergency & safety equipment training should be provided by suitably qualified personnel.		
165.	AMC1 ORO.FC.230	Recurrent training and checking – Emergency & safety equipment checking		The items to be checked should be those for which training has been carried out.		
166.	AMC1 ORO.FC.230	Recurrent training and checking – Emergency & safety		Emergency & safety equipment checking should be		

		equipment checking – Personnel			provided by suitably qualified personnel.		
167.	AMC1 ORO.FC.230	Recurrent training and checking – Flight crew incapacitation training (except single pilot operations)			<p>(1) Procedures should be established to train flight crew to recognise and handle flight crew incapacitation. This training should be conducted every year and can form part of other recurrent training. It should take the form of classroom instruction, discussion, audio-visual presentation or other similar means.</p> <p>(2) If an FSTD is available for the type of aircraft operated, practical training on flight crew incapacitation should be carried out at intervals not exceeding 3 years.</p>		
168.	ORO.FC.230	Recurrent training and checking – CRM training			<p>(1) Elements of CRM shall be integrated into all appropriate phases of the recurrent training.</p> <p>(2) Each FCM shall undergo specific modular CRM training. All major topics of CRM training shall be covered by distributing modular training sessions as evenly as possible over each three-year period.</p>		
169.	AMC1 ORO.FC.230 AMC1 ORO.FC.115	Recurrent training and checking – CRM training			Elements of CRM training, as specified in Table 1 of AMC1 ORO.FC.115, should be integrated into all appropriate phases of recurrent training.		
170.	AMC1 ORO.FC.115	Recurrent training and checking – CRM training			<p>(1) Annual recurrent CRM training should be provided in such a way that all CRM training elements specified for the annual recurrent training in Table 1 of (g) AMC1 ORO.FC.115 are covered over a period not exceeding 3 years.</p> <p>(2) Operators should update their CRM recurrent training programme over a period not exceeding 3 years. The revision of the programme should take into account information from the operator's management system including the results of the CRM assessment.</p>		
171.	AMC1 ORO.FC.115	CRM – Combined training			<p>(i) Operators should provide combined training for flight crew, cabin crew and technical crew during recurrent CRM training.</p> <p>(ii) The combined training should address at least:</p> <p>(A) effective communication, coordination of tasks and functions of flight crew, cabin crew and technical</p>		

					<p>crew; and</p> <p>(B) mixed multinational and cross-cultural flight crew, cabin crew and technical crew, and their interaction, if applicable.</p> <p>(iii) The combined training should be expanded to include medical passengers, if applicable to the operation.</p> <p>(iv) Combined CRM training should be conducted by flight crew CRM instructor or cabin crew CRM instructor.</p> <p>(v) There should be an effective liaison between flight crew, cabin crew and technical crew training departments. Provision should be made for transfer of relevant knowledge and skills between flight crew, cabin crew and technical crew CRM instructors.</p>	
172.	GM3 ORO.FC.115	CRM – Combined training – Minimum times			Combined CRM training: 6 training hours over a period of 3 years;	
173.	ORO.FC.231 (a) (1)	Evidence-based training Programme			<p>The operator may substitute the requirements of ORO.FC.230 by establishing, implementing, and maintaining a suitable EBT programme approved by the competent authority.</p> <p>The operator shall demonstrate its capability to support the implementation of the EBT programme (including an implementation plan) and perform a safety risk assessment demonstrating how an equivalent level of safety is achieved.</p>	
174.	ORO.FC.231 (a) (2)	Evidence-based training Programme			<p>The EBT programme shall:</p> <p>(i) correspond to the size of the operator, and the nature and complexity of its activities, taking into account the hazards and associated risks inherent in those activities.</p> <p>(ii) ensure pilot competence by assessing and developing pilot competencies required for a safe, effective and efficient operation of aircraft.</p> <p>(iii) ensure that each pilot is exposed to the assessment and training topics derived in accordance with ORO.FC.232.</p>	

					(iv) include at least six EBT modules distributed across a 3-year programme; each EBT module shall consist of an evaluation phase and a training phase. The validity period of a EBT module shall be 12 months;		
175.	ORO.FC.231 (a) (2) (A)	Evidence-based training Programme – Evaluation Phase			The evaluation phase comprises a line-orientated flight scenario (or scenarios) to assess all competencies and identify individual training needs.		
176.	ORO.FC.231 (a) (2) (B)	Evidence-based training Programme – Training Phase			<p>The training phase comprises:</p> <p>(a) the manoeuvres training phase, comprising training to proficiency in certain defined manoeuvres.</p> <p>(b) the scenario-based training phase, comprising a line-orientated flight scenario (or scenarios) to develop competencies and address individual training needs.</p> <p>The training phase shall be conducted in a timely manner after the evaluation phase.</p>		
177.	ORO.FC.231 (a) (3)	Evidence-based training Programme – Enrolment			<p>The operator shall ensure that each pilot enrolled in the EBT programme completes:</p> <p>(i) a minimum of two EBT modules within the validity period of the type rating, separated by a period of not less than 3 months. The EBT module is completed when: (A) the content of the EBT programme is completed for that EBT module (exposure of the pilot to the assessment and training topics); and (B) an acceptable level of performance in all observed competencies has been demonstrated.</p> <p>(ii) line evaluation(s) of competence; and</p> <p>(iii) ground training.</p>		
178.	ORO.FC.231 (a) (4)	Evidence-based training Programme – Instructor Standardisation and Concordance			<p>The operator shall establish an EBT instructor standardisation and concordance assurance programme to ensure that the instructors involved in EBT are properly qualified to perform their tasks.</p> <p>(i) All instructors must be subject to this programme.</p> <p>(ii) The operator shall use appropriate methods and</p>		

					metrics to assess concordance. (iii) The operator shall demonstrate that the instructors have sufficient concordance.	
179.	ORO.FC.231 (a) (5)	Evidence-based training Programme – Contingency procedures			The EBT programme may include contingency procedures for unforeseen circumstances that could affect the delivery of the EBT modules. The operator shall demonstrate the need for those procedures. The procedures shall ensure that a pilot does not continue line operations if the performance observed was below the minimum acceptable level. They may include: (i) a different separation period between EBT modules; and (ii) different order of the phases of the EBT module.	
180.	AMC1.ORO.FC.231 (a)	Evidence-based training – Programme Suitability			An operator’s EBT programme is one in which: (a) training is focused on development of competencies, rather than repetition of tasks; (b) the development of the programme is based on data-driven EBT training topics with a link to the operator’s competency framework; (c) training needs are addressed through training based on underlying competencies; (d) the programme includes: (1) an evaluation phase to identify training needs based on competencies and collect population-based data; to identify the training needs means, the root cause of the deficiency observed should be identified rather than the symptoms of the deficiency; (2) a manoeuvres training phase (skill retention): to train skill-based manoeuvres (body memory actions). These manoeuvres should place a significant demand on a proficient pilot; and (3) a scenario-based training phase to focus on identified training needs based on competencies rather than repetition of tasks; (e) the programme includes the conduct of objective observations based on a competency framework, and	

				<p>documents evidence of the behaviour observed;</p> <p>(f) there is a customisation of syllabi:</p> <p>(1) The operator should describe in the operations manual the procedure to customise syllabi. It should include how to:</p> <p>(i) select the example scenario elements within a training topic that should be included in the EBT programme; and</p> <p>(ii) contextualise the example scenario elements based on the operator's operational data (e.g. input from SMS, FDM programme, etc.) and training data.</p> <p>(2) This customisation should be based on evidence both internal and external to the operator;</p> <p>(g) performance is evaluated using a competency-based grading system;</p> <p>(h) instructors grade competencies based on observable behaviours (OBs);</p> <p>(i) instructors grade the pilot using a defined methodology — observe, record, classify and assess/evaluate (ORCA) is recommended;</p> <p>(j) instructors have completed the EBT instructor standardisation;</p> <p>(k) instructors have sufficient concordance based on defined criteria (instructor concordance assurance programme);</p> <p>(l) the analysis of the pilot's performance is used to determine competency-based training needs;</p> <p>(m) there is a range of teaching styles during simulator training to accommodate trainee learning needs; and</p> <p>(n) facilitation techniques in debriefing are incorporated.</p>	
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181.	AMC2.ORO.FC.231 (a)	Evidence-based training – UPRT		<p>UPSET PREVENTION AND RECOVERY TRAINING (UPRT) FOR COMPLEX MOTOR-POWERED AEROPLANES WITH A MAXIMUM OPERATIONAL PASSENGER SEATING CONFIGURATION (MOPSC) OF MORE THAN 19</p> <p>Operators approved for EBT should follow the provisions for upset prevention and recovery training (UPRT) contained in AMC1 ORO.FC.220&230 ‘Operator conversion training and checking & recurrent training and checking’. These provisions should be included in the tables of assessment and training topics detailed in ORO.FC.232.</p>		
182.	AMC3.ORO.FC.231 (a)	Evidence-based training – Personnel Conducting Assessment and Providing Training		<p>(a) Ground and refresher training should be provided by suitably qualified personnel.</p> <p>(b) For non-EBT assessment and training: flight training should be provided by a flight instructor (FI), type rating instructor (TRI) or class rating instructor (CRI) or, in the case of the FSTD content, a synthetic flight instructor (SFI). The FI, TRI, CRI or SFI should satisfy the operator’s standardisation, experience, and knowledge requirements.</p> <p>(c) Emergency and safety equipment training should be provided by suitably qualified personnel.</p> <p>(d) CRM training should be provided by an EBT instructor or, for the classroom CRM training, a CRM instructor.</p> <p>(e) Additional personnel requirements are described in ORO.FC.146 and ORO.FC.231 and in the associated AMC and GM.</p>		
183.	AMC1.ORO.FC.231 (a) (1)	Evidence-based training – Experience in mixed EBT to substitute oro.FC.230		<p>(a) The operator should have a minimum experience of 3 years of a mixed EBT programme. Note: More information on a mixed EBT programme is provided in GM1 ORO.FC.230(a);(b);(f) and in GM2 ORO.FC.A.245.</p> <p>(b) The operator should demonstrate 2 years of an instructor concordance assurance programme.</p> <p>(c) The operator should demonstrate 1 year of a valid equivalency of malfunctions.</p>		

				<p>(d) The operator should demonstrate 1 year of integration of the training data in the customisation of the EBT programme and SMS data for the contextualisation of the example scenario elements.</p> <p>(e) The operator should demonstrate that there is a verification of the grading system and feedback is provided to the training system performance and to the instructor standardisation concordance assurance.</p> <p>SUBSTITUTION OF THE REQUIREMENTS OF ORO.FC.230</p> <p>(f) One complete EBT module substitutes one operator proficiency check (OPC).</p> <p>(g) The line evaluation of competence substitutes the line check.</p>		
184.	AMC1.ORO.FC.231 (a) (2)	Evidence-based training Programme and assessment and training topics. - Resilience		<p>(a) Compliance with the table of assessment and training topics ensures that crews are presented with an array of realistic changing events that allow for resilience development purposes.</p> <p>(b) The EBT programme should be designed observing the following principles for resilience development:</p> <p>(1) Resilience, surprise, and unexpected events</p> <p>The EBT programme should be designed in such a way that in every cycle the simulator session (or part of it) allows variations so that the pilots are not familiar with the scenarios presented in the simulator session. Variations should be the focus of EBT programme design and should not be left to the discretion of individual instructors, in order to preserve programme integrity and fairness.</p> <p>(2) Resilience and decision-making (dilemma)</p> <p>The EBT programme should be designed in such a way that in every cycle the crews are exposed to a scenario where more than one possible and less than ideal solutions exist, with some unfavourable conditions attached to each solution.</p>		
185.	AMC2.ORO.FC.231 (a) (2)	Evidence-based training – Validity of EBT Module		<p>(a) The validity period should be counted from the</p>		

				<p>end of the month when the module was completed. When the module is undertaken within the last 3 months of the validity period, the new validity period should be counted from the original expiry date.</p> <p>(b) In the context of ORO.FC.130 point (a), the pilot should have a valid module.</p>	
186.	AMC1.ORO.FC.231 (a) (3)	Evidence-based training – Enrolment		<p>(a) Enrolment is when a flight crew member commences the first EBT module.</p> <p>(b) A flight crew member is considered to leave the operator’s EBT programme (de-enrolled) when the operator is no longer responsible for the administrative action for the flight crew’s licence revalidation under an EBT programme.</p> <p>(c) The operator should inform the flight crew members who fail to demonstrate an acceptable level of competence and leave the operator’s EBT programme (de-enrolled) that they should not exercise the privileges of that type rating.</p>	
187.	AMC1.ORO.FC.231 (a) (4)	Evidence-based training – Instructor Concordance Assurance Programme (ICAP)		<p>(a) The ICAP should be able to identify areas of weak concordance to drive improvement in the quality and validity of the grading system.</p> <p>(b) The ICAP should be adapted to the size and complexity of the instructors’ group and the complexity of the operator’s EBT programme.</p> <p>(c) Complex operators should include an ICAP-specific data analysis, demonstrating:</p> <p>(1) instructor-group assessment homogeneity (agreement);</p> <p>(2) instructor assessment accuracy (alignment).</p> <p>(d) The operator should verify the concordance of the instructors:</p> <p>(1) once every cycle;</p> <p>(2) for a sufficient number of competency-grade combinations.</p> <p>(e) The operator should establish procedures to address those instructors who do not meet the</p>	

					standards required. (f) The operator should maintain a list with the EBT instructors qualified to deliver the EBT programme.		
188.	AMC1.ORO.FC.231 (a) (5)	Evidence-based training Programme – Contingency procedures for unforeseen circumstances that may affect the delivery of the module.			The operator should detail in the EBT programme the contingency procedures in the event of unforeseen circumstances that may affect the delivery of the module (e.g. long-term sick pilot). As detailed in the AMC		
189.	ORO.FC.231 (b)	Evidence-based training Programme – Competency Framework			The operator shall use a competency framework for all aspects of assessment and training within an EBT programme. The competency framework shall: (1) be comprehensive, accurate, and usable. (2) include observable behaviours required for safe, effective, and efficient operations. (3) include a defined set of competencies, their descriptions, and their associated observable behaviours.		
190.	AMC1.ORO.FC.231 (b)	Evidence-based training Programme – Competency Framework			The operator should include in its EBT programme at least the EASA competencies listed in this AMC with the Observable behaviours (OB) indicated.		
191.	AMC2.ORO.FC.231 (b)	Evidence-based training Programme – Adapted Competency Model			(a) An operator seeking to develop an adapted competency model under ORO.GEN.120 should: (1) identify positive behaviours and use language that avoids ambiguity; and (2) demonstrate equivalence to the recommended EBT competencies in AMC1 ORO.FC.231(b). (b) In order to demonstrate equivalence, the operator should map the competencies and observable behaviours to the recommended EBT competencies. (c) When the operator is translating AMC1 ORO.FC.231(b) into its common language, the application of ORO.GEN.120 may not be necessary. The translation may not be literal		
192.	ORO.FC.231 (c)	Evidence-based training Programme – Training System Performance			(1) The EBT system performance shall be measured and evaluated through a feedback process in order to:		

					<ul style="list-style-type: none"> (i) validate and refine the operator’s EBT programme. (ii) ascertain that the operator’s EBT programme develops pilot competencies. (2) The feedback process shall be included in the operator’s management system. (3) The operator shall develop procedures governing the protection of EBT data. 	
193.	AMC1 ORO.FC.231 (c)	Evidence-based training Programme – Training System Performance – Feedback Process			<ul style="list-style-type: none"> (a) Feedback process is the continuous process of collecting and analysing assessment and training data from an EBT programme. (b) The feedback process should use defined metrics to collect data in order to: <ul style="list-style-type: none"> (1) identify trends and ensure corrective action where necessary; (2) identify collective training needs; (3) review, adjust and continuously improve the training programme; (4) further develop the training system; and (5) standardise the instructors (when the standardisation and concordance assurance programme is integrated into the training system performance). (c) The following defined metrics should be collected as a minimum: <ul style="list-style-type: none"> (1) level 0 grading metrics (competent metrics): data metrics providing the information whether the pilot(s) is (are) competent or not; (2) level 1 grading metrics (competency metrics): quantifiable data from the grading system — numeric grade of the competencies (e.g. 1 to 5); (3) level 2 grading metrics (observable behaviour metrics): the instructors record predetermined OBS during the session; (4) level 3 grading metrics (other metrics): the instructors may record other predetermined data 	

					(e.g. specific tasks, actions, questions, etc.). (d) Alternatively, where a system for the measurement of training system performance already exists, the operator may use it and, if necessary, adapt it to meet the demands of EBT.	
194.	AMC2 ORO.FC.231 (c)	Evidence-based training Programme – Data Protection – Grading system			(a) The objective of protecting the EBT data is to avoid inappropriate use of it in order to ensure the continued availability of such data, to maintain and improve pilot competencies. (b) The data access and security policy should restrict information access to authorised persons. (c) The data access and security policy should include the measures to ensure the security of the data (e.g. information security standard). (d) The data access and security policy (including the procedure to prevent disclosure of crew identity) should be agreed by all parties involved (airline management and flight crew member representatives nominated either by the union or the flight crew themselves). (e) The data access and security policy should be in line with the organisation safety policy in order to not make available or to not make use of the EBT data to attribute blame or liability. (f) The operator may integrate the security policy within other management systems already in place (e.g. information security management).	
195.	ORO.FC.231 (d)	Evidence-based training Programme – Grading System			(1) The operator shall use a grading system to assess the pilot competencies. The grading system shall ensure: (i) a sufficient level of detail to enable accurate and useful measurements of individual performance. (ii) a performance criterion and a scale for each competency, with a point on the scale which determines the minimum acceptable level to be achieved for the conduct of line operations. The operator shall develop procedures to address low performance of the pilot.	

					<p>(iii) data integrity.</p> <p>(iv) data security.</p> <p>(2) The operator shall verify at regular intervals the accuracy of the grading system against a criterionreferenced system.</p>	
196.	AMC1.ORO.FC.231 (d) (1)	Evidence-based training Programme – Grading System			<p>(a) The grading system should provide quantifiable data for the measurement of the training system performance.</p> <p>(b) The grading scale should be 1 to 5, where:</p> <p>(1) Grade 1 — NOT COMPETENT — determines that the minimum acceptable level of performance was not achieved for the conduct of line operations. An outcome of ADDITIONAL TRAINING REQUIRED, and level 2 grading metrics should be recorded.</p> <p>(2) Grade 2 to 5 determine an outcome of COMPETENT for the conduct of line operations.</p> <p>(3) Grade 2 (below the average) determines that the minimum acceptable level was achieved for the conduct of line operations. Additionally, level 2 grading metrics should be recorded.</p> <p>Minimum performance indicates a need for training (e.g. tailored or additional) to elevate performance. It includes:</p> <p>(i) a competency graded continuously with 2 in multiple modules, or</p> <p>(ii) the majority of competencies graded with 2 in a module.</p> <p>(4) Grade 3 is the average.</p> <p>(5) Grade 4 determines that the pilot is above the average.</p> <p>(6) Grade 5 (exemplary) determines that the pilot is above the average and the outcome is enhanced safety, effectiveness and efficiency.</p> <p>(c) The operator should develop further grading guidance to the above points to help the instructors determine the grade of the pilots they assess.</p>	

197.	AMC2.ORO.FC.231 (d) (1)	Evidence-based training Programme – Grading System Alternative System		<p>(a) An operator seeking to develop an alternative grading system under ORO.GEN.120 should:</p> <p>(1) provide quantifiable data for the measurement of the training system performance; and</p> <p>(2) demonstrate equivalence to the recommended grading system in AMC1 ORO.FC.231(d)(1).</p> <p>(b) The grading scale for each competency should:</p> <p>(1) determine the grade at which the performance is considered:</p> <p>(i) NOT COMPETENT for the conduct of line operations. An outcome of ADDITIONAL TRAINING REQUIRED and level 2 grading metrics should be recorded; and</p> <p>(ii) COMPETENT for the conduct of line operations; and</p> <p>(2) determine for the pilot whose performance is considered competent for the conduct of line operations:</p> <p>(i) if the pilot needs more training (e.g. tailored or additional training) to elevate their performance to the operator specified norm;</p> <p>(ii) if the pilot is at the operator specified norm;</p> <p>(iii) if the pilot is above the average (it can be one or more grades e.g. above the average and exemplary).</p>		
198.	AMC3.ORO.FC.231 (d) (1)	Evidence-based training Programme – Grading System - ORCA		Refer to AMC for details		
199.	AMC4.ORO.FC.231 (d) (1)	Evidence-based training Programme – Grading System VENN Model		Refer to AMC for details		
200.	AMC1.ORO.FC.231 (d) (2)	Evidence-based training Programme – Verification of the accuracy of the grading system		<p>(a) The purpose is to provide data to assess the accuracy of the grading system.</p> <p>(b) The items defined below are based on Part-FCL Appendix 9. They should be included in the EVAL and MT of the applicable module. The minimum items to be included are: rejected take-off, failure of critical engine between V1 & V2, adherence to departure and arrival, 3D approaches down to a decision height</p>		

				<p>(DH) not less than 60 m (200 ft), engine-out approach & go-around, 2D approach down to the MDH/A, engine-out approach & go-around, engine-out landing.</p> <p>(c) Instructors should record if the exercises are flown to proficiency using Appendix 9 references (define criteria). Note: Individual pilots' grading and assessment remains according to the EBT grading system and Appendix 10.</p> <p>(d) This verification should be performed once every 3 years.</p>		
201.	ORO.FC.231 (e)	Evidence-based training Programme – Suitable Training Devices and Volume of Hours to Complete the Operator's EBT programme		<p>(1) Each EBT module shall be conducted in an FSTD with a qualification level adequate to ensure the correct delivery of the assessment and training topics.</p> <p>(2) The operator shall provide a sufficient volume of hours in the suitable training device for the pilot to complete the operator's EBT programme. The criteria to determine the volume of the EBT programme are as follows:</p> <p>(i) The volume corresponds to the size and complexity of the EBT programme.</p> <p>(ii) The volume is sufficient to complete the EBT programme.</p> <p>(iii) The volume ensures an effective EBT programme taking into account the recommendations provided by ICAO, the Agency, and the competent authority.</p> <p>(iv) The volume corresponds to the technology of the training devices used.</p>		
202.	AMC1 ORO.FC.231 (e)	Evidence-based training Programme – Volume and FSTD Qualification Level		<p>(a) The EBT programme has been developed to include a notional exemplar of 48 FSTD hours over a 3-year programme for each flight crew member.</p> <p>(b) Subject to ORO.GEN.120, the operator may reduce the number of FSTD hours provided that an equivalent level of safety is achieved. The programme should not be less than 36 FSTD hours.</p> <p>(c) Each EBT module should be conducted in an FSTD with a qualification level adequate to complete proficiency checks; therefore, it should be conducted</p>		

					in a full-flight simulator (FFS) level C or D.	
203.	ORO.FC.231 (f)	Evidence-based training Programme – Equivalency of malfunctions			<p>(1) Each pilot shall receive assessment and training in the management of aircraft system malfunctions.</p> <p>(2) Aircraft system malfunctions that place a significant demand on a proficient crew shall be organised by reference to the following characteristics:</p> <ul style="list-style-type: none"> (i) immediacy. (ii) complexity. (iii) degradation of aircraft control. (iv) loss of instrumentation. (v) management of consequences. <p>(3) Each pilot shall be exposed to at least one malfunction for each characteristic at the frequency determined by the table of assessment and training topics.</p> <p>(4) Demonstrated proficiency in the management of one malfunction is considered equivalent to demonstrated proficiency in the management of other malfunctions with the same characteristics.</p>	
204.	AMC1 ORO.FC.231 (f)	Evidence-based training Programme – Equivalency of malfunctions			<p>(a) The equivalency of malfunctions process should be undertaken by subject matter experts (SMEs) who hold or have held a type rating on the aeroplane type.</p> <p>(b) Steps of the equivalency of malfunctions</p> <p>Step 1: Look at (review) all aircraft system malfunctions provided by the OEM. For example, FCOM for Airbus, or AFM for other manufacturers, does not normally provide an exhaustive list of malfunctions.</p> <p>Step 2: Determine and retain in a list only malfunctions that place a significant demand on a proficient crew, in isolation from an environmental or operational context.</p> <p>Step 3: For each retained malfunction, determine the applicable characteristic or characteristics.</p>	

					<p>Step 4: Develop the EBT FSTD programme to incorporate malfunctions at the frequency specified in the table of assessment and training topics.</p> <p>(c) Malfunctions included in the equivalency of malfunctions but not included in the EBT FSTD programme require review and appropriate procedural knowledge training, conducted in a less qualified but suitable alternative environment (classroom, flight procedure training device, advance computer-based training, aviation blended learning environment (ABLE), etc.). Further guidance can be found in the EASA EBT manual.</p> <p>(d) The operator should establish procedures to determine what malfunctions should be included in the FSTD. This may include a different malfunction difficulty between the EVAL and the SBT.</p>	
205.	AMC1 ORO.FC.231 (f) (3)	Evidence-based training Programme – Crew exposure to at least one malfunction for each characteristic			<p>(a) Unless specified in the OSD, each crew member should be exposed to the characteristics of degraded control and loss of instrumentation in the role of pilot flying.</p> <p>(b) Notwithstanding point (a), for aircraft types with a limited number of malfunctions in the characteristic of degraded control or loss of instrumentation, the operator may use an alternative means of compliance in accordance with ORO.GEN.120</p>	
206.	ORO.FC.231 (g)	Evidence-based training Programme – Equivalency of approaches relevant to operations			<p>1) The operator shall ensure that each pilot receives regular training in the conduct of approach types and approach methods relevant to operations.</p> <p>(2) This training shall include approaches that place an additional demand on a proficient crew.</p> <p>(3) This training shall include the approaches that require specific approval in accordance with Annex V (PartSPA) to this Regulation</p>	
207.	AMC1 ORO.FC.231 (g)	Evidence-based training Programme – Approaches that place additional demand on a proficient crew			<p>(a) In order to identify approaches that place an additional demand on a proficient crew, an operator should:</p> <p>(1) review its operational network;</p> <p>(2) select approaches with one or more of the</p>	

				<p>following characteristics:</p> <p>(i) unusual design;</p> <p>(ii) low frequency of exposure; and</p> <p>(iii) degraded approach guidance;</p> <p>(3) select at least one approach of each type and method and include them in the EBT programme at the frequency given in the table of assessment and training topics; and</p> <p>(4) ensure the approaches selected in (3) cover all the characteristics at the frequency given in the table of assessment and training topics.</p> <p>Note: The approaches listed within Section 2 of the table of assessment and training topics should be selected in this process.</p> <p>(b) Any approach that is required to be flown in the PF role specifically should be classified as 'skills retention' and may be trained in the MT.</p>	
208.	AMC2 ORO.FC.231 (g)	Evidence-based training Programme – Equivalency of approaches relevant to operations – Specific Approval		The operator may extend the interval for recurrent training and checking of approaches that require specific approval as defined in the AMC to Part-SPA (e.g. SPA.LVO) to the frequency given in the EBT programme.	
209.	ORO.FC.231 (h)	Evidence-based training Programme – Line Evaluation of competence.		<p>1) Each pilot shall periodically undertake a line evaluation of competence in an aircraft to demonstrate the safe, effective and efficient conduct of normal line operations described in the operations manual.</p> <p>(2) The validity period of a line evaluation of competence shall be 12 months.</p> <p>(3) The operator approved for EBT may, with the approval of the competent authority, extend the validity of the line evaluation of competence to:</p> <p>(i) either 2 years, subject to a risk assessment.</p>	

					<p>(ii) or 3 years, subject to a feedback process for the monitoring of line operations which identifies threats to the operations, minimises the risks of such threats, and implements measures to manage human error in the operations.</p> <p>(4) For successful completion of the line evaluation of competence, the pilot shall demonstrate an acceptable level of performance in all observed competencies.</p>		
210.	AMC1 ORO.FC.231 (h)	Evidence-based training Programme – Line Evaluation of competence.			<p>(a) The purpose of the line evaluation of competence is to verify the capability of the flight crew member(s) to undertake line operations, including pre-flight and post-flight activities as specified in the operations manual. Therefore, the line evaluation of competence should be performed in the aircraft. The route should be representative of typical sectors undertaken in normal operations. The commander, or any pilot who may be required to relieve the commander, should also demonstrate their competency in the role.</p> <p>(b) Each flight crew member should be assessed according to the competency framework and grading system approved for their operator's EBT Programme.</p> <p>(c) Flight crew members should be assessed in duties as pilot flying and pilot monitoring; they should be evaluated in each role. Therefore, they should be checked on one flight sector as pilot flying and on another flight sector as pilot monitoring.</p> <p>(d) The operator should maintain a list and inform the competent authority about the line evaluators suitably qualified to undertake line evaluations of competence.</p> <p>(e) The person that conducts the line evaluation of competence should occupy an observer's seat.</p> <p>For aeroplanes, in the case of long-haul operations where additional operating flight crew members are carried, the person that conducts the line evaluation of competence may fulfil the function of a cruise relief pilot and should not occupy either pilot's seat during take-off, departure, initial cruise, descent,</p>		

					<p>approach and landing.</p> <p>(f) The validity period should be counted from the end of the month when the line evaluation of competence was undertaken. When the line evaluation of competence is undertaken within the last 3 months of the validity period, the new validity period should be counted from the original expiry date.</p>		
211.	AMC2 ORO.FC.231 (h)	Evidence-based training Programme – Line Evaluation of competence – Line Evaluator			<p>(a) The line evaluator should have a valid line evaluation of competence.</p> <p>(b) The line evaluator should receive an acceptable training based on the EBT instructor training. The EBT assessment of competence is not required.</p>		
212.	AMC1 ORO.FC.231 (h) (3)	Evidence-based training Programme – Line Evaluation of competence – Extension of the validity			<p>In order to extend the validity of the line evaluation of competence to:</p> <p>(a) 2 years, in every cycle, one EVAL for each pilot should be conducted by an EBT instructor (EBT instructors) who has (have) a valid line evaluation of competence in the same operator;</p> <p>(b) 3 years, in addition to point (a) above, the operator should have a feedback process for the monitoring of line operations which:</p> <p>(1) identifies threats in the airline’s operating environment;</p> <p>(2) identifies threats within the airline’s operations;</p> <p>(3) assesses the degree of transference of training to the line operations;</p> <p>(4) checks the quality and usability of procedures;</p> <p>(5) identifies design problems in the human-machine interface;</p> <p>(6) understands pilots’ shortcuts and workarounds;</p> <p>and</p> <p>(7) assesses safety margins.</p>		
213.	ORO.FC.231 (i)	Evidence-based training Programme – Ground Training			<p>(1) Every 12 calendar months, each pilot shall undergo:</p>		

					<p>(i) technical ground training.</p> <p>(ii) assessment and training on the location and use of all emergency and safety equipment carried on the aircraft.</p> <p>(2) The operator may, with the approval of the competent authority and subject to a risk assessment, extend the period of assessment and training on the location and use of all emergency and safety equipment carried on the aircraft to 24 months.”</p>		
214.	AMC1 ORO.FC.231 (i)	Evidence-based training Programme – Performance-Based continuous technical ground training			<p>(a) Technical ground training programme</p> <p>(b) Emergency and safety equipment training</p> <p>(c) Emergency and safety equipment training — extension of period of training</p> <p>Refer to details in this AMC</p>		
215.	ORO.FC.232	EBT programme assessment and training topics			<p>(a) The operator shall ensure that each pilot is exposed to the assessment and training topics.</p> <p>(b) The assessment and training topics shall be:</p> <p>(1) derived from safety and operational data that are used to identify the areas for improvement and prioritisation of pilot training to guide in the construction of suitable EBT programmes.</p> <p>(2) distributed across a 3-year period at a defined frequency.</p> <p>(3) relevant to the type or variant of aircraft on which the pilot operates.”</p>		
216.	AMC1 ORO.FC.232	EBT programme assessment and training topics			Refer to details in AMC		
217.	AMC2/3/4/5/6/7 ORO.FC.232	EBT programme assessment and training topics- Tables of Assessment and Training Topics			Refer to details in AMC and to specific aircraft generation		
218.	AMC8 ORO.FC.232	EBT programme assessment and training topics – Scenario elements and competency mapping			<p>(a) The operator may develop scenario elements and a competency map that are more relevant to its operation.</p> <p>(b) When developing scenario elements, the operator should ensure that there can be no negative training when asking pilots to induce their own errors.</p> <p>(c) Competencies mapped are those considered</p>		

					critical in managing the scenario. They are determined according to the following principles: (1) those competencies considered most critical to the successful management of the defined threat or error; or (2) those competencies most likely to be linked to the root cause of poor performance in the case of unsuccessful management of a defined threat or error. (d) The competency map may indicate scenarios or combinations of scenarios for development of particular competencies. (e) The competency map indicates the most critical competencies suggested by design, but the instructor should always assess all observed competencies.		
219.	AMC1 ORO.FC.232 (b) (1)	EBT programme assessment and training topics – EBT Data Report			Refer to details in AMC		
220.	AMC1 ORO.FC.232 (b) (3)	EBT programme assessment and training topics – Aircraft Types by Generations			Refer to details in AMC		

Either seat qualification							
221.	ORO.FC.135	Pilot qualification to operate in either pilot's seat			FCM who may be assigned to operate in either pilot's seat shall complete appropriate training and checking as specified in the OM.		
222.	ORO.FC.235	Pilot qualification to operate in either pilot's seat – Commander			Commanders of aeroplanes whose duties require them to operate in either pilot's seat and carry out the duties of a co-pilot, or commanders required to conduct training or checking duties shall complete additional training and checking to ensure that they are proficient in conducting the relevant normal, abnormal and emergency procedures from either seat. Such training and checking shall be specified in the operations manual. The checking may be conducted together with the operator proficiency check prescribed in ORO. FC.230(b) or in the EBT programme prescribed in ORO.FC.231.		
223.	ORO.FC.235	Pilot qualification to operate in either pilot's seat –			The additional training and checking shall include at		

		Commander			<p>least the following:</p> <p>(1) an engine failure during take-off;</p> <p>(2) a one-engine-inoperative approach and go-around; and</p> <p>(3) a one-engine-inoperative landing.</p>		
224.	ORO.FC.235	Pilot qualification to operate in either pilot's seat – Commander			When operating in the co-pilot's seat, the checks required by ORO.FC.230 or the assessment and training required by ORO.FC.231 for operating in the commander's seat shall, in addition, be valid and current.		
225.	AMC1 ORO.FC.235(d)	Pilot qualification to operate in either pilot's seat – Commander – Helicopters			In the case of single-engined helicopters, the autorotative landing should be carried out from left- and right-hand seats on alternate proficiency checks.		
226.	ORO.FC.235	Pilot qualification to operate in either pilot's seat – Co-pilot			The pilot relieving the commander shall have demonstrated, concurrent with the operator proficiency checks prescribed in ORO.FC.230(b) or the assessment and training required by ORO.FC.231, practice of drills and procedures that would not normally be his or her responsibility. Where the differences between left- and right-hand seats are not significant, practice may be conducted in either seat.		
227.	ORO.FC.235(f)	Pilot qualification to operate in either pilot's seat – Co-pilot			The pilot, other than the commander, occupying the commander's seat shall demonstrate practice of drills and procedures, concurrent with the operator proficiency checks prescribed in ORO.FC.230(b) or the assessment and training required by ORO.FC.231, which are the commander's responsibility acting as pilot monitoring. Where the differences between left- and right-hand seats are not significant, practice may be conducted in either seat.		
228.	ORO.FC.236	Pilot qualification to operate in either pilot's seat – helicopters			<p>Helicopter pilots whose duties require them to operate in either pilot's seat shall complete additional training and checking to ensure that they are proficient in conducting the relevant normal, abnormal and emergency procedures from either seat. The validity period of this qualification shall be 12 calendar months.</p> <p>Current FIs or TRIs on the relevant type are</p>		

					considered to fulfil the requirement above if they have had a FI or TRI activity in the last 6 months on that type and on the helicopter.		
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Operation on more than one type or variant							
229.	ORO.FC.140	Operation on more than one type or variant			<p>(a) Flight crew members that operate more than one type or variant of aircraft shall comply with the requirements prescribed in this Subpart for each type or variant, unless credits related to the training, checking, and recent experience requirements are defined in the mandatory part of the operational suitability data established in accordance with EASA Part 21 or any equivalent material acceptable to the CAAT for the relevant types or variants</p> <p>(b) The operator may define groups of single-engined helicopter types. An operator proficiency check on one type shall be valid for all the other types within the group if both of the following conditions are met:</p> <p>(1) the group either includes only single-engined turbine helicopters operated under VFR or it includes only single-engined piston helicopters operated under VFR;</p> <p>(2) for CAT operations, at least two operator proficiency checks per type shall be conducted within a 3-year cycle.</p> <p>(c) For specialised operations, elements of the aircraft/FSTD training and operator proficiency check that cover the relevant aspects associated with the specialised task and are not related to the type or group of types may be credited towards the other groups or types, based on a risk assessment performed by the operator.</p> <p>(d) For operations on more than one helicopter type or variant that are used for conducting sufficiently similar operations, if line checks rotate between types or variants, each line check shall revalidate the line check for the other helicopter types or variants.</p> <p>(e) Appropriate procedures and any operational restrictions shall be specified in the operations</p>		

					manual for any operation on more than one type or variant.		
230.	ORO.FC.240	Operation on more than one type or variant			The procedures or operational restrictions for operation on more than one type or variant established in the OM and approved by the competent authority shall cover: (1) the flight crew members' minimum experience level; (2) the minimum experience level on one type or variant before beginning training for and operation of another type or variant; (3) the process whereby flight crew qualified on one type or variant will be trained and qualified on another type or variant; and (4) all applicable recent experience requirements for each type or variant.		
231.	ORO.FC.240	Operation on more than one type or variant			Such limitations shall not apply to operations of performance class B aeroplane if they are limited to single-pilot classes of reciprocating engine aeroplanes under VFR by day.		
232.	AMC1 ORO.FC.240	Operation on more than one type or variant – Aeroplanes			Check that requirements of AMC1 ORO.FC.240 (a) and AMC2 ORO.FC.240 are fulfilled.		
233.	AMC1 ORO.FC.240	Operation on more than one type or variant – Helicopters			Check that requirements of AMC1 ORO.FC.240 (b) and AMC2 ORO.FC.240 are fulfilled. Where applicable each AMC requirement for the EBT programme shall be complied with.		
234.	ORO.FC.240	Operation on more than one type or variant			Such limitations with helicopters shall not apply to operations of performance class B aeroplane if they are limited to single-pilot classes of reciprocating engine aeroplanes under VFR by day.		
235.	AMC1 ORO.FC.240	Operation on more than one type or variant – Aeroplane + Helicopter			Check that requirements of AMC1 ORO.FC.240 (c) are fulfilled.		

Commanders holding a CPL

236.	ORO.FC.A.250	Commanders holding a CPL - Aeroplane			The holder of a CPL(A) shall only act as commander in CAT on a single-pilot aeroplane if:		
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					<p>(1) when carrying passengers under VFR outside a radius of 50 NM (90 km) from an aerodrome of departure, he/she has a minimum of 500 hours of flight time on aeroplanes or holds a valid instrument rating (not for operations under VFR by day); or</p> <p>(2) when operating on a multi-engine type under IFR, he/she has a minimum of 700 hours of flight time on aeroplanes, including 400 hours as pilot-in-command. These hours shall include 100 hours under IFR and 40 hours in multi-engine operations. The 400 hours as pilot-in-command may be substituted by hours operating as co-pilot within an established multi-pilot crew system prescribed in the operations manual, on the basis of two hours of flight time as co-pilot for one hour of flight time as pilot-in command.</p>	
237.	ORO.FC.H.250	Commanders holding a CPL - Helicopters			<p>(a) The holder of a CPL(H) (helicopter) shall only act as commander in CAT on a single-pilot helicopter if:</p> <p>(1) when operating under IFR, they have a minimum of 700 hours total flight time on helicopters, including 300 hours as pilot-in-command. The total flight time on helicopters shall include 100 hours under IFR. Up to 50 hours instrument time performed on an FFS(H) level B or FTD level 3 qualification or higher qualified for instrument training, may be credited towards the 100 hours. The 300 hours as pilot-in-command may be substituted by hours operating as co-pilot within an established multi-pilot crew system prescribed in the operations manual on the basis of 2 hours of flight time as co-pilot for 1 hour flight time as pilot-in command;</p> <p>(2) when operating under visual meteorological conditions (VMC) at night, he/she has:</p> <p>(i) a valid instrument rating; or</p> <p>(ii) 300 hours of flight time on helicopters, including 100 hours as pilot-in-command and 10 hours as pilot flying at night.</p>	

Single-pilot operations under IFR or at night

238.	ORO.FC.202	Single-pilot operations under IFR or at night			<p>The operator shall include in the OM a pilot's conversion and recurrent training programme that includes the additional requirements for a single-pilot operation. The pilot shall have undertaken training on the operator's procedures, in particular regarding:</p> <ul style="list-style-type: none"> (1) engine management and emergency handling; (2) use of normal, abnormal and emergency checklist; (3) air traffic control (ATC) communication; (4) departure and approach procedures; (5) autopilot management, if applicable; (6) use of simplified in-flight documentation; (7) single-pilot crew resource management. 		
239.	ORO.FC.202	Single-pilot operations under IFR or at night – Aeroplane under IFR			<p>For aeroplane operations under IFR the pilot shall have:</p> <ul style="list-style-type: none"> (1) a minimum of 50 hours flight time under IFR on the relevant type or class of aeroplane, of which 10 hours are as commander; and (2) completed during the preceding 90 days on the relevant type or class of aeroplane: <ul style="list-style-type: none"> (i) five IFR flights, including three instrument approaches, in a single-pilot role; or (ii) an IFR instrument approach check. 		
240.	ORO.FC.202	Single-pilot operations under IFR or at night – Aeroplane at night			<p>For aeroplane operations at night the pilot shall have:</p> <ul style="list-style-type: none"> (1) a minimum of 15 hours flight time at night which may be included in the 50 hours flight time under IFR; and (2) completed during the preceding 90 days on the relevant type or class of aeroplane: <ul style="list-style-type: none"> (i) three take-offs and landings at night in the single pilot role; or (ii) a night take-off and landing check. 		

241.	ORO.FC.202	Single-pilot operations under IFR or at night – Helicopter under IFR			<p>For helicopter operations under IFR the pilot shall have:</p> <p>(1) 25 hours total IFR flight experience in the relevant operating environment; and</p> <p>(2) 25 hours flight experience as a single pilot on the specific type of helicopter, approved for single-pilot IFR, of</p> <p>which 10 hours may be flown under supervision, including five sectors of IFR line flying under supervision using the single-pilot procedures; and</p> <p>(3) completed during the preceding 90 days:</p> <p>(i) five IFR flights as a single pilot, including three instrument approaches, carried out on a helicopter approved for this purpose; or</p> <p>(ii) an IFR instrument approach check as a single pilot on the relevant type of helicopter, flight training device (FTD) or full flight simulator (FFS).</p>		
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MEL Training							
242.	ORO.GEN.110(e) AMC1 ORO.GEN.110(e)	MEL Training programme			<p>The operator should develop a training programme for crew members and detail such training in the Operations Manual. Such training programme should include:</p> <p>(1) the scope, extent and use of the MEL;</p> <p>(2) the operator's MEL procedures;</p> <p>(3) elementary maintenance procedures; and</p> <p>(4) pilot-in-command/commander responsibilities</p>		

ACAS/TCAS training							
243.	AUR.ACAS.2010 ICAO Doc 9863	ACAS – Training			<p>Operators shall establish ACAS II operational procedures and training programmes so that the flight crew is appropriately trained in the avoidance of collisions and competent in the use of ACAS II equipment.</p>		

244.	AUR.ACAS.2010 ICAO Doc 9863	ACAS – Training programme			-Theory of operation -ACAS limitations -Operating procedures Including: crew coordination and communications with ATC -ACAS manoeuvre training including: TA responses RA responses -ACAS initial evaluation -Recurrent training		
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PBN training							
245.	CAT.OP.MPA.126	PBN Training – General			For operations where a navigation specification for performance-based navigation (PBN) has been prescribed and no specific approval is required in accordance with SPA.PBN.100, the operator should specify the flight crew qualification and proficiency constraints and ensure that the training programme for relevant personnel is consistent with the intended operation.		
246.	JAA TGL10	Training programme – PBN for Terminal airspace: arrival and departure (RNAV1/2, RNP1), P-RNAV			P-RNAV training should cover: <ul style="list-style-type: none"> - Normal procedures - Contingency procedures Simulator training & checks should include departures and arrivals using P-RNAV procedures. Subject to be covered: <ul style="list-style-type: none"> - Theory of RNAV including differences between B-RNAV (RNAV5), P-RNAV, RNP-RNAV - Limitations of RNAV - Charting, database and avionics issues including waypoint naming concepts - RNAV path terminator concepts and especially the use of the CF & TF path terminator 		

					<ul style="list-style-type: none"> - Fly-by and fly-over waypoints - Use of RNAV equipment including: <ul style="list-style-type: none"> o Retrieving a procedure from the database o Verification and sensor management o Tactically modifying the flight plan o Addressing discontinuities o Entering data such as wind, altitude, speed constraints, vertical profile, vertical speed o Flying the procedure o Use LNAV mode and lateral control techniques o Use VNAV mode and vertical control techniques o Use of AP, FD and AT at different stages of the procedure - RT phraseology for RNAV - Implications for RNAV operations of system malfunctions which are not RNAV related 	
247.	CAT.OP.MPA.126 FAA Order 8400.33 ICAO Doc 9997	Training programme – RNP 4			<p>The following items should be included in flight crew training programmes:</p> <ul style="list-style-type: none"> - equipment requirements, - normal and non-normal operations and flight procedures, - limits of their navigation capability for operations in RNP-4 oceanic and remote area operations 	
248.	CAT.OP.MPA.126	Training programme – RNAV 10			<p>The following items should be included in flight crew training programmes:</p>	

	AMC 20-12 ICAO Doc 9997				<ul style="list-style-type: none"> - equipment requirements, - normal and non-normal operations and flight procedures, - limits of their navigation capability for operations in RNAV-10 oceanic and remote area operations - GNSS principles related to en-route navigation 		
249.	CAT.OP.MPA.126 AMC 20-27/28	Training programme – RNP APCH – Initial theoretical			<p>The theoretical RNP APCH training shall be given by adequately qualified personnel (GI, TRI,...) and shall be tailored to the operator's approved operations. Therefore, a generic theoretical training is not sufficient and shall be completed by a specific operator module (including aircraft type specificities).</p> <p>This training shall include at least:</p> <p>RNAV Approach concept:</p> <ul style="list-style-type: none"> - Theory of RNAV including different types of RNAV operations - Limitations of RNAV and BARO-VNAV - Charting and database (waypoint naming, vertical path angle, fly-by and fly-over waypoint) - Use of RNAV equipment (verification & sensor management, entering data,...) - Use of lateral nav mode (and lateral control techniques) - Use of vertical nav mode (and vertical control techniques) - R/T phraseology for RNAV operations - Implications for RNAV ops of system malfunction which are not RNAV related <p>RNP Approach concept (including LPV):</p> <ul style="list-style-type: none"> - Definition of RNP APCH operations - Regulatory requirements for RNP APCH 		

					<p>(including LPV)</p> <ul style="list-style-type: none"> - Required navigation equipment for RNP APCH (GNSS, SBAS, RAIM, BARO-VNAV, MEL,...) - Procedures characteristics (minima, chart depiction,...) - Retrieving adequate procedure from database - Procedure changes (destination, arrival, alternate,...) - Flying the procedure (use of A/P, FD, auto throttle, lateral and vertical path management,...) - Specificities for BARO-VNAV and LPV - Effect of temperature deviation and its compensation - ATC procedures - Abnormal and contingency procedures 	
250.	CAT.OP.MPA.126 AMC 20-27/28	Training programme – RNP APCH – Initial Practical			<p>The practical RNP APCH training shall be given by adequately qualified personnel (SFI, TRI,...) and shall be tailored to the operator's approved operations. The practical training shall be performed in a flight simulator when technically available.</p> <p>This training shall include at least:</p> <ul style="list-style-type: none"> - Programming RNAV approaches including database and sensor checking - Cockpit display management - Use of nav charts - Application of SOPs and abnormal procedures as described in OM A and B - Flying the RNP APCH procedure with full and partial flight guidance systems - Lateral & vertical approach path management (fly direct to a waypoint, 	

					<p>interception of a of initial or intermediate segment,...)</p> <ul style="list-style-type: none"> - Use of other a/c equipment to support track monitoring, weather and obstacle avoidance - Interception of the extended final approach segment (if applicable) - Determining lateral & vertical track deviation/error - Contingency procedures (LNAV/VNAV failure, sensor failure...) - Check RNP/ANP and RAIM - Missed approach procedures (conventional and RNAV) - Adherence to speed and/or altitude constraints - Abnormal procedures 		
251.	SPA.PBN.105	Training programme – RNP AR APCH			RNP AR APCH is addressed in a separate checklist.		

MNPS (NAT-HLA) training							
252.	SPA.MNPS.105 NAT Doc 007	Training programme – MNPS			<p>The training programme should include:</p> <ul style="list-style-type: none"> - instructions on the efficient use of equipment with emphasis on how to avoid mistakes - develop a meticulous method of using Control Display Units (CDUs), with careful cross-checking at all operational stages - the need for maintaining accuracy along and across track (i.e. the careful application of Mach Number Technique, accurate reporting of positions and the use of accurate time in reporting positions) - knowledge and understanding of standard ATC phraseology used in each area of 		

					<p>operations</p> <ul style="list-style-type: none"> - importance of crew members cross-checking each other to ensure that ATC clearances are promptly and correctly complied with - use and limitations, in terms of accuracy, of standby altimeters during contingency situations. Where applicable, the pilot should review the application of Static Source Error Correction/Position Error Correction (SSEC/PEC) through the use of correction cards - characteristics of aircraft altitude capture systems which may lead to the occurrence of overshoots - relationships between the altimetry, automatic altitude control and transponder systems in normal and abnormal situations - aircraft operating restrictions related to airworthiness approval - familiarity with the recommendations to reduce oceanic errors as contained in the current version of the “Oceanic Errors Safety Bulletin (OESB)” published by ICAO EUR/NAT Office as a NAT Operations Bulletin - instruction on what action should be considered in the event of systems failures - Lessons to be learned (ICAO Nat Doc 007 §15.4) 	
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RVSM training						
253.	SPA.RVSM.105 AMC2 SPA.RVSM.105	Training programme – RVSM			The training programme should include: <ul style="list-style-type: none"> - knowledge and understanding of standard ATC phraseology used in each area of operations; 	

					<ul style="list-style-type: none"> - importance of crew members cross-checking to ensure that ATC clearances are promptly and correctly complied with; - use and limitations in terms of accuracy of standby altimeters in contingencies. Where applicable, the pilot should review the application of static source error correction/position error correction through the use of correction cards; such correction data should be available on the flight deck; - problems of visual perception of other aircraft at 300 m (1 000 ft) planned separation during darkness, when encountering local phenomena such as northern lights, for opposite and same direction traffic, and during turns; - characteristics of aircraft altitude capture systems that may lead to overshoots; - relationship between the aircraft's altimetry, automatic altitude control and transponder systems in normal and abnormal conditions; and - any airframe operating restrictions, if required for the specific aircraft group, related to RVSM airworthiness approval. 	
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LVO training						
254.	SPA.LVO.120	LVO training and qualifications			<p>(a) The operator shall ensure that the flight crew is competent to conduct the intended operations.</p> <p>(b) The operator shall ensure that each flight crew member successfully completes training and checking for all types of LVOs and operations with operational credits for which an approval has been granted. Such training and checking shall:</p> <p>(1) include initial and recurrent training and checking;</p> <p>(2) include normal, abnormal and emergency</p>	

				<p>procedures;</p> <p>(3) be tailored to the type of technologies used in the intended operations; and</p> <p>(4) take into account the human factor risks associated with the intended operations.</p> <p>(c) The operator shall keep records of the training and qualifications of the flight crew members.</p> <p>(d) The training and checking shall be conducted by appropriately qualified personnel. In the case of flight and flight simulation training and checking, the personnel providing the training and conducting the checks shall be qualified in accordance with TCAR PEL Part FCL.</p>	
255.	AMC1 SPA.LVO.120	LVO training and qualifications – Experience – CAT II		<p>Before commencing CAT II operations, the following additional provisions should be applicable to commanders, or pilots to whom conduct of the flight may be delegated, <u>who are new to the aircraft type or class</u>:</p> <p>(i) 50 hours or 20 sectors on the type, including LIFUS; and</p> <p>(ii) 100 m should be added to the applicable CAT II RVR minima when the operation requires a CAT II manual landing or use of HUDLS to touchdown until:</p> <p>(A) a total of 100 hours or 40 sectors, including LIFUS, has been achieved on the type; or</p> <p>(B) a total of 50 hours or 20 sectors, including LIFUS, has been achieved on the type where the flight crew member has been previously qualified for CAT II manual landing operations with other Thai operator;</p> <p>(C) for HUDLS operations the sector provisions should always be applicable; the hours on type or class do not fulfil the provisions.</p>	
256.	AMC1 SPA.LVO.120	LVO training and qualifications – Experience – CAT III		<p>Before commencing CAT III operations, the following additional provisions should be applicable to commanders, or pilots to whom conduct of the flight may be delegated, <u>who are new to the aircraft type</u>:</p> <p>(i) 50 hours or 20 sectors on the type, including LIFUS;</p>	

				and (ii) 100 m should be added to the applicable CAT II or CAT III RVR minima unless he/she has previously qualified for CAT II or III operations with other Thai operator, until a total of 100 hours or 40 sectors, including LIFUS, has been achieved on the type. For HUDLS operations the sector provisions should always be applicable; the hours on type or class do not fulfil the provisions.	
Ground Training					
257.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Ground training		<p>The initial ground training course for LVO should include at least the following:</p> <ol style="list-style-type: none"> (1) characteristics and limitations of the ILS and/or MLS; (2) characteristics of the visual aids; (3) characteristics of fog; (4) operational capabilities and limitations of the particular airborne system to include HUD symbology and EVS characteristics, if appropriate; (5) effects of precipitation, ice accretion, low level wind shear and turbulence; (6) effect of specific aircraft/system malfunctions; (7) use and limitations of RVR assessment systems; (8) principles of obstacle clearance requirements; (9) recognition of and action to be taken in the event of failure of ground equipment; (10) procedures and precautions to be followed with regard to surface movement during operations when the RVR is 400 m or less and any additional procedures required for take-off in conditions below 150 m (200 m for category D aeroplanes); (11) significance of DHs based upon radio altimeters and the effect of terrain profile in the approach area on radio altimeter readings and on the automatic approach/landing systems; 	

					(12) importance and significance of alert height, if applicable, and the action in the event of any failure above and below the alert height; (13) qualification requirements for pilots to obtain and retain approval to conduct LVOs; and (14) importance of correct seating and eye position.		
258.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with</u> CAT II/III experience with Community operator – Ground training			Abbreviated ground training course if operating a different type or class from that on which the previous CAT II or CAT III experience was gained.		
259.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with</u> CAT II/III experience <u>with the operator</u> – Ground training			Abbreviated ground training course if operating a different type or class from that on which the previous CAT II or CAT III experience was gained.		
Simulator Training							
260.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			FSTD and/or flight training for LVO should include at least: (i) checks of satisfactory functioning of equipment, both on the ground and in flight; (ii) effect on minima caused by changes in the status of ground installations; (iii) monitoring of: (A) automatic flight control systems and auto-land status annunciators with emphasis on the action to be taken in the event of failures of such systems; and (B) HUD/HUDLS/EVS guidance status and annunciators as appropriate, to include head-down displays; (iv) actions to be taken in the event of failures such as engines, electrical systems, hydraulics or flight control systems; (v) the effect of known unserviceabilities and use of MELs; (vi) operating limitations resulting from airworthiness certification; (vii) guidance on the visual cues required at DH together with information on maximum deviation		

					allowed from glide path or localiser; and (viii) the importance and significance of alert height if applicable and the action in the event of any failure above and below the alert height.		
261.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			FCM should be trained to carry out their duties and instructed on the coordination required with other crew members. Maximum use should be made of suitably equipped FSTDs for this purpose.		
262.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			Training should be divided into phases covering normal operation with no aircraft or equipment failures but including all weather conditions that may be encountered and detailed scenarios of aircraft and equipment failure that could affect CAT II or III operations. If the aircraft system involves the use of hybrid or other special systems, such as HUD/HUDLS or enhanced vision equipment, then FCM should practise the use of these systems in normal and abnormal modes during the FSTD phase of training.		
263.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			Incapacitation procedures appropriate to LVTO, CAT II and CAT III operations should be practised.		
264.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			For aircraft with no FSTD available to represent that specific aircraft, operators should ensure that the flight training phase specific to the visual scenarios of CAT II operations is conducted in a specifically approved FSTD. Such training should include a minimum of 4 approaches. Thereafter, the training and procedures that are type specific should be practised in the aircraft.		
265.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			Initial CAT II and III training should include at least the following exercises: (i) approach using the appropriate flight guidance, autopilots and control systems installed in the aircraft, to the appropriate DH and to include transition to visual flight and landing; (ii) approach with all engines operating using the appropriate flight guidance systems, autopilots, HUDLS and/or EVS and control systems installed in the aircraft down to the appropriate DH followed by		

					<p>missed approach - all without external visual reference;</p> <p>(iii) where appropriate, approaches utilising automatic flight systems to provide automatic flare, hover, landing and rollout; and</p> <p>(iv) normal operation of the applicable system both with and without acquisition of visual cues at DH.</p>		
266.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			<p>Subsequent phases of training should include at least:</p> <p>(i) approaches with engine failure at various stages on the approach;</p> <p>(ii) approaches with critical equipment failures, such as electrical systems, auto flight systems, ground and/or airborne ILS, MLS systems and status monitors;</p> <p>(iii) approaches where failures of auto flight equipment and/or HUD/HUDLS/EVS at low level require either:</p> <p>(A) reversion to manual flight to control flare, hover, landing and rollout or missed approach; or</p> <p>(B) reversion to manual flight or a downgraded automatic mode to control missed approaches from, at or below DH including those which may result in a touchdown on the runway;</p> <p>(iv) failures of the systems that will result in excessive localiser and/or glideslope deviation, both above and below DH, in the minimum visual conditions specified for the operation. In addition, a continuation to a manual landing should be practised if a head-up display forms a downgraded mode of the automatic system or the head-up display forms the only flare mode; and</p> <p>(v) failures and procedures specific to aircraft type or variant.</p>		
267.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			The training programme should provide practice in handling faults which require a reversion to higher minima.		
268.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III			The training programme should include the handling		

		experience – Simulator training			of the aircraft when, during a <u>fail-passive CAT III approach</u> , the fault causes the autopilot to disconnect at or below DH when the last reported RVR is 300 m or less.		
269.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			Where take-offs are conducted in RVRs of 400 m and below, training should be established to cover systems failures and engine failure resulting in continued as well as rejected take-offs.		
270.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			The training programme should include, where appropriate, approaches where failures of the HUDLS and/or EVS equipment at low level require either: (i) reversion to head down displays to control missed approach; or (ii) reversion to flight with no, or downgraded, HUDLS guidance to control missed approaches from DH or below, including those which may result in a touchdown on the runway.		
271.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			When undertaking LVTO, LTS CAT I, OTS CAT II, CAT II and CAT III operations utilising a HUD/HUDLS, hybrid HUD/HUDLS or an EVS, the training and checking programme should include, where appropriate, the use of the HUD/HUDLS in normal operations during all phases of flight.		
272.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			A minimum of 6, respectively 8 for HUDLS with or without EVS, approaches and/or landings in an FSTD. The provisions for 8 HUDLS approaches may be reduced to 6 when conducting hybrid HUDLS operations.		
273.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			Where no FSTD is available to represent that specific aircraft, a minimum of 3, respectively 5 for HUDLS and/or EVS, approaches including at least 1 missed approach procedure is required on the aircraft. For hybrid HUDLS operations a minimum of 3 approaches is required, including at least 1 missed approach procedure.		
274.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator training			Appropriate additional training if any special equipment is required such as HUD or enhanced vision equipment. When approach operations		

					utilising EVS are conducted with an RVR of less than 800 m, a minimum of 5 approaches, including at least 1 missed approach procedure are required on the aircraft.	
275.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with</u> CAT II/III experience with Community operator – Simulator training			<p>Abbreviated ground, FSTD and/or flight training course if operating the same type or class and variant of the same type or class on which the previous CAT II or CAT III experience was gained.</p> <p>The abbreviated course should include at least a minimum of 6, respectively 8 for HUDLS with or without EVS, approaches and/or landings in an FSTD.</p> <p>The provisions for 8 HUDLS approaches may be reduced to 6 when conducting hybrid HUDLS operations.</p> <p>The operator may reduce the number of approaches/landings required if the type/class or the variant of the type or class has the same or similar:</p> <p>(A) level of technology - flight control/guidance system (FGS);</p> <p>(B) operating procedures;</p> <p>(C) handling characteristics;</p> <p>(D) use of HUDLS/hybrid HUDLS; and</p> <p>(E) use of EVS,</p> <p>as the previously operated type or class, otherwise the provisions above should be met.</p>	
276.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with</u> CAT II/III experience <u>with the operator</u> – Simulator training			<p>When changing aircraft type or class, the abbreviated course should include at least a minimum of 6, respectively 8 for HUDLS with or without EVS, approaches and/or landings in an FSTD.</p> <p>The provisions for 8 HUDLS approaches may be reduced to 6 when conducting hybrid HUDLS operations.</p> <p>When changing to a different variant of aircraft within the same type or class rating that has the same or similar:</p>	

					(A) level of technology - FGS; (B) operating procedures - integrity; (C) handling characteristics; (D) use of HUDLS/Hybrid HUDLS; and (E) use of EVS, as the previously operated type or class, a difference course or familiarisation appropriate to the change of variant should fulfil the abbreviated course provisions.		
277.	AMC1 SPA.LVO.120	LVO training and qualifications – LTS CAT I – Simulator training			During conversion training the total number of approaches should not be additional to the requirements in ORO.FC provided the training is conducted utilising the lowest applicable RVR.		
278.	AMC1 SPA.LVO.120	LVO training and qualifications – OTS CAT II – Simulator training			During conversion training the total number of approaches should not be less than those to complete CAT II training utilising a HUD/HUDLS.		
279.	AMC1 SPA.LVO.120	LVO training and qualifications – EVS operations – Simulator training			During conversion training the total number of approaches required should not be less than that required to complete CAT II training utilising a HUD.		
Simulator Checking							
280.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with no</u> CAT II/III experience – Simulator checking			The operator should ensure that each flight crew member completes a check before conducting CAT II or III operations. This check may be replaced by successful completion of the FSTD and/or flight training specified above.		
281.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with</u> CAT II/III experience with Community operator – Simulator checking			The operator should ensure that each flight crew member completes a check before conducting CAT II or III operations.		
282.	AMC1 SPA.LVO.120	LVO training and qualifications – FCM <u>with</u> CAT II/III experience <u>with the operator</u> – Simulator checking			The operator should ensure that each flight crew member completes a check before conducting CAT II or III operations.		
LIFUS							
283.	AMC1 SPA.LVO.120	LVO training and qualifications – LIFUS – CAT II			For CAT II when a manual landing or a HUDLS approach to touchdown is required, a minimum of: (A) three landings from autopilot disconnect; and (B) four landings with HUDLS used to touchdown, except that only one manual landing, respectively two using HUDLS, to touchdown is required when the		

					simulator training has been carried out in an FSTD qualified for zero flight time conversion.		
284.	AMC1 SPA.LVO.120	LVO training and qualifications – LIFUS – CAT III			<p>For CAT III, a minimum of 2 auto-lands, except that:</p> <p>(A) only one auto-land is required when the simulator training has been carried out in an FSTD qualified for zero flight time conversion;</p> <p>(B) no auto-land is required during LIFUS when the simulator training has been carried out in an FSTD qualified for zero flight time (ZFT) conversion and the flight crew member successfully completed the ZFT type rating conversion course; and</p> <p>(C) the flight crew member, trained and qualified in accordance with (B), is qualified to operate during the conduct of LIFUS to the lowest approved DA/H and RVR as stipulated in the operations manual.</p> <p>For CAT III approaches using HUDLS to touchdown, a minimum of four approaches.</p>		
Recurrent training & checking							
285.	AMC1 SPA.LVO.120	LVO recurrent training and checking			<p>The required number of approaches to be undertaken in the FSTD within the validity period of the OPC should be a minimum of 2 (4 when HUDLS and/or EVS is utilised to touchdown), 1 of which should be a landing at the lowest approved RVR.</p> <p>In addition 1 (2 for HUDLS and/or operations utilising EVS) of these approaches may be substituted by an approach and landing in the aircraft using approved CAT II and CAT III procedures.</p> <p>One missed approach should be flown during the conduct of an OPC.</p> <p>If the operator is approved to conduct take-off with RVR less than 150 m, at least one LVTO to the lowest applicable minima should be flown during the conduct of the OPC.</p>		
286.	AMC1 SPA.LVO.120	LVO recurrent training and checking – CAT III			For CAT III operations on aircraft with a fail-passive flight control system, including HUDLS, a missed approach should be completed by each FCM at least once over the period of three consecutive OPCs as		

					the result of an autopilot failure at or below DH when the last reported RVR was 300 m or less.		
287.	AMC1 SPA.LVO.120	LVO recurrent training and checking – LTS CAT I			During recurrent training and checking the operator may also combine the separate requirements provided the above operational procedure provision is met and at least one approach using LTS CAT I minima is conducted at least once every 18 months.		
288.	AMC1 SPA.LVO.120	LVO recurrent training and checking – OTS CAT II			During recurrent training and checking the operator may also combine the separate provisions provided the above operational procedure provision is met and at least one approach using OTS CAT II minima is conducted at least once every 18 months.		
289.	AMC1 SPA.LVO.120	LVO recurrent training and checking – EVS operations			During recurrent training and checking the operator may also combine the separate provisions provided the above operational procedure provision is met and at least one approach utilising EVS is conducted at least once every 12 months.		
LVTO							
290.	AMC1 SPA.LVO.120	LVTO training			<p>Prior to conducting take-offs in RVRs below 400 m, the flight crew should undergo the following training:</p> <p>(i) normal take-off in minimum approved RVR conditions;</p> <p>(ii) take-off in minimum approved RVR conditions with an engine failure:</p> <p>(A) for aeroplanes between V1 and V2 (take-off safety speed), or as soon as safety considerations permit;</p> <p>(B) for helicopters at or after take-off decision point (TDP); and</p> <p>(iii) take-off in minimum approved RVR conditions with an engine failure:</p> <p>(A) for aeroplanes before V1 resulting in a rejected take-off; and</p> <p>(B) for helicopters before the TDP.</p>		
291.	AMC1 SPA.LVO.120	LVTO training – RVR below 150m			The operator approved for LVTOs with an RVR below 150 m should ensure that the training above is carried out in an FSTD. This training should include the use of any special procedures and equipment.		

292.	AMC1 SPA.LVO.120	LVTO checking – RVR below 150m			The operator should ensure that a FCM has completed a check before conducting LVTO in RVRs of less than 150 m. The check may be replaced by successful completion of the FSTD training above on conversion to an aircraft type.		
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ETOPS training							
293.	SPA.ETOPS.105 AMC 20-6	ETOPS training programme – Introduction to ETOPS			<ul style="list-style-type: none"> a. Brief overview of the history of ETOPS; b. ETOPS regulations; c. Definitions; d. Approved One-Engine-Inoperative Cruise Speed; e. ETOPS Type Design Approval – a brief synopsis; f. Maximum approved diversion times and time-limited systems capability; g. Operator’s Approved Diversion Time; h. Routes and aerodromes intended to be used in the ETOPS area of operations; i. ETOPS Operations Approval; j. ETOPS Area and Routes; k. ETOPS en-route alternates aerodromes including all available let-down aids; l. Navigation systems accuracy, limitations and operating procedures; m. Meteorological facilities and availability of information; n. In-flight monitoring procedures; o. Computerised Flight Plan; p. Orientation charts, including low level planning charts and flight progress charts usage (including position plotting); q. Equal Time Point; r. Critical fuel. 		

294.	SPA.ETOPS.105 AMC 20-6	ETOPS training programme – Normal operations		<p>a. Flight planning and Dispatch</p> <ul style="list-style-type: none"> (1) ETOPS Fuel requirements (2) Route Alternate selection - weather minima (3) Minimum Equipment List – ETOPS specific (4) ETOPS service check and Tech log (5) Pre-flight FMS Set up <p>b. Flight performance progress monitoring</p> <ul style="list-style-type: none"> (1) Flight management, navigation and communication systems (2) Aeroplane system monitoring (3) Weather monitoring (4) In-flight fuel management – to include independent cross checking of fuel quantity 		
295.	SPA.ETOPS.105 AMC 20-6	ETOPS training programme – abnormal & contingency procedures		<p>a. Diversion Procedures and Diversion ‘decision making’.</p> <p>Initial and recurrent training to prepare flight crews to evaluate potential significant system failures. The goal of this training should be to establish crew competency in dealing with the most probable contingencies. The discussion should include the factors that may require medical, passenger related or non-technical diversions.</p> <p>b. Navigation and communication systems, including appropriate flight management devices in degraded modes.</p> <p>c. Fuel Management with degraded systems.</p> <p>d. Initial and recurrent training which emphasises abnormal and emergency procedures to be followed in the event of foreseeable failures for each area of operation, including:</p> <ul style="list-style-type: none"> (1) Procedures for single and multiple failures in flight affecting ETOPS sector entry and diversion decisions. If standby sources of electrical power significantly degrade the cockpit instrumentation to the pilots, then training for approaches with the standby 		

					generator as the sole power source should be conducted during initial and recurrent training. (2) Operational restrictions associated with these system failures including any applicable MEL considerations.		
296.	SPA.ETOPS.105 AMC 20-6	ETOPS training programme – abnormal & contingency procedures			During the introduction into service of a new ETOPS type, or conversion of pilots not previously ETOPS qualified where ETOPS approval is sought, a minimum of 2 ETOPS sectors should be completed including an ETOPS line check. ETOPS subjects should also be included in annual refresher training as part of the normal process.		

SET-IMC training							
297.	SPA.SET-IMC.105 AMC1 SPA.SET-IMC.105(c)	SET-IMC training programme – Use of FFS/FSTD			Where a suitable full flight simulator (FFS) or a suitable flight simulation training device (FSTD) is available, it should be used to carry out training and checking for SET-IMC operations conversion training and checking. Following conversion training and checking, the next recurrent training session and the next OPCs including SET-IMC operations items should be conducted in a suitable FFS or FSTD, where available.		
298.	SPA.SET-IMC.105 AMC1 SPA.SET-IMC.105(c)	SET-IMC training programme – Conversion Training			Conversion training should be conducted in accordance with a syllabus devised for SET-IMC operations and include at least the following: (1) normal procedures: (i) anti-icing and de-icing systems operation; (ii) navigation system procedures; (iii) radar positioning and vectoring, when available; (iv) use of radio altimeter; and (v) use of fuel control, displays interpretation; (2) abnormal procedures:		

					<ul style="list-style-type: none"> (i) anti-icing and de-icing systems failures; (ii) navigation system failures; (iii) pressurisation system failures; (iv) electrical system failures; and (v) engine-out descent in simulated IMC; and (3) emergency procedures: <ul style="list-style-type: none"> (i) engine failure shortly after take-off; (ii) fuel system failures (e.g. fuel starvation); (iii) engine failure other than the above: recognition of failure, symptoms, type of failure, measures to be taken, and consequences; (iv) depressurisation; and (v) engine restart procedures: <ul style="list-style-type: none"> (A) choice of an aerodrome or landing site; and (B) use of an area navigation system; (vi) air traffic controller (ATCO) communications; (vii) use of radar positioning and vectoring (when available); (viii) use of radio altimeter; and (ix) practice of the forced landing procedure until touchdown in simulated IMC, with zero thrust set, and operating with simulated emergency electrical power. 	
299.	SPA.SET-IMC.105 AMC1 SPA.SET-IMC.105(c)	SET-IMC training programme – Conversion Checking			<p>The following items should be checked following completion of the SET-IMC operations conversion training as part of the operator’s proficiency check (OPC):</p> <ul style="list-style-type: none"> (1) conduct of the forced landing procedure until touchdown in simulated IMC, with zero thrust set, and operating with simulated emergency electrical power; 	

					(2) engine restart procedures; (3) depressurisation following engine failure; and (4) engine-out descent in simulated IMC.		
300.	SPA.SET-IMC.105 AMC1 SPA.SET-IMC.105(c)	SET-IMC training programme – Recurrent Training			Recurrent training for SET-IMC operations should be included in the recurrent training required by ORO.FC for pilots carrying out SET-IMC operations. This training should include all items of the conversion training.		
301.	SPA.SET-IMC.105 AMC1 SPA.SET-IMC.105(c)	SET-IMC training programme – Recurrent Checking			The following items should be included into the list of required items to be checked following completion of SET-IMC operations recurrent training as part of the OPC: (1) conduct of the forced landing procedure until touchdown in simulated IMC, with zero thrust set, and operating with simulated emergency electrical power; (2) engine restart procedures; (3) depressurisation following engine failure; and (4) emergency descent in simulated IMC.		

NVIS training							
302.	SPA.NVIS.130	NVIS Operations - Experience			The minimum experience for the commander shall not be less than 20 hours VFR at night as commander of a helicopter before commencing training.		
303.	SPA.NVIS.130	NVIS Operations – Operational training			All pilots shall have completed the operational training in accordance with the NVIS procedures contained in the operations manual.		
304.	SPA.NVIS.130	NVIS Operations – Recency			All pilots and NVIS technical crew members conducting NVIS operations shall have completed three NVIS flights in the last 90 days. Recency may be re-established on a training flight in the helicopter or an approved full flight simulator (FFS)		
305.	SPA.NVIS.130	NVIS Operations – Training & checking			Crew training programmes shall: improve knowledge of the NVIS working environment and equipment; improve crew coordination; and include measures to		

				<p>minimise the risks associated with entry into low visibility conditions and NVIS normal and emergency procedures.</p> <p>It shall be assessed during:</p> <p>(A) night proficiency checks; and</p> <p>(B) line checks.</p>		
306.	<p>SPA.NVIS.130</p> <p>AMC1 SPA.NVIS.130(f)(1)</p>	NVIS Training & checking programme - Training		<p>The flight crew training syllabus should include the following items:</p> <p>(1) NVIS working principles, eye physiology, vision at night, limitations and techniques to overcome these limitations;</p> <p>(2) preparation and testing of NVIS equipment;</p> <p>(3) preparation of the helicopter for NVIS operations;</p> <p>(4) normal and emergency procedures including all NVIS failure modes;</p> <p>(5) maintenance of unaided night flying;</p> <p>(6) crew coordination concept specific to NVIS operations;</p> <p>(7) practice of the transition to and from NVG procedures;</p> <p>(8) awareness of specific dangers relating to the operating environment; and</p> <p>(9) risk analysis, mitigation and management.</p> <p>See GMs SPA.NVIS.130(f) for more details.</p>		
307.	<p>SPA.NVIS.130</p> <p>AMC1 SPA.NVIS.130(f)(1)</p>	NVIS Training & checking programme - Checking		<p>The flight crew checking syllabus should include:</p> <p>(1) night proficiency checks, including emergency procedures to be used on NVIS operations; and</p> <p>(2) line checks with special emphasis on the following:</p> <p>(i) local area meteorology;</p> <p>(ii) NVIS flight planning;</p> <p>(iii) NVIS in-flight procedures;</p>		

					<p>(iv) transitions to and from night vision goggles (NVG);</p> <p>(v) normal NVIS procedures; and</p> <p>(vi) crew coordination specific to NVIS operations.</p> <p>See GMs SPA.NVIS.130(f) for more details.</p>		
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HHO training							
308.	SPA.HHO.130	HHO Operations - Experience			<p>The minimum experience level for the commander conducting HHO flights shall not be less than:</p> <p>(1) Offshore:</p> <p>(i) 1 000 hours as pilot-in-command/commander of helicopters, or 1 000 hours as co-pilot in HHO of which</p> <p>200 hours is as pilot-in-command under supervision; and</p> <p>(ii) 50 hoist cycles conducted offshore, of which 20 cycles shall be at night if night operations are being conducted, where a hoist cycle means one down-and-up cycle of the hoist hook.</p> <p>(2) Onshore:</p> <p>(i) 500 hours as pilot-in-command/commander of helicopters, or 500 hours as co-pilot in HHO of which 100</p> <p>hours is as pilot-in-command under supervision;</p> <p>(ii) 200 hours operating experience in helicopters gained in an operational environment similar to the intended operation; and</p> <p>(iii) 50 hoist cycles, of which 20 cycles shall be at night if night operations are being conducted.</p>		
309.	SPA.HHO.130	HHO Operations – Operational training & experience			<p>Successful completion of training in accordance with the HHO procedures contained in the operations manual and relevant experience in the role and environment under which HHO are conducted.</p>		

310.	SPA.HHO.130	HHO Operations – Recency			<p>All pilots and HHO crew members conducting HHO shall have completed in the last 90 days:</p> <p>(1) when operating by day: any combination of three day or night hoist cycles, each of which shall include a transition to and from the hover;</p> <p>(2) when operating by night: three night hoist cycles, each of which shall include a transition to and from the hover.</p>		
311.	SPA.HHO.130	HHO Operations – Training & checking			<p>Crew training programmes shall: improve knowledge of the HHO working environment and equipment; improve crew coordination; and include measures to minimise the risks associated with HHO normal and emergency procedures and static discharge.</p> <p>It shall be assessed during visual meteorological conditions (VMC) day proficiency checks, or VMC night proficiency checks when night HHO are undertaken by the operator.</p>		
312.	AMC1 SPA.HHO.130(f)(1)	HHO Operations – Training & checking programme – Training			<p>The flight crew training syllabus should include the following items:</p> <p>(1) fitting and use of the hoist;</p> <p>(2) preparing the helicopter and hoist equipment for HHO;</p> <p>(3) normal and emergency hoist procedures by day and, when required, by night;</p> <p>(4) crew coordination concepts specific to HHO;</p> <p>(5) practice of HHO procedures; and</p> <p>(6) the dangers of static electricity discharge.</p>		
313.	AMC1 SPA.HHO.130(f)(1)	HHO Operations – Training & checking programme – Checking			<p>The flight crew checking syllabus should include:</p> <p>(1) proficiency checks, which should include procedures likely to be used at HHO sites with special emphasis on:</p> <p>(i) local area meteorology;</p> <p>(ii) HHO flight planning;</p> <p>(iii) HHO departures;</p>		

					(iv) a transition to and from the hover at the HHO site; (v) normal and simulated emergency HHO procedures; and (vi) crew coordination.		
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HEMS training							
314.	SPA.HEMS.130	HEMS Operations - Experience			The minimum experience level for the commander conducting HEMS flights shall not be less than: (1) either: (i) 1 000 hours as pilot-in-command/commander of aircraft of which 500 hours are as pilot-in-command/commander on helicopters; or (ii) 1 000 hours as co-pilot in HEMS operations of which 500 hours are as pilot-in-command under supervision and 100 hours pilot-in-command/commander of helicopters; (2) 500 hours' operating experience in helicopters, gained in an operational environment similar to the intended operation; and (3) for pilots engaged in night operations, 20 hours of VMC at night as pilot-in-command/commander.		
315.	SPA.HEMS.130	HEMS Operations – Operational training & experience			Successful completion of operational training in accordance with the HEMS procedures contained in the operations manual.		
316.	SPA.HEMS.130	HEMS Operations – Recency			All pilots conducting HEMS operations shall have completed a minimum of 30 minutes' flight by sole reference to instruments in a helicopter or in an FSTD within the last 6 months.		
317.	SPA.HEMS.130	HEMS Operations – Training & checking			Crew training programmes shall: improve knowledge of the HEMS working environment and equipment;		

				<p>improve crew coordination; and include measures to minimise the risks associated with en-route transit in low visibility conditions, selection of HEMS operating sites and approach and departure profiles.</p> <p>It shall be assessed during:</p> <p>(A) VMC day proficiency checks, or VMC night proficiency checks when night HEMS operations are undertaken by the operator; and</p> <p>(B) line checks.</p>		
318.	AMC1 SPA.HEMS.130(f)(1)	HHO Operations – Training & checking programme – Training		<p>The flight crew training syllabus should include the following items:</p> <p>(1) meteorological training concentrating on the understanding and interpretation of available weather information;</p> <p>(2) preparing the helicopter and specialist medical equipment for subsequent HEMS departure;</p> <p>(3) practice of HEMS departures;</p> <p>(4) the assessment from the air of the suitability of HEMS operating sites; and</p> <p>(5) the medical effects air transport may have on the patient.</p>		
319.	AMC1 SPA.HEMS.130(f)(1)	HHO Operations – Training & checking programme – Checking		<p>(1) proficiency checks, which should include landing and take-off profiles likely to be used at HEMS operating sites; and</p> <p>(2) line checks, with special emphasis on the following:</p> <p>(i) local area meteorology;</p> <p>(ii) HEMS flight planning;</p> <p>(iii) HEMS departures;</p> <p>(iv) the selection from the air of HEMS operating sites;</p> <p>(v) low level flight in poor weather; and</p> <p>(vi) familiarity with established HEMS operating sites in the operator’s local area register.</p>		

Fatigue Management

320.	<p>ORO.FTL.250 AMC1 ORO.FTL.250</p>	<p>Crew members - Initial and recurrent fatigue management training</p> <p>APPLICABLE TO CAT OPERATIONS EXCEPT AIR TAXI, EMS, SiPO, HELICOPTER.</p>		<p>The training syllabus should contain the following:</p> <ul style="list-style-type: none"> (a) applicable regulatory requirements for flight, duty and rest; (b) the basics of fatigue including sleep fundamentals and the effects of disturbing the circadian rhythms; (c) the causes of fatigue, including medical conditions that may lead to fatigue; (d) the effect of fatigue on performance; (e) fatigue countermeasures; (f) the influence of lifestyle, including nutrition, exercise, and family life, on fatigue; (g) familiarity with sleep disorders and their possible treatments; (h) where applicable, the effects of long range operations and heavy short range schedules on individuals; (i) the effect of operating through and within multiple time zones; and (j) the crew member responsibility for ensuring adequate rest and fitness for flight duty. 	
321.	<p>ORO.FTL.250 AMC1 ORO.FTL.250</p>	<p>Personnel responsible for preparation and maintenance of crew rosters and management personnel - Initial and recurrent fatigue management training</p>		<p>The training syllabus should contain the following:</p> <ul style="list-style-type: none"> (a) applicable regulatory requirements for flight, duty and rest; (b) the basics of fatigue including sleep fundamentals and the effects of disturbing the circadian rhythms; (c) the causes of fatigue, including medical conditions that may lead to fatigue; (d) the effect of fatigue on performance; (e) fatigue countermeasures; (f) the influence of lifestyle, including nutrition, exercise, and family life, on fatigue; 	

				<p>(g) familiarity with sleep disorders and their possible treatments;</p> <p>(h) where applicable, the effects of long range operations and heavy short range schedules on individuals;</p> <p>(i) the effect of operating through and within multiple time zones; and</p> <p>(j) the crew member responsibility for ensuring adequate rest and fitness for flight duty.</p>		
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REMARKS

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OPERATOR Declaration of compliance

Compliance Monitoring Manager name and signature: _____

Place _____

Date _____