Annex I to ED Decision 2022/014/R

'AMC & GM to Annex III (Part-ORO) to Commission Regulation (EU) No 965/2012 — Issue 2, Amendment 21'

The text of the amendment is arranged to show deleted, new or amended text as shown below:

(a) deleted text is ~~struck through~~;

(b) new or amended text is highlighted in blue;

(c) an ellipsis '[…]' indicates that the rest of the text is unchanged.

Note to the reader

In amended, and in particular in existing (that is, unchanged) text, 'Agency' is used interchangeably with 'EASA'. The interchangeable use of these two terms is more apparent in the consolidated versions. Therefore, please note that both terms refer to the 'European Union Aviation Safety Agency (EASA)'.

The Annex to Decision 2014/017/R of 24 April 2014 of the Executive Director of the Agency is amended as follows:

GM2 ORO.GEN.110(f) Operator responsibilities

ELEMENTS OF THE BRIEFING GIVEN TO FLIGHT OPERATIONS OFFICERS/FLIGHT DISPATCHERS BEFORE ASSUMING DUTIES

Before commencing their shift, the FOO/FD should be briefed on relevant safety information such as:

(a) weather charts;

(b) weather reports;

(c) NOTAMs;

(d) operational restrictions in force;

(e) flights in the air and flights for which operational flight plans have been issued but which have not yet started and for which the FOO/FD will be responsible;

(f) the forecast flight schedule; and

~~(f)~~(g) other relevant safety information as listed in GM 28 Annex I 'Definitions for terms used in Annexes II to VIII'.

~~AMC1 ORO.FC.100(c) Composition of flight crew~~

~~**OPERATIONAL MULTI-PILOT LIMITATION (OML)**~~

~~The operator should ensure that pilots with an OML on their medical certificate only operate aircraft in multi-pilot operations when the other pilot is fully qualified on the relevant type of aircraft, is not subject to an OML and has not attained the age of 60 years.~~

GM1 ORO.FC.100(c) Composition of flight crew

LICENCE AND RATINGS IN ACCORDANCE WITH COMMISSION REGULATION (EU) No 1178/2011

When determining the composition of the crew, and monitoring whether the flight crew holds the appropriate licence and ratings, the operator needs to take into account any limitations prescribed in Regulation (EU) No 1178/2011 applicable to the flight crew members such as, but not limited to, recent experience and operational multi-pilot limitation.

AMC1 ORO.FC.105(b)(2);(c) Designation as pilot-in-command/commander

GENERAL

The operator should comply with the national training and checking requirements published in the aeronautical information publication (AIP).

ROUTE, ~~/~~AREA AND AERODROME KNOWLEDGE FOR COMMERCIAL OPERATIONS

~~For commercial operations, the~~ The experience of the route or area to be flown and of the aerodrome facilities and procedures to be used should include the following:

(a) Area and route knowledge

(1) An objective of the area ~~Area~~ and route training should be to ensure that the pilot has ~~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.

(2) ~~Depending on the complexity of the area or route, as assessed by the operator, the following methods of familiarisation should be used:~~Another objective of the area and route training should be to ensure that the pilots are aware of the most significant underlying risks and threats of a route or an area that could affect their operations following the 'threat and error management model' or an alternative risk model agreed with the authority.

~~(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.~~

(3) The area and route familiarisation training should:

(i) be based on an assessment by the operator of the underlying risks and threats of a route or an area using:

(A) internal evidence;

(B) external evidence;

(ii) be conducted:

(A) as an initial training before operating to a route and area;

(B) as a refresher training after not operating to a route and area for 12 months.

(4) The area and route familiarisation training should be delivered using different methods and tools.

(i) The selection of the method and tools should result from a combination of the learning objectives and the type of risk or threat that needs to be trained.

(ii) The selection of the appropriate method and tool should be driven by the desired outcome in terms of adequate knowledge and awareness.

(iii) The methods and tools employed should include one or more of the following:

Training in a flight simulation training device (FSTD), computer-based training, familiarisation flight as a pilot in-command/commander or co-pilot under supervision or an observer, video training, virtual reality training, familiarisation by self-briefing with route documentation and audio training.

(b) Aerodrome knowledge

(1) Aerodrome familiarisation 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.

(2) The operations manual should describe the method of categorisation of aerodromes and, in the case of CAT operations, provide a list of those aerodromes categorised as B or C.

(3) All aerodromes to which an operator operates should be categorised in one of these three categories:

(i) category A — an aerodrome that meets all ~~of~~ the following conditions ~~requirements~~:

(A) a straight-in 3D instrument approach procedure with a glide path angle of not more than 3.5 degrees to each runway expected to be used for landing; ~~an approved instrument approach procedure;~~

(B) at least one runway with no performance-limited procedure for take-off and/or landing, such as no requirement to follow a contingency procedure for obstacle clearance in the event of an engine failure on take-off from any runway expected to be used for departure; and

(C) ~~published circling minima not higher than 1000 feet above aerodrome level~~

~~(D)~~ night operations capability.

(ii) category B — an aerodrome that does not meet the category A conditions ~~requirements~~ or which requires extra considerations due to ~~such as~~:

(A) non-standard approach aids and/or approach patterns, such as restrictions on the availability of straight-in instrument approach procedures;

(B) unusual local weather conditions, such as environmental features that can give rise to turbulence, windshear or unusual wind conditions;

(C) unusual characteristics or performance limitations, such as unusual runway characteristics in length, width, slope, markings or lighting that present an atypical visual perspective on approach;

(D) any other relevant considerations, including obstructions, physical layout, lighting, etc., such as restrictions on circling in certain sectors due to obstacles in the circling area;

(E) training or flight crew experience requirements stipulated by the competent authority responsible for the aerodrome that do not include instruction in an FSTD or visiting the aerodrome.

(iii) category C — an aerodrome:

(A) that requires additional considerations to those of a category B aerodrome; or

(B) for which flight crew experience or qualification requirements stipulated by the competent authority responsible for the aerodrome include instruction in an FSTD or visiting the aerodrome.

~~(iv)o~~Offshore installations may be categorised as category B or C aerodromes, taking into account the limitations determined in accordance with AMC1 SPA.HOFO.115 'Use of offshore locations'.

(c) Prior to operating to a category B aerodrome (planned destination or required alternate), the pilot-in-command/commander should:

(1) comply with any requirements stipulated by the competent authority responsible for the aerodrome; and

(2) be briefed, or self-brief~~ed~~ by means of programmed instruction, about the additional considerations applicable to operations to ~~on~~ ~~the~~ that category B aerodrome~~(s) concerned~~. The completion of the briefing should be recorded. This recording may be accomplished after completion or confirmed by the pilot-in-command/commander before departure on a flight involving category B aerodrome(s) as destination or alternate aerodromes.

(d) Prior to operating to a category C aerodrome (planned destination or required alternate), the pilot-in-command/commander should:

(1) comply with any requirements stipulated by the competent authority responsible for the aerodrome; and

(2) be briefed or self-brief by means of programmed instruction, about the additional considerations applicable to operations to that category C aerodrome; and

(3) visit the aerodrome as an observer and/or undertake instruction in a suitable FSTD. The observer should occupy an observer's seat where installed. If an observer's seat is not available and cannot be installed, the pilot-in-command/commander may occupy a pilot

seat to conduct the aerodrome visit with a suitably qualified commander nominated by the category C aerodrome operator.

The completion of the briefing, visit and/or instruction should be recorded.

AMC2 ORO.FC.105(b)(2);(c) Designation as pilot-in-command/commander

GENERAL

The operator should comply with the national training and checking requirements published in the AIP.

ROUTE, AREA AND AERODROME KNOWLEDGE FOR NON-COMMERCIAL OPERATIONS

The knowledge of the route and area to be flown and of the aerodrome facilities and procedures to be used should include the following:

(a) Area and route knowledge

(1) The objective of the area and route familiarisation should be to ensure that the pilot has 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.

(2) The operations manual should describe appropriate methods of familiarisation depending on the complexity of the area or route and the experience of the pilot-in-command.

(b) Aerodrome knowledge

(1) Aerodrome familiarisation 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.

(2) The operator's manual should describe appropriate methods of familiarisation depending on the complexity of the aerodrome.

(3) If the competent authority of the aerodrome or area requires specific training or familiarisation, the operator should maintain all records of this training or familiarisation in accordance with ORO.GEN.220.

(4) For offshore installations, the limitations determined in accordance with AMC1 SPA.HOFO.115 should be taken into account.

GM2 ORO.FC.105(b)(2) Designation as pilot-in-command/commander

AERODROME KNOWLEDGE FOR NON-COMMERCIAL OPERATIONS

The operator may, based on complexity, categorise all aerodromes in one of the following three categories:

(a) category A — an aerodrome that meets all the following conditions:

(1) an approved instrument approach procedure;

(2) at least one runway with no performance-limited procedure for take-off and/or landing;

(3) published circling minima not higher than 1 000 ft above aerodrome level; and

(4) night operations capability.

(b) category B — an aerodrome that does not meet the category A conditions or which requires extra considerations due to:

(1) non-standard approach aids and/or approach patterns;

(2) unusual local weather conditions;

(3) unusual characteristics or performance limitations;

(4) any other relevant considerations, including obstacles, physical layout, lighting, etc.

(c) category C — an aerodrome that requires additional considerations to those of a category B aerodrome.

Offshore installations may be categorised as category B or C aerodromes, taking into account the limitations determined in accordance with AMC1 SPA.HOFO.115 ‘Use of offshore locations’.

AMC1 ORO.FC.105(b)(3) Designation as pilot-in-command/commander

OPERATOR’S COMMAND COURSE FOR NON-COMMERCIAL OPERATIONS WITH COMPLEX MOTOR-POWERED AIRCRAFT (NCC)

(a) For aeroplane and helicopter operations, when upgrading from co-pilot to pilot-in-command, the flight crew member should be trained at least on the following elements, as part of the command course:

(1) command responsibilities training;

(2) demonstration of competence operating as pilot-in-command.

(b) Demonstration of competence operating as pilot-in-command may be achieved by:

(1) completing a proficiency check in the role of pilot-in-command; or

(2) operating at least one flight under the supervision and to the satisfaction of a suitably qualified pilot-in-command nominated by the operator.

AMC1 ORO.FC.105(c) Designation as pilot-in-command/commander

ROUTE/AREA AND AERODROME 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) when the latest operation on the route or area was flown and when the aerodromes, facilities and procedures were 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.~~ The 36-month period should be counted from the last day of the month:

(1) when the familiarisation training was undertaken; or

(2) when the latest operation on the route or area was flown.

GM1 ORO.FC.105(c) Designation as pilot-in-command/commander

AREA AND ROUTE FAMILIARISATION TRAINING DELIVERY

When developing the area and route familiarisation training, the operator may apply the following methodology:

(a) Internal evidence

(1) Operator assessment by conducting an operational risk evaluation according to the following criteria:

(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.

(2) Operator-specific evidence gathered through the safety management process in accordance with ORO.GEN.200.

(b) External evidence

(1) notices to airmen (NOTAMs);

(2) AIP.

(c) When selecting the method and tool, operators should be driven by the objective of reaching the optimum in terms of the desired outcome, which is the maximum possible knowledge increase. This methodology intends that such selection is based on the type of the underlying risks of a route / area as determined in accordance with (a) and (b) and the learning objectives. For example: for the less complex areas or routes, familiarisation by self-briefing with route documentation, or by means of programmed instruction; and for the more complex areas or

routes, in-flight familiarisation as a pilot-in-command/commander or co-pilot under supervision or an observer, or familiarisation in a flight simulation training device (FSTD) using a database appropriate to the route concerned.

AMC1 ORO.FC.105(d) Designation as pilot-in-command/commander

AREA FAMILIARISATION TRAINING THAT INCLUDES ROUTE /AERODROME FAMILIARISATION — HELICOPTERS

(a) The area familiarisation training for day VFR should ensure that a pilot is capable of selecting aerodromes and operating sites from the ground and from the air, and of establishing a safe flight path for landing and take-off.

AREA FAMILIARISATION TRAINING

(b) The following areas and conditions should require specific area familiarisation training:

(1) mountain environment;

(2) offshore environment;

(3) complex airspace;

(4) areas that are regularly covered by snow and are prone to white-out phenomena during the cruise or landing phase; and

(5) other challenging areas or conditions.

AMC1 ORO.FC.115 Crew resource management (CRM) training

CRM TRAINING — MULTI-PILOT OPERATIONS

(a) General

[...]

(4) Flight simulation training devices (FSTDs)

(i) 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.

(ii) If the operator proficiency check is conducted in a FSTD, it should include a line-oriented flight during which a complementary CRM assessment should take place, in conditions that reproduce a realistic operational environment.

[...]

(c) Operator conversion course — CRM training

When the flight crew member undertakes a conversion course with a change of aircraft type or ~~change of~~when joining an 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).

[...]

(d) Annual recurrent CRM training

[...]

(g) CRM training syllabus

[...]

Table 1: Flight crew CRM training

CRM training elements	Initial operator's CRM training	Operator conversion course when changing aircraft type	Operator conversion course when ~~changing~~ joining an operator	Annual recurrent training	Command course
General principles					
Human factors in aviation; General instructions on CRM principles and objectives; Human performance and limitations; Threat and error management.	In-depth	Not ~~R~~required	Required	Required	Required
Relevant to the individual flight crew member					
Personality awareness, human error and reliability, attitudes and behaviours, self-assessment and self-critique; Stress and stress management; Fatigue and vigilance; Assertiveness, situation awareness, information acquisition and processing.	In-depth	Not required	~~Not r~~Required	Required	In-depth
Relevant to the flight crew					
Automation and philosophy on the use of automation	Required	In-depth	In-depth	In-depth	In-depth
Specific type-related differences	Required	In-depth	Not required	Required	Required
Monitoring and intervention	Required	In-depth	In-depth	Required	Required
Relevant to the entire aircraft crew					

Shared situation awareness, shared information acquisition and processing; Workload management; Effective communication and coordination inside and outside the flight crew compartment; Leadership, cooperation, synergy, delegation, decision-making, actions; Resilience development; Surprise and startle effect; Cultural differences.	In-depth	Required	Required	Required	In-depth
Relevant to the operator and the organisation					
Operator's safety culture and company culture, standard operating procedures (SOPs), organisational factors, factors linked to the type of operations; Effective communication and coordination with other operational personnel and ground services.	In-depth	Required	In-depth	Required	In-depth
Case studies	In-depth	In-depth	In-depth	In-depth	In-depth

[...]

AMC2 ORO.FC.115 Crew resource management (CRM) training

CRM TRAINING — SINGLE-PILOT OPERATIONS

[...]

(b)

[...]

(3) Virtual classroom ~~Computer-based~~ training

Notwithstanding (a)(2) ~~(a)(3)~~ of AMC1 ORO.FC.115, ~~computer-based training may be conducted as a stand-alone training method~~ classroom training may take place remotely, using a videoconferencing tool. The tool should permit real-time interaction between the trainees and the trainer, including speech and elements of body language. It should also be capable of transmitting any document to the trainee that the trainer wishes to present. The CRM trainer should establish the list of trainees in advance. Their numbers

should be limited to 6 to ensure a sufficient level of interaction during the training session.

AMC~~3~~2 ORO.FC.~~115~~ 146 ~~Crew resource management (CRM) training~~ Personnel providing training, checking and assessment

FLIGHT CREW CRM TRAINER

(a) Applicability

The provisions described herein:

(1) should be fulfilled by flight crew CRM trainers responsible for classroom CRM training; and

(2) are not applicable to:

(i) instructors, holding a certificate in accordance with Commission Regulation (EU) No 1178/2011, ~~who conduct~~ when conducting CRM training in the operational environment; and

(ii) trainers or instructors when conducting training other than CRM training, but integrating CRM elements into this training.

(b) Qualification of a flight crew CRM trainer

~~(1) A training and standardisation programme for flight crew CRM trainers should be established.~~

~~(2) A flight crew CRM trainer, in order to be suitably qualified, should:~~

(1) Prerequisites. A flight crew CRM trainer should:

~~(i) have adequate knowledge of the relevant flight operations;~~

(i~~i~~) have adequate knowledge of human performance and limitations (HPL), whilst:

(A) having obtained a commercial pilot licence in accordance with Commission Regulation (EU) No 1178/2011; or

(B) having followed a theoretical HPL course covering the whole syllabus of the HPL examination;

(ii~~i~~) have completed flight crew initial operator's CRM training;

(~~iv~~iii) have received training in group facilitation skills~~;~~, except for instructors holding a certificate in accordance with Commission Regulation (EU) No 1178/2011.

~~(iv) 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.~~

~~(iv) Instructors holding a certificate in accordance with Commission Regulation (EU) No 1178/2011 shall be considered as complying with the provisions of points..~~

~~(3) The following qualifications and experiences are also acceptable for a flight crew CRM trainer in order to be suitably qualified:~~

~~(i) A flight crew member holding a recent qualification as a flight crew CRM trainer may continue to be a flight crew CRM trainer 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 trainer 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 trainer may become a flight crew CRM trainer if he/she demonstrates adequate knowledge of the relevant flight operations and fulfils the provisions of (2)(ii) to (2)(vi).~~

(2) In order to qualify as flight crew CRM trainer, a person meeting the prerequisites should:

(i) have adequate knowledge of the relevant flight operations at one operator, in accordance with (d);

(ii) receive the initial training in accordance with (c)(3); and

(iii) be assessed by that operator in accordance with (f).

(3) In order to act as flight crew CRM trainer at an operator, a qualified and current flight crew CRM trainer should meet one of the following conditions:

(i) have adequate knowledge of the relevant flight operations at that operator, in accordance with (d); or

(ii) be part of a team of trainers in accordance with (e).

(4) The period of validity of the flight crew CRM trainer qualification should be 3 years.

(5) Recency and renewal of the flight crew CRM trainer qualification

(i) The flight crew CRM trainer should complete CRM trainer refresher training within the last 12 months of the 3-year validity period; and

(ii) The flight crew CRM trainer should meet one or both of the following conditions:

(A) conduct at least 3 CRM training events within the 3-year validity period;

(B) be assessed within the last 12 months of the 3-year validity period in accordance with (f); and

(iii) If the flight crew CRM trainer qualification has expired, it can be renewed if all of the conditions below are met. The validity should be 3 years after completion of (A) and (C) below, whichever comes first:

(A) complete CRM trainer refresher training;

(B) receive refresher training on knowledge of the relevant flight operations, as necessary;

(C) be assessed in accordance with (f).

(c) Training of flight crew CRM trainer

(1) If the operator trains flight crew CRM trainers, the training syllabi should be described in the operations manual. The operator should ensure that the initial and refresher training of the flight crew CRM trainers are conducted by flight crew CRM trainers with a minimum of 3 years of experience.

(~~1~~2) Training of flight crew CRM trainers should be both theoretical and practical. Practical elements should include the development of specific trainer skills, particularly the integration of CRM into line operations.

(~~2~~3) The ~~basic~~ initial training of flight crew CRM trainers 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:

(i) introduction to CRM training and competencies for CRM trainers:~~;~~

(A) ability to interact with and manage a group;

(B) ability to pre-plan an objective and timely training session;

(C) ability to deliver a good balance of 'telling', 'selling' and 'facilitating';

(D) ability to connect realistically poor and good CRM to the operations;

(E) ability to assess the performance, the progress and needs of trainees in a meaningfully way;

(ii) operator's management system as defined in point (a)(7) of AMC1 ORO.FC.115; and

(iii) characteristics of the flight crew CRM training as defined in Table 1 of AMC1 ORO.FC.115 and its integration into line operations~~, as applicable~~:

(A) ~~of~~ the different types of CRM trainings (initial, recurrent, etc.);

(B) ~~of~~ combined training; and

(C) training related to the type of aircraft or operation. ~~; and~~

~~(iv) assessment.~~ Instructors holding a certificate in accordance with Commission Regulation (EU) No 1178/2011 may be credited towards (i) and (ii) if they have completed the refresher training defined in (4).

(~~3~~4) The refresher training of flight crew CRM trainers should include new methodologies, procedures and lessons learned, as well as additional topics such as the following:

(i) Group facilitation skills including team dynamics, moderation skills and use of questions

(ii) Course preparation, defining objectives and selecting methods to best convey knowledge (e.g. lecture, group work, case analysis, gamification, scenario-based training, individual research)

(iii) Safety culture and management systems

(iv) An example of an analysis of CRM factors in an accident or serious incident.

(v) New developments or research in human factors and CRM

(vi) TEM principles and their practical implementation in normal operations

(45) Instructors, holding a certificate in accordance with Commission Regulation (EU) No 1178/2011, who are also CRM trainers, may combine the CRM trainer refresher training with instructor refresher training if the instructor refresher training meets all of the conditions defined in (4).

(56) Instructors for other-than complex motor-powered aeroplanes ~~aircraft~~ should be qualified as flight crew CRM trainers for this aircraft category with no additional training, as specified in (32) and (43) when:

(i) holding a certificate in accordance with Commission Regulation (EU) No 1178/2011; and

(ii) fulfilling the provisions of (b)(2) or (b)(53).

~~(6) The training of flight crew CRM trainers should be conducted by flight crew CRM trainers with a minimum of 3 years' experience. Assistance may be provided by experts in order to address specific areas.~~

(d) Knowledge of the relevant flight operations

(1) The operator should evaluate the experience and knowledge of the flight crew CRM trainer. The evaluation of the operator should include at least:

(i) the operational experience of the flight crew CRM trainer as a flight crew member;

(ii) whether this experience as a flight crew member or a former flight crew member covers the aircraft category, the aircraft generation and the form of operations, as relevant to the operator.

(2) If the flight crew CRM trainer does not have the relevant knowledge of the relevant flight operation based on the evaluation in (1), the operator should provide training to the flight crew CRM trainer to provide the adequate knowledge.

(3) The operator should describe the assessment and training in the operations manual.

(e) Team of CRM trainers

If the flight crew CRM trainer is qualified in accordance with (b) but does not meet the conditions defined in (d), he or she may be assisted by a training assistant that has the knowledge of the relevant flight operations. The operator should ensure that all the following conditions are met:

(1) The training assistant should meet the condition defined in (c) but needs not meet the conditions defined in (b). The training assistant should be an instructor or have experience in ground training.

(2) The flight crew CRM trainer and the training assistant should prepare the training session together and adapt it to the operational needs of the operator.

(3) If the flight crew CRM trainer and the training assistant have already provided training for the operator or for a similar operator, the operator may determine that condition (2) is met.

(4) The flight crew CRM trainer and the training assistant should provide the training together.

(5) The flight crew CRM trainer remains responsible for the training.

(~~d~~f) Assessment of a flight crew CRM trainer

(1) ~~A flight crew CRM trainer 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.~~

~~(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 trainer. All personnel involved in the assessment must be credible and competent in their role.

(2) The assessment should enable the flight crew CRM trainer to demonstrate the knowledge and ability to train the CRM training elements in the non-operational environment. Special attention should be given to fields such as group management, group dynamics and personal awareness.

(3) The initial assessment of a flight crew CRM trainer by the operator may take place when conducting their first CRM training course.

(4) The assessment of flight crew CRM trainers should be conducted by flight crew CRM trainers with a minimum of 3 years of experience.

~~(e) Recency and renewal of qualification as flight crew CRM trainer~~

~~(1) For recency of the 3-year validity period, the flight crew CRM trainer:~~

~~(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 trainer refresher training within the 3-year validity period.~~

~~(2) The next 3-year validity period should start at the end of the previous period.~~

~~(3) For renewal, i.e. when a flight crew CRM trainer does not fulfil the provisions of (1), he/she should, before resuming as flight crew CRM trainer:~~

~~(i) be assessed by the operator; and~~

~~(ii) complete CRM trainer refresher training.~~

(g) The operator should only select a qualified and current flight crew CRM trainer meeting the conditions defined in (d) or (e).

GM3 ORO.FC.115 Crew resource management (CRM) training

MINIMUM TRAINING TIMES

(a) The following minimum training times are appropriate:

(1) multi-pilot operations:

(i) combined CRM training: 6 training hours over a period of 3 years, or, for EBT operators, a minimum of 3 training hours within 3 years; and

[...]

GM8 ORO.FC.115 Crew resource management (CRM) training

VIRTUAL CLASSROOM TRAINING — SINGLE-PILOT OPERATIONS

(a) A successful virtual classroom training relies on the ability of the trainer to make best use of the associated technologies in the context of CRM training. The flight crew CRM trainer may need to receive appropriate training covering the following:

(1) learning style;

(2) teaching method associated with virtual classroom instruction, such as videoconferencing, and a familiarisation with the virtual classroom instruction system in use, including management of time, training media and equipment and tools.

(b) The assessment of CRM skills may be used by the operator to improve the CRM training system by evaluating de-identified summaries of all CRM assessments.

(c) The requirement of ORO.GEN.140 for the operator to grant access to the competent authority also applies to the virtual classroom training.

(d) More information on virtual classroom training is provided in the EASA Guidance for allowing virtual classroom instruction and distance learning.

AMC1 ORO.FC.120 Operator conversion training

OPERATOR CONVERSION TRAINING FOR NON-COMMERCIAL OPERATIONS WITH COMPLEX MOTOR-POWERED AIRCRAFT (NCC)

(a) General

(1) The operator conversion training should include:

(i) ground training, including the following:

(A) aircraft systems;

(B) normal procedures, which include flight planning, ground-handling and flight operations, including performance, mass and balance, fuel schemes, selection of alternates, and ground de-icing/anti-icing;

(C) abnormal and emergency procedures, which include pilot incapacitation, as applicable;

(D) a review of relevant samples of accidents/incidents and occurrences to increase awareness of the occurrences that may be relevant for the intended operation;

(ii) emergency and safety equipment training and checking, including survival equipment training (completed before operating on any passenger-carrying flight);

(iii) passenger handling for operations where no cabin crew is carried; and

(iv) a minimum number of sectors and/or flight hours operated under the supervision of a flight crew member nominated by the operator, to demonstrate the standard of qualification specified in the operator's manual.

(2) The operator conversion course may be combined with a new type rating course, as required by Commission Regulation (EU) No 1178/2011.

(3) The conversion training should ensure that each flight crew member:

(i) has been trained to competency on the emergency and safety equipment installed on the aircraft they are to operate; and

(ii) is competent in the operating procedures and the use of checklists used by the operator.

(b) Emergency and safety equipment training should:

(1) take place in conjunction with cabin crew and technical crew as far as practicable. Emphasis should be placed on the importance of effective coordination and two-way communication between crew members in various emergency situations;

(2) address the operational procedures of rescue and emergency services; and

(3) cover the items of point (a)(2) of AMC1 ORO.FC.130.

AMC2 ORO.FC.120 Operator conversion training

FORM OF OPERATIONS — SINGLE-PILOT HELICOPTERS

The training for conversion from single-pilot operations to multi-pilot operations and vice versa on a given helicopter type, as specified in point FCL.725(d)(2) of Annex I (Part-FCL) to Regulation (EU) No 1178/2011, should take into account all of the following:

(a) the SOPs of the operator;

(b) the flight crew member's previous trainings and experience.

AMC3 ORO.FC.120 Operator conversion training

SPO OPERATOR CONVERSION COURSE — GROUND TRAINING

(a) General

The operator conversion training should include ground training and checking, including all of the following:

(1) aircraft systems,

(2) normal procedures, which include flight planning ground-handling and flight operations, including performance, mass and balance, fuel schemes selection of alternates, and ground de-icing/anti-icing;

(3) abnormal and emergency procedures, which include pilot incapacitation as applicable;

(4) a review of relevant samples of accident/incident and occurrences to increase awareness of the occurrences that may be relevant for the intended operation.

SPECIALISED OPERATIONS

If a flight crew member undergoes training with regard to SOPs related to a specialised operation, either as part of an equipment and procedure training or a conversion training, the following should apply:

(b) Initial training for a given specialised operation

(1) In-depth training should achieve competence in carrying out normal, abnormal and emergency procedures, covering the SOPs associated with the specialised task.

(2) The training should include ground training associated with the specialised task, completed before any flight training in an aircraft commences.

(3) If one or more task specialists are on board, the training should include emergency and safety equipment training, completed before any flight training in an aircraft commences. The training should ensure that all emergency equipment can be used timely and efficiently, that an emergency evacuation and first aid can be conducted, taking into account the training and operating procedures of the task specialist(s).

(4) Unless the flight crew member has significant experience in similar specialised operations as defined in the operations manual, the training should include aircraft/FSTD training associated with the specialised task.

(c) Initial training and experience for any level of HEC and HESLO operations: AMC1 SPO.SPEC.HEC.100 and AMC1 SPO.SPEC.HESLO.100 should apply in combination with point (b) above.

(d) Training when changing operators

(1) The training should focus on the elements of the SOPs that are specific to the operator.

(2) The operator should determine the amount of training required in the operator's conversion course in accordance with the standards of qualification and experience specified in the operations manual, taking into account the flight crew member's previous training and experience in the given specialised operation and in similar operations.

(e) Training when changing specialised operations within the same operator, with previous experience of the specialised operation: point (d) above should apply.

(f) Training when changing types or variants: The training should focus on the elements of the SOPs that are specific to the type or variant. The operator should assess whether the flight crew should require ground training, aircraft/FSTD training or both, when changing type or variants within the framework of the same specialised operations. The assessment should take the following into account:

(1) the validity of the flight crew type rating;

(2) the experience and recency of the flight crew on the type or variant;

(3) whether any type or variant specific procedures exist;

(4) differences in equipment related to the specialised operations;

(5) differences in limitations or procedures related to the specialised operations.

GM1 ORO.FC.120 Operator conversion training

STANDARD OPERATING PROCEDURES FOR MULTI-PILOT OPERATIONS — SINGLE-PILOT HELICOPTERS

MCC training is generic to all types. A pilot holding a certificate of completion of MCC training requires additional training to implement the multi-pilot SOPs of a given helicopter type.

AMC1 ORO.FC.125 Differences training, ~~and~~ familiarisation ~~training~~ , equipment and procedure training

GENERAL

(a) Differences training requires additional knowledge and training on the aircraft or an appropriate training device. It should be carried out:

~~(1) when introducing a significant change of equipment and/or procedures on types or variants currently operated; and~~

(1~~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

(2~~3~~) in the case of helicopters, when operating a variant of a helicopter currently operated.

(b) Familiarisation ~~training~~ requires only the acquisition of additional knowledge. It should be carried out when~~:~~

~~(1)~~ operating another helicopter or aeroplane of the same type~~; or~~

~~(2) when introducing a significant change of equipment and/or procedures on types or variants currently operated~~.

AMC2 ORO.FC.125 Differences training, familiarisation, equipment and procedure training

OPERATOR DIFFERENCE REQUIREMENTS (ODRs)

When defining the needs for differences training, familiarisation or equipment training, the operator should make use of the concept of ODRs and of the methodology described in AMC1 ORO.FC.140(a), including the ODRs tables.

FORM OF OPERATIONS — SINGLE-PILOT HELICOPTERS

If the differences training, familiarisation, equipment or procedure training includes the conversion from single-pilot operations to multi-pilot operations and vice versa, it should take into account all elements described in AMC2 ORO.FC.120.

GM1 ORO.FC.125 Differences training, familiarisation, equipment and procedure training

OPERATOR DIFFERENCE REQUIREMENTS (ODRs)

The ODRs tables may result in different training programmes, depending on the training needs, regardless of the 'base aircraft' used to establish the table (e.g. the trainee may know the 'other aircraft' and be trained towards the 'base aircraft').

AMC1 ORO.FC.125(b) Differences training, familiarisation, equipment and procedure training

SPECIALISED OPERATIONS

If the differences training, familiarisation, equipment and procedure training includes training for SOPs related to a specialised operation, points (b) to (f) of AMC3 ORO.FC.120 should apply.

GM1 ORO.FC.125(b) Differences training, familiarisation, equipment and procedure training

GENERAL

Introducing a change of equipment and/or procedures on types or variants currently operated may require additional knowledge or additional training on the aircraft, or an appropriate training device, or both.

GM2 ORO.FC.125(b) Differences training, familiarisation, equipment and procedure training

PROCEDURE TRAINING — STANDARD OPERATING PROCEDURES FOR MULTI-PILOT OPERATIONS — SINGLE-PILOT HELICOPTERS

MCC training is generic to all types. A pilot holding a certificate of completion of MCC training requires additional procedures training to implement the multi-pilot SOPs of a given single-pilot helicopter type.

AMC1 ORO.FC.130 Recurrent training and checking

RECURRENT TRAINING AND CHECKING TO DEMONSTRATE COMPETENCE FOR NON-COMMERCIAL OPERATIONS WITH COMPLEX MOTOR-POWERED AIRCRAFT (NCC)

(a) Recurrent training

Recurrent training should comprise the following:

(1) Ground training

The ground training programme should include:

(i) aircraft systems;

(ii) normal procedures, which include flight planning, ground-handling and flight operations, including performance, mass and balance, fuel schemes, selection of alternates, and ground de-icing/anti-icing;

(iii) abnormal and emergency procedures, which include pilot incapacitation as applicable;

(iv) a review of relevant samples of accidents/incidents and occurrences to increase awareness of the occurrences that may be relevant for the intended operation;

(2) Emergency and 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.

(ii) Every year 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; and

(E) instruction on the location and use of all types of exits.

(3) Elements of CRM as specified in Table 1 of AMC1 ORO.FC.115 should be integrated into all appropriate phases of recurrent training.

(4) Aircraft/FSTD training

(i) The aircraft/FSTD training programme should be established in such a way that all the major failures of aircraft systems and associated procedures will have been covered in the preceding 3-year period.

(ii) When engine-out manoeuvres are carried out in an aircraft, the engine failure should be simulated.

(iii) When an FSTD is not available or accessible, the operator should establish mitigating measures to ensure that an adequate level of safety is maintained when conducting the training or checking in an aircraft. If one or more of the major failures cannot be practised in the aircraft because of their associated risks or because of environmental considerations, the failure(s) may be partially replicated for crew training purposes using pre-briefed, risk-assessed measures that avoid degrading the aircraft's performance below a predetermined level, and which permit immediate reversion to normal operating conditions.

(b) Periodic check to demonstrate competence

(1) Each flight crew member should complete the periodic check as part of the normal crew complement.

(2) Periodic demonstrations of competence should be conducted every 12 months and may be combined with the proficiency check required by Commission Regulation (EU) No 1178/2011.

GM1 ORO.FC.130 Recurrent training and checking

PERIODIC CHECKS

(a) For CAT operations, the operator proficiency checks and the line checks are both part of the periodic checks. For EBT operators, the EBT module and the line evaluations of competence are both part of the periodic checks.

(b) For SPO operations, the operator proficiency checks are part of the periodic checks.

(c) For non-CAT operations, the periodic checks may include a line check.

AMC1 ORO.FC.130(a) Recurrent training and checking

OPERATIONS WITH VARIATIONS IN AIRCRAFT CONFIGURATION

AMC1 ORO.FC.140(a) should be used to determine the recurrent ground training and checking relevant to variations in aircraft configuration, if all of the following apply:

(a) the pilot operates variations in aircraft configuration;

(b) the aircraft operated do not all belong to the same group of types defined under ORO.FC.140(b); and

(c) credit (as defined in point (a)(4) of AMC1 ORO.FC.140(a)) is sought.

AMC1 ORO.FC.135 Pilot qualification to operate in either pilot's seat

GENERAL

The training and checking for pilot qualification to operate in either pilot's seat should include any safety-critical items as specified in the operations manual where the action to be taken by the pilot is different depending on which seat they occupy.

NON-COMMERCIAL OPERATIONS WITH COMPLEX MOTOR-POWERED AIRCRAFT (NCC)

Training should be arranged so that all such items will have been covered in the preceding 3-year period.

GM1 ORO.FC.140 Operation on more than one type or variant

GENERAL

(a) The concept of operating more than one type or variant depends on the experience, knowledge and ability of the operator and the flight crew concerned.

(b) The first consideration is whether operations on one aircraft type or variant allow the safe operation of all other types and variants.

(c) The second consideration is whether and how adequate training to address potential confusion and increased workload caused by the operation of several types or variants is achieved.

AMC1 ORO.FC.140(a) Operation on more than one type or variant

GENERAL

(a) Terminology

The terms used in the context of operation on more than one type or variant have the following meaning:

(1) 'Base aircraft' refers to an aircraft used as a reference to compare differences with another aircraft.

(2) 'Variant' refers to an aircraft or a group of aircraft within the same pilot type or class rating that has differences with the base aircraft and requires differences training or familiarisation.

(3) A 'variation in aircraft configuration' refers to an aircraft or a group of aircraft within the same variant that has differences with the base aircraft and requires equipment and procedure training.

(4) 'Credit' refers to the recognition of recurrent training, checking or recent experience based on commonalities between aircraft.

(5) 'Operator difference requirements (ODRs)' refer to a formal description of differences between types or variants or aircraft configurations flown by a particular operator.

(6) 'Training' refers to differences training, familiarisation and equipment training.

(7) 'Currency' refers to the recurrent training on types and variants.

(b) Scope of ODRs

The operator should use the ODRs methodology, a means of evaluating aircraft differences and similarities, in order to define the training and checking in the following cases:

(1) for the introduction of a change of equipment on a type or variant currently operated;

(2) for the introduction of a new variant within a type or class currently operated;

(3) for the recurrent training and checking of variations in aircraft configuration. The operator may define credit based on ODRs tables;

(4) for the operation of more than one type or variant when credit is sought, in which case all of the following should apply:

(i) All training, checking and currency requirements should be completed independently for each type or variant unless credits have been established by using ODRs tables.

(ii) All recent experience requirements should be completed independently for each type unless credits have been established by using ODRs tables.

(iii) The operator may define credit based on ODRs tables that should not be less restrictive than the OSD.

(c) ODRs methodology

(1) The operator should conduct a detailed evaluation of the differences or similarities of the aircraft concerned in order to establish appropriate procedures or operational restrictions. This evaluation should be based on the OSD for the relevant types or variants and should be adapted to the operator's specific variations in aircraft configuration. This evaluation should take into account all of the following:

(i) the level of technology;

(ii) operational procedures; and

(iii) handling characteristics.

(2) ODRs tables

The operator should first nominate one aircraft as the base aircraft from which to show differences with the second aircraft type or variant or variation in aircraft configuration, the 'difference aircraft', in terms of technology (systems), procedures, pilot handling and aircraft management. These differences, known as ODRs, preferably presented in tabular format, constitute part of the justification for operating more than one type or variant and also the basis for the associated differences/familiarisation or reduced type rating training for the flight crew.

(3) The ODRs tables should be presented as follows:

GENERAL OPERATOR DIFFERENCE REQUIREMENTS TABLE										
DIFFERENCE AIRCRAFT: BASE AIRCRAFT:				COMPLIANCE METHOD						
				TRAINING					CHECKING/ CURRENCY	
General	Differences	Flt char	Proc chg	A	B	C	D	E	FLT CHK	CURR ENCY
GENERAL	Range ETOPS certified	No	Yes		CBT					
DIMENSIONS	Configuration per AFM, FCOM	Yes	No		CBT					

SYSTEM OPERATOR DIFFERENCE REQUIREMENTS TABLE										
DIFFERENCE AIRCRAFT: BASE AIRCRAFT:				COMPLIANCE METHOD						
				TRAINING					CHECKING/ CURRENCY	
System	Differences	Flt char	Proc chg	A	B	C	D	E	FLT CHK	CURRE NCY
21 – AIR CONDITIONING	CONTROLS AND INDICATORS: - Panel layout	No	Yes	HO						
21 – AIR CONDITIONING	PACKS: - Switch type - Automaticall y controlled - Reset switch for both packs	No	Yes		CBT					

MANOEUVRE OPERATOR DIFFERENCE REQUIREMENTS TABLE										
DIFFERENCE AIRCRAFT: BASE AIRCRAFT:				COMPLIANCE METHOD						
				TRAINING					CHECKING/ CURRENCY	
Manoeuvre	Differences	Flt char	Proc chg	A	B	C	D	E	FLT CHK	CURRENCY
Exterior Preflight	Minor differences	No	No	HO						
Preflight	Differences due to systems, ECL	No	Yes		CBT	FTD				
Normal take-off	FBW handling v conventional; AFDS TAKE-OFF: Autothrottle engagement FMA indications	No	Yes		CBT			FFS		

(4) Compilation of ODRs tables

(i) ODRs 1: General

The general characteristics of the candidate aircraft are compared with the base aircraft with regard to:

(A) general dimensions and aircraft design (number and type of rotors, wing span or category);

(B) flight deck general design;

(C) cabin layout;

(D) engines (number, type and position);

(E) limitations (flight envelope).

(ii) ODRs 2: Systems

Consideration is given to differences in design between the candidate aircraft and the base aircraft. For this comparison, the Air Transport Association (ATA) 100 index is used. This index establishes a system and subsystem classification and then an analysis is performed for each index item with respect to the main architectural, functional and operations elements, including controls and indications on the systems control panel.

(iii) ODRs 3: Manoeuvres

Operational differences encompass normal, abnormal and emergency situations and include any change in aircraft handling and flight management. It is necessary to establish a list of operational items for consideration on which an analysis of differences can be made.

The operational analysis should take the following into account:

(A) flight deck dimensions (size, cut-off angle and pilot eye height);

(B) differences in controls (design, shape, location and function);

(C) additional or altered function (flight controls) in normal or abnormal conditions;

(D) handling qualities (including inertia) in normal and in abnormal configurations;

(E) aircraft performance in specific manoeuvres;

(F) aircraft status following failure;

(G) management (e.g. ECAM, EICAS, navaid selection, automatic checklists).

(iv) Once the differences for ODRs 1, ODRs 2 and ODRs 3 have been established, the consequences of differences evaluated in terms of flight characteristics (FLT CHAR) and change of procedures (PROC CHNG) should be entered into the appropriate columns.

(v) Difference levels — crew training, checking and currency

(A) In order to operate more than one type or variant, the operator should establish crew training, checking and currency requirements. This may be done by applying the coded difference levels from the table in point (d)(2) to the compliance method column of the ODRs tables.

(B) Differences identified in the ODRs tables as impacting flight characteristics or procedures, should be analysed in the corresponding ATA section of the ODRs manoeuvres. Normal, abnormal and emergency situations should be addressed accordingly.

(d) Difference levels

(1) Difference levels — general

Difference levels are used to identify the extent of a difference between a base and a candidate aircraft with reference to the elements described in the ODRs tables. These levels are proportionate to the differences between a base and a candidate aircraft. A range of five difference levels in order of increasing requirements, identified as A through E, are each specified for training, checking, and currency.

Difference levels apply when a difference with the potential to affect flight safety exists between a base and a candidate aircraft. Differences may also affect the knowledge, skills, or abilities required from a pilot. If no differences exist, or if differences exist but do not affect flight safety, or if differences exist but do not affect knowledge, skills or abilities, then difference levels are neither assigned nor applicable to pilot qualification. When difference levels apply, each level is based on a scale of differences related to design features, systems, or manoeuvres. In assessing the effects of differences, both

flight characteristics and procedures are considered since flight characteristics address handling qualities and performance, while procedures include normal, non-normal and emergency items.

Levels for training, checking, and currency are assigned independently, but are linked depending on the differences between a base and candidate aircraft. Training at level E usually identifies that the candidate aircraft is a different type from the base aircraft.

(2) Difference levels are summarised in the table below regarding training, checking, and currency.

DIFFERENCE LEVEL	**TRAINING**	**CHECKING**	**CURRENCY**
A	Self-instruction	Not applicable or integrated with next proficiency check	Not applicable
B	Aided instruction	Task or system check	Self-review
C	System devices	Partial proficiency check using qualified device	Designated system
D	Manoeuvre training devices[1] or aircraft to accomplish specific manoeuvres	Partial proficiency check using qualified device[1]	Designated manoeuvre(s)[1]
E	FSTDs[2] or aircraft	Proficiency check using FSTDs[2] or aircraft	As per regulation, using FSTDs[2] or aircraft

Footnote (1):

– *Aeroplane: FTD level 2, or FFS, or aeroplane*

– *Helicopter: FTD levels 2 and 3, or FFS, or helicopter*

Footnote (2):

– *Aeroplane: FFS level C or D, or aeroplane*

– *Helicopter: FSTDs having dual qualification: FFS level B and FTD level 3, or FFS level C or D, or helicopter*

Training levels A and B require knowledge, levels C and D require additional skills. Training level E means that the differences are such that type rating training is required or, in the context of equipment and procedure training, aircraft/FSTD training and checking is required.

(3) Difference levels — training

The training difference levels specified represent the minimum requirements. Devices associated with a higher difference level may be used to satisfy a training differences requirement.

(i) Level A training

Level A differences training is applicable to aircraft with differences that can adequately be addressed through self-instruction. Level A training represents a knowledge requirement such that once appropriate information is provided, understanding and compliance can be assumed to be demonstrated.

Training needs not covered by level A training may require level B training or higher, depending on the outcome of the evaluations described in the aircraft evaluation process (CS FCD.420).

(ii) Level B training

Level B differences training is applicable to aircraft with system or procedure differences that can adequately be addressed through aided instruction.

At level B aided instruction, it is appropriate to ensure pilot understanding, emphasise issues, provide a standardised method of presentation of material, or to aid retention of material following training.

(iii) Level C training

Level C differences training can only be accomplished through the use of devices capable of systems training.

Level C differences training is applicable to variants having 'part task' differences that affect skills or abilities as well as knowledge. Training objectives focus on mastering individual systems, procedures, or tasks, as opposed to performing highly integrated flight operations and manoeuvres in 'real time'. Level C may also require self-instruction or aided instruction of a pilot, but cannot be adequately addressed by a knowledge requirement alone. Training devices are required to supplement instruction to ensure attainment or retention of pilot skills and abilities to accomplish the more complex tasks, usually related to operation of particular aircraft systems.

The minimum acceptable training media for level C are interactive computer-based training, cockpit systems simulators, cockpit procedure trainers, part task trainers (such as inertial navigation system (INS), flight management system (FMS), or traffic collision avoidance system (TCAS) trainers), or similar devices.

(iv) Level D training

Level D differences training can only be accomplished with devices capable of performing flight manoeuvres and addressing full task differences affecting knowledge, skills, or abilities.

Devices capable of flight manoeuvres address full task performance in a dynamic 'real time' environment and enable integration of knowledge, skills and abilities in a simulated flight environment, involving combinations of operationally oriented tasks and realistic task loading for each relevant phase of flight. At level D,

knowledge and skills to complete necessary normal, non-normal and emergency procedures are fully addressed for each variant.

Level D differences training requires mastery of interrelated skills that cannot be adequately addressed by separate acquisition of a series of knowledge areas or skills that are interrelated. However, the differences are not so significant that a full type rating training course is required. If demonstration of interrelationships between the systems was important, the use of a series of separate devices for systems training would not suffice. Training for level D differences requires a training device that has accurate, high-fidelity integration of systems and controls and realistic instrument indications. Level D training may also require manoeuvre visual cues, motion cues, dynamics, control loading or specific environmental conditions. Weather phenomena such as low-visibility conditions or wind shear may or may not be incorporated. Where simplified or generic characteristics of an aircraft type are used in devices to satisfy level D differences training, significant negative training should not occur as a result of the simplification.

Appropriate devices as described in CS FCD.415(a), satisfying level D differences training range from those where relevant elements of aircraft flight manoeuvring, performance, and handling qualities are incorporated. The use of a manoeuvre training device or aircraft is limited for the conduct of specific manoeuvres or handling differences, or for specific equipment or procedures.

(v) Level E training

Level E differences training is applicable to candidate aircraft that have such significant 'full task' differences that a full type rating training course or a type rating training course with credit for previous experience on similar aircraft types is required to meet the training objectives.

The training requires a 'high-fidelity' environment to attain or maintain knowledge, skills, or abilities that can only be satisfied by the use of FSTDs or the aircraft itself as mentioned in CS FCD.415(a). Level E training, if done in an aircraft, should be modified for safety reasons where manoeuvres can result in a high degree of risk.

When level E differences training is assigned, suitable credit or constraints may be applied for knowledge, skills or abilities related to other pertinent aircraft types. The training programme should specify the relevant subjects, procedures or manoeuvres.

(4) Difference levels — checking

Differences checking addresses any pertinent pilot testing or checking. Initial and recurrent checking levels are the same unless otherwise specified.

It may be possible to satisfactorily accomplish recurrent checking objectives in devices that do not meet the initial checking requirements. In such instances, the applicant may propose for revalidation checks the use of certain devices that do not meet the initial checking requirements.

(i) Level A checking

Level A differences checking indicates that no check related to differences is required at the time of differences training. However, a pilot is responsible for knowledge of each variant flown.

(ii) Level B checking

Level B differences checking indicates that a 'task' or 'systems' check is required following initial and recurring training.

(iii) Level C checking

Level C differences checking requires a partial check using a suitable qualified device. A partial check is conducted relative to particular manoeuvres or systems.

(iv) Level D checking

Level D differences checking indicates that a partial proficiency check is required following both initial and recurrent training. In conducting the partial proficiency check, manoeuvres common to each variant may be credited and need not be repeated. The partial proficiency check covers the specified particular manoeuvres, systems or devices. Level D checking is performed using scenarios that represent a 'real-time' flight environment and uses qualified devices permitted for level D training or higher.

(v) Level E checking

Level E differences checking requires that a full proficiency check be conducted in FSTDs or in an aircraft as mentioned in CS FCD.415(a), following both initial and recurrent training. If appropriate, alternating Level E checking between relevant aircraft is possible and credit may be defined for procedures or manoeuvres based on commonality.

Assignment of level E checking requirements alone, or in conjunction with level E currency, does not necessarily result in assignment of a separate type rating.

(5) Difference levels — currency

Differences currency addresses any currency and re-currency levels. Initial and recurrent currency levels are the same unless otherwise specified.

(i) Level A currency

Level A currency is common to each aircraft and does not require separate tracking. Maintenance of currency in any aircraft suffices for any other variant within the same type rating.

(ii) Level B currency

Level B currency is 'knowledge-related' currency, typically achieved through self-review by individual pilots.

(iii) Level C currency

(A) Level C currency is applicable to one or more designated systems or procedures and it relates to both skill and knowledge requirements. When level C currency applies, any pertinent lower-level currency is also to be addressed.

(B) Re-establishing level C currency

When currency is lost, it may be re-established by completing required items using a device equal to or higher than that specified for level C training and checking.

(iv) Level D currency

(A) Level D currency is related to designated manoeuvres and addresses knowledge and skills required for performing aircraft control tasks in real time with integrated use of associated systems and procedures. Level D currency may also address certain differences in flight characteristics including performance of any required manoeuvres and related normal, non-normal and emergency procedures. When level D is necessary, any pertinent lower-level currency is also to be addressed.

(B) Re-establishing level D currency

When currency is lost, currency may be re-established by completing pertinent manoeuvres using a device equal to or higher than that specified for level D differences training and checking.

(v) Level E currency

(A) Level E currency requires that recent experience requirements of Part-FCL and operational requirements be complied with in each aircraft separately. Level E currency may also specify other system, procedure, or manoeuvre currency item(s) necessary for safe operations and may require procedures or manoeuvres to be accomplished in FSTDs or in an aircraft as mentioned in CS FCD.415(a). Provisions are applied in a way which addresses the required system or manoeuvre experience.

When level E is assigned between aircraft of common characteristics, credit may be permitted. Assignment of level E currency requirements does not automatically lead to a determination on same or separate type rating. Level E currency is tracked by a means that is acceptable to the competent authority.

When common take-off and landing credit (CTLC) is permitted, any credit or constraints applicable to using FSTDs, as mentioned in CS FCD.415(a), are also to be determined.

(B) Re-establishing level E currency

When currency is lost, currency may be re-established by completing pertinent manoeuvres using a device specified for level E differences training and checking.

(6) Competency regarding non-normal and emergency procedures — currency

Competency for non-normal and emergency manoeuvres or procedures is generally addressed by checking requirements. Particular non-normal and emergency manoeuvres or procedures may not be considered mandatory for checking or training. In this situation, it may be necessary to periodically practise or demonstrate those manoeuvres or procedures specifying currency requirements for those manoeuvres or procedures.

GM1 ORO.FC.140(a) Operation on more than one type or variant

OPERATOR DIFFERENCE REQUIREMENTS (ODRS)

The ODRs tables may result in different training programmes, depending on the training needs, regardless of the 'base aircraft' used to establish the table (e.g. the trainee may know the 'other aircraft' and be trained towards the 'base aircraft').

AMC1 ORO.FC.140(b) Operation on more than one type or variant

GROUPS OF SINGLE-ENGINED PISTON HELICOPTER TYPES FOR THE REVALIDATION OF THE OPC

When establishing groups of single-engined helicopter types for the purpose of crediting of proficiency checks, the operator should only take into account the helicopter types considered for crediting in AMC1 FCL.740.H(a)(3).

AMC1 ORO.FC.140(d) Operation on more than one type or variant

LINE CHECKS — HELICOPTERS

(a) Prior to using a line check on one helicopter type or variant to revalidate the line check on other helicopter types or variants, the operator should consider whether the type of operations are sufficiently similar in terms of:

(1) use of aerodromes or operating sites;

(2) day VFR or night VFR;

(3) use of operational approvals and specific approvals;

(4) normal procedures, including flight preparation, take-off and landing procedures; and

(5) use of automation.

(b) For IFR operations of helicopters, an operation should only be considered sufficiently similar to allow a line check on one type or variant to revalidate the line check for the other type or variant

if such credits are defined in the operational suitability data established in accordance with Commission Regulation (EU) No 748/2012[1], as determined in point (a) of ORO.FC.140.

(c) Line check cross-crediting should be defined in the operations manual.

AMC1 ORO.FC.145 Provision of training, checking and assessment

ACCEPTANCE OF PREVIOUS TRAINING FOR NON-COMMERCIAL OPERATIONS WITH COMPLEX MOTOR-POWERED AIRCRAFT, INCLUDING NON-COMMERCIAL SPECIALISED OPERATIONS

(a) If the operator chooses to make use of previous training received by the pilot, the operator should develop a policy for the crediting of such training. Details of such policy should be included in the operations manual.

(b) The policy should as a minimum include measures to assess:

(1) the content of the previous training;

(2) whether the previous training was delivered by suitably qualified personnel or organisations;

(3) whether the aircraft, FSTD or other equipment used for the previous training was sufficiently similar to the aircraft and equipment the crew member will operate; and

(4) whether the operating procedures used during such previous training were sufficiently representative of the procedures used by the new operator.

(c) Where previous training delivered by other suitably qualified personnel or organisations is found to satisfy all or some of the requirements in ORO.FC.120, the training may be credited and an abbreviated conversion course may be used. Such an abbreviated course should cover all items not credited from previous training.

(d) Where a pilot flies for more than one operator and the training delivered by that other operator is found to satisfy some of the requirements of ORO.FC.130, then such training may be credited and an abbreviated recurrent training programme may be used. Such an abbreviated recurrent training programme should cover all items not credited from the training delivered by the other operator.

(e) An aircraft operator remains responsible for all training required by this Part regardless of whether the training is conducted by the operator, another operator, a certified organisation or another subcontractor, as defined in ORO.GEN.205.

(f) An operator accepting any previous training should be satisfied that the flight crew member is competent to operate in accordance with that operator's procedures and to use the specific equipment installed on the aircraft to be operated.

(g) Previous training needs to be formally documented.

[1] OJ L 243, 27.9.2003, p. 6.

(h) The assessment under (b) and the documents referred to under (g) should be stored as part of the crew member training, checking and qualifications records.

GM1 ORO.FC.145 Provision of training, checking and assessment

POLICY FOR ACCEPTANCE OF PREVIOUS TRAINING AND CHECKING FOR OTHER THAN COMMERCIAL AIR TRANSPORT OPERATIONS (NCC)

If the operator chooses to make use of previous training received by the pilot, in accordance with AMC1 ORO.FC.145, the operator may wish to enter into arrangements with other operators in order to satisfy the requirements of ORO.GEN.205 in relation to contracted training providers or other aircraft operators.

AMC1 ORO.FC.145(a) Provision of training, checking and assessment

TRAINING AND CHECKING PROGRAMMES AND SYLLABI

(a) Training and checking programmes and syllabi should include as a minimum:

(1) when training and checking take place during the same session, the distinction between the two;

(2) a list of the items covered;

(3) the minimum time allocation (duration);

(4) the means of delivery (e.g. FSTD, OTD, computer-based, VR, etc.);

(5) the personnel providing the training and conducting the checks.

(b) Further details on the training and checking programmes and syllabi should be included in the operations manual depending on the complexity of the operations (e.g. further contextualisation of the training programme, details of the airport in which some items will be covered, time allocation to brief and debrief, whether the item to be trained is a legal requirement or an SMS item, etc.).

GM1 ORO.FC.145(a) Provision of training, checking and assessment

TRAINING AND CHECKING PROGRAMMES AND SYLLABI

The syllabus lists the topics to be covered in a training and checking programme. A syllabus may include:

— the personnel providing the training and conducting the checks;

— a description of the content;

— the means of delivery (e.g. FSTD, aircraft, OTD, (virtual) classroom, computer-based training, VR, etc.);

— the minimum time allocation (duration);

— the prerequisites to be fulfilled before starting the training or checking;

— the standard of performance;

— the training objectives;

— a reference to training/checking material;

— the checking requirements, if any;

— when training and checking is combined, the distinction between trained and checked items.

AMC1 ORO.FC.145(b) Provision of training, checking and assessment

NON-MANDATORY (RECOMMENDATION) ELEMENTS OF OPERATIONAL SUITABILITY DATA

When developing the training programmes and syllabi, the operator should include ~~consider~~ the non-mandatory (recommendation) elements for the relevant type that are provided in the operational suitability data established in accordance with Commission Regulation (EU) No 748/2012.

AMC1 ORO.FC.145(d) Provision of training, checking and assessment

FULL FLIGHT SIMULATORS (FFS)

[...]

AMC2 ORO.FC.145(d) Provision of training, checking and assessment

FSTDs

(a) Before the operator extracts the data from an FSTD that can be related to a pilot, it should develop a data access and security policy.

(b) 'Availability' and 'accessibility' of FSTD used in this Subpart.

(1) 'Available FSTD' refers to any flight simulation training device (FSTD) that is vacant for use by the FSTD operator or by the customers irrespective of any time consideration.

(2) 'Accessible' refers to a device that can be used by the operator to conduct training or checking pertaining to this Subpart, and by the nominated person conducting the training or checking.

More information on these definitions can be found in Part-FCL of Regulation (EU) No 1178/2011.

GM1 ORO.FC.145(d) Provision of training, checking and assessment

CONFIDENTIALITY AND PROTECTION OF TRAINING DATA IN COMMERCIAL AIR TRANSPORT

(a) Without prejudice to applicable national legislation on the protection of individuals with regard to the processing of personal data, for the training conducted in accordance with ORO.FC.145 the operator may have a training data access and security policy (including the procedure to prevent disclosure of crew identity).

(b) If the operator decides to have such a policy, it should:

(1) be agreed by all parties involved (airline management and flight crew member representatives nominated either by the union or the flight crew themselves);

(2) be in line with the organisation's safety policy in order to not make available or to not make use of the training data to attribute blame or liability.

(c) The training data access and security policy may include a policy for access to information only to specifically authorised persons identified by their position in order to perform their duties.

AMC1 ORO.FC.145(g) Provision of training, checking and assessment

VALIDITY PERIOD OF RECURRENT ASSESSMENT, TRAINING AND CHECKING

(a) When the recency, training or check is completed within the last 3 months of the validity period, the new validity period should be counted from the original expiry date.

(b) When the recency, training or check is completed before the last 3 months of the validity period, the new validity period should be counted from the end of the month when the recency, training or check was completed and not from the original expiry date.

(c) Notwithstanding (a), the revalidation of CRM instructor and EBT instructor qualifications should follow AMC2 ORO.FC.146 and AMC2 ORO.FC.146(c).

AMC1 ORO.FC.146 Personnel providing training, checking and assessment

PERSONNEL CONDUCTING TRAINING AND CHECKING — GENERAL

Training and checking should be provided by the following personnel:

(a) Ground and refresher training by suitably qualified personnel;

(b) Emergency and safety equipment training and checking by suitably qualified personnel as specified in the operator's manual;

(c) CRM

(1) Integration of CRM elements into the different phases of training by all the personnel conducting the training, as per AMC1 and AMC2 ORO.FC.115.

(2) The operator should ensure that all personnel conducting such training are suitably qualified to integrate elements of CRM into this training.

(3) Classroom CRM training by at least one CRM trainer, qualified as specified in AMC2 ORO.FC.146 who may be assisted by experts in order to address specific areas.

AMC1 ORO.FC.146(b) Personnel providing training, checking and assessment

PERSONNEL PROVIDING AIRCRAFT/FSTD TRAINING AND CONDUCTING OPERATOR PROFICIENCY CHECKING AND QUALIFIED UNDER ANNEX I (PART-FCL) TO REGULATION (EU) No 1178/2011

Training and checking should be provided by the following personnel:

(a) Flight training by a type rating instructor (TRI) or class rating instructor (CRI), flight instructor (FI) or, in the case of the FSTD content, a synthetic flight instructor (SFI). For commercial air transport, the FI, TRI, CRI or SFI should satisfy the operator's experience and knowledge requirements sufficiently to instruct on aircraft systems and operational procedures and requirements.

(b) Operator proficiency check by a type rating examiner (TRE), class rating examiner (CRE) or, if the check is conducted in an FSTD, a synthetic flight examiner (SFE). The TRE, CRE or SFE should be trained in CRM concepts and the assessment of CRM skills.

(c) For aircraft/FSTD training, line flying under supervision, operator proficiency checks and line checks, if the training or checking includes multi-pilot operations in helicopters, in addition to (a) and (b) the personnel conducting training or checking should have 350 hours flying experience in multi-pilot operations.

(d) In the case of CAT operations in helicopters, the 350 hours flying experience in multi-pilot operations defined in (c) may be reduced on an individual basis, as part of the approval of the training and checking programmes. The operator may apply for such a reduced flying experience based on the unavailability of experienced pilots in both multi-pilot operations and in their types of operations. A FI/TRI/SFI rating and MCC training in helicopters should be a prerequisite for any reduced flying experience in multi-pilot operations. In addition, the operator should define mitigation measures after having performed a risk assessment. The following should be taken into account:

(1) flying experience criteria in single-pilot operations in the types of operations;

(2) any other training, checking, recency and experience criteria;

(3) robustness and maturity of multi-pilot SOPs.

(e) In the case of training and checking towards the relevant aspects associated with a specialised operation, points (j)(2) to (j)(4) of AMC1 ORO.FC.146(e);(f)&(g) should apply.

AMC1 ORO.FC.146(c) Personnel providing training, checking and assessment

EBT INSTRUCTOR — INITIAL STANDARDISATION PROGRAMME

(a) [...]

EBT INSTRUCTOR TRAINING

(b) [...]

(c) [...]

(d) [...]

EBT ASSESSMENT OF COMPETENCE

(e) [...]

(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~~.

(g) [...]

(h) [...]

AMC2 ORO.FC.146(c) Personnel providing training, checking and assessment

EBT INSTRUCTOR — RECURRENT STANDARDISATION PROGRAMME

The EBT instructor should:

[...]

(c) complete an EBT 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 competence.

AMC1 ORO.FC.146(e);(f)&(g) Personnel providing training, checking and assessment

SUITABLY QUALIFIED PIC OR COMMANDER NOMINATED BY THE OPERATOR — GENERAL

(a) The nominated PIC/commander conducting training should either be qualified as an instructor under Regulation (EU) No 1178/2011 or receive training which should cover at least:

(1) techniques of briefing and debriefing;

(2) CRM concepts and CRM assessment;

(3) for SPO, which manoeuvres the nominated PIC/commander should not train or check unless qualified as an instructor.

(b) In addition, the nominated PIC/commander conducting operator proficiency checks or line checks should either be qualified as an examiner under Regulation (EU) No 1178/2011 or receive additional training which should cover at least:

(1) how to perform a check;

(2) flight techniques applicable to checks performed in flight;

(3) the assessment of CRM skills.

(c) The nominated PIC/commander conducting aircraft/FSTD training, line flying under supervision, operator proficiency checks or line checks taking place under multi-pilot operations in helicopters should have 350 hours flying experience in multi-pilot operations.

(d) The nominated PICs/commanders, or the criteria for nominating PICs/commanders, should be included in the operations manual.

(e) The nominated PIC/commander should be type rated or class rated in the type or class where he or she provides the training, checking or assessment.

CAT — SUITABLY QUALIFIED COMMANDER OR INSTRUCTOR NOMINATED BY THE OPERATOR

(f) For CAT operations under VFR by day, the minimum experience of the nominated commander should be more than 750 hours total flight time with at least 50 hours on the type, class or the aircraft variant.

(g) For CAT operations in performance class B aeroplanes under night VFR or under IFR, the minimum experience of the nominated commander should be more than 1 000 hours total flight time with at least 100 hours on the type, class or the aircraft variant.

(h) In the case of CAT operations in helicopters, the 350 hours flying experience in multi-pilot operations defined in (c) may be reduced on an individual basis, as part of the approval of the training and checking programmes. The operator may apply for such a reduced flying experience based on the unavailability of experienced pilots in both multi-pilot operations and in their types of operations. An FI/TRI/SFI rating and MCC training in helicopters should be a prerequisite for any reduced flying experience in multi-pilot operations. In addition, the operator should define mitigation measures after having performed a risk assessment. The following should be taken into account:

(1) flying experience criteria in single-pilot operations in the types of operations;

(2) any other training, checking, recency and experience criteria; and

(3) robustness and maturity of multi-pilot SOPs.

(i) ORO.FC.220 (f) allows the operator to develop a specific conversion course to address an operational circumstance, when the operator intends to have pilots temporally joining the operator to conduct line checks. The content of the specific operator's conversion course is included in AMC1 ORO.FC.220(f).

SPO — SUITABLY QUALIFIED PIC OR INSTRUCTOR NOMINATED BY THE OPERATOR

(j) For SPO, the person conducting the aircraft/FSTD training and the operator proficiency check should meet the following criteria:

(1) Training and checking covering normal, abnormal and emergency procedures relevant to the type or variant should be conducted in accordance with AMC1 ORO.FC.146(b).

(2) Training and checking covering the relevant aspects associated with HEC and HESLO should be conducted by a HEC or HESLO instructor as defined in AMC1 SPO.SPEC.HEC.100 and AMC1 SPO.SPEC.HESLO.100.

(3) Training and checking covering the relevant aspects associated with a specialised operation other than HEC and HESLO should be conducted by a nominated PIC with the following flight experience:

(i) at least 750 hours total flight time with at least 50 hours on the type, class or aircraft variant;

(ii) for specialised operations other than HEC and HESLO, either:

(A) at least 350 hours in the applicable specialised operation; or

(B) 800 hours in specialised operations and the number of hours in the applicable specialised operation as defined by the operator, based on a risk assessment, taking into account the complexity of the relevant aspects associated with the applicable specialised operation. Flight experience in HHO, firefighting flight experience and flight experience in the search component of search and rescue flights may be credited towards the 800 hours in specialised operations. In addition, up to 200 hours of experience in CAT operations (other than HHO) may be credited towards the 800 hours in specialised operations.

(4) In addition to (2) and (3) above, flight training and checking of sensitive type-related manoeuvres in combination with the training and checking of the relevant aspects associated with a specialised task, should be conducted by a qualified instructor.

(k) In addition to (j) above, if the SPO operator combines the operator proficiency check with a licence proficiency check, the person conducting the check should meet the requirements for licence proficiency checks.

AMC1 ORO.FC.205 Command course

COMBINED UPGRADING AND CONVERSION COURSE — HELICOPTER

If a pilot is converting from one helicopter type ~~or variant~~ to another when upgrading to commander:

[...]

AMC1 ORO.FC.215 Initial operator's crew resource management (CRM) training

TRAINING ELEMENTS AND TRAINER QUALIFICATION

Initial operator's CRM training should:

(a) cover the applicable provisions of AMC1 ORO.FC.115, including the training elements as specified in Table 1 thereof; and

(b) be conducted by a flight crew CRM trainer who is qualified as specified in ~~AMC3 ORO.FC.115~~AMC2 ORO.FC.146.

AMC1 ORO.FC.220 Operator conversion training and checking

OPERATOR CONVERSION TRAINING SYLLABUS

(a) General

(1) The operator conversion training should include, in the following order:

(i) ground training and checking, including all of the following:

(A) aircraft systems;~~, and~~

(B) normal procedures, which include flight planning and ground-handling and flight operations, including performance, mass and balance, fuel schemes, selection of alternates, and ground de-icing/anti-icing;~~,~~

(C) abnormal and emergency procedures, which include pilot incapacitation as applicable;

(D) a review of relevant samples of accident/incident and occurrences to increase awareness of the occurrences that may be relevant for the intended operation;

(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.

[...]

(5) The operator should ensure that:

(i) applicable elements of CRM training, as specified in Table 1 of AMC1 ORO.FC.115, are integrated into all appropriate phases of the conversion training; and

(ii) the personnel integrating elements of CRM into conversion training are suitably qualified, as specified in ~~AMC3 ORO.FC.115~~ AMC2 ORO.FC.146.

[...]

(b) Ground training

(1) [...]

(2) The course of ground instruction should incorporate formal tests ~~on such matters as aircraft systems, performance and flight planning, where applicable~~.

(c) Emergency and safety equipment training and checking

[...]

(3) Operations where no cabin crew is required

(i) Passenger handling

Other than general training on dealing with people, emphasis should be placed on the following:

(A) advice on the recognition and management of passengers who appear or are intoxicated with alcohol, under the influence of drugs or aggressive;

(B) methods used to motivate passengers and the crowd control necessary to expedite an aircraft evacuation; and

(C) 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.

(ii) Discipline and responsibilities

Emphasis should be placed on discipline and an individual's responsibilities in relation to:

(A) his or her ongoing competence and fitness to operate as a crew member with special regard to flight and duty time limitation (FTL) requirements; and

(B) security procedures.

(iii) Passenger briefing/safety demonstrations

Training should be given in the preparation of passengers for normal and emergency situations.

(d) Flight training

(1) 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 operational suitability data in accordance with Commission Regulation (EU) No 748/2012, where they exist.

(2) In planning flight training on aircraft with a flight crew of two or more, particular emphasis should be placed on the practice of LOFT with emphasis on CRM, and the use of crew coordination procedures, including coping with incapacitation.

(3) 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.

(4) 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.

(e) Operator proficiency check

(1) For aeroplanes, the operator proficiency check that is part of the operator's conversion checking should follow the provisions in AMC1 ORO.FC.230. For EBT, the operator should include either an EBT module in accordance with ORO.FC.231 or an OPC in accordance with AMC1 ORO.FC.230.

(2) For helicopters, the operator proficiency check that is part of the operator's conversion checking should include at least the following emergency/abnormal procedures as relevant to the helicopter and operations:

(i) engine fire;

(ii) interior helicopter fire or smoke;

(iii) emergency operation of undercarriage;

(iv) hydraulic failure;

(v) electrical failure;

(vi) flight and engine control system malfunctions;

(vii) recovery from unusual attitudes;

(viii) landing with one or more engine(s) inoperative;

(ix) instrument meteorological conditions (IMC) autorotation techniques;

(x) autorotation to a designated area;

(xi) pilot incapacitation;

(xii) directional control failures and malfunctions; and

(xiii) engine failure and if relevant, relight;

and for multi-engined helicopters:

(xiv) engine failure during take-off before decision point;

(xv) engine failure during take-off after decision point;

(xvi) engine failure during landing before decision point; and

(xvii) engine failure during landing after decision point.

(3) For helicopter pilots required to engage in IFR operations, the proficiency check should include the following additional normal/abnormal/emergency procedures:

(i) 3D approach operation to minima;

(ii) go-around on instruments;

(iii) 2D approach operation to minima;

(iv) if relevant, at least one of the 3D or 2D approach operations should be an RNP APCH or RNP AR APCH operation;

(v) in the case of multi-engined helicopters, a simulated failure of one engine to be included in either the 3D or 2D approach operation to minima; and

(vi) where appropriate to the helicopter type, approach with flight control system/flight director system malfunctions, flight instrument and navigation equipment failures.

(4) For helicopters, the flight crew should be assessed on their CRM skills in accordance with the methodology described in AMC1 ORO.FC.115 and as specified in the operations manual.

(5) The use of FSTDs, composition of the flight crew, and the possible combinations with training or with the licence proficiency check should be defined as per AMC1 ORO.FC.230.

(~~e~~f) Line flying under supervision (LIFUS)

[...]

~~(f) 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.~~

~~(g) 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.~~

~~(h) 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.~~

AMC3 ORO.FC.220 Operator conversion training and checking

TRAINING PROGRAMMES

The operator should ensure that training programmes include the relevant de-identified feedback from the management system, including occurrence reporting and flight data monitoring programmes.

AMC1 ORO.FC.220(b) Operator conversion training and checking

ASSIGNMENT TO FLIGHTS DURING AN OPERATOR CONVERSION COURSE — HELICOPTERS

(a) A group of helicopter types should include either only single-engined turbine helicopters operated only under VFR or only single-engined piston helicopters operated only under VFR.

(b) The flight crew member should only be assigned to flights on a helicopter within the same group of helicopter types as the type used for the operator conversion training and checking.

(c) Once an operator conversion course has been commenced, the flight crew member should not start another operator conversion course on another helicopter type until that course is completed or terminated.

AMC1 ORO.FC.220(f) Operator conversion training and checking

SPECIFIC CONVERSION COURSE — SUITABLY QUALIFIED COMMANDER NOMINATED BY THE OPERATOR — PILOTS WHO TEMPORARILY JOIN THE OPERATOR AND WILL BE NOMINATED TO CONDUCT LINE CHECKS

(a) In some cases, operational circumstances may require the operator to develop a specific conversion course to nominate pilots as suitably qualified commanders to conduct line checks in accordance with the requirements of ORO.FC.146. In this case, the operator conversion training should include training as follows:

(1) normal procedures, which include flight planning and ground-handling and flight operations, including performance, mass and balance, fuel schemes, selection of alternates, and ground de-icing/anti-icing;

(2) abnormal and emergency procedures, which include pilot incapacitation as applicable.

(b) The operator should ensure that the line checker is familiar with:

(1) the operating procedures and the use of checklists used by the operator;

(2) the emergency and safety equipment installed or carried on the operated aircraft.

(c) After the completion of the specific conversion course, the following apply:

(1) The line checker should not exercise duties at the controls of the aircraft.

(2) The line checker should only conduct recurrent line checks of pilots whose previous line check has not expired, in accordance with ORO.FC.230.

(d) The validity of the specific conversion course should be limited to 6 months.

GM1 ORO.FC.220(f) Operator conversion training and checking

SPECIF CONVERSION COURSE TO BE USE TEMPORARILY FOR A LIMITED NUMBER OF PILOTS — NEW AOC OR ADDITION OF A NEW AIRCRAFT TYPE OR CLASS TO THE FLEET

For a new AOC or for the addition of a new aircraft type or class to the fleet, the operator may contact the competent authority to agree on a specific conversion course to be included in the operations manual (CAT requires approval in accordance with ORO.FC.145 point (c)) to be used temporarily for a limited number of pilots. The specific course may include an agreement on the minimum experience of the pilots, the required experience of the line supervisor and line checkers amongst others.

AMC1 ORO.FC.230 Recurrent training and checking

RECURRENT TRAINING AND CHECKING SYLLABUS

(a) Recurrent training

Recurrent training should comprise the following:

(1) Ground training

(i) The ground training programme should include:

(A) aircraft systems;

~~(B) operational procedures and requirements, including ground de-icing/anti-icing and pilot incapacitation; and~~

(B) normal procedures, which include flight planning and ground-handling and flight operations, including performance, mass and balance, fuel schemes, selection of alternates, and ground de-icing/anti-icing;

(C) abnormal and emergency procedures, which include pilot incapacitation as applicable;

(D)~~(C)~~ ~~accident/incident and occurrence review~~ a review of relevant samples of accident/incident and occurrences to increase awareness of the occurrences that may be relevant for the intended operation.

(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.~~

[...]

(4) Aircraft/FSTD training

(i) General

(A) 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~~ trained in the preceding 3-year period.

(B) When engine-out manoeuvres are carried out in an aircraft, the engine failure should be simulated.

(C) ~~Aircraft/FSTD training may be combined with the operator proficiency check.~~ The recurrent aircraft/FSTD training of a single task or manoeuvre should be separate from, and should not take place at the same time as, an operator proficiency check of the item.

~~(D) 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.~~

(ii) 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.~~

If the operator is able to demonstrate, on the basis of a compliance and risk assessment, that alternating the use of an FSTD with the use of 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 (alternating with the use of an FSTD) for this training to the extent necessary.

(B) Where a suitable FSTD is available and accessible, it should be used to complete the following additional items: ~~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.

(5) [...]

(b) Recurrent checking

Recurrent checking should comprise the following:

(1) Operator proficiency checks

(i) Aeroplanes

~~Where applicable, operator~~ Operator proficiency checks should take place as part of the normal crew complement and should include, where applicable, the following manoeuvres as pilot flying:

[...]

(C) 3D approach operation to minima with, in the case of multi-engined aeroplanes, one-engine-inoperative;

[...]

(G) landing with one-engine-inoperative. For single-engined aeroplanes, a practice forced landing is required.

(ii) Helicopters

(A) ~~Where applicable, operator proficiency checks should include the following abnormal/emergency procedures:~~

- ~~engine fire;~~
- ~~fuselage fire;~~
- ~~emergency operation of under carriage;~~
- ~~fuel dumping;~~
- ~~engine failure and relight;~~
- ~~hydraulic failure;~~
- ~~electrical failure;~~
- ~~engine failure during take-off before decision point;~~
- ~~engine failure during take-off after decision point;~~
- ~~engine failure during landing before decision point;~~
- ~~engine failure during landing after decision point;~~
- ~~flight and engine control system malfunctions;~~
- ~~recovery from unusual attitudes;~~
- ~~landing with one or more engine(s) inoperative;~~
- ~~instrument meteorological conditions (IMC) autorotation techniques;~~
- ~~autorotation to a designated area;~~
- ~~pilot incapacitation;~~
- ~~directional control failures and malfunctions.~~

The aircraft/FSTD checking programme should be established in a way that all major failures of aircraft systems and associated procedures will have been checked in the preceding 3-year period.

The operator should define which failures are major for the purpose of the operator proficiency check based on a risk assessment, taking the following into account:

(a) cautions or warnings associated with the failure;

(b) the criticality of the situation or failure;

(c) the outcome of the procedure (land immediately or as soon as possible as opposed to land as soon as practical);

(d) when available, manufacturer documentation; and

(e) the list of abnormal/emergency procedures described in point (e)(1) of AMC1 ORO.FC.220.

In addition, for single-engined helicopters, each operator proficiency check should include at least the following procedures:

(f) engine failure;

(g) directional control failures and malfunctions; and

(h) hydraulic failure as applicable.

(B) When a group of single-engine turbine or single-engine piston helicopter types is defined for the purpose of extending the validity of the operator proficiency check, all major system failures should nevertheless be checked on every type within a 3-year cycle unless credits related to the training, checking and recent experience requirements are defined in the operational suitability data established in accordance with Commission Regulation (EU) No 748/2012 for the relevant types or variants.

(~~B~~C) For pilots required to engage in IFR operations, proficiency checks include the following additional normal/abnormal/emergency procedures:

— 3D approach operation to minima;

— go-around on instruments ~~from minima with, in the case of multi-engined helicopters, a simulated failure of one engine~~;

— 2D approach operation to minima;

— if relevant, at least one of the 3D or 2D approach operations should be an RNP APCH or RNP AR APCH operation;

— in the case of multi-engined helicopters, a simulated failure of one engine to be included in either the 3D or 2D approach operation to minima;

— ~~landing with a simulated failure of one or more engines;~~

— where appropriate to the helicopter type, approach with flight control system/flight director system malfunctions, flight instrument and navigation equipment failures.

(~~C~~D) Before a flight crew member without a valid instrument rating is allowed to operate in VMC at night, ~~he/she~~ they should be required to undergo a proficiency check at night. Thereafter, each second proficiency check should be conducted at night.

(E) Operator proficiency checks should be conducted with two qualified pilots in multi-pilot operations, and one qualified pilot in single-pilot operations. A pilot flying both single-pilot and multi-pilot operations should be checked in multi-pilot conditions with the essential malfunctions or manoeuvres below being also checked in the single-pilot role:

(a) at least two abnormal or emergency manoeuvres relevant to the type based on a risk assessment;

(b) one instrument approach for IFR operations.

(F) The flight crew should be assessed on their CRM skills in accordance with the methodology described in AMC1 and AMC2 ORO.FC.115 and as specified in the operations manual.

(G) If the operator is able to demonstrate, on the basis of a compliance and risk assessment, that alternating the use of an FSTD with the use of an aircraft for this training provides equivalent standards of checking with safety levels similar to those achieved using an FSTD, the aircraft may be used (alternating with the use of an FSTD) for this checking to the extent necessary.

(iii) ~~Once every 12 months the~~ The checks prescribed in (b)(1) ~~(ii)(A)~~ may be combined with the skill test or proficiency check ~~for~~ required for the issue, the revalidation or renewal of the ~~ATPL and~~ aircraft type rating and with the skill test required for the issue of the ATPL licence.

~~(iv) Operator proficiency checks should be conducted by a type rating examiner (TRE) or a synthetic flight examiner (SFE), as applicable.~~

(2) Emergency and safety equipment checks

[...]

(3) Line checks

(i) A 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~~ their ability to 'manage' the operation and take appropriate command decisions.

[...]

(v) A line check ~~Line checks~~ should be conducted by a commander nominated by the operator. The operator should maintain a list of nominated commanders and 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.~~

(A) For aeroplanes, in the case of long-haul operations where additional operating flight crew are carried, the person conducting the line check 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.

(B) If an observer's seat is not installed but a forward-facing passenger seat allows a good view and sound of the cockpit and the crew, this seat should be used as an observer's seat.

(C) If an observer's seat is not available and cannot be installed, the commander nominated by the operator should occupy a pilot seat to conduct the line check.

(vi) CRM assessment during the line check

(A) The CRM assessment taking place during the line check should be solely based on observations made during the initial briefing, cabin briefing, flight crew compartment briefing and those phases where the line checker occupies the observer's seat.

(B) If an observer's seat is not available and cannot be installed, then the operator should define the best way to assess CRM taking into account the CRM principles above.

(vii) Complementary CRM assessment

If a suitable FSTD is available and accessible for operator proficiency checks or FSTD training, then a CRM assessment should take place in a line-oriented flight scenario (LOFT or line-oriented section of the OPC) of an FSTD session. This assessment complements the CRM assessment taking place during the line check, but is not part of the line check.

(viii) Where a pilot is required to operate as pilot flying and pilot monitoring, they ~~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~~.

(4) ~~When the operator proficiency check, line check or emergency and safety equipment check are undertaken within the final 3 calendar months of validity of a previous check, the period of validity of the subsequent check should be counted from the expiry date of the previous check.~~

~~(5)~~ In the case of single-pilot operations ~~with helicopters~~, the recurrent checks referred to in (b)(1)~~, (2)~~ and (3) should be performed in the single-pilot role ~~on a particular helicopter type~~ in an environment representative of the operation.

(c) [...]

~~(d) Personnel providing training and checking~~

~~Training and checking should be provided by the following personnel:~~

~~(1) ground and refresher training by suitably qualified personnel;~~

~~(2) flight training 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 items specified in paragraphs (a)(1)(i)(A) and (B);~~

~~(3) emergency and safety equipment training by suitably qualified personnel;~~

~~(4) CRM:~~

~~(i) integration of CRM elements into all the phases of the recurrent training by all the personnel conducting recurrent training. The operator should ensure that all personnel conducting recurrent training are suitably qualified to integrate elements of CRM into this training;~~

~~(ii) classroom CRM training by at least one CRM trainer, qualified as specified in AMC3 ORO.FC.115 who may be assisted by experts in order to address specific areas.~~

~~(5) recurrent checking by the following personnel:~~

~~(i) operator proficiency check 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.~~

~~(ii) emergency and safety equipment checking by suitably qualified personnel.~~

(~~e~~d) Use of FSTD

(1) Training and checking provide an opportunity to ~~practice~~ practise 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~~ when available and accessible.

[...]

AMC3 ORO.FC.230 Recurrent training and checking

TRAINING PROGRAMMES

The operator should ensure that training programmes include the relevant de-identified feedback from the management system, including occurrence reporting and flight data monitoring programmes.

GM1 ORO.FC.230 Recurrent training and checking

LINE CHECK AND PROFICIENCY TRAINING AND CHECKING

[...]

(b) The line check is considered a particularly important factor in the development, maintenance and refinement of high operating standards, and can provide the operator with a valuable indication of the usefulness of ~~his/her~~ its training policy and methods. Line checks are a test of a flight crew member's ability to perform a complete line operation, including pre-flight and post-flight procedures and use of the equipment provided, and an opportunity for an overall assessment of ~~his/her~~ their ability to perform the duties required as specified in the operations manual. The line check is not intended to determine knowledge on any particular route.

(c) [...]

MAJOR FAILURES — HELICOPTERS

(d) The list of major failures as defined by the operator in AMC1 ORO.FC.230 for the purpose of training may be more extensive than the list covered in the 3-yearly operator proficiency checking programme for the following reasons:

(1) It may happen that several training elements are covered by a single check; and

(2) Certain complex system malfunctions are best explored under recurrent training, where the trainee will derive more benefit and training to proficiency is also employed.

GM3 ORO.FC.231(a) Evidence-based training

CUSTOMISATION OF THE EBT PROGRAMME (SYLLABI)

(a) Syllabi can be customised at three different steps:

(1) The first step would be a syllabus for the whole pilots' population (customisation only at type rating level and/or aircraft generation level). At this step, the operator customises the example scenario elements based on relevant operational data (safety management system, state safety plan, OSD, occurrences, manufacturer data, etc.), and the training topics within the module are the same (same syllabus). At this level, it may be necessary to have a different example scenario element for the different crews within the same module to ensure that pilots are exposed to surprise and unexpected events and thus avoid pilots knowing all the details of the simulator session beforehand.

(2) The second step would be a different syllabus or part of it for the different populations of pilots. For example, some parts of the syllabus are different for the ~~first officers~~ co-

pilot and the captain, or the syllabus is different for the B747 pilots or for the Airbus pilots, etc. At this step, the module or part of the module is different for each population; this may include a different example scenario element for each population (or a different training topic; however, the customisation at training topic level is more difficult to control).

(3) The third step would be syllabi tailored to the individual pilot (pilot customisation — individual syllabus). This step is linked to the procedures established for the tailored training and the additional training of the pilots following the VENN model.

(b) The procedure to describe the customisation of syllabi must be described in the OM. Customisation is based on evidence that can be gathered on three different levels, two from the inner loop, one from the outer loop.

(1) Inner loop

(i) Individual evidence based on training data (e.g. grading metrics, training reports, questionnaires, etc.), analysed either for an individual pilot or a group of pilots (for example, all ~~first officers~~ co-pilots, all B747 pilots, all pilots flying an Airbus model, etc.).

(ii) Operator-specific evidence gathered through the safety management process in accordance with ORO.GEN.200.

(2) Outer loop

Evidence gathered from external sources such as authorities (e.g. state safety plan, etc.), OEMs (e.g. OEBs, OSD, safety documentation such as getting to grip, etc.

GM3 ORO.FC.231(a)(2) Evidence-based training

EBT PROGRAMME —ORDER OF THE PHASES

The order of the phases is intended as follows:

(a)~~(2)~~ First, the EVAL; and

(b)~~(3)~~ Second, and in a timely manner after the EVAL, the training phases. The training phases are the MT and the SBT and may be delivered in any order.

Further guidance can be found in the EASA EBT manual.

GM1 ORO.FC.231(a)(5) Evidence-based training

CONTINGENCY PROCEDURES — RATINGS RENEWAL

[...]

(b) In case of an expiry longer than 1 year, the requirements of Part-FCL will be followed and the proficiency checks will be performed in accordance with Appendix 9 as the EBT system may not have sufficient training data for the pilot.

~~(1)~~ Expiry longer than 1 year but shorter than 3 years: a minimum of three training sessions in which the most important malfunctions in the available system are covered plus a proficiency check in accordance with Appendix 9 to renew the licence.

~~(2) Expiry longer than 3 years: the pilot should undergo the training for the initial issue of the type rating.~~

~~(3) Expiry longer than 7 years: the pilot should undergo the training for the initial issue of the instrument rating.~~

AMC1 ORO.FC.231(c) Evidence-based training

(a) [...]

(b) [...]

(c) The following defined metrics should be collected as a minimum:

(1) [...]

(2) [...]

(3) [...]

(4) level 3 grading metrics (other metrics): the instructors may record other ~~predetermined~~ data (e.g. abstract, specific tasks, actions, questions, etc.).

AMC4 ORO.FC.231(d)(1) Evidence-based training

(a) [...]

(b) Grades should be determined during each EBT module as follows:

(1) EVAL — overall performance of the phase for each competency at level 1 grading metrics.

(2) MT — overall performance of the phase at level 0 grading metrics. When the phase is graded 'not competent', it requires level 2 grading metrics.

Note: Only a limited number of competencies may be observed and graded in this phase (e.g. PRO, FPA, FPM); the others are 'to be left in blank'.

(3) SBT — overall performance of the phase for each competency at level 1 grading metrics. Unless just culture and the necessary non-jeopardy environment during training may be compromised. In that case, level 0 grading metrics.

Note: In-seat instruction (ISI) should not be included in any assessment.

[...]

GM1 ORO.FC.231(d)(1) Evidence-based training

RECOMMENDED CONDUCT OF THE GRADING — ORCA

(a) At the end of the EVAL, after the facilitated de-briefing, the instructor may, as a minimum, record level 1 grading metrics.

(b) The instructor may conduct the simulator session of the EVAL following the principles of a summative assessment and the facilitated de-briefing following the principles of a formative assessment. The MT and SBT simulator sessions may be conducted as a formative assessment.

(c) At the end of each training phase, it is recommended to record level 1 grading metrics unless just culture and the necessary non-jeopardy environment during training may be compromised. In that case, the following alternative may be recommended: level 0 grading metrics for all competencies may be recorded (exceptionally 'not observed' or 'left in blank' may be recorded) and de-identified level 1 grading metrics may be recorded for the data collection and analysis purposes.

(d) A simple practice to classify the observations recorded during the simulator session is to classify the OB as positive, negative, neutral.

GM2 ORO.FC.231(d)(1) Evidence-based training

RECOMMENDED GRADING SYSTEM METHODOLOGY — VENN MODEL

(a) Grades may be determined during each EBT module as follows:

(1) For each assigned grade:

(i) the observed performance should be identified with one or more OBs; and

(ii) the OB(s) should simply link the observed performance to the competency; they are not to be used as a checklist.

(2) At the completion of the EVAL, the grade should be ~~assigned for each competency, based on~~ the overall assessment of the performance of each competency during the EVAL. Although it is not recommended, if the instructor performs an overall grade (additional to level 1), it should be at level 0 grading metric (competent or not).

(3) The underlying philosophy of the individual tailored training and additional FSTD training is the identification of the pilot's individual training needs during the EVAL or EVALs. However, there may be cases in which such an identification may be complemented using other phases or combination of phases along the EBT programme. Nevertheless, when this happens consistently to a large number of pilots, it may indicate a problem of instructor standardisation.

(4) At the completion of the MT, only a limited number of competencies can be graded. The others are to be left in blank. Note: The grade of a competency as 'not observed' is a relevant set of data to be used in the EBT programme (e.g. may be used for instructor concordance assurance programme, programme design, etc.), while 'competency left in blank' is stating the obvious, which is that MT is a skill retention phase and therefore it

focuses on only some of the competencies which may provide NO opportunity to observe all the competencies.

(5) At the completion of the module, grades should be assigned for each competency, based on the overall assessment of training during the SBT.

(6) In exceptional occasions, the instructor may have been unable to assess one or two competencies in the EVAL or SBT. A 'not observed' may be graded. The training system performance and concordance assurance system may use these metrics to improve instructors' standardisation and the EBT programme design. When the operator grades the MT alone (instead of grading the MT and EVAL together), a 'not observed' grading may be frequent. It also occurs when the instructor grades each one of the manoeuvres.

(b) The word pictures are standardised according to the VENN model but may be simplified once instructors become familiar with the system.

Word picture VENN model	
Application of procedures (PRO)	
5	The pilot applied procedures in an exemplary manner, by always demonstrating almost all of the observable behaviours to a high standard when required, which enhanced safety, effectiveness and efficiency
4	The pilot applied procedures effectively, by regularly demonstrating most of the observable behaviours when required, which resulted in a safe operation
3	The pilot applied procedures adequately, by regularly demonstrating many of the observable behaviours when required, which resulted in a safe operation
2	The pilot applied procedures at the minimum acceptable level, by only occasionally demonstrating some of the observable behaviours when required, but which did not result in an unsafe situation
1	The pilot applied procedures ineffectively ~~incorrectly~~, by rarely demonstrating any of the observable behaviours when required, which resulted in an unsafe situation

[...]

AMC1 ORO.FC.231(d)(2) Evidence-based training

VERIFICATION OF THE ACCURACY OF THE GRADING SYSTEM

(a) [...]

(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 (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.

(c) [...]

AMC2 ORO.FC.232 EBT programme assessment and training topics

GENERATION 4 (JET) — TABLE OF ASSESSMENT AND TRAINING TOPICS

[...]

	Assessment and training topic	*Frequency*	*Description (includes type of topic, being threat, error or focus)*	*Desired outcome* *(includes performance criteria OR training outcome)*	*Flight phase*	*Guidance material (GM)* *Example scenario elements*	*PRO*	*COM*	*FPA*	*FPM*	*LTW*	*PSD*	*SAW*	*WLM*	*KNO*
Generation 4 Jet — Recurrent assessment and training matrix							*Competency map*								
Section 1 — Skill retention. Manoeuvres training phase (MT)															
MT	Rejected take-off	B	~~Engine failure~~ Rejected take-off after the application of take-off thrust and before reaching V1 (CAT I or above)	Demonstrate manual aircraft control skills with smoothness and accuracy as appropriate to the situation. Detect deviations through instrument scanning. Maintain spare mental capacity during manual aircraft control. Maintain the aircraft within the flight envelope. Apply knowledge of the relationship between aircraft attitude, speed and thrust.	TO	From initiation of take-off to complete stop (or as applicable to the procedure)	x			x					
MT	[...]	[...]	[...]		[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
MT	Emergency descent	C	Initiation of emergency descent from normal cruise altitude		CRZ	The manoeuvre is complete once the aircraft is stabilised in emergency descent configuration (and profile). However, if the EBT programme does not include the example scenario element 'emergency descent' in the training topic 'automation management', the emergency descent procedures should be completed and should not stop once the aircraft is stabilised in emergency descent configuration.	x		x	x					

[...]

EVAL or SBT	Automation management	A	CLB CRZ DES APP	The purpose of this topic is to encourage and develop effective flight path management through proficient and appropriate use of the flight management system(s), guidance and automation, including transitions between modes,	Know how and when to use the flight management system(s), guidance and automation.	ACAS warning (resolution advisory), recovery and subsequent engagement of automation	x		x						
			ALL		Demonstrate correct methods for engagement and disengagement of the auto flight system(s).	FMS tactical programming issues, e.g. step climb, runway changes, late clearances, destination re-programming, executing diversion	x		x						X

			CLB CRZ DES APP	monitoring, mode awareness, vigilance and flexibility needed to change from one mode to another. The means of mitigating errors are included in this topic. The errors are described as mishandled auto flight systems, inappropriate mode selection, mishandled flight management system(s) and inappropriate autopilot usage.	Demonstrate appropriate use of flight guidance, auto thrust and other automation systems. Maintain mode awareness of the auto flight system(s), including engagement and automatic transitions. Revert to different modes when appropriate. Detect deviations from the desired aircraft state (flight path, speed, attitude, thrust, etc.) and take appropriate action. Anticipate mishandled auto flight system. Recognise mishandled auto flight system. Take appropriate action if necessary. Restore correct auto flight state. Identify and manage consequences.	Recoveries from terrain avoidance warning systems (TAWS), management of energy state to restore automated flight	x		x	x					
			CLB CRZ DES APP			Amendments to ATC cleared levels during altitude capture modes to force mode awareness and intervention.	x		x				x		
						ACAS warning (resolution advisory to level off) during climb or descent; for example, close to the cleared level when the capture mode has already been activated.	x		x				x		
			TO			Late ATC clearance to an altitude below acceleration altitude	x		x				x		
			TO APP			Engine-out special terrain procedures	x		x				x		
			CRZ			Forcing autopilot disconnect followed by re-engagement, recovery from low- or high-speed events in cruise	x		x	x			x		
			CLB			Engine failure during or after initial climb using automation	x		x						
			CRZ			Engine failure in cruise to onset of descent using automation	x		x						
			CRZ			Emergency descent	x		x						X
			DES APP			Managing high-energy descent capturing descent path from above (correlation with unstable approach training)	x		x				x		X
			APP			No ATC clearance received prior to commencement of approach or final descent	x		x				x		
			APP			Reactive wind shear and recovery from the consequent high-energy state	x		x				x		
			APP			Automation fail to capture the approach altitude in descent (e.g. last altitude before the FAP). Ideally, the failure occurs when the workload is high (e.g. configuration of the aircraft for final approach).					x	x	x	x	
			APP			Non-precision or infrequently flown approaches using the maximum available level of automation	x		x						X
			APP			Gear malfunction during an approach planned with autoland (including autobrake). Competency FPA may or may not be included depending on the impact of such malfunction on the automation.		x	x			x		x	
			APP			ATC clearances to waypoints beyond the programmed descent point for a coded final descent point during an approach utilising a final descent that is commanded by the flight management system	x		x				x		X

[...]

EVAL or SBT	Competencies —non-technical (CRM)	A	APP	This encapsulates the general CRM principles and objectives. It includes communication; leadership and teamwork; problem-solving and decision-making; situation awareness and management of information; and workload management. Emphasis should be placed on the development of leadership, shown by EBT data sources to be a highly effective competency in mitigating risk and improving safety through pilot performance.	Exposure to an event or sequence of events to allow the pilot to build awareness of human factors in aviation and the human limitations. This includes the development of the following competencies: <u>Communication:</u> Demonstrate: — effective use of language; — responsiveness to feedback; and — capability to state the plans and resolve ambiguities. <u>Leadership and teamwork:</u> Use appropriate authority to ensure focus on the task. Support others in completing tasks. <u>Problem-solving and decision-making:</u> Detect deviations from the desired state, evaluate problems, identify the risk, consider alternatives and select the best course of action. Continuously review progress and adjust plans. <u>Situation awareness and management of information:</u> Have an awareness of the aircraft state in its environment; project and anticipate changes. <u>Workload management:</u> Prioritise, delegate and receive assistance to maximise focus on the task. Continuously monitor the flight progress.	GPS failure prior to commencement of approach associated with position drift and a terrain alert					x	x	x		X
			DES			Cabin crew report of water noise below the forward galley indicating a possible toilet pipe leak, with consequent avionics failures					x	x	x		
			CRZ			Smoke removal but combined with a diversion until landing is completed.		x			x	x	x	x	X
			GND			Apron fuel spilling					x	x		x	
			CRZ			Important water leak in an aircraft galley		x			x	x		x	
			ALL			A relevant number of cabin crew are wounded or incapacitated. Additionally, the cabin crew wounded or incapacitated are the most competent (e.g. senior cabin crew member).					x	x		x	
			ALL			Unruly passenger(s)					x			x	
			GND			Passenger oxygen: passenger service unit open and mask falling down					x	x		x	
			ALL			Passenger with medical problems — medical emergency					x			x	
			CRZ			Credible threat reported to the crew. Stowaway or fugitive on board.		x			x		x	x	
			GND			No METAR or TAFOR is available for destination due to industrial action at the destination airport.	x	x			x	x			
			CRZ			Credible bomb threat reported to crew		x			x		x	x	
			CLB DES			Credible bomb threat or pressurisation problem, but no quick landing possible (due to weather, terrain or other reasons)		x			x	x		x	
			APP			Diversion with low remaining fuel or increased fuel flow due to system malfunction	x				x		x	x	
			APP			ACAS warning (resolution advisory) immediately following a go-around, with a descent manoeuvre required. (The RA should be a command for descent when the aircraft is above 1 100 ft AGL.)		x			x	x	x	X	

[...]

EVAL or SBT	Manual aircraft control	A	CLB CRZ DES APP	Controls the flight path through manual control	Demonstrate manual aircraft control skills with smoothness and accuracy as appropriate to the situation. Detect deviations through instrument scanning. Maintain spare mental capacity during manual aircraft control. Maintain the aircraft within the normal flight envelope. Apply knowledge of the relationship between aircraft attitude, speed and thrust.	Flight with unreliable airspeed, which may or may not be recoverable	x			x			x		X
			CLB CRZ DES APP			Alternate flight control modes according to malfunction characteristics	x			x				x	X
			CLB CRZ DES APP			ACAS warning (resolution advisory)~~A~~ requires the pilot to descend or ATC calls for immediate descent (preferably during climb which requires a significant change in aircraft attitude).	x	x		x					
						ACAS warning (resolution advisory) requires the pilot to climb or ATC calls for immediate climb (preferably during descent which requires a significant change in aircraft attitude).	x	x		x					
			DES			TAWS warning when deviating from planned descent routing, requiring immediate response	x			x	x				
			TO			Scenario immediately after take-off which requires an immediate and overweight landing			x	x	x	x			
			TO			Adverse wind, crosswinds with or without strong gusts on take-off	x			x					
EVAL or SBT			TO			Adverse weather, wind shear, wind shear encounter during take-off, with or without reactive warnings	x			x			x		
			TO			Engine failure during initial climb, typically 30-60 m (100-200 ft) (autopilot off)	x	x		x				x	
			CRZ			Wind shear encounter scenario during cruise, significant and rapid change in wind speed or down/updrafts, without wind shear warning	x		x			x	x	x	
			APP			Adverse weather, wind shear, wind shear encounter with or without warning during approach	x		x	x			x		
			APP			Adverse weather, deterioration in visibility or cloud base, or adverse wind, requiring a go-around from visual circling approach, during the visual segment	x	x	x	x		x	x	x	
			APP			Interception of the glide slope from above (correlation with unstable approach training)			x				x	x	
			APP LDG			Adverse wind, crosswinds with or without strong gusts on approach, final approach and landing (within and beyond limits)	x			x		x			
			APP LDG			Adverse weather, adverse wind, approach and landing in demanding weather conditions, e.g. turbulence, up and downdrafts, gusts and crosswinds including shifting wind directions				x		x	x		
			APP LDG			Circling approach manually flown at night in minimum in-flight visibility to ensure ground reference, minimum environmental lighting and no glide slope guidance lights	X			X			X	X	
			APP LDG			Runway incursion during approach, which can be triggered by ATC at various altitudes or by visual contact during the landing phase	x			x			x		

			LDG			Adverse wind, visibility, type-specific, special consideration for long-bodied aircraft, landing in minimum visibility for visual reference, with crosswind	x	x		x			x		
			LDG			System malfunction, auto flight failure at DA during a low-visibility approach requiring a go-around flown manually	x		x	x			x		
			APP LDG			Approach planned with autoland, followed by a failure below 1 000 ft requiring a manual go-around and an immediate landing due to fuel shortage	x		x		x		x		
			TO			In-seat instruction: Insufficient engine failure recovery, forcing the pilot monitoring to take over the flight controls		x		x			x	x	
			APP LDG			In-seat instruction: Unstable approach on short final or long landing, forcing the pilot monitoring to take over the flight controls		x		x			x	x	

[...]

Section 5 — UPRT training topic with frequency (B). Evaluation phase, manoeuvres training phase or scenario-based training phase (EVAL, MT or SBT)																	
EVAL, MT or SBT	Upset prevention training	B	N/A	Compliance with AMC1 or AMC2 to ORO.FC.220&230 Include upset prevention elements in Table 1 for the recurrent training programme in at least every cycle, such that all the elements are covered over a period not exceeding 3 years. The elements are numbered with letters from A to I in Table 1 of AMC1 ORO.FC.220&230. Each element is made up of several numbered components. According to the principles of EBT, covering one component should satisfy the requirement to cover the whole element of recognising and preventing the development of upset conditions.	Early recognition and prevention of upset conditions. When the differences between LHS and RHS are not significant in the handling of the aircraft, UPRT may be conducted in either seat.	See Table 1 of AMC1 ORO.FC.220&230: Elements and respective components of upset prevention training.	Intentionally blank								
			CRZ			Demonstration of the defined normal flight envelope and any associated changes in flight instruments, flight director systems, and protection systems. This should take the form of an instructor-led exercise to show the crew the points beyond which an upset condition could exist.			X					x	x
			TO APP			Severe wind shear or wake turbulence during take-off or approach			x	x		x	x		
			CRZ			As applicable and relevant to the aircraft type, demonstration at a suitable intermediate level, with turbulence as appropriate; practise steep turns and note the relationship between bank angle, pitch and stalling speed.				X			x		x
			CRZ			At the maximum cruise flight level for the current aircraft weight, turbulence to trigger overspeed conditions (if FSTD capability exists, consider use of the vertical wind component to add realism).	X		x	x			x		
			CRZ			At the maximum cruise flight level for the current aircraft weight, turbulence and significant temperature rise to trigger low-speed conditions (if FSTD capability exists, consider use of the vertical wind component to add realism).			X	x			x		X
			CRZ			High-altitude ~~T~~ACAS RA (where the RA is required to be flown in manual flight)	x			x			x	x	

[...]

EVAL or SBT	Traffic	C	CLB CRZ DES	Traffic conflict. ACAS RA or TA, or visual observation of conflict, which requires evasive manoeuvring	Anticipate potential loss of separation. Recognise loss of separation. Take appropriate action. Apply the appropriate procedure correctly. Maintain aircraft control. Manage consequences.	ACAS warning that requires crew intervention		x				x	x	x	
						Dilemma: Visual acquisition of conflicting traffic followed by an ACAS warning (resolution advisory) triggered by the same or other traffic. Even if the traffic is in sight, the pilot should follow the RA.	x		x	x				
						While in descent, ACAS warning (traffic advisory) of an aircraft below. The crew should not initiate an avoidance manoeuvre based on TA (except decreasing the rate of descent unless otherwise instructed by ATC, etc.). This example scenario can be done during climb with conflicting traffic above.	x				x	x			

[...]

AMC3 ORO.FC.232 EBT programme assessment and training topics

GENERATION 3 (JET) — TABLE OF ASSESSMENT AND TRAINING TOPICS

[...]

Assessment and training topic	*Frequency*	*Description (includes type of topic, being threat, error or focus)*	*Desired outcome* *(includes performance criteria OR training outcome)*	*Flight phase*	*Guidance material (GM)* *Example scenario elements*	*PRO*	*COM*	*FPA*	*FPM*	*LTW*	*PSD*	*SAW*	*WLM*	*KNO*
Generation 3 Jet — Recurrent assessment and training matrix						*Competency map*								
Section 1 — Skill retention. Manoeuvres training phase (MT)														
MT Rejected take-off	B	~~Engine failure~~ Rejected take-off after the application of take-off thrust and before reaching V1 (CAT I or above)	Demonstrate manual aircraft control skills with smoothness and accuracy as appropriate to the situation.	TO	From initiation of take-off to complete stop (or as applicable to the procedure)	x			x					

Assessment and training topic	*Frequency*	*Description (includes type of topic, being threat, error or focus)*	*Desired outcome* *(includes performance criteria OR training outcome)*	*Flight phase*	*Guidance material (GM)* *Example scenario elements*	*PRO*	*COM*	*FPA*	*FPM*	*LTW*	*PSD*	*SAW*	*WLM*	*KNO*
Generation 3 Jet — Recurrent assessment and training matrix						*Competency map*								
[...]	[...]	[...]	Detect deviations through instrument scanning. Maintain spare mental capacity during manual aircraft control. Maintain the aircraft within the flight envelope. Apply knowledge of the relationship between aircraft attitude, speed and thrust.	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
Emergency descent	C	Initiation of emergency descent from normal cruise altitude		CRZ	The manoeuvre is complete once the aircraft is stabilised in emergency descent configuration (and profile). However, if the EBT programme does not include the example scenario element 'emergency descent' in the training topic 'automation management', the emergency descent procedures should be completed and should not stop once the aircraft is stabilised in emergency descent configuration.	x		x	x					

[...]

EVAL or SBT	Automation management	A	CLB CRZ DES APP	The purpose of this topic is to encourage and develop effective flight path management through proficient and appropriate use of the flight management system(s), guidance and automation, including transitions between modes, monitoring, mode awareness, vigilance and flexibility needed to change from one mode to another. The means of mitigating errors are included in this topic. The errors are described as mishandled auto flight systems, inappropriate mode selection, mishandled flight management system(s) and inappropriate autopilot usage.	Know how and when to use the flight management system(s), guidance and automation. Demonstrate correct methods for engagement and disengagement of the auto flight system(s). Demonstrate appropriate use of flight guidance, auto thrust and other automation systems. Maintain mode awareness of the auto flight system(s), including engagement and automatic transitions. Revert to different modes when appropriate. Detect deviations from the desired aircraft state (flight path, speed, attitude, thrust, etc.) and take appropriate action.	ACAS warning (resolution advisory), recovery and subsequent engagement of automation	x		x						
			ALL			FMS tactical programming issues, e.g. step climb, runway changes, late clearances, destination re-programming, executing diversion	x		x						X
			CLB CRZ DES APP			Recoveries from terrain avoidance warning systems (TAWS), management of energy state to restore automated flight	x		x	x					
			CLB CRZ DES APP			Amendments to ATC cleared levels during altitude capture modes to force mode awareness and intervention.	x		x				x		
						ACAS warning (resolution advisory to level off) during climb or descent; for example, close to the cleared level when the capture mode has already been activated.	x		x				x		
			TO			Late ATC clearance to an altitude below acceleration altitude	x		x				x		
			TO APP			Engine-out special terrain procedures	x		x				x		
			CRZ			Forcing autopilot disconnect followed by re-engagement, recovery from low- or high-speed events in cruise	x		x	x			x		

			CLB		Anticipate mishandled auto flight system. Recognise mishandled auto flight system. Take appropriate action if necessary. Restore correct auto flight state. Identify and manage consequences.	Engine failure during or after initial climb using automation	x		x					
			CRZ			Engine failure in cruise to onset of descent using automation	x		x					
			CRZ			Emergency descent	x		x					X
			DES APP			Managing high-energy descent capturing descent path from above (correlation with unstable approach training)	x		x			x		X
			APP			No ATC clearance received prior to commencement of approach or final descent	x		x			x		
			APP			Reactive wind shear and recovery from the consequent high-energy state	x		x			x		
			APP			Automation fail to capture the approach altitude in descent (e.g. last altitude before the FAP). Ideally, the failure occurs when the workload is high (e.g. configuration of the aircraft for final approach).					x	x	x	
			APP			Non-precision or infrequently flown approaches using the maximum available level of automation	x		x					X
			APP			Gear malfunction during an approach planned with autoland (including autobrake). Competency FPA may or may not be included depending on the impact of such malfunction on the automation.		x	x			x	x	
			APP			ATC clearances to waypoints beyond the programmed descent point for a coded final descent point during an approach utilising a final descent that is commanded by the flight management system	x		x			x		X

[...]

EVAL or SBT	Competencies —non-technical (CRM)	A	APP	This encapsulates the general CRM principles and objectives. It includes communication; leadership and teamwork; problem-solving and decision-making; situation awareness and management of information; and workload management. Emphasis should be placed on the development of leadership, shown by EBT data sources to be a highly effective competency in mitigating risk and improving safety through pilot performance.	Exposure to an event or sequence of events to allow the pilot to build awareness of human factors in aviation and the human limitations. This includes the development of the following competencies: <u>Communication:</u> Demonstrate: — effective use of language; — responsiveness to feedback; and	GPS failure prior to commencement of approach associated with position drift and a terrain alert					x	x	x		X
			DES			Cabin crew report of water noise below the forward galley indicating a possible toilet pipe leak, with consequent avionics failures					x	x	x		
			CRZ			Smoke removal but combined with a diversion until landing is completed.		x			x	x	x	x	X
			GND			Apron fuel spilling					x	x		x	
			CRZ			Important water leak in an aircraft galley		x			x	x		x	
			ALL			A relevant number of cabin crew are wounded or incapacitated. Additionally, the cabin crew wounded or incapacitated are the most competent (e.g. senior cabin crew member).					x	x		x	
			ALL			Unruly passenger(s)					x			x	

			GND		— capability to state the plans and resolve ambiguities. <u>Leadership and teamwork:</u> Use appropriate authority to ensure focus on the task. Support others in completing tasks. <u>Problem-solving and decision-making:</u> Detect deviations from the desired state, evaluate problems, identify the risk, consider alternatives and select the best course of action. Continuously review progress and adjust plans. <u>Situation awareness and management of information:</u> Have an awareness of the aircraft state in its environment; project and anticipate changes. <u>Workload management:</u> Prioritise, delegate and receive assistance to maximise focus on the task. Continuously monitor the flight progress.	Passenger oxygen: passenger service unit open and mask falling down					x	x		x	
			ALL			Passenger with medical problems — medical emergency					x			x	
			CRZ			Credible threat reported to the crew. Stowaway or fugitive on board.		x			x		x	x	
			GND			No METAR or TAFOR is available for destination due to industrial action at the destination airport.	x	x			x	x			
			CRZ			Credible bomb threat reported to crew		x			x		x	x	
			CLB DES			Credible bomb threat or pressurisation problem, but no quick landing possible (due to weather, terrain or other reasons)		x			x	x		x	
			APP			Diversion with low remaining fuel or increased fuel flow due to system malfunction	x				x		x	x	
			APP			ACAS warning (resolution advisory) immediately following a go-around, with a descent manoeuvre required. (The RA should be a command for descent when the aircraft is above 1 100 ft AGL.)		x			x	x	x	X	

[...]

EVAL or SBT	Manual aircraft control	A	CLB CRZ DES APP	Controls the flight path through manual control	Demonstrate manual aircraft control skills with smoothness and accuracy as appropriate to the situation. Detect deviations through instrument scanning. Maintain spare mental capacity during manual aircraft control. Maintain the aircraft within the normal flight envelope.	Flight with unreliable airspeed, which may or may not be recoverable	x			x			x		X
			CLB CRZ DES APP			Alternate flight control modes according to malfunction characteristics	x			x				x	X
			CLB CRZ			ACAS warning (resolution advisory)~~A~~ requires the pilot to descend or ATC calls for immediate descent (preferably during climb which requires a significant change in aircraft attitude)	x	x		x					

			DES APP		Apply knowledge of the relationship between aircraft attitude, speed and thrust.	ACAS warning (resolution advisory) requires the pilot to climb or ATC calls for immediate climb (preferably during descent which requires a significant change in aircraft attitude).	x	x		x					
			DES			TAWS warning when deviating from planned descent routing, requiring immediate response	x			x	x				
			TO			Scenario immediately after take-off which requires an immediate and overweight landing			x	x	x	x			
			TO			Adverse wind, crosswinds with or without strong gusts on take-off	x			x					
EVAL or SBT			TO			Adverse weather, wind shear, wind shear encounter during take-off, with or without reactive warnings	x			x			x		
			TO			Engine failure during initial climb, typically 30-60 m (100-200 ft) (autopilot off)	x	x		x				x	
			CRZ			Wind shear encounter scenario during cruise, significant and rapid change in wind speed or down/updrafts, without wind shear warning	x		x			x	x	x	
			APP			Adverse weather, wind shear, wind shear encounter with or without warning during approach	x		x	x			x		
			APP			Adverse weather, deterioration in visibility or cloud base, or adverse wind, requiring a go-around from visual circling approach, during the visual segment	x	x	x	x		x	x	x	
			APP			Interception of the glide slope from above (correlation with unstable approach training)			x				x	x	
			APP LDG			Adverse wind, crosswinds with or without strong gusts on approach, final approach and landing (within and beyond limits)	x			x		x			
			APP LDG			Adverse weather, adverse wind, approach and landing in demanding weather conditions, e.g. turbulence, up and downdrafts, gusts and crosswinds including shifting wind directions				x		x	x		
			APP LDG			Circling approach manually flown at night in minimum in-flight visibility to ensure ground reference, minimum environmental lighting and no glide slope guidance lights	X			X			X	X	
			APP LDG			Runway incursion during approach, which can be triggered by ATC at various altitudes or by visual contact during the landing phase	x			x			x		
			LDG			Adverse wind, visibility, type-specific, special consideration for long-bodied aircraft, landing in minimum visibility for visual reference, with crosswind	x	x		x			x		
			LDG			System malfunction, auto flight failure at DA during a low-visibility approach requiring a go-around flown manually	x		x	x			x		
			APP LDG			Approach planned with autoland, followed by a failure below 1 000 ft requiring a manual go-around and an immediate landing due to fuel shortage	x		x		x		x		
			TO			In-seat instruction: Insufficient engine failure recovery, forcing the pilot monitoring to take over the flight controls		x		x			x	x	

			APP LDG			In-seat instruction: Unstable approach on short final or long landing, forcing the pilot monitoring to take over the flight controls		x		x			x	x		

[...]

Section 5 — UPRT training topic with frequency (B). Evaluation phase, manoeuvres training phase or scenario-based training phase (EVAL, MT or SBT)																
EVAL, MT or SBT	Upset prevention training	B	N/A	Compliance with AMC1 or AMC2 to ORO.FC.220&230 Include upset prevention elements in Table 1 for the recurrent training programme in at least every cycle, such that all the elements are covered over a period not exceeding 3 years. The elements are numbered with letters from A to I in Table 1 of AMC1 ORO.FC.220&230. Each element is made up of several numbered components. According to the principles of EBT, covering one component should satisfy the requirement to cover the whole element of recognising and preventing the development of upset conditions.	Early recognition and prevention of upset conditions. When the differences between LHS and RHS are not significant in the handling of the aircraft, UPRT may be conducted in either seat.	See Table 1 of AMC1 ORO.FC.220&230: Elements and respective components of upset prevention training.	Intentionally blank									
			CRZ			Demonstration of the defined normal flight envelope and any associated changes in flight instruments, flight director systems, and protection systems. This should take the form of an instructor-led exercise to show the crew the points beyond which an upset condition could exist.			X					x	x
			TO APP			Severe wind shear or wake turbulence during take-off or approach			x	x		x	x		
			CRZ			As applicable and relevant to the aircraft type, demonstration at a suitable intermediate level, with turbulence as appropriate; practise steep turns and note the relationship between bank angle, pitch and stalling speed.				X			x		x
			CRZ			At the maximum cruise flight level for the current aircraft weight, turbulence to trigger overspeed conditions (if FSTD capability exists, consider use of the vertical wind component to add realism).	X		x	x			x		
			CRZ			At the maximum cruise flight level for the current aircraft weight, turbulence and significant temperature rise to trigger low-speed conditions (if FSTD capability exists, consider use of the vertical wind component to add realism).			X	x			x		X
			CRZ			High-altitude ~~T~~ACAS RA (where the RA is required to be flown in manual flight)	x			x			x	x	

[...]

EVAL or	Traffic	C	CLB CRZ DES	Traffic conflict. ACAS RA or TA, or visual observation of conflict, which requires evasive manoeuvring	Anticipate potential loss of separation.	ACAS warning that requires crew intervention		x				x	x	x		

					Recognise loss of separation. Take appropriate action. Apply the appropriate procedure correctly. Maintain aircraft control. Manage consequences.	Dilemma: Visual acquisition of conflicting traffic followed by an ACAS warning (resolution advisory) triggered by the same or other traffic. Even if the traffic is in sight, the pilot should follow the RA.	x		x	x						
						While in descent, ACAS warning (traffic advisory) of an aircraft below. The crew should not initiate an avoidance manoeuvre based on TA (except decreasing the rate of descent unless otherwise instructed by ATC, etc.). This example scenario can be done during climb with conflicting traffic above.	x				x	x				

[...]

AMC4 ORO.FC.232 EBT programme assessment and training topics

GENERATION 3 (TURBOPROP) — TABLE OF ASSESSMENT AND TRAINING TOPICS

	Assessment and training topic	*Frequency*	*Description (includes type of topic, being threat, error or focus)*	*Desired outcome* *(includes performance criteria OR training outcome)*	*Flight phase*	*Guidance material (GM)* *Example scenario elements*	*PRO*	*COM*	*FPA*	*FPM*	*LTW*	*PSD*	*SAW*	*WLM*	*KNO*
	Generation 3 Turboprop — Recurrent assessment and training matrix						*Competency map*								
Section 1 — Skill retention. Manoeuvres training phase (MT)															
MT	Rejected take-off	B	~~Engine failure~~ Rejected take-off after the application of take-off thrust and before reaching V1 (CAT I or above)	Demonstrate manual aircraft control skills with smoothness and accuracy as appropriate to the situation. Detect deviations through instrument scanning. Maintain spare mental capacity during manual aircraft control. Maintain the aircraft within the flight envelope. Apply knowledge of the relationship between aircraft attitude, speed and thrust.	TO	From initiation of take-off to complete stop (or as applicable to the procedure)	x			x					
MT	[...]	[...]	[...]		[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
MT	Emergency descent	C	Initiation of emergency descent from normal cruise altitude		CRZ	The manoeuvre is complete once the aircraft is stabilised in emergency descent configuration (and profile). However, if the EBT programme does not include the example scenario element 'emergency descent' in the training topic 'automation management', the emergency descent procedures should be completed and should not stop once the aircraft is stabilised in emergency descent configuration.	x		x	x					

[...]

EVAL or SBT	Automation management	A	CLB CRZ DES APP	The purpose of this topic is to encourage and develop effective flight path management through proficient and appropriate use of the flight management system(s), guidance and automation, including transitions between modes, monitoring, mode awareness, vigilance and flexibility needed to change from one mode to another. The means of mitigating errors are included in this topic. The errors are described as mishandled auto flight systems, inappropriate mode selection, mishandled flight management system(s) and inappropriate autopilot usage.	Know how and when to use the flight management system(s), guidance and automation. Demonstrate correct methods for engagement and disengagement of the auto flight system(s). Demonstrate appropriate use of flight guidance, auto thrust and other automation systems. Maintain mode awareness of the auto flight system(s), including engagement and automatic transitions. Revert to different modes when appropriate. Detect deviations from the desired aircraft state (flight path, speed, attitude, thrust, etc.) and take appropriate action. Anticipate mishandled auto flight system. Recognise mishandled auto flight system. Take appropriate action if necessary. Restore correct auto flight state. Identify and manage consequences.	ACAS warning (resolution advisory), recovery and subsequent engagement of automation	x		x					
			ALL			FMS tactical programming issues, e.g. step climb, runway changes, late clearances, destination re-programming, executing diversion	x		x					X
			CLB CRZ DES APP			Recoveries from terrain avoidance warning systems (TAWS), management of energy state to restore automated flight	x		x	x				
			CLB CRZ DES APP			Amendments to ATC cleared levels during altitude capture modes to force mode awareness and intervention.	x		x			x		
						ACAS warning (resolution advisory to level off) during climb or descent; for example, close to the cleared level when the capture mode has already been activated.	x		x			x		
			TO			Late ATC clearance to an altitude below acceleration altitude	x		x			x		
			TO APP			Engine-out special terrain procedures	x		x			x		
			CRZ			Forcing autopilot disconnect followed by re-engagement, recovery from low- or high-speed events in cruise	x		x	x		x		
			CLB			Engine failure during or after initial climb using automation	x		x					
			CRZ			Engine failure in cruise to onset of descent using automation	x		x					
			CRZ			Emergency descent	x		x					X
			DES APP			Managing high-energy descent capturing descent path from above (correlation with unstable approach training)	x		x			x		X
			APP			No ATC clearance received prior to commencement of approach or final descent	x		x			x		
			APP			Reactive wind shear and recovery from the consequent high-energy state	x		x			x		
			APP			Automation fail to capture the approach altitude in descent (e.g. last altitude before the FAP). Ideally, the failure occurs when the workload is high (e.g. configuration of the aircraft for final approach).					x	x	x	
			APP			Non-precision or infrequently flown approaches using the maximum available level of automation	x		x					X
			APP			Gear malfunction during an approach planned with autoland (including autobrake).		x	x			x		

						Competency FPA may or may not be included depending on the impact of such malfunction on the automation.										
			APP			ATC clearances to waypoints beyond the programmed descent point for a coded final descent point during an approach utilising a final descent that is commanded by the flight management system	x		x				x		X

[...]

EVAL or SBT	Competencies —non-technical (CRM)	A	APP	This encapsulates the general CRM principles and objectives. It includes communication; leadership and teamwork; problem-solving and decision-making; situation awareness and management of information; and workload management. Emphasis should be placed on the development of leadership, shown by EBT data sources to be a highly effective competency in mitigating risk and improving safety through pilot performance.	Exposure to an event or sequence of events to allow the pilot to build awareness of human factors in aviation and the human limitations. This includes the development of the following competencies: <u>Communication:</u> Demonstrate: — effective use of language; — responsiveness to feedback; and — capability to state the plans and resolve ambiguities. <u>Leadership and teamwork:</u> Use appropriate authority to ensure focus on the task. Support others in completing tasks. <u>Problem-solving and decision-making:</u> Detect deviations from the desired state, evaluate problems, identify the risk, consider alternatives and select the best course of action. Continuously review progress and adjust plans. <u>Situation awareness and management of information:</u> Have an awareness of the aircraft state in its environment; project and anticipate changes.	GPS failure prior to commencement of approach associated with position drift and a terrain alert					x	x	x		X
			DES			Cabin crew report of water noise below the forward galley indicating a possible toilet pipe leak, with consequent avionics failures					x	x	x		
			CRZ			Smoke removal but combined with a diversion until landing is completed.		x			x	x	x	x	X
			GND			Apron fuel spilling					x	x		x	
			CRZ			Important water leak in an aircraft galley		x			x	x		x	
			ALL			A relevant number of cabin crew are wounded or incapacitated. Additionally, the cabin crew wounded or incapacitated are the most competent (e.g. senior cabin crew member).					x	x		x	
			ALL			Unruly passenger(s)					x			x	
			GND			Passenger oxygen: passenger service unit open and mask falling down					x	x		x	
			ALL			Passenger with medical problems — medical emergency					x			x	
			CRZ			Credible threat reported to the crew. Stowaway or fugitive on board.		x			x		x	x	
			GND			No METAR or TAFOR is available for destination due to industrial action at the destination airport.	x	x			x	x			
			CRZ			Credible bomb threat reported to crew		x			x		x	x	
			CLB DES			Credible bomb threat or pressurisation problem, but no quick landing possible (due to weather, terrain or other reasons)		x			x	x		x	
			APP			Diversion with low remaining fuel or increased fuel flow due to system malfunction	x				x		x	x	
			APP			ACAS warning (resolution advisory) immediately following a go-around, with a descent manoeuvre required. (The RA should be a command for descent when the aircraft is above 1 100 ft AGL.)		x			x	x	x	X	

					Workload management: Prioritise, delegate and receive assistance to maximise focus on the task. Continuously monitor the flight progress.										

[...]

EVAL or SBT	Manual aircraft control	A	CLB CRZ DES APP	Controls the flight path through manual control	Demonstrate manual aircraft control skills with smoothness and accuracy as appropriate to the situation. Detect deviations through instrument scanning. Maintain spare mental capacity during manual aircraft control. Maintain the aircraft within the normal flight envelope. Apply knowledge of the relationship between aircraft attitude, speed and thrust.	Flight with unreliable airspeed, which may or may not be recoverable	x			x			x		X
			CLB CRZ DES APP			Alternate flight control modes according to malfunction characteristics	x			x				x	X
			CLB CRZ DES APP			ACAS warning (resolution advisory)~~A~~ requires the pilot to descend or ATC calls for immediate descent (preferably during climb which requires a significant change in aircraft attitude)	x	x		x					
						ACAS warning (resolution advisory) requires the pilot to climb or ATC calls for immediate climb (preferably during descent which requires a significant change in aircraft attitude).	x	x		x					
			DES			TAWS warning when deviating from planned descent routing, requiring immediate response	x			x	x				
			TO			Scenario immediately after take-off which requires an immediate and overweight landing			x	x	x	x			
			TO			Adverse wind, crosswinds with or without strong gusts on take-off	x			x					
EVAL or SBT			TO			Adverse weather, wind shear, wind shear encounter during take-off, with or without reactive warnings	x			x			x		
			TO			Engine failure during initial climb, typically 30-60 m (100-200 ft) (autopilot off)	x	x		x				x	
			CRZ			Wind shear encounter scenario during cruise, significant and rapid change in wind speed or down/updrafts, without wind shear warning	x		x			x	x	x	
			APP			Adverse weather, wind shear, wind shear encounter with or without warning during approach	x		x	x			x		
			APP			Adverse weather, deterioration in visibility or cloud base, or adverse wind, requiring a go-around from visual circling approach, during the visual segment	x	x	x	x		x	x	x	
			APP			Interception of the glide slope from above (correlation with unstable approach training)			x				x	x	

			APP LDG			Adverse wind, crosswinds with or without strong gusts on approach, final approach and landing (within and beyond limits)	x			x		x			
			APP LDG			Adverse weather, adverse wind, approach and landing in demanding weather conditions, e.g. turbulence, up and downdrafts, gusts and crosswinds including shifting wind directions				x		x	x		
			APP LDG			Circling approach manually flown at night in minimum in-flight visibility to ensure ground reference, minimum environmental lighting and no glide slope guidance lights	X			X			X	X	
			APP LDG			Runway incursion during approach, which can be triggered by ATC at various altitudes or by visual contact during the landing phase	x			x			x		
			LDG			Adverse wind, visibility, type-specific, special consideration for long-bodied aircraft, landing in minimum visibility for visual reference, with crosswind	x	x		x			x		
			LDG			System malfunction, auto flight failure at DA during a low-visibility approach requiring a go-around flown manually	x		x	x			x		
			APP LDG			Approach planned with autoland, followed by a failure below 1 000 ft requiring a manual go-around and an immediate landing due to fuel shortage	x		x		x		x		
			TO			In-seat instruction: Insufficient engine failure recovery, forcing the pilot monitoring to take over the flight controls		x		x			x	x	
			APP LDG			In-seat instruction: Unstable approach on short final or long landing, forcing the pilot monitoring to take over the flight controls		x		x			x	x	

[...]

Section 5 — UPRT training topic with frequency (B). Evaluation phase, manoeuvres training phase or scenario-based training phase (EVAL, MT or SBT)																	
EVAL, MT or SBT	Upset prevention training	B	N/A	Compliance with AMC1 or AMC2 to ORO.FC.220&230 Include upset prevention elements in Table 1 for the recurrent training programme in at least every cycle, such that all the elements are covered over a period not exceeding 3 years. The elements are numbered with letters from A to I in Table 1 of AMC1 ORO.FC.220&230. Each element is made up of several numbered components. According to the principles of EBT, covering one component should satisfy the requirement to cover the whole element of recognising and preventing the development of upset conditions.	Early recognition and prevention of upset conditions. When the differences between LHS and RHS are not significant in the handling of the aircraft, UPRT may be conducted in either seat.	See Table 1 of AMC1 ORO.FC.220&230: Elements and respective components of upset prevention training.	Intentionally blank								
			CRZ			Demonstration of the defined normal flight envelope and any associated changes in flight instruments, flight director systems, and protection systems. This should take the form of an instructor-led exercise to show the crew the points beyond which an upset condition could exist.			X					x	x
			TO APP			Severe wind shear or wake turbulence during take-off or approach			x	x		x	x		
			CRZ			As applicable and relevant to the aircraft type, demonstration at a suitable intermediate level, with turbulence as appropriate; practise steep turns and note the relationship between bank angle, pitch and stalling speed.				X			x		x
			CRZ			At the maximum cruise flight level for the current aircraft weight, turbulence to trigger overspeed conditions (if FSTD capability exists, consider use of the vertical wind component to add realism).	X		x	x			x		
			CRZ			At the maximum cruise flight level for the current aircraft weight, turbulence and significant temperature rise to trigger low-speed conditions (if FSTD capability exists, consider use of the vertical wind component to add realism).			X	x			x		X
			CRZ			High-altitude ~~T~~TACAS RA (where the RA is required to be flown in manual flight)	x			x			x	x	

[...]

EVAL or SBT	Traffic	C	CLB CRZ DES	Traffic conflict. ACAS RA or TA, or visual observation of conflict, which requires evasive manoeuvring	Anticipate potential loss of separation. Recognise loss of separation. Take appropriate action. Apply the appropriate procedure correctly. Maintain aircraft control. Manage consequences.	ACAS warning that requires crew intervention		x				x	x	x		
						Dilemma: Visual acquisition of conflicting traffic followed by an ACAS warning (resolution advisory) triggered by the same or other traffic. Even if the traffic is in sight, the pilot should follow the RA.	x		x	x					
						While in descent, ACAS warning (traffic advisory) of an aircraft below. The crew should not initiate an avoidance manoeuvre based on TA (except decreasing the rate of descent unless otherwise instructed by ATC, etc.). This example scenario can be done during climb with conflicting traffic above.	x				x	x			

[...]

AMC6 ORO.FC.232 EBT programme assessment and training topics

GENERATION 2 (TURBOPROP) — TABLE OF ASSESSMENT AND TRAINING TOPICS

	Assessment and training topic	*Frequency*	*Description (includes type of topic, being threat, error or focus)*	*Desired outcome (includes performance criteria OR training outcome)*	*Flight phase ...*	*Guidance material (GM) Example scenario elements*	*PRO*	*COM*	*FPA*	*FPM*	*LTW*	*PSD*	*SAW*	*WLM*	*KNO*
Generation 2 Turboprop — Recurrent assessment and training matrix							*Competency map*								
Section 1 — Skill retention. Manoeuvres training phase (MT)															
MT	Rejected take-off	B	Engine failure after the application of take-off thrust and before reaching V1 (CAT I or above)	Demonstrate manual aircraft control skills with smoothness and accuracy as appropriate to the situation.	TO	From initiation of take-off to complete stop (or as applicable to the procedure)	x			x					
	[...]	[...]	[...]	Detect deviations through instrument scanning.	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
	Emergency descent	C	Initiation of emergency descent from normal cruise altitude	Maintain spare mental capacity during manual aircraft control. Maintain the aircraft within the flight envelope. Apply knowledge of the relationship between aircraft attitude, speed and thrust.	CRZ	The manoeuvre is complete once the aircraft is stabilised in emergency descent configuration (and profile). However, if the EBT programme does not include the example scenario element 'emergency descent' in the training topic 'automation management', the emergency descent procedures should be completed and should not stop once the aircraft is stabilised in emergency descent configuration.	x		x	x					

[...]

EVAL or SBT	Automation management	A	CLB CRZ DES APP	The purpose of this topic is to encourage and develop effective flight path management through proficient and appropriate use of the flight management system(s), guidance and automation, including transitions between modes,	Know how and when to use the flight management system(s), guidance and automation. Demonstrate correct methods for engagement and disengagement of the auto flight system(s).	ACAS warning (resolution advisory), recovery and subsequent engagement of automation	x		x						
			ALL			FMS tactical programming issues, e.g. step climb, runway changes, late clearances, destination re-programming, executing diversion	x		x						X

			CLB CRZ DES APP	monitoring, mode awareness, vigilance and flexibility needed to change from one mode to another. The means of mitigating errors are included in this topic. The errors are described as mishandled auto flight systems, inappropriate mode selection, mishandled flight management system(s) and inappropriate autopilot usage.	Demonstrate appropriate use of flight guidance, auto thrust and other automation systems. Maintain mode awareness of the auto flight system(s), including engagement and automatic transitions. Revert to different modes when appropriate. Detect deviations from the desired aircraft state (flight path, speed, attitude, thrust, etc.) and take appropriate action. Anticipate mishandled auto flight system. Recognise mishandled auto flight system. Take appropriate action if necessary. Restore correct auto flight state. Identify and manage consequences.	Recoveries from terrain avoidance warning systems (TAWS), management of energy state to restore automated flight	x		x	x					
			CLB CRZ DES APP			Amendments to ATC cleared levels during altitude capture modes to force mode awareness and intervention.	x		x				x		
						ACAS warning (resolution advisory to level off) during climb or descent; for example, close to the cleared level when the capture mode has already been activated.	x		x				x		
			TO			Late ATC clearance to an altitude below acceleration altitude	x		x				x		
			TO APP			Engine-out special terrain procedures	x		x				x		
			CRZ			Forcing autopilot disconnect followed by re-engagement, recovery from low- or high-speed events in cruise	x		x	x			x		
			CLB			Engine failure during or after initial climb using automation	x		x						
			CRZ			Engine failure in cruise to onset of descent using automation	x		x						
			CRZ			Emergency descent	x		x						X
			DES APP			Managing high-energy descent capturing descent path from above (correlation with unstable approach training)	x		x				x		X
			APP			No ATC clearance received prior to commencement of approach or final descent	x		x				x		
			APP			Reactive wind shear and recovery from the consequent high-energy state	x		x				x		
			APP			Automation fail to capture the approach altitude in descent (e.g. last altitude before the FAP). Ideally, the failure occurs when the workload is high (e.g. configuration of the aircraft for final approach).					x	x	x	x	
			APP			Non-precision or infrequently flown approaches using the maximum available level of automation	x		x						X
			APP			Gear malfunction during an approach planned with autoland (including autobrake). Competency FPA may or may not be included depending on the impact of such malfunction on the automation.		x	x			x		x	
			APP			ATC clearances to waypoints beyond the programmed descent point for a coded final descent point during an approach utilising a final descent that is commanded by the flight management system	x		x				x		X

[...]

EVAL or SBT	Competencies —non-technical (CRM)	A	APP	This encapsulates the general CRM principles and objectives. It includes communication; leadership and teamwork; problem-solving and decision-making; situation awareness and management of information; and workload management. Emphasis should be placed on the development of leadership, shown by EBT data sources to be a highly effective competency in mitigating risk and improving safety through pilot performance.	Exposure to an event or sequence of events to allow the pilot to build awareness of human factors in aviation and the human limitations. This includes the development of the following competencies: <u>Communication:</u> Demonstrate: — effective use of language; — responsiveness to feedback; and — capability to state the plans and resolve ambiguities. <u>Leadership and teamwork:</u> Use appropriate authority to ensure focus on the task. Support others in completing tasks. <u>Problem-solving and decision-making:</u> Detect deviations from the desired state, evaluate problems, identify the risk, consider alternatives and select the best course of action. Continuously review progress and adjust plans. <u>Situation awareness and management of information:</u> Have an awareness of the aircraft state in its environment; project and anticipate changes. <u>Workload management:</u> Prioritise, delegate and receive assistance to maximise focus on the task. Continuously monitor the flight progress.	GPS failure prior to commencement of approach associated with position drift and a terrain alert					x	x	x		X
			DES			Cabin crew report of water noise below the forward galley indicating a possible toilet pipe leak, with consequent avionics failures					x	x	x		
			CRZ			Smoke removal but combined with a diversion until landing is completed.		x			x	x	x	x	X
			GND			Apron fuel spilling					x	x		x	
			CRZ			Important water leak in an aircraft galley		x			x	x		x	
			ALL			A relevant number of cabin crew are wounded or incapacitated. Additionally, the cabin crew wounded or incapacitated are the most competent (e.g. senior cabin crew member).					x	x		x	
			ALL			Unruly passenger(s)					x			x	
			GND			Passenger oxygen: passenger service unit open and mask falling down					x	x		x	
			ALL			Passenger with medical problems — medical emergency					x			x	
			CRZ			Credible threat reported to the crew. Stowaway or fugitive on board.		x			x		x	x	
			GND			No METAR or TAFOR is available for destination due to industrial action at the destination airport.	x	x			x	x			
			CRZ			Credible bomb threat reported to crew		x			x		x	x	
			CLB DES			Credible bomb threat or pressurisation problem, but no quick landing possible (due to weather, terrain or other reasons)		x			x	x		x	
			APP			Diversion with low remaining fuel or increased fuel flow due to system malfunction	x				x		x	x	
			APP			ACAS warning (resolution advisory) immediately following a go-around, with a descent manoeuvre required. (The RA should be a command for descent when the aircraft is above 1 100 ft AGL.)		x			x	x	x	X	

[...]

EVAL or SBT	Manual aircraft control	A	CLB CRZ DES APP	Controls the flight path through manual control	Demonstrate manual aircraft control skills with smoothness and accuracy as appropriate to the situation. Detect deviations through instrument scanning. Maintain spare mental capacity during manual aircraft control. Maintain the aircraft within the normal flight envelope. Apply knowledge of the relationship between aircraft attitude, speed and thrust.	Flight with unreliable airspeed, which may or may not be recoverable	x			x			x		X
			CLB CRZ DES APP			Alternate flight control modes according to malfunction characteristics	x			x				x	X
			CLB CRZ DES APP			ACAS warning (resolution advisory)~~A~~ requires the pilot to descend or ATC calls for immediate descent (preferably during climb which requires a significant change in aircraft attitude)	x	x		x					
						ACAS warning (resolution advisory) requires the pilot to climb or ATC calls for immediate climb (preferably during descent which requires a significant change in aircraft attitude).	x	x		x					
			DES			TAWS warning when deviating from planned descent routing, requiring immediate response	x			x	x				
			TO			Scenario immediately after take-off which requires an immediate and overweight landing			x	x	x	x			
			TO			Adverse wind, crosswinds with or without strong gusts on take-off	x			x					
EVAL or SBT			TO			Adverse weather, wind shear, wind shear encounter during take-off, with or without reactive warnings	x			x			x		
			TO			Engine failure during initial climb, typically 30-60 m (100-200 ft) (autopilot off)	x	x		x				x	
			CRZ			Wind shear encounter scenario during cruise, significant and rapid change in wind speed or down/updrafts, without wind shear warning	x		x			x	x	x	
			APP			Adverse weather, wind shear, wind shear encounter with or without warning during approach	x		x	x			x		
			APP			Adverse weather, deterioration in visibility or cloud base, or adverse wind, requiring a go-around from visual circling approach, during the visual segment	x	x	x	x		x	x	x	
			APP			Interception of the glide slope from above (correlation with unstable approach training)			x				x	x	
			APP LDG			Adverse wind, crosswinds with or without strong gusts on approach, final approach and landing (within and beyond limits)	x			x		x			
			APP LDG			Adverse weather, adverse wind, approach and landing in demanding weather conditions, e.g. turbulence, up and downdrafts, gusts and crosswinds including shifting wind directions				x		x	x		
			APP LDG			Circling approach manually flown at night in minimum in-flight visibility to ensure ground reference, minimum environmental lighting and no glide slope guidance lights	X			X			X	X	

			APP LDG			Runway incursion during approach, which can be triggered by ATC at various altitudes or by visual contact during the landing phase	x			x			x		
			LDG			Adverse wind, visibility, type-specific, special consideration for long-bodied aircraft, landing in minimum visibility for visual reference, with crosswind	x	x		x			x		
			LDG			System malfunction, auto flight failure at DA during a low-visibility approach requiring a go-around flown manually	x		x	x			x		
			APP LDG			Approach planned with autoland, followed by a failure below 1 000 ft requiring a manual go-around and an immediate landing due to fuel shortage	x		x		x		x		
			TO			In-seat instruction: Insufficient engine failure recovery, forcing the pilot monitoring to take over the flight controls		x		x			x	x	
			APP LDG			In-seat instruction: Unstable approach on short final or long landing, forcing the pilot monitoring to take over the flight controls		x		x			x	x	

[...]

Section 5 — UPRT training topic with frequency (B). Evaluation phase, manoeuvres training phase or scenario-based training phase (EVAL, MT or SBT)																	
EVAL, MT or SBT	Upset prevention training	B	N/A	Compliance with AMC1 or AMC2 to ORO.FC.220&230 Include upset prevention elements in Table 1 for the recurrent training programme in at least every cycle, such that all the elements are covered over a period not exceeding 3 years. The elements are numbered with letters from A to I in Table 1 of AMC1 ORO.FC.220&230. Each element is made up of several numbered components. According to the principles of EBT, covering one component should satisfy the requirement to cover the whole element of recognising and preventing the development of upset conditions.	Early recognition and prevention of upset conditions. When the differences between LHS and RHS are not significant in the handling of the aircraft, UPRT may be conducted in either seat.	See Table 1 of AMC1 ORO.FC.220&230: Elements and respective components of upset prevention training.	Intentionally blank								
			CRZ			Demonstration of the defined normal flight envelope and any associated changes in flight instruments, flight director systems, and protection systems. This should take the form of an instructor-led exercise to show the crew the points beyond which an upset condition could exist.			X					x	x
			TO APP			Severe wind shear or wake turbulence during take-off or approach			x	x		x	x		
			CRZ			As applicable and relevant to the aircraft type, demonstration at a suitable intermediate level, with turbulence as appropriate; practise steep turns and note the relationship between bank angle, pitch and stalling speed.				X			x		x
			CRZ			At the maximum cruise flight level for the current aircraft weight, turbulence to trigger overspeed conditions (if FSTD capability exists, consider use of the vertical wind component to add realism).	X		x	x			x		
			CRZ			At the maximum cruise flight level for the current aircraft weight, turbulence and significant temperature rise to trigger low-speed conditions (if FSTD capability exists, consider use of the vertical wind component to add realism).			X	x			x		X

			CRZ			High-altitude ~~T~~ACAS RA (where the RA is required to be flown in manual flight)	x			x			x	x	

[...]

EVAL or SBT	Traffic	C	CLB CRZ DES	Traffic conflict. ACAS RA or TA, or visual observation of conflict, which requires evasive manoeuvring	Anticipate potential loss of separation. Recognise loss of separation. Take appropriate action. Apply the appropriate procedure correctly. Maintain aircraft control. Manage consequences.	ACAS warning that requires crew intervention		x				x	x	x	
						Dilemma: Visual acquisition of conflicting traffic followed by an ACAS warning (resolution advisory) triggered by the same or other traffic. Even if the traffic is in sight, the pilot should follow the RA.	x		x	x					
						While in descent, ACAS warning (traffic advisory) of an aircraft below. The crew should not initiate an avoidance manoeuvre based on TA (except decreasing the rate of descent unless otherwise instructed by ATC, etc.). This example scenario can be done during climb with conflicting traffic above.	x				x	x			

[...]

~~AMC1 ORO.FC.235(d) Pilot qualification to operate in either pilot's seat~~

~~**SINGLE-ENGINE HELICOPTERS — AUTOROTATIVE LANDING**~~

~~In the case of single-engined helicopters, the autorotative landing should be carried out from left- and right-hand seats on alternate proficiency checks.~~

GM1 ORO.FC.235(e);(f)~~(g)~~ Pilot qualification to operate in either pilot's seat

DIFFERENCES BETWEEN LEFT AND RIGHT-HAND SEATS

The differences between left- and right-hand seats may not be significant in cases where, for example, the autopilot is used.

AMC1 ORO.FC.236 Pilot qualification to operate in either pilot's seat — helicopters

GENERAL

(a) The operator should either conduct a check every year or alternate training and checking every year. The training and checking may take place during or together with an operator proficiency check or an aircraft/FSTD training session.

(b) When engine-out manoeuvres are carried out in an aircraft, the engine failure should be simulated.

(c) Helicopter pilots should meet one of the following criteria:

(1) complete their operator proficiency checks from left- and right-hand seats, on alternate proficiency checks; or

(2) for multi-engined helicopters, if two consecutive operator proficiency checks are conducted from the same seat, the pilot should complete at least the following from the other pilot's seat:

(i) an engine failure during take-off;

(ii) a one-engine-inoperative approach and go-around; and

(iii) a one-engine-inoperative landing;

(3) for single-engined helicopters, if two consecutive operator proficiency checks are conducted from the same seat, the pilot should complete at least one autorotation training or checking from the other pilot's seat.

GM1 ORO.FC.236 Pilot qualification to operate in either pilot's seat — helicopters

QUALIFICATION TO FLY IN EITHER PILOT'S SEAT — NOMINATED COMMANDER CONDUCTING LINE CHECKS

In the case of a line check revalidation of a fully qualified commander in single-pilot operations, the line checker does not require a qualification to operate in either pilot's seat, regardless of the seat he or she occupies, provided that the line checker has no pilot duties other than checking.

AMC1 ORO.FC.240 Operation on more than one type or variant

GENERAL

[...]

(b) Helicopters

(1) If a flight crew member operates more than one type or variant, the following provisions should be met:

(i) The recency requirements and the requirements for recurrent training and checking should be met and confirmed prior to CAT operations on any type, and the minimum number of flights on each type within a ~~3-month~~ 3 months' period specified in the operations manual.

[...]

(iv) If a ~~For~~ helicopter~~s with~~ has a maximum certified take-off mass (MCTOM) of more than 5 700 kg~~,~~ or ~~with~~ a maximum operational passenger seating configuration (MOPSC) of more than 19:

[...]

(B) a minimum of 3 months and 150 hours experience on the type ~~or variant~~ should be achieved before the flight crew member should commence the conversion course onto the new type or variant, unless credits related to the training, checking and recent experience requirements are defined in the operational suitability data established in accordance with Commission Regulation (EU) No 748/2012 for the relevant types or variants;

(C) 28 flying days ~~and/~~or 50 hours ~~flying~~ experience should then be achieved exclusively on the new type or variant, unless credits related to the training, checking and recent experience requirements are defined in the operational suitability data established in accordance with Commission Regulation (EU) No 748/2012 for the relevant types or variants; and

(D) a flight crew member should not be rostered to fly more than one type ~~or significantly different variant of a type~~ during a single duty period unless the following conditions are met:

— There should be sufficient time off between the two types for a comprehensive training or self-training on the differences between the types. The time off should not include flight preparation duties.

— The training referred in the previous paragraph should include time in flight or in the cockpit or in a device representative of the cockpit of the next type to be flown.

— The training syllabus should be based on a risk assessment of the operator and be described in the operations manual. The training should take place every time the pilot changes types, whether within the same duty period or not.

(v) In the case of all other helicopters, the flight crew member should not operate more than three helicopter types or groups of types in CAT, NCC and SPO ~~or significantly different variants~~, unless credits related to the training, checking and recent experience requirements are defined in the operational suitability data established in accordance with Commission Regulation (EU) No 748/2012 for the relevant types or variants.

(vi) The operator should only define a group of types for the purpose of this AMC if the following conditions are met:

(A) A group of helicopter types should either include only single-engined turbine helicopters operated only under VFR or it should include only single-engined piston helicopters operated only under VFR.

(B) The operator should define conditions for flying more than one type or variant on the same day, including sufficient time for a briefing or self-briefing on changing types or variants.

(C) The operator should define the maximum number of types and variants that can be flown on the same day.

(vii) Points (v) and (vi) above apply whenever a flight crew member operates more than one type or variant in CAT.

(c) Combination of helicopter and aeroplane

(1) ~~The flight crew member may fly one helicopter type or variant and one aeroplane type irrespective of their MCTOM or MOPSC.~~ The flight crew member should only operate a combination of helicopters and aeroplanes if one of the following conditions is met:

(i) operations under CAT, NCC and SPO should be limited to one type or class of aeroplane and one helicopter type; or

(ii) operations under CAT, NCC and SPO should be limited to one type or class of aeroplane and one group of helicopter types defined in (b)(vi) above; or

(iii) operations under CAT, NCC and SPO should be limited to only performance class B aeroplanes from the single-pilot classes of reciprocating engine aeroplanes and one helicopter type or group of helicopter types defined in (b)(vi) above.

(2) If ~~the~~ a helicopter type is covered by point ~~paragraph~~ (b)(1)(iv), then (b)(1)(iv)(B), (C) and (D) should also apply in this case.

~~AMC2 ORO.FC.240 Operation on more than one type or variant~~

~~GENERAL~~

AMC1 ORO.FC.A.245 Alternative training and qualification programme

COMPONENTS AND IMPLEMENTATION

(a) Alternative training and qualification programme (ATQP) components

The ATQP should comprise the following:

(1) Documentation that details the scope and requirements of the programme, including the following:

[...]

(iv) A description of how the programme will:

[...]

(D) integrate CRM in all aspects of training and ensure that each flight crew member undergoes specific modular CRM training. All major topics of CRM training should be covered by distributing modular training sessions as evenly as possible over each 3-year period;

[...]

(4) A specific training programme for:

(i) each aeroplane type/class within the ATQP;

(ii) instructors (class rating instructor rating/synthetic flight instructor authorisation/type rating instructor rating — CRI/SFI/TRI), and other personnel undertaking flight crew instruction; and

(iii) examiners (class rating examiner/synthetic flight examiner/type rating examiner — CRE/SFE/TRE).

This should include a method for the standardisation of instructors and examiners.

Personnel who perform training and checking of flight crew in an operator's ATQP should receive the following additional training on:

(A) ATQP principles and goals;

(B) knowledge/skills/behavioural markers as learnt from task analysis;

(C) line-oriented evaluation (LOE)/LOFT scenarios to include triggers/behavioural markers/event sets/observable behaviour;

(D) qualification standards;

(E) harmonisation of assessment standards;

(F) behavioural markers and the systemic assessment of CRM;

(G) event sets and the corresponding desired knowledge/skills and behavioural markers of the flight crew;

(H) the processes that the operator has implemented to validate the training and qualification standards and the instructors part in the ATQP quality control; and

(I) line-oriented quality evaluation (LOQE).

[...]

(6) A method for the assessment of flight crew during conversion and recurrent training and checking. The assessment process should include event-based assessment as part of the LOE. The assessment method should comply with ORO.FC.230.

[...]

(v) The assessment and the subsequent grading of the performance of flight crew members should include the following steps:

(A) Observe performance (behaviours) during the simulator session.

(B) Record details of effective and ineffective performance (behaviours) observed during the simulator session ('record' in this context refers to instructors taking notes).

(C) Classify observations against the set of behavioural markers and allocate the behavioural markers to each type of knowledge or skill or task, using amongst others the facilitation technique. If the operator has developed a set of competencies, it may allocate the behavioural markers to each competency.

(D) Assess and evaluate (grade): assess the performance by determining the root cause(s). Low performance would normally indicate the area of performance to be remediated in subsequent phases or modules or training sessions. Evaluate (grade) the performance by determining a grade using the methodology defined by the operator.

[...]

GM3 ORO.FC.A.245 Alternative training and qualification programme

BEHAVIOURAL MARKERS AND OBSERVABLE BEHAVIOURS — ATQP & EBT

(b) Behavioural markers in ATQP are observable behaviours that contribute to superior or substandard performance within a flight (including pre-flight and post-flight duties).

(c) A good behavioural marker:

(1) describes a specific, observable behaviour, not an attitude or personality trait, with clear definition (enactment of skills or knowledge is shown in behaviour);

(2) has demonstrated a causal relationship to performance outcome, without necessarily being present in all situations, and with its appropriateness possibly depending on context;

(3) uses simple phraseology; and

(4) describes a clear concept.

(d) The characteristics of good behavioural marker systems are:

(1) validity: in relation to performance outcome;

(2) reliability: instructor or examiner concordance (inter-rater reliability), internal consistency;

(3) sensitivity: in relation to levels of performance;

(4) transparency: the pilots receiving the training or checking understand the performance criteria against which they are being rated; availability of reliability and validity data;

(5) usability: easy to train, simple framework, easy to understand, domain-appropriate language, sensitive to rater (i.e. examiner, instructor) workload, easy to observe;

(6) ability to provide a focus for training goals and needs; and

(7) minimal overlap between components.

(e) For EBT mixed implementation, the operator may refer to the Annex I definitions of 'behaviour' and 'observable behaviour' which include the concept of behavioural marker in ATQP. In other words, the EBT OBs may be used as behavioural markers under ATQP.

GM1 ORO.FC.A.245(e)(2) Alternative training and qualification programme

LINE CHECK IN MIXED FLEET OPERATION UNDER ATQP

The extension of validity for the line check is intended for single fleet operation. For mixed fleet operation, the operator needs to observe the provisions in the operational suitability data established in accordance with Commission Regulation (EU) No 748/2012. Usually the operational suitability data refers to one line check per year in alternate aircraft types.

AMC1 ORO.FC.A.245(d);(e)(2) Alternative training and qualification programme

COMBINATION OF CHECKS

(a) The ~~line-orientated evaluation (~~LOE~~)~~ may be undertaken with other ATQP training. The operator should ensure that training and checking are clearly distinguished and described in the operations manual.

(b) The line check may be combined with a line-oriented quality evaluation (LOQE).

(c) Complementary CRM assessment

The CRM assessment should take place in a line-oriented flight scenario (LOFT, LOE or line-oriented section of the OPC) of an FSTD session. This assessment complements the CRM assessment taking place during the line check /LOQE, but it is not part of the line check / LOQE.

AMC1 ORO.FC.A.245(g) Alternative training and qualification programme

ATQP PROGRAMME — FSTD

The FSTD qualification level should be adequate to complete proficiency checks; therefore, the ATQP programme should be conducted in a full-flight simulator (FFS) level C or D.

AMC1 ORO.FC.320 Operator conversion training and checking

OPERATOR PROFICIENCY CHECK

The operator proficiency check should take place at the end of the operator conversion training programme defined in AMC3 ORO.FC.120.

AMC1 ORO.FC.325 Equipment and procedure training and checking

SPECIALISED OPERATIONS

(a) If the equipment and procedure training includes training for SOPs related to a specialised operation, points (b) to (f) of AMC3 ORO.FC.120 should apply.

(b) The operator proficiency check should take place at the end of the aircraft/FSTD training programme defined in AMC3 ORO.FC.120.

AMC1 ORO.FC.330 Recurrent training and checking — operator proficiency check

SPO — RECURRENT TRAINING

(a) The training should include:

(1) ground training, including all the following:

(i) aircraft systems;

(ii) normal procedures, which include flight planning and ground-handling and flight operations, including performance, mass and balance, fuel schemes selection of alternates, and ground de-icing/anti-icing;

(iii) abnormal and emergency procedures, which include pilot incapacitation as applicable;

(iv) a review of relevant samples of accident/incident and occurrences to increase awareness of the occurrences that may be relevant for the intended operation;

(2) emergency and safety equipment training if one or more task specialists are on board. The training should ensure that all emergency equipment can be used timely and efficiently, that an emergency evacuation and first aid can be conducted, taking into account the training and operating procedures of the task specialist(s); and

(3) aircraft/FSTD training relevant to the type or variant of aircraft on which the flight crew operates.

(b) Additional training relevant to the specialised tasks should be either ground training or aircraft/FSTD training or both, in accordance with the results of the operator's risk assessment.

SPO — OPERATOR PROFICIENCY CHECK

(c) The SPO operator proficiency check should take place at least annually. If the SPO operator combines the operator proficiency check with a licence proficiency check, the check should cover both the normal, abnormal and emergency procedures relevant to the type or variant and the relevant aspects associated with the specialised tasks described in the operations manual.

(d) If the SPO operator does not combine the operator proficiency check with a licence proficiency check, the operator proficiency check may not include the normal, abnormal and emergency procedures relevant to the type or variant that are already covered within the licence proficiency check. The operator proficiency check then covers the relevant aspects associated with the specialised task described in the operations manual.

(e) The flight crew should be assessed on their CRM skills in accordance with the methodology described in AMC1 and AMC2 ORO.FC.115 and as specified in the operations manual. CRM assessment should not be used as a reason for a failure of the operator proficiency check unless the observed behaviour could lead to an unacceptable reduction in safety margin.

(f) Each flight crew member should complete the operator proficiency checks as part of the normal crew complement.

SPO — RELEVANT PROCEDURES TO BE TRAINED AND CHECKED

(g) The operator should determine, based on a risk assessment, which procedures associated with the specialised tasks are relevant to be trained and checked. The following should be taken into account:

(1) specific risks associated with the specialised operation;

(2) for abnormal and emergency procedures, the criticality of the situation or failure and the impact of training and checking on ensuring a positive outcome; and

(3) for normal procedures, the amount of experience and recent experience accumulated since the previous training or checking.

(h) The operator should establish a training and checking programme to ensure that normal, abnormal and emergency procedures covering the relevant aspects associated with the specialised tasks are:

(1) trained and checked over a 2-year cycle for SPO operators engaged in only one specialised operation;

(2) trained and checked over a 2-year cycle for pilots engaged in only one specialised operation;

(3) trained and checked over a 3-year cycle, if neither (1) nor (2) applies;

(4) trained and checked before a pilot with no recent experience of the specialised operation in the last 6 months resumes the specialised operation.

(i) Whenever an item requires both training and checking, the recurrent aircraft/FSTD training of a single task or manoeuvre should be separate from, and should not take place at the same time as, an operator proficiency check of the item.

(j) Specialised operations may be exposed to specific risks such as routinely flying within the height velocity envelope of a helicopter. The operator should avoid taking unnecessary risks during aircraft training and checking and should take advantage of simulation devices, if possible, to train for such situations.

COMBINED CAT AND SPO TRANING AND CHECKING

(k) If the operator is involved in both CAT and SPO, the CAT training and checking programme may include elements that are relevant to the specialised tasks. If this is the case, these training and checking elements may be credited towards compliance with ORO.FC.330 as approved by the authority under ORO.FC.145(c).

GM1 ORO.FC.330 Recurrent training and checking — operator proficiency check

SPO — RELEVANT PROCEDURES TO BE TRAINED AND CHECKED

The procedures to be trained in the aircraft/FSTD may be different from the procedures to be checked if both complement each other, as defined by the operator in AMC1 ORO.FC.330, considering the following:

(a) It may happen that several training elements are covered by a single check; and

(b) Certain complex procedures are best explored under recurrent training, where the trainee will derive more benefit and training to proficiency is also employed.

AMC1 ORO.CC.115(e) Conduct of training courses and associated checking

Table 1 — Cabin crew CRM training

[...]

(g) CRM training syllabus

Table 1 below specifies which CRM training elements should be covered in each type of training. The levels of training in Table 1 can be described as follows:

(1) 'Required' means training that should be instructional or interactive in style to meet the objectives specified in the CRM training programme or to refresh and strengthen knowledge gained in a previous training.

(2) 'In-depth' means training that should be instructive or interactive in style taking full advantage of group discussions, team task analysis, team task simulation, etc., for the acquisition or consolidation of knowledge, skills and attitudes. The CRM training elements should be tailored to the specific needs of the training phase being undertaken.

Table 1 — Cabin crew CRM training

CRM training elements	**Operator's CRM training**	**Operator aircraft type conversion training**	**Annual recurrent training**	**Senior cabin crew member (SCC) course**
General principles				
Human factors in aviation; General instructions on CRM principles and objectives; Human performance and limitations; Threat and error management.	Required ~~Not required (covered under initial training required by Part-CC)~~	~~Required~~ Not required	Required	Required
Relevant to the individual cabin crew member				
Personality awareness, human error and reliability, attitudes and behaviours, self-assessment and self-critique; Stress and stress management; Fatigue and vigilance; Assertiveness, situation awareness, information acquisition and processing.	~~Not required (covered under initial training required by Part-CC)~~ Required	Required	Required (3-year cycle)	Required

Relevant to the entire aircraft crew				
Shared situation awareness, shared information acquisition and processing; Workload management; Effective communication and coordination between all crew members including the flight crew as well as inexperienced cabin crew members; Leadership, cooperation, synergy, delegation, decision-making, actions; Resilience development; Surprise and startle effect; Cultural differences; Identification and management of the passenger human factors: crowd control, passenger stress, conflict management, medical factors.	In-depth	Required when relevant to the type(s)	Required (3-year cycle)	In-depth
Specifics related to aircraft types (narrow-/wide-bodied, single-/multi-deck), flight crew and cabin crew composition and number of passengers	Required	In-depth	Required (3-year cycle)	In-depth
Relevant to the operator and the organisation				
Operator's safety culture and company culture, standard operating procedures (SOPs), organisational factors, factors linked to the type of operations; Effective communication and coordination with other operational personnel and ground services; Participation in cabin safety incident and accident reporting.	In-depth	Required when relevant to the type(s)	Required (3-year cycle)	In-depth
Case- studies	In-depth	Required when	In-depth	In-depth

		relevant to the type(s)		

AMC2 ORO.CC.115(e) Conduct of training courses and associated checking

CREW RESOURCE MANAGEMENT (CRM) TRAINING — SINGLE CABIN CREW OPERATIONS

[...]

(b) Virtual classroom ~~Computer-based~~ training

Notwithstanding (a)(2)~~(3)~~ of AMC1 ORO.CC.115(e), ~~computer-based training may be conducted as a stand-alone training method~~ classroom training may take place remotely, using a videoconferencing tool for a cabin crew member operating on aircraft with a maximum operational passenger seating configuration of 19 or less. The tool should permit real-time interaction between the trainees and the trainer, including speech and elements of body language. It should also be capable of transmitting any document to the trainee that the trainer wishes to present. The CRM trainer should establish the list of trainees in advance. Their number should be limited to 6 to ensure a sufficient level of interaction during the training session.

GM2 ORO.CC.115(e) ~~Crew resource management (CRM) training~~ Conduct of training courses and associated checking

MINIMUM TRAINING TIMES

(a) The following minimum training times are appropriate:

(1) multi cabin crew operations:

(i) combined CRM training: 6 training hours over a period of 3 years or, for EBT operators which have implemented a competency framework for cabin crew (e.g. ICAO PANS-TRG), a minimum of 3 training hours within 3 years; and

(ii) operator's CRM training: 6 training hours;

(2) operator's CRM training for single cabin crew operations: 4 training hours for a cabin crew member operating on aircraft with a maximum operational passenger seating configuration of 19 or less;

[...]

GM3 ORO.CC.115(e) ~~Crew resource management (CRM) training~~ Conduct of training courses and associated checking

[...]

GM4 ORO.CC.115(e) ~~Crew resource management (CRM) training~~ Conduct of training courses and associated checking

[...]

GM6 ORO.CC.115(e) Conduct of training courses and associated checking

CRM TRAINING — VIRTUAL CLASSROOM TRAINING — SINGLE-CABIN CREW OPERATIONS OF AIRCRAFT WITH AN MOPSC OF 19 OR LESS

(a) A successful virtual classroom training relies on the ability of the trainer to make best use of the associated technologies in the context of CRM training. The cabin crew CRM trainer may need to receive appropriate training covering the following:

(1) learning style;

(2) teaching method associated with virtual classroom instruction, such as videoconferencing, and a familiarisation with the virtual classroom instruction system in use, including management of time, training media and equipment and tools.

(b) The requirement of ORO.GEN.140 for the operator to grant access to the competent authority also applies to the virtual classroom training.

(c) More information on virtual classroom training is provided in the EASA Guidance for allowing virtual classroom instruction and distance learning.