



SAFETY MATERIAL

RMT.0599

‘Evidence-based and competency-based training.’

SPT.012

‘Promote the new European provisions on pilot training’

Oversight guidance for the transition to EBT Implementation (Baseline)

According to:

ORO.FC.231. EVIDENCE-BASED TRAINING.

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Disclaimer: The Agency has prepared this document to provide stakeholders with an easy-to-read publication. This document is part of the safety material documentation published by EASA. The document provides some of the best practices in the industry to implement EBT and **does not** form part of the EASA regulatory system (there is no need to comply with this document). This document is for information only. The Agency accepts no liability for damage of any kind resulting from the risks inherent in the use of this document.

Background: EBT is a worldwide global initiative that was created and developed by many organisations that contributed equally to the development of the project. ICAO, IATA and OEM guidance is available for the support of implementation of EBT programmes worldwide. No single organisation or person can claim the original idea or ownership of EBT and its principles. Stakeholders are recommended to follow the advice and documentation provided by their regulator.



1.- Legislation and references:

Primary legislation and references:

European Regulations:

- Regulation (EU) 2020/2036 of 9 December 2020 amending Regulation (EU) 965/2012.
 - o <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020R2036&qid=1607691853186>
- Regulation (EU) 2020/2193 of 16 December 2020 amending Regulation (EU) 1178/2011.
 - o <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R2193>

ED Decisions:

- ED Decision 2021/002/R 'Update of the AMC & GM to Subpart FC of Part-ORO (evidence -based training (EBT))'
 - o <https://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2021002r>

Explanatory notes and Safety promotion material (they are included in the Explanatory note)

- Explanatory note to the ED Decision 2021/002/R and Regulation (EU) 2020/2036 and Regulation (EU) 2020/2193.
 - o https://www.easa.europa.eu/sites/default/files/dfu/explanatory_note_to_ed_decision_2021-002-r.pdf

Secondary legislation and references:

- ED Decision 2015/027/R Implementation of evidence-based training (EBT) within the European regulatory framework <https://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2015027r>. It includes:
 - Annex I to ED decision 2015/027/R: **GM1 ORO.FC.230 (a); (b); (f). Recurrent training and checking** to Part-ORO – Issue 2, Amendment 4; and
 - Explanatory Note to the ED Decision 2015/027/R.
- ICAO Doc 9995 AN/497 Manual of Evidence-based Training First Edition – 2013.

For info:

- EASA Opinion No 08/2019 (A) Subpart FC 'Flight Crew' of Annex III (part-ORO) to Regulation (EU) 965/2012 – Update of ORO.FC: Evidence-based training (EBT).
 - o <https://www.easa.europa.eu/document-library/opinions/opinion-082019-b>
- EASA Notice of proposed of Amendment 2018-07(B) and 2018-07(A).
- ToR RMT.0696 Implementation of Evidence-Based Training within the European regulatory framework
 - o <https://www.easa.europa.eu/document-library/terms-of-reference-and-group-compositions/tor-rmt0696>.
- ToR (+ Concept Paper) RMT.0599 Evidence-based and competency-based training
 - o <https://www.easa.europa.eu/document-library/terms-of-reference-and-group-compositions/tor-concept-paper-rmt0599>
- IATA Evidence-Based Training Implementation Guide July 2013 First Edition & IATA Data Report for Evidence-Based Training August 2014 1st edition.
- ICAO PANS Training DOC 9868.

2.- PROJECT GUIDANCE FOR BASELINE EBT IMPLEMENTATION.

Task	Operator action	Authority action	Reference
1	Contact NAA to arrange a meeting to initiate the “Baseline implementation of EBT” and the intended scope.	Arrange a meeting with appropriately qualified staff.	NAA internal procedures and documentation. Provide guidance if available.
2	Apply for EBT. Prepare a draft implementation plan. Ensure Minimum experience in Mixed EBT.	Acknowledge receipt. Formal reply. Start the project.	NAA internal procedures. Minimum experience in Mixed EBT – AMC1 ORO.FC.231(a)(1)
3	Provide implementation plan to NAA including milestones and timeframes. Evaluate requirements to implement Baseline EBT (GAP analysis). Provide documentation where: 1. Description of the amendment/s required in the Operation Manual (linked to GAP analysis) 2. Planning of the AltMoC (if they will be required). Allocate personnel.	Allocate responsible team including FOI. Review implementation plan. Ask for: GAP analysis. Internal procedure to evaluate AltMoC. When the AltMoC is received in any of the steps below, ensure EASA is informed at the start of the evaluation of the AltMoC as they can support the National Authority.	ORO.FC.231(a)(1). ICAO Doc 9995 4.1.2 of Part I. IATA EBT Implementation Guide. An example of a GAP analysis can be found in Appendix 7 to Chapter 5 SMS gap analysis checklist and implementation plan ICAO Doc 9859 AN/474 Safety Management Manual (SMM). For AltMoc see ARO.OPS.226.
4	Provide implementation risk assessment.	Evaluate risk assessment in accordance with the safety case policy. NAA internal documentation.	As per company Management System. ORO.GEN.130 and ORO.FC.231(a).
5	Confirmed the set of competencies and observable behaviours (OMD amendment if required).	Review. Accept/Reject Amendment to OMD.	ICAO Doc 9995 Appendix 1. ORO.FC.231(b) and AMC1 ORO.FC.231(b)
6	Confirmed an assessment and grading system, adapt it as required (OMD amendment if required).	Review. Accept/Reject Amendment to OMD.	ORO.FC.231(d) and AMC1 ORO.FC.231(d) Explanatory note to ED Decision 2021/002/R

7	Communicate plan for EBT implementation to the pilot body and other key stakeholders in the operator.		EASA safety material
8	EBT Instructor training programme. (OMD amendment if required). Should include: – initial EBT instructor training course; – EBT assessment of competence – Recurrent standardisation programme: ○ refresher EBT training; ○ concordance training	Review the training documentation. Accept/Reject Amendment to OMD in case of operator's own instructor course approval. Conduct inspection of instructor training delivery as appropriate. Inspection report with finding and observations if necessary.	AMC1 ORO.FC.146(c) / GM1 ORO.FC.146(c) AMC2 ORO.FC.146(c) / GM2 ORO.FC.146(c) Explanatory note ED Decision 2021/002/R. initial EBT instructor training course: AMC1 ORO.FC.146(c) point (b), (c) and (d). NAA internal documentation for approving Manual amendments.
9	EBT training programme. (OMD amendment is required). – Assessment and training topics and their distribution during the 3-year EBT period. – set of competencies and OB (point 5); – assessment and grading system (point 6); – tailored and additional training system (remedial procedures); – unforeseen situations; – training system performance; – line evaluation of competence.	Review training documentation. Accept/Reject Amendment to OMD.	ORO.FC.231 (a)(2)(IV) / ORO.FC.231(a)(3) ORO.FC.231(c) / AMC ORO.FC.231(c)) ORO.FC.231(d) / AMC ORO.FC.231(d)) ORO.FC.231(h) / AMC1 ORO.FC.231(h) ORO.FC.231(a)(5) / AMC1 ORO.FC.231(a)(5) / GM1 ORO.FC.231(a)(5) NAA internal documentation for approving Manual amendments.
10	Implement EBT Baseline programme. Complete and deliver the compliance checklist (chapter 1) to your authority	Conduct inspection of the programme delivery as appropriate. Inspection report with finding and observations if necessary.	NAA internal procedures. AMC1 ARO.OPS.226(d).

3.- Guidance for Baseline implementation (compliance checklist):

This tool should be used in the approval of the EBT programme and it's transition from a Mixed EBT programme to a Baseline EBT programme.

No	EU or ICAO Reference		Details of the provision	Operators
1.0	ORO.FC.231	AMC1 ORO.FC.231 (a)(1)	<u>EXPERIENCE IN MIXED EBT TO SUBSTITUTE ORO.FC.230</u> ▪ The operator should have a minimum experience of 3 years of a mixed EBT programme. ▪ The operator should demonstrate 2 years of an instructor concordance assurance programme. ▪ The operator should demonstrate 1 year of a valid equivalency of malfunctions. ▪ The operator should demonstrate 1 year of integration of the training data in the customization of the EBT programme and SMS data for the contextualization of the example scenario elements. ▪ The operator should demonstrate that there is a verification of the grading system and feedback is provided to the training system performance and to the instructor standardization concordance assurance. ▪ One complete EBT module substitutes one operator proficiency check (OPC). ▪ The line evaluation of competence substitutes the line check. The authority will check that all the experience to substitute Mixed EBT and ORO.FC.230 are fulfilled prior to grant the approval of the Baseline EBT programme. (Note: More information on a mixed EBT programme is provided in GM1 ORO.FC.230(a);(b);(f) and in GM2 ORO.FC.A.245).	
1.1	ORO.FC.231	ORO.FC.231 (a)(1)	<u>IMPLEMENTATION PLAN.</u> Definition of an implementation and operations plan. This plan should be agreed with the competent authority. A safety risk assessment should be required by the competent authority for the implementation of EBT. Additionally, the plan may include a plan to return to legacy training/mixed EBT training if the implementation of Baseline is cancelled.	
	ICAO Doc 9995	4.1.2 of Part I		
1.2	ARO.OPS.226	Point (c)(1)	<u>The competent authority shall ensure the resolution of level 1 findings in the areas that will support the application of the EBT programme.</u>	

No	EU or ICAO Reference		Details of the provision	Operators reference
1.1	ORO.FC.231	ORO.FC.231 (e) AMC1 ORO.FC.231(e)	<u>VOLUME AND FSTD QUALIFICATION LEVEL.</u> Operators should implement the EBT programme referred to in ORO.FC.231. EBT programme has been developed to include notional 48 hours for each crew member over a 3-year period in a suitable FSTD. However, to achieve the programme objectives the duration of FSTD training may be determined according to the type of aircraft and complexity of operations. Subject to ORO.GEN.120, the operator may reduce the number of FSTD hours provided that an equivalent level of safety is achieved. The programme should not be less than 36 FSTD hours. Each EBT module should be conducted in an FSTD with a qualification level adequate to complete proficiency checks; therefore, it must be conducted in a full-flight simulator (FFS) level C or D.	In this column, the Operator writes the reference to their OMD or internal documentation. (e.g. Instructor handbook, pilot handbook, notice to crew...etc.) which shows compliance with the provision.
1.2	ORO.FC.231	ORO.FC.231(a)(2)(iii) AMC1 ORO.FC.232 (b)(3) AMC2 to AMC 7 ORO.FC.232 ICAO Doc 9995 3.1.2 of Part I Appendix 2	<u>APPLICABILITY – AIRCRAFT AND GENERATION.</u> The EBT training program described in this document refers to recurrent evaluation and training of flight crew. The training program considers the differences between aircraft of different generations and the effect of these differences on training. Aircraft considered are western built only. The tables from AMC2 to AMC 6 ORO.FC.232 are extracted from ICAO Doc 9995 and outlines the categorisation of aircraft into different generations. The operator as agreed by the Competent Authority will include new models in generations according to similar characteristics. (Example: A330 neo in Generation 4 – Jet). The operator should determine which generations of aircraft apply according to the table.	
1.3	ICAO Doc 9995	4.1.1 (c), 6.1.1 & 6.1.2, 7.2.3 of Part I	<u>PILOT INFORMATION.</u> Availability of information to pilots regarding EBT principles, methodology, set of competencies to demonstrate including observable behaviours and grading system (EBT pilot handbook).	

1.4	ORO.FC.231 ICAO Doc 9995	ORO.FC.231 (b) AMC1 ORO.FC.231(b) 3.2 of Part I 4.1.1 of Part I Appendix 1	SYSTEM OF CORE COMPETENCIES. The first component in the development of the EBT concept is a set of competencies contained in EASA AMC1 ORO.FC.231(b). This is a complete framework of competencies, competency descriptions and related behavioural indicators encompassing the technical and non-technical knowledge, skills and attitudes to operate safely, effectively and efficiently in a commercial air transport environment. The competencies contained in Appendix 1 to Part II were used to develop the baseline EBT programme. (Note: KNO is a new competency not covered in ICAO Doc 9995. EASA decided to introduce ‘application of knowledge’ as an additional competency to the ICAO core competency framework. Industry practice and experience indicates that observable behaviours related to “application of knowledge” are very useful and should be included as an additional core competency.)	
1.5	ORO.FC.231 ED Decision 2021/002/R and Explanatory Note to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg (EU) 2020/2193. ICAO Doc 9995	ORO.FC.231 (d) AMC1 ORO.FC.231 (d)(1) AMC4 ORO.FC.231 (d)(1) GM2 ORO.FC.231(d)(1) TEM model 3.6.3 of Part I	<u>ASSESSMENT AND GRADING SYSTEM.</u> Implementation of EBT includes the development and use of a competency-based assessment and grading system. Each competency may be rated on a scale according to defined observable behaviours. The operator should determine which point on the scale indicates minimum acceptable performance. At the end of the module, the operator’s OMD will require to define: 1. any competency observed below the minimum acceptable performance; 2. specific training needs (tailored and/or additional); 3. the pilot remediation training. Flight crew members are not released to line flying until an acceptable level of performance is achieved. Achievement of the minimum acceptable level of performance in the Evaluation Phase and Manoeuvres Training phase should indicate a pass for the next module if no opportunity to demonstrate it during the SBT. The Grading system should be able to obtain:	

No	EU or ICAO Reference		Details of the provision	Operators Ref.
2.0	ORO.FC.146 ICAO Doc 9995	AMC1 ORO.FC.146(c) GM1 ORO.FC.146(c) GM3 ORO.FC.146(c) 4.1.1 and 6.3 of Part I	<u>EBT INSTRUCTOR INITIAL STANDARDISATION TRAINING.</u> Instructor initial training should be a formalised approach to ensure a consistent and standardised approach to the EBT programme before implementation, including practical training reinforcing application of the assessment and grading system and maximising instructor’s concordance (inter-rater reliability). For an EBT programme, the personnel that performs assessment and provides training shall hold an Annex I (Part-FCL) instructor or examiner certificate; Before delivering the operator’s EBT programme, the instructor should complete an EBT instructor initial standardisation programme composed of: ▪ EBT instructor training; ▪ EBT assessment of competence. ICAO Doc 9995 refers to the assessment of the instructor during a practical training session. This is a session conducted in an FSTD as part of an EBT programme, or a similar FSTD session involving pilots role-playing to facilitate standardisation of the instructor. If the practical training session is part of an EBT programme, the session can also be used for revalidation of an examiner or instructor’s certificate or fulfil an operator or ATO requirement for competency assessment in the delivery of competency-based training. Completion of the operator’s EBT initial standardisation programme will qualify the instructor to perform EBT practical assessment. If the EBT instructor training course is design by the operator, previous OMD approval and oversight by the authority is required. The instructor’s competencies recommended are described in the EASA EBT instructor competency framework. The EBT instructor training course may be a minimum of 14 hours (EBT instructor training alone) and the recommended length is between 21 to 24 hours (EBT instructor training plus assessment of competence).	
2.1	ORO.FC.146	GM2 ORO.FC.146(c)	<u>EBT INSTRUCTOR CONCORDANCE ASSURANCE PROGRAMME (ICAP)</u> (recurrent standardisation).	Two year of demonstration of instructor’s

ORO.FC.231 ICAO Doc 9995	ORO.FC.231(a)(4) AMC1 ORO.FC.231(a)(4) GM1 ORO.FC.231(a)(4) 4.1.1 and 6.3 of Part I	‘Concordance (inter-rater reliability)’ is the consistency or stability of scores between different EBT instructors. It gives a score (s) of how much homogeneity or consensus there is in the ratings given by instructors. This training is one of the elements to ensure concordance within the EBT instructor community. Those EBT instructors who do not demonstrate concordance may require further training. The operator’s instructor standardisation and concordance assurance programme provide insight in the areas that an instructor (or instructor population) requires concordance training. The operator shall establish an EBT instructor standardisation and concordance assurance programme. (i) All instructors must be subject to this programme. (ii) The operator shall use appropriate methods and metrics to assess concordance. (iii) The operator shall demonstrate sufficient instructor concordance. A good concordance is based as a minimum: (a) Grading Data analysis: this may help to determine if all the elements of the EBT system are working correctly (e.g. some instructors may not be grading properly or one competency found difficult to grade...etc). The operator should determine a root cause and provide mitigation measures (e.g. instructor training, improve procedures, etc). Note: A simple average does not provide enough insights in the data to enable a proper analysis; instead, the operator should develop some more metrics (e.g. may include average) to identify learning opportunities to an instructor or instructors. Note: As a very general comment, the findings in the instructor grading may be: 1- too low grading (the too strict – the butcher), 2- too high grading (the too lenient – Santa Claus), 3- too many gradings in the middle (3) (the lazy), 4- too many extreme gradings (1 and 5) and little number of gradings in the middle (the unbalanced – the crazy). (b) Good grading guidance: the operator should further develop guidance to help the instructor in the duty of grading. A threat and error management model is provided as a reference in the ED Decision 2021/002/R and Explanatory Note to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg (EU) 2020/2193.	concordance assurance is required prior to the approval of a Baseline EBT programme.
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			The ICAP should be adapted to the size and complexity of the instructors' group and the complexity of the operator's EBT programme. Complex operators must include an ICAP-specific data analysis demonstrating: ▪ instructor-group assessment homogeneity (agreement); ▪ instructor assessment accuracy (alignment). The operator should verify the concordance of each instructor: ▪ once every cycle; ▪ for a sufficient number of competency-grade combinations.	
2.2	ORO.FC.146 ORO.FC.231	AMC1 ORO.FC.146(c) ORO.FC.231(h) AMC2 ORO.FC.231(h) GM1 ORO.FC.231(h) GM2 ORO.FC.231(h)(4)	<u>LINE EVALUATOR OF COMPETENCE.</u> The line evaluation of competence shall be conducted by a suitably qualified commander nominated by the operator that is standardised in EBT concepts and the assessment of competencies (line evaluator). ▪ The line evaluator should have a valid line evaluation of competence; ▪ The line evaluator should receive an acceptable training based on the EBT instructor training. The EBT instructor training provides some learning objectives which may be used to qualify the commander nominated by the operator to perform line evaluation of competence. The training may be a minimum of 7 hours, where 1 hour may be done outside the classroom. ▪ The EBT assessment of competence is not required. ▪ The line evaluator training may be included in the EBT instructor standardisation and concordance programme.	

Ref.	EC or ICAO Reference	Details of the provision	Operators Ref.
3.0	ORO.FC.231 ORO.FC.231(f) AMC1 ORO.FC.231(f) GM1 ORO.FC.231(f) GM2 ORO.FC.231(f) GM3 ORO.FC.231(f) GM4 ORO.FC.231(f) ED Decision 2021/002/R ICAO Doc 9995 3.8.2 and 3.8.3 of Part I	<u>EQUIVALENCY OF MALFUNCTIONS</u> (Malfunction clustering). Each pilot shall receive assessment and training in the management of aircraft system malfunctions. This training shall include aircraft system malfunctions that place a significant demand on a proficient crew. The methodology is described in AMC1 ORO.FC.231(f). According to the EBT philosophy, failures of aircraft systems and associated procedures are assessed as major according to their impact on crew performance. Demonstrated proficiency in the management of one malfunction is then considered equivalent to demonstrated proficiency for the other malfunctions in the same group. Malfunction characteristics should be considered in isolation from any environmental or operational context. 1.- Classify and group malfunctions according to the 5 characteristics: ▪ Immediacy ▪ Complexity ▪ Degradation of control* ▪ Loss of instrumentation* ▪ Management of consequences 2.- Develop the EBT FSTD programme to incorporate malfunctions at the frequency specified in the table of assessment and training topics (AMC 2 to AMC6 ORO.FC.232 or Appendix 2 to 6 in ICAO Doc.9995). (Note*: In general, the management of aircraft malfunctions is considered as a crew, but where the characteristics degradation of control and loss of instrumentation are considered each pilot should have an opportunity of performing the role of PF). Malfunctions included in the equivalency of malfunctions but not included in the EBT FSTD programme require review and appropriate procedural knowledge training, conducted in suitable alternative environment (classroom, flight procedure training device, computer-based training, etc.). When more than one characteristic is identified, the malfunction may be included in several groups. In this case only one characteristic may be selected for programme development.	One year of equivalency of a valid malfunctions according to EBT ORO.FC.231 is required prior to the approval of a Baseline EBT programme. (Note: “valid” refers to an equivalency of malfunctions during the last year that complies with all the requisites described in ORO.FC.231(f).

			(Note: Doc 9995 reads “combining characteristics should not reduce the number of malfunctions below 4”. EASA recommends a minimum of 5 malfunctions per year: 1 immediacy, 1 complexity, 1 degradation of control (as PF), 1 loss of instrumentation (as PF) and 1 management of consequences).	
3.1	ORO.FC.231 ORO.FC.232 ED Decision 2021/002/R ICAO Doc 9995	ORO.FC.231 (g) AMC1 ORO.FC.231(g) AMC2 ORO.FC.231(g) GM1 ORO.FC.231(g) AMC2 to AMC6 ORO.FC.232 Manoeuvres training. 3.8.4 of Part I	<u>EQUIVALENCY OF APPROACHES</u> (Approach clustering). The operator shall ensure that each pilot receives regular training in the conduct of approach types and approach methods relevant to operations. This training shall include approaches that place an additional demand on a proficient crew. The methodology is described in AMC1 ORO.FC.231(g). 1.- Classify and group approaches relevant to operations according to the 3 characteristics: ▪ Design ▪ Frequency ▪ Degraded guidance 2.- Develop the EBT FSTD programme to incorporate the selected approaches at the frequency specified in the table of assessment and training topics (AMC 2 to AMC6 ORO.FC.232 or Appendix 2 to 6 in ICAO Doc.9995). The table of assessment and training topics for each generation provides the type of approach, flight method and frequency for the crew. (Note: the underlying philosophy in the design of a equivalency of approaches model proposed by EASA ORO.FC.231 differs notably to the approach clustering proposed in ICAO Doc.9995).	

Ref:	EC or ICAO Reference		Details of the provision	Operators reference
4.0	ORO.FC.231	ORO.FC.231(a)(2)(iv) ORO.FC.231(a)(3) AMC1 ORO.FC.231(a)	<u>EBT MODULES.</u> The EBT modules in a Baseline programme are described as follows: 1. Evaluation phase: means one of the phases of an EBT module which is a line-orientated flight scenario representative of the operator's environment during which there are one or more occurrences to evaluate key elements of the defined competency framework; The purpose is to identify training needs based on competencies and collect population-based data; To identify the training needs it should be identified the root cause of the deficiency observed rather than the symptoms of the deficiency. 2. Manoeuvres training phase: The purpose of the manoeuvres training phase is to train the handling skills necessary to fly critical flight manoeuvres so that they are maintained to a defined level of proficiency. These exercises or events should place a significant demand on a proficient pilot. This replaces the manoeuvres validation phase in a Mixed EBT programme. 3. Scenario-based training phase: The purpose of the scenario-based training phase is to further develop pilot core competencies in a positive learning environment. The Operator should describe how the EBT modules and its phases are distributed throughout the EBT programme. (Note: ISI (In-seat instruction) training differs from IATA as in EASA EBT Baseline means a way to deliver training and not a phase itself defined in the programme).	
4.1	ORO.FC.232	AMC 2 to AM7 ORO.FC.232	<u>PROGRAMME DESIGN.</u> The EBT programme should be designed according to the guidance and priorities within ICAO Doc 9995. All modules and lesson plans should be fully tested before use, to ensure that anticipated timings and FSTD fidelity provide for the training outcomes defined. Selection and adaptation of the scenarios defined in Appendices 2 to 6 ICAO Doc 9995 or AMC2 to AMC6 ORO.FC.232 according to the generation of aircraft (fleet) and type of operation. The scenario elements are listed in AMC2 ORO.FC.232 and the operator should determine the distribution of training topics listed as A, B and C over the 3-year period and their distribution among the different phases of the module.	
	ICAO Doc 9995	Attachment to Chapter 1 Step 7A 4.1.2 of Part I		

4.2	ORO.FC.231 ICAO Doc 9995	AMC1 ORO.FC.231(a) point (f). GM3 ORO.FC.231(a) 3.6.6 and 3.6.8 of Part I	<u>CUSTOMISATION OF THE EBT PROGRAMME (SYLLABI).</u> 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, all B747 pilots, all pilots flying an Airbus model, etc.). (ii) Operator-specific evidence gathered from the safety management process in accordance with ORO.GEN.200. (2) Outer loop (i) 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.), etc. It should also consider the revised internationally available EBT data and any recommendations to training topic prioritisation. The programme will demonstrate that: ▪ There is a reasonable contextualization of the example scenarios based on the real operation performed by the operator and feedback from the SMS (e.g. if the network of the operator is in Europe, the LOFTS may be located in Europe, or if SMS has reported that TCAS alerts occurs in Spain then the contextualisation of TCAS example scenarios may be located in Spanish aerospace, a new route is established in the network then SBT may use the same route, etc); ▪ Data provided by the EBT system is used to design the EBT programme (e.g. if deficient is found in one competency across the fleet/pilot rank/airline the future EBT programmes should reinforce this competency) The Authority is invited to verify if the operator has established a system (including procedures) to design the EBT programme which includes how the selection of the example scenarios is done and how the operator contextualizes those example scenarios. The contextualisation should be based on the operational data (Area of operation, SMS data, FDM data, pilots report, etc).	One year of demonstration in the customisation of the syllabi in the integration of SMS and training programme data for the contextualisation of the scenario elements of the programme is required prior to the approval of a Baseline EBT programme.
4.3	ORO.FC.231	ORO.FC.231 (a)(5)	<u>CONTINGENCY PROCEDURES (UNFORESEEN FACTORS).</u>	

	ED Decision 2021/002/R and Explanatory Note to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg (EU) 2020/2193.	AMC1 ORO.FC.231(a)(5) GM1 ORO.FC.231(a)(5)	The EBT programme may include contingency procedures for unforeseen circumstances that could affect the delivery of the EBT modules. The operator shall demonstrate the need for these procedures. These procedures shall ensure that a pilot does not continue line operations if the performance observed was below the minimum acceptable level. These procedures may include: (i) a different separation period between EBT modules; and (ii) different order of the phases of the EBT module. The operator should describe in the OMD contingency procedures when crews are unable to perform the planned module. Generally, the principles that should drive the development of such contingency procedures are: ▪ Maintain the approach that has been approved in traditional training; ▪ Contingency situations outside the control of the operator (e.g. last minute or long-term sickness of crew, pregnancy, etc.) ▪ Contingency procedures under the control of the operator (e.g. broken simulator either self-owned or subcontracted, in both cases operator retains the responsibility ORO.GEN.205), inability of the crew member due to delay of the preceding fly duty period, or positioning flight...etc.) ▪ the procedures to re-instate the crew into the program.	
4.4	ORO.FC.231 ED Decision 2021/002/R and Explanatory Note to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg	ORO.FC.231(d)(1) AMC1 ORO.FC.231(d)(1) AMC4 ORO.FC.231(d)(1)	<u>TAILORED AND ADDITIONAL TRAINING.</u> The operator shall use a grading system to assess the pilot competencies. The grading system shall ensure a performance criterion and a scale for each competency, with a point on the scale which determines the minimum acceptable level to be achieved for the conduct of line operations. The operator shall develop procedures to address low performance of the pilot. Remedial training should be linked to the grading system and to the training needs analysis performed by the instructors to allow remediation tailored to the pilot. The grading scale for each competency should determine the grade at which the performance is considered: (i) Not competent for the conduct of line operations. An outcome of additional training is required and level 2 grading metrics should be recorded; and (ii) if the pilot needs more training (e.g. tailored or additional training) to elevate their performance to the operator specified norm.	

	(EU) 2020/2193.			
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Ref: EC or ICAO Reference		Details of the provision		Operators reference
5.0	ORO.FC.231 ICAO Doc 9995	ORO.FC.231(c) AMC1 ORO.FC.231(c) GM1 ORO.FC.231(c) GM2 ORO.FC.231(d)(2) 3.6.6 and 3.6.8 of Part I	<u>TRAINING SYSTEM PERFORMANCE</u> (Feedback process). The EBT system performance shall be measured and evaluated through a feedback process in order to: (i) validate and refine the operator's EBT programme; and (ii) ascertain that the operator's EBT programme develops pilot competencies. The feedback process shall be included in the operator's management system. A system that includes the trainees feedback is highly beneficial and should be considered. The programme should be reviewed periodically based on the data obtained in the EBT programme (e.g. grading of the pilots, feedback from instructors and pilots, deficiencies found in one or more competencies...) The feedback process is the continuous process of collecting and analysing assessment and training data from an EBT programme. The training system performance will be described in the operator's OMD including the defined metrics to collect data in order to: ▪ identify trends and ensure corrective action where necessary; ▪ identify collective training needs; ▪ review, adjust and continuously improve the training programme; ▪ further develop the training system; ▪ standardise the instructors (when the instructor standardisation and concordance assurance programme is integrated into the training system performance).	The operator should demonstrate 1 year of integration of the training data in the customization of the EBT programme and SMS data for the contextualization of the example scenario elements.
5.1	ORO.FC.231	ORO.FC.231(c) AMC2 ORO.FC.231 (c) GM2 ORO.FC.231(c)	<u>DATA PROTECTION.</u> The objective of protecting the EBT data is to avoid inappropriate use of it in order to ensure the continued availability of such data to maintain and improve pilot competencies.	

			The data access and security policy (including the procedure to prevent disclosure of crew identity) should be agreed by all parties involved (airline management and flight crew member representatives nominated either by the union or the flight crew themselves). The operator shall develop procedures governing the protection of EBT data. The operator will define the data access and security policy to information access: 1. The data access and security policy should include the measures to ensure the security of the data (e.g. information security standard). This usually include a classification of the data and depending on that classification who can access such data. 2. The identified data retention policy and accountability; 3. The measures to ensure that the security of the data includes the information security standard (e.g. information security management systems standard e.g. ISO 2700x-ISO 27001, NIST SP 800-53, etc.). This security standards includes when using electronics systems, penetration tests, back up of the information and security of such back up...etc ; 4. The method to obtain de-identified crew feedback on those occasions that require specific follow-up.	
5.2	ORO.FC.231	ORO.FC.231 (d)(2) AMC1 ORO.FC.231 (d)(2) GM1 ORO.FC.231 (d)(2) GM2 ORO.FC.231(d)(2)	<u>VERIFICATION OF THE ACCURACY OF THE GRADING SYSTEM.</u> EBT Mixed implementation offers a valuable opportunity to trim the accuracy of the grading system previous to the approval of a Baseline EBT programme. Data from the Mixed EBT grading system and every year's LPC may be compared. The data obtained during the 3-year Mixed EBT period (ORO.FC.230) would be a solid data to make the verification of the accuracy of the Baseline EBT programme. The Mixed EBT 3-year period is intended to demonstrate what works or what has to be improve towards the Baseline programme. It is not about to show a perfect accuracy (alignment and agreement) but to understand the system that is going to be implemented. The operator should be able to show to the authorities the strengths and weakness of the system so the operator acquires the knowledge and tools to make a continuous oversight, knows how to implement corrections to the system and knows when the system is not working as planned. The competent authority is invited to verify if the operator has a system (including procedures) to verify the accuracy of the grading system. The authority may not allow full EBT unless the accuracy of the grading system is demonstrated.	

4.- Administrative action for the revalidation of licences (PART FCL) under EBT Baseline.

FCL.740.A includes that the completion of the EBT practical assessment shall be done in the 3 months immediately preceding the expiry date of the rating

- (a) The completion of an EBT Practical assessment includes:
 - (1) the assessment of pilot performance either in a simulated or an operational environment and
 - (2) the administrative action which includes the completion of the Appendix 10 form.
- (b) Therefore, point (1) may be performed before the 3 months immediately preceding the expiry date of the rating as long as point (2) administrative action is completed within the 3 months.

Appendix 10 form includes the confirmation that the pilot has completed the operator's EBT programme, these requirements can be found in ORO.FC.231 and include as a minimum the completion of the EBT modules (minimum two EBT modules), a valid line evaluation of competence and the completion of the ground training.

5.- Objectives for the inclusion of mandatory items specified in Manoeuvre Training Phase (for FSTD only).

An operator, unless indicated by the authority, should define the start and end point for each manoeuvre.

The manoeuvres training phase (skill retention) is intended to train skill-based manoeuvres (body memory actions). These manoeuvres should place a significant demand on a proficient pilot.

This phase is designed to focus on the competencies PRO, FPA and FPM.

Assessment and training topic	AP9 ref.	Flight phase for activation	Freq.	Topic description	EASA guidance (Manoeuvre training phase)
Rejected take-off (CAT I).	2.6	Take-off	B	System failure after the application of take-off thrust and before reaching V1 (CAT I or above)	From initiation of take-off to complete stop (or as applicable to procedure).
SPA Rejected Take off (RTO)	6.1*	Take-off	B	System failure after the application of take-off thrust and before reaching V1 (LOVT)	RTO - Can be combine with the assessment and training topic "surprise" in EVAL or SBT. RTO is not required under Part SPA but instead in Appendix 9 section 6.
LVTO	NO	Take-off	B		RTO is not required under Part SPA but instead in Appendix 9 section 6. The manoeuvre may be complete at a point when the aircraft is stabilised at normal climb speed with the correct pitch and lateral control in trim condition and as applicable autopilot engagement.
Failure of the critical engine between V1 & V2.	2.5.2*	Take-off	B	Failure of the critical engine (if applicable) from V1 and before reaching V2 in the lowest CAT I visibility conditions or in LVO conditions.	The manoeuvre is complete at a point when the aircraft is stabilised at normal engine-out climb speed with the correct pitch and lateral control in trim condition and as applicable autopilot engagement. Only one failure of the critical engine between V1 and V2 a year should may be done in LVO conditions.

Failure of one engine on take-off	2.5.1*	Take-off	B	Failure of one engine from V1 and before reaching V2 in lowest CAT I visibility conditions or in LVO conditions.	The manoeuvre is complete at a point when the aircraft is stabilised in a clean configuration with engine-out procedures completed. Only one failure of the critical engine between V1 and V2 a year may be done in LVO conditions.
				Failure of one engine above V2 (any segment of the TO) in lowest CAT I visibility or in LVO conditions.	The manoeuvre is complete at a point when aircraft is stabilised in a clean configuration with engine-out procedures completed.
Engine-out approach & landing	3.8.3.4*	Approach	B	With the critical engine (if applicable) failed, normal landing	Initiation in a stabilised engine-out configuration from not less than 3 NM final approach until completion of roll-out.
Engine-out approach & go-around	4.4*	Approach	B	With the critical engine (if applicable) failed, manually flown normal precision approach to DA, followed by a manual go-around — the whole manoeuvre to be flown without visual reference	This manoeuvre should be flown from intercept to centreline until acceleration after go-around. The manoeuvre is complete at a point when the aircraft is stabilised at normal engine-out climb speed with the correct pitch and lateral control in trim condition and as applicable autopilot engagement ().
Go-around	4.2*	Approach	A	Go-around, all engines operative	High energy, initiation during the approach at 150 to 300 m (500 to 1 000 ft) below the missed approach level-off altitude.
					Initiation of a go-around from DA followed by visual circuit and landing.
					During flare/rejected landing.
Approach type A or B 3D	3.8.3*	Approach	B	Approach type A or B flight method 3D	See equivalency of approaches relevant to operations that place an additional demand on a proficient crew.
Approach type A 2D	3.8.4*	Approach	B	Approach type A flight method 2D	See equivalency of approaches relevant to operations that place an additional demand on a proficient crew.

SPA approach(es)	6.2* 6.3* 6.4*	Approach	B	Approach requiring specific approval	See equivalency of approaches relevant to operations — specific approval.
Emergency descent	NO	Cruise	C	Initiation of emergency descent from normal cruise altitude	The manoeuvre is complete once the aircraft is stabilised in emergency descent configuration (and profile) and all the procedures completed if not done in automation management training topic .

Note: The starred items (*) shall be flown solely by reference to instruments.

6.- Objectives for the inclusion of items in Manoeuvre Training Phase (for FSTD only) for the verification of the accuracy of the grading system

An operator, unless indicated by the authority, should define the start and end point for each manoeuvre.

The check should be conducted under IFR and as far as possible be accomplished in a simulated commercial air transport environment.

GM1 ORO.FC.231(d)(2) provides the items that should be included in the manoeuvre training phase and their description to be equivalent when the operator makes the verification of the grading system (GM1 ORO.FC.231(d)(2)). A reference to the AP9 and its description is included.

The manoeuvres training phase (skill retention) is intended to train skill-based manoeuvres (body memory actions). These manoeuvres should place a significant demand on a proficient pilot.

This phase is designed to focus on the competencies PRO, FPA and FPM.

Assessment and training topic	AP9 ref.	Flight Phase activation	Freq	Topic description	EASA guidance (Manoeuvre training phase)
Rejected take-off at a reasonable speed before reaching V1	2.6	Take-off	C	System failure after the application of take-off thrust and before reaching V1 (CAT I or above)	From initiation of take-off to complete stop (or as applicable to procedure).
SPA Rejected Take off (recommended but not required)	6.1*	Take-off	C	System failure after the application of take-off thrust and before reaching V1 (LOVT)	RTO - Can be combine with the assessment and training topic “surprise” in EVAL or SBT. RTO is not required under Part SPA but instead in Appendix 9 section 6.
LVTO (recommended but not required)	NO	Take-off	C		RTO is not required under Part SPA but instead in Appendix 9 section 6. The manoeuvre may be complete at a point when the aircraft is stabilised at normal climb speed with the correct pitch and lateral control in trim condition and as applicable autopilot engagement.
Failure of the critical engine between V1 & V2.	2.5.2*	Take-off	C	Failure of the critical engine (if applicable) from V1 and before reaching V2 in the lowest CAT I visibility conditions or in LVO conditions.	The manoeuvre is complete at a point when the aircraft is stabilised at normal engine-out climb speed with the correct pitch and lateral control in trim condition and as applicable autopilot engagement. Only one failure of the critical engine between V1 and V2 a year may be done in LVO conditions.

Failure of one engine on take-off (recommended but not required)	2.5.1*	Take-off	C	Failure of one engine from V1 and before reaching V2 in lowest CAT I visibility conditions or in LVO conditions.	The manoeuvre is complete at a point when the aircraft is stabilised in a clean configuration with engine-out procedures completed. Only one failure of the critical engine between V1 and V2 a year may be done in LVO conditions.
				Failure of one engine above V2 (any segment of the TO) in lowest CAT I visibility or in LVO conditions.	The manoeuvre is complete at a point when aircraft is stabilised in a clean configuration with engine-out procedures completed.
3D operations to DH/A of 200 ft (60 m) or to higher minima if required by the approach procedure	3.8.3*	Approach	C	Manually, with one engine failure (a) before passing 1 000 ft above aerodrome level; or (b) during final approach after passing the outer marker (OM) within a distance of not more than 4 NM until touchdown or through the complete missed approach procedure.	See equivalency of approaches relevant to operations that place an additional demand on a proficient crew.
2D operations down to the MDH/A	3.8.4	Approach	C	Non-precision approach down to the MDH/A	See equivalency of approaches relevant to operations that place an additional demand on a proficient crew.
Engine-out approach & go-around	4.4*	Approach	C	With the critical engine (if applicable) failed, manually flown normal precision approach to DA, followed by a manual go-around — the whole manoeuvre to be flown without visual reference	This manoeuvre should be flown from intercept to centreline until acceleration after go-around. The manoeuvre is complete at a point when the aircraft is stabilised at normal engine-out climb speed with the correct pitch and lateral control in trim condition and as applicable autopilot engagement ().
Engine-out landing	5.5	Landing	C	Landing with the critical engine inoperative	Maybe combined with element 3.8.3 or 3.8.4

SPA approach(es) (recommended but not required)	6.2* 6.3* 6.4*	Approach	C	Approach requiring specific approval	See equivalency of approaches relevant to operations — specific approval.
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Note: The starred items (*) shall be flown solely by reference to instruments.

7.- Compliance for the ATPL skill test in an EBT module.

Rule reference: FCL.520.A ATPL(A) – Skill test

The skill test in accordance with Appendix 9 may be combined with an EBT module. It may follow the same process already described in mixed EBT for the LPC (e.g. manoeuvres validation phase for the pilot performing the ATPL skill test). The competent authority may provide guidance.

8.- Validity of the EBT module.

The rule ORO.FC.231 (a) (2) (iv) says, "the validity period of an EBT module shall be 12 month(s)". In a giving moment the pilot shall have a valid module (at least one). This requirement is to be seeing in conjunction with ORO.FC.130¹.

On the other hand, in Part FCL, and in order to revalidate pilot licences under the Appendix 10, pilots must complete at least two modules within the validity period of their licences. It is not required to have two valid modules in order to revalidate. Example: a pilot has a licence expiry date of 31.12.2021 on the basis of module 1 performed in April 2020, module 2 in November 2020 and the administrative process of revalidation in November 2020 as the pilot is within 3 months revalidation period. The pilot may perform module 3 in April 2021 and module 4 on 30 of December 2021. From 01.12.2021 until 30.12.2021, the pilot has a valid module (module 3), and therefore, he/she is in compliance with ORO.FC.231(a)(2)(iv) and ORO.FC.130 as required in Part ORO. Even if the November 2020 module is expired and therefore in December 2021, only one module is valid, Part-ORO only requires to have one module valid. However, to revalidate, it is required to complete two modules within the period of validity of the type rating (January to December 2021), which the pilot will do by completing module 3 in April and module 4 in December.

¹ ORO.FC.130 'Recurrent training and checking' [Regulation (EU) No 965/2012]

(a) Each flight crew member shall complete annual recurrent flight and ground training relevant to the type or variant of aircraft on which he/she operates, including training on the location and use of all emergency and safety equipment carried.

(b) Each flight crew member shall be periodically checked to demonstrate competence in carrying out normal, abnormal and emergency procedures.

9.- Guidance for Alternative means of compliance related to Evidence-based Training. (ARO.OPS.226).

ARO.OPS.226 point (e).

The competent authority shall contact EASA before the start of the evaluation of the AltMOC. EASA can provide useful information for the purpose of the evaluation.

- AltMOC related to AMC1 and AMC2 ORO.FC.231(b) (Adapted competency Model):
AltMoC to EASA competency model are generally not recommended to assure non-biased industry data collection and analysis. In case the operator decides to do so the following principles should apply (in order of preference):
 - 1- The addition of a new competency is preferred (e.g. Professional competency) rather than a re-designation of the EASA competencies-to allow the comparison of competency data with other operators and facilitate the job of the authority. An AltMoC is required if the competency is used as part of the programme to revalidate pilots' licences.
 - 2- It is recommended that OBs are not moved from one competency to another instead it may be better that a new OB/s is introduced to complement the existing EASA OBs to a particular competency. An AltMoC is required.

Note: An AltMoC is not required when the competency model is the same as the EASA competencies (9 competencies) and its OBs, but some additional notes are added to better explain some of the existing OBs (e.g. to improve the understanding and facilitate the observation of such OBs).
- AltMOC related to AMC2 ORO.FC.231(d)(1) Grading system.
Grading systems of 4 point scales, instead of 5 point scale as recommended in AMC1 ORO.FC.231(d)(1) may be accepted. In this case it is recommended that the Operator merges EASA grade 4 and 5 into a single grade 4. This way grade 1 and 2 which are key in the EBT system remain as recommended. Grade 3 also remains standard; grade 3 is very important because is one of the most common grades use across the airline. It is recommended that the Operator provides a comparison table as follows:

EASA grading scale (AMC1)	Operator grading scale (AMC2)
Grade 1	Grade 1
Grade 2	Grade 2
Grade 3	Grade 3
Grade 4	Grade 4
Grade 5	

10.- Objectives and compliance checklist between CRM Recurrent training ORO.FC.115 and EBT Baseline implementation.

Operators implementing Baseline EBT in accordance with ORO.FC.231 need to demonstrate compliance with ORO.FC.115 and the associated AMC. However, some elements of the required recurrent CRM training may already be covered with this implementation.

A comparison has been made between the requirements of:

- AMC1 ORO.FC.115 in relation to recurrent CRM training and
- EBT programme as described in ICAO document 9995 and implemented in accordance with ORO.FC.231.

The requirements for annual recurrent CRM training and CRM integration into FSTD training are generally satisfied by such programme (ORO.FC.231) but operators will need to demonstrate compliance with some aspects of recurrent CRM that are not necessarily addressed by the EBT programme. In particular:

- **Combined CRM** [AMC1 ORO.FC.115(a)(6)]

Operators will need to provide combined classroom CRM training for flight crew and cabin crew. The maximum periodicity for such training is once in every three years, but most operators will provide this training more frequently, especially if it is combined with other training events requiring the participation of both flight crew and cabin crew (e.g. emergency procedures training).

- **Training in the non-operational environment**

Operators will need to deliver recurrent CRM training in either the operational or non-operational environment for training topics that are not otherwise covered by the EBT programme. Certain CRM elements may require training in the non-operational environment. Examples include:

- | | |
|-----------------------------------|---|
| a) Resilience development; | c) Operator's safety culture and company culture and |
| b) Cultural differences; | d) Case studies. |

Training in the non-operational environment could be by done in the computer-based training or classroom training and, where the topic affects the entire aircraft crew, may be delivered during the combined CRM sessions. This training might also be complemented by additional training during EBT modules.

- **Identified safety risks** [AMC1 ORO.FC.115(a)(7)]

Operators need to demonstrate that hazards and risks identified by their safety risk assessment processes are addressed either in the EBT modules or during CRM training in the non-operational environment.

- **Review of training programme** [AMC1 ORO.FC.115(d)(2)]

Operators implementing EBT need to demonstrate that the programme is updated regularly and in any case, at least once every 3 years.

- CRM training other than recurrent flight crew CRM

Other CRM training events (initial, operator's conversion, command course) are outside the scope of the EBT programme.

CRM Trainers

Classroom CRM training should be delivered by CRM trainers qualified in accordance with AMC3 ORO.FC.115. CRM training during EBT modules will be provided by a TRI / SFI who has completed the operator's EBT Instructor's course. If needed, directions concerning CRM-related issues arising from computer-based training are provided by either a flight crew CRM trainer or by TRI / SFI.

Substitution of compliance-based CRM [AMC1 ORO.FC.115 (a)(8)]

A competency-based training programme, such as EBT, may be used to substitute the compliance-based approach to CRM training. It is therefore not necessary for an operator to include every element of CRM training listed in AMC1 ORO.FC.115 provided that the operator can demonstrate that the same training objective is delivered by the EBT programme. For this purpose, the EBT non-technical competencies (CRM): communication, leadership and teamwork, problem solving and decision making, situational awareness, and workload management are means to demonstrate that the same training objective is delivered.

Compliance Table

Table 1 may be used to describe how an operator implementing EBT will comply with the requirements of AMC1 ORO.FC.115 for recurrent CRM training. The means of compliance may either be a training event in the operational (FSTD, briefing and debriefing) or non-operational environment (classroom, computer-based training) or it may be a description of how the operator's EBT programme will substitute the compliance-based approach to CRM training.

CRM training evenly distributed

The requirement contained in ORO.FC.230 point (e)(2) is not mandatory in Baseline EBT. The competency framework and training principles topics ensure a continuous assessment of CRM. However is advisable to continue a similar distribution pattern in Baseline EBT as best practice.

Table 1: CRM training elements

OP: means operational environment / Non Op: means non-operational environment. The operator may choose to cover one item in the operational environment and/or in non-operational environment.

CRM training elements	environment		Means of compliance <i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
	OP	Non OP	
Automation and philosophy on the use of automation			
Case studies			
Human factors in aviation;			
General instructions on CRM principles and objectives;			

CRM training elements	environment		Means of compliance
	OP	Non OP	<i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
Human performance and limitations;			
Personality awareness, human error and reliability, attitudes and behaviours, self-assessment, and self-critique;			
Fatigue and vigilance;			
Stress and stress management;			
Cultural differences.			
Operator's safety culture and company culture, standard operating procedures (SOPs), organisational factors, factors linked to the type of operations;			
Threat and error management.			
Assertiveness, situation awareness, information acquisition and processing.			
Specific type-related differences			
Monitoring and intervention			
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;			
Effective communication and coordination with other operational personnel and ground services.			

11.- Data management.

Use of level 1 and level 0 grading metrics.

Level 1 grading metrics (grade 1 to 5 each competency) is recommended for EVAL and SBT. In addition, the operator should allow the instructor to grade “not observed” when grading competencies.

Not observed VS Intentionally left in blank.

“Not observed” is used by the instructor. During the analysis of the EBT data, it provides, amongst others, good insights of the programme design or insights in the instructor standardisation or both.

‘Competency left in blank’ is intentionally used at programme design to prevent the instructor from grading certain competencies. It expresses that the programme intentionally offers NO opportunity to observe the competency left in blank. For example:

- When instructors grade competencies in the MT which is a skill retention phase and therefore it focuses on only some of the competencies.
- When instructors conduct a tailored training session focusing on only a competency/ies when the design of such tailored training does not follow LOFT scenarios (e.g. FPM).

Note: ‘Competency left in blank’ is not used at programme design when the competency grading is a combination of the EVAL + MT, as it should provide opportunities to observe all competencies.

Although the following practice is not recommended, when the operator performs an overall single simulator grading (additional to level 1 of each competency), it should be at level 0 grading metric (competent or not). As we already have a 5-point scale (level 1 grading metric) for the competencies, it should have a binary approach applied to the overall grade of the session. It would not be recommended to increase the granularity of this overall grade above that of a binary scale; as it will lead to significant complexity in deciding upon the grade for the instructors and incompatibilities between the level 1 grading made for each competency and the single grading of the overall simulator session resulting in contradictions in concordance. For example:

Binary overall grade system:

PRO	COM	FPA	FPM	LTW	PSD	SAW	WLM	KNO	OVERALL GRADE
1	2	2	3	3	3	3	3	3	NOT COMPETENT
2	3	2	3	2	3	3	3	3	COMPETENT
3	3	5	2	4	3	3	2	5	COMPETENT

5-point overall grade system (not recommended):

PRO	COM	FPA	FPM	LTW	PSD	SAW	WLM	KNO	OVERALL GRADE
1	2	2	3	3	3	3	3	3	1
2	3	2	3	2	3	3	3	3	2 or 3?
3	3	3	3	3	3	3	3	3	3
3	3	5	2	4	3	3	2	5	2,3,4,5?

Chapter to be developed further:

- Management.
- Quality. Include Concordance.
- Taxonomy – Line evaluation of competency.

12.- Explanatory note for the CRM compliance checklist refers in chapter 3.

Operators implementing ‘EBT’ provide a recurrent training and assessment programme that addresses capability of trainees across a range of core competencies. These competencies, described by a ‘competency framework’ include both the technical and non-technical aspects of flight crew performance. The EBT training programme described in ICAO document 9995 is designed to address topics covered in legacy CRM training.

Table 2 lists all of the CRM training requirements of ORO.FC.115 and describes how the requirements related to recurrent flight crew training may be addressed in an EBT programme. The table intends to provide further explanation. However it may be used for initial approval as an exhaustive checklist.

Table 2: AMC1 ORO.FC.115 - column Ref. means paragraph reference to AMC1 ORO.FC.115.

Ref.	Provision	Satisfaction of CRM training requirement in Baseline EBT	Operator's ref.
(a)(1)	Training environment CRM training should be conducted in the non-operational environment (classroom and computer-based) and in the operational environment (flight simulation training device (FSTD) and aircraft). Tools such as group discussions, team task analysis, team task simulation and feedback should be used.	EBT modules incorporate all flight crew competencies and therefore address the requirement for training in the operational environment. Classroom and computer-based training will be required in addition to EBT modules (see below).	
		Note	
		Operators implementing EBT may use the table in chapter 3 of the ‘EBT audit checklist for operators’ to demonstrate that CRM training in both the operational and non-operational environments is included in the EBT programme.	
		Note 2	
(a)(2)	Classroom training Whenever possible, classroom training should be conducted in a group session away from the pressures of the usual working environment, so that the opportunity is provided for flight crew members to interact and communicate in an environment conducive to learning.	Cabin training devices if used should be considered operational environment.	
		Required [see also (d)(1) below].	
		Note	
		Some training in a ‘non-operational environment’ (classroom or computer-based) is required in addition to EBT modules. Classroom may include means of video, group discussion,...etc.	

Ref.	Provision	Satisfaction of CRM training requirement in Baseline EBT	Operator's ref.
(a)(3)	Computer-based training Computer-based training should not be conducted as a stand-alone training method but may be conducted as a complementary training method.	May be used to complement classroom or FSTD training. GM2 ORO.FC.115 suggests that directions concerning CRM-related issues may be provided by an instructor or a CRM Trainer.	
		Note	
		Some training in a 'non-operational environment (classroom or computer-based) is required in addition to EBT modules.	
(a)(4)	Flight simulation training devices (FSTDs) 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.	The requirement is satisfied by phase 3 of the EBT modules (scenario-based training).	
		Note	
		Provided that the operator's EBT programme includes scenario-based training as phase 3 of the EBT module it will be compliant with this requirement.	
(a)(5)	Integration into flight crew training CRM principles should be integrated into relevant parts of flight crew training and operations including checklists, briefings, abnormal and emergency procedures.	An EBT programme must include training addressing all elements of crew competency and thus integration of CRM principles into FSTD training is intrinsic to EBT.	
		Note	
		Provided that the operators EBT programme is in accordance with ICAO 9995, specifically the use of a competency framework and use of the appropriate training and assessment matrix, it will be compliant with this requirement.	
(a)(6)	Combined CRM training for flight crew, cabin crew and technical crew (i) Operators should provide combined training for flight crew, cabin crew and technical crew during recurrent CRM training. (ii) The combined training should address at least:	Separate combined CRM training for flight crew and cabin crew will be required in addition to EBT modules. The minimum frequency for this training should be once in every three years (see (d)(1)).	
		Note	

Ref.	Provision	Satisfaction of CRM training requirement in Baseline EBT	Operator's ref.
	(A) effective communication, coordination of tasks and functions of flight crew, cabin crew and technical crew; and (B) mixed multinational and cross-cultural flight crew, cabin crew and technical crew, and their interaction, if applicable. (iii) The combined training should be expanded to include medical passengers, if applicable to the operation. (iv) Combined CRM training should be conducted by flight crew CRM trainer or cabin crew CRM trainer. (v) There should be an effective liaison between flight crew, cabin crew and technical crew training departments. Provision should be made for the transfer of relevant knowledge and skills between flight crew, cabin crew and technical crew CRM trainers.	Operators implementing EBT will need to demonstrate compliance with this requirement in the same way as non-EBT operators. There must be a classroom training session for both flight crew and cabin crew at least once every three years. Note: Most operators might conduct this training more frequently especially if it can be combined with other training events requiring the participation of flight crew and cabin crew, such as emergency procedures training. Note2: "effective communication, coordination of tasks": the competency Communication includes OBs of this topic. The development of this competency allows the pilot to train all observable behaviours required for (e.g. the ability of being assertive in the communication) an effective communication.	
(a)(7)	Management system CRM training should address hazards and risks identified by the operator's management system described in ORO.GEN.200.	EBT should integrate information from the 'management system' into design of training modules. Full incorporation of this 'operations data' will allow optimisation of the EBT programme for a particular operator and will be intrinsic element of 'enhanced EBT';(see Doc 9995 chapter 5). Note An operator implementing Baseline EBT will additionally need to demonstrate that hazards and risks identified by their safety risk assessment processes are addressed either in the EBT modules or during training in the non-operational environment (e.g. classroom or computer-based CRM training).	
(a)(8)	Competency-based CRM training (i) Whenever practicable, the compliance-based approach concerning CRM training may be substituted by a competency-based approach such as evidence-based	The EBT programme can substitute the compliance-based approach to CRM training. To substitute elements of the CRM programme mandated by AMC1 ORO.FC.115 the operator will need to demonstrate that the training	

Ref.	Provision	Satisfaction of CRM training requirement in Baseline EBT	Operator's ref.
	training. In this context, CRM training should be characterised by a performance orientation, with emphasis on standards of performance and their measurement, and the development of training to the specified performance standards. (ii) CRM training should be an essential element of the alternative training and qualification programme (ATQP) described in ORO.FC.A.245, when the operator applies ATQP.	objectives can be met by another means. Because this provision is included in the AMC, it is not necessary for the operator to apply an Alternative Means of Compliance i.a.w. ORO.GEN.125 Note Operators implementing EBT may use the table in chapter 3 of the 'EBT audit checklist for operators' to demonstrate that the training objectives of AMC1 ORO.FC.115 and, in particular, the training topics listed in table 1, are covered within the EBT programme.	
(a)(9)	Contracted CRM training If the operator chooses not to establish its own CRM training, another operator, a third party or a training organisation may be contracted to provide the training in accordance with ORO.GEN.205. In case of contracted CRM training, the operator should ensure that the content of the course covers the specific culture, the type of operations and the associated procedures of the operator. When crew members from different operators attend the same course, the CRM training should be specific to the relevant flight operations and to the trainees concerned.	No difference	
(b)	Initial operator's CRM training (1) The flight crew member should complete the initial operator's CRM training once. When the type of operation of a new operator is not different, the new operator should not be required to provide the initial operator's CRM training to this flight crew member a second time. (2) The initial training should cover all elements specified in Table 1 of (g).	Initial training is not within the scope of EBT	
(c)	Operator conversion course — CRM training	Operator's conversion course is not within the scope of EBT	

Ref.	Provision	Satisfaction of CRM training requirement in Baseline EBT	Operator's ref.
	When the flight crew member undertakes a conversion course with a change of aircraft type or change of operator, elements of CRM training should be integrated into all appropriate phases of the operator's conversion course, as specified in Table 1 of (g).		
(d)	Annual Recurrent CRM training		
(d)(1)	Annual recurrent CRM training should be provided in such a way that all CRM training elements specified for the annual recurrent training in Table 1 of (g) are covered over a period not exceeding 3 years.	The EBT programme will include a minimum of two modules per year. Each EBT module will include elements of CRM training. The EBT programme must also be designed to cover all training topics over three-years. There is no specific requirement for annual recurrent CRM training in the non-operational environment. Note: Provided that the operator can demonstrate that the training objectives of AMC1 ORO.FC.115 are achieved (using table 1 below) then this requirement will be satisfied.	
(d)(2)	Operators should update their CRM recurrent training programme over a period not exceeding 3 years. The revision of the programme should take into account information from the operator's management system including the results of the CRM assessment.	Operators will need to review and update the EBT programme over a period not exceeding three years. ICAO document 9995 requires the EBT programme to be reviewed periodically (3.6.8). The review needs to include identified risks (see (a)(7)) and the results of competency assessments. Note: Operators implementing EBT need to demonstrate that programme is updated regularly and, in any case, at least once in 3 years.	
(e)	Command course — CRM training The operator should ensure that elements of CRM training are integrated into the command course, as specified in Table 1 of (g).	Command course is not within the scope of EBT	
(f)	Training elements		

Ref.	Provision	Satisfaction of CRM training requirement in Baseline EBT	Operator's ref.
	The CRM training elements to be covered are specified in Table 1 of (g). The operator should ensure that the following aspects are addressed:		
(f)(1)	(1) Automation and philosophy on the use of automation (i) The CRM training should include training in the use and knowledge of automation and in recognition of systems and human limitations associated with the use of automation. The operator should, therefore, ensure that the flight crew member receives training on: (A) the application of the operations policy concerning the use of automation as stated in the operations manual; and (B) system and human limitations associated with the use of automation, giving special attention to issues of mode awareness, automation surprises and over-reliance including false sense of security and complacency. (ii) The objective of this training should be to provide appropriate knowledge, skills and attitudes for managing and operating automated systems. Special attention should be given to how automation increases the need for crews to have a common understanding of the way in which the system performs, and any features of automation that make this understanding difficult. (iii) If conducted in an FSTD, the training should include automation surprises of different origin (system- and pilot-induced).	Flight path management automation is one of the Competencies that must be trained and assessed within the EBT programme. <i>'Automation Management'</i> is a training topic that must be included in every EBT module (frequency 'A') for all aircraft generations for which assessment and training matrices have been published. Note: An EBT programme designed in accordance with ICAO document 9995 will cover automation and philosophy on the use of automation in significantly greater depth than required by (f)(1) (see the 'description' and 'desired outcome' for training topic <i>'automation management'</i> in the assessment and training matrices in Appendix II to ICAO do 9995). If the operators EBT programme is found acceptable by the CA then no further evidence will be required to demonstrate compliance with this requirement.	
(f)(2)	Monitoring and intervention Flight crew should be trained in CRM-related aspects of operation monitoring before, during and after flight, together with any associated priorities. This CRM training	<i>'Monitoring, cross checking, error management, mismanaged aircraft state'</i> is a training topic that must be addressed in EBT programme by in-seat instruction in every EBT module (frequency 'A'). The description of this training topic includes making appropriate interventions.	

Ref.	Provision	Satisfaction of CRM training requirement in Baseline EBT	Operator's ref.
	should include guidance to the pilot monitoring on when it would be appropriate to intervene, if felt necessary, and how this should be done in a timely manner. Reference should be made to the operator procedures for structured intervention as specified in the operations manual.	Note: An EBT programme designed in accordance with ICAO document 9995 will cover Monitoring and intervention in significantly greater depth than required by (f)(2) (see the 'description' and 'desired outcome' for training topic '<i>Monitoring, cross checking, error management, mismanaged aircraft state</i>' in the assessment and training matrices in Appendix II to ICAO do 9995). If the operators EBT programme is found acceptable by the CA then no further evidence will be required to demonstrate compliance with this requirement.	
(f)(3)	Resilience development CRM training should address the main aspects of resilience development. The training should cover: (i) Mental flexibility Flight crew should be trained to: (A) understand that mental flexibility is necessary to recognise critical changes; (B) reflect on their judgement and adjust it to the unique situation; (C) avoid fixed prejudices and over-reliance on standard solutions; and (D) remain open to changing assumptions and perceptions. (ii) Performance adaptation Flight crew should be trained to: (A) mitigate frozen behaviours, overreactions and inappropriate hesitation; and (B) adjust actions to current conditions.	Although an FSTD provides the best environment to practice events to improve crew resilience the objectives of (f)(3) cannot be met simply by putting flight crew into 'surprise' situations; they also need to be taught strategies to develop mental flexibility and adapt performance. The EBT modules will need to be complemented by some training in the non-operational environment. Note: To demonstrate compliance, an operator could be expected to show that resilience development training is complemented in the non-operational environment by means of classroom or computer-based training. Note: resilience development is a training topic that applies to the entire aircraft crew and is, therefore, also suitable for inclusion in combined CRM training involving both flight and cabin crew.	

Ref.	Provision	Satisfaction of CRM training requirement in Baseline EBT	Operator's ref.
(f)(4)	Surprise and startle effect CRM training should address unexpected, unusual and stressful situations. The training should cover: (i) surprises and startle effects; and (ii) management of abnormal and emergency situations, including: (A) the development and maintenance of the capacity to manage crew resources; (B) the acquisition and maintenance of adequate automatic behavioural responses; and (C) recognising the loss and re-building situation awareness and control.	The EBT programme must include 'surprise' as a training topic in at least each alternate training module (frequency 'B'). The intention of this topic for the crew to practice strategies to deal with threats or errors that were unexpected. When combined with resilience development training (see (f)(4)) the objectives of this requirement will be met.	
		Note: If the operators EBT programme is found acceptable by the CA then no further evidence will be required to demonstrate compliance with this requirement.	
(f)(5)	Cultural differences CRM training should cover cultural differences of multinational and cross-cultural crews. This includes recognising that: (i) different cultures may have different communication specifics, ways of understanding and approaches to the same situation or problem; (ii) difficulties may arise when crew members with different mother tongue communicate in a common language which is not their mother tongue, and (iii) cultural differences may lead to different methods for identifying a situation and solving a problem.	Cultural difference training is not specifically addressed in the EBT programme. To meet the objectives of this requirement operators should provide training in the non-operational environment. This training might be complemented by FSTD training during EBT modules where cultural differences are a particular issue for the operator or where a specific risk is identified (see (a)(7)).	
		Note: To demonstrate compliance an operator could be expected to show that cultural differences training is provided in the non-operational environment by means of classroom or computer-based training. Note: 'Cultural differences' is a training topic that applies to the entire aircraft crew and is therefore, also suitable for inclusion in combined CRM training involving both flight and cabin crew.	

Ref.	Provision	Satisfaction of CRM training requirement in Baseline EBT	Operator's ref.
(f)(6)	Operator's safety culture and company culture CRM training should cover the operator's safety culture, its company culture, the type of operations and the associated procedures of the operator. This should include areas of operations that may lead to particular difficulties or involve unusual hazards.	Operator's safety culture and company culture training is not specifically addressed in the EBT programme. To meet the objectives of this requirement operators should provide training in the non-operational environment e.g. in the form of a group discussion that could be complemented with the simulator. Where areas of operations lead to particular difficulties or involve unusual hazards these will be included in the EBT programme if a specific risk is identified (see (a)(7)). Note: To demonstrate compliance, an operator could be expected to show that Operator's safety culture and company culture training is provided in the non-operational environment by means of classroom or computer-based training. Note: This is a training topic that applies to the entire aircraft crew and is, therefore also suitable for inclusion in combined CRM training involving both flight and cabin crew. It may also be addressed during the safety training required by AMC1 ORO.GEN.200(a)(4).	
(f)(7)	Case studies (i) CRM training should cover aircraft type-specific case studies, based on the information available within the operator's management system, including: (A) accident and serious incident reviews to analyse and identify any associated non-technical causal and contributory factors, and instances or examples of lack of CRM; and (B) analysis of occurrences that were well managed. (ii) If relevant aircraft type-specific or operator-specific case studies are not available, the operator should consider other case studies relevant to the scale and scope of its operations.	Case studies are primarily covered during training in the non-operational environment. Aspects relevant to the whole crew could also be delivered during combined classroom CRM. An incident accident review is also required as part of recurrent ground training i.a.w. AMC1 ORO.FC.230. Case studies may be useful to inform the development of scenario-based training. In this case the training objective should always be for the crew to successfully manage the threats and errors presented in the case study, not to replicate the outcome. Note: To demonstrate compliance, an operator could be expected to show that case studies are used during training in the non-operational environment by means of classroom or computer-based training. This may be combined with the accident / incident review required as part of annual ground training	

Ref.	Provision	Satisfaction of CRM training requirement in Baseline EBT	Operator's ref.
(g)	CRM training syllabus Table 1 below specifies which CRM training elements should be covered in each type of training ...	See table 1 of AMC1 ORO.FC.115	
(h)	Assessment of CRM skills		
(h)(1)	Assessment of CRM skills is the process of observing, recording, interpreting and debriefing crews and crew member's performance using an accepted methodology in the context of the overall performance.	The competency framework described in Appendix I to ICAO document 9995 is an 'accepted methodology' for the assessment of pilot competence encompassing both technical and non-technical (CRM skills). Further information on the implementation of an adapted competency model is provided in ICAO 9868. Note: To implement baseline EBT the operator has implemented a competency framework in accordance with AMC1 ORO.FC.231(b). This will satisfy the requirement for an accepted methodology for the assessment of CRM skills.	
(h)(2)	The flight crew member's CRM skills should be assessed in the operational environment, but not during CRM training in the non-operational environment. Nevertheless, during training in the non-operational environment, feedback from the flight crew CRM trainer or from trainees on individual and crew performance may be given to the crew members concerned.	Assessment of pilot competencies is required during the evaluation phase of EBT modules. This requirement is therefore satisfied by the EBT programme. Operators should not conduct CRM assessments in the non-operational environment. Note: If the operators EBT programme is found acceptable by the CA then no further evidence will be required to demonstrate compliance with this requirement.	
(h)(3)	The assessment of CRM skills should: (i) include debriefing the crew and the individual crew member; (ii) serve to identify additional training, where needed, for the crew or the individual crew member; and	Facilitated debriefing of crew members is required by the EBT programme, especially following the scenario-based training phase of EBT modules. ICAO document 9995 requires that the results of assessment be used to <i>"determine training system effectiveness and indicate individual training needs"</i> (7.7.1). Operators should include processes for future development of the EBT programme based on feedback (3.6.8) Note:	

Ref.	Provision	Satisfaction of CRM training requirement in Baseline EBT	Operator's ref.
	(iii) be used to improve the CRM training system by evaluating de-identified summaries of all CRM assessments.	If the operators EBT programme is found acceptable by the CA then no further evidence will be required to demonstrate compliance with this requirement.	
(h)(4)	Prior to the introduction of CRM skills assessment, a detailed description of the CRM methodology, including the required CRM standards and the terminology used for the assessment, should be published in the operations manual.	The competency framework required for the EBT programme will be the basis of CRM skills assessment (see (h)(1)) Note: The competency framework must be described in detail in the operations manual.	
(h)(5)	Methodology of CRM skills assessment The assessment should be based on the following principles: (i) only observable behaviours are assessed; (ii) the assessment should positively reflect any CRM skills that result in enhanced safety; and (iii) assessments should include behaviour that results in an unacceptable reduction in safety margin.	EBT provides an assessment methodology for non-technical skills based on VENN (see ORO.FC.231(d) and associated AMC and GM) The competency framework relies on the use of observable behaviours to assess flight crew competency. The application of a competency framework is described in more detail in ICAO document 9868. ICAO document 9995 also requires that <i>“Any area of competence assessed not to meet the required standard shall also be associated with an observable behaviour that could lead to an unacceptable reduction in safety margin”</i> (7.7.1). The operator may use the EBT competencies assessment and competencies as the unique system for EBT and CRM. Note: Provided that the operator has implemented an adapted competency model and assessment system in accordance with ORO.FC.231 or ICAO document 9995 and Doc.9868 this requirement will be satisfied. This should include the line check to comply with AMC1 ORO.FC.230 (b)(3)(ii).	
(h)(6)	(6) Operators should establish procedures, including additional training, to be applied in the event that flight crew members do not achieve or maintain the required CRM standards.	ICAO document 9995 requires that at the conclusion of the evaluation phase <i>“any areas that do not meet the minimum competency standard will become the focus of subsequent training”</i> (7.7.1). Note:	

Ref.	Provision	Satisfaction of CRM training requirement in Baseline EBT	Operator's ref.
		Provided that the operator's EBT programme includes a requirement for training the pilot to competence before releasing the pilot to line operations then no further evidence will be required to demonstrate compliance with this requirement.	

Table 3 illustrates a real and summarized example on how an operator demonstrated compliance with some required elements of CRM training. This example may not reflect the position of EASA.

Table 3: Example of an Operator's demonstration of compliance

- “CBT” includes virtual reality, tablets, mobile devices, and legacy CBTs.
- “Booklet”: document used by the operator to provide written material within the context of a training programme. The booklet should not be considered as a ‘training’ mean to address a CRM element, but as a reading material that expands or refreshes the knowledge in an element/s already trained, and/or as preparatory reading that complements the training that will be received of an element.

CRM training elements	environment		Means of compliance <i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
	OP	None OP	
Automation and philosophy on the use of automation	X	X	Covered by the ‘automation management’ training topic mandated at frequency ‘A’ by the assessment and training topic. Additionally, one module in every 3-year programme is dedicated to automation (together with other competencies or alone). In the non-operational environment, the pilot will additionally review by means of Booklet or CBT: the philosophy on the use of automation (e.g. the concept of automation, charts/ statistics of the different generation of automation, case studies, technical knowledge...etc.) Note: This training element must be trained in-depth.
Case studies	X	X	The requirement will be covered: - in the non-operational environment, within the combined CRM training for flight crew and cabin crew where an accident/incident is reviewed and - in the simulator's briefing and when appropriate in the actual simulator. Throughout the 3 years programme, the operator has different cases studies (accident or incident) where all the competencies are covered. The pilot learns the importance of a competency or group of competencies in each case study. For example by studying an incident/accident where a competency was missing and or by studying cases where the competency was exercised to the right level, and this allows the crew to ‘save the day’. Some of the case studies may be provided by the SMS flight safety

CRM training elements	environment		Means of compliance <i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
	OP	None OP	
			department.
Human factors in aviation;	X	X	EBT training topic A “competencies non-technical (CRM)” In the non-operational environment it is included in the combined CRM training for flight crew and cabin crew or CBT, at least once in the 3 years cycle. Interaction human-machine with the focus on the HUMAN element in the model (e.g. SHELL).
General instructions on CRM principles and objectives;	X	X	EBT training topic A “competencies non-technical (CRM)” Facilitation technique is used as a means of debriefing in every simulator session. In the non-operational environment it is included in the combined CRM training for flight crew and cabin crew or CBT at least once in the 3 years cycle.
Human performance and limitations;	X	X	EBT training topic A “competencies non-technical (CRM)” In the non-operational environment it is included in the combined CRM training for flight crew and cabin crew or CBT at least once in the 3 years cycle. Interaction human-machine with the focus on the HUMAN element in the model (e.g. SHELL).
Personality awareness, human error and reliability, attitudes and behaviours, self-assessment and self-critique;	X	X	- Personality awareness: it is trained in the combined CRM training for flight crew and cabin crew. This element is trained in a non-operational environment. This could be additionally complemented by a CBT. - Human error and reliability, attitudes and behaviours, self-assessment and self-critique: EBT fully endorses the facilitated de-briefing because it provides opportunities to the pilots for self-assessment and self-critique exercise. The grading system also provides observable behaviours that will foster this CRM training element. This element is, therefore trained in the operational environment.

CRM training elements	environment		Means of compliance <i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
	OP	None OP	
Fatigue and vigilance;		X	This requirement is trained by CBT and in the FRMS training.
Stress and stress management;	X	X	Training topic (workload distraction pressure) frequency B. The Competency WLM is assessed every 6 months. Additionally, at least, one module in every 3-year programme is dedicated to WLM (together with other competencies or alone). The briefing and de-briefing script of this module is planned in such a way that instructors have opportunities to further develop this CRM element. Note: stress and stress management is not always related to Workload; that is why the non-operational environment training is additionally proposed. In the non-operational environment it is included in: - The combined CRM training for flight crew and cabin crew. - Case study/s that includes "stress and stress management". This element maybe delivered by advanced CBT (e.g. Virtual reality). - The CBT explaining the theory of this element. Once every 3 years
Cultural differences.		X	combined CRM training for flight crew and cabin crew.
Operator's safety culture and company culture, standard operating procedures (SOPs), organisational factors, factors linked to the type of operations;	X	X	Operator's safety culture and company culture training are not specifically addressed in the EBT programme. To meet the objectives of this requirement operators should provide training in the non-operational environment e.g. in the form of a group discussion. Operator's safety culture, company culture, organisational factors and factors linked to the type of operations are included in the non-operational environment in the combined CRM training for flight crew and cabin crew. Standard operating procedures (SOPs) and factors linked to the type of operations are trained in the EBT simulator programme. Specifically during the SBT. Furthermore, the competency "Applications of procedures" is

CRM training elements	environment		Means of compliance <i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
	OP	None OP	
			graded every simulator session. Additionally, the 3 years EBT programme has one specific module dedicated to the development of this competency.
Threat and error management.	X	X	Annual CBT or classroom training once every 3 years. Additionally, the briefing and de-briefing in the simulator session may be guided through the TEM model (e.g. during the briefing when the instructor is explaining a malfunction he/she should identify with the pilots the hazards and possible errors; this helps a facilitated briefing).
Assertiveness, situation awareness, information acquisition and processing.	X		The competency "situation awareness and management of information" (SAW) is assessed in every simulator session. Additionally, one module in every 3-year programme is dedicated to situational awareness (together with other competencies or alone). Assertiveness is partially covered through the competency 'communication' (COM) through OB2.1 and OB.2.4. This competency is assessed in every simulator session. Additionally, one module in every 3-year programme is dedicated to 'communication' (together with other competencies or alone). 'Information acquisition and processing' is additionally trained as follows: - briefly discussed during the briefing/de-briefing by means of a presentation delivered by the instructor and - In CBT (or advance CBT such VR, chat boot, interactive scenario trainer). - Note: when possible the training actions above may be done together with 'human performance and limitation'
Specific type-related differences	X	X	Mandated at frequency 'C' by the training and assessment matrix. Additionally, the operator of this example includes when appropriate: - a reminder during the simulator briefing sessions by means of a

CRM training elements	environment		Means of compliance
	OP	None OP	Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement
			presentation delivered by the instructor, or - in the non-operational environment, the pilot will additionally review by means of Booklet or CBT
Monitoring and intervention	X		Mandated at frequency 'A' by the 'table of assessment and training topics'
Shared situation awareness, shared information acquisition and processing;	X		The competency "Situation awareness and management of information" (SAW) is assessed in every simulator. Additionally, one module in every 3-year programme is dedicated to SAW (together with other competencies or alone). SAW is additionally discussed during the briefing/de-briefing by means of a presentation delivered by the instructor
Workload management;	X		Workload Management is one of the core competencies that must be trained throughout the EBT programme. Workload is also a specific training topic mandated at frequency 'B' in the 'table of assessment and training topics'.
Effective communication and coordination inside and outside the flight crew compartment;	X	X	'Communication' (COM) is one of the core competencies that must be trained throughout the EBT programme. In the non-operational environment in the combined CRM training involving both flight and cabin crew. Note: this element may be credited during the emergency and safety equipment training referred in AMC1 ORO.FC.230 paragraph (a)(2)(iv) and (vi).
Leadership, cooperation, synergy, delegation, decision-making, actions;	X	X	Leadership and teamwork are one of the core competencies that must be trained throughout the EBT programme. Additionally leadership, cooperation, synergy, delegation is complemented in the combined CRM training for flight crew and cabin crew. Cooperation, synergy and delegation are additionally covered in the non-operational environment by means of CBT once in a 3 year period.

CRM training elements	environment		Means of compliance
	OP	None OP	Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement
			Decision-making: - When the EBT programme is designed in such a way that crews are exposed to a dilemma. This means crews are presented with situations where more than one possible less than ideal solutions exist, with some unfavourable conditions attached, then this element is covered in the simulator session. This training action also relates to the competency PSD. - Alternatively, the operator may develop an advance CBT where the pilot faces a scenario/s where the pilot must take a decision/s.
Resilience development;	X	X	This element is fulfilled in the simulator session by: - Training topic 'surprise' (see the table of assessment and training topics). - Scenario-based training phase, as per definition, the SBT should develop resilience. Additional it will be trained in the non-operational environment during: - CBT that explains the theory of this element. Once every 3 years. - Advance EBT (e.g. VR) for the element of surprise and startle effect that relates to resilience.
Surprise and startle effect;	X	X	This element is fulfilled in the simulator session by: - Training topic 'surprise and startle effect' at frequency 'B' (see the table of assessment and training topics). Additional it will be trained in the non-operational environment during: - The combined CRM training for flight crew and cabin crew once in the 3 years, or the legacy CBT explaining the theory of this element. Once every 3 years. or - Advance CBT (e.g. Virtual reality) where the pilot faces a scenario/s

CRM training elements	environment		Means of compliance <i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
	OP	None OP	
			where the pilot experience this element.
Effective communication and coordination with other operational personnel and ground services.	X	X	'Communication' (COM) is one of the core competencies that must be trained throughout the EBT programme. Additionally, there are 2 training topics (ATC and Loss of Communication) frequency C and 1 training topic (Competency Non-Technical CRM) frequency A. In the non-operational environment in the combined CRM training involving both flight and cabin crew, or the operator may develop an advance CBT (e.g. chatbot) where the pilot faces a scenario/s where the pilot experience this element

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