

Flight Crew Training Guide Aeroplanes FCTG-A

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Foreword

This user guide aims to assist operators in establishing their flight crew training programmes, and will consist of nine (9) chapters covering different aspects of flight crew training. These include Operator Conversion Course (OCC), Recurrent Training and Checking (RTC), Evidence Based Training (EBT), Command Course (CC), Line Training Captain nomination (LTC), Single/Mixed Fleet Flying (S/MFF) Operations on more than one type or variant, In-flight Relief of Flight Crew Member (IRFCM), Zero Flight Time Training (ZFTT), and Pilot In Command Under Supervision (PICUS).

The training programmes must comply with regulatory requirements including TCAR OPS (AIROPS) and TCAR PEL (AIRCREW). The user guide is intended to provide operators with information and recommendations on how to develop and implement effective flight crew training programmes, including how to meet regulatory requirements, and will be a valuable resource for those involved in flight crew training and operations.

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Abbreviations

Abbreviations	Meaning
ACAS	Airborne alert and Collision Avoidance System
AMC	Acceptable Means of Compliance
AMOC	Alternative Means of Compliance
AMS	Alternative Means of Simulation
FSM	Flight Safety Manual
ASR	Air Safety Report
ATO	Approved Training Organisation
ATQP	Alternative Training and Qualification Programme
CAT	Commercial Air Transport
CBT	Computer Based Training
CPDLC	Controller Pilot data Link Communication
CPT	Captain
CRCP	Cruise relief co-pilot
CRM	Crew Resource Management
CRP	Cruise relief pilot
CTPH	Crew Training Post Holder
DG	Dangerous Goods
EBT	Evidence Based Training
EFB	Electronic Flight Bag
ESETC	Emergency and Safety Equipment Training and Checking
ESTC	Either Seat Training and Checking
ETOPS	Extended Range Operations with Two-Engines Aeroplanes
EWIS	Electrical Wiring Interconnection System
F/O	First Officer
FAA	Federal Aviation Administration
FANS	Future Air Navigation Systems
FC	Flight Crew
FCL	Flight Crew Licensing
FCTG	Flight Crew Training Guide
FDM	Flight Data Monitoring
FFS	Full Flight Simulator

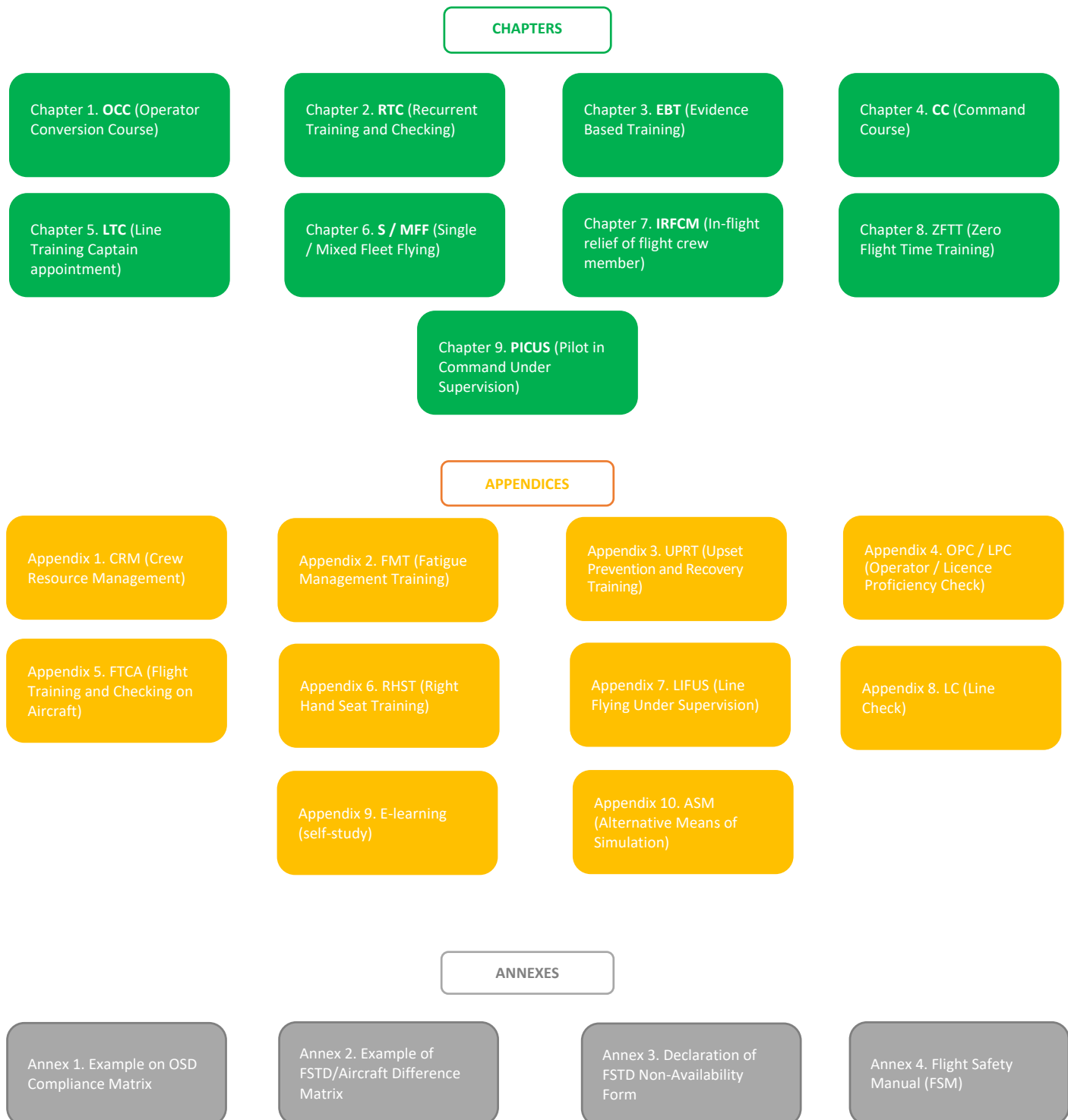
FMT	Fatigue Management Training
FNPT	Flight and Navigation Procedures Trainer
FOI	Flight Operations Inspector
FOTB	Flight Operations Technical Bulletin
FRM	Fatigue Risk Management
FSTD	Flight Simulation Training Device
FT	Flight Training
FTCA	Flight Training and Checking on Aircraft
FTD	Flight Training Device
FTL	Flight Time Limitations
GI	Ground Instructor
GM	Guidance Material
GRF	Global Reporting Format
GTC	Ground Training and Checking
HPAC	High Performance Aircraft - Complex
IOS	Instructor Operating Station
IRFCM	In-flight Relief of Flight Crew Members
ISI	In-Seat Instruction
TRE-I	Examiner inspector TRE/SFE/SE, staff mandated by the CAAT to supervise Examiners
LC	Line Check
LCC	Line Check Captain
LHS	Left Hand Seat
LIFUS	Line Flying Under Supervision
LOE	Line Oriented Evaluation
LOFT	Line Oriented Flight Training
LOQE	Line Oriented Quality Evaluation
LPC	Licence Proficiency Check
LST	Licence Skill Test
LTC	Line Training Captain
LVO	Low Visibility Operations
LVTO	Low Visibility Take Off
MED	Medical
MEL	Minimum Equipment List

MFF	Mixed Fleet Flying
MNPS	Minimum Navigation Performance Specifications
MPO	Multi-Pilot Operations
MVM	Mandatory Visual Maneuvers
NOTECHS	Non-Technical Skills
NSA	Non-Stabilised Approach
OCC	Operator Conversion Course
ODR	Operator Difference Requirement
OM	Operations Manual
OPC	Operator Proficiency Check
OPC/LPC	Operator Proficiency Check / Licence Proficiency Check
OPS	Operations
ORO	Organisation Requirements for Air Operations
OSD	Operational Suitability Data
OTD	Other Training Device
OTT	Operations Training Transmission (Airbus document)
PBN	Performance Based Navigation
PF/ PM	Pilot Flying / Pilot Monitoring.
PIC	Pilot In Command
PICUS	Pilot In Command Under Supervision
RHS	Right Hand Seat
RRLD	Reduced Required Landing Distance
RTC	Recurrent Training-Checking
RVSM	Reduced Vertical Separation Minima
SFE	Synthetic Flight Examiner
SFF	Single Fleet Flying
SIB	Safety Information Bulletin
SMS	Safety Management System (SMS)
SOP	Standard Operating Procedures
SiPO	Single Pilot Operations
ST	Skill-Test (Type Rating proficiency check)
TASE	Training Areas of Special Emphasis
TAWS	Terrain Awareness and Warning System
TEM	Threat and Error Management

TR	Type Rating
TRE/SFE	Type Rating Examiner / Synthetic Flight Examiner
TRF	Training and Report Form
UPRT	Upset Prevention and Recovery Training
VTE	Valid Training Envelope

0. General

0.1 Development of the training programmes



0.2 General principles

Air Operators engaged in commercial or non-commercial operations with complex aircraft must establish training and checking programmes for their flight crew members. In commercial air transport operations, these training programmes are part of the OM-D of the Operator and are approved by the CAAT.

This Flight Crew Training Guide – Aeroplanes (FCTG-A) is available to Operators to help them in the development and implementation of training programmes for their pilots on aircraft operating in multi-pilot operations (MPO). It contains reminders of the regulations, explanations on the implementation of certain regulatory requirements as well as recommendations. It also specifies the rules and guidelines for pilot training for Operators conducting single-pilot operations (SiPO) in CAT.

This guide shall not contradict the regulations and its published means of compliance, which remain the only applicable regulatory references.

The FCTG-A is structured in the form of chapters, appendices and annexes.

- The chapters aim to address dedicated training courses, such as the Operator Conversion Course (OCC) and Recurrent Training Checking (RTC).
- The appendices aim to address modules that fit into several training courses described in the chapters. For example, we will find in appendix the CRM training that is necessary in OCC, Command Course and RTC.
- The annexes contain examples of the OSD compliance matrix, FSTD/Aeroplane differences, a FSTD non-availability declaration form, and the Flight Safety Manual.

0.3 Applicability

The guidance provided is intended for AOC holders whose Flight Crew Training Programmes must be approved by the CAAT. However, Non-commercial operators with CMPA (NCC) can also benefit from relevant sections of the FCTG in developing their own programmes.

0.4 Reference

This guidance is essentially based on TCAR OPS Regulation, with the associated AMCs and GM. The main chapters of which are:

- Part CAT - SUBPART B - OPERATIONAL PROCEDURES
- Part ORO - SUBPART GEN - GENERAL REQUIREMENTS
- Part ORO - SUBPART FC – FLIGHT CREW
- Part ORO - SUBPART FTL - FLIGHT AND DUTY TIME LIMITATIONS AND REST REQUIREMENTS
- Part SPA PART – OPERATION REQUIRING SPECIFIC APPROVALS
- Part SPO

In addition, this guidance is also based on TCAR PEL Regulation where flight crew must be qualified in accordance with TCAR PEL Regulation.

0.5 Personnel Involved in Training and Checks

[ORO.FC.146]

The Operator must document in its OM-D all the training provided within the scope of its activities. Additionally, it must define the rules for the appointment and training of personnel responsible for delivering these training sessions (qualifications, experience criteria, initial training, recurrence, etc.).

The traceability of the training and qualifications of instructors must be ensured.

Ground instructors may be exempt from the course(s) they deliver or the e-learning module(s) they have designed. However, the Operator must ensure traceability of this exemption to validate the training of the instructors.

An instructor is not exempt from the knowledge assessment for a course they have delivered or an e-learning module they have designed.

0.6 Programme Development

0.6.1 General

Training programmes must take into account regulatory requirements but must also be designed to meet training needs of the Operator's crews and its safety management system (SMS).

Regulatory requirements for flight crew training are mainly contained in the TCAR OPS subpart Flight Crew (ORO.FC) but also come from other sources:

- General training required by the ORO.GEN (e.g. security, dangerous goods, management system system);
- Training related to specific equipment (e.g. TAWS, ACAS);
- Training elements mentioned in Operational Suitability Data (OSD) reports, including Training Areas Special Emphasis (TASE) and Operator Difference Requirements (ODR). TASEs are exercises identified as unavoidable by the manufacturer, and ODRs are a formal description of the differences between aircraft variants or types. For example, a matrix of compliance with the OSD is presented in [Annex 1](#);
- Operational guidelines; and
- Recommendations from the Operator's SMS.

Generic training needs are linked to the broad families of risks identified at national or international level. The Operator may rely on the various publications relating to safety and impacting training programmes, whether from the Authorities or manufacturers, when they are relevant to the operation and type of aircraft concerned.

Examples of publications that may contain recommendations:

- The "[SIB](#)" ([Safety Information Bulletin](#)) issued by [EASA](#) which publish recommendations, some of which reproduce those already issued at the global level (in particular FAA);
- Training recommendations issued by manufacturers, such as Airbus Operations Training Transmissions (OTT) or Boeing's Flight Operations Technical Bulletins (FOTB);
- Incidents analysis issued by the CAAT;
- Accident/ incidents reports issued by the national and foreign Accident Investigation Boards.

The Operator's specific training needs must also be identified by the information collected internally, in particular:

- Occurrence reported by the air safety reporting system (ASR);

- Trends detected by flight data analysis programme (FDM);
- Statistical analysis of training session and grading sheets;
- Feedback from instructors / examiners;
- Recommendations from safety analyses (internal investigations); and
- Recommendations from impact from management of changes.

Note: Sources from manufacturers (OSD, TASE, ODR, OTT, FOTB, etc.) on which the Operator relies should be provided in a complete manner to the Authority when filing training programmes for approval.

0.6.2 Training related to obtaining operational approval (ETOPS, PBN, MNPS, RVSM, LVO, DG, RRLD, EFB)

The FCTG-A does not cover the detailed content of the initial training related to operational/specific approvals, its described in other guides provided by the CAAT. However these topics must be integrated in the training courses.

- Extended Twin Engines Operations (ETOPS);
- Performance Based Navigation (PBN);
- NAT HLA flight (MNPS);
- RVSM;
- AWOs operations & Operational credits (LVO and LVTO),
- Dangerous Goods (DG) Training Programmes, Transportation of Dangerous Goods;
- Reduced Required Landing Distance (RRLD);
- Steep approach;
- Short landing; and
- Electronic Flight Bag (EFB).
- Etc.

0.6.3 Training related to the integration of new equipment.

[ORO. FC.125 and AMC1 ORO. FC.125]

The introduction of new equipment or the evolution of an interface (RASS, AP/TCAS, ROPS, BTV, ROW, BUSS, etc.) may require training in differences or familiarisation training. After the assessment of the complexity of the change under consideration, a possible safety study and the consideration of the criteria established by the manufacturer (OSD), the Operator will define in the OM-D an appropriate training on a suitable tool.

0.7 Standardized Names of Training and Checking

The names given to the various training programmes should adhere to the names used in the regulatory (text) requirement. To facilitate a common understanding on the Flight Crew Training in Thailand context, the Operator may consider adopting terminology corresponding to the original regulatory requirement and AMC/GM. The table below recalls the main standardized names:

Abbreviation	Regulatory Designations
OCC	Operator Conversion Course
GTC	Ground Training and Checking
OPC	Operator Proficiency Check
FT	Flight Training

LIFUS	Line Flying Under Supervision
LC	Line Check
LPC	Licence Proficiency check
OPC/LPC	Operator Proficiency Check combined with Licence Proficiency Check
TR	Type Rating
ST	Skill Test
LST	Licence Skill test
RTC	Recurrent training and Checking

0.8 General information on training and checks on FSTD

The following generalities apply to all training activities and checks conducted on FSTD.

0.8.1 Terms used in the FCTG-A

Note: in the absence of an HPAC type FFS used, Operators may use certified FTD 2 and FNPT II MCC FSTDs for training and checking. Refer to [Appendix 10](#) to this guide for more information.

Any use of a flight simulation training devices (FSTD or OTD) within the scope of training or checking defined in TCAR OPS Regulation is subject to authorisation for Commercial Air Transport (CAT).

For all the checking, training and drills defined in the TCAR OPS and carried out on FSTD, the Operator must ensure the validity of the certificates of the FSTD used. The Operator should identify and list the simulators they intend to use in each application for approval of a FC training programme. The authorisations for use of FSTDs are validated by the CAAT, at the same time as the issuance of the approval of the training programme (OM-D).

Any use of an additional FSTD during RTC will require a new authorization for its use.

Exercises must be strictly performed within the limits and flight envelope of the certified flight simulators (Valid Flight Envelope: VTE). The behavior of the simulator at certain fault combinations may not be representative of the aircraft's reactions. The Operator will take care to evaluate the impacts in order not to generate negative training.

Regarding the implementation of UPRT exercises, especially the Upset "Recovery training exercises" in Table 2 of AMC1 to ORO.FC.220&230, Operators, and not instructors, must determine for each exercise whether the use of "motion" is desirable based on identified criteria. False impressions felt by the trainee (accelerations) can be detrimental and counterproductive during the reproduction of certain maneuvers.

According to the simulator manufacturers, the technology used, the coverage of the data packages provided by the aircraft manufacturers and the constant evolution of the simulation criteria, the Operator must regularly position itself on the use or not of the motion. In all cases, it is essential that the instructors make the trainees aware of the limits of representativeness inherent in the design of the simulators (limited or even erroneous restitution of the accelerations felt and the forces to be applied to the checks).

0.8.2 In-seat instruction

In-seat instruction, as defined in TCAR OPS Part-DEF, consists of the instructor:

- Providing simple instructions to a single pilot with the aim of teaching specific maneuvers or procedures, or

- Performing predefined exercises in the pilot's seat as PF or PM for demonstration purposes or to elicit a reaction from the trainee.

This simulator instruction method is recommended to achieve specific pedagogical objectives and will be used only during training, not during a check or evaluation.

0.8.3 Briefings

A reminder of the safety instructions for evacuating the facilities housing the FSTD and the simulator should be made for each crew.

Briefings prior to simulator sessions must include a systematic reminder of the differences between the FFS and the reference aircraft defined by the Operator (taking into account any different variants), in accordance with the differences identified by the Operator and transmitted to the CAAT. The use of all or part of the table of differences associated with the authorisation to use the simulator filed to CAAT is desirable. The impact of the differences on the session must be discussed during the briefing and the Operator must take appropriate measures to train its crews on the use of systems that would not be simulated or incorrectly simulated during the session on FFS [AMC1 ORO. FC.145 (d)].

0.8.4 Use of video

Some simulators are equipped with video (audio and visual) recording systems and sometimes parameter recording systems. These tools can provide valuable educational insights during various sessions and the CAAT recommends their use, especially in Flight Training (FT) sessions.

These tools are to be considered as aids for debriefing.

0.8.5 Documentation

The parts of the OM and the on-board documentation, defined by the Operator as relevant for the session (possibly in the form of copies), and in a form equivalent to that used in operation, should be available and up to date in the briefing room and in the simulator.

In the case where the use of an EFB on board is approved, different equipment may be acceptable on FSTD, provided that the applications it contains are strictly those used in operations and kept up to date. The specifics of the equipment used in the FFS should be included in the Operator's EFB approval document. (see AMC4 SPA. EFB.100(b)(3) and EFB Approval Guide published by CAAT.

0.9 Validity of Training and Checking

AMC1 ORO.FC.145(g) specifies that the validity of all recurrent training is considered at the end of the month. When an act of training or checking is performed within the 3 months preceding its expiration, the new validity period is understood to start from the initial validity date.

NOTE: This rule does not apply to revalidations of CRM instructor and EBT instructor qualifications, for which AMC2 ORO.FC.146 and AMC2 ORO.FC.146(c) apply

0.10 Subcontracting

The Operator may be required to subcontract all or part of certain training courses. The reasons for using a subcontractor are various, the main one being the lack of qualified internal resources.

In general, any subcontracted activity must comply with the ORO.GEN.205 and associated AMC and GM.

The Operator using an external service provider remains solely responsible for the programmes submitted and their implementation. When applying for approval of its training programmes, the Operator must provide

detailed information concerning the organisation of these trainings, including support resources and traceability.

To do this, the Operator must:

- Precisely define, contractual, the services provided by its subcontractor;
- Establish procedures to ensure, continuously, regulatory compliance and the quality of the delivered service (diplomas and qualifications of the service provider's personnel, approval, or accreditation of the necessary resources in a valid state), and
- Provide the necessary elements so that the service provided is fully adapted to its operation. Generic courses from a service provider are not acceptable.

No approval is issued directly to a service provider, and they cannot in any case avail themselves of the CAAT certificate/approval.

0.9 Monitoring of Operators and Training Programmes

With the aim of guaranteeing a high level of flight safety as part of its public service mission, the CAAT has missioned the Flight Operations Inspectors (FOI to carry out surveillance acts on the ground, at the FSTD and in flight.

Annex 9 of the ICAO, in Articles 3.68 3.70 and 3.71 of point O, sets out the recommendations to facilitate the performance of the missions of the Civil Aviation Inspectors. In particular, the assimilation of Inspectors as crew members, for the purpose of facilitating customs formalities and arrival.

The CAAT therefore recommends that Operators, during their en-route checks, include the FOI on the crew manifest of the flight (GEN DEC).

During these surveillance flights, the FOI must be briefed on the operator's safety instructions. These guidelines can be adapted according to the qualifications held by the FOI)

1. OCC (Operator Conversion Course)

Knowledge of Chapter 0 General FCTG-A is an essential prerequisite for the proper use of this chapter.

1.1 Main regulatory references

- ORO.GEN.110 Operator responsibilities
- ORO.GEN.200 Management system
- CAT.GEN.MPA.170
- CAT.GEN.MPA.175
- ORO.FC.115 CRM Training
- ORO.FC.120 Operator Conversion Training
- ORO.FC.145 Provision of Training
- ORO.FC.146 Personnel providing training, checking and assessment
- ORO.FC.220 Operator Conversion Training and Checking
- ORO.FC.230 (b) Recurrent Training and Checking
- ORO.FTL.250 Flight Time Limitation
- Part SPA Specific Approvals
- EASA AMC 20-6 ETOPS

1.2 Preamble

This chapter is an aid to the development and implementation of the Operator's Conversion Course. It is intended for air operators operated in multi-pilot crew. In the remainder of this chapter, this training programme will be referred to by the abbreviation "**OCC**" Operator Conversion Course.

1.3 Objectives of the programme

An OCC training programme must fulfill multiple regulatory requirements and be developed to cover the specific training needs of the flight crew. The Operator is responsible for determining their training needs in connection with its Safety Management System (SMS) taking into account the experience of the crew member, within the regulatory framework set by the TCAR OPS regulations. The details of the programme (e.g. volume hour) should be described in the Operator's OM-D.

1.4 Development of programmes

A program covering all identified topics must be included and documented in the OM-D, and the means and educational tools used in this context must be appropriate.

An OCC is required for each pilot:

- Upon arrival at their first Operator (Initial OCC),
- With each change of Operator, and
- With each change of aircraft type within the same Operator.

Operators employing seasonal flight crews may size the OCC based on the duration of interruptions in duty and the recent activity of these crews.

The OCC programme should contain, in order:

1. Ground Training and Checking (GTC)
2. Offline Training (Flight Training - FT)
3. Operator Proficiency Check (OPC)

4. LIFUS
5. Line Check

Important notes:

- [ORO. FC.220 (b)] For Aeroplanes of Class A, once OCC Flight Training has commenced, the flight crew member shall not be assigned to flight on any other type or class of aircraft until the OCC has been completed or finally terminated.
- The OM-D could consider and define conditions for resuming activity following an interruption of training. It would be appropriate for such recovery programmes to take into account the phase during which the interruption took place, the trainee's history, the complexity of the OCC, the duration of the interruption, etc.
- The timeline requirements of OCC training must be met even for pilots who have obtained their TypeRatings in the ZFTT framework. [ORO. FC.220 (d) and (e)]

1.5 Ground training and checking (GTC)

All the items in the GTC are grouped in the following table.

Type of training	OCC		
	Operator change	Change type	
Initial*			
Systems and Procedures Course. AMC1 ORO FC.220 (a)(1)(i) and (b)			
➤ Aircraft systems	/ (1)	/ (1)	/ (1)
➤ Normal (including operational), Abnormal and Emergency procedures	/	/	/
➤ Accident/Incident and occurrence review	/	/	/
SPA (PBN, MNPS, RVSM, ETOPS, LVO, EFB) if applicable			
➤ PBN RNP AR APCH AMC1 SPA.PBN.105(b)	/	/	/
➤ MNPS SPA.MNPS.105 (c)	/	/	/ (2)
➤ RVSM AMC2 SPA.RVSM.105 (f)	/	/	/ (2)
➤ LVO AMC1 SPA.LVO.120(b); AMC2 SPA.LVO.120(b); AMC3 SPA.LVO.120(b)	/	/	/
➤ ETOPS AMC 20-6 rev.2 APPENDIX 6	/	/	/ (2)
➤ EFB AMC4 SPA.EFB.100(b)(3)	/	/	/ (2)
➤ RRLD AMC1 CAT.POL.A.255(b)(2)(iv); AMC1 CAT.POL.A.355(b)(5) and (b)(6)	/	/	/ (2)
➤ Steep Approach CAT.POL.A.245; CAT.POL.A.345	/	/	/ (2)
➤ Short landing CAT.POL.A.250; CAT.POL.A.350	/	/	/ (2)
➤ Two-engined aeroplanes without ETOPS approval CAT.OP.MPA.140	/	/	/
Flight Path Management (MAN or AUT) during Unreliable Airspeed indication and other failures at high ALT in aeroplanes with MAX CRZ ALT > FL300			
➤ Elements as specified in Table AMC1 ORO.FC.120&130	/	/	/
UPRT			
➤ AMC1 ORO.FC.220&230	/	/	/
Emergency and Safety Equipment Training and Checking (ESETC)			
➤ First-aid in general	/	/	/
➤ First-aid as relevant to the ACFT type of operation and crew complement	/	/	/
➤ Aero-medical topics	/	/ (2)	/ (2)
➤ Smoke	/	/	/
➤ Actual Fire Fighting	/	/	/
➤ Operational procedures of security, rescue and emergency services	/	/	/
➤ Survival Training	/ (2)	/ (2)	/ (2)
➤ Ditching procedures and actual use of corresponding equipment	/	/	/
➤ Wet-drill Training	/	/	/

➤ Location/use of Emer/Safety equipment and associated procedures/drills	/	/	/
➤ PAX handling for OPS where no cabin crew is required	/	/	/
➤ Discipline and responsibilities for OPS where no CC is required	/	/	/
➤ PAX briefing/safety demonstrations, for OPS where no CC is required	/	/	/
CRM Training			
• Elements as specified in Table 1 AMC1 ORO.FC.115 Column 1	/		
• Elements as specified in Table 1 AMC1 ORO.FC.115 Column 2		/	/
• Elements as specified in Table 1 AMC1 ORO.FC.115 Column 3			/
DG Training AMC1 SPA.DG.105(a) and ORO.GEN.110(j)	/	/	/ (2)
Fatigue Management Training FMT ORO.FTL.250	/	/	/ (2)
SMS Training			
➤ Training and Communication on Safety AMC1 ORO.GEN.200(a)(4)	/	/	
➤ Compliance monitoring AMC1 ORO.GEN.200(a)(6)(e)(3)	/	/	
Security Training AMC1 ORO.GEN.110(a)	/	/	/ (2)
EWIS EASA AMC 20-22	/ (3)	/ (3)	/ (3)
Psychoactive substances and endangering safety CAT.GEN.MPA.170(b), CAT.GEN.MPA.175	/	/	
Global Reporting Format (GRF) AMC1 CAT.OP.MPA.303 & CAT.OP.MPA.311	/	/	/ (2)
Ground checking AMC1 ORO.FC.220 (b)(2)	/	/	/

*First OCC of a CAT pilot

- (1) Not applicable if covered by the TR
- (2) If applicable due to the change in type of holding
- (3) If applicable

1.5.1 Systems, procedures and SPA training courses

[AMC1 ORO. FC.220 (a)(1)(i) and (b)]

The GTC includes the review of aircraft systems and normal, abnormal and emergency procedures, including:

- Normal procedures
 - Flight planning
 - Ground handling
 - Performance
 - Mass and balance
 - Fuel scheme
 - Selection of alternate
 - Ground de-icing/anti-icing
- Abnormal procedures, including pilot incapacitation.

But also, and not limited to, any other relevant subject for the operation, such as:

- Differences between possible variants;
- The MEL;
- Procedures and regulations related to all operation requiring specific approvals (PBN, MNPS, RVSM, LVO, ETOPS, DG, RRLD, EFB, Steep approach, Short landing);
- "Ice and other Contaminants" procedures;
- Ground Proximity Warning (TAWS);
- ACAS; and
- States Laws, Regulations and Procedures.

If the OCC is combined with the Type Rating (TR), the review of aircraft systems and normal, abnormal, and emergency procedures can be covered during the TR.

Important Note:

- Type Ratings training programmes are defined in ATO Training manual and approved by the PEL department of the CAAT.
- OCC training programmes are defined in AOC OM Part-D and approved by the OPS department of the CAAT.

Combination is possible § AMC1 ORO.FC.120 (a)(2), provided AOC and ATO of AOC coordinate to organise the footprint of the TR course to include OCC. OCC and TR exercises shall be clearly identified. Some credits can be obtained (e.g. Aircraft systems, normal, abnormal, and emergency procedures).

Note: It is recalled that the procedures are those described in the OM-A and OM-B.

Reminder: Initial training related to specific approvals is described in the corresponding CAAT guidance.

1.5.2 Flight Path Management

[AMC1 ORO.FC.120&130]

The establishment of a cross-reference matrix between AMC1 ORO.FC.120&130 and Table 1 of AMC1 ORO.FC.220&230 is recommended to identify and select common elements that address both the GTC requirements of the AMC related to Flight Path Management and UPRT.

1.5.3 Upset Prevention and Recovery Training UPRT

[AMC1 and AMC2 ORO. FC.220&230]

Refer to Appendix 3 to this guide. UPRT ([Upset Prevention and Recovery Training](#)).

1.5.4 Emergency and Safety Equipment Training and Checking

[AMC1 ORO. FC.220 (c)]

This training is required during the initial OCC and all subsequent OCCs (change of Operator and change of type). It should be conducted jointly for both flight and cabin crew. The equipment used should be representative of that available on the aircraft, and in case of unavailability, a documented presentation of the differences must be provided. The topics to be covered in this training are listed in AMC1 ORO.FC.220 (c)(2). This training must be concluded with an assessment.

During the initial OCC, exercises on forced ditching and the use of associated equipment, as well as first aid training, should be conducted.

According to AMC1 ORO.FC.220(c)(2)(v), the safety aspect of the survival equipment must be addressed. Therefore, this point should be covered in relation to the equipment on board the specific aircraft (location of safety equipment that may pose a security risk, in-flight verification of the presence of this equipment, etc.).

1.5.5 CRM

[ORO. FC.220 (a)] Refer to Appendix 1 to this guide. CRM ([Crew Resource Management](#)).

1.5.6 Dangerous Goods DG

[ORO. GEN.110(j) and AMC1 SPA. DG.105(a)]

An Aircraft Operator, whether authorised or not to carry dangerous goods (DG), must provide an initial dangerous goods training programme specific to its personnel. For more information, refer to the CAAT guidance for the approval of DG training programmes which is based on the principles of the CBTA.

1.5.7 Fatigue Management Training (FMT)

Refer to [Appendix 2](#) to this guide. [FMT \(Fatigue Management Training\)](#).

1.5.8 SMS Training

[ORO. GEN.200 (a)(1)(iv), AMC1 ORO. GEN.200 (a)(1)(iv) and AMC1 ORO. GEN.200(a)(2) point (e) (3)]

The Operator must establish a training program to ensure that its personnel are informed about the current state of its SMS and briefed on the role of compliance monitoring.

1.5.9 Security

[AMC1 and GM1 ORO. GEN.110(a)]

In addition to the training requirements of [CAAT announcement on National Civil Aviation Security Training Programme: NCASTP](#), the AMC1 ORO. GEN.110(a) contains theoretical and practical safety features that should be included in OCC training.

1.5.10 EWIS

Each Operator may consider the relevance of the EWIS (Electrical Wiring Interconnection System) training, in application of the [EASA AMC 20-22 Aeroplane Electrical Wiring Interconnection System Training Programme](#). In response to this question, the Operator should indicate in the OM-D, in accordance with its SMS, whether it is impacted or not. If necessary, operator should adapt the OCC training for FC accordingly.

1.5.11 Support programme, Psychoactive substances and Endangering safety

[CAT.GEN.MPA.175 and AMC1 and GM1 CAT.GEN.MPA.175(b)]

The Operator should, when recruiting its flight crew, take into account the psychological assessment measures required by the Regulations.

The Operator must inform its personnel of the procedures for accessing a psychological support program (CAT.GEN.MPA.215).

[AMC1 CAT. GEN. MPA.170(b)]

The Operator should put in place a policy of prevention and detection of psychotropic drugs in its training programme when recruiting aircrew.

NOTE: This provision is scheduled to become fully effective by December 31, 2028.

1.5.12 GLOBAL REPORTING FORMAT (GRF)

[AMC1 CAT. OP. MPA.303 & CAT. OP. MPA.311]

To develop the Global Reporting Format (GRF) training syllabus, the Operator may refer to GM1 CAT.OP. MPA.303 & CAT.OP.MPA.311.

1.5.13 Knowledge assessment (checking)

[AMC1 ORO. FC.220 (b)(2)]

The ground courses of OCC must be validated by checking. The conditions for achieving these must be described in the OM-D. They should include questions on the following topics:

- Aircraft systems;

- Aircraft performance; and
- Flight preparation.

The use of on-board documentation is encouraged during knowledge assessment to promote its mastery.

The Operator should ensure that these checks verify the trainee's actual assimilation of the programme's knowledge. The minimum required pass mark and the handling of failure should be determined and specified in the OM-D.

Note: The content of the assessment and its result attesting to the pilot's competence must be formalised and traced [AMC1 ORO.MLR.115]. The sole presentation of an attendance certificate to the training is not acceptable.

1.6 Self-Training

Part of the training can be carried out in self-training. Refer to [Appendix 9 E-learning](#) to this guide.

1.7 Subcontracting

Some of the training can be outsourced. Refer to [paragraph 0.8 Subcontracting of Chapter 0](#).

1.8 Flight Training (FT)

[AMC1 ORO. FC.120&130; AMC1 ORO. FC.220 (d); AMC1 and AMC2 ORO. FC.220&230]

[Appendix 5](#) to this guide [FTCA \(Flight Training and Checking on Aircraft\)](#) supplements the information in this paragraph regarding sessions on aircraft.

1.8.1 Objectives

The purpose of this training is to train and consolidate the crew member in the Operator's operating procedures including for specific operations (PBN, NAT HLA, RVSM, LVO, ETOPS, RRLD, EFB, steep approach, short landing, etc.), for which additional training must be provided.

1.8.2 Briefing

Each FT session should be conducted with a training mindset. In this regard, the instructor should have a support material serving as the basis for the briefing and ensuring standardisation of the delivered message. These materials could be optimised so as not to overshadow the key role of the instructor in the educational process, allowing them to adapt their briefing according to the needs of the crew.

It is expected that the briefing:

- Is delivered just before the session (and not the day before);
- Not less than 1 hour;
- Presents the course program flow and addresses subjects related to the desired learning objectives; and
- Contains comments tailored to the proper mastery of certain exercises of the programme.

1.8.3 Content of the sessions

The training programme must contain the mandatory guidelines contained in the OSDs and should consider their instructions "non-mandatory".

It should contain a LOFT and exercises to:

- The development of CRM;
- Assessment and development of technical and non-technical skills; and

- To practice handling pilot incapacitation.

It should incorporate UPRT exercises (Refer to Appendix 3 to this guide. UPRT ([Upset Prevention and Recovery Training](#))) and, where applicable, flight path management (aircraft that can fly over the FL300) described in the AMC1 ORO table. FC.120&130. The establishment of a cross-matrix between the AMC1 ORO table. FC.120&130 and Table 1 of the AMC1 ORO. FC.220&230 to identify and select common elements would meet the GTC requirements for Flight Path Management and UPRT.

Reminder: additional training related to operations requiring specific approvals is described in the corresponding CAAT guidance.

Training content and volumes should remain balanced between F/O and CPT and PF and PM functions.

1.8.4 Particular case of the TR base training performed by the operator

[TCAR PEL Part FCL Appendix 9 §(A)(17) (b)]

In the case of a TR performed by an operator, the operator must detail the programme conforming to AMC2 ORA.ATO.125§(k)(1) in the OM-D. This programme is approved by the CAAT.

These flights should be performed in accordance with CAAT approved procedures for use of aircraft on an AOC for non-commercial operations and specialized operations (ORO.GEN.310 & ORO.AOC.125)

A certificate of completion of the type rating course including the flight training in the aircraft shall be forwarded to the CAAT before the new type rating is endorsed in the applicants' licence.

A certificate of completion produced by the operator will be provided to the applicant for the endorsement of the TR on his licence.

1.9 Flight Checking

[AMC1 ORO. FC.220 (d)]

Refer to [Appendix 4 OPC/LPC](#) to this guide [on Operator/Licence Proficiency Check](#)

[Appendix 5](#) to this guide [on FTCA \(Flight Training and Checking on Aircraft\)](#) complements the information given in Appendix 4 concerning aircraft sessions.

1.10 LIFUS

[AMC1 ORO. FC.220 (e)]

Refer to [Appendix 7 LIFUS](#) to this guide [Line Flying Under Supervision](#).

1.11 Line Check

Refer to [Appendix 8 LC](#) to this guide [on Line Check](#).

1.12 Continuity of training

At the end of an OCC, the Operator must integrate the flight crew into the applicable RTC cycle, depending on the validity limits of the various training courses followed in OCC (see table in [paragraph 1.5 Ground training and checking \(GTC\)](#)) and required under the RTC (see table in [paragraph 2.3 Ground Training and Checking \(GTC\)](#)).

2. RTC (Recurrent Training and Checking)

Knowledge of Chapter 0 General FCTG-A is an essential prerequisite for the proper use of this chapter.

2.1 Main regulatory references

- ORO. GEN.110 Operator responsibilities
- ORO. GEN.200 Management system
- ORO. FC.115 CRM Training
- ORO. FC.130 and 230 Recurrent Training and Checking
- ORO. FC.135 Pilot Qualification to operate in either pilot's seat
- ORO. FC.140 Operation on more than one type or variant
- ORO. FC.145 Provision of training
- ORO. FC. A.201 Inflight relief of flight crew member (IRFCM)
- ORO. FC.330 Recurrent Training and Checking OPC
- ORO. FTL.250 Flight time limitation
- CAT. GEN. MPA.170(b)
- Part SPA Operations Requiring Specific approvals.

2.2 Preamble

Recurrent training involves ground courses, training and checking sessions on aircraft or FSTD and a Line Check (LC). The following paragraphs are intended to assist Operators in the development and implementation of such training or checking.

Note: By extension to the ORO. FC.145(g), the validity of all acts of training and checks related to the RTC is understood at the end of the month.

Given a constantly evolving regulatory context, recommendations from manufacturers and authorities, feedback from the previous RTC cycle, and feedback from the Operator's SMS, it is expected that MPO or SiPO Operators will have their program approved each year to take into account all these points.

2.3 Ground Training and Checking (GTC)

The following table groups all GTC training courses, with the associated minimum recurrence.

Type of training	RTC	
	Annual	Triennial
Systems and Procedures Course. AMC1 ORO FC.220 (a)(1)(i) and (b)		
➤ Aircraft systems ⁽¹⁾	/	
➤ Operational procedures including OPS on more than one type or variant	/	
Ground de-icing/Anti-icing	/	
Pilot incapacitation	/	
➤ Accident/Incident and occurrence review	/	
SPA (PBN, MNPS, RVSM, ETOPS, LVO, EFB) if applicable		
➤ PBN RNP AR APCH AMC1 SPA.PBN.105(b)	/	
➤ NAT HLA SPA.MNPS.105(c)	/ ⁽³⁾	
➤ RVSM AMC2 SPA.RVSM.105 (f)	/ ⁽³⁾	
➤ LVO AMC4 SPA.LVO.120(b); AMC6 SPA.LVO.120(b)	/	
➤ ETOPS AMC 20-6 rev. 2 APPENDIX 6	/	
➤ EFB AMC4 SPA.EFB.100(b)(3)		⁽⁴⁾
➤ RRLD AMC1 CAT.POL.A.255(b)(2)(iv) ; AMC1 CAT.POL.A.355(b)(5) and (b)(6) ⁽¹⁾	/	

➤ Steep Approach CAT.POL.A.245 ; CAT.POL.A.345	(6)	
➤ Short landing CAT.POL.A.250 ; CAT.POL.A.350	(6)	
➤ Two-engined aeroplanes without ETOPS approval CAT.OP.MPA.140	(6)	
Emergency and Safety Equipment Training and Checking (ESETC)		
➤ Actual donning of a life-jacket, where fitted	/	
➤ Actual donning of protective breathing equipment, where fitted	/	
➤ Actual handling of fire extinguishers of the type used	/	
➤ Instruction on the location/use of Emer/Safety equipment carried on the ACFT	/	
➤ Instruction on the location/use of all types of exits	/	
➤ Security Procedures	/	
➤ Actual operation of all types of exits		/
➤ Demonstration of the method used to operate a slide, where fitted		/
➤ Actual fire-fighting using equipment representative of that carried in the aircraft on an actual or simulated fire ⁽²⁾		/
➤ The effects of smoke in an enclosed area and actual use of all relevant equipment in a simulated smoke-filled environment		/
➤ Actual handling of pyrotechnics, real or simulated, where applicable		/
➤ Demonstration in the use of the life-rafts, where fitted		/
➤ Particularly in the case where no CC is required, First-aid, appropriate to the ACFT type, the kind of OPS and crew complement		/
CRM Training		
• Elements as specified in Table 1 AMC1 ORO.FC.115 Column Annual Recurrent Training ⁽¹⁾	/	
Flight Path Management (MAN or AUT) during Unreliable Airspeed indication and other failures at high ALT in aeroplanes with MAX CRZ ALT > FL300		
Elements as specified in Table AMC1 ORO.FC.120&130 ⁽¹⁾	/	
UPRT		
Upset Prevention elements from Table 1 AMC1 ORO.FC.220&230 ⁽¹⁾	/	
DG Training AMC1 SPA.DG.105(a) and ORO.GEN.110(j)	Every 24 months	
Fatigue Management Training FMT ORO.FTL.250	/	
SMS Training AMC1 ORO.GEN.200(a)(4)	(6)	
Security Training AMC1 ORO.GEN.110(a) and ACAAT on NCASTP	/	
EWIS EASA AMC 20-22	Every 24 months	
Psychoactive substances CAT.GEN.MPA.170(b)	(6)	

(1) All items are covered over a period not exceeding 3 years

(2) Except that, with Halon extinguishers, an alternative extinguisher may be used;

(3) Reminders on important points and new elements if necessary;

(4) Normally not necessary if EFB functions are used regularly in line operations;

(5) As specified by the operator's safety training programme;

(6) No specified periodicity

2.3.1 Aircraft Systems

[AMC1 ORO.FC.230 (a)(1) (i) (A)]

The aircraft systems must undergo an annual review. The comprehensive revision of all aircraft systems should be completed over a three-year period. A triennial (3-year) distribution must be defined in the OM-D.

This program must consider the Operator's specific authorisations and any differences between possible variants. It is the responsibility of the Operator, as part of their management system, to identify the possible need to increase the revision frequency of certain systems.

2.3.2 Operational Procedures and Regulations

[AMC1 ORO. FC.230(a)(1)(i)(B)]

The Operator's programme should cover all operational procedures and regulations defined in each part of the OM (including those related to its operational approvals) with acceptable recurrence.

In order to best target the procedures and regulations to be reviewed annually or within each triennial cycle, the Operator should rely on its SMS to select the points of most interest, the greatest challenges, and/or innovations (for example: the fuel scheme and LVO in 2022/2023), as well as points that are particularly critical for safety.

Note: the two points (i) and (ii) below are valid for 12 months.

(i) Deicing/Anti-icing

[GM2 CAT. OP. MPA.250(f)]

The theoretical review should focus on operational procedures in icing conditions. This review should include the use of the Operator's documentation and target the reality of the operation, considering the characteristics of the aircraft and the operated network, as well as available feedback and experiences (internal or external).

(ii) Pilot incapacitation

[AMC1 ORO. FC.230 (a)(1)(i) B and (c)(1)]

In addition to written procedures, the subject should, through group discussions based on concrete facts, consider the various possible scenarios of incapacitation, ranging from detection to decision-making issues.

Furthermore, the topic of pilot incapacitation should be addressed during the GTC, even in Single-Pilot Operations (SiPO), with a particular focus on prevention. [AMC1 ORO. FC.230 (a)(1)(i) B]

(iii) Operations requiring Specific Approvals

Based on the Operator's specific approvals, the following topics should be addressed annually:

- **MNPS (NAT-HLA):** [SPA.MNPS.105(c)] the Operator must ensure that the knowledge and the capabilities of the crews in relation to MNPS operations are maintained and updates by providing a recurring training programme.

CAAT recommends including an annual recurrent on NAT-HLA, based on the latest recommendations of [ICAO DOC NAT 007](#) and [NAT OPS bulletins](#)

In the event of inactivity on the route or the area for more than 36 months, the Operator must provide refresher training (AMC1 ORO.FC.105(b)(2);(c))

- **RVSM:** [AMC1 SPA. RVSM.105 (c)] The Operator should ensure that crew knowledge and capabilities in relation to RVSM operations are maintained, updated and verified by providing a recurrent training programme. The contents of this program are described in the AMC2 SPA. RVSM.105 (f).
- **LVO:** The Operator must ensure that the knowledge and skills of the flight crews in relationship with LVO operations are maintained, updated and verified. It would be relevant to also include a review of the content of the initial LVTO training.
- **ETOPS:** [Appendix 6 of AMC 20-6, Appendix 7 of EASA AMC 20-6 (Part D), SPA. ETOPS.105] Appendix 6 and 7 of EASA AMC 20-6 detail precisely the elements to be included in the ETOPS training programme. The recurrent training elements, described in Appendix 6 of EASA AMC 20-6, will be adapted or developed based on the nature of the operation. Recurrent training will be defined in OM-D.

- **DG:** [CAT. GEN. MPA.200; ORO. GEN.110(j) and AMC1 SPA. DG.105(a)] An aircraft operator, whether authorised to transport dangerous goods (DG) or not, shall provide a specific dangerous goods training programme to its personnel. The recurrent training programme by category of staff or according to the principles of the CBTA should be carried out at least every 2 years. For more information, refer to the CAAT guidance material for the approval of DG training programmes which is based on the principles of the CBTA.
- **EFB:** [AMC4 SPA. EFB.100(b)(3) (d)] The Operator should include an annual reminder about normal EFB operations, and more specifically whether new functions or applications have been implemented.
- **RRLD:** [AMC1 CAT. POL. A.255(b)(2)(iv)] The programme defined in the "GROUND TRAINING" section of the AMC should be covered on a three-year cycle.

Note: For performance classes B aeroplane, the training programme described in AMC1 CAT.POL. A.355(b)(5) and (b)(6) is not as prescriptive, but the pilot's knowledge and ability to perform the tasks associated with this operation should be verified.

- **Steep approach and Short landing:** [CAT. POL.A.245 and CAT. POL.A.250] Refer to specific requirements.

(iv) FANS: ADS, CPDLC, PBCS

This training is an integral part of the review of operational regulations and procedures. It appears to be necessary annually due to the constant evolution of rules, procedures and systems and in order to prevent errors of use in the various airspaces concerned. In no case is it a question of reproducing the initial training, but on the contrary, it is expected to make a reminder of the normal, abnormal and emergency procedures with reference to the latest documents in force translated in the latest updates of OM Part C. This review, illustrated with feedback and/or incidents in operation, may include a review of essential CPDLC messages, including the meaning of the most ambiguous ones.

The [ICAO Global Operational Data Link Document \(GOLD\)](#) is a useful reference in support of training.

(v) Noise abatement procedures reminder

This reminder not subject to knowledge testing, could lead to a targeted recall of the procedures specific to the types and airports used by the Operator. It could be enriched by feedback from experiences and difficulties, or incidents noted during the past year within the Operator but also externally.

2.3.3 Accident/Incident and Event Review

[AMC1 ORO. FC.230(a)(1)(i)(C)]

Accidents and serious incidents occurring within the Operator, but also relevant events external to the Operator, should be the subject of an analysis (incidents/accidents, ASR, various feedback) promoting collective reflection and exchange between participants and not in the form of a masterful presentation. Beyond the events from the SMS of the Operator itself, the Operators will be able to draw inspiration from the data provided by the manufactures and other resources (NTSB, AAIB, ATSB, BFU, BST, etc.).

2.3.4 Emergency and Safety Equipment Training and Checking

[AMC1 ORO. FC.230(a)(2)]

Periodicity:

- 1 year concerning the AMC1/ORO. FC.230(a)(2)(ii)
- 3 years concerning the AMC1/ORO. FC.230(a)(2)(iii)

Particular attention should be paid to paragraphs (iv), (v), (vi) of the AMC that require joint FC/CC training.

In reference to the AMC1 ORO.FC.230(a)(2)(ii)(D), the equipment used should be representative of that available on board the aircraft. If this is not possible, a documented statement of the differences should be required.

2.3.5 CRM

Refer to [Appendix 1](#) to this guide [on CRM \(Crew Resource Management\)](#).

2.3.6 Flight Path Management

[AMC1 ORO. FC.120&130]

All the elements of the table of the AMC1 ORO. FC.120&130 should be reviewed over a rolling period of three (3) years for Operators involved in flights above FL300. The establishment of a cross-matrix between the AMC1 ORO table. FC.120&130 and Table 1 of the AMC1 ORO. FC.220&230 to identify and select common elements would meet the AMCs GTC requirements for Flight Path Management and UPRT is strongly recommended.

2.3.7 UPRT

[AMC1 and 2 ORO. FC.220&230] Refer to [Appendix 3](#) to this guide [on UPRT \(Upset Prevention and Recovery Training\)](#).

2.3.8 Dangerous goods

[CAT. GEN. MPA.200; ORO. GEN.110(j) and AMC1 SPA. DG.105(a)]

An Aircraft Operator, whether authorised to transport dangerous goods (DG) or not, must provide a specific dangerous goods training programme to its personnel. The recurrent training programme must be carried out at intervals not exceeding 2 years. For more information, refer to the CAAT Guidance material for the approval of DG training programme.

2.3.9 Fatigue Management Training (FMT)

Refer to [Appendix 2](#) to this guide [on FMT \(Fatigue Management Training\)](#).

2.3.10 Security [AMC1 ORO. GEN.110(a)]

In addition to the training requirements of CAAT announcement on National Civil Aviation Security Training Programme: NCASTP, the AMC1 ORO. GEN.110(a) contains training topics related to operational safety. Relevant elements, i.e. in relation to operational-specific security threats.

2.3.11 SMS Training

[ORO. GEN.200 (a) (4) and AMC1 ORO. GEN.200 (a)(4)]

The Operator must establish a programme to ensure that its personnel are trained on the functioning and updates of its Safety Management System (SMS) and that they remain up to date.

2.3.12 EWIS

Each Operator should consider the relevance of the EWIS (Electrical Wiring Interconnection System) training, in application of the EASA AMC 20-22 Aeroplane Electrical Wiring Interconnection System Training Programme. In response to this question, the Operator should indicate in the OM-D, in accordance with its SMS, whether it is impacted or not and if necessary, adapt the recurrent training for Flight Crew.

Note: If operator consider providing EWIS training for flight crew, the maximum frequency should not exceed 2 years.

2.3.13 Psychoactive substances

[AMC1 CAT. GEN. MPA.170(b)]

The Operator should put in place a policy of prevention and detection of psychotropic use in its recurrent training programmes at a frequency to be defined.

During recurrent training programmes, the Operator may remind its staff of the arrangements for access to a psychological support programme (CAT. GEN. MPA.215).

2.4 Checks of Knowledge

Where a check of knowledge is required by regulatory requirements, the conditions for carrying out such checks should be described.

The Operator must ensure that these assessments effectively verify the trainee's actual assimilation of the program's knowledge. The minimum required pass criteria and the management of failures should be determined and specified in the OM-D.

The use of reference material is encouraged during knowledge assessments to promote proficiency.

Note: The content of the assessment and the result demonstrating the pilot's competence must be documented and recorded [AMC1 ORO.MLR.115]. The mere presentation of an attendance certificate for training is not acceptable."

2.5 Self-training

Part of the training can be carried out in self-training. This topic is developed in [Appendix 9](#) to this guide [on E-learning](#).

2.6 Subcontracting

Some of the recurring training can be outsourced. Refer to [paragraph 0.8 Subcontracting of Chapter 0](#).

2.7 General Flight Training and Checking

2.7.1 Sessions

Two types of sessions in RTC: training sessions and check sessions can be identified. These are described in [paragraphs 2.8](#) and [2.9](#) of this same chapter, respectively.

CAAT recommends:

- Before the start of the RTC cycle, the Operator should practically verify the compatibility of the planned exercises with the simulator session duration by conducting specific validation sessions. These sessions should be calibrated considering a crew performance representative of the pilot population;
- That radio communication with ATC, during RTC sessions, both on FSTD and on aircraft, be carried out in English.

2.7.2 Scheduling of Training Sessions

Regulations do not impose a specific placement for the Flight Training (FT) session within the RTC cycle, except for ensuring its validity of one year.

2.7.3 Number of Session and time allocation

Beyond the regulatory minimum, the number of sessions and the time allocation to them must be determined by each Operator and for each type of aircraft according to the programmes to be covered resulting from operational specificities and the field of operation.

Given the multiplicity of elements to be considered in RTC, the CAAT encourages Operators to organise their annual programme in such a way as to allow the realisation of two FTs and to prepare its ability to evolve towards the EBT.

2.8 Flight Training

Regarding Flight Training on aircraft, Appendix 5 to this guide provides additional information to complement the details mentioned above

2.8.1 Session Objectives

The objective of training is to maintain and develop pilot skills. It will be done through regulatory exercises (three-year programme) and additional (or even more complex) exercises defined by the Operator according to its type of operations, the associated risks and its SMS.

2.8.2 Briefing

Every FT/FSTD session should be conducted with an academic background. In this regard, it is highly recommended that the instructor has a support material serving as a basis for the briefing, ensuring the standardization of the message delivered. These support materials should be optimized to highlight the instructor's key role in the pedagogical process, enabling them to adapt their briefing according to the crew's needs.

It would be appropriate for the briefing:

- Be delivered just before the session (and not the day before);
- Not less than 1 hour;
- Presents the progress of the programme and deals with topics related to the educational objectives sought; and
- Contains comments tailored to the proper mastery of certain exercises of the programme.

2.8.3 Content of the session

This session is not dedicated to the preparation of the checking but to the recurrent training. We should find the revision of major system failures but also:

- Original exercises that may never have been seen by the flight crew, including initial training (interrupted approach in level or descent, etc.);
- Exercises targeted by the Operator's SMS (including manual piloting, Mandatory Visual Maneuver at minima, visual transition with strong crosswind, short or narrow runways, etc.);
- Relevant exercises in response to the various recommendations issued (Safety Bulletin, Safety Info, etc.);
- Exercises corresponding to the implementation of the three-year UPRT practical programme (see [Appendix 3](#) to this guide [on UPRT \(Upset Prevention and Recovery Training\)](#))
- All elements of the table of the AMC1 ORO. FC.120&130 should be reviewed over a rolling period of three years for Operators involved in flights above FL300. The establishment of a cross-matrix

between the AMC1 ORO table. FC.120&130 and Table 1 of the AMC1 ORO. FC.220&230 to identify and select common elements would meet the AMC GTC requirements for Flight Path Management and UPRT.

- ETC.

In addition, an Operator is free to provide in its FT session a part "LOFT", allowing the instructor to personalise it according to the identified needs.

On FSTD, depending on the type of exercise, the practice of ISI (In Seat Instruction) by the instructor can be beneficial, especially for some UPRT exercises.

Note: it may be relevant that manual piloting training is preferred during these sessions. Indeed, his online practice, even supervised, always consists of a significant increase in workload.

2.8.4 Review of Major Failures

Refer to the AMC1 ORO. FC.230 (a)(4) (i) (A):

"The aircraft/FSTD training programme should be established in such a way that all major aircraft system failures and associated procedures are covered over a rolling period of 3 years." It is therefore necessary for the Operator to determine "major" failures by aircraft type. To do this, the following procedures could at least be considered by the Operator:

- Procedures involving items to be made from memory;
- Procedures requiring immediate action by the crew (identified red or related to Master Warning); and
- Abnormal procedures identified by the Operator as complex or likely to have serious consequences.

The Operator should compile a list of these procedures in reference to those provided by the manufacturer, along with a schedule for their implementation, which should be included in the approval request documentation. Considering the training needs for other exercise categories, these major failures should be identified by the Operator after thorough analysis. Under no circumstances should the quantity of these procedures be considered as an indicator of the relevance of this choice.

2.8.5 Unexpected Situations

The analysis of recent accidents highlighted the need to train crews to identify and manage an unforeseen situation in order to provide a satisfactory response, in a condition of stress related to the startling effect.

However, it is often difficult to achieve such surprise effects in the simulator and this can have negative consequences, especially in the case of inappropriate crew reactions leading to a feeling of failure at the end of the session.

Consequently, in order to best meet this demand, it is suggested to the NPTN (Crew training Post Holder):

- To assign such surprise effects to sessions only,
- To list for the instructors' situations subjecting the crew to the effect of surprise, in order to use them in session independently of the programme,
- Leave it to the instructor to bring out any of these situations at the most appropriate time, and
- Use the ISI (In Seat Instruction).

Note: Instructors should be particularly briefed and standardised on the attitude to adopt in the face of inappropriate crew reactions. These should be analysed and the exercises carried out again. This confrontation with the unexpected must not leave the crew with a feeling of failure with destabilizing consequences.

Operators are encouraged to offer multiple event choices during each flight phase. When combined, these events create less predictable scenarios.

2.8.6 Pilot Incapacitation Handling

[AMC1 ORO. FC.230(c) (2)]

If a simulator is available, practical training per pilot, at intervals not exceeding 3 years, shall be conducted. The choice of situations and the degree of incapacity should be made in a relevant manner, taking into account the particular cases of distribution of tasks (the case of the CPT's incapacity during take-off should be considered).

2.8.7 ACAS/TAWS

[CAT.OP.MPA 290/295]

The operator must integrate the procedures for using the ACAS system in its training programmes.

GM1 CAT.OP.MPA.295 §(j) recommends maintaining knowledge and skills relating to the use and procedures associated with the ACAS system, reviewing all possible scenarios over a two-year cycle. GM1 CAT.OP.MPA.290 §(c)(5) recommends the maintenance of knowledge and skills relating to the use and procedures associated with the TAWS system on a recurring basis.

2.8.8 Crew composition

By analogy with the crew constitution of an offline checks, the training session is preferably carried out in a formed crew, except for a session specially designed for a well-defined purpose (e.g. training of the CPT's substitute F/O or the right-seat CPTs). Indeed, the CAAT recommends conducting sessions with crew composition in accordance with the provisions of the Operator's operations manual. For example:

- Non-matching of two inexperienced pilots within the meaning of AMC1 ORO.FC.200(a),
- If a non-standard crew of two F/Os, one of them should hold the right-seat Captain qualification.

2.8.9 Treatment of inadequate skill level

The Operator should define the course of action to be taken if the level reached by a trainee at the end of the session does not comply with its requirements.

2.8.10 Special case: training to recover the conditions of recent experience (FCL.060)

According to paragraph (c) (1) of FCL.060 to find the conditions of recent experience at 90 days, the pilot will be able to continue his online activity under the supervision of an instructor (or examiner) provided that he totals 3 take-offs, 3 approaches and 3 landings in PF within 120 days previous ones. In this situation, "instructor" should mean a TRI having:

- Either a LIFUS extension (in the ZFTT sense)
- Or an LTC (Line Training Captain) nomination

A non-TRI LTC therefore does not meet the requirements of the Regulation.

If the pilot could not benefit from the previous rule, retraining in order to recover recent experience is then necessary. A session will therefore be organised:

- On FFS with, at least, a TRI restricted to the simulator (TRI/r); or
- On aeroplane (without passenger on board) in case of FFS unavailability ((according to the usual regulatory availability criteria) with a TRI Landing Training or a TRI LIFUS in accordance with FCL.910.TRI TRI(a)(3).

- When a TRI is not required by subpart J of Part-FCL, on an aeroplane (without passengers on board) with a competent instructor in accordance with the regulations and in agreement with the operations manual.

2.9 Flight Check

Refer to [Appendix 4](#) to this guide [on OPC/LPC \(Operator/Licence Proficiency Check\)](#).

[Appendix 5](#) to this guide [on FTCA \(Flight Training and Checking on Aircraft\)](#) supplements the information in Appendix 4 concerning aircraft sessions.

2.10 Either Seat Training and Checking

Refer to [Appendix 6](#) to this guide [on ESTC \(Either Seat Training and Checking\)](#).

2.11 Training and checks IRFCM

Refer to [Chapter 7 on IRFCM \(In-flight Relief of Flight Crew Member\)](#).

2.12 Line Check

Refer to [Appendix 8](#) to this guide [on LC \(Line Check\)](#).

3. EBT (Evidence Based Training)

This chapter is developed in addition to the [EASA checklists](#):

- [Oversight guidance for transition to mixed EBT \(checklist\)](#)
- [Oversight guidance for the transition to EBT Implementation](#)

3.1 Abbreviations, definitions

Abbreviations in paragraph 0.3

Abbreviations remain applicable. Those defined below are specific to the EBT chapter. The Operators are also invited to read the definitions introduced by the EBT regulation in TCAR OPS Regulation.

EBT Programme	Three-year EBT programme, consisting of six EBT modules
Cycle EBT	Annual EBT programme, consisting of two EBT modules
Module EBT	Set of two FSTD sessions covering the three phases EVAL, SBT and MT
EVAL	Phase Evaluation
SBT	Phase Scenario-Based Training
MT	Phase Manoeuvres Training
LEC	Line Evaluation of Competence
TGT	Technical Ground Training, consisting of the ground course (TGTP) and the Emergency and Safety Equipment Training (ESET)
TGTP	Technical Ground Training Programme
ESET	Emergency and Safety Equipment Training
TATT	Table of Assessment and Training Topics
ICAP	Instructor Concordance Assurance Programme
OBs	Observable Behaviours

3.2 Preamble to the concept of Evidence Based Training (EBT)

3.2.1 Origins

The evolution of the global fleet, on-board technologies, new simulation capabilities and the analysis of the causes of accidents through globalized data collection, led international bodies (ICAO and then IATA) to design, in 2013, a new approach to flight crew RTCs. This new approach was subsequently adapted and incorporated into the regulations. Introduction of all EBT regulations in the TCAR OPS and TCAR PEL regulations have completed to frame the regulatory requirements necessary for the implementation of the

EBT programmes for CS-25 aircraft. Regulatory extension of the EBT concept non-CS-25 devices and qualifying training in ATO (Type Rating) is planned at a later date.

3.2.2 General principles

Taking into account four generations of CS-25 Jet and Turboprop aircraft, based on the assessment of technical and non-technical skills and feedback, the EBT strengthens the crew's capabilities, in all phases of flight, to deal with degraded situations, various threats and unforeseen events with the aim of significantly improving flight safety.

EBT is a global training concept where the strict standardized checks of Appendix 9 of TCAR PEL Part FCL and TCAR OPS Part ORO, ORO. FC.230 gives way to an evaluation and then an adapted training in order to improve the skills of the crews at the end of a module of 2 sessions on simulator.

The Operator's EBT programme takes place over 3 one-year cycles and includes;

- One to three online assessments, LEC = Line Evaluation of Competence,
- Recurrent training on the ground
 - Three TGT Ground Courses = Technical Ground Training
 - Two to three ESET Rescue Safety Courses = Emergency and Safety Equipment Training
- At least six EBT modules spaced a maximum of 12 months and a minimum of 3 months, each comprising:
 - An evaluation phase, EVAL = Evaluation,
 - Two phases of training;
 - MT = Manoeuvres Training
 - SBT = Scenario Based Training

The completion of 2 modules of the annual EBT cycle, combined with recurrent ground training, makes it possible to extend the type rating.

In order to adapt its EBT programme to its type of flight operations and its specificities (aircraft type, type of breakdown, type of approach, various recurrences, etc.), the Operator must take into account all the relevant data collected by different means (SMS, training department, manufacturers (OSD, Service Bulletin, ...), Authorities, Accident Investigation authorities, international bodies, etc.).

The EBT involves the training of all stakeholders in the evaluation and training of crews. A rating system adapted to the specific needs of the EBT will also have to be put in place.

The implementation of an EBT programme requires a 3-year transition phase, corresponding to a full RTC programme. During this phase the rules of the ORO. FC.230 continue to apply and allow the Operator to develop its training system (competency assessment, scoring system, multiple choice scenarios, classification of failures and approaches, data collection, ...) and to train trainers and evaluators in new concepts.

In order to obtain approval for EBT program, the Operator must proceed in steps, respecting the different phases of the [EBT checklist made available by EASA or other equivalent process proposed by the operator and accepted by the CAAT.](#)

The implementation of an EBT programme remains an optional step left to the discretion of the Operator.

3.2.3 Operational benefits of EBT for the Operator

The initial and fundamental objective of the EBT programmes remains to increase the level of performance of the crews in order to improve the level of flight safety with a content of the FFS sessions less constrained by regulation, oriented towards more training, adaptable by the Operator to meet both its own operational specificities and the needs of its crews.

The operating rules of an EBT programme provide both a certain flexibility for the Operator but also a better autonomy in the field of crew education and training. Here are the main lines:

- Flight Crew programming during simulator sessions

The validity rules of 6 months for OPCs and 12 months for LPC and training are replaced by 2 annual modules separated by at least 3 months. In addition, 2 modules of two successive EBT years must not be more than 12 months apart.

- Online Assessment

Simulator modules systematically with operational phases (Evaluation and Scenario Based Training), annual online checks (Line Check) are replaced by Line evaluation of competence (LEC) valid for 12 to 36 months under certain conditions.

- Emergency and Safety Equipment Training

This part of the recurrent ground training may, under certain conditions, see its validity extended from 12 to 24 months.

- Either pilot's seat training and checking

The recurrent of the either pilot's seat qualification is extended to 12 months.

- Renewal of the Type Rating

The EBT programme makes it possible to define a method of renewal of the TR within the Operator itself (therefore without the need to go through an ATO) subject to an expiry of less than 1 year.

- EBT Instructor Training

The training of EBT instructors, subject to holding a TRI rating, may be provided by the Operator without the need for ATO training as required for TRE.

3.3 Regulatory References

3.3.1 TCAR OPS

- **ORO.FC.146 Personnel providing training, checking and assessment**

- AMC1 ORO. FC.146 (c) - Initial standardisation programme
- AMC2 ORO. FC.146 (c) - Recurrent standardisation programme

- **ORO. FC.231 Evidence-Based Training**

(a) EBT Programme

- AMC1 ORO.FC.231 (a) - EBT programme suitability
- AMC2 ORO.FC.231 (a) - UPRT for complex motor-powered aeroplanes with MOPSC > 19
- AMC3 ORO.FC.231 (a) - Personnel conducting assessment and providing training
- AMC1 ORO.FC.231 (a)(1) - Experience in mixed EBT to substitute ORO.FC.230
- AMC1 ORO.FC.231 (a)(2) - EBT programme and assessment and training topics — Resilience
- AMC2 ORO.FC.231 (a)(2) - Validity of the EBT module
- AMC1 ORO.FC.231 (a)(3) - EBT programme — enrolment
- AMC1 ORO.FC.231 (a)(4) - Instructor concordance assurance programme (ICAP)
- AMC1 ORO.FC.231 (a)(5) - Contingency procedures for unforeseen circumstances that may affect the delivery of the module.

(b) Competency Framework

- AMC1 ORO.FC.231 (b) - Recommended EBT competencies (EASA competency framework)
- AMC2 ORO.FC.231 (b) - Adapted competency model
- (c) Performance of the training system**
 - AMC1 ORO.FC.231 (c) - Training system performance - feedback process
 - AMC2 ORO.FC.231 (c) - Feedback process - data protection - grading system
- (d) Grading system**
 - AMC1 ORO.FC.231 (d)(1) - Grading system
 - AMC2 ORO.FC.231 (d)(1) - Grading system - alternative system
 - AMC3 ORO.FC.231 (d)(1) - Conduct of the grading - ORCA
 - AMC4 ORO.FC.231 (d)(1) - Recommended grading system methodology – VENN model
 - AMC1 ORO.FC.231 (d)(2) - Verification of the accuracy of the grading system
- (e) Devices and hourly volume of the EBT**
 - AMC1 ORO.FC.231 (e) - Volume and FSTD qualification level
- (f) Equivalency of malfunctions**
 - AMC1 ORO.FC.231 (f) - Equivalency of malfunctions - process
 - AMC1 ORO.FC.231 (f)(3) - Crew exposure to at least one malfunction for each characteristic
- (g) Equivalency of approaches**
 - AMC1 ORO.FC.231 (g) - Approaches that place an additional demand on a proficient crew
 - AMC2 ORO.FC.231 (g) - Equivalency of approaches relevant to operations – specific approval
- (h) Line evaluation of competence**
 - AMC1 ORO.FC.231 (h) - Line evaluation of competence
 - AMC2 ORO.FC.231 (h) - Line evaluation of competence – line evaluator
 - AMC1 ORO.FC.231 (h)(3) - Line evaluation of competence – extension of the validity
- (i) Ground training (GT and ESET)**
 - AMC1 ORO.FC.231 (i) - Performance-based continuous technical ground training
- **ORO.FC.232 Table of Assessment and Training Topics (TATT)**
 - AMC1 ORO.FC.232 - Assessment and training topics
 - AMC2 ORO.FC.232 - TATT – generation 4 (JET)
 - AMC3 ORO.FC.232 - TATT – generation 3 (JET)
 - AMC4 ORO.FC.232 - TATT – generation 3 (TURBOPROP)
 - AMC5 ORO.FC.232 - TATT – generation 2 (JET)
 - AMC6 ORO.FC.232 - TATT – generation 2 (TURBOPROP)
 - AMC7 ORO.FC.232 - TATT – generation 1 (JET)
 - AMC8 ORO.FC.232 - EBT programme assessment and training topics – scenario elements and competency mapping
 - AMC1 ORO.FC.232 (b)(1) - EBT programme assessment and training topics – EBT data report
 - AMC1 ORO.FC.232 (b)(3) - EBT programme assessment and training topics – aircraft types by generations
- **ORO.FC.235 Pilot qualification to operate in either pilot's seat — aeroplanes**
- **AMC1 ORO.FC.240 Operation on more than one type or variant**

3.3.2 TCAR PEL Part FCL

- **FCL 625 – IR**
- **FCL 625A – IR(A) Extension**
- **FCL 740 – Validity and renewal of class and type rating**

- AMC2 FCL 740(b) Refresher training at an AOC
- **FCL 740A – Extension of Class and Type Ratings – Aeroplane**
- **FCL 905.TRI/ SFI – TRI/SFI Privileges and conditions**
- **FCL 1025 Validity, Extension and Renewal of Examiner certificates**
- **Appendix 10 Extension and renewal of type ratings and IR**
 - AMC1 Appendix 10 - Application and report form – Licences administrative procedures

3.4 International support documentation

As part of the transition to EBT, the Operator is invited to consult the following documentation in addition to the TACR OPS regulations.

- **EASA:**
 - [Oversight guidance for transition to mixed EBT \(checklist\)](#)
 - [Oversight guidance for the transition to EBT Implementation](#)
- **ICAO Document 9995 Manual of Evidence-based Training**
<https://skybrary.aero/sites/default/files/bookshelf/3177.pdf>
- **IATA Evidence-Based Training Implementation Guide**
<https://www.iata.org/contentassets/632cceb91d1f41d18cec52e375f38e73/ebt-implementation-guide.pdf>
- **IATA Data Report for Evidence-Base Training**
<https://www.iata.org/contentassets/632cceb91d1f41d18cec52e375f38e73/data-report-for-evidence-basted-training-ed20one.pdf>
- **EOFDm: European Operators Flight Data Monitoring**
<https://www.easa.europa.eu/en/domains/safety-management/safety-promotion/european-operators-flight-data-monitoring-eofdm-forum>
- **Instructor and Evaluator Training**
<https://www.iata.org/contentassets/c0f61fc821dc4f62bb6441d7abedb076/guidance-material-and-best-practices-for-instructor-and-evaluator-training.pdf>
- **Doc 10151 Manual on Human Performance (HP)for Regulators**
<https://www.icao.int/safety/OPS/OPS-Section/Documents/Advanceunedited.Doc.10151.alltext.en.pdf>
- **The 2020 EBT global review**
<https://www.nlr.org/evidence-based-training/ebt-global-review-2020/>
- **Pilot aptitude testing**
<https://www.iata.org/contentassets/19f9168ecf584fc7b4af8d6d1e35c769/pilot-aptitudetesting-guide.pdf>
- **Manual Operation for 4th Generation Airliners**
<https://cordis.europa.eu/project/rcn/104513/reporting/en>

3.5 Mixed EBT

3.5.1 Reflections and procedures before setting up the EBT

CAAT recommends following the best practice described on the EASA recommendation. The implementation of EBT requires a transition phase of at least 3 years described in the document published by EASA "Oversight guidance for the transition to Mixed EBT implementation" ([EASA Checklist](#)).

An Operator wishing to move towards the EBT should start a preliminary reflection well in advance of the official contact provided for in point 1 of the "project guidance for mixed EBT implementation" (Project checklist) of the EASA checklist.

This reflection may, but is not limited to, cover the following points:

- Objective of the transition to EBT: improving flight safety
- Implementation process and sustainability of the system: be aware that beyond the mixed EBT period, the Operator will have to continue to evolve its training objectives.
- Taking into account the time taken to write manuals and matrices, set up adapted tools (computer tools in particular, skills scoring, TATT...), training and standardisation of instructors, and compliance with the items of the EASA checklist.

The implementation time of the 9 items of the EASA Project Checklist will depend on the resources allocated by the Operator to this project, a duration of one year seems reasonable. Some items, such as the standardisation of the instructor college, the creation or adaptation of the computer tool for scoring and data collection, the grading to skills should be thought, developed and tested in the organisation of the company to begin the period of "mixed EBT", which is already a phase of "production" of the EBT.

The Operator should be able to use and support these first tools from launch of the "Mixed EBT" phase. The adherence of instructors (essential to the proper functioning of the EBT programme), the coherence of the scoring system, or the use of observations via an adapted computer tool are the key points of a successful deployment of this phase.

Note regarding the computer scoring tool: a small Operator can free himself from the computer tool for scoring and data collection. Nevertheless, the collection of this data on paper (or equivalent), then entered on a spreadsheet-type tool, will require a specific allocation of human resources. This solution is unsuitable for a larger Operator.

Some Operators already experienced in the concept of competency scoring use the 9 pilot competencies in their classic RTC system. Nevertheless, significant additional work remains to be done to introduce the observable behaviors (OBs) that define each skill at stake. For this, the Operator should rely on the AMC1 ORO. FC.231(b) and adapt its grading system accordingly.

At the end of the reflection phase, in accordance with the first 3 points of the EASA Project checklist, the Operator will contact his authority, and may present directly on this occasion the following elements:

- EBT objectives specific to the Operator,
- Analysis of the elements to be implemented (GAP analysis), and
- Deployment schedule.

3.5.2 Mixed EBT

The "Mixed EBT" programme is a transition phase between the "classical" training and checks system and the EBT programme.

[GM1 ORO. FC.230(a); (b); (f)]

This transition phase incorporates elements that the Operator puts in place in order to obtain the approval of its EBT programme. This is required by regulation by the AMC1 ORO. FC.231 (a) (1).

This means that the Operator integrates into its classic training and checks programme (governed by the ORO. FC.230) elements of EBT in the context of its OPC/TF and LPC. During this period, compliance with the ORO. FC.230 through the possibilities offered by the GM1 ORO. FC.230 and Appendix 9 of part FCL shall be complied with.

The duration of implementation of the EBT via the "mixed EBT" programme is set at a minimum of three years and will have to demonstrate compliance with the requirements of the AMC1 ORO. FC.231(a)(1). However, the Operator or the CAAT will be free to extend this period according to the degree of maturity of the Operator before the final transition to the EBT.

Associated with this chapter of the FCTG-A, the main tool that Operators will have to follow in order to guide this approach is the [Oversight guidance for transition to EBT mixed checklist \(checklist\)](#).

On the other hand, Chapter 2 of the EASA checklist "Objectives for the inclusion of mandatory items specified in PART-FCL Appendix 9 and Part ORO. FC.230", covers the means of compliance with the ORO. FC.230 and appendix 9.

Finally, the elements concerning the CRM must be covered in accordance with the criteria specified in Chapter 3 of the EASA checklist, and in particular Tables 1 and 2.

3.6 Observable Skills and Behaviour: Competencies and OBs

[AMC1 and AMC2 ORO. FC.231(b)]

The implementation of EBT requires the Operator to set up a set of skills and observable behaviors (OBs), adapted to its operation.

The Operator's scoring system must make it possible to accurately identify through the OBs the skills at stake during each simulated event.

The implementation of this triptych skills/OBs/scoring system is a key point in the EBT concept.

The EASA competency model, derived from the ICAO Regulation, is described in the AMC1 ORO. FC.231(b). It includes the following 9 skills:

- **KNO:** Application of Knowledge
- **PRO:** Application of Procedures and compliance with regulations
- **COM:** Communication
- **FPA:** Aeroplane Flight Path Management – Automation
- **FPM:** Aeroplane Flight Path Management – Manual Checks
- **LTW:** Leadership & Teamwork
- **PSD:** Problem-solving – Decision-making
- **SAW:** Situation awareness and Management of information
- **WLM:** Workload management

For each of the competencies, the AMC1 ORO. FC.231(b) provides for a list of OBs. An operator who would like to adapt these OBs should develop an alternative means of compliance (AMOC) provided for by the AMC2 ORO. FC.231(b) and in particular demonstrate the equivalence of its system to that of the AMC1 ORO. FC.231(b) based on the GM1 ORO. FC.231(b). A non-literal translation or different explanations that do not change the general meaning of the OBs are not considered a different model from that of EASA and therefore do not call for AMOC.

3.7 Grading system

[ORO. FC.231 (d)]

The Operator must develop a grading system or adapt the existing system. Skills, through observable behaviors (OBs), are the basis of the scoring system.

The AMC1 ORO. FC.231(d)(1) provides for a 5-level scoring system. An operator wishing to adapt this system should develop an alternative means of compliance (AMOC) provided for by the AMC2 ORO. FC.231(d)(1) and in particular demonstrate the equivalence of its system to that of the AMC1 ORO. FC.231(d)(1).

Whatever the system chosen, the Operator must develop each level of scoring in a guide for instructors and in particular define the standard level and the minimum acceptable level.

The scoring methods are described in paragraph (a) of the AMC3 (ORCA) and AMC4 (VENN) of the ORO. FC.231(d)(1).

The finesse of the data ("grading metrics" whose levels are described in the AMC1 ORO. FC.231(c)(c)) to be reassembled according to each phase, session and module, is described in paragraph (b) of both models. In particular, the two models combined provide that each phase is subject to a collection of data of different finesse:

- EVAL: grading metrics 1
- MT: grading metrics 0 (or 2 in the case of a skill rated as unacceptable)
- SBT: grading metrics 1
- EBT module: grading metrics 0

For the sake of simplification, it is recommended to systematically report data from grading metrics 1.

The grading metrics of the AMC1 ORO. FC.231(c)(c) and its GM1 can be interpreted as follows:

- Metrics 0: scoring the result in "Competent/non-competent"
- Metrics 1: 5-level skill scoring
- Metrics 2: complement to the competency scoring sheet (metrics 1) through the observable indicators that led to the grading of the competency
- Metrics 3: addition to the scoring sheet through comments that can be entered in free field or correspond to additional information identified by the operator (questionnaire for example)

Paragraphs (d), (e) and (f) of the AMC4 ORO. FC.231(d)(1) specify the criteria defining the acceptable levels of competence and appropriate training (individually customized training and/or additional FSTD training) as appropriate.

The grading system must also provide data for the evaluation of the training system.

3.8 Instructor Training

3.8.1 Standardisation of Instructors

[ORO. FC.146 (c)]

In order to be able to instruct within the modules of an EBT programme, in addition to holding a valid FCL qualification (TRI or SFI), an instructor must follow the Operator's standardisation programme including initial training and recurrent training.

3.8.2 Initial training

[AMC1 ORO. FC.146(c)]

Initial training consists of theoretical courses, practical training and a skills assessment.

- **EBT instructor training**

The operator must establish initial training for its instructors. This should include theoretical and practical training in instruction on all points of paragraph (c) of the AMC1 ORO. FC.146(c) and should be issued by a pilot who is or has been an EBT instructor (AMC1 ORO. FC.146(c) §(b)).

The GM1 ORO. FC.146(c) §(e) recommends at least 14 hours of training. The CAAT suggests that this hourly volume, which remains a minimum, be exempted over at least 3 days.

As part of the launch of its EBT programme, the Operator will be able to identify a launch team of experienced instructors who have participated in the development of the EBT programme. He will be able to take credit for the experience of the latter by justifying their knowledge and skills in all the elements of paragraph (c) and their involvement in the implementation of the EBT programme. This launch team will be tasked with training all of the Operator's EBT instructors as planned by the AMC1 ORO. FC.146(c) §(b).

Beyond the core of instructors, a credit for the alleviation of initial training may be granted to an instructor in accordance with paragraph (d) of the AMC1 ORO. FC.146(c). For this, the Operator will send the CAAT an analysis and the relevant elements (experience in the function, syllabus of instructor training of past seasons ...).

- **EBT assessment of competence (AoC)**

The terms of the assessment of competence (AoC) are described in paragraph (e) of the AMC1 ORO. FC.146(c). The Operator will also be able to rely on the GM3 ORO. FC.146(c).

For the launch team, the initial AoC will be conducted by a TRE or SE designated in accordance with item 2.0 of the EASA (Oversight Guidance for the transition to Mixed EBT Implementation) checklist.

3.8.3 Recurring Training

[AMC2 ORO. FC.146(c)]

The Operator must establish an annual recurring standardisation programme including:

- An EBT training refresher to update skills in terms of instruction;
- A concordance training that aims to harmonize the methods of instruction and grading; and
- An EBT assessment of competence.

Note: The EBT assessment of competence (AoC) may be combined with the AOC required every 3 years by the Part-FCL under the TRI qualification. It will have to be carried out on one of the two sessions of a module in accordance with the details of paragraph (e) of the AMC1 ORO. FC.146(c).

3.8.4 Concordance

[AMC1 ORO.FC.231(a)(4)]

A Grading Concordance Programme (ICAP: Instructor Concordance Assurance Programme) must be put in place to improve the reliability and consistency of scoring for all instructors qualified to deliver EBT. This is a key element of the EBT programme that will also be monitored by CAAT.

This grading monitoring should be adapted to the needs of the Operator and the complexity of its EBT programme. It must be formalized through a follow-up of the data relating to the notation, the evaluations of the instructors on the way to grade and their standardisation in this matter.

This concordance check should be put in place for each EBT cycle and should cover a significant set of competences.

The concordance programme should include procedures for the personalized follow-up of instructors in order to maintain their scoring standards.

The entire concordance programme will have to be formalized and justified by an analysis of evidence (instructor statistics on grading, number of instructors in pedagogical follow-up, actions to standardize grading, etc.).

The definition of the ICAP instructor concordance programme can also be based on the GM1 ORO. FC.231(a)(4).

3.9 Performance of the training system

3.9.1 Data Collection and Analysis

[ORO. FC.231 (c) (1) and (2); AMC1 ORO. FC.231(c)]

As part of the EBT, the performance of the training system must be evaluated by the Operator in order to adjust and improve the training programme on an ongoing basis. To this end, the Operator must integrate into its management system a process for collecting and analysing data ("feedback process") from EBT assessments and training.

If the Operator already has such a process in place, it should adapt it to the requirements of the AMC1 ORO. FC.231(c). In particular, the EBT introduces the concept of data finesse ("grading metrics"), on which the scoring system is based (See § 3.7. Grading system) and feedback process. As a reminder, the four types of grading metrics are defined in the AMC1 ORO. FC.231(c).

During the mixed implementation phase and with a view to obtaining EBT approval, the CAAT will request the Operator to transmit the list of data collected, the types of analyses carried out on them and the possible instances during which the performance of the training system is evaluated on the basis of them.

3.9.2 Data protection

[ORO. FC.231(c) (3); AMC2 ORO. FC.231(c)]

As part of the EBT, the Operator must develop a data access and security policy in order to ensure their availability to authorized persons and to avoid any inappropriate use of them. Paragraphs (e) and (f) of the AMC2 ORO. FC.231(c) specify that this policy should be consistent with its general security policy and may be integrated with any other existing security policy in its management system.

The expectations of this policy are described in the AMC2 ORO. FC.231(c) (b), (c) and (d). In particular, that policy should contain the procedure to prevent the disclosure of the identity of the crew outside the scope of training and should be signed by all stakeholders.

3.10 Concept of EBT scenarios

3.10.1 Modules

[AMC2 ORO. FC.231(a)(2), AMC1 ORO. FC.231(e), AMC1 ORO. FC.231(a), AMC2 ORO. FC.231(a)]

To be ORO compliant. FC.231 of an EBT programme the Operator will implement, over each annual cycle, the following four points:

1. The EBT cycle contains at least 2 modules of 2 FFS sessions
2. The content of each module, spread over these 2 sessions, includes first a phase of EVALuation, then two phases of training in the form of Maneuvres Training (MT) and Scenario Base Training (SBT).
3. A minimum of three months interval between two consecutive modules.
4. Twelve months maximum interval between two consecutive modules.

Example of a module and its contents:

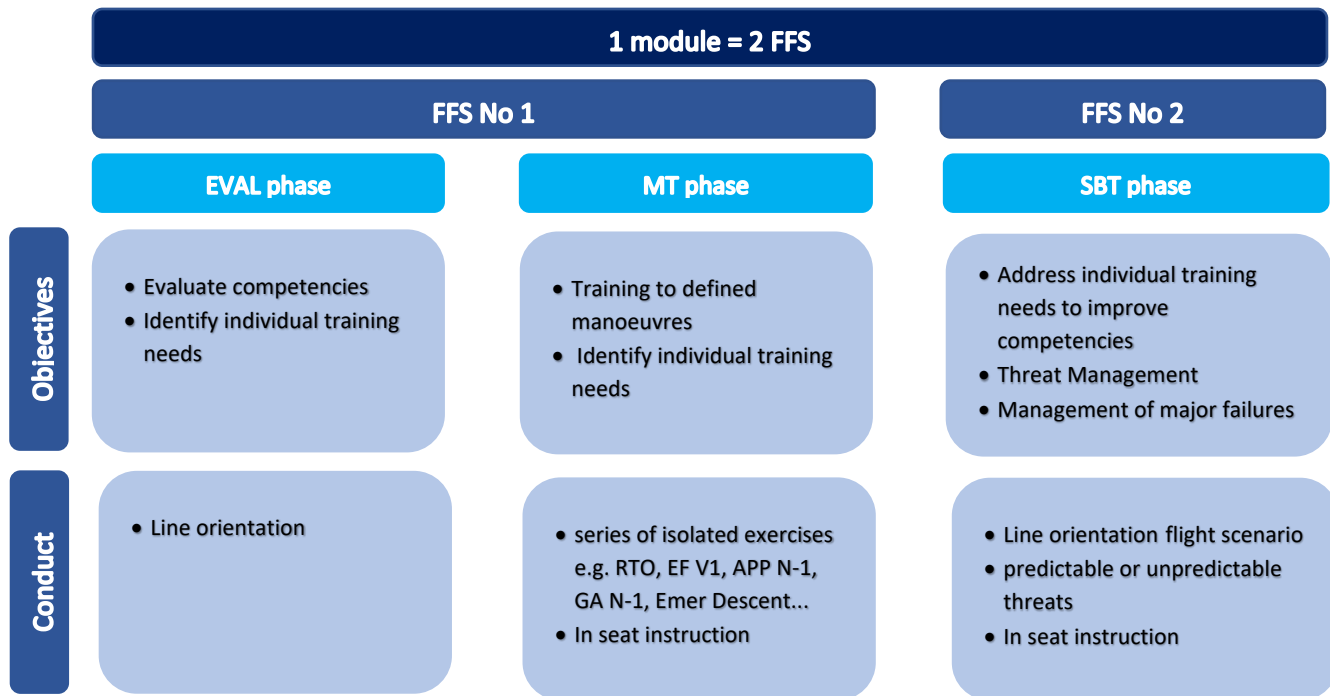
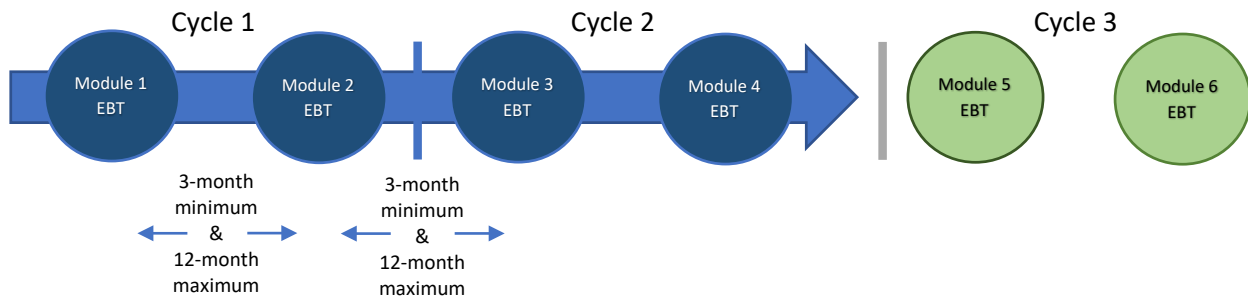


Diagram of validity of the modules between annual cycles:



The CAAT recommends numbering the modules of each cycle of the EBT programme in order to facilitate the identification of the modules, and the corresponding cycle.

According to the structure of the modules set out above, the objective is to implement, during the scenario of the EVAL phase, various events that will make it possible to assess the pilot competencies. The following MT and SBT phases will train and validate the identified competencies, bringing them to the minimum level required. At the end of the EVAL phase, if the competencies are considered satisfactory but perfectible, they will be trained to further increase the level.

In the case of EBT programme approval, in order to identify and well manage in quickly way, the CAAT expects that:

- The sessions of the same module are consecutive, that is to say follow each other without aerial activity between them, ideally D-day for the first session and D+1 for the second session of the module.

- The same instructor is programmed throughout the module in order to deal with the improvement of the competencies that will be identified during the EVAL phase.
- The crew remains the same within the same module.

In addition, the CAAT recommends that EBT sessions should be carried out with a composition crew in accordance with the provisions of the operator's operations manual, except for a session specially designed for a well-defined purpose (e.g. training CPT alternate F/Os or CPT right seat). As examples:

- Pairing of two inexperienced pilots within the meaning of AMC1 ORO.FC.200(a),
- If non-standard crew of two F/Os then one of them should have the relief CPT qualification and it would be relevant that the specific exercises of take-off/landing exercises (e.g. LVO) were not carried out.

The content of the modules should reflect the type of flight operations and its specificities (aircraft type, type of failure, type of approach, various recurrences, etc.). The Operator must take into account all the relevant data collected by different means (SMS, training department, manufacturers (OSD, Service Bulletin, ...), Authorities, Accident investigation bodies, international bodies, etc.).

Note: Although this is no longer a regulatory requirement since there is no longer any checks, it may be relevant to continue the targeted questioning that was planned during an OPC/LPC with trainees on a recurring basis. A frequency could be defined by the Operator and included in the scenarios.

3.10.2 Hourly volume

[AMC1 ORO. FC.121(e)]

The hourly volume of modules is specified in the AMC1 ORO. FC.231(e). This 48-hour duration involves 12 sessions of 4:00 hrs spread over three years. The objective of the EBT programme is not to reduce the hourly volume made possible by the optimisation of the objectives of the sessions, but to free up time with less exercise constraint. The time thus available will make it possible to schedule training adapted to each pilot, in order to improve their competencies and thus increase flight safety.

Defining or maintaining a volume of less than 48 hours of FFS on an EBT programme is nevertheless possible by paragraph (b) of the AMC1 ORO. FC.231(e) by filing an AMOC to the CAAT.

3.10.3 Equivalency of malfunctions

[AMC1 ORO.FC.231(f), AMC1 ORO.FC.231(f)(3)]

The equivalency of malfunction allows the Operator to enrich and offer a variety of events using the same pilot competencies and having the same degree of commitment and difficulty that may arise at the FSTD in order to perfect the training of its crews and bring them to the desired level of competence.

The classification of failures, determining the equivalency of malfunctions must make it possible to appeal to a significant degree of requirement on the part of the crews in terms of cognitive resources, workload, piloting and solicitation of pilot skills. The Operator will be able to determine these requirements using the GM1 ORO. FC.231(f).

This requirement in terms of crew resources will be verified if the characteristics of the failure have at least one of the following:

- Immediacy
- Complexity
- Degradation of aircraft controllability
- Loss of instrumentation
- Consequence management

Conditions of substitution for the ORO. FC.230: the Operator must be able to implement the "Equivalency of malfunction" concept no later than the last year of Mixed EBT before being eligible for a transition to EBT (AMC1 ORO. FC.231(a)(1)(c)).

In order to establish a list of equivalent failures, the Operator may rely on the following sections of the Regulation: AMC1 ORO. FC.231(f), AMC1 ORO. FC.231(f)(3), GM1, GM2, GM3, GM4 ORO. FC.231(f). The Operator will appoint a team of experts qualified on the type considered (a solicitation to a supplier outside the Operator is possible in this case, manufacturer, consultant ...) in order to:

- Define the entire list of failures specific to the aircraft type (using the FCOM, POH, AFM, FCTM, FCTS ...);
- Classify breakdowns according to the same degree of requirement in terms of crew resources;
- Identify the characteristics of each failure in terms of immediacy, complexity, degradation of the controllability of the aircraft, loss of instrumentation, consequence management;
- Develop an FSTD programme integrating failures according to the frequency defined in the Table of Assessment and Training Topics (TATT).

Some failures may be seen in an environment other than the FSTD. In this case, the Operator will identify them by retaining the breakdowns according to their difficulty of realisation.

Failures should be uncorrelated with the environment and the operating context, only the technical characteristics of the failures are to be taken into account.

3.10.4 Equivalency of approaches

[AMC1 and AMC2 ORO. FC.231(g)]

Equivalency of approaches is a basic tool of EBT but can be optionally implemented in Mixed EBT.

In an EBT system, the equivalency of approaches must be implemented by the Operator, according to the method described in the AMC1 ORO. FC.231(g).

In particular, it will have to determine, after analysis of its network, types of approaches that require a particular competence of the crews according to their design, the frequency of their realisation and the degradation of the modes of guidance. It will then integrate an approach of each type according to the frequencies provided in the Table of Assessment and Training Topics (TATT) specific to the aircraft generation.

The equivalency of approaches can, among other things, allow the Operator to reduce the number of approaches required under the SPA. LVO.

3.10.5 Table of Assessment and Training Topics (TATT)

[AMCs ORO. FC.232]

For each generation of aircraft, the TATT describes all the exercises to be carried out at the prescribed frequencies (A, B and C). The Operator shall ensure that TATT exercises are well integrated into the phases indicated (EVAL, MT and SBT).

3.10.6 Management of Unexpected Circumstances

[AMC1 ORO. FC.231(a)(5)]

The Operator will have to detail in its EBT programme the procedures to be implemented due to unforeseen circumstances that may affect the finalisation of module(s) (e.g. long-term absence, simulator hazards, etc.).

The AMC1 ORO. FC.231(a)(5) identifies the most common cases of interruptions. However, it will be up to the Operator to ensure its ability to manage unforeseen circumstances impacting the validity or realisation of

module(s). The purpose is to keep the pilot in the EBT system. Any interrupted or unrealized module must be processed in accordance with the procedures described in the OM-D of the Operator.

In the event of a module interruption or discontinuity requiring a change of instructor, the Operator shall ensure that a robust system for exchanging information on trainee performance, training needs, etc. is in place.

3.11 Pilot qualification to operate in either seat

In the context of the EBT, the provisions of the ORO. FC.235 remain applicable but on an EBT cycle, i.e. over a periodicity of 12 months.

3.12 Operation on more than one type or variant in S/MFF

In the context of the EBT, the provisions of the ORO. FC.240 remain applicable with regard to volumes and alternation of modules with or without OSD credit.

The operation of aircraft in S/MFF of two different generations, (e.g. ATR 500 (Generation 2) and ATR 600 (Generation 3)), requires the application of the TATT associated with each generation.

Within a module, the change of variant or type is to be avoided in the context of an S/MFF operation.

A Line assessment/evaluation (Line Evaluation of Competency: LEC) remains applicable annually on each type. However, if it meets the prerequisites of the AMC1 ORO. FC.231(h) (3) necessary for the extension of the LEC beyond one year and provided that the OSD so provides, the Operator may alternate the LEs on each type/variant.

The extension of the LEC to three years is not allowed in the context of an MFF operation.

3.13 Line Evaluation of Competency (LEC)

[AMC1 ORO. FC.231(h)]

The line check is replaced by a line assessment/evaluation ("line evaluation of competences") with a basic validity of one year.

The line evaluator is a CPT that has received at least training containing relevant elements of the EBT instructor training programme in accordance with the AMC2 ORO. FC.231(h) (e.g. competency-based scoring training, facilitation technique during debriefing, operation of SMS ...).

In the event that the line evaluators are not EBT instructors, the Operator may rely on the GM1 ORO. FC.231(h)(4) §(a).

Each module of the EBT cycle systematically includes an EVAL phase in the form of LOFT (including the full implementation of the aircraft in commercial operation), an extension of the validity of the LEC is proposed by the regulations.

Thus, the EBT programme makes it possible to extend the validity of the LEC to 2 or 3 years under certain conditions described in the AMC1 ORO. FC.231(h)(3), which differ according to the desired extension. In particular, associated with a safety study, an Operator employing instructors fully enrolled in the EBT system and up to date with their LEC can benefit from the extension of validity of the LEC to 2 years.

Note: The particularities related to S/MFF operation are described in paragraph [3.12. Operation on more than one type or variant in S/MFF](#).

To benefit from the extension of validity to 3 years, the Operator should be able, among other things, to collect data relating to online exploitation (for example via a LOQE standard questionnaire).

As the frequency of LECs may be less important, standardisation instructors (and evaluators) should include training (initial and recurrent) of the line evaluator.

Remarks:

- *The possibility of the evaluator being a crew member on reinforced flight (on observer seat) is retained with the same criteria as the classic system.*
- *The pilot will have to be evaluated in FP and PM on two sectors.*

3.14 Transition from ATPL to EBT module

In accordance with GM1 FCL.520.A, the skill-test for the issuance of the ATPL can be combined to an EBT module. The relevant session must comply with the requirements of Appendix 9 of the TCAR PEL Part FCL

3.15 Technical Ground Training

3.15.1 Technical ground training programme (TGTP)

[AMC1 ORO. FC.231(i) §(a)]

The Technical Ground Training Programme (TGTP), conducted once per EBT cycle and based on a three-year programme, should cover the topics of paragraph (a)(1), including crews' awareness of the risks of its operation based on the review of internal and, if relevant, external incidents or accidents through the context of the TEM model.

Note: Pilot incapacitation and icing/de-icing procedures are no longer subjects to be dealt with during the ground course. Nevertheless, Operators are invited to supplement the practical training with regular theoretical training, the frequency of which is left to the choice of the Operators.

The methods and means of instruction and verification of the achievement of the objectives are left to the choice of the Operator. Nevertheless, if the TGTP is mainly provided via a CBT method, an exchange between the trainees and the instructor should still be provided.

Data from operations (internal and external events, FDM ...), external bodies (regulations, PSE, OSD, manufacturers ...) and pilot training (refer to paragraph [3.9. Performance of the training system](#)) should be used to continuously adapt the TGTP to the needs of the Operator. In addition, training data from the TGTP (e.g. knowledge assessment results) should also feed into the data collection and analysis system described in paragraph [3.9.1 Data collection and analysis](#).

3.15.2 Emergency and Safety Equipment Training (ESET)

[AMC1 ORO. FC.231(i) §(b) and §(c)]

The items to be covered annually and three years during emergency and safety equipment training are listed in paragraphs (b)(2) and (b)(3) of the AMC1 ORO. FC.231(i).

Note: regarding cockpit exits, it is up to the Operator to implement the most appropriate means to get as close as possible to the "actual operation" required by the regulation.

The ESET should include joint training between FC and CC, the requirements of which are detailed in paragraphs (b)(4), (5) and (6) of the AMC1 ORO. FC.231(i).

EBT offers the possibility, through paragraph (c) of the AMC1 ORO. FC.231(i) to extend the periodicity of such training to two years. To do this, the Operator must demonstrate that the competence of its pilots is equivalent to that obtained in the case of annual training. In accordance with the AMC1 ORO. FC.231(i) (c)(2), it should put in place an ESET training implementation plan, including a safety study and an internal

monitoring programme, and will be able to rely on its data analysis collection system. In the event that such an approval is issued:

- The annual and three fiscal years of paragraphs (b)(2) and (3) may be conducted every 2 years; or
- The annual exercises of paragraph (b)(2) may be carried out every 2 years, and the three-year exercises of paragraph (b)(3) may remain three-year.

3.16 CRM

3.16.1 CRM in an operational environment (simulator or aircraft)

The ORO. FC.115 remains applicable under the EBT. Refer to [Appendix 1](#) to this guide. [CRM \(Crew Resource Management\)](#).

3.16.2 CRM in a non-operational environment

The ORO. FC.115 remains applicable under the EBT. Refer to [Appendix 1](#) to this guide. [CRM \(Crew Resource Management\)](#). However, the Operator has the possibility to develop its CRM training methods: computer-based courses (e-learning, virtual reality, etc.) can become the primary means of training, which will be supplemented by classroom courses (in particular for the joint FC/CC CRM course).

3.17 Revalidation and Renewal of Licence

3.17.1 Regulatory references

- FCL.740;
- Appendix 10;
- GM1 FCL.740(b);
- AMC1 to Appendix 10;
- FCL.740.A;
- GM1 to Appendix 10;
- GM2 to Appendix 10;
- AMC1 ORO.FC.231(b).

3.17.2 The Operator, the EBT manager and administrative procedures

To have the possibility to proceed with the revalidation or renewal of the Type Rating and IR under the EBT, the Operator will have to meet the requirements of point A of Appendix 10 of the Aircrew's Part-FCL. In particular, it must have received EBT approval (be outside the scope of the "Mixed EBT" and be EBT approved).

The EBT manager, TRE, must ensure that the applicant meets all the required criteria (qualification, completion of the ground course, completion of the EBT cycle of the year in question, LEC) for the revalidation or renewal of a Type Rating.

Regarding the administrative act, the EBT manager must:

- Ensure that the applicant meets the relevant points described in FCL.1030.
- Complete the form and declaration for the revalidation or renewal of the Type Rating in accordance with AMC1 of TCAR PEL Part FCL Appendix 10.
- Endorse the new validity date of the Type Rating to the applicant's licence.

The operator may establish a procedure in the EBT programme, allowing another person to have delegation from the EBT manager of the aircraft type concerned for this endorsement (e.g. in the case of a large fleet size). This delegate must be appointed by the operator, and hold or have held an instructor certificate (PART FCL, Appendix 10 A 1 (c)(iii), GM1 to Appendix 10).

The EBT manager and his delegate(s) must be referenced by the Operator in his OM-D and notify to the CAAT.

3.17.3 The applicant

The applicant for an revalidation or renewal of a Type Rating must be integrated into the Operator's EBT programme on an ongoing basis and demonstrate an acceptable level of performance in the set of pilot competences defined in TCARs. For the purpose of extending or renewing a Type Rating, the pilot must demonstrate a level of performance of his competencies to the standard expected by the Operator on all EBT modules during the period of validity of the Type Rating (TCAR PEL Part FCL, Appendix 10 A 3 (a), A 4 (b))).

3.17.4 Revalidation

An applicant for the revalidation of a Type Rating obtains the privileges of the LPC when he has completed the entire annual cycle of the EBT programme (including FFS and TGTP modules) and has completed his LEC according to the approved recurrent.

For the first revalidation after the mixed EBT phase, the mixed EBT modules associated with the EBT modules can be used.

3.17.5 Renewal

For the renewal of a Type Rating at an EBT Operator, an applicant must be evaluated and possibly follow a "refresher training" established by the Operator. The latter will have to be specifically approved for such training. The specifications for determining the necessary training according to the time elapsed since the expiry of the Type Rating, are indicated in the GM1 ORO. FC.231(a)(5).

The applicant will then be required to complete an EBT practical assessment in accordance with TCAR PEL Part FCL Appendix 10, which can be combined with refresher training.

Renewal with an EBT Operator is limited to applicants engaged in that operator's EBT programme and whose Type Rating is expired for less than one year. Beyond one year, the applicant must renew his Type Rating according to Appendix 9 of the TCAR PEL Part-FCL within an ATO (AMC1 ORO. FC.231(a)(5)(c)(6)).

4. CC (Command Course)

4.1 Main Regulatory References

- ORO. GEN.200 Management system
- ORO. FC.105 Designation as pilot in command/ commander
- ORO. FC.115 Crew resource management (CRM) training
- ORO. FC.145 Provision of training
- ORO. FC.200 Composition of flight crew
- ORO. FC.205 Command course
- ORO. FC.230 (b) Recurrent Training and checking
- ORO. FTL.250 Flight Time Limitation
- Part SPA Specific approvals

4.2 Preamble

The command training is mandatory for initial appointment to the position of aircraft commander (CPT) in MPO. It must be documented in the OM-D.

4.3 Definition of the target population and access conditions to the internship

As a preamble to the course description, the Operator must:

- Recapitulate the regulatory prerequisites; and
- Define the additional criteria of experience and skills that he deems necessary to begin the training.

A standardized competency evaluation procedure should be established. The objective is to confirm the applicant's readiness to start the course under the best conditions (professional maturity, adequate preparation, technical and non-technical knowledge and skills, especially decision-making and leadership abilities).

Elements for handling failure in this evaluation should be documented (particularly, the possibility and the waiting period for a new presentation should be defined).

4.4 General regulatory content of the command course

In accordance with the ORO. FC.205, the course must include:

- Ground training (role and responsibilities of the CPT, specific CRM);
- An FT in the simulator (and /or in flight) largely oriented line (LOFT);
- A OPC in the CPT function;
- A LIFUS CPT; and
- A Line Check in the CPT function including route and aerodrome competence, as defined in the ORO. FC.205 (a)(5).

4.5 Detailed content of command course

4.5.1 Theoretical training

The content of the command course is summarized in the table below.

Type of training	CC
Ground Training	
➤ The ability to decide on the following points should be further developed:	
MEL/CDL	/ (1)
Fuel Planning/Management	/ (1)
Operational performance	/ (1)
Management of abnormal situations and emergencies	/ (1)
Corporate Safety Culture/Safety/Associated Forms (2)	/ (1)
CRM Training	
➤ Elements as specified in Table 1 AMC1 ORO. FC.115 Command course column	/
SPA (PBN, MNPS, RVSM, ETOPS, LVO, EFB) if applicable	
➤ RNP AR APCH <i>AMC1 SPA. PBN.105(b)</i>	/
➤ LVO <i>AMC1 SPA. LVO.120</i>	/
Fatigue Management Training FMT <i>ORO. FTL.250</i>	/
SMS Training <i>AMC1 ORO. GEN.200(a)(4)</i>	/
Route, Area and Aerodrome competency (ORO.FC.105 and AMC)	
Regulatory reminders texts CAAT, ICAO, EASA, etc.	/ (1)
EWIS <i>AMC 20-22</i>	/ (1)

(1) CAAT Recommendation

(2) As specified by the operator's safety training programme

Beyond the revision and deepening of knowledge, the main purpose of theoretical training is the development of the aptitude for command and decision-making.

The following teaching methods are recommended:

- Use of practical scenarios;
- Presentations prepared and delivered by trainees;
- Consolidation by reminders of key points during briefings (in the simulator, in LIFUS); and
- Ongoing assessment of knowledge throughout the course. These assessment(s) should be documented.

In any case, it would be relevant if the ability to decide on the following points were deepened:

- MEL/CDL;
- Fuel planning/management;
- Operational performance;
- Management of abnormal and emergency situations;
- Corporate Security Culture / Security / Associated Forms; and
- Specific CRM (refer to [Appendix 1 to this guide on CRM \(Crew Resource Management\)](#)).

Fatigue management training must be integrated into the Command Course. Refer to [Appendix 2 to this guide on FMT \(Fatigue Management Training\)](#).

Whether in MPO or SiPO, exercising the function of a commander requires acquiring route and aerodrome competence. These must be acquired before operating in the relevant areas and/or aerodromes. AMC1

ORO.FC.105(b)(2);(c) outlines the required training to obtain these competencies. This training should include elements associated with GM1 ORO.FC.105(b)(2), namely, the prevention of upsets related to environmental awareness.

Note: When an Operator is approved for LVO (Low Visibility Operations), specific provisions apply to Captains when assuming the role or undergoing a change of aircraft type. A risk assessment must be conducted, leading to the development of rules based on GM1 SPA.LVO.120(a). Additionally, the relevant parts of AMC2 SPA.LVO.120(b) also apply.

4.5.2 Flight Training (FT) (FSTD or Aeroplane)

This phase, which could include several simulator sessions, includes both familiarisation and training for piloting in the left seat, and LOFT-type exercises allowing scenarios intended to train the future CPT in his role as pilot-in-command (especially in degraded situations). Table 2 UPRT recovery is to be made in the left seat [AMC1 ORO. FC.220&230 (b) (2)], refer to [Appendix 3 to this guide on UPRT \(Upset Prevention and Recovery Training\)](#) for more information.

This phase should be appropriately structured. Consolidation sessions can be scheduled if necessary to achieve the training objectives.

The pedagogical result in this phase is largely related to the quality of briefings and debriefings which should be based on standardized guides. The proper understanding and practice of TEM and CRM elements is paramount.

4.5.3 OPC

Refer to [Appendix 4 to this guide on OPC/LPC \(Operator/Licence Proficiency Check\)](#).

It would be appropriate for the OPC to be conducted in such a way as to allow the judgment of command and decision-making skills.

4.5.4 LIFUS

Refer to [Appendix 7 to this guide on LIFUS \(Line Flying Under Supervision\)](#).

4.5.5 Line Check

Refer to [Appendix 8 to this guide on LC \(Line Check\)](#).

4.6 Continuity of training

At the end of a CC, the Operator should integrate the pilot into the applicable RTC cycle, depending on the validity limits of the various training courses followed in CC (see table in paragraph [4.5 Detailed content of the course](#)) and required under the RTC (see table in paragraph [2.3 Ground Training and Checking \(GTC\)](#)).

5. LTC (Line Training Captain)

5.1 Main Regulatory References

- ORO.FC.145 Provision of training
- ORO.FC.146 Personnel providing training, checking and assessment
- ORO.FC.200 Composition of flight crew
- ORO.FC.235 Pilot qualification to operate in either pilot's seat

5.2 Prerequisite

Since the TCAR OPS regulations do not specify a minimum in terms of experience, the CAAT recommends that the Operator put in place a process for the selection, training and designation of LTCs.

5.3 Training

[GM1 ORO. FC.220(d) (a) Operator conversion training and checking]

Before being appointed to supervise LIFUS flights, the CPT concerned could undergo training covering the following aspects:

- Pedagogy concepts applied to flight training;
- Practical simulator (or flight) training. In addition to the regulatory minimum training right hand seat (refer to [Appendix 6 to this guide on ESTC \(Either Seat Training and Checking\)](#) this training should include elements specific to the LTC role (recovery from inappropriate maneuvers, resumption of controls, etc.);
- Ground training specific to the delivery of the LIFUS program defined by the Operator.

5.3.1 Pedagogical Training

Instructor training could include:

- Either the general theoretical part of an instructor qualification course as defined in the TCAR PEL Part FCL: FCL 920 and AMC1 FCL.920,
- Either a training proposal developed by the Operator submitted to the CAAT.

5.3.2 Practical Training at the FSTD

This training may include the following aspects:

- **Adaptation/rehabilitation to the right place**

Refer to [Appendix 6 to this guide on ESTC \(Either Seat Training and Checking\)](#).

- **Role of the LTC in Challenging Situations**

Highly recommended, this phase is conducted with the PM applicant in the right seat, acting as the LTC. An instructor or examiner (CRI/TRI or CRE/TRE) occupies the left seat, acting as a trainee CPT. It involves, for example, the following points:

- Take-off with "inappropriate pitching rate" leading to taking over controls by the applicant;
- Unstabilised approach in the short final leading to taking over controls and execution of a balked landing by the applicant; and
- Take-off interruption not initiated by the PF resulting in the taking over controls by the applicant.

5.3.3 Training on Different Operator Programs

This training could include:

- Familiarisation with the different LIFUS programmes (OCC, Command course, etc.) in reference in the OM-D;
- Documentation support and the use of the evaluation and grading system;
- In-flight workload management;
- Creation and management of fictitious situations in flight, questions in the phase of preparation of the flight and in the different phases of the flight.

Reminder: During passenger or cargo flights, abnormal or emergency situations requiring the application of unusual or emergency procedures shall not be simulated [CAT. OP. MPA.275];

- Procedures for monitoring progress, managing progress difficulties; and
- Role and responsibilities of the CPT in charge of LIFUS, in particular in maintaining a good awareness of the situation and the security measures related to this type of flight.

5.4 Change of type with the same Operator

In the case of a type change, the operator may issue a new designation, considering the crew members' experience on the previous type. These conditions should not be less than the minimum pairing requirements [AMC1 ORO.FC.200(a)]. It is the responsibility of the operator to assess the need for additional training based on the differences between the types involved.

6. S/MFF (Single/Mixed Fleet Flying) Operation on more than one type or variant

6.1 Main Regulatory References

- ORO. FC.125 Differences training and familiarisation training
- ORO. FC.140 Operation on more than one type or variant
- ORO. FC.145 Provision of training
- ORO. FC.240 Operation on more than one type or variant
- FCL 710 Class and type ratings – variants

6.2 Terminology

[AMC2 ORO. FC.240) (a); (FCL.710) (a)]

- **Base aircraft:** an aircraft used as a reference to compare differences with another aircraft.
- **Aircraft Type¹:** means an aeroplane or group of aeroplanes under the same Endorsement Licence that requires a type rating, as defined in the Operational Suitability Data (OSD) established in accordance with Part 21 and that includes all aircraft with identical fundamental characteristics, including any modifications made to them, except those that result in a change in handling or flight characteristics.
- **Variant:** Variant of an aircraft type requiring training on differences

(example: **A330/A350**), or familiarisation training (example: **A330-300/A330-200/A330-200F**). Refer to the [Type Ratings and Licence endorsement list](#) and/or the OSD to determine if this is a difference or familiarisation.

Airbus	A330	- 300 series - 200 series - 200 F - 200 MRTT FAF STC	A330/350	X	X	MP	X	OSD FC A330/A350 OSD FC A330 MRTT FAF STC OSD A350-1000 and A330-900 dated 01/10/2018
	A350	- 900 series - 1000 series						

- **Credit:** means recognition in terms of training, checks, or recent experience based on commonality between aircraft (usually described in OSDs).
- **ODR:** Operator Difference Requirements, are a formal description of the differences between aircraft variants or types (ODRs are either provided by the manufacturer or established by the Operator in the absence of publication).
- **MFF (Mixed Fleet Flying):** operation of more than one type by a group of pilots within an Operator.
 - Example n°1: Falcon 900EX EASy & Falcon 2000 EX (two types).
 - Example n°2: A330/A350 & A320 (under the OSD, two variants operated in Single Fleet, constituting a first and same type, and a second type).
- **SFF (Single Fleet Flying):** operation of several variants of the same aircraft type by a group pilots within an Operator.
 - Example: B777/787
- **Licence endorsement:** qualification mention on a license

¹ Type ratings and licence endorsement lists: <https://www.caat.or.th/wp-content/uploads/2024/01/%E0%B8%A0%E0%B8%B2%E0%B8%84%E0%B8%9C%E0%B8%99%E0%B8%A7%E0%B8%81-1-%E0%B8%99%E0%B8%B1%E0%B8%81%E0%B8%9A%E0%B8%B4%E0%B8%99.pdf>

6.3 General

[(AMC1 ORO.FC.230 and AMC1 ORO. FC.240); (Aircraft manufacturer OSD and ODR)]

In the context of the training and checking, and the conditions of recent experience, the Operator should comply with the standards, guidelines and recommendations published in the manufacturer's OSD and ODR. The Operator will be responsible for conducting safety assessments and studies to determine whether the variants or types are sufficiently similar to be operated safely by the same group of pilots, using the ODR.

Unless credits published in the OSD apply, each training/checks and recent experience should be carried out independently for each type or variant.

Note: however, the operator may propose to regroup some training/checking for several variants by proposing to the CAAT an AMOC to AMC1 to ORO.FC.230 and AMC1 to ORO.FC.240

The operational procedures or restrictions for operation on several types or variants, established in the OM and approved by the CAAT shall cover:

- The minimum level of experience of flight crew members;
- The minimum level of experience on one type or variant before starting training on another type or variant;
- The process by which a crew member qualified on one type or variant will be trained and qualified on another type or variant;
- The process by which a crew member will be trained and checked on more than one type or variant;
- The applicable recent experience requirements for each type or variant; and
- Special cases of operation (Operations as CPT on one type and F/O on another, operation on several variants/types within the same flight duty period, etc.).

6.4 Single Fleet Flying Training (SFF)

Differences training or familiarisation between several variants of the same type can be carried out within the Operator (FCL.710 §(b)(3)). It must be documented in the OM-D and approved by the CAAT.

6.5 Training Methodology

The Operator should apply the methodology set out in the AMC1 ORO. FC.140(a).

The training, checking and recent experience programme should be set by using the manufacturer OSD. The definition of “differences levels” (A, B, C, D, E) is described in AMC1 ORO.FC.140 (a) §(d).

In the absence of OSD or ODR published by the manufacturer, the Operator must establish a table similar to that presented in AMC1 ORO.FC.140(a), in order to define the type of training, checking and recent experience required to be able to practice on more than one type or variant, using in particular the difference levels described in AMC1 ORO.FC.140(a) §(d).

6.6 Limitations related to operations on more than one variant or type

The AMC1 ORO. FC.240 details the limit in terms of the number of types or variants on which a pilot or group of pilots may operate, depending on aircraft certifications:

- **Single-pilot aircraft** only, maximum:
 - 3 types or variants of piston aircraft.
 - 3 types or variants of turboprop aircraft.
 - 1 type or variant of turboprop aircraft and 1 type or variant piston aircraft.
 - 1 type or variant of turboprop aircraft and any aircraft within the same class.

- **Multi-pilot aircraft** only, maximum:
 - A set of types or variants requiring no more than two (2) rating endorsements separate on the licence (licence endorsement).
- **Single and multi-pilot aircraft**, maximum:
 - 2 types with separate qualification endorsement on the licence.
- **Aeroplane and helicopter**, maximum:
 - Not allowed in Thailand context.

Note: the manufacturer's OSD may consider two variants of the same type as sufficiently similar and thus give a credit to overcome certain limitations of the AMC1 ORO. FC.240.

The conditions of application for different paragraphs of AMC1 ORO.FC.240 can be summarized in the following table while respecting the restrictions, limitations, or experience conditions of the relevant paragraph (in parentheses in the table, read AMC1 ORO.FC.240 paragraphs (1) or (2) or (4)).

Combination of:	Classes single-pilot	Type Single-pilot jet engine	Type multi-pilot
Classes single-pilot	(1)	(2)	(2)-(4)
Type Single-pilot jet engine	(2)	(2)	(2)-(4)*
Type multi-pilot	(2)-(4)	(2)-(4)*	(2)-(4)

Note: Any combination of aeroplanes, types or classes, of which at least one aircraft is operated in MPO should comply with (2) and (4).

Case (1): Paragraph (1) covers any combination of single-pilot class and/or single-pilot type with a propeller (piston engine or turboprop).

Case (2): Paragraph (2) covers all cases except those addressed in paragraph (1). Paragraphs (1) and (2) are mutually exclusive: the conditions of (2) do not apply to the single-pilot class and/or single-pilot type covered by (1), especially the requirement for a minimum number of flight crew members (2)(i). However, applying precaution (2)(iii) to operations falling under (1) is considered good practice.

Case (3): Paragraph (3) covers the combination of single-pilot type AND multi-pilot type. This paragraph, therefore, concerns operations on multiple types, with at least one being a multi-pilot type. Therefore, the case of two single-pilot jet types is only covered by paragraph (2). In this specific case, since paragraph (4) does not apply, the AMC is not prescriptive, and it is up to the operator to define minimum experience conditions for transitioning from one single-pilot type to another.

NOTE: *Paragraph (3) is not included in the table as it refers to paragraphs (2) and (4).

Case (4): Paragraph (4) concerns multi-pilot types or a combination of single-pilot class AND multi-pilot type. Therefore, at least one of the types must be a multi-pilot type.

Note: The aircraft manufacturer's OSD may consider two variants of the same type as sufficiently similar and thus provide credit to bypass certain limitations of AMC1 ORO.FC.240.

6.7 Example: Mixed fleet operation on more than one type or variant, on aircraft operated or certified Multi-pilot operations

A detail of the AMC1 ORO. FC.240 is proposed below for the case of operation on more than one type or variant on operated or certified multi-pilot aircraft.

Example:

- Cessna CJ3 certified SP and operated in MPO and Cessna Latitude certified and operated by MPO; or
- Airbus A320 and Airbus A350.

As recalled in the table in the preceding paragraph, subsections (2) and (4) should be applied in this case.

- Minimum overall experience before practicing on more than one type or variant:
 - Have carried out, within the same Operator, a minimum of 500 hours and two consecutive OPCs.
 - In the case of an F/O operating on more than one type or variant at an Operator X accessing the CPT function at the same Operator: having completed 300 flight hours, a minimum of 6 months of experience and 2 consecutive OPCs in the new function.

These prerequisites are motivated by the fact that the pilot must have exercised a minimum of time within the same Operator in order to stabilize the gain of experience in commercial operation. This experiment may have been carried out at a previous Operator, this is a global experience and not specific to the Operator for whom the exploitation on more than one type or variant is targeted.

- Before starting training and operation on more than one type or variant:
 Unless you can benefit from credits defined in the OSD, have completed 150 hours of flight, 3 months of experience on the base aircraft and an OPC.
- After the initial Line Check on the new type has been successful:
 Unless you can benefit from credits defined in the OSD, have completed 50 hours of flight or 20 sectors on the new type, before being able to fly again on the previous type.
- Recent experience:
 The criteria of recent experience are defined by the FCL.060, specifically 3 take-offs, approaches and landings within 90 days on the same type or class of aircraft or within 120 days if the next flight is carried out under the supervision of an instructor. Credits may apply if specified in the manufacturer's OSD.
- Recurrent Training and checking:
 - OPC: two annual OPCs per aircraft type or variant are required, unless the OSD allows the two types or variants to be validated alternately by OPC.
 - LPC: for the purpose of extending or renewing Type Ratings, the LPC may be combined with OPCs. An LPC extends the type rating for all variants of the same Licence Endorsement.
 - Line Check: one line check per year per type or variant, unless the manufacturer's OSD allows both types or variants to be validated on a single aircraft.
 - Emergency and Safety Equipment Training must cover all the particularities of the types or variants used.

7. IRFCM (In-flight Relief of Flight Crew Member)

7.1 Main Regulatory References

- **TCAR PEL Part FCL**
 - FCL.010 Definitions
 - AMC1 FCL.050 Recording of flight time GENERAL (b) (3)
 - FCL.060 Recent experience (b) (3)
 - FCL.720.A Experience requirements and prerequisites for the issue of the type rating
- **TCAR OPS**
 - ORO. FC.100 Composition of flight crew
 - ORO. FC.105 Designation as pilot-in-command/commander
 - ORO. FC.145 Provision of training
 - ORO. FC.235 Pilot qualification to operate in either pilot's seat
 - ORO. FC. A.201 Inflight relief of flight crew member

7.2 Acronyms used

- CRCP [FCL.010 Definitions]: Cruise Relief Co-Pilot, co-pilot reporting a co-pilot in his or her function while cruising over the FL200 (only within the framework of FCL.720.A(c) associated with ORO.FC.A.201(b)(2)).
- CRP: Cruise Relief Pilot, any pilot relieving another pilot during cruise above FL200, with or without the delegation of flight control, associated with ORO.FC.A.201(a)(2).
- RHS/LHS: Right hand seat / Left hand seat.

7.3 Impact of regulations on the different crew configurations

The various crew configurations during cruise above FL 200 and specific training requirements are summarized in the table below.

LHS			RHS		
Functions		Specific requirements	Functions		Specific requirements
F/O	Relief CPT, PM	ORO. FC.105 ORO.FC. A.201 (a) ORO. FC.235 (e) and (f)	F/O	PF	
CPT	PIC, PF		CPT	PM	ORO. FC. A.201 (b) (1) and adapted training if judged necessary by the Operator

7.4 Flight Crew Rotation Operation

7.4.1 General

In the context of CAT operations in MPO, a pilot may be required to relieve another flight crew member in flight subject to compliance with the regulatory requirements described in TCAR PEL and TCAR OPS.

In particular, any cruise relief pilot must hold a type rating or be qualified in accordance with FCL.720.A(c) and must comply with the ORO. FC. A.201 according to its function on board. The ORO. FC.235 complements these requirements, in particular points (e) and (f).

The Operator must clearly define in the OM-A:

- the precise crew composition rules;
- the method for designating the Captain's substitute within the crew;
- task distribution; and
- the handover procedures during in-flight relief.

In order to ensure the safe operation of multi-pilot operations using additional crew members, the Operator:

- Should define minimum experience criteria (type flight hours, commandability, etc.);
- Should ensure that CRPs and CRCPs are properly trained and qualified to safely operate a multi-pilot aircraft during the cruise;
- Should define responsibilities and chain of command in the cockpit in the absence of the CPT;
- Should take into account all possible crew compositions, such as for example the case of LIFUS flights with a safety pilot, two CPTs working together, and the management of a pilot disability, etc. and define the associated criteria;
- Could make the CPT aware of the importance of organising rotations, taking into account the risks associated with the flight (environment, meteorology, complexity of the flight, etc.), and compliance with the requirements in terms of resting;
- Could develop a succession briefing focused on:
 - The continuity of the flight, integrating the principles of the TEM;
 - Essential information on the delegation of command and the distribution of associated tasks;
 - NAV/COM/WXR instructions for flight and, in particular, oceanic or conditional clearances; block-levels, contingency, etc.; and
 - All other specificities.
- Could define additional CRM training requirements for the CRP. To this end, the Operator may, if he wishes, develop the following elements, specific to the function of the CRP:
 - Error prevention and detection;
 - Shared situational awareness, shared acquisition and processing of information;
 - Workload management;
 - Effective communication and coordination (Flight crew, Cabin crew, ATC, pilot during rest...);
 - Leadership, cooperation, synergy, delegation, decision-making, actions; and
 - SMS integration and feedback from Operators.

7.4.2 IRFCM Training

[ORO. FC. A.201] Depending on the type of aircraft and operation, and in agreement with the manufacturer's OSD, the Operator shall define the initial and recurrent training and checking programme for the CRP/CRCP and should cover those relating to the Recovery part of the UPRT [AMC1 ORO. FC.220&230 UPRT (b) Table 2].

The seat to be occupied by the pilot reporting to the CPT is not specified in the regulatory [ORO. FC.100(d)]. It is the Operator's responsibility to ensure that this position occupied by the pilot to whom the CPT has delegated the conduct of the flight for operations above FL200 allows him to cope with major breakdown situations optimally, taking into account the level of redundancy and the pilot information available from both seats.

It should be noted that, in order to respond to the possibility of such breakdowns, the pilot relieving the CPT must be trained and checked for this purpose and must demonstrate during the OPCs his ability to practice the exercises and to call and apply the procedures which are not normally his usual responsibility [ORO. FC.235(e) and (f)].

Note: for aircraft types where certain cases of failure lead to the use of the only left board or possibly the emergency instruments, the pilot who may be required to occupy this position must be trained and checked regularly on the corresponding exercises.

The level of redundancy regarding the pilotage information available in the various cases of failure should be identified by the Operator who should establish precise rules for the relief of the CPT for operations above FL200. The programme and conditions for carrying out the inspection to be carried out for the pilot likely to be covered by the CPT must be drawn up accordingly and included in the RTC.

It should be noted that the replacement of the co-pilot by a CPT is not addressed in the ORO. FC.235, paragraph (e) refers only to the case of a CPT qualified RHS. However, if this CPT/CPT composition were to be used for operations above FL200 with a non-RHS qualified CPT within the meaning of the ORO. FC.235(a) the Operator should define it in its OM, identify specific competencies and, if deemed necessary, establish the corresponding RTC programme.

It is recommended that the PF seats in the position in which he usually performs his function.

8. ZFTT (Zero Flight Time Training)

8.1 Main Regulatory References

- **TCAR PEL Part FCL:**
 - ORA. ATO.125 Training Programme
 - ORA. ATO.330 General
 - ORA. ATO.335 Full Flight Simulator
 - FCL.730.A Specific Requirements
 - Appendix 9 (TRF - certificate of completion)
- **TCAR OPS:**
 - ORO. FC.145 Provision of training
 - ORO. FC.220 Operator conversion training and checking

8.2 Definitions

- Specific session: FFS ZFTT specific session.
- Refresher session: FFS retraining session (is to refresh the ZFTT session). **
- Appropriate training session: FFS re-training session (is to refresh the TR session). **
- LIFUS ZFTT: Type Rating flight training carried out in ZFTT (with TRI-LIFUS).
- Sector in PF: take-off and landing carried out in PF.

Important Note: ** These trainings will be required when the trainee does not comply with 21-days timeframe.

8.3 Preamble

A Type Rating (TR) performed by an ATO in ZFTT is based on a close partnership between the ATO and an airline (AOC holder). The objective is to validate the TR by replacing the classic in-flight take-off/landing session (Base/Landing Training) by:

- A specific session on FFS simulator; and
- 4 take-offs and landings carried out online as a PF within the partner company. This part of the training is referred to as “LIFUS ZFTT”.

The particularity of the ZFTT training is therefore to mix the **TCAR PEL Part FCL** and **TCAR OPS** regulations. It is recommended that the ATO and the Operator (AOC holder) clearly identify their respective responsibilities : the overall responsibility for ZFTT training is the domain of the ATO which trains for Type Rating but the Airline remains directly responsible for all the aviation activity incumbent on it. The latter must, in particular, organize prior to the 1st flight LIFUS ZFTT, the operator conversion course (OCC) (which can be partly combined with the Type Rating as the regulations allow [AMC1 ORO FC.220 and AMC2 ORA. ATO.125 (k) (2) (vi)]).

8.4 Elements concerning the ATO

The ability of an ATO to provide a ZFTT Type Rating is determined by the ORA criteria. ATO.330 and is subject to approval by the **CAAT/PEL**.

To obtain this approval, the ATO must be contractually bound to the Operator (AOC holder) (Refer to [paragraph 0.8 Subcontracting of Chapter 0](#)). It must describe the entire ZFTT programme and may refer to the Operator's Manual for the content of the LIFUS ZFTT flight training.

The FFS used (with Motion and Visual) must meet the criteria of the ORA. ATO.335 which refers to EASA CS-FSTD (A) or equivalent material acceptable to the CAAT in ORA. FSTD.205.

The experience criteria for pilots undertaking a ZFTT Type Rating within an approved ATO and the qualification level of FSTDs must meet the requirements of FCL.730.A (a) (2). FCL.730.A (a) (1) is not applicable in the context of the AMC1 ORO. FC.145(d) (d).

In addition, pilots transitioning from turboprop to turbojet (or vice versa) must attend additional FFS sessions as part of their training [FCL.730.A (b)]. It should be noted that in particular, that **pilots in the first time of obtaining a Type Rating cannot claim to follow a ZFTT training**.

Item 1.2 of the TCAR PEL Part FCL Appendix 9 (TRF) (Aircraft external visual inspection) is usually carried out or completed (case of the virtual exterior walk around on CBT) during The Base Training. In accordance with the AMC2 ORO. ATO.125 (k) (2) (iii) approval must be obtained to carry out this item according to a defined methodology specific to the ZFTT curriculum.

In accordance with AMC1 of TCAR PEL Part FCL Appendix 9 (TRF), the ATO, which must issue a Certificate of Completion at the end of any training, may use the TRF which will serve as a certificate. Framework 3 of the TRF will then have to be filled in accordingly.

3	Flight training: in the aircraft <input type="checkbox"/>		in the FSTD (for ZFTT) <input type="checkbox"/> (if relevant) restricted to CAT Operator :	
Type of aircraft:		Registration:		Flight time at the controls:
Take-offs:		Landings:		Training aerodromes or sites (take-offs, approaches and landings):
Take-off time:		Landing time:		
Location and date:				
Type rating instructor <input type="checkbox"/>		Type and number of licence held:		
Name(s)*:			Signature of instructor:	

- Specific FFS ZFTT session: unless specifically specified in the manufacturer's OSD, this session must:
 - Cover at least the exercises defined by the AMC2 ORO. ATO.125 (k)(2) (i) and (ii) and include **"6 take-offs and landings under the supervision of an occupying TRI(A) one of the pilot seats"** [ORO. FC.220(e)(2)]. This session, which replaces the Base Training on aircraft, should allow the applicant to consolidate his mastery of manual piloting and his technique of taxiing, take-off and landing. The Operator Operating Procedure (SOP) will be used to best prepare for the LIFUS ZFTT flight phase.
 - Be carried out within 21 days of the Skill-test [ORO. FC.220 (e) (1)]. Beyond 21 days after the Skill-test, the Operator must organize a refresher session at the type qualification, before carrying out the specific FFS ZFTT session.
- Note concerning the time stop of the 21 days:

At the end of the Skill-test, **the following must be carried out within 21 days**:

- The **specific FFS ZFTT session**,
- The first flight according to the **LIFUS ZFTT phase**

It is the responsibility of the ATO and the Operator to ensure, as part of the organisation of a ZFTT Rating type course, that the 21-day time target is respected. Exceeding this stop must remain exceptional. Appropriate and Refresher training sessions must be defined and documented in the Operator's reference system [ORO. FC.220 (e) (1) & (2)].

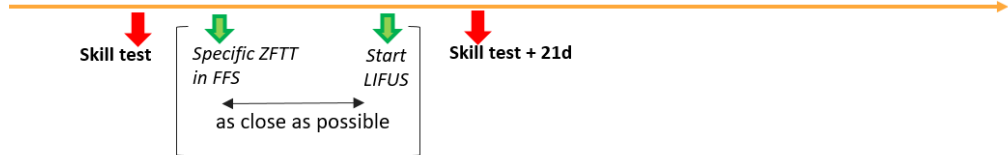
- Appropriate training session: FFS re-training session, the objective of this appropriate training session is to maintain or bring the trainee back to the level of skills required at the end of Type Rating (TR). It should therefore recall normal procedures, include the treatment of one or more abnormal situations and include manual piloting exercises. This session should preferably be carried out with a constituted crew
- Refresher training session at type rating: The objective of this refresher training is to refresh the skill of the trainee for conducting specific training (ZFTT) session.

Cases where Refresher Training is required include situations where Appropriate Training is necessary.

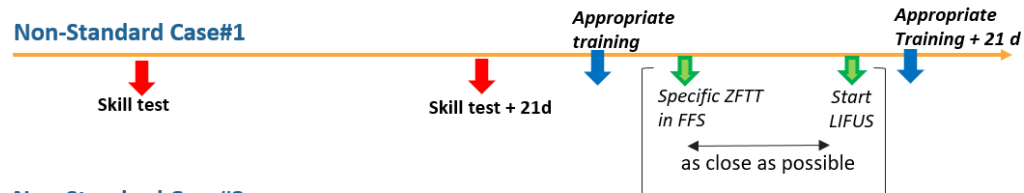
Zero Flight Time Training - ZFTT

Different cases to be considered

Standard Case:



Non-Standard Case#1



Non-Standard Case#2



After this **appropriate training**, the first flight must take place no later than the end of a further **21-day period**.

8.5 Elements concerning the Operator

To carry out the LIFUS in flight as a part of a Type rating carried out in ZFTT in partnership with an ATO, the Operator must meet the general criteria of the ORA. ATO.330(b) and AMC1 ORA. ATO.330 in case of first ZFTT approval.

The simulator used is briefly specified by the AMC1 ORO. FC.145 (d) §(d) which refer to the a Level D FSTD which excludes level C and CG FSTD as mentioned in FCL.730.A (a) (1. However, this simulator must also meet the criteria of the ORA. ATO.335 which refers to CS-FSTD (A) in ORA. FSTD.205.

The elements concerning the ATO partner, the simulator used, the Operator training programme part related to the ZFTT must be integrated into the OM-D submitted for approval by **CAAT/OPS**. In addition, all combined ATO/Operator training elements prior to the LIFUS flight must also be defined in OM-D.

- LIFUS ZFTT flight:

The LIFUS ZFTT Flight Phase corresponds to the first steps carried out by the trainee and must include 4 sectors in PF, unless specifically specified by the manufacturer's OSD.

A 1st LIFUS ZFTT flight in PF must be carried out at the earliest after the specific session, at the latest 21 days after the Skill-test [ORO. FC.220 (e) (1)]. If this stop is exceeded, a refresher session must be carried out before starting the first flight.

This LIFUS ZFTT phase is an integral part of the OCC's LIFUS phase. The regulations do not require the presence of a safety pilot during LIFUS ZFTT flights, however it is up to the Operator, through his SMS, to position himself on this need in order to ensure the regularity of its operation (LVO, special weather conditions, ...).

- Endorsement of the type rating:

At the end of the Skill-test and before his first LIFUS ZFTT flight, the pilot should have his Type rating endorsed on his licence. This will be restricted to the ATO Partner Operator. This restriction may be lifted at the end of the 4th sector in FP of the LIFUS ZFTT phase. A certificate, after the completion of these four sectors, should be provided by the ATO or by delegation by the Operator to validate the Type Rating without restriction.

It is recommended that the licence restriction to the Operator be lifted within a reasonable time following the completion of the 4 sectors of LIFUS ZFTT. It is this lifting of restrictions that finalizes the end of training in the context of ATO.

- TRI ZFTT prerequisites:

In accordance with FCL.910.TRI and FCL.930.TRI.TRI:

- To conduct the ZFTT Specific Session on Simulator, the trainer must be TRI or TRI restricted to the simulator, and
- To conduct the LIFUS ZFTT flight part, the instructor must be TRI or, TRI restricted to the simulator holding the LIFUS additional training.

TRIs must be trained, standardized and referenced in the OM of the ATO and/or the Company as required. In particular, the ATO's TRI intervening in the specific ZFTT sessions must be trained in the Operator's operating procedures (SOP).

9. PICUS (Pilot in Command Under Supervision)

9.1 Main Regulatory References

- FCL.035 Earning Flight Time Credits and Theoretical Knowledge
(3) Flight time as co-pilot
- AMC1 FCL.050 Recording of flight time
(b) Logging of time
 - (1) PIC flight time ((i) and (v))
 - (5) PICUS flight time
- FCL.510A ATPL (A): Prerequisites, Experience and Obtaining Credits
 - (a) Prerequisites
 - (b) Experience

9.2 Preamble

The objective of this chapter is to define the criteria for validating the flight hours performed by a co-pilot as a supervising pilot-in-command (PICUS), in an air transport company operating under Multi-Pilot Operations (MPO). These hours are used to reach the minimum CPT hours quota required to meet the prerequisites of FCL.510A for presentation to the ATPL.

The definition of PICUS, taken from FCL.010, is as follows: "Pilot-in-Command Under Supervision (PICUS)" refers to the co-pilot who fulfills the duties and functions of a pilot-in-command under the supervision of the pilot-in-command.

9.3 Experience required for presentation to the ATPL

[FCL.510A ATPL (A) (b)]

Applicants for an ATPL(A) licence must have a minimum of 1 500 hours of flight time on aircraft, with at least:

- 1) 500 hours of flight requiring at least 2 pilots;
 - On multi-pilot aircraft; or
 - Single-pilot in the context of an operation required by regulation (ORO.FC.200 (c)(1) "*commercial operations under instrument flight rules (IFR) or at night*" – Turboprop aeroplane with maximum certified passenger seat configuration greater than 9, as well as turbojet aeroplane); or
 - justify equivalent provisions acceptable to the CAAT.
- 2) (i) 500 hours as a supervised PIC, or
(ii) 250 hours as an PIC, or
(iii) 250 hours, of which at least 70 hours as an PIC, and the remainder as a PIC under supervision;
- 3) 200 hours of cross country flying, including at least 100 hours as a PIC or PIC under supervision;
- 4) 75 hours of instrument time, of which a maximum of 30 hours may be instrument ground time;
- 5) 100 hours of night flight as PIC or co-pilot.

Within 1,500 flight hours, up to 100 flight hours may have been completed in an FFS and an FNPT. Of these 100 hours, only a maximum of 25 hours can be completed in an FNPT.

9.4 Method of counting PICUS hours by the Operator

In order to meet the AMC1 FCL.050 (b) (5) and value the PIC hours under supervision, the Operator must present in the OM, the information defined in the following paragraphs.

9.4.1 Define the objective for achieving The PICUS hours

This point must specify the regulatory aspect and the purpose of the realisation of these hours at the Operator.

9.4.2 Set supervised CPT hours

[AMC1 FCL.050 (b) (5) PICUS]

To be acceptable, PICUS hours must be worked in the framework of an air transport operation in MPO, as required under TCAR OPS. The co-pilot shall act as CPT and manage the entire preparation and conduct of the flight (excluding commercial aspects) under the supervision of a CPT authorised for this purpose by the Operator.

9.4.3 Define the profile and list of CTPs authorised for supervision

Authorised CTPs are not necessarily LTCs. They should receive, as appropriate, training or information including:

- The regulations defining these hours under supervision;
- Instructions on the feasibility criteria of the flight considered under the PICUS programme (operational complexity, conditions of the day, etc.);
- The need to carry out a specific briefing prior to the flight;
- Vigilance instructions related to tasks under surveillance such as preparing for the flight or conducting the flight;
- The tasks still to be carried out by the CPT, such as the management of stopovers, coordination with the Cabin crew, as well as its overall responsibility for the flight; and
- Taking into account the CRM aspect of these flights under supervision.

CAAT Recommendation: PIC (supervisor) must be experienced crew as detailed in ORO.FC.200.

9.4.4 Define the criteria for determining and recording the hours performed

Validation criteria will have to be defined to allow the authorised CPT to validate the hours performed. They must relate to the latitude left to the F/O for it to carry out its flight (preparation, conduct of the flight). Indeed, some operational or commercial interference may mean that the supervision could not be carried out properly.

Once the flight has been completed and the validation criteria have been met, the CPT will apply the defined validation procedure (flight log signature, etc.) which will allow the F/O to keep its count of hours under supervision up to date.

This validation must be based only on the defined criteria. This is not an act of instruction where the performance of the F/O comes into play in the validation process.

9.4.5 Provide an attestation of the number of hours worked under supervision

The Operator must provide the pilot with a certificate of the number of hours performed under supervision. This certificate is required in the applicant's application file for the ATPL (A) practical test. The form used for this certificate must be presented in OM-D.

9.4.6 Example of a record of hours

Example of a record of hours under supervision (kept up to date by the pilot under supervision) as an alternative to the signature of the nominated CPT on the flight log because some of the operators are using the electronic logbook:

NAME OF OPERATOR					
Record of flight time carried out as a PIC under supervision of the PIC authorised for this purpose in accordance with the Operator's procedure					
Date	Type	Route	Duration	Accumulation	Name and Signature of PIC authorised supervisor
DD/MM/YY	A320	BKK-CMA	1:00	1:00	
DD/MM/YY	A320	BKK-TPE	3:35	4:35	

Appendix 1. CRM (Crew Resource Management)

1. Main Regulatory References

- ORO. FC.115 CRM Training
- ORO. FC.145 Provision of training
- ORO. FC.205 Command Course
- ORO. FC.215 CRM Training
- ORO. FC.220 Operator conversion training and checking
- ORO. FC.230 Recurrent training and checking

2. CRM Training for Multi-Pilot Operations (MPO)

Each pilot must have received CRM training tailored to their role, type or class:

- First OCC of a flight crew at its first Operator (initial OCC);
- During an additional OCC at another Operator or on a new aircraft type within the same Operator;
- At the time of a first CPT promotion (Commander course); and
- During the RTC (adapted training, with a common FC/CC module).

The terms and conditions of CRM training applied to MPO operations are detailed in the AMC1 ORO. FC.115.

CRM training should rely on the experience of the Operator (and others) by integrating flight safety, SMS and internal CRM evaluation (in a de-identified way). It should focus on the particularities related to automation, monitoring, resilience, the startling effect, cultural differences, the Operator's safety culture, in particular by using case studies (internal or external).

A flight crew member should complete the initial CRM training [column 1 of Table 1 of the AMC1 ORO. FC.115] on its initial OCC. If he/she changes operators, he/she should complete CRM training change of operator [column 3 of Table 1 of the AMC1 ORO. FC.115], except in the case of a change in the type of operation. In the latter case, he should take the initial CRM training again.

CRM training elements listed in Table 1 of the AMC1 ORO. FC.115(g) should be integrated into all relevant phases of the OCC course following a change of aircraft type or Operator. In particular, the CAAT recommends that the relevant theoretical elements are seen before starting the simulator/aircraft and LIFUS practical phase.

During the RTC, the CRM training programme should allow the revision of all modules as listed in § (g) / table 1 of the AMC1 ORO. FC.115 over a rolling period of 3 years.

Table 1 of the AMC1 ORO.FC.115 details, according to each case where CRM training is required, the regulatory content of the training and the level of revision required on each element.

The assessment of CRM skills should not be conducted during CRM training activity but only in an operational environment (simulator or aircraft). This assessment should be collective (within the technical crew) and individual. It should make it possible to detect possible areas of development of skills identified as perfectible and specific needs for retraining, but also to improve the CRM training programme within the company. This evaluation may be done, among other things, on the assessment of the non-technical skills described in GM6 ORO. FC.115.

3. CRM Training for Single Pilot Operations (SPiO)

In the case of single-pilot operation, the training programme described in AMC1 ORO.FC.115 will be adapted according to the elements described in AMC2 ORO.FC.115.

4. Minimum training time

The GM3 ORO. FC.115 details the minimum training time according to the scenarios (MPO and SPiO).

5. CRM Trainer

The prerequisites and qualifications to be held by the CRM trainer are detailed in the AMC3 ORO.FC.115.

Initial and recurrent training of CRM trainers is complemented by GM3 and GM7 ORO.FC.115.

An Operator who chooses not to establish his own CRM training programme, may contractually call on an external body with which a contract must be established [ORO. GEN.205]. In this case, the Operator should ensure that the programme covers the particularities of its operation and that it is delivered by qualified personnel [AMC3 ORO. FC.115].

6. UPRT

CRM concepts such as surprise/startle effect, resilience should be integrated into the UPRT training programme.

7. OPC, Line check

The examiners and check pilots appointed to conduct the OPCs and line checks should have been trained in the assessment of CRM competencies. The CRM assessment should only be based on behaviours observable during the checks.

As part of the OPC/LPC, the Operator should put in place procedures, including retraining, if the CRM assessment found of the technical crew does not meet the required standards. [AMC1 ORO. FC.115 (h) (6)]

The CRM assessment should not be used as the only reason for a failure during a Line Check, unless the observed behavior drastically reduces safety. [AMC1 ORO. FC.230 (b) (3) (iii)]

The debriefing of these tests should include both technical and non-technical aspects.

Appendix 2. FMT (Fatigue Management Training)

1. Main Regulatory References

- ORO. FTL.120 Fatigue Risk Management (FRM)
- ORO. FTL.205 Flight Duty Period (FDP)
- ORO. FTL.250 Flight time limitation
- CAAT announcement dated 21 January B.E. 2551 on “*Flight Time, Flight Duty Periods and Rest Limitations*”.

2. Preamble

Two types of Operators are to be considered:

- CAT operators (excluding exemptions below):

TCAR OPS regulation applies through the ORO. FTL.250 which deals with Fatigue Management Training (FMT) and provides for the Operator to provide crew members with initial and recurrent fatigue management training. At the same time, the ORO.FTL.120 specifies that the Operator must establish, implement and maintain Fatigue Risk Management (FRM) as part of its management system in order to improve its overall performance.

- Specialized CAT Operators Emergency Medical Flight, Single Pilot Operations (SPiO), Flights on Demand aircraft MTOW <10t, aircraft < 20 PAX.

These Operators will refer to the CAAT announcement on “*Flight Time, Flight Duty Periods and Rest Limitations*”.

The Operator may refer to the CAAT Guideline "Flight Time Specification Schemes", in particular during the approval process.

3. Training Objectives

The objective of training and communication on fatigue and associated hazards is to educate crew members about the FRM and how the system works in order to:

- Train all personnel concerned by the risk of fatigue and its impact on Flight Safety, and
- Communicate on the actions of the FRM and its operation to obtain the support of the staff.

4. Content of the training

The detailed programme of the FMT should be described in the OM-D of the Operator. It should refer to the AMC1 ORO syllabus. FTL.250.

Training must be provided initially and recurrently by e-learning or face-to-face.

The Operator should ensure that its personnel are familiar with the content of OM-A Chapter 7 (FMT), including through the Operator's Fatigue Management Policy which includes: [ORO AMC1 FTL.120]

- The reporting of events concerning fatigue;
- Details of the objectives and procedures for identifying and assessing risk; and
- The promotion of fatigue reports.

During the Command Course, training should include the decision-making power and margins of the CPT, and its role in managing crew fatigue on mission as described in the ORO. FTL.205(f) and its AMC. The training

sessions may recall the need for the CPT to declare to the CAAT the extension of a FDP or the reduction of a rest period of more than one hour.

Appendix 3. UPRT (Upset Prevention and Recovery Training)

1. Main Regulatory References

TCAR OPS:

- AMC1 and AMC2 ORO. FC.220&230
- AMC1 ORO. FC.120&130
- ORO. FC.220 Operator conversion training and checking
- ORO. FC.230 Recurrent training and checking
- ORO. FC.105 Designation as pilot in command/commander

TCAR PEL Part FCL:

- Appendix 9B 5 and 9B 6

2. Preamble

UPRT training is the result of international studies (ICAO (DOC 10011), IATA) relating to commercial air transport accidents following loss of control in flight.

The Operator's attention is drawn to the fact that in the event of recourse to an external service provider in terms of UPRT training, he remains solely responsible for the programmes submitted and their achievement.

3. General principles

3.1 Definitions

All definitions, abbreviations and acronyms related to the UPRT are available in ICAO DOC 10011, "Guidance Material and Best Practices for the Implementation of Upset Prevention and Recovery Training" published by IATA, GM15 Annex 1 TCAR OPS Definitions and AUPRTA.

Let recall here the definitions strictly essential to the understanding of this appendix:

- Prevention Training: prepares the crew to avoid incidents that can lead to upset situations.
- Recovery Training: prepares the crew to prevent the occurrence of an accident after developing a upset situation.
- Manoeuvre Training: training consisting exclusively of isolated exercises.
- Scenario Based Training: training composed of exercises carried out in a sequence of events representative of the operation.
- Upset: Refers to the situation of an aircraft in flight that unintentionally exceeds the parameters normally encountered in line operation or formation, and normally defined by at least one of the following:
 - Pitch attitude greater than 25° (high nose); or
 - Negative pitch attitude greater than 10° (low nose); or
 - Bank angle greater than 45°; or
 - Inside these parameters but with speeds inappropriate to the conditions.

3.2 Presentation of training in the OM-D

Although there is no regulatory constraint on the presentation of UPRT training in the OM-D, the importance of the number of items to be covered in full over a three-year period could justify the creation of a specific sub-chapter. All subjects should be presented there exhaustively and it should be specified at least:

- The General Policy of the Operator in terms of UPRT training;
- The means used, including instructors and their training/standardisation;
- The content of the theoretical training;
- The types of practical exercises envisaged;
- The topics selected for the different OCC;
- The three-year breakdown of all subjects under RTC.

As such, the Operator is strongly encouraged to produce a compliance matrix of AMC1 and AMC2 ORO.FC.220&230 tables 1 and 2, with the three-year distribution of recovery exercises and prevention to ensure the compliance of the training programme.

4. Training

The concerned training courses are:

- Operator Conversion Course (OCC);
- Recurrent Training and Checking (RTC);
- Command Course (CC).

These trainings focus mainly on Prevention but also on Recovery and must be considered under theoretical and practical aspects, including Human Factors.

Two different programmes are available according to the "Complex" aeroplane to which they are operated:

- MOPSC aircraft > 19 seats [AMC1 ORO. FC.220&230]; or
- MOPSC aircraft ≤ 19 seats [AMC2 ORO. FC.220&230].

The items in tables 1 and 2 can be partially in custody during the OCC, items selected according to their relevance to the type of OCC (examples: first joining in company, change of type: importance of the transition from an aeroplane with conventional flight controls to an FBW machine, etc.) and the experience of the pilot. All items, adapted to the aircraft type, should be covered over a rolling period of three years under the RTC.

Reminder: the content of the OCC is independent of the RTC programme.

- Flight Path Management Training:

All the elements of the AMC1 ORO.FC.120&130 table must be reviewed over a period of three-year period for Operators concerned by flights above FL300 (aircraft complex or non-complex). The establishment of a cross matrix between the AMC1 table ORO.FC.120&130 and table 1 of AMC1 ORO.FC.220&230 to determine and choose common elements would make it possible to meet the GTC requirements of the AMCs relating to the **Flight Path Management** and UPRT.

4.1 Theoretical training

In-depth knowledge of environmental factors, the principles of aerodynamics, of flight technique, aircraft design and human factors is essential for effective upset prevention. Theoretical training is therefore fundamental in the successful completion of UPRT programmes.

The assembly of theoretical training can be carried out efficiently using the GM1, 2 and 3 of the ORO. FC.220&230. It is important to emphasize that it would be relevant for these theoretical trainings to be presented in an aspect that remains practical, "seen from the cockpit" and relating to the usual working environment of pilots.

This theoretical training could precede the practical training in as short an interval as possible. The interventions in briefing before session can only be considered as a reminder of this theoretical training.

As part of the Command Course defined in the ORO. FC.105, a specific part could be included concerning environmental factors and associated risks to upset [GM1 ORO. FC.105(b)(2)].

In the event of subcontracting of the UPRT theoretical training, the Operator should ensure that it takes into account its specific factors (aircraft type, operating environment and Human Factors).

4.2 Practical training

For the Prevention aspect as well as for the Recovery aspect, for certain exercises of the Maneuver Based Training, the use of In-Seat Instruction (ISI) is possible (instructor in pilot seat that demonstrates and initiates situations that can lead to an upset). In addition, the CRM aspect and in particular the significant role of the PM must be developed in this type of training.

It is recalled that to validate the "FSTD/Aeroplane training" sections of table 1 of the AMC1 ORO.FC.220&230, sufficiently clear and detailed instructor instructions must be integrated into the scenarios.

Example: **Exercise A.12** in Table 1 of AMC1 ORO.FC.220&230 "icing and contamination effect" cannot be validated by the sole fact the presence of icing conditions. It would be appropriate for an instruction to be given via a contextual briefing or by using a simulator function if it exists.

4.2.1 Prevention aspect

The Prevention aspect could be covered using Scenario-Based-Training and Manoeuvre-Training.

Scenario Based trainings concern sequences of events during which the crew should demonstrate their ability to identify the threat and implement the measures adapted to prevent it (TEM approach). They typically relate to the risks associated with a poor management of the flight envelope and/or poor consideration of the evolution of environmental factors.

The Prevention aspect should also give rise to isolated exercises (Maneuver Training) allowing piloting training at the limits of the flight envelope, early recognition and avoiding the development of upset situations.

As part of upset prevention, the programme should also include the realisation missed approaches from different altitudes with all engines operating taking into account the following points:

5. Exposure of the crew to the surprise effect;
6. Realisation to different masses and configurations;
7. Rejected landings.

4.2.2 Recovery aspect

Upset recovery exercises could be conducted as isolated exercises (Manoeuvre-Training). They could allow the crew to use their flying skills and an adapted exit strategy to move from an upset position to a stabilized trajectory, while using CRM principles (role of the PM, surprise effect, etc.).

The Recovery aspect formally concerns only the STALL, Nose High, and Nose Low. With regard to these exercises, programme designers must take into account the following precautions:

- Existence of any specific instructions from the manufacturer (OEM);

- Strict application of these instructions or, in their absence, of the generic maneuvers described in the GM3 tables at point ORO.FC.220&230;
- Limits of representativeness of the FSTDs and compliance with the VTE (Valid Training Envelope).

Table 1 of the GM3 ORO. FC.220&230 recommends that stall recovery maneuvers be undertaken as soon as the phenomena representative of the stall approach (buffeting, stick shaker, alarm, etc.) are recognized.

Since March 31, 2021, Stall Recovery exercises must only be carried out on FFS category C or D to the CS-FSTD issue 2. For aircraft with MOPSC ≤ 19 seats UPRT exercises may be performed on FNPTs in accordance with the provisions of Appendix 10 to this guide.

4.3 Human Factors

GM1 ORO. FC.220&230] All phases of training could include relevant elements of human factors (spatial disorientation and sensory illusions, cognitive limitations and degradation of performance under stress, etc.).

It is of the utmost importance that the limits of representativeness of the means used be systematically stressed before carrying out the practical training phases.

5. Instructor Competencies and Standardisation

[GM5 ORO. FC.220&230] Operators should ensure the knowledge and skills of their trainers in UPRT, and supplement their training with a view to acquiring and maintaining their capacity to deliver these programmes and avoid any risk of negative training.

In particular, the skills expected from trainers concern:

- For all trainers: a level of fundamental theoretical knowledge sufficient to instruct the Operator's programmes, including and in depth, the parts specific to the type used and the field of operation.
- For trainers involved in practical training:
 - All points listed in the GM5 ORO. FC.220&230; and
 - A perfect knowledge of the Operator's practical programmes and standardisation to their dispensation.

Appendix 4. OPC/LPC (Operator/Licence Proficiency Check)

1. Main Regulatory References

- **TCAR OPS:**
 - ORO. FC.115 CRM Training
 - ORO. FC.120 and 220 Operator Conversion Training
 - ORO. FC.130 and 230 Recurrent Training and Checking
 - ORO. FC.135 Pilot Qualification to operate in either pilot's seat
 - ORO. FC.140 and 240 Operation on more than one type or variant
 - ORO. FC.145 Provision of training
 - ORO. FC.146 Personnel proving training, checking and assessment
 - ORO. FC.205 Command Course
 - ORO. FC.330 Recurrent Training and Checking OPC
 - ORO. FC. A.201 Inflight relief of flight crew member (IRFCM)
 - Part SPA Specific approvals
- **TCAR PEL Part FCL:**
 - Subpart A, F and H of Part FCL
 - Appendix 9B5 & B6, TRF

2. Preamble

Offline checking sessions are required by regulation under the OCC, CC and RTC. The Operator is free to organise additional checking sessions.

The special case of sessions performed on aircraft in addition to this appendix is dealt with in Appendix 5 to this guide on FTCA (Flight Training and Checking on Aircraft).

3. Checks Objective

3.1 Objective of the OPC

The objective of the OPC is to confirm that, in the specific operating environment of an Operator and within a standard crew, pilots demonstrate the level of skills required to start (OCC, Command Course) or continue (RTC) the safe and efficient conduct of flights.

Unlike the Skill Test of the Type Rating (TR) whose programme and judging criteria are defined by the legislator and essentially based on the ability to fly manually and the knowledge of the aircraft, the OPC generally includes the evaluation of a wider field of competence and the ability to exercise these skills in compliance with the methods, procedures and instructions specific to the Operator such as:

- The policy of regarding use of automation;
- Compliance with working methods, procedures and crew coordination (division of tasks, technical announcements, checklists, etc.);
- The implementation of the TEM and the efficient use of the CRM principles;
- The structured treatment of operational situations, including the use of a methodology for decision-making and managerial skills for the effective management of normal, abnormal and emergency situations;
- The knowledge and know-how related to the specific authorisations of the Operator (PBN, NAT-HLA, RVSM, LVO, ETOPS, EFB and installed applications).

3.2 Objective of the LPC

The purpose of the LPC is to issue, revalidate or renew the type rating and/or certifications attached to it. The objective is to verify that an applicant has met or maintained the criteria of knowledge and know-how as defined by the legislator (Part FCL) for the issuance, revalidation or renewal of the licence, rating or certification applied for. The FCL checks can also be used as a support for the ATPL practical exam.

3.3 OPC/LPC combination

The Operator has the possibility to combine the OPS and FCL proficiency check (PC) within the same test.

4. Trainee leaflets / Examiners' leaflets

Trainees should not be informed of the precise content of the exercises in the session. The theme of the trip, the elements of the flight and environment are sufficient for the preparation of the checks and constitute the trainee booklet (including the flight file). On the contrary, examiners should have precise instructions in order to carry out the checks in a regulatory, optimum and harmonized manner. This is the reason why the Operators could set up a specific examination booklet, showing the conditions for carrying out the session and each exercise (environment, use of automation, particularities related to the simulator used, targeted skills, etc.), briefings, and any useful instructions including those related to the administrative treatment of the test.

5. Crew training

For the OPC, it is recalled that each crew member must be checked as a normally constituted crew [ORO. FC.230 (b)(1)].

The exceptional use of a support pilot external to the Operator is only possible with the agreement of the CAAT.

The Operator must in all cases submit appropriate training programme for approval, this training, in the form of a specific OCC, involves drafting a compliance matrix with ORO.FC.220 in order to claim any applicable credits.

Special case of Operators carrying out spot checks with two CPTs: The use of a CPT support pilot in the right seat should remain exceptional and solely linked to the structural constraints of the operator (small size of the operator and consequent FC staffing). In this case, the criteria of Appendix 6 to this guide on ESTC (Either Seat Training and Checking) apply.

6. Briefing of the check sessions

Briefings before a check session should not consist of a detailed review of the techniques to be implemented during the practical session.

These briefings may nevertheless be an opportunity to make reminders on technical developments, on instructions or on procedures newly introduced by the Operator. It would be appropriate for this part to be sized accordingly and not to consist of a reminder of "what to do to pass the checks". In this case, the briefing could be sufficiently structured to allow applicants to unambiguously identify what falls within the scope of the training and what relates to their assessment.

Briefings could include appropriate questioning to ensure a sufficient level of the applicant's knowledge.

Reminder: briefings should systematically include a reminder of the differences between the simulator and the aircraft in the fleet with reference to the differences noted by the Operator [ORO. FC.145 (d)].

7. Progress of the scenario

Scenario designers could be encouraged to develop several possibilities for the scenario to unfold, whether in the choice of possible failures on the same system or in the choice of possible diversion airports. The TRE thus having greater latitude in the conduct of the session could nevertheless be strictly limited to the choices proposed, improvisation in this field can have significant anti-pedagogical consequences.

8. Construction of checking scenarios

Whatever the type of checking (OPC or OPC/LPC), the scenario must be representative of the work of the crew in the operation to which they are assigned, including the PF and PM functions. Each part of the scenario, dedicated to the pilots in the PF function, should be different one from the other.

The simple realisation, in PF only, of the only sections required by the AMC1 ORO.FC.230 (b) is not sufficient.

On FSTD, the OPC scenario must include a LOFT (AMC1 ORO.FC.115 §(a)(4)(ii)) allowing CRM assessment.

Any task related to the implementation of the aircraft and participating in the realisation of the session must therefore be drawn and noted. The OPC, excluding specific TCAR PEL Part FCL requirements (non-use of automatisms, particular conditions of realisation, concept of critical engine etc.) is in particular the opportunity to check the skills of the crew in conditions as close as possible from the operational context.

The combination of LPC/OPC requires that the most stringent conditions of implementation of each of the TCAR OPS and TCAR PEL Part FCL regulations be retained.

9. Check pilot acceptability Criteria

The OPC must be conducted by an examiner, with the exception of the following special cases:

- For Operators meeting the criteria of ORO.FC.005(b)(1) (VFR day A to A, MCTOM<5.7t, MOPSC<5), the OPC may be performed by a CPT nominated by the Operator;
- For Operators of performance class B aircraft that do not meet the criteria for ORO.FC.005(b)(1) the OPC may be performed by a CPT nominated by the Operator and holding a valid **FI/TRI/SFI certificate** on the type.

The training and experience of the CPT mentioned in the two paragraphs above must meet the requirements of AMC1 ORO.FC.146(e);(f)&(g). In particular, he must be qualified on the aircraft type on which he conducts the OPC.

The CAAT recommends that the Operator favor internal company skills, over the type and on the relevant network.

Exceptionally, the CAAT will study, on a case-by-case basis, any other possibility proposed by the Operator in order to compensate for a temporary lack of an offline checking. In this case the Operator must propose alternative arrangements for which the checking concerned:

- Complies with the conditions of recent experience on the type or class concerned (if the OPC is carried out on plane);
- Followed a specific OCC (by granting possible credits according to the checking up-to-date periodicals at its original Operator) the content and volume of which must be defined in the OM-D. These potential credits must be established using a compliance matrix containing all the requirements of an OCC; and
- Is able to conduct inspection in the language used in operation.

Remember that in his role as a CRM evaluator, the offline checking must be trained the CRM assessment methodology set out in the Operator's OM-D.

Note: these acceptability criteria are also valid for instructors within the framework of a Flight Training.

10. LVO Checking

As of 30th October 2022, LVO competence (training and checking) is solely the responsibility of the operator. (SPA LVO.120 and its AMCs).

For Operators with an LVO approval, the LVO checking requirements are defined:

- As part of an **OCC**: refer to AMC1 and 2 of SPA.LVO.120.
- Within the framework of the **RTC**: the checking must be carried out by a TRE with a full crew complement. The content is described in AMC4 SPA.LVO.120 (b)

Especially:

- During each OPC or once per EBT cycle:
 - A missed approach at DH must be performed (on FSTD for operations CAT III);
 - An approach to the DH followed by a landing;
 - If the Operator is approved RVR less than 150m, at least one LVTO at approved minimum visibility must be conducted.
- Every other OPC or once per EBT cycle:
 - At least one aborted take-off at the lowest approved RVR (for LVTO approved operators with an RVR between 150m and 400m);
 - For CAT III operations on aircraft with fail-passive systems, or including the HUDLS (Head-Up Display Landing System) or equivalent: an approach interrupted with system failure at DH or below DH with lower RVR or equal to 300m.

In addition to regulatory requirements, it is useful to carry out one or more LVO approaches under conditions that do not correspond to the lowest minima. Example: for a CAT III approved operator, performing a CAT II approach with manual landing, this approach that can also be done in Flight Training.

11. Requirements for 2D/3D approaches and PBN skills

11.1 Recaps

Some definitions:

- An “RNP APCH” designates a specification based on a PBN, used for operations instrument approach.
- A “three-dimensional (3D) instrument approach operation” means an operation instrument approach using both lateral and vertical guidance.
- A “two-dimensional (2D) instrument approach operation” means an operation instrument approach using only lateral guidance.
- FCL Requirements for OPC/LPC [TCAR PEL Part FCL Appendix 9B6]:

An RNP APCH is required to establish or maintain PBN privileges.

- OPS requirements for OPC [AMC1 ORO.FC.230]:

The classification as “approach operation” provides, in the case of multi-engine aircraft, the performance of a 3D approach in PF down to the minima with one engine inoperative (section C) and a 2D approach down to the minima (section D). Item (E) specifies that one of the approaches thus performed (3D or 2D) must be an

RNP APCH or, for Approved Operators, an RNP AR APCH (if applicable, 3D only). For RNP AR Approved Operators, AMC1 SPA.PBN.105(b) (g) (1) and (2) provides for at least two RNP AR APCH (1 in PF and 1 in PM), including one followed by a go-around and the other followed by a landing.

11.2 Practical implementation: 2D/3D approaches

A distinction must be made between type of approach and type of approach operation. In particular, depending on aircraft equipment, certain types of non-precision approach can be operated in 2D and in 3D. Thus, for both LPC and OPC:

- For 3D operations, the choice is to carry out an ILS, a GLS or a GNSS approach using VNAV guidance (G/S, SBAS or Baro-VNAV depending on equipment available and certified aircraft) up to a DA/DH.
- For the 2D operations, it is essential to select a non-precision approach procedure (LOC, VOR, VOR/DME, NDB or a GNSS LNAV) and carry it out without the use of the VNAV guidance possibly available in the aircraft. This is to assess the ability of the pilot to manage its vertical path through a primary piloting parameter (the rate of descent or the FPA) using the approach chart data (altitude/distance information or altitude/time).

In all cases, the scenarios should clearly indicate both the type of approach and the type approach operations.

11.3 Revalidation/Renewal of PBN qualification

Except for aeroplanes not certified for PBN approaches, proficiency checks (OPC – OPC/LPC) must allow revalidation of the PBN proficiency for each pilot. The requirement corresponding is relatively simple since it is sufficient that the scenario includes at least one GNSS-based approach (operated in 2D or 3D with or without automation). No special mention other than identification of the approach and approach operation (such as indicated in the previous paragraph) is required.

11.4 Revalidation of RNP AR qualification

For RNP AR approved operators during competency checks (OPC) the scenario should include 2 approaches, one in PF, the other in PM including a landing and a go-around. In case of approval for specific approaches, the most complex/stringent approach can be credited all of the Operator's specific RNP AR approaches.

The RNP AR approach generally be considered as a 3D approach.

12. Soft Skills in proficiency Checks

In generally, soft skills, including TEM, are assessed in the same way as technical skills.

It is essential that the assessment methodology and in particular the terminology used are identical on all the operator's training and checks acts.

The evaluation of the 4 technical and 5 non-technical skills is one of the pillars of the EBT and ATQP rating system, which the Operator will be able to draw on (see §3.7 [Grading system](#)).

13. RRLD

For Operators with RRLD approval, under RTC, a minimum of two approaches and landings will have to be carried out each year. The characteristics of these approaches and landings are described in AMC1 CAT. POL. A.255(b)(2)(iv) § RECURRENT TRAINING AND CHECKING.

Note: For performance classes B, the training programme described in AMC1 CAT. POL. A.355(b)(5) and (b)(6) is not as prescriptive, but the pilot's knowledge and ability to perform the tasks associated with this operation should be verified.

14. Qualification and Checks of Cruise Relief Pilots

Refer to [Chapter 7 IRFCM \(In-flight Relief of Flight Crew Member\)](#).

15. Repositioning during simulator sessions

For the purposes of checks, repositioning is possible provided that consistency is maintained in the exercises. This could be addressed during the briefing.

16. Debriefing of checks sessions

It is recommended that the checking session systematically give rise to a debriefing in a suitable room. Indeed, a consolidated and structured debriefing of the session makes it possible to take full advantage of the observations made during it. In this case, when the checking is based on the assessment of competences, the latter must be analysed and commented.

This debriefing is followed by the entry of administrative documents clearly showing the result of the checks, the reasons for the outcome, any annotations allowing the follow-up of the professional level and any remarks of the applicant.

As part of a competency-based assessment, the scorecard should be filled in precise order to feed into the training system database.

Appendix 5 FTCA (Flight Training and Checking on Aircraft)

1. Main Regulatory References

- See [Appendix 4 OPC/LPC \(Operator/Licence Proficiency Check\)](#)
- **TCAR OPS**
 - ORO. FC.130 and 230 and AMC: Recurrent Training and Checking
- **TCAR PEL Part FCL**
 - Appendix 9 paragraphs A, B5 and B6

2. Preamble

This appendix complements all the information contained in Appendix 4 to this guide on OPC/LPC (Operator/Licence Proficiency Check) and Annex 4 Flight Safety Manual (FSM).

Under TCAR PEL Part FCL, for the revalidation of Type Rating (TR) and IR the flight simulator **must be used** if available. [TCAR PEL Part FCL Appendix 9 §A6]: "**Flight simulators and other training devices, where available, shall be used as set out in this Part**". See Appendix 10 to this guide on AMS (Alternative Means of Simulation).

TCAR OPS, definitions of availability and accessibility of FSTDs are introduced at AMC2 ORO.FC.145(d). They are identical to those used in TCAR PEL Part FCL Appendix 9 (§ A1). So when available and accessible, a suitable FSTD (ORO.FC.145(d)) should be used (AMC1 ORO.FC.230(d)(1)) (see Annex 5 on the conditions of use of simulators within the framework of approval of training programmes).

The AMCs and GMs in ORO.FC.230 specify the conditions for using flight simulators or aircraft for pilot training.

Paragraph §(a)(4)(i) of AMC1 to ORO.FC.230, in conjunction with paragraph §(f) of ORO.FC.230 provides for the case of carrying out training sessions on aeroplanes and on simulators. Paragraph §(b)(1)(i) of AMC1 to ORO.FC.230 details the specific provisions for OPC exercises (see §5.6).

Offline sessions (Checking and Training) carried out on the aircraft must, as for simulators sessions, accurately describe the programmes and exercises to be performed. The minimum duration of each exercise and the nominal chronology should be indicated as well as all the elements necessary for the session. As the course of the session may be disrupted by constraints of the day (ATC, Weather, etc.), several options could be proposed to deal with it (choice of airports in particular).

Operational constraints may lead to exercises not provided for in the programme submitted or not feasible. Refer to Annex 4 Flight Safety Manual (FMS).

3. Conditions for conducting offline training sessions on aircraft (Base/Landing training)

In all cases offline sessions performed on aircraft, the following precautions should be implemented.

3.1 Flight Safety Manual (FSM)

In the context of air operations, refer to Annex 4 Flight Safety Manual (FSM).

3.2 Crew composition

Sessions conducted on an aircraft allow only one pilot to be trained/checked, the second pilot being the instructor or examiner. As specified in TCAR PEL Part FCL Appendix 9 §A-13): **"if an aircraft is used, the safety pilot should be the examiner or an instructor"**.

CAAT Recommendation: When conducting a check session in the aircraft, the trainee should fly with the instructor, and the jump-seat pilot should serve as the examiner.

Personnel authorized to conduct a session on an aircraft must hold the rating

- FI, CRI, **TRI/r LT** [to perform landing training after TR], **TRI/r LIFUS** [to perform ZFTT first 4 T/O&L/D] or **TRI unrestricted** [if no FSTD exist], applicable to the aircraft type.
- FE, CRE or TRE (hold of relevant instructor rating) for the checks

Special cases concerning the Flight Training (FT) and the OPC:

- For Operators meeting the criteria of ORO.FC.005(b)(1) (VFR day A to A, MCTOM<5.7t, MOPSC<5), they may be conducted by a CPT nominated by the Operator and qualified on type or class.
- For Operators of performance class B aircraft that do not meet the criteria for ORO.FC.005(b)(1), they may be conducted by a CPT nominated by the Operator and holding a valid FI/TRI/SFI certificate on the type.

The training and experience of the CPT mentioned in the two paragraphs above must meet the requirements of AMC1 ORO.FC.146(e);(f)&(g).

4. Particularities of OPC and OPC/LPC on aircraft

In the combined tests of the TCAR PEL Part FCL and TCAR OPS regulations, all the requirements of both regulations will have to be covered.

In practice, when carrying out a programme on an aeroplane, the chronology of the exercises may be adapted by the TRE depending on the circumstances. Under the OPC, each pilot is checked in as part of a crew formed to demonstrate its competence in carrying out the normal, abnormal and emergency procedures [ORO.FC.330 (a)].

Thus, in the context of MPO operation, on aircraft as well as on FSTD, PM skills must be trained during FT sessions and verified by carrying out relevant exercises during the OPC (ORO.FC.130 (b)).

As part of the OPC/LPC on aircraft:

- Section 2.5.1 replaces section 2.5.2 (M) and the performance criteria shall comply with TCAR PEL Part FCL Appendix 9§B6 as well as those defined in the Operator's Flight safety manual. In all cases, the following minimum values must be respected: 500' AGL, V2+10, gears retracted.
- The headings identified by an asterisk in TCAR PEL Part FCL appendix 9B6 or B5, as well as all exercises of ORO.FC.230(b)(2) must be conducted in real or simulated IMC at means of appropriate equipment (goggles, hood, etc.) allowing monitoring of the external environment by the instructor responsible for ensuring safety.
- In the majority of cases, HPAC aircraft are used in multi-pilot operations and the items of TCAR PEL Part FCL Appendix 9 §B6 will be checked using the task distribution rules defined for these operations, including the MCC aspect. The TR will then be limited to MPO.

To lift this restriction, the following exercises must be re-controlled under "single-pilot" conditions (SPiO):

- 2.5.1 on aeroplane or FTD 2/FNPT II MCC (or 2.5.2 to the FFS);
- 3.8.3.4;
- 4.4;
- 5.5;
- One series 3.4 exercise
- On aircraft not certified under CS-25 or CS-23 commuter the realisation of the manual N-1 go-around at the DA / MDA must be done respecting a minimum ground height of 500 ' at the power restoration in N-1 configuration.
- The "Rejected take-off" exercise will be performed when the brakes are released, without asymmetry during powering. It will thus validate the TCAR PEL Part FCL requirements (Appendix 9) which implies its realisation on the runway at reasonable speed as well as the requirements of the TCAR OPS Part ORO (AMC1 ORO. FC.230 (b) (1) (i) (A)).
- One-engine-out landing and go-around exercises for HPA Complex aeroplanes must be performed with critical engine failure (exercises FCL 4.4 and 5.5). The Operator should set up an alternation with the OPS checks and training to allow the practice of this exercise on each engine.
- Special features of FCL exercises for non-HPAC SP aeroplanes related to the use of the TCAR PEL Part FCL appendix 9 B5:
 - 2.3 Stall and recovery (VMC)
 - 3B.6*(IMC) (Flight exercises including simulated failure of the compass and attitude indicator: – rate 1 turns; and – recoveries from unusual attitudes)"

These exercises must be carried out in accordance with the limitations of the AFM, the examiner will focus on judging recovery technique and extreme maneuvers should be avoided. The intervention of the examiner will be done without delay in case of bad procedure or slow action of the applicant, in order to avoid going into an upset.

These exercises as well as all exercises with maneuvers specific to TCAR PEL Part FCL Appendix 9B5 should be the subject of safety instructions in the Flight Aeroplane Safety Manual (FSM).

5. Particularities of Flight Training (FT) on aircraft

Reminder: FCL training sessions are not covered here, they are carried out as part of an ATO and must take into account the instructions of its FSM.

The regulations allow the combination of training and checking [AMC1 ORO.FC.230(a)(4)(i)(C)]. However, the following points should be observed:

- A clear separation must be made between what is trained and what is checked. In Consequently, the training and checking exercises must be carried out at least in two distinct parts of the same flight, separated by an intermediate landing with taxiing to the holding point.
- The punctual realisation of the training items disseminated in an improvised way on non-dedicated flights is not compliant, the training must be carried out according to the programmes and sessions approved by the CAAT.
- Each pilot carries out the FT in his function and is trained in carrying out the procedures normal, abnormal and emergency in PF and PM.

5.1 UPRT

Non-complex aircraft are not subject to UPRT training requirements within the meaning of TCAR OPS (and the safety constraints defined by this regulation). Nevertheless, it is recommended that prevention exercises in upset situations be regularly trained.

In other cases, it is AMC1 or AMC2 for ORO.FC220&230 which applies depending on the MOPSC greater than or not 19 pax.

Where OPS training sessions contain elements of UPRT, the Operator should limit itself to the Prevention exercises required by Table 1. These exercises should be carried out annually in order to cover all financial years over a maximum period of 3 years. **None of the recovery exercises of Table 2 may be performed on aircraft.** Finally, all UPRT maneuvers should be carried out at a minimum altitude precisely defined in the documents describing the exercises and allowing the possible resumption of commands by the instructor.

5.2 Engine failures

Engine failure exercises should not be performed with actual engine shutdown during maneuvers (AMC1 ORO. FC.230 (a) (4) (i) (B)). It is nevertheless acceptable, excluding any other simultaneous maneuver, to cause an engine to be effectively shut down and then re-ignited in stabilised flight, under safety conditions which should be defined in the FSM.

5.3 Pilot incapacitation

This exercise is not scheduled to be carried out on aircraft as part of the RTC FT [AMC1 ORO. FC.230 (c) (2)] but the topic should be covered, in all cases, (MPO and OPS) under the GTC [AMC1 ORO. FC.230 (a) (1) (i) (B) and (c) (1)].

As part of a MPO operation, this practical exercise should be conducted on an aircraft during the OCC FT [AMC1 ORO. FC.220 (d) (2)].

Appendix 6. ESTC (Either Seat Training and Checking)

1. Main Regulatory References

- AMC1. ORO. FC.220&230 Operator conversion training and checking & Recurrent training and checking
- ORO. FC.235 Pilot qualification to operate in either pilot's seat

2. Initial and Recurrent training

Beyond the requirements of ORO.FC.235, it is the responsibility of the Operator to define in its OM additional training and checking for its pilots qualified to operate from either of the pilot seats to ensure they safely perform the functions on the right-hand side (RHS CPT), of TRI, or LTC.

For maintenance of ESTC proficiency, the minimum exercises required for training and checking must be carried out in PF:

- Once a year, those defined in ORO.FC.235 (b) and including at least:
 - An engine failure on takeoff;
 - An approach and a go-around with one engine inoperative; and
 - A landing with one engine inoperative.
- Once a year, those defined in AMC4 SPA.LVO.120(b), if holding an LVO approval, and including at least:
 - An approach at approved minimum visibility, followed by a go-around at the DH.
 - An approach at approved minimum RVR, followed by a landing.
- Over a three-year cycle, according to AMC1.ORO.FC 220&230 (b) table 2:
 - Upset recovery exercises.

Training and checking should be tailored to the specific characteristics of the aircraft used and should cover at least the regulatory requirements mentioned above. They should also cover any recommendations of specific documents (OSD) for variants.

The Operator should assess the relevance of adding additional exercises to be carried out, depending on characteristics specific to its fleet and its operation.

Appendix 7 LIFUS (Line Flying Under Supervision)

1. Main Regulatory References

• TCAR OPS:

- AMC1 ORO. FC.105 (b)(2)(c) Designation as pilot in command/commander
- ORO. FC.205 Command Course
- ORO. FC.220 Operator Conversion Training and Checking
- SPA. LVO.120

• TCAR PEL Part FCL:

- FCL.060 Recent Experience

2. Preamble

The LIFUS (Line Flying Under Supervision), concerns all stages of flight under supervision, to be carried out as part of an OCC, a Command Course or any other appropriate training and includes, where appropriate, the requirements of the TR carried out in ZFTT (Chapter 8. ZFTT (Zero Flight Time Training)).

3. Objective

The LIFUS should allow a flight crew member to consolidate the acquisition of Operator procedures related to its functions and operational specificities. At the end of the LIFUS, the trainee should be able to perform a flight in safe and efficient conditions suited to the position he occupies.

Flight scheduling should be representative of the network (route, areas) and aerodromes served by the operator.

The presentation to the Line Check is conditioned by the achievement of the required level at the end of LIFUS and should be formalized through a procedure that must be included in the OM-D.

4. Cases where LIFUS is required

The development of the Operator's training programmes must include a series of flights under the supervision of an LTC (Line Training Captain). The following cases are distinguished:

- First OCC;
- OCC following a change of Operator;
- OCC in the context of a change of aircraft type within the same Operator;
- Command Course (first CPT accession);
- Certain cases deemed necessary by the Operator (exceeded deadline, processing of failure, resuming activity, etc.).

5. Development of a LIFUS programme

The OM-D, must contain the relevant elements of this chapter, covering at least:

- Definition of objectives, training programme and trainee booklet
- Progression management;
- Line Check performance criteria;
- The treatment of failure; and

- Details of in-flight safety precautions and procedures (Examples: associated LTC briefings, safety pilot, simulation of events, cases of the actual failure, maintenance of aircraft integrity, radio monitoring, TEM, etc.).

6. Definition of training volumes

The flight steps defined in this chapter do not include the steps performed during the Line Check, which is carried out in addition to the volumes defined below.

6.1 Regulatory Minimum

The training volumes, defined in terms of the number of flight sectors or flight hours, the programme of which is set out in the OM, should include at least:

- **First OCC (initial):**
[GM1 ORO. FC.220(d)]
 - Have completed a minimum of 100 flight hours or 40 sectors.
- **OCC following a change of Operator:**
[ORO. FC.220 (c), AMC1 ORO. FC.220 (f) (2)]
 - The Operator shall define the number of sectors or flight hours according to the standards of qualification and experience defined in the OM-D, taking into account the qualifications and experience of the trainee.
- **OCC change of aircraft type within the same Operator:**
[AMC1 ORO. FC.220 (f)(2)]
 - Possibly defined by the OSD of the aircraft type considered.
- **Command Course:**
[ORO. FC.205, GM1 ORO. FC.220(d)]
 - 10 sectors if the trainee is already qualified on the type;
 - 20 sectors if the trainee is not qualified on the type.

6.2 Important Notices

Depending on the case, the LIFUS must cover:

- **The ZFTT part of the LIFUS:** phase comprising the first 4 take-offs and landings in PF under the supervision of a TRI/r LIFUS. These steps are included in the count of the total number of steps following the type rating. Refer to [Chapter 8. ZFTT \(Zero Flight Time Training\)](#). The following steps may be performed under the supervision of an LTC [ORO. FC.220];
- **LVO operations:** refer to GM1 SPA.LVO.120(b) – Table 1;
- The acquisition of area, **route** (NAT-HLA, ETOPS, etc.) **and aerodrome competence**. [AMC1 ORO.FC.105 (b)(2)(c);(2)(ii)].

Note: By a definition, TRIs means full TRIs who are not restricted to the simulator.

6.3 Training Volume

Beyond the regulatory minima mentioned above, it is up to the Operator, based on feedback from the training system and the SMS, to define training volumes adapted to its operation.

Taking experience into account is associated with multiple factors that will have to be integrated by the Operator, such as:

- the period during which the volume of hours was acquired;
- the position and previous experience;
- the date of the last flight;
- a period of intermediate activity on another type;
- the type and area of operation of the Operator.

As an indication, the following number of sectors reflects the current practices of the EU Operators.

	F/O		CPT	
	S/MH	LH	S/MH	LH
1st OCC (regulatory minimum)	100h/40 sectors			
Nth OCC Change of Operator	10	8 (14)	10	8 (14)
Nth OCC Change of type and Operator	20	10 (16)	20	10 (16)
Command Course without Type Rating (TR) experience			20	16 (22)
Command Course with TR experience			20	10 (16)
OCC CPT without TR experience			20	14 (20)
OCC CPT with TR experience			10	8 (14)

Table legend:

- LH: Long haul
- S/MH: Short/Medium Haul
- (The values in parentheses refer to the first long-haul adaptation)

7. Experienced or non-experienced pilots

The AMC1 ORO. FC.200(a) specifies the number of flight hours and sectors to be taken for a pilot to be considered experienced. The counting of these flight hours and sectors begins after the LIFUS phase and the completion of Line Check.

In addition, in the event of appeal to paragraph (b) of the AMC1 ORO. FC.200(a):

- The CAAT reminds that the objective is to deal with specific cases that should consider a dedicated individual expertise. An application for approval must be submitted to the CAAT.
- Experience must be acquired within a reasonable period of time. A time limit must therefore be proposed by the operator for cases where the number of flight hours/sectors is less than 100flight hours/10 sectors.
- The number of sectors proposed must be adapted to the number of hours proposed and the type of network concerned (Short-haul/Medium-haul or Long-haul).
- In the event of a change of type within an operator, to benefit from criteria on the target aircraft of less than 100 flight hours/10 sectors, the pilot must already be experienced within the meaning of the AMC1 ORO. FC.200(a) on the original aircraft.

Appendix 8 LC (Line Check)

1. Main Regulatory References

- ORO. FC.115 CRM Training
- ORO. FC.135 Pilot Qualification to operate in either pilot's seat
- ORO. FC.146 Personnel providing training, checking and assessment
- ORO. FC.205 Command Course
- ORO. FC.220 Operator Conversion Training and Checking
- ORO. FC.230 Recurrent Training and Checking
- ORO. FC.235 Pilot qualification to operate in either pilot's seat — aeroplanes
- ORO. FC.240 Operation on more than one type or variant

2. Preamble

A line check is required as part of the OCC and CC. It is also required under the RTC.

3. Reminders on the nature of the checks

The ability to satisfactorily carry out all online operations, including pre-flight and post-flight procedures and the use of equipment provided in accordance with the OM, should be verified at line check (LC). The objective of the LC should not be the simple verification of knowledge on a particular line. The route chosen should be capable of verifying all the usual tasks of a pilot in normal operations as well as the flight crew's CRM skills [AMC1 ORO. FC.230 Recurrent training and checking (b)(3)(ii)].

The LC of a pilot, at the end of an OCC or a Command Course, should be carried out in identical conditions to those of the LC in RTC. In these cases, the presentation to the LC is conditioned by the acquisition of the level required at the end of LIFUS and could be formalized according to a procedure that must be included in the OM-D.

Note: The rules of matching and recent experience must be respected.

4. Minimum number of sectors to be checked

The AMC1 ORO. FC.230 (b)(3)(iv) specifies that pilots should be checked in PF and PM functions, including for aeroplanes certified single-pilot but operated in a multi-pilot environment. The LC will therefore normally be carried out over two sectors.

5. Place of the check pilot

The place of the online checking is precisely defined in AMC1 ORO.FC.230 (b)(3).

The person performing the LC must occupy the observer seat on any aircraft so equipped. An observer seat is understood to mean a jumpseat or an approved structural seat with the appropriate safety items such as a safety harness, oxygen mask if required and allowing clear observation of the crew and intercommunication with them.

In the case of long-haul operations requiring a reinforced crew, the person carrying out the check may occupy the position of relief pilot in cruise provided that he does not occupy any pilot seats during take-off, departure, initial climb, descent, approach and landing. His assessment of crew resource management is based only on observations made during the initial briefing, the cabin briefing, the cockpit briefing and the phases where he occupies an observer seat.

If there is no observer seat, the AMC1 ORO.FC.230(b)(3)(v)(B) & (C) applies.

In the event that the LCC occupies a pilot seat, the evaluation methodology used by the Operator must take this particularity into account and define the CRM elements that can be assessed objectively in this particular crew configuration.

6. Designation of the Captain during the Line Check

The Operator must designate, between the CPT and the LCC, the pilot-in-command of the flight [Commander within the meaning of ORO.FC.105 (a)], in particular in the cases below:

- CPT presenting the LC at the end of line training (CC and OCC)
- CPT no longer having a valid LC.
- In the event that the LCC is not recent with TCAR PEL FCL.060, it can perform the Line Check but cannot be designated as flight captain.

The designation criteria according to the different possible cases must be described in the Operator's OM.

7. Acceptability Criteria for Line Check Captain (LCC)

Line Checks, whether following OCC, CC training or as part of RTC, must be conducted by CPTs designated by the Operator, following criteria defined in OM-D. The Operator must inform the CAAT of these designations [ORO.FC.146 §(h)]

For the initial OCC Line Check, Operators can define the same criteria for the acceptability of the online checking as those of the RTC Line Checks. The LCC must hold a valid LC.

In its role as a CRM evaluator, the LCC must be trained in the CRM evaluation methodology described in OM-D [AMC1 ORO.FC.146(e);(f)&(g) §(b)]

Additionally, it is desirable that LCCs have prior experience as an LTC.

The Operator should prioritize internal company expertise on the specific type and network.

In exceptional cases, the CAAT will consider, on a case-by-case basis, any other possibilities proposed by the Operator to address a temporary LCC shortage. In this regard, the Operator may propose the following alternative configurations:

- A qualified LCC on another type and experienced on a similar network; or
- An LCC from another Operator, he/she will then have to follow a specific OCC with a validity of 6 months as specified in AMC1 ORO.FC.220(f).

The LCC cannot be designated as the commander of the flight under ORO.FC.105. Therefore, the pilot or crew being assessed must hold a valid LC.

8. Knowledge examination/survey

Compliance with sterile cockpit rules and the concern for not disturbing the crew in a situation of actual flight does not exempt the LCC from carrying out a knowledge examination/survey, including the use any documentation, taking care not to hinder the smooth running of the flight. This examination/survey is an opportunity for the Operator to ensure that the crew has mastered the changes documents and procedures in the context of change management.

9. Processing of a pilot who has exceeded the Line Check expiry date

A pilot who has passed the LC expiry date can no longer carry out his duties by regulation. The Operator should then define in the OM-D the conditions for a new examination to the LC. Depending on the duration of the overrun, an adapted refresher training programme will be put in place.

Appendix 9 E-learning (self-training)

1. Definitions

- Self-study:

Self-training is a means of learning using the capacities autonomy of the trainee. With regard to “pedagogical” self-training, it concerns any means acquisition (or revision) of “knowledge”, independently but within a framework and according to a programme defined by the entity responsible for delivering this training. Self-training can be based on the use of conventional study resources (books etc.), computers (CBT) or even remotely (E-learning)

Nevertheless, the acquisition of certain skills concerning "know-how" and "soft skills" generally requires the implementation of additional practical training, or even scenarios, in the presence of qualified trainers.

- CBT (computer based training)

Self-study based on the use of computers, individual, networked or online (E-learning or Web-Based Training).

- E-learning or Distance learning

E-learning or Distance learning are different from face-to-face training. E-learning is a training system organized according to individual or collective needs. It involves individualised learning and access to local or distance resources and skills. It is not necessarily carried out under the permanent supervision of a trainer. The realisation of an E-learning implies on the part of the provider the implementation of human resources and pedagogical and technical means whose importance and nature depend both on the field and the objective of the operation, the beneficiary public, as well as the type or types of learning chosen.

Currently an e-learning course is followed on a computer with a visual and a voice explaining it, either on a computer within a company or on any computer accessible by the trainee.

2. Means of self-training

The different media used can be materialized (books, manuals, etc.) or dematerialized (E-learning, DVD, etc.).

Note: the use of a simple reading of a textbook is not acceptable unless it is precisely framed (chapters to be studied / time allotted to the study / pedagogical support to guide the study). Whatever the medium chosen, for any use of self-training, the following general criteria should be considered:

- The Operator's training must be consistent with the methods and procedures defined in the OM. This includes the terminology used but also the working language which must be consistent with that used by the Operator or, at the very least, present a guarantee of understanding of all trainees;
- Implementation modalities: number of trainees at the same time, time allotted, presence or absence of a "facilitator", etc.;
- Trainee Access to Content. Use of the material available, files, DVDs etc. For e-learning, this includes ease and reliability of access to content and support computer, and the ability of trainees to use it;
- Presentation of information (readability, clarity, user-friendliness, performance adapted to the complexity of the subject to be taught);
- Relevance of content. This must present a guarantee in relation to the source information (manufacturer docs/regulations, etc.) and be kept up to date with the latest amendments to this source information.

3. Traceability of training

The Operator should ensure that the required training has been completed. In no case, the completion of the training required by the regulations without examination/testing.

To this end, the following means must be put in place to justify the follow-up of the courses:

- Certificate of the trainee in the case of self-training by studying manuals: the Operator must take into account the results of the testing to proceed with the validation of the training at the with regard to the relevant regulatory requirements;
- Electronic tracking system in the case of online e-learning: date of the study, time spent, partial or total coverage of the course, testing results. The trainee himself should have access to this data in order to locate the progress of the training he has completed in relation to the total programme;

*Attention: the time allotted to the different training courses must be considered in the planning of the crews, respecting the rules "**flight and duty time limitations and rest requirement**" and being line with the contents.*

4. Special features related to e-learning requiring approval under the TCAR OPS Regulation

The following criteria should be particularly taken into account in the choice of these services and will be more precisely checked in the training approval application proposed by the Operator:

- Interface, use, navigation in the course:

To assist the trainee in familiarizing himself with the interface, a user tutorial and a support system (e.g. hotline) should be included. Regarding the navigation in the course, in order to guarantee the complete follow-up, each page should be read in full before allowing the activation of the next page. In addition, the trainee should be able to easily return to a page already seen in order to consolidate his learning.

- Terminology:

Although these E-learning means are often offered by external and international companies, the technical terms and acronyms used in the courses should not deviate from those with which the Operator's staff are familiar. The language used must be easily understood by all trainees.

- Programme:

In the case of specific training courses for the Operator, the courses provided must be representative of his working methods and cover the points provided in the OM. Similarly, for system courses, the variants used by the Operator must be specifically reviewed, as well as their equipment. It follows that the provider providing the courses should provide a generic course, common core, to which it is possible to add the necessary complement specific to the type and/or the Operator. This supplement may consist of:

- Customisation of the course by the service provider under the control of the Operator;
- Additional course provided by the Operator and put online by the provider;
- Additional intervention carried out live by the Operator;
- Content of the systems courses;
- Each system course should generally address:
 - The revision of the system itself (description, limitations, MEL);
 - A reminder about the different commands and controls of the system;
 - The typical study of at least one abnormal procedure of the system.
- Presentation:

The general user-friendliness of the course (animations, homogeneous distribution of the information provided) is not prohibitive in terms of approval but should be taken into account in the choice of the Operator, being decisive in the desirable attractiveness of the trainees.

- Presence of consolidation quizzes:

Depending on the complexity of the subject studied, these can allow the trainee to self-evaluate and verify for himself the quality of the training he has just followed. Consolidation tests, usually presented at the end of the chapter, should only be accessible after viewing the entire chapter concerned.

- Organisation of Checking:

At the end of the training, the required knowledge testing can be fully organised by the Operator in an acceptable form or be offered by the provider in the form of an online quiz of adapted level. In this case, the questions should be random or extracted from several questionnaires established in the form of a database. The quiz should only be accessible after the complete completion of the corresponding training. At the end of the checking, the presentation of the results must allow the trainee:

- Identify false answers;
- To know the corresponding correct answers; and
- To return to the relevant chapter.

- Considering the period of completion of the training:

Some training courses need to be carried out within a regulated period; this is particularly the case of the RTC ground training course which can be carried out with a maximum anticipation of 3 months before the expiry date of validity of the previous course, the new validity has to be limited to a maximum of 12 months after completion of the training [ORO. FC.230]. For this purpose, the knowledge testing should be accessible to trainees within 3 months before the end of the validity of their previous course, this does not in any way prevent the provision of all courses in free consultation and continuously.

The traceability criteria defined above must enable the Operator to justify compliance with these requirements.

- Failure processing:

The Operator must be able to trace the failures of each trainee.

After a first failure a trainee may perform a new check different in its content, after a simple revision of the chapters concerned, without re-doing the entire training. On the other hand, a second failure should, in any case, require to follow again the entire course. Exceptional cases that would concern an additional failure at the end of this final training can only be personalized under the direct responsibility of the Operator.

Appendix 10 AMS (Alternative Means of Simulation)

1. Main Regulatory References

- **TCAR OPS**
 - ORO. FC.130 and 230 and AMC
 - ORO. FC.145
- **TCAR PEL Part FCL**
 - Appendix 9 paragraphs A, B5 and B6
- **Constructor**
 - OSD & ODR
 - TASE

2. Preamble

All training and checking must be carried out on FSTD, when available (AMC1 ORO. FC.230 (e)).

Note: The CAAT has provided a list of approved FSTD-rated simulators under TCAR PEL Regulation in [CAAT website](#).

Recommendations for the use of simulators or aircraft for training and checking are detailed in paragraph §(d) of AMC1 to ORO.FC.230 (see [Appendix 5](#) and [Annex 5](#) on this document):

“(1) Training and checking provide an opportunity to practice abnormal/emergency procedures that rarely arise in normal operations and should be part of a structured programme of recurrent training. This should be carried out in an FSTD when available and accessible.

(2) The line check should be performed in the aircraft. All other training and checking should be performed in an FSTD, or, if it is not reasonably practicable to gain access to such devices, in an aircraft of the same type or in the case of emergency and safety equipment training, in a representative training device. The type of equipment used for training and checking should be representative of the instrumentation, equipment and layout of the aircraft type operated by the flight crew member.

(3) Because of the unacceptable risk when simulating emergencies such as engine failure, icing problems, certain types of engine(s) (e.g. during continued take-off or go-around, total hydraulic failure), or because of environmental considerations associated with some emergencies (e.g. fuel dumping) these emergencies should preferably be covered in an FSTD. If no FSTD is available, these emergencies may be covered in the aircraft using a safe airborne simulation, bearing in mind the effect of any subsequent failure, and the exercise must be preceded by a comprehensive briefing.”

The purpose of this appendix is to provide a framework for the use of simulators other than FFS during carrying out training and checking within the framework of TCAR OPS regulations for HPAC aeroplanes or complex non-HPA aeroplanes.

In the event of the unavailability of FFS representative of the type of aircraft operated, the Operators concerned must first consider the possibility of carrying out on FSTDs other than FFS, all the exercises required under the AMC1. ORO. FC.230 (b)(1)(i), for the purpose of validating OPC and any other training, training or checks required by the Operator.

The conditions of application of Appendix 9 of the TCAR PEL Part FCL with regard to the use of FSTD have been specified in TCAR PEL Part FCL appendix 9 (**GENERAL Part**).

2.1 Explanatory note to Appendix 9 when FSTD is not available and accessible

“The training for MPA and PL type ratings shall be conducted in an FFS or in a combination of FSTD(s) and FFS. The skill test or proficiency check for MPA and PL type ratings and the issue of an ATPL and an MPL, shall be conducted in an FFS, if available.

The training, skill test or proficiency check for class or type ratings for SPA and helicopters shall be conducted in:

- (a) an available and accessible FFS; or*
- (b) a combination of FSTD(s) and the aircraft if an FFS is not available or accessible; or*
- (c) the aircraft if no FSTD is available or accessible.”*

This provisions for Single Pilot Aeroplane (SPA) and Helicopter may be applied, in particular where the columns “Practical Training and Skill test or Proficiency checks” of the tables of Appendix 9 specify one tool, provided that the means of simulation used is appropriate to meet the purpose of the exercises.

The intention Chapter A1 (in appendix 9) provisions for SPA are as follows:

When the tools to be used is defined in the column “FSTD” as FFS, and no FFSs are not available, it can be replaced by a combination of FSTD and aircraft or an aircraft (if no FSTD is available and accessible).

Note1: the combination of FSTD and aircraft, may be understand as follows:

- refers to the practical training, examinations and proficiency checks
- for the practical training and the proficiency checks use of the aircraft in addition to the FSTD is allowed, as appropriate for the exercise.
- If there are practical examinations or the proficiency checks the use of the aircraft, is not required if no mandatory exercise is mentioned as to require exclusively the aircraft.
- It may cover the case where no FSTD would be representative for the completion of the exercise, without mandating the use of an aircraft for some exercises where the associated manoeuvre is not relevant on aircraft.

In the case of the FFS is not available and accessible, the FSTD (e.g. FTD2+ FNPTII MCC) selected by the ATO or operator for delivering the training shall be validated by the CAAT as part of the approval of the training/checking programmes. The adequacy of the FSTD will be assessed for each exercise for which it is used.

In the case of the FSTD is not available and accessible is not sufficient representative for the exercises, a part of the training will be carried out on the actual aircraft.

If the Skill test is performed on an FSTD, this FSTD must be the same as that used for the training. Proficiency checks on HPAC can be carried out without obligation to carry out part of the exercises on actual aircraft.

In the event that an FSTD for the type is neither accessible nor available, and where the manoeuvre is not found inappropriate on actual aircraft, all mitigating actions to the risks identified shall be taken, before carrying out the exercises on aircraft, in compliance with the recommendations proposed by paragraph (d) of GM5 to FCL 010 and should be detailed in Flight Safety Manual (FSM).

Note2: Special care must be taken when manoeuvres/procedures of item 2 5 1 & 2 5 2 of the Appendix 9 - B 6 (multi pilot aeroplanes and HPA single pilot Complex aeroplanes)

- Regarding exercise 2.5.1 for SP HPA Complex aeroplanes: In addition to regulatory requirements and considering that this may result in an improvement of air safety, CAAT recommends, for skill tests and

proficiency checks to perform the exercise of engine failure at take-off, if an acceptable means of simulation, even non-FFS, makes it possible. For SP HPA Complex aeroplanes, the use of FTD2+ FNPTII MCC is more suitable to cover the engine failure shortly after reaching V2, which corresponds to exercise 2 5 1.

- Regarding exercise 2.5.2 for SP HPA Complex aeroplanes: The use of the aircraft is not relevant, for safety reasons. The mention “M FFS Only” in “Tested or checked in FSTD or A” column specifies that the exercise is mandatory but has to be performed on FFS only. Exercise 2 5 2 is not required when training on real SP HPA Complex aeroplanes because it may generate an unsafe situation. In case, no FFS is available or accessible, it is acceptable, not to perform this exercise.

3. Conditions of implementation

At a minimum, the proposed FSTD must be certified at **FTD2 + FNPT II MCC level**. The adequacy of the proposed FSTD, taking into account in particular the risks of negative training, will have to be evaluated by the Operators and submitted to the CAAT [ORO. FC.145(c)].

To do this, it will also be necessary to specify any limitations related to the use of these means of simulation in certain phases of the flight. Particular attention will be paid to the reaction of the FSTD to taxiing, during high-speed acceleration-stops (in N and N-1 engines), and during the ground-to-flight (Take-off) and flight-to-ground (Landing) transition phases.

Any restrictions set by the Operator, or by the CAAT following its assessment as part of the FSTD's application for employment, will be integrated into the OM-D. They must be systematically brought to the attention of the TRI/TRE in the form of instructions integrated into the scenarios of the training programmes.

The exercises concerned by this measure may, in a non-exhaustive manner, be the following:

- TCAS;
- Windshear;
- GPWS;
- Smoke;
- LVTO;
- UPRT (MOPSC aircraft ≤ 19 seats);
- Rejected Take-off (AMC1 ORO.FC.230 (b)(1)(i)(A));
- Engine failure between V1 and V2 (AMC1 ORO.FC.230 (b)(1)(i)(B));
- Any exercise deemed appropriate by the Operator as part of the three-year training (breakdowns majors, emergency descent, ...) and any other training.

As engine failure exercises on take-off between V1 and V2 are not allowed on aircraft and their modelling being complex on FTD2, same as the recommendations issued about the LPC exercises, the CAAT recommends that Operators generate this failure after V2 if using a non-FFS FSTD.

Any Commercial Air Transport Operator wishing to benefit from these provisions must make a request to its inspector in charge by submitting an approval application letter. The application must include at least:

- A request for approval;
- A declaration of unavailability of FFS;
- The FSTD certificate (FTD2 and FNPT II MCC at least);
- A description of the exercises that the Operator wishes to carry out on this FSTD.

An authorisation to use the FSTD for approved training programmes will be issued to Commercial Air Transport Operators following an expert review of the relevant information by the CAAT.

The FFS non-availability form is detailed in Annex 3 of this document.

Annex 1 Example of an OSD compliance matrix

Type:

Variant:

Repository: OSD FC report – Revision x - date: d

Regulatory basis:

ORO. FC.145 Provision of training (b): *"When establishing the training programmes and syllabi, the operator shall include the relevant elements defined in the mandatory part of the operational suitability data established in accordance with EASA Part 21 or any equivalent material acceptable to the CAAT."*

- AMC1 ORO. FC.145(b) Provision of training - NON-MANDATORY (RECOMMENDATION) ELEMENTS OF OPERATIONAL SUITABILITY DATA
"When developing the training programmes and syllabi, the operator should consider the non-mandatory (recommendation) elements for the relevant type that are provided in the operational suitability data established in accordance with EASA Part 21 or any equivalent material acceptable to the CAAT"

item	[M]/[AMC]	Requirement	Operator Compliance
6. Recurrent Training		Recurrent training must include the identified Training Areas of Special Emphasis.	OM-D/Chapter xx/RTC
		Difference levels between variants for recurrent training are the same as for initial training.	
	[M]	Recurrent training must address the differences between the variants flown as identified in the relevant ODR tables.	
7. Specification for Checking	[M]	Difference levels between variants for recurrent checking are the same as for initial checking.	OM-D/Chapter xx/RTC/Ground course: test QCM; OPC/LPC
	[AMC]	Recurrent checking should be alternated between models flown.	
	[M]	When operating multiple variants with different avionics suites, recurrent checking should be alternated between the variants of different avionics suites.	OM-A/Chapter 5/ Operation on more than one type or variant

	[M]	All checking must include the elements of the relevant TASE on a rotational basis	OM-D/Chapter xx/ RTC TASE item A: OPC/LPC; TASE item B: ground course check; TASE item C: Line Check
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Annex 2 Examples of FSTD/Aircraft difference matrix

Chapter ATA/System	Simulator Differences / aeroplane Presentation	Impact on Procedure Abnormal urgency	Impact on Procedure Normal	Impact on Flight Characteristics	Level of Conformity	Method of conformity according to the type of training	
ATA 28 Fuel	Cockpit refueling Panel: Absent on FFS	No	No	No	A	In OCC:	IN RTC:
						Seen during practical training LIFUS	Seen in Briefing with descriptive

ORO.FC.145 Provision of training

(d) The FSTD shall replicate the aircraft used by the operator, as far as practicable. Differences between the FSTD and the aircraft shall be described and addressed through a briefing or training, as appropriate.

AMC1 ORO.FC.145 (d) Provision of training

The operator should classify any differences between the aircraft and FFS in accordance with the Air Transport Association (ATA) chapters as follows:

Compliance Level	Method
Level A differences: <ul style="list-style-type: none"> ➤ no influence on flight characteristics; ➤ no influence on procedures (normal and/or abnormal); ➤ differences in presentation and differences in operation. 	Self-instruction via the operations manual or flight crew information
Level B differences: <ul style="list-style-type: none"> ➤ no influence on flight characteristics; ➤ influence on procedures (normal and/or abnormal); and ➤ possible differences in presentation and operation. 	Flight crew information, computer-based training, system device training or special instruction by instructor.
Level C differences: <ul style="list-style-type: none"> ➤ influence on flight characteristics; ➤ influence on procedures (normal and/or abnormal); and ➤ eventually differences in presentation and operation. 	Special instruction by instructor, a selected partial training on another FSTD or aircraft or a waiver because of previous experience, special instruction or training programme.
Level D differences: <ul style="list-style-type: none"> ➤ influence on flight characteristics; and/or ➤ influence on procedures (normal and/or abnormal) ; and/or ➤ differences in presentation and/or operation; and ➤ FSTD is level D qualified and is used for zero flight-time. 	A specified partial training on another FSTD or aircraft or a waiver because of previous experience, special instruction or training programme.

Annex 3 Declaration of FSTD Non-Availability Form

1. Applicant:

- Name of the Operator:
- AOC Number:

2. Type of request:

- ☐ Initial
- ☐ Modification of the initial request of the
- ☐ Temporary from to

3. Type and variants concerned:

4. List of existing FFS for this type:

Indicate what FFS are in service on the date of application.

Simulated variant and avionics	Simulated variant and avionics	FFS Certifying Authority	Location (Country, city)

5. Reason for unavailability of FFS:

- ☐ There is no certificated FFS for the types:
- ☐ Other detailed reasons (in particular simulator/aircraft adequacy analysis):

6. List of existing FTD2 – FNPT II MCC for this type:

Indicate what FTD2 FNPT II MCC are in service on the date of application.

Simulated variant and avionics	FSTD Qualification Number	FFS Certifying Authority	Location (Country, city)

7. Evaluation of FSTDs and restrictions:

Give precisions on the FTD2 FNPT II MCC evaluation initiatives taken of and any restrictions identified.

.....

.....

.....

.....

8. Reason for unavailability of existing FTD2-FNPT II MCC for this type

☐ There is no certificated FFS for the types:

☐ Other detailed reasons (in particular simulator/aircraft adequacy analysis):

9. List of alternative means proposed in the absence of existing FFS and FTD2 - FNPT II MCC:

Indicate the alternative means in use on the date of application.

Simulated variant and avionics	FSTD Qualification Number	FFS Certifying Authority	Location (Country, city)

10. Evaluation carried out on alternative means and restrictions

Specify the evaluation initiatives taken of alternative means and any restrictions identified.

11. Reason in case of unavailability of existing alternative means for this type

Specify (in particular provide simulator / aircraft suitability analysis):

12. Commitment of the FC Training post holder

I, undersigned,

Operator's Nominated Training Post Holder

Certified that the validity of the above elements and:

- Declares that no FFS is available to date on the following type of aircraft operated: to carry out training and checking
- Undertakes to perform these on the FTD2 FNPT II MCC simulator(s) and/or the alternative means listed in this form provided that:
 - o This FSTD is certified by the CAAT;
 - o This FSTD has been evaluated favorably by my services (without transfer of negative training);

- This FSTD be validated favorably by the CAAT;
- Any restrictions set by my services or by the CAAT are documented in the OM-D and brought to the attention of the TRI/TRE in the form of instructions in the scenarios of training programmes and checking.

Date:

Signature:

Annex 4 Flight Safety Manual (FSM)

1. Preamble

In order to establish an optimal level of safety during flight training and checking, the Operator may draw up an Flight Safety Manual (FSM), for the attention of the crews and personnel in charge of the execution of these flights. Such a Safety Manual should simultaneously take into account the TCAR PEL (LPC) and TCAR OPS (FT/OPC) regulations.

As the safety levels of TCAR PEL and TCAR OPS are set on different criteria, the Operator must comply with the most stringent safety requirements while complying with the regulatory provisions. To this end, this Annex is proposed to Operators in order to help them draft their FSM in compliance with the regulations while taking into account their own safety requirements.

Depending on the type of aircraft, the operational environment, the objectives and the content of the corresponding training or checks programmes, the Operator must set up an effective feedback and analysis system in order to bring its FSM to life through the SMS.

2. General

2.1 Scope

The Flight Safety Manual is a document owned by the Operator. It should serve as a reference document, in addition to the training and checks programme approved by the CAAT for any act of checking and training carried out on aircraft (see [paragraph 5.3 Conditions for carrying out offline sessions on aircraft](#)). In this context, the FSM should be part of the file filed with the CAAT in the context of training programme approvals.

The FSM should be adapted to the Operator and take into account the differences between the aircraft types operated in a single document (see guide sheet §4.3).

The FSM could contain sheets describing precise instructions for carrying out the exercises that may be carried out on aircraft and any specificities specific to aircraft types. The applicable fact sheet should be identified for each exercise requiring its use when writing a scenario.

2.2 Weather minima and environmental constraints

The Operator should define minima corresponding to each type of exercise, take into account the environmental constraints with the specificities of each land used. These must be specified in the corresponding tables/documents.

The CAAT recommends that the training sessions should be carried out during the day

2.3 Conditions of implementation

It is the responsibility of the captain designated for the flight (the instructor or examiner), beyond simple airworthiness, to review all scheduled exercises and ensure that they are feasible with the consideration of any technical tolerances applicable on the day of the test (see worksheets).

If an exercise is not feasible, the training/checking programme may take into account alternative exercises if previously approved, and if not, the test will have to be interrupted or the exercise postponed.

In the event that certain abnormal or emergency situations cannot be simulated (fictitious breakdowns, regulatory or operational security constraints, ...), the processing must be carried out in the form of a touch drill and supplemented if necessary by oral questioning.

Failure/Fault management within the framework of the TCAR OPS RTC should comply with AMC1 ORO. FC.230 (e)(3). Some of them should follow these guidelines:

- be generated under defined safety conditions;
- be preceded by a contextual briefing that could take into account the possible consequences as well as respect the instructions described in the Manufacturer's AFM (e.g. no action on circuit-breakers on certain aircraft, no voluntary power cut of a system on these same aircraft, no action on the aircraft gyroscopic unit t equipped with G1000, ...).

Flight organisation: these specific flights must take place within the framework described in OM part A 8.7 (Without passengers on board, Authorized personnel on board, On-board documents, Stowage, etc.).

2.4 ATC coordination and collision avoidance

Throughout the flight, the instructor or examiner should endeavor to coordinate any exercise with ATC. Exercises should be conducted whenever possible in a volume of dedicated airspace, in which case freedom of maneuver should normally be granted by ATC in that airspace.

In the case of a flight in uncontrolled airspace, each exercise should be announced on the corresponding traffic information frequency with rescheduling of position and altitude.

Collision avoidance is essential during the entire flight. To this end, the presence of a third pilot not in service may be considered by the Operator depending on the type of aircraft, the environment, the planned exercises and the result of his SMS. If the environmental and traffic conditions are not met, it is up to the instructor or examiner to postpone the test.

2.5 Risk and Threat Management: Safety Briefing, TEM

The particularity of training and checking flights, their dynamism, the evolutionary nature of the trajectories, the involvement of the instructor or examiner in the course of the session and the observation of the trainee's performance, impose certain precautions.

The risks of collisions, loss of separation, non-compliance with airspace and altitudes, unintentional upset of the aircraft and actual breakdowns that the aircraft may suffer should be taken into account by the crew. In addition to external risk management, internal errors should also be taken into account (resilience of the trainee and instructor, fatigue, etc.).

Thus, it would be necessary for a safety briefing to take place on the ground at the end of the briefing of the session. On this occasion, the instructor would review all the threats with the trainee and set up mitigation measures.

The dynamism of the flight, unlike an FFS session, imposes certain precautions when carrying it out, including a contextual briefing. Each exercise would thus be preceded by the mini contextual briefing and an environmental check before its completion.

The sequence of exercises should allow the trainee, and the instructor, a minimum period of time to reconstruct a sphere of anticipation for the next exercise.

Educational and safety briefings and debriefing of the session should not take place in the cockpit.

2.6 Management of an actual in-flight failure and interruption of the session

During the session, if a breakdown or an unwanted situation occurs, the instructor/examiner, by means of a conventional announcement (such as "I have the controls, end of the exercise") will have to regain control of the flight in order to manage the situation. Once the event has been processed and if it does not impact the rest of the session, the instructor/examiner will consider the possibility of continuing the session.

On the other hand, if the breakdown significantly impacts the rest of the session or prevents its continuation, the instructor / examiner will clearly announce to the trainee the end of it.

More generally, if during the flight the instructor/examiner interrupts the session, he will take control of the aircraft for the return flight

In addition, if the completion of an exercise leads to an unintentional upset situation, the instructor/examiner will have to take back the controls for the recovery and interrupt the session. Additional training will then have to be carried out.

3. Methodology

3.1 Guide to writing a handout

The Operator may, at a minimum, include all the following elements that he will complete items that he deems relevant.

TITLE / type(s) aircraft(s)* / reference (for quick access from syllabuses)	
Regulatory refs	<ul style="list-style-type: none"> - OPS references of the exercise (TABLE UPRT, OCC, SET IMC, A, B, C, ...) - Reference for the year concerned (N) for FT financial years - Year references (according to FCL Appendix 9-B6 or B5) - Ref of various recommendations (internal (SMS) and external (SIB, ...))
TEM	<ul style="list-style-type: none"> - Trajectory - Environment - Infrastructure - MTOW - Crew performance degradation to deal with an actual failure - Expected or frequently encountered errors - Etc.
Minimum of realisation	<ul style="list-style-type: none"> - MTO - Crew composition - Available airspace (horizontal plane, vertical plane, envisaged trajectory) - Minimum altitude - Track length - Acceptable of Aircraft Status, MEL and CDL state - Etc.
Simulations realisation of the failure	<ul style="list-style-type: none"> - Scenario instructions - Example of scenario - Instructions for implementation - Etc
Return to normal situation	<ul style="list-style-type: none"> - Clear announcements of the beginnings and ends of simulated situations to avoid confusion
Operator Instructions	<ul style="list-style-type: none"> - Scope for the exercise

	<ul style="list-style-type: none"> - Instructions to the examiner, reference to manufacturer's documentation, ... - Elements from feedback - Specific C/L if applicable
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*The Operator may take into account any particularities specific to aircraft types or variants in terms of performance, limitations, etc. or consider the creation of separate sheets in the event of too great disparities within the fleet.

3.2 Feedback system

The safety implications of these activities requires a constantly feedback to SMS. A problem encountered during an exercise simulation carried out according to these activities must be the subject of a return from the examiner/instructor.

A feedback may be proposed to the examiner/instructor. This should be designed in accordance with the company's SMS and allow feedback on the safety problems encountered and/or a possible improvement of the relevant sheet.

For safety concerns, a rapid distribution channel to the relevant examiners/instructors should be considered.

Annex 5 Transition period on the use of FSTD as part of Flight Crew training programmes

1. Preamble

This appendix provides the information to relevant parties relating to the consideration of the simulator in the training programmes of CAT operators.

This transition programme, is applicable for a period of 3 years after publication of TCAR PEL FCL/TO – AirCrew Licensing, and Training organisation.

2. A Brief Summary of FSTD transition

- Existing FSTDs that were approved in accordance with the regulations enforced before the entry into force of TCAR PEL regulations can continue to be used until the end of the transition period.
- To continue benefiting from credits of training performed in (FSTDs) used for pilot training, testing and checking, beyond the end of transition date of TCAR PEL regulation, FSTDs shall comply with the detailed requirements contained in TCAR PEL Part ORA and shall have been qualified by the CAAT in accordance with TCAR PEL Part ORA.

Note: The transition provisions are detailed in TCAR PEL Cover Regulation called TCAR PEL FCL/TO – AirCrew Licensing, and Training organisation.