European Union Aviation Safety Agency

Certification Specifications and Guidance Material for Operational Suitability Data (OSD) Flight Crew Data (CS-FCD)

Issue 2

15 September 2021[1]

[1] For the date of entry into force of this Amendment, kindly refer to Decision 2021/012/R in the Official Publication of the Agency.

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SUBPART A — GENERAL

CS FCD.050 Scope

(a) These Certification Specifications for Flight Crew Data (CS-FCD) address:

(1) the determination of a pilot type rating:

(i) to establish whether an aircraft is recognised as a new type or as a variant to an existing type of aircraft, or as a modification to an existing type or variant, including its new systems, new equipment, or new procedures; and

(ii) to assign the pilot licence endorsement designation for an aircraft.

(2) the minimum syllabus for an aircraft type-specific pilot training course, including checking requirements, currency requirements and recent experience requirements;

(3) the identification and validation of training areas of special emphasis (TASE)

(4) the determination of initial and recurrent training, as well as of checking and credit based on the differences/commonalities between types, variants, aircraft systems, equipment, or procedures; and

(5) pilot experience and pilot prerequisites for the issuance of a type rating, as provided for in Regulation (EU) No 1178/2011 ('Aircrew Regulation').

(b) The following elements are taken into consideration to achieve compliance with CS-FCD:

(1) the specific characteristics of the aircraft;

(2) any type-specific training elements related to design changes, equipment, procedures or operations of an aircraft;

(3) the technical requirements and administrative procedures related to the Aircrew Regulation, Regulation (EU) No 965/2012 ('Air OPS Regulation'), and those of Annex I (Part 21) to Regulation (EU) No 748/2012 ('Initial Airworthiness Regulation');

(4) the pilot experience and entry prerequisites for the issuance of a type rating;

(5) the commonalities and differences between the candidate aircraft and the base aircraft in accordance with the differences requirement (DR) tables, where applicable.

[Issue No: FCD/2]

GM1 FCD.050 Scope

(a) The scope of CS-FCD includes the following elements, as appropriate:

(1) training elements related to types of operations subject to specific approvals as per Annex III (Part-ORO), Annex V (Part CAT), and Annex VIII (Part-SPO) to the Air OPS Regulation; and

(2) the use of optional aircraft equipment.

(b) Specific types of operations include, but are not limited to:

(1) LVO;

(2) ETOPS;

(3) operations dedicated to helicopters such as HHO, HEMS, and offshore operations; and

(4) steep approaches.

(c) Specific airspace includes, but is not limited to, RVSM, MNPS, and BRNAV.

(d) Optional equipment includes, but is not limited to, new aircraft technology or specific equipment such as HUD, EFB, NVIS, ECL customisation, EFVS and SFVS equipment.

[Issue No: FCD/2]

CS FCD.100 Applicability

(a) CS FCD.200(a) is applicable to all aircraft. All other paragraphs are applicable to aircraft for which a pilot type rating is determined.

(b) This CS-FCD specifies operational suitability data (OSD) based on data provision which is required from the type certificate (TC) applicant/holder and data provided at the request of the TC applicant/holder. OSD is presented as mandatory or non-mandatory (recommendations) for the end user in accordance with the Aircrew and Air OPS Regulations as follows:

(1) data required from the TC applicant/holder and mandatory for the end users (Box 1):

(i) CS FCD.200;

(ii) CS FCD.300(a);(b);(c);(d);(e)(1) and (e)(2);

(iii) CS FCD.400

(iv) CS FCD.405;

(v) CS FCD.410;

(vi) CS FCD.415; and

(vii) CS FCD.420;

(2) data required from the TC applicant/holder and non-mandatory (recommendations) for the end users (Box 2):

(i) CS FCD.300(a);(b);(c);(d);(e)(3) and (f);

(ii) CS FCD.415; and

(iii) CS FCD.420;

(3) data at the request of the TC applicant/holder and mandatory for the end users (Box 3):

(i) CS FCD.300(a);(b);(c);(d);(e)(1) and (e)(2);

(ii) CS FCD.310(a) and (b);

(iii) CS FCD.400;

(iv) CS FCD.405;

(v) CS FCD.410;

(vi) CS FCD.415; and

(vii) CS FCD.420;

(4) data at the request of the TC applicant/holder and non-mandatory (recommendations) for the end users (Box 4):

(i) CS FCD.300(a);(b);(c);(d);(e)(2);(e)(3) and (f);

(ii) CS FCD.305;

(iii) CS FCD.310(a) and (b);

(iv) CS FCD.400;

(v) CS FCD.405;

(vi) CS FCD.410;

(vii) CS FCD.415; and

(viii) CS FCD.420; and

(5) Items (b)(1) and (b)(2) combined constitute the minimum syllabus for pilot type rating training as required by Part 21.

[Issue No: FCD/2]

GM1 FCD.100 Applicability

(a) The technical requirements and administrative procedures related to the Aircrew and Air OPS Regulations contain references to OSD that may be established in accordance with Regulation (EU) No 748/2012.

This data may contain mandatory or non-mandatory elements concerning:

(1) the type of aircraft categorisation;

(2) the period of validity for type ratings;

(3) the pilot experience requirements and prerequisites to commence training;

(4) theoretical knowledge and flight instruction for the issuance of type ratings;

(5) difference training provisions between different variants of one type or between an aircraft and the related systems, equipment, and procedures that are associated with a modification;

(6) credit related to reduced type rating training, based on commonalities between two types from the same manufacturer;

(7) recent experience credit for operations on more than one type of aircraft;

(8) recurrent training, and checking, as well as alternating proficiency checks, for operations on more than one type or variant;

(9) pilot type-specific training elements;

(10) credit related to crewing of inexperienced flight crew members;

(11) credit related to the number of take-offs and landings following ZFTT;

(12) type-specific training elements related to the issuance of a specific approval; and

(13) credit related to specific types of operations, when so allowed by the Air OPS Regulation.

(b) Mandatory and non-mandatory OSD elements are approved upon satisfactory demonstration of compliance. This data may be required from, or voluntarily provided by, the applicant, based on data required to be approved, or based on data approved at the request of the applicant.

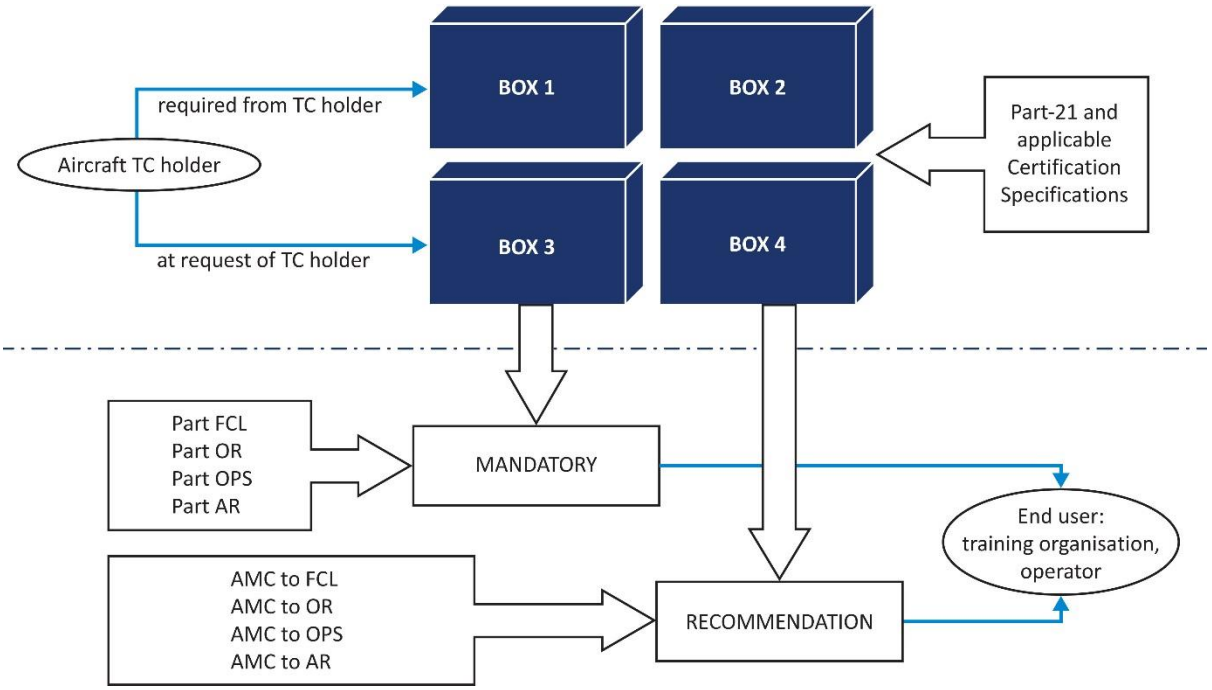
Therefore, OSD can be grouped in 'Boxes' as follows:

(1) Box 1: Data required from the applicant and mandatory for the end user;

(2) Box 2: Data required from the applicant and non-mandatory (recommendations) for the end user;

(3) Box 3: Data at the request of the applicant and mandatory for the end user; and

(4) Box 4: Data at the request of the applicant and non-mandatory (recommendations) for the end user.



Boxes 1 and 2 combined constitute the minimum syllabus for pilot type rating training as required by Part 21.

Some practical examples are provided in the following table:

Box 1	**Box 2**
Aircraft type designation and pilot licence endorsement Aircraft variant designations Prerequisites for initial type rating training and checking Training areas of special emphasis (TASE) for initial type rating and recurrent training MDR tables between variants DR tables related to systems training, equipment training, and procedures training, based on aircraft modifications	Training footprint for: for initial type rating and difference training (when applicable)
Box 3	**Box 4**
Level of differences determination — DR & MDR Tables	Training footprint for:

TASE for: — difference training; — type rating training based on credit for commonalities; and — training for specific operations, procedures or equipment (e.g. steep approaches, RNP AR, EFVS/SFVS, EFB, NVIS, etc.) Prerequisites, credit for training and checking or recent experience requirements for operations on more than one type or variant	— difference training; — type rating training based on credit for commonalities; and — training for specific operations, procedures or equipment (e.g. LVO, RNP AR, EFVS/SFVS, EFB, NVIS, etc.) CTLC Credits for training, checking, or currency

[Issue No: FCD/2]

CS FCD.105 Definitions

Within the scope of this CS-FCD, the following definitions apply:

(a) *Base aircraft* means an aircraft used as a reference to compare differences with another aircraft.

(b) *Candidate aircraft* means an aircraft subject to the evaluation process.

(c) *Checking* means skill testing, proficiency checking, and recurrent checking.

(d) *Common take-off and landing credit (CTLC)* means a programme or process that allows credit for recent experience between aircraft types that can be demonstrated to have very similar handling qualities, flight characteristics, operating techniques, and operating procedures during take-off and initial climb, approach and landing (including the establishment of the final landing configuration).

(e) *Currency* means the experience and recurrent training necessary for the safe operation of aircraft, systems and equipment.

(f) *Difference level* means a formally designated level of difference between a base and a candidate aircraft for the evaluation of pilot training, checking, or currency.

(g) Differences Requirement (DR) means a description of the differences regarding the level of training and checking, or currency between a base and a candidate aircraft and their impact on flight characteristics and changes of procedures, to be used by ATOs for the development of training courses and by operators for the development of ODR tables and training programmes.

(h) *Evaluation subjects* means pilots possessing the general and specific prerequisites for taking a training course and/or for conducting the specific test, who are used in T tests for the purpose of determining the compliance of the proposed OSD FC initial or difference training elements, as well as of any credit.

(i) *Flight characteristics* means the handling qualities or performance characteristics perceivable by a pilot. Flight characteristics relate to the natural aerodynamic response of an aircraft, particularly as affected by changes in configuration or flight path parameters.

(j) *Handling qualities* means the manner in which the aircraft responds with respect to the rate and magnitude of pilot-initiated control inputs to the flight controls based on the aerodynamic response of an aircraft, also as affected by changes in configuration or flight path parameters.

(k) *Line flying under supervision (LIFUS)* means the part of the operator's conversion course in accordance with the Air OPS Regulation.

(l) *Master difference requirements (MDRs)* means those requirements that pertain to differences between types of aircraft or variants of the same type of aircraft. MDRs are specified in terms of the minimum difference levels for training, checking, and currency, and include the highest difference level identified in the applicable DR tables.

(m) *Minimum syllabus* means the training elements and the associated footprint provided by the applicant and approved by EASA for a specific aircraft type.

(n) *Modification* means a change to an aircraft type design and to the associated TC, which has an impact on the flight crew data in relation to new systems, new equipment, or new procedures.

(o) *Pilot type rating endorsement* means the designation of an aircraft type endorsed on a pilot licence.

(p) *Recent experience* means the recent experience described in point FCL.060 of Annex I (Part FCL) to the Aircrew Regulation.

(q) *Training areas of special emphasis (TASE)* means specific knowledge and skills required for the safe operation of an aircraft type or variant, the use of equipment, the application of procedures, or the performance of operations.

(r) *Training footprint* means a summary description of a training programme, usually in short tabular form, showing the training subjects, modules, procedures, manoeuvres, or other programme elements that are planned for completion during each day or phase of training.

(s) *Type of aircraft* means a category of aircraft that requires a type rating as determined in the OSD established in accordance with Part 21, and which includes all aircraft of the same basic design, including all modifications thereto, except those modifications that result in a change of handling qualities or of flight characteristics.

(t) *Variant* means an aircraft or a series of aircraft that shares the same basic design within the same pilot type rating, and that has such differences from the base aircraft that require difference training or familiarisation training as per point FCL.710 of Part-FCL.

[Issue No: FCD/2]

GM1 FCD.105 Definitions

List of acronyms used in CS-FCD

ACARS	Aircraft Communication Addressing and Reporting System
ATA	Air Transport Association
ATO	approved training organisation
ATQP	Alternative Training and Qualification Programme
BRNAV	Basic Area Navigation
CBT	Computer-Based Training
CTLC	common take-off and landing credit
CS	Certification Specifications
DR	Difference Requirement
ECL	Electronic Check List
EFB	Electronic Flight Bag
EFIS	Electronic Flight Instrument System
EFVS	enhanced flight vision system
ETOPS	Extended range operations with two-engine aeroplane
FC	Flight Crew
FCD	flight crew data
FCL	Flight Crew Licensing
FCS	FSTD capability signature
FD	Flight Director
FFS	full flight simulator
FGCS	Flight Guidance Control System
FMS	Flight Management System
FSTD	flight simulation training device
FTD	flight Training Device
GM	Guidance Material
GPWS	Ground Proximity Warning System

HEMS	Helicopter Emergency Medical Service
HHO	Helicopter Hoist Operations
HUD	Head-Up Display
INS	Inertial Navigation System
JOEB	Joint Operational Evaluation Board
LBS	Load & Balance and Servicing
LIFUS	Line Flying Under Supervision
LOF	line oriented flying
LVO	Low-Visibility Operations
MDR	Master Difference Requirement
MNPS	Minimum Navigation Performance Specification
NVIS	Night Vision Imaging System
ODR	Operator Difference Requirement
OEB	Operational Evaluation Board
OPT	Operational Performance Tool
OSD	Operational Suitability Data
OTD	Other Training Devices
PIC	Pilot-In-Command
QRH	Quick Reference Handbook
RNP AR	required navigation performance authorisation required
RVSM	Reduced Vertical Separation Minima
SFVS	synthetic flight vision system
TC	Type Certificate
TCAS	Traffic Collision Avoidance System

TCH	type-certificate holder
TRI	Type-Rating Instructor
VFR	Visual Flight Rules
WBT	web-based training
ZFTT	zero flight time training

[Issue No: FCD/2]

SUBPART B — DETERMINATION OF A PILOT TYPE RATING

CS FCD.200 Determination of a pilot type rating

(a) The determination of whether a certain type of aircraft is subject to a pilot type rating is as follows:

(1) The following aircraft are subject to a pilot type rating:

(i) aeroplanes:

— with a maximum certified take-off mass (MCTOM) exceeding 5 700 kg, or

— certified for a maximum passenger seating configuration of more than 19, or

— certified for operation with a minimum crew of at least two pilots, or

— equipped with one or more turbojet engines or more than one turboprop engine;

(ii) helicopters except those certified in accordance with CS-VLR;

(iii) tilt rotors; and

(iv) gas airships;

(2) The following aircraft are not subject to a pilot type rating:

(i) sailplanes;

(ii) powered sailplanes;

(iii) balloons;

(iv) aeroplanes that meet the definition of ELA 1 or ELA 2; and

(v) hot air airships.

(3) An aircraft not listed in subparagraphs (1) or (2) will be subject to a pilot type rating:

(i) either at the request of the applicant; or

(ii) if EASA determines that the aircraft's operational experience, data, handling qualities, performance or level of flight deck technology require type rating training for its safe operation.

(b) The determination of whether a certain aircraft is a new type or a variant is made in accordance with Subpart D.

(c) The type rating or variant determination is recorded in the OSD FC.

(d) Changes to a type design are assessed for their impact on the associated FC data and addressed, if necessary, through changes to the OSD FC.

[Issue No: FCD/2]

GM1 FCD.200 Determination of a pilot type rating and a variant

For aircraft described in CS FCD.200(a)(3)(a)(3), it may be determined, during the type certification process or based on in-service experience, that the aircraft type requires a pilot type rating for safe operations. The TC applicant/holder is then requested to obtain approval of a minimum syllabus for pilot type rating training by including the OSD FC specifications in the certification basis. This determination is based on the considerations listed in that subparagraph.

With reference to CS FCD.200(d), when assessing design changes for their impact on the FCD, a new model or a new series, as identified in the TC data sheet, would usually determine a variant or, potentially, a new type.

Modifications that are significant from the FC perspective, performed by the TC holder or via an STC, even though they do not determine a new model or a new series, may require the determination of a new variant (e.g. the installation of a new avionic suite).

Design modifications to an existing type or variant that do not determine a new variant are only addressed through changes to the DR tables or supplemental DR tables to support operators in developing their training programmes.

[Issue No: FCD/2]

SUBPART C — PILOT TYPE RATING TRAINING AND OPERATIONAL TRAINING REQUIREMENTS

CS FCD.300 Pilot type rating training and operational training requirements for a specific aircraft

(a) The specific training requirements to build the necessary theoretical and practical skills to operate a specific aircraft are defined in the OSD FC.

(b) The definition of the specific training requirements has to consider the provisions related to Aircrew and Air OPS Regulations and Part 21, taking into account the relevant references to the OSD.

(c) The development of the specific training requirements is based on the assumption that the pilot undergoing training has met the prerequisites for the training to be evaluated.

(d) The specific training requirements must be identified and established in accordance with CS FCD.425.

(e) The specific training requirements depend on the aircraft type, any design changes, specific equipment, procedures, or operations, and contain:

(1) TASE related to the particular aircraft type, including identification of all type-specific knowledge and skills;

(2) the prerequisites for the minimum entry-level requirements to be fulfilled by the pilot, when they are more stringent than those established under the Aircrew Regulation; and

(3) the training footprint.

(f) The training footprint indicates which training methods and device(s) are assumed to be used, based on CS FCD.415.

[Issue No: FCD/2]

GM1 FCD.300 Pilot type rating training and operational training requirements for a specific aircraft

(a) The following table presents an example of a training footprint for a type rating course. This footprint can be made equally applicable to other training courses by adapting the contents and durations.

Day 1	Day 2	Day 3	Day 4	Day 5
Table Introduction **CBT MODULE 1** (x:xx hrs)	**CBT MODULE 2** (x:xx hrs)	**CBT MODULE 3** (x:xx hrs)	**CBT MODULE 4** (x:xx hrs) **OTD MODULE 1** (x:xx hrs)	**Tutorial 1 OPT** (x:xx hrs)

Day 6	Day 7	Day 8	Day 9	Day 10
CBT MODULE 5	**CBT MODULE 6**	**CBT MODULE 7**	**CBT MODULE 8**	**CBT MODULE 9**

(x:xx hrs) **OTD MODULE 2** (x:xx hrs)	(x:xx hrs) **OTD MODULE 3** (x:xx hrs)	(x:xx hrs) **OTD MODULE 4** (x:xx hrs)	(x:xx hrs) **OTD MODULE 5** (x:xx hrs)	(x:xx hrs) **OTD MODULE 6** (x:xx hrs)

Day 11	Day 12	Day 13	Day 14	Day 15
CBT MODULE 10 (x:xx hrs) **OTD MODULE 7** (x:xx hrs)	**CBT MODULE 11** (x:xx hrs) **OTD MODULE 8** (x:xx hrs)	**CBT MODULE 12** (x:xx hrs) **OTD MODULE 9** (x:xx hrs)	**CBT MODULE 13** (x:xx hrs) **OTD MODULE 10** (x:xx hrs)	**Tutorial 2 EFB, QRH** (x:xx hrs) **Tutorial 3 LBS** (x:xx hrs)

Day 16	Day 17	Day 18	Day 19	Day 20
Variances (if needed) (x:xx hrs)	**FSTD MODULE 1** (x:xx hrs)	**FSTD MODULE 2** (x:xx hrs)	**FSTD MODULE 3** (x:xx hrs)	**FSTD MODULE 4** (x:xx hrs)

Day 21	Day 22	Day 23	Day 24	Day 25
FSTD MODULE 5 (x:xx hrs) **Wind shear briefing** (x:xx hrs)	**FSTD MODULE 6** (x:xx hrs)	**FSTD MODULE 7** (x:xx hrs)	**FSTD MODULE 8** (x:xx hrs)	**Skill test** (x:xx hrs)

Note: Times for OTD and FSTD modules include time for briefing and debriefing when appropriate.

(b) Reduced training footprint

Type rating training is based on the pilot's prerequisites.

If there is some commonality between the base and candidate aircraft, a reduced type rating training footprint may be provided by giving credit to the common characteristics between these types.

If the determination is made that the base and the candidate aircraft are considered variants, then difference training or familiarisation training is required.

(c) Training methods

For the training methods for pilot type rating training and operational training:

(1) knowledge can be adequately addressed through self-instruction and aided instruction;

(2) hands-on training can be adequately addressed by part-task trainers, system training devices (for example for FMS and TCAS), or aircraft on ground;

(3) demonstration can only be adequately addressed in an FSTD or in an aircraft with the appropriate capability to achieve the objectives, and enable the integration of knowledge, skills and abilities.

(d) Development of training areas of special emphasis (TASE)

(1) TASE are identified:

(i) to prevent misunderstandings, skill errors, or skill deficiencies that have an impact on the safety of the flight, and may be specified as mandatory items specific to a given aircraft type, variant, or equipment to be integrated in the training (type

rating training, difference training, familiarisation training, or equipment training, as applicable); or

(ii) when the impact on the safety of the flight is considered to be associated with aircraft failure conditions with a severity classified as Major or higher and when there are associated pilot training elements to mitigate the effects; or

(iii) when the flight manual emergency and abnormal procedures require specific knowledge or skills to be acquired.

(2) Types of TASE

(i) TASE provided in the initial FCD corresponding to the aircraft configuration in the TC (or provided in the aircraft basic specification at the time of the FCD catch-up). These TASE are the only mandatory FCD items for the type rating course content based on the aircraft configuration at TC.

(ii) TASE provided in the update of the FCD for the modified aircraft (TASE for a variant, TASE for equipment). These TASE are mandatory FCD items that are provided in addition to the DR tables for the difference training, familiarisation training, and equipment training.

(3) Initial and recurrent training

TASE are applicable to both initial and recurrent training. However, more detailed provisions on the applicability of TASE may be provided as part of the OSD.

(4) Relationship between TASE and difference training levels

TASE are typically associated with training items that require at least level B difference training.

(5) Sources for TASE

Typical sources of TASE or elements that may generate TASE are:

(i) design validation: validation of an aircraft design (e.g. systems, functions, etc.) and aircraft procedures (e.g. flight test, human factors (HF) evaluation, safety analysis, etc.);

(ii) operational evaluations: FCD evaluations (T testing), or ATO training syllabus evaluations; and

(iii) in-service or training feedback/experience.

[Issue No: FCD/2]

CS FCD.305 LIFUS

Requirements for LIFUS are specified in the Air OPS Regulation; however, credit between aircraft types for the number of take-offs and landings related to LIFUS following a ZFTT is permitted as a result of the evaluation process, and specified in the OSD.

[Issue No: FCD/2]

CS FCD.310 Credit for operations on more than one type or variant

(a) Based on commonalities between aircraft types or variants and based on the provisions of Part-ORO of the Air OPS Regulation, the applicant may propose:

(1) credit for training, checking, and currency for operations on more than one type or variant;

(2) credit related to recent-experience requirements when operating more than one type.

(b) For substantiation of the credit that is proposed under (a), the applicant provides DR tables or other appropriate documentation for comparison of the relevant aircraft characteristics.

[Issue No: FCD/2]

GM1 FCD.310 Credit for operations on more than one type or variant

Credit can be given for common equipment, common procedures, and types of operations that include, but are not limited to:

(a) alternating proficiency checks;

(b) currency and recent experience; and

(c) other credit to be established under the OSD in the relevant subparts of Parts ORO, CAT, and SPO of the Air OPS Regulation.

[Issue No: FCD/2]

SUBPART D — OPERATIONAL EVALUATION

CS FCD.400 Difference Requirement (DR) tables

(a) DR tables are provided for:

(1) any evaluation of differences between a base aircraft and a candidate aircraft for type rating and variant assessment;

(2) the content of difference training or familiarisation training between variants;

(3) new systems or equipment and associated procedures; and

(4) credit based on commonality.

(b) DR tables identify the differences between the base and the candidate aircraft in terms of general characteristics, systems, and manoeuvres, and propose appropriate difference levels.

(c) DR tables can be expanded to address multiple aircraft comparisons.

(d) DR tables are established in accordance with the Appendix to CS FCD.400.

[Issue No: FCD/2]

Appendix to CS FCD.400 Compilation of DR tables

This appendix specifies the compilation of DR tables. The applicant conducts a detailed evaluation of the differences of the aircraft concerned and incorporates it into the DR tables.

(a) DR 1: General

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

(1) general dimensions and aircraft design (number and type of rotors, wingspan or category);

(2) flight deck general design;

(3) cabin layout;

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

(5) limitations (flight envelope).

(b) DR 2: Systems

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

(c) DR 3: Manoeuvres

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

The operational analysis should take the following into account:

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

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

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

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

(5) aircraft performance in specific manoeuvres;

(6) aircraft status following a failure;

(7) management (such as Electronic Centralised Aircraft Monitoring (ECAM), Engine Indication and Crew Alerting System (EICAS), navaid selection and automatic checklists).

[Issue No: FCD/2]

CS FCD.405 Master Difference Requirement (MDR) tables

(a) Based on the DR tables that are established in accordance with CS FCD.400, MDR tables must be included in the OSD.

(b) MDR tables are specified in terms of the minimum difference levels for training, checking, and currency, and include the highest difference level identified in the applicable DR tables.

[Issue No: FCD/2]

GM1 FCD.405 Master Difference Requirement (MDR) tables

Proposed MDRs

MDR tables are established when candidate aircraft is evaluated in comparison to base aircraft.

MDRs example:

Aircraft type		**FROM AIRCRAFT (base)**		
		aircraft 1	**aircraft 2**	**aircraft**
TO AIRCRAFT (candidate)	**aircraft 1**	n/a	A / A / A	C / B / B
	aircraft 2	A / A / A	n/a	D/B/B
	aircraft	C / B / B	D / B / B	n/a

CS FCD.410 Difference levels — General

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

(b) Difference levels apply when a difference with the potential to affect flight safety exists between a base and a candidate aircraft. Differences may also affect the knowledge, skills, or abilities required from a pilot. If no differences exist, or if differences exist but do not affect flight safety, or if differences exist but do not affect knowledge, skills, or abilities, then difference levels are neither assigned nor applicable to pilot qualification. When difference levels apply, each level is based on a scale of differences related to design features, systems, or manoeuvres. In assessing the effects of differences, both flight characteristics and procedures are considered since flight characteristics address handling qualities and performance, while procedures include normal, non-normal and emergency items.

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

[Issue No: FCD/2]

CS FCD.415 Difference levels — Training, checking, and currency

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

DIFFERENCE LEVEL	TRAINING	CHECKING	CURRENCY
A	— Self-instruction	Not applicable or integrated with the next proficiency check	Not applicable
B	— Aided instruction	Task or system check	Self-review
C	— System devices	Partial proficiency check that uses a qualified device	Designated system and procedures that use system devices or aircraft
D	Manoeuvre FSTDs[1] or aircraft to execute specific manoeuvres	Partial proficiency check that uses a qualified device[1]	Designated manoeuvre(s)[1] that use FSTDs[1] or aircraft
E	FSTDs[2] or aircraft	Proficiency check using FSTDs[3] or aircraft	

Footnote (1):

(1) aeroplanes:

(i) FFS level D, or

(ii) FSTD with an FCS at least equal to FTD level B as defined in CS-FSTD(A) Issue 3[1].

[1] The related NPA is under preparation.

(2) helicopters:

(i) FTD Levels 2 and 3, or

(ii) FFS.

Footnote (2):

(1) aeroplanes:

FSTDs that meet the training objectives and requirements provided for in the Aircrew Regulation.

(2) helicopters:

FSTDs that have dual qualification: FFS Level B and FTD Level 3, or FFS Level C or D.

Footnote 3:

(1) aeroplanes:

(i) FFS level D, or

(ii) FSTDs that have at least fidelity level S (Specific) for the following features:

(A) flight deck layout and structure,

(B) flight model,

(C) ground reaction and handling qualities, and

(D) flight controls and forces.

(2) helicopters:

(i) FTD Levels 2 and 3, or

(ii) FFS.

(b) Difference level — Training

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

(1) Level A training

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

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

(2) Level B training

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

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

(3) Level C training

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

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

The minimum acceptable training media for level C is interactive computer-based training, cockpit systems simulators, cockpit procedure trainers, part task trainers or similar devices.

(4) Level D training

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

FSTDs capable of flight manoeuvres replicate the aircraft in a dynamic 'real time' simulation flight environment, enabling the integration of knowledge, skills, and abilities by combining operationally oriented tasks and realistic task workloads for each relevant phase of flight. At level D, the knowledge and skills to complete necessary normal, non-normal and emergency procedures are fully addressed for each type or variant.

Level D difference training requires mastery of interrelated skills that cannot be adequately addressed by separate acquisition of a series of knowledge areas or skills that are interrelated. However, the differences are not so significant that a full type rating training course is required.

Training for level D differences requires an FSTD that has accurate, high fidelity integration of systems and controls and realistic instrument indications. Level D training may also require manoeuvring visual cues, dynamics, control loading or specific environmental conditions. Weather phenomena such as low visibility operations or wind shear may or may not be incorporated.

The applicant needs to propose the features that define the FSTD capability that is required to meet the training objectives among those identified in the table of paragraph (a). Where simplified or generic characteristics of an aircraft type are used in devices to satisfy level D difference training, significant negative training cannot occur as a result of the simplification.

The appropriate devices, as described in CS FCD.415(a), which satisfy level D difference training, are those which incorporate relevant elements of aircraft flight manoeuvring, performance, and handling qualities.

(5) Level E training

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

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

When level E difference training is assigned, as well as for any initial type rating training, the experience requirements and prerequisites for the issuance of the relevant rating may be approved based on the requirements of points FCL.720.A and FCL.720.H of Part-FCL of the Aircrew Regulation. Recurrent training credit for operations on more than one type may be approved based on the requirements of Part-ORO of the Air OPS Regulation.

(c) Difference level — Checking

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

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

(1) Level A checking

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

(2) Level B checking

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

(3) Level C checking

Level C difference checking requires a partial check using a suitable FSTD. A partial check is conducted relative to particular manoeuvres or systems and equipment.

(4) Level D checking

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

(5) Level E checking

Level E difference checking requires that a full proficiency check be conducted in FSTDs or in an aircraft, as mentioned in CS FCD.415(a), following both initial and recurrent training. If appropriate, alternating recurrent checking between the relevant aircraft

types is possible, and credit may be defined for procedures or manoeuvres based on commonality.

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

(d) Difference level — Currency

Currency differences address any currency and recurrent training difference levels. Initial and recurrent currency levels are the same, unless otherwise specified.

(1) Level A currency

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

(2) Level B currency

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

(3) Level C currency

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

(ii) Re-establishing level C currency

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

(4) Level D currency

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

(ii) Re-establishing level D currency

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

(5) Level E currency

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

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

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

(ii) Re-establishing level E currency

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

(e) Competency regarding non-normal and emergency procedures — Currency

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

[Issue No: FCD/2]

GM1 FCD.415 Difference levels — Training, checking, and currency

(a) While particular aircraft are often assigned the same level for training, checking, and currency (for example, C/C/C), this is not always the case. Training, checking, and currency levels may be assigned independently. As an example, a candidate aircraft may be assigned level C for training, level B for checking, and level D for currency (for example, C/B/D).

(b) Difference level — Training

As an example, for the use of a training device associated with a higher difference level than required, if level C differences have been assessed due to the installation of a different FMS, pilots may be trained using the FMS installed in an FSTD that is used as a system trainer, if a dedicated part task FMS training device is not available.

(1) Level A training

Compliance with level A training is typically achieved by methods such as issuance of operating manual page revisions, dissemination of flight crew operating bulletins or difference handouts to describe minor differences between aircraft.

Level A training is normally limited to situations such as the following:

(i) the change introduces a different version of a system or equipment for which the flight crew has already demonstrated understanding and the ability to use it safely (for example, an updated version of an engine); or

(ii) information highlighting a difference that, once brought to the attention of a crew, is self-evident, inherently obvious and easily understood (for example, a communication radio panel installed in a different location, a different exhaust gas temperature limit which is placarded, or changes to abnormal ‘read and do’ procedures).

(2) Level B training

Level B aided instruction typically employs means such as presentations, tutorials, CBT, stand-up lectures, or videos.

(3) Level C training

While level C systems or equipment, and procedures, knowledge or skills relate to specific rather than fully integrated tasks, the performance of the steps to accomplish normal, abnormal and emergency procedures or manoeuvres related to particular systems such as INS, FMS, or TCAS trainers, may be necessary.

Examples of devices acceptable for level C training:

(i) interactive training to include FMS trainers, and systems trainers;

(ii) qualified FSTDs;

(iii) specific systems incorporated in an FSTD; or

(iv) a static aircraft.

(4) Level D training

The use of an FSTD for manoeuvre training or an aircraft, as mentioned in CS FCD.420(a), may be specified for the conduct of specific manoeuvres or handling differences, such as HUD training or a manoeuvre (for example, no-flap landing, tail-rotor control failure, etc.). In such cases, the number of hours required should normally be limited to an appropriate number of hours within Level D training.

(5) Level E training

For safety reasons, if the training is performed in an aircraft, consideration must be given to high-risk situations, such as engine loss, by not shutting down the engine but rather by simulating the engine failure, using safe original-equipment manufacturer (OEM)-recommended methods, for example such as training mode, or by setting the affected engine to idle or zero thrust.

(c) Difference level — Checking

(1) Level A checking

Difference items should be included as an integral part of subsequent proficiency checks.

(2) Level B checking

Level B checking typically applies to particular tasks or systems, or equipment and procedures, such as INS, FMS, TCAS, or other individual systems or related groups of systems.

(3) Level C checking

An example of level C checking would be the evaluation of a sequence of manoeuvres demonstrating a pilot's ability to use a flight guidance control system or flight management system. An acceptable scenario would include each relevant phase of flight, but would not necessarily address manoeuvres that do not relate to the set up or use of the FD or FMS.

(d) Difference level — Currency

(1) Level A currency

Level A currency consists of a self-review as necessary.

(2) Level B currency

Self-review is usually accomplished by review of material provided by the operator to pilots. Such currency may be undertaken at an individual pilot's initiative; however, the operator identifies the material and the frequency or other situations in which the material should be reviewed. Self-review may be based on manual information, bulletins, aircraft placards, memos, class hand-outs, videotapes or DVDs, or other memory aids that describe the differences, procedures, manoeuvres, or limits for the aircraft that pilots are flying.

An example of how compliance with level B currency can be demonstrated would be the issuance of a bulletin which directs pilots to review specific operating manual information. Level B currency may be regained by reviewing the pertinent information, including bulletins, if that variant has not been flown within a specified period (for example, by flying that variant or by having completed a review of the differences in limitations and procedures within the past 90 days).

Another method of compliance would be pilot certification on a dispatch release that they have reviewed the pertinent information for a particular variant to be flown on that trip. However, level B currency cannot be achieved solely by reviewing the class notes taken by and at the initiative of an individual pilot, unless the adequacy of those notes is verified by the operator.

(3) Level C currency

An example of level C currency would be the establishment of INS currency, FMS currency, flight guidance control system currency, or other particular currency that is necessary for safe operation of an aircraft. Establishment of level C currency for an FMS would typically require a pilot to fly the aircraft within a specified period or to re-establish currency. Typically, currency constraints for level C are 90 days. However, some systems or procedures may require shorter time limits while others may be longer than the normal interval for proficiency checks, if the pertinent items are not always addressed by these checks.

Examples of methods acceptable for addressing level C currency are:

(i) pilot scheduling practices resulting in a pilot being scheduled to fly a variant with the pertinent system, equipment, or procedure within the specified period;

(ii) tracking of an individual pilot's flying to ensure that the particular system, equipment, or procedure has been flown within the specified period;

(iii) use of a higher-level method (level D or E currency).

Re-establishing level C currency

Means to re-establish currency include flights with an appropriately qualified TRI, completion of proficiency training, or a proficiency check. In the case of a non-current co-pilot, a designated PIC may be authorised to accompany a flight crew member to re-establish currency. In some instances, a formal re-familiarisation period in the actual aircraft with the applicable system operating while on ground may be acceptable. Such re-familiarisation periods are completed using an operator-established procedure under the supervision of a pilot designated by the operator.

(4) Level D currency

A typical application of level D currency is to specify selected manoeuvres, such as take-off, departure, arrival, approach, or landing, which are to be performed using a particular FGCS and instrument display system. A pilot either flies an aircraft equipped with the FGCS and particular display system sufficiently often to retain familiarity and competence within the specified currency period, or re-establishes currency.

Examples of methods acceptable for addressing level D currency are:

(i) tracking of flights by an individual pilot to assure experience within the specified currency period;

(ii) tracking of completion of specific manoeuvres based on logbook entries, ACARS data, or other reliable records to assure experience within the specified currency period;

(iii) scheduling of aircraft or crews to permit currency requirements to be met with verification that each pilot has actually accomplished the assigned or an equivalent schedule;

(iv) completion of pilot certification, proficiency check, proficiency training, ATQP evaluations, or other pertinent events in which designated manoeuvres are performed in a device or simulator acceptable for level D currency;

(v) use of a higher level method (level E currency).

Re-establishing level D currency

Means to re-establish currency include flight with an appropriately qualified TRI during training or in line operations, completion of proficiency training, a proficiency check, or ATQP proficiency evaluation.

(5) Level E currency

If FGCS, FMS, EFIS, navigation, or other system or manoeuvre experience is the basis for a currency requirement, approval of an operator's programme at level E includes use of those systems in conjunction with satisfactory take-off and landing requirements. In such an instance making three simulator take-offs and landings in VFR closed traffic without using the FGCS, EFIS, or FMS may not be sufficient to meet level E currency requirements.

When credit is permitted between aircraft of common flight characteristics, pertinent currency requirements for knowledge, skills, procedures, or other manoeuvres not related to take-off and landings may be necessary.

Re-establishing level E currency

Means to re-establish currency include flight with an appropriately qualified TRI during training or in line operations, completion of proficiency training, a proficiency check, or ATQP evaluation.

CS FCD.420 Evaluation process overview

(a) Six standard evaluations (T1, T2, T3, T4, T5 and T6) are defined under CS FCD.425. They are used to set MDRs, acceptable training programmes, and other provisions, and to define the type rating requirements as shown in the Appendix to CS FCD.420. One or more of these six evaluations are applied, depending on the objectives of the applicant, on the difference level sought, and on the successful outcome of any previous evaluations used in identifying MDRs.

(b) The following evaluations are used:

(1) The T1, T2 and T3 evaluations must be carried out to validate difference training, checking, and currency requirements between a base and a candidate aircraft that share the same basic design.

The results of these evaluations determine whether the aircraft is a new type or a variant, or a modification of an existing type or variant. The level of differences determines the minimum required training, checking, and currency requirements applicable to the candidate aircraft.

Additionally, when the applicant requests approval for a reduced initial type rating training course, based on previous experience on similar aircraft types (different type ratings), as per Part-FCL of the Aircrew Regulation, the T2 and T3 tests must be used for this purpose.

(2) The T4 evaluation is used to establish relief from the approved currency requirements based on the system, equipment, procedural, and manoeuvre differences between the aircraft.

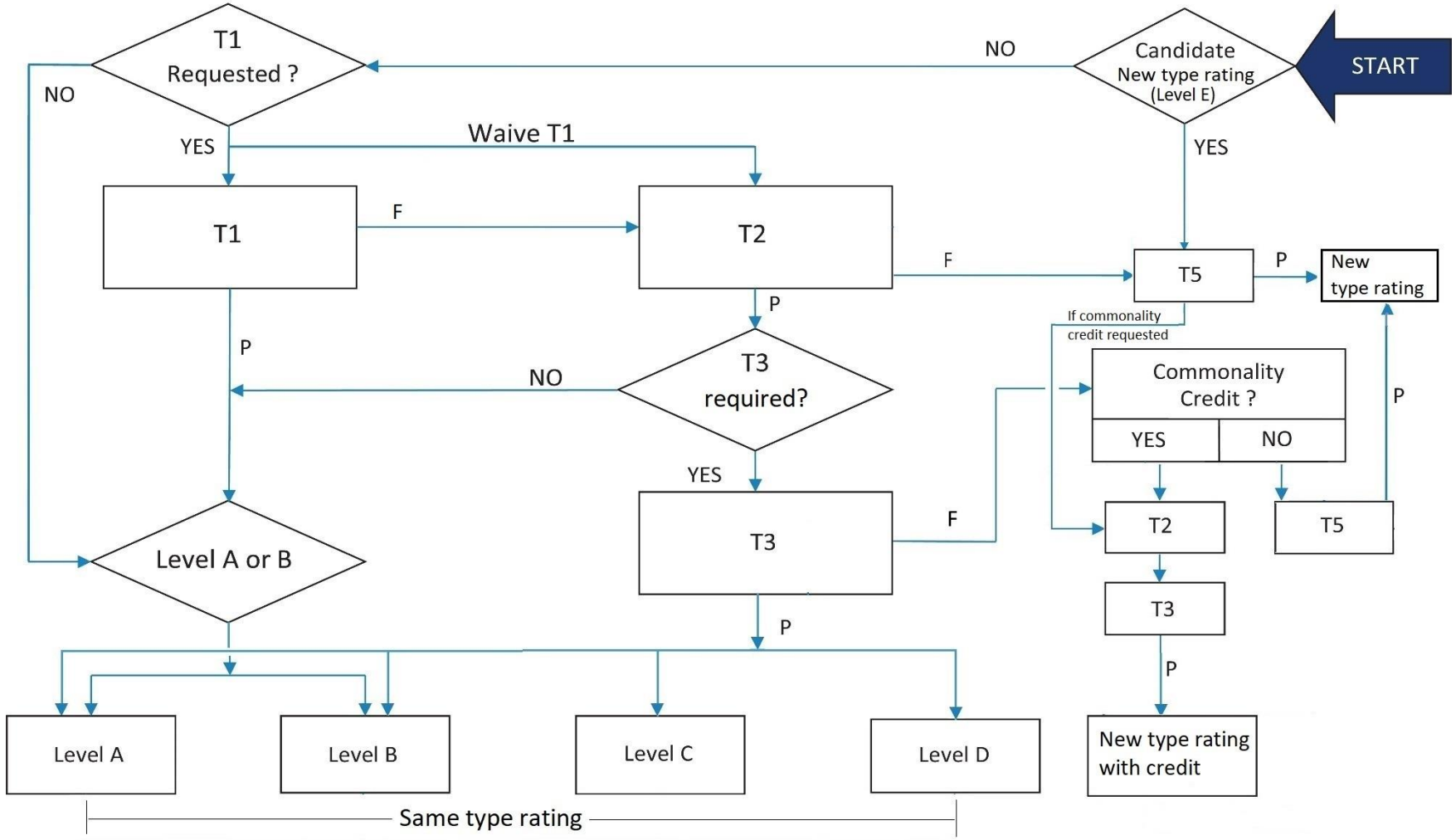
(3) The T5 evaluation is used to validate the minimum syllabus for the initial type rating training for a new aircraft TC. The results of a T5 evaluation determine the minimum syllabus for a pilot type rating applicable to that type of aircraft, including the associated TASE, and any additional prerequisites and limitations as provided for in the Aircrew Regulation.

(4) The T6 evaluation is used to evaluate the CTLC between different types of aircraft to allow credit for recent experience requirements as provided for in the Aircrew Regulation.

(c) The flow chart for the evaluation process is available in the Appendix to CS FCD.420.

[Issue No: FCD/2]

Appendix to CS FCD.420 Evaluation process



[Issue No: FCD/2]

GM1 FCD.420 Evaluation process overview

(a) For a new TC, the type of the aircraft must be determined (CS FCD.200) and the minimum syllabus for an initial type rating training course must be approved (CS FCD.300). The means of compliance for the approval of the OSD FC is, in this case, the T5 test.

In addition to the above, the applicant may request the approval of a reduction in the initial type rating training based on previous experience on similar aircraft types, as well as the approval of credit based on commonality for operations on more than one type. In this case, the T2 and T3 tests are used as means of compliance.

When applying for a change to an existing TC that has associated OSD FC, or for the issuance of an STC, the applicant assesses the impact of the design changes to the OSD FC. These changes may or may not determine a new variant, or, if the changes are significant, may determine a new type of aircraft for the purpose of pilot type rating. The applicable tests are, in this case, T1, or T2 and T3.

(b) T tests — General description and purpose

(1) T1 evaluation — Functional equivalence and training

When the differences between the base and the candidate aircraft are not significant from the pilot's perspective, and there is no impact on the handling qualities, a T1 test may be proposed. T1 tests the functional equivalence between the base and the candidate aircraft. Satisfactory crew performance during the test establishes that the differences between the base and the candidate aircraft are considered minor, and consequently, training requirements no greater than level B are assigned.

If a T1 test is waived or failed, the T2 and T3 tests may be used.

(2) T2 evaluation — Handling qualities comparison

The T2 test compares handling qualities, using predetermined flight manoeuvres to confirm that the candidate aircraft may be considered a variant of the base aircraft. If no major differences are found in the handling qualities, then the T2 test is successful, and a T3 test may be performed from the base to the candidate aircraft, as appropriate, to validate the difference levels up to level D.

T2 manoeuvres are performed in the base aircraft or in a base aircraft FFS, to establish a baseline, and then in the candidate aircraft for comparison.

The T2 evaluation profile is established via an applicant's proposal, with EASA agreement, based on the differences that may potentially affect the handling qualities between the base and the candidate aircraft. The T2 test consists of a comparison between the selected pilot type rating proficiency check manoeuvres that are performed first in the base aircraft and then in the candidate aircraft. An approved level D FFS may be used in place of the base aircraft, and when safety considerations dictate so, in place of the candidate aircraft.

Although T2 evaluations should always be carried out in the candidate aircraft, some portions that may significantly affect crew safety (such as flight control failures) may be conducted in an FSTD suitable for the test. Subject pilots are observed and provide feedback on the degree of difficulty in performing manoeuvres in the candidate aircraft compared to the base aircraft.

When designing the T6 test, the applicant should also consider the effects on the take-off and landing manoeuvres of the following factors:

(i) the aircraft weight;

(ii) the aircraft centre of gravity (CG); and

(iii) the take-off and landing crosswinds.

(3) T3 evaluation — System and equipment differences and training

The test has the purpose of identifying system, equipment, procedural, and manoeuvre differences, and of validating the proposed familiarisation training or difference training, checking, and currency requirements.

A successful T3 test permits to assign A, B, C, or D difference training levels. The same type rating may be assigned if no training differences greater than level D exist, or a different type rating if level E training differences are identified.

Normally, for level A and B differences, a two-way evaluation is not necessary. Typically, a T3 evaluation to validate level C and D differences is valid in one direction only (base to candidate aircraft). However, the applicant may request that a T3 evaluation be conducted in both directions (base to candidate aircraft, and candidate to base aircraft). The MDR (for variants only) and DR tables should reflect the validated difference levels accordingly.

The T3 test is also used to validate a proposed reduced initial type rating training course based on previous experience on similar aircraft types. In this case, the purpose of the test is to validate and approve the proposed content and duration of the reduced initial type rating training. The result is a reduced initial type rating training course (level E differences or 'new type').

(4) T4 evaluation — Currency validation

T4 tests are not shown in the evaluation process, since they are only triggered when the applicant seeks relief from the system, equipment, procedural, and manoeuvre currency requirements as set in the DR tables.

(5) T5 evaluation — Minimum syllabus validation for a new type rating

The T5 test is appropriate and required for a new TC, to establish and approve the minimum syllabus for pilot type rating training.

Evaluation subjects are pilots who meet the prerequisites established under Part-FCL of the Aircrew Regulation for obtaining a type rating, and who are checked (through a skill

test) in accordance with Part-FCL, after having undergone the proposed full type rating training syllabus.

(6) T6 evaluation — CTLC

T6 evaluation subjects are pilots who are type-rated and experienced on the base aircraft. They are evaluated on their ability to manually fly, with no previous training, the candidate aircraft through take-off, initial climb, as well as approach and landing (including the establishment of the final landing configuration). When designing the T6 test, the applicant should consider the effects on the take-off and landing manoeuvres of the following factors:

(i) the aircraft weight;

(ii) the aircraft CG; and

(iii) the take-off and landing crosswinds.

[Issue No: FCD/2]

CS FCD.425 Evaluation process and evaluation descriptions

Definition of the evaluation process and evaluation descriptions:

(a) Difference level evaluations

Tests T1 to T5 are used to evaluate a candidate aircraft on the pilot type rating, minimum syllabus, operational evaluations, and credit for operations on more than one type or variant. The T6 evaluation may be used to establish the CTLC between related aircraft when not previously demonstrated in a T2 evaluation.

One or more of these six evaluations are applied depending on the objectives of the applicant, difference level sought, and the successful outcome of any previous evaluations used in identifying MDRs.

(b) Steps of the evaluation process

When an evaluation is carried out, the T1, T2, and T3 tests compare the candidate aircraft with the base aircraft. DR tables and MDR tables (between variants of aircraft types) are established, which address the differences between the base and the candidate aircraft.

To establish data for a direction that was not previously assessed, an additional evaluation using the above T tests may be carried out based on an application. In general, level A and B differences do not require two-way testing.

(c) Prior to the evaluation:

(1) representative training programmes, difference programmes and the necessary supporting training material and information are developed as needed;

(2) the proposed MDRs and DRs are identified;

(3) the applicant proposes which evaluations and criteria apply; evaluations may be combined;

(4) the applicant proposes which aircraft, variants, simulation devices, or analysis is needed to support the evaluation;

(5) the aircraft, variants, training aids, FSTDs, or analyses that are needed to support the evaluation are identified;

(6) the applicant proposes test procedures, schedules, and specific interpretation of the possible results.

(d) Evaluation purpose and application

The evaluation purpose and application are summarised in the table below:

	EVALUATION PURPOSE	APPLICATION
T1	Establishes functional equivalence	Sets levels A/B
T2	Compares handling qualities	Pass permits T3, and A/B/C/D; failure sets level E and requires T5 and/or, if required, T2 + T3 for commonality credit
T3	Evaluates differences and sets training or checking requirements	Pass sets levels A/B/C/D; failure sets level E and requires T5 and/or, if required T2 + T3 for commonality credit
T4	Revises currency requirements	
T5	Sets training or checking for new or 'E' aircraft	Sets level E
T6	Evaluates CTLC	Sets recent experience requirements

A detailed description of the purpose, process, and application of each of the six difference level evaluations is as follows:

(e) Evaluation 1 (T1) — Functional equivalence

Evaluation purpose: to validate:

— the functional equivalence between the base and the candidate aircraft; and

— the level differences.

Evaluation subjects: as established by EASA based on a proposal by the applicant.

Evaluation process: administer appropriate portions of a proficiency check as agreed by EASA based on a proposal by the applicant. This evaluation may be carried out in an FSTD with the appropriate capability to achieve the training objectives, or an aircraft, as appropriate. Only those portions of the proficiency check which are affected by the differences from the base aircraft need to be evaluated. For minor level A or B differences, this evaluation may be conducted through analysis.

(1) Successful evaluation validates that the base and candidate aircraft are sufficiently alike, to assign level A or B differences.

(2) Failure of an evaluation generally requires completion of the T2 and T3 evaluations. Normally, re-evaluation is not appropriate; however, at the request of the applicant, re-evaluation may be accepted by EASA.

(3) EASA may waive the T1 test if a T2 test, or T2 and T3 tests are to be performed.

(f) Evaluation 2 (T2) — Handling qualities comparison

Evaluation purpose: to evaluate handling qualities using specific flight manoeuvres, to determine whether level A, B, C, or D training is appropriate to be validated via a T3 test, when required. At the discretion of EASA, the T2 evaluation may be completed through analysis when

it is assessed that the nature of the proposed design changes does not affect the handling qualities of the candidate aircraft.

The test has also the purpose of validating the commonality, in terms of handling qualities, between two different aircraft types, when seeking approval for a reduced type rating training course.

Evaluation subjects: as established by EASA based on a proposal by the applicant.

Evaluation process: compare the handling qualities during a set of agreed manoeuvres. This evaluation is conducted in the base and the candidate aircraft, unless safety considerations dictate the use of an FFS, as defined in CS FCD.415(a) for Level E. Manoeuvres that are performed in the aircraft require a safety pilot who may only aid in areas not related to the evaluation. Normal crew call-outs and coordination are permitted; however, the safety pilot may not assist in any other manner unless directly related to a safety- of-flight issue, for example, no 'coaching' or instructing is permitted.

Successful evaluation: validates that the base and the candidate aircraft are sufficiently alike in handling qualities to permit the applicant to assign A, B, C, or D training levels. A successful T2 evaluation permits a subsequent T3 evaluation to assess the system differences and equipment differences, the training, or checking to be conducted. If a subsequent T3 test is not requested, level A or B training may be assigned.

When a T2 test is otherwise successfully completed, an FFS or aircraft for manoeuvre training, as mentioned in CS FCD.415(a), may be proposed within level D training for performing specific manoeuvres.

Failure of the evaluation: failure of the T2 evaluation indicates that major differences exist in handling qualities during the critical phases of flight (such as take-off or landing), or that numerous less critical but still significant differences in handling qualities exist between the base and the candidate aircraft. A failure of a T2 evaluation requires to assign level E training. Also with level E training, a separate type rating is normally assigned to the candidate aircraft being evaluated. Normally, a T2 re-evaluation is not appropriate; however, a re-evaluation may be proposed.

(g) Evaluation 3 (T3)

This is a test of the system and equipment differences, and validation of the proposed difference training and checking or of the reduced type rating training, based on credit for previous experience on similar aircraft types.

Evaluation purpose: to evaluate the proposed difference training, and the checking and training devices at level A, B, C, or D. T3 is also used to evaluate reduced type rating training, checking, and currency, as well as training devices for reduced initial type rating training, based on credit for previous experience on similar aircraft types.

Evaluation subjects: pilots designated by EASA, trained and experienced in the base aircraft and having been given the proposed difference training or reduced initial type rating training for the candidate aircraft.

Evaluation process: if level A or B training is deemed appropriate, T3 may be completed by analysis. If level C or D training is deemed appropriate, administer appropriate portions of a proficiency check in system trainers or an FSTD for manoeuvre training, or in an aircraft, as mentioned in CS FCD.415(a). Following the completion of the proficiency check, a simulated LOF check may be administered by EASA. This LOF check is normally administered in an FSTD, but may be conducted in a test aircraft, as appropriate.

Successful evaluation: permits assignment of level A, B, C or D training and validates the proposed differences training or checking programmes.

Failure of evaluation: indicates that either the proposed training is inadequate and is in need of revision to qualify for a re-evaluation opportunity or T3 failure may require the assignment of level E training. With level E training a separate type rating is normally assigned to the candidate aircraft. Re-evaluation may be proposed.

(h) Evaluation 4 (T4) — Currency validation

Evaluation purpose: used to evaluate relief from established currency requirements. This currency evaluation addresses systems, equipment, procedural and manoeuvring differences between aircraft, and does not address the recent experience requirements for take-off, approach, and landing, as mentioned in FCL.060(b) of Part-FCL.

Evaluation subjects: as established by EASA based on a proposal by the applicant.

Evaluation process: as established by EASA based on a proposal by the applicant, but normally involves a process for validating a specific currency proposal made by the applicant or alternative evaluation methods such as direct observation of proficiency checks or LOF FSTD sessions.

Successful evaluation: validates that the proposed currency provision(s) is (are) accepted as a means of compliance with the applicable requirements and provides an equivalent level of safety. T4 may be completed as part of an initial certification or evaluation process or as a follow-up of evaluation.

Failure of evaluation: indicates that the proposed currency requirements do not provide an equivalent level of safety and may lead to re-evaluation as determined by EASA based on a proposal by the applicant, if appropriate.

(i) Evaluation 5 (T5) — Initial or transition training programme validation

Evaluation purpose: used to validate training courses at level E (new type rating). In accordance with the pilot prerequisites for the subject training course, training courses to be evaluated is (are) either a full type rating course(s) or reduced type rating courses with credit for previous experience on similar aircraft types.

Evaluation subjects: as established by EASA based on a proposal by the applicant, who meet the prerequisites that are established under Part-FCL for issuing a type rating.

Evaluation process: as established by EASA based on a proposal by the applicant, but normally involves evaluation subjects receiving the proposed training and EASA observing or administering the checking upon completion of the training. A T2 and T3 evaluation may be performed if credit for commonality is requested. This evaluation may be structured to evaluate specific commonality objectives as established by EASA based on a proposal by the applicant.

Successful evaluation: validates that the proposed training satisfies the appropriate requirements.

Failure of the evaluation: indicates that the proposed training programme requires changes to satisfy the appropriate requirements. A re-evaluation, as established by EASA based on a proposal by the applicant, would normally be required.

A T5 evaluation may give credit for an applicable evaluation that is carried out during T2 and T3 evaluations in the event of T2 or T3 evaluation failures.

(j) Evaluation 6 (T6) — CTLC

Evaluation purpose: to establish credit between the base and candidate aircraft towards the recent experience requirements for take-off and landing.

Evaluation subjects: pilots designated by EASA, neither trained nor experienced in the candidate aircraft.

Evaluation process: the evaluation subjects are first provided with refresher training in the base aircraft to establish a baseline of proficiency. This training may be completed in the aircraft or in an approved level C or D FFS. The subject is then evaluated in the candidate aircraft, without any training in it, by accomplishing a minimum of three take-offs and landings without use of the autopilot. It may not be practical to conduct some evaluations in an aircraft, and in such cases, an FFS may be used to conduct these evaluations. The evaluation subjects should be evaluated on the ability to fly the aircraft manually through take-off, initial climb, approach, and landing (including the establishment of the final landing configuration).

Successful evaluation: validates that the proposed training satisfies the appropriate requirements, and that an equivalent level of safety can be maintained when full or partial credit for take-offs and landings is given between the base and candidate aircraft.

Failure of the evaluation: indicates that an equivalent level of safety cannot be maintained when either full or partial credit for take-offs and landings is given between the base and candidate aircraft.

(k) Disposition of evaluation results

Evaluation results should be summarised by EASA and sent to the applicant, and the outcome should be documented in the OSD FC.

Prior to the issuance of the OSD, a statement declaring the results of the type rating determination may be issued.

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