

Certification Memorandum

Minimum Syllabus of Pilot Type Rating for VTOL-capable aircraft

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Regulatory requirement(s): CS-FCD Issue 2: CS-FCD.200, CS-FCD.300, CS-FCD.425

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Log of issues

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1. Introduction

1.1. Purpose and scope

The purpose of this Certification Memorandum is to provide guidance to applicants for the Type Certificate or Restricted Type Certificate of a VTOL-capable aircraft, on how to carry out a gap analysis to develop one or more customised syllabi for Pilot Type Rating to be approved as part of the OSD FCD.

1.2. References

It is intended that the following reference materials be used in conjunction with this Certification Memorandum:

Reference	Title	Code	Issue	Date
1	Certification Specifications and Guidance Material for Operational Suitability Data (OSD): Flight Crew Data	CS-FCD	2	15/09/2021
2	Notice of Proposed Amendment 2022-06	NPA 2022-06	1	30/06/2022
3	Regulation (EU) No 1178/2011 – Annex I (Part-FCL)	PART-FCL	N/A	As last amended

1.3. Abbreviations

CM	Certification Memorandum
CPL(A)	Commercial Pilot License for Aeroplanes
CPL(H)	Commercial Pilot License for Helicopters
CS	Certification Specification
EASA	European Union Aviation Safety Agency
FC	Flight Crew
FCD	Flight Crew Data
FCL	Flight Crew Licencing
GM	Guidance Material
OSD	Operational Suitability Data
TC	Type Certificate
TNA	Training Needs Analysis

1.4. Definitions

VTOL-capable aircraft	A power-driven, heavier-than-air aircraft, other than aeroplane or rotorcraft, capable of performing vertical take-off and landing by means of lift or thrust units used to provide lift during take-off and landing.
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2. Background

CS-FCD Subpart B establishes the aircraft for which a type rating is required, the process to address new types and variants, their associated ratings and changes thereto. CS FCD.200(a)(3) provides that an aircraft other than those listed in subparagraphs (a)(1) or (a)(2) will be subject to a pilot type rating either upon request of the applicant or if EASA determines that it requires type rating training for its safe operation, based on its operational experience, data, handling characteristics, performance, or level of flight deck technology.

Based on the above, and considering the novelty, complexity as well as the lack of operational experience and data associated with VTOL-capable aircraft, **EASA has determined the need of a pilot type rating for manned VTOL-capable aircraft¹**.

The development of comprehensive flight crew licensing requirements (ab initio training) for manned VTOL-capable aircraft is under way. However, it is anticipated that some manned VTOL-capable aircraft manufacturers/operators will be ready to start operations before the adoption and applicability of the associated implementing and delegated acts.

Hence, to ensure that the start of operations with manned VTOL-capable aircraft in the near future will be supported by the availability of appropriately qualified and licensed flight crews, NPA 2022-06 (published in June 2022) proposes to introduce a new Article 4f in Commission Regulation (EU) No 1178/2011. That article would allow CPL(A) and CPL(H) holders to be issued with a VTOL-capable aircraft type rating endorsed on their license, after completion of a type-rating training. This scheme (VTOL-capable aircraft type ratings for existing CPL(A) and CPL(H) holders) would serve as a bridging solution until a final comprehensive Part-FCL framework would be in place. Furthermore, the content of Article 4f would be kept as a permanent arrangement, so that CPL(A) or CPL(H) holders would not need to obtain a separate pilot licence for manned VTOL-capable aircraft, but could instead simply add a VTOL-capable aircraft type rating to their existing licence.

For the training, skill test and proficiency check for a Type Rating, Appendix 9 of Part-FCL is applicable in principle. However, the syllabus to be established by the applicant for the type rating training needs to follow parts from different sections, as necessary (mainly helicopter, aircraft and powered lift).

It is therefore necessary that applicants for a Type Certificate (TC) of VTOL-capable aircraft carry out a gap analysis to develop one or more customised syllabi to be approved as part of the OSD FC. However, there is currently no advisory or guidance material to substantially guide an applicant for a TC along these lines.

3. EASA Certification Policy

3.1. EASA Policy

Based on the considerations above, CS-FCD is applicable to VTOL-capable aircraft and constitutes part of the certification basis when an EASA TC or Restricted TC is sought. The applicability is based on the provisions in CS FCD.200(a)(3)(ii), with EASA's determination that VTOL-capable aircraft are subject to a pilot type rating.

¹ Remote pilots of “unmanned VTOL-capable aircraft” are not affected by this Certification Memorandum

The requirements established in CS FCD.300, CS FCD.420 and CS FCD.425 are therefore applicable to the initial approval of an OSD FC for VTOL-capable aircraft.

Due to the specificities of the VTOL aircraft category and to the abovementioned limitations of Appendix 9 to Part-FCL, where no detailed tables exist for this category, the means of compliance and guidance material in paragraphs 3.1.1. and 3.1.2. of this CM apply.

3.1.1. Additional guidance for compliance with CS FCD.300

The following guidance should be followed, complementing the content of **GM1 FCD.300**:

1. *The applicant should have an appropriate methodology and/or tools to perform an analysis of the training needs in order to properly identify the elements composing pilot type rating training and checking, based on the specific characteristics of the aircraft (cockpit environment, flight controls logics, handling characteristics and qualities, manoeuvres, operating limitations, failure conditions, ...).*
2. *Appendix 9 to Part-FCL should be used by the applicant as a general reference in terms of required detailed training elements, based on the above-mentioned analysis, using data from the aeroplanes, helicopters and powered-lift tables therein contained.*
3. *Based on the content of the Appendix 9, a coherent detailed table should be developed by the applicant, in addition to or in combination with the table described in GM1 FCD.300(a) and should be included in the OSD FC.*
4. *The detailed table for training and checking, as referred to in GM1 FCD.300(a), should include additional training elements, and where necessary specifically for aeroplane pilot licence and/or helicopter pilot licence holders, as to obtain the competence to operate the type.*
5. *Specific experience requirements and prerequisites for the issuance of the type rating should be identified, assessed, and included in the OSD FC for (A) and/or (H) licences holders. The provisions in FCL.720.A, FCL.720.H and FCL.720.PL should be used as a basis.*

The TNA and the detailed table containing the training elements should be proposed to EASA as compliance documents, included in the OSD FC certification plan.

3.1.2. Guidance for compliance with CS FCD.425

With reference to the evaluation of the proposed minimum type rating training syllabus and considering the eligibility to the type rating of (A) and/or (H) license holders, the following guidance should be followed when demonstrating compliance with **CS FCD.425(i) - Evaluation 5 (T5): initial or transition training programme validation**:

When proposing/selecting evaluation subjects to EASA to participate in the T5 test, pilots representative of aeroplane and/or helicopter licenses holders should be identified, as necessary.

3.2. Who this Certification Memorandum affects

This Certification Memorandum affects applicants for a TC or restricted TC of a VTOL-capable aircraft.

4. Remarks

1. This EASA Proposed Certification Memorandum will be closed for public consultation on the 10th of March 2023. Comments received after the indicated closing date for consultation might not be taken into account.
2. For any question concerning the technical content of this EASA Certification Memorandum, please contact:
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