



Operational Suitability Data (OSD) Flight Crew

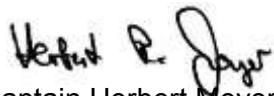
Diamond Aircraft

DA42

01 November 2014

Diamond 42

Twin Star



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Revision Record

Revision No.	Content	Date
OEB Report, Rev. 1	DA42 OEB Report	13 Dec 2010
OSD FC Original	Replaces the DA42 OEB Report and establishes Operational Suitability Data (OSD)	01 Nov 2014

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Acronyms

AFM	Aeroplane Flight Manual
AMC	Acceptable Means of Compliance
ATO.....	Approved Training Organisation
CPD	Common Procedures Document for conducting Operational Evaluation Boards, dated 10 June 2004
CS-FCD	Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data CS-FCD, Initial issue, 31 January 2014
CS-FSTD(A)	Certification Specifications for Aeroplane Flight Simulation Training Devices of 4 July 2012
EASA	European Aviation Safety Agency
EECU	Electronic Engine Control Unit
EFIS	Electronic Flight Instrument System
FADEC.....	Full Authority Digital Engine Control
FNPT.....	Flight & Navigation Procedures Trainer
FSTD.....	Flight Simulation Training Device
FTO.....	Flight Training Organisation
IFR	Instrument Flight Rules
JAA	Joint Aviation Authorities
JAR-FCL 1	Joint Aviation Requirements Flight Crew Licensing (Aeroplanes)
MDU.....	Multifunction Display Unit
ME	Multi-Engine
MEP	Multi-Engine Piston
NAA.....	National Aviation Authority
OEB	Operational Evaluation Board
OSD	Operational Suitability Data
OTD	Other Training Device
Part-FCL	Annex I to Commission Regulation (EU) No 1178/2011 of 3 November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (as amended)
PIC	Pilot In-Command
PPL	Private Pilot License
SP	Single-Pilot
TASE.....	Training Areas of Special Emphasis
TRTO	Type Rating Training Organisation
VFR.....	Visual Flight Rules

Preamble

1. Introduction

Where references are made to requirements and where extracts of reference texts are provided, these are at the amendment state at the date of evaluation or publication of this document. Users should take account of subsequent amendments to any references, in particular concerning requirement for civil aviation aircrew and air operations.

Determinations made in this document are based on the evaluations of specific configurations of aircraft models, equipped in a given configuration and in accordance with current regulations and guidance.

The provisions contained in this document apply to all DA42 series aircraft listed in the EASA Type Certificate Data Sheet No. TCDS A.005 and TCDS A.513 (both dated 16 July 2010) at the time of the evaluation (i.e. DA 42, DA 42 M, DA 42 NG, DA 42 M-NG).

Modifications and upgrades to the aircraft evaluated require additional OSD assessment for type designation, training / checking / currency, operational credits, and other elements within the scope of the OSD evaluations.

In accordance with Commission Regulation (EU) No 69/2014 of 27 Jan 2014, the Operational Suitability Data contained in this document are identified as follows:

[M]..... mandatory Operational Suitability Data, bearing the status of rule (see GM No 3 to 21A.15(d))

[AMC] non-mandatory Operational Suitability Data, bearing the status of Acceptable Means of Compliance (see GM No 3 to 21A.15(d))

2. Background

On request by the EASA Certification Directorate an OEB catch-up operational evaluation was concluded in December 2010 to assess pilot training for the Diamond 42 (DA42) aeroplane.

The evaluation was based on the CPD, the Memorandum of Understanding (MoU) between EASA and European NAAs, and requirements of JAA JAR-FCL 1. The evaluation included assessments of approved training courses, interviews with NAA's and training organisations, a visit to the Diamond Aircraft Factory, and participation in a flight on the DA42.

The scope of the DA42 operational evaluation comprised the type of aircraft categorisation and the evaluation of pilot training.

3. Training on Advanced Twin-piston Aeroplanes vs. Conventional Twin-piston Aeroplanes

The DA42 is an advanced twin-piston aeroplane. It has Electronic Flight Instrument System (EFIS) displays and single-lever engine operation, with automatic engine control and automatic feathering facilities. It is inevitable that the DA42 will be used for initial training. Its operation may well be much simpler than that of a conventional twin-piston aeroplane, which leaves the student in a vulnerable position when reverting back to a more conventional aeroplane. The Multi-Engine Piston (MEP) syllabus is based upon the theory of conventional aeroplane operation and should not be over-simplified because of the advance in technology. It is important that MEP training emphasises the theoretical differences between conventional and advanced systems. Specific differences training is required before the holder of a MEP class rating can exercise the privileges of the rating on another MEP aeroplane. Such training should include airborne operation and be conducted by an FTO or a TRTO.

4. Operational Evaluations – Group Composition

Name	Organization	Function
Herbert Meyer ²⁾	EASA	EASA Section Manager
Evan Nielsen ¹⁾	EASA	EASA Flight Standards Manager
Poul B. Rasmussen ¹⁾	EASA	OEB Chairman
Philip Winternitz ¹⁾	EASA	OEB Team Member
Joachim Wirths ¹⁾	EASA	OEB Team Member

1) DA42 OEB evaluation

2) DA42 OSD transfer

Operational Suitability Data (OSD) – Flight Crew

1. Aircraft Type Designation and Pilot License Endorsement [M]

With reference to Part-FCL, FCL.010 ('type of aircraft') and GM1 FCL.700, the DA42 has been evaluated for aircraft categorisation and license endorsement.

The DA42 series aircraft have been assessed Class Rating MEP (land), requiring differences training when transitioning to/from other aircraft within the same class rating.

The license endorsement is established as "**MEP (land)**".

EASA Type Rating & License Endorsement List – Aeroplanes:

Manufacturer	Aircraft Model / Name	License Endorsement	Variants	Complex	SP / SP HPA / MP	OEB FC REPORT / OSD FC available	Remarks
Diamond Aircraft Industries GmbH	DA 42 (DA 42, DA 42 M, DA 42 NG, DA 42 M-NG)	MEP (land)	—	—	SP	X	Class Rating MEP (land) OSD FC DA-42 (Twin Star), dated 01 Nov 2014

Differences training is required between the DA42 and other aircraft of the same class rating MEP (land).

2. Aircraft Specifics

The DA42 Series is a modern glass-cockpit and composite structure aeroplane, twin-engine, four seat, low wing mono-plane with retractable tricycle landing gear. The aeroplane is propelled by two piston diesel engines driving 3-blade propellers. It has a cantilever wing and a 'T' tail.

The minimum crew is 1 pilot, maximum passenger seating capacity is 3 persons. The aeroplane can be operated Day/Night, VFR/IFR and into known or forecast icing conditions.

3. Specifications for Pilot Training

3.1 Prerequisites

In accordance with Part-FCL, FCL.720.A, minimum experience requirements for a SP ME aeroplane are 70 hours as PIC on aeroplanes.

3.2 Theoretical Knowledge and Flight Instruction

The DA42 is an advanced twin-piston aeroplane, with EFIS displays, integrated avionics (Garmin 1000), single-lever engine operation with electronic engine control, and automatic feathering facilities.

[AMC] DA42 training should adequately support training of these advanced technologies.

Part-FCL, FCL.725.A establishes requirements for theoretical knowledge and flight instruction for the issue of a SP ME class rating on aeroplanes.

[M] The requirements contained in Part-FCL, FCL.725.A.(a) are applicable to candidates when extending privileges to fly the DA42 either following differences or familiarisation training, or an initial MEP class rating.

3.3 Initial MEP (land) Class Rating Training on DA42

Part-FCL, Appendix 9 describes the training, skill test and proficiency check for class ratings.

[AMC] In accordance with Part-FCL, Appendix 9, A.4., the DA42 training syllabus should include a breakdown of flying and theoretical knowledge instruction in a week-by-week or phase presentation, a list of standard exercises, and a syllabus summary. In particular, theoretical knowledge instruction and practical training should be phased in a manner, so as to ensure that candidates are able to apply the theoretical knowledge to the practical training. Arrangements should be made so that problems encountered in instruction can be resolved during subsequent training.

[AMC] The theoretical training should be performed over a period of at least 2 days. Pilots without any previous experience with EFIS, FMS or integrated avionics should receive additional training, which may be completed before DA42 training, or integrated in the DA42 training. FNPTs and OTDs form part of the training, especially with regards to the Garmin 1000 avionics system. Training should include the characteristics of an “all electric aeroplane” which needs electrical power to operate the engines, and should include the basics of a FADEC operated powerplant. The human factors aspects of complex avionics/EFIS in VFR and IFR environment should be specifically addressed.

3.4 Differences training to/from the DA42 and aeroplanes within the same class rating

[AMC] Differences between the DA42 and other aeroplanes within the same class rating may be extensive and must be taken into account for training when extending privileges in accordance with Part-FCL, FCL.710 to/from another MEP (land) aeroplane.