

**EUROPEAN AVIATION SAFETY AGENCY / JOINT AVIATION
AUTHORITIES**

JOINT OPERATIONAL EVALUATION BOARD REPORT



**Cessna Aircraft Company
C560 XLS+**

06/05/09

European Aviation Safety Agency
Postfach 10 12 53
D-50452 Köln, Germany

Cessna has requested a JOEB for the evaluation of the **C560 XLS+**

The following subgroups have been established:

- FCL & OPS Subgroup
- MMEL Subgroup

This JOEB Report covers the FCL & OPS activities.

The simulator was qualified by UK-CAA

No other FSTD has been assessed by the JOEB.
The MMEL is presented in a separate document.

Revision Record

Revision	Section	Publication/date
Original	All	Original Draft 12 03 09
Original	All	Original Final 06 05 09

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EASA Operation Evaluation Board

FCL & OPS Subgroup

JOEB Chairman
Jean-Luc Renard
(DGAC/F-Flight Inspector)

Jean Baril
(EASA – JOEB Co-ordinator)

Jean-Luc Renard– JOEB Chairman

Original dated: 06 05 09

C560 XLS+ JOEB Composition

Subgroup	Name	Organisation
OPS/FCL	1 Jean Luc Renard 2. Len Kaufman	DGAC/France TCCA
MMEL Focal Point:	1. Colin Hancock 2. Jean-Luc Renard	1. EASA 2 DGAC France
Simulator Focal Point:	N/A	N/A

Preamble

The C560 XLS+ Joint Operational Evaluation has been performed as a joint evaluation with Transport Canada using the Common Procedures Document, EU-OPS and JAR- FCL1 as the basis for the evaluation.

This report:

- Specifies the EASA/JAA minimum requirements for the Initial Pilot Type Rating training course, Checking and Recent experience on the C560 XLS+.
- Specifies the EASA/JAA minimum requirements for the Differences Courses: XLS+ to XLS and XLS+ to XL versions. The reverse courses were accepted by analysis.

EASA recommends the approval of the C560 XLS+ proposed training course for initial type rating and the granted Endorsement is:

C560 XL/XLS

NOTE: Whilst this report was written for Commercial Operation, the JOEB recommends that non Commercial Operators also follow the requirements and recommendations in this report.



Evan Nielsen

Head of Certification Flight Standards
EASA Certification Directorate

Date: 06/05/09

Acronyms

AC	Advisory Circular
AFM	Airplane Flight Manual
AFCS	Automatic Flight Control System
AGM	Advanced Graphic Modules
AMC	Acceptable Means of Compliance
AP	Autopilot
AT	Auto throttle
CCD	Cursor Control Device
CCW	Counter Clock Wise
EASA	European Aviation Safety Agency
ECL	Electronic Check List
EDM	Emergency Descent Maneuver
EFIS	Electronic Flight Instrument System
EGPWS	Enhanced Ground Proximity Warning System
EVS	Enhanced Vision System
FAA	Federal Aviation Administration
FGS	Flight Guidance System
FMS	Flight Management System
FSB	Flight Standardization Board
GPWS	Ground Proximity Warning System
HUD	Head Up Guidance Display
IEM	Interpretative / Explanatory Material
I-NAV	Integrated Navigation Display
IPT	Integrated Procedure Trainer
IRS	Inertial Reference System
JAA	Joint Aviation Authority
Lab session	Ground training with use of IPT
LIFUS	Line Flying Under Supervision
MAU	Modular Avionics Units
MCDU	Multi-Function Control Display Units
MDU	Multi-functions Display Units
MKB	Multi-functions Key-board
NAA	National aviation Authority
NADP	Noise Abatement Departure Procedure
ND	Navigation Display
ORI	Operational Review Item
PDU	Primary Display Unit
RAT	Ram Air Turbine
RWY	(-type approaches) Runway
SFD	Secondary Flight Display
SFI	Synthetic Flight Instructor
SOP	Standard Operating Procedure
TCAS	Traffic Alert and Collision Avoidance System
TCCA	Transport Canada
TRTO	Type Rating Training Organization
VGS	Visual Guidance System
VNAV	Vertical Navigation
V-MDA	(-type approaches) Vertical-Minimum Descent Altitude
WOW	Weight on Wheels

The following Operational Review Items (ORIs) have been issued by the JOEB as a basis for the Cessna C560 XLS+ evaluation:

- | | |
|----------|--|
| ORI n°1 | Type Rating determination, training, checking, and recent experience requirements. |
| ORI n°2 | EU-OPS/JAR-OPS 1 Subpart K/L |
| ORI n°4 | Master Minimum Equipment List (MMEL) |
| ORI n°5 | Simulator qualification |
| ORI n°6 | Operational evaluation |
| ORI n°10 | Electronic Flight Bag (not completed) |

The JOEB recommends the acceptance of this report.

Operational Evaluation Report / FCL & OPS Subgroup

1. Purpose and applicability

This report addresses:

- Recommendations for initial Training,
- Recommendations for checking,
- Recommendations for recent experience
- Recommendations for Differences course from XLS+ to XLS and XL

1.1 Overview

The C560 XLS+ is a new version of the C560 XL/XLS.

- The JOEB have performed a T5 test by following the full Pilot Type Rating Training Course from September 22 to October 8, 2008 at FSI Training Centre in Wichita (KS-USA)
- The skill test was performed in the simulator, followed by 4 take off and landings in the aircraft (ORI n°1).
- The JOEB pilot performed 3 Operational Suitability flights (ORI n°8) on 17th November 2008
- The JOEB pilot attended the XLS+ to XLS differences course from 18 to 19 November 2008.

1.2 Pilot Initial Type Rating Training Course

The JOEB performed the T5 test, from September 22 to October 8, 2008. The JOEB received the C560 XLS+ initial pilot ground training course, provided by FSI, Wichita, Kansas, USA. Several instructors gave both the classroom instruction and the SIT (System Integration Training) sessions on Fix Base Flight Simulator. The System Integration Training is designed to reinforce classroom learning, as well as to introduce crews to the use of the Collins ProLine 21 System and to the practical operation of the aircraft.

This training course referenced as C560 XLS+ Initial Type Rating Training Course is recommended for approval by the JOEB.

2. Pilot Type Rating Requirements

The C560XLS+ is accepted as a variant to the existing C560XL and the C560XLS and it is entered in the type rating list as a new model maintaining the same Licence Endorsement for all models

C560 XL/XLS

3. Specific operational limitations

3.1 Minimum Height for use of autopilot:

As specified in the approved AFM.

3.2 Aircraft approach and circling category

As per Appendix 2 to EU-OPS/JAR-OPS 1.430(c), the C560 XLS+ is **Category C**.

3.3 Normal Procedures

The normal procedures check list provided by FSI has been used throughout this training.

3.4 Abnormal and Emergency procedures

The pilot's abbreviated Checklist (CITATION XLS+) provided by FSI has been the only reference for the crew throughout the evaluation.

4. MDR and ODR

4.1 Acceptable Master Difference Requirements (MDR)

<i>Master Differences Requirements (MDR) Table</i>				
<i>AIRPLANE TYPE</i>		<i>FROM AIRPLANE</i>		
<i>RATING: C560XL/XLS</i>		CESSNA MODEL C560XL	CESSNA MODEL C560XLS	CESSNA MODEL C560XLS+
TO AIRPLANE	CESSNA MODEL C560XL	A/A/B*	A/A/B	C/C/C**
	CESSNA MODEL C560XLS	A/A/B	A/A/B*	C/C/C**
	CESSNA MODEL C560XLS+	C/C/C**	C/C/C**	A/A/B*

NOTES

*Differences to accommodate optional equipment and aircraft modifications.

** The currency level for flight crews, who are trained and qualified on in both the C 560XL/XLS and the C560XLS+, or who are operating the C560XLS+ and one of the other variants within the C560 family the currency level is C if they have not operated the C560XLS+ in the preceding 180 days.

If flight crews have not operated the C560XLS+ in the preceding 180 days, operators must ensure they receive the recurrent training at level C to re-establish currency in the C560XLS+ avionics system and FMS.

If flight crews have operated the C560XLS+, in the preceding 180 days and have retained systems proficiency with the Pro Line 21 System and the FMS, the currency level will be Level B.

If flight crews have not operated the C560XL/XLS in the preceding 180 days, operators must ensure they receive the recurrent training at level C to re-establish currency in the C560XL/XLS avionics system and FMS.

If flight crews have operated the C560XL/XLS in the preceding 180 days and have retained systems proficiency with the Honeywell Avionics System and applicable FMS, the currency level will be Level B.

4.2 Acceptable Operator Difference Requirements (ODR)

Operator Differences Requirements (ODR) tables are used to show an operator's compliance method.

Cessna C560XL/XLS/XLS+ differences are provided in Appendix 4 of this report. These differences lists contain Cessna information, and therefore they may not include all optional equipment. Operator differences assume that pilots are qualified, current and experienced in operating the base aircraft.

Operators flying mixed C560XL/XLS/XLS+ variants must have ODR tables approved by their NAA.

5. Specifications for Pilot Training

5.1 Full Initial Pilot Type Rating training course

The following areas are applicable to the C560XLS+ and are essential to safe operation of the aircraft and must be included in the initial training program:

- RVSM, TCAS, Windshear prediction and all associated procedures.
- In flight and Ground Icing Awareness
- CFIT procedures
- The pilot type rating training course, as proposed by Cessna Company and Flight Safety International, was found suitable for pilots with previous experience in operating EFIS/FMS Collins ProLine 21 system and multi-engine/turbojet aircraft. For pilots not having experience in operating EFIS/FMS Collins ProLine 21 system and multi-engine/turbojet experience, additional training is appropriate as determined by the respective NAA.

5.2 Specifications for special emphasis for pilot training

5.2.1 The JOEB has identified several aircraft systems and / or procedures that should receive special emphasis in a C560 XLS+ initial pilot type rating training course:

- Interpretation and use of the Crew Alerting System (CAS)
- Avionics system and associated failures

5.2.2 In addition of the C560XLS+ specific feature above listed, all the characteristics of the Collins ProLine 21 system and Collins 3000 FMS should be emphasised during the pilot training program:

- Use and interpretation of colour code of avionic System

- Use of different VNAV modes
- Use of the FMS-Based approaches and the differences between RWY-type approaches and V-MDA-type approaches

5.2.3 Recurrent training

Recurrent pilot training should be performed as specified in JAR-FCL 1 and JAR OPS1/EU-OPS.

6. Specifications for checking

6.1 Skill test

As required by Appendix 1 and 2 to JAR FCL 1.240 and 1.295.

6.2 Recurrent Checking

Proficiency Checks must be conducted in compliance with JAR-FCL 1.245 and JAR-OPS 1.965.

6.3 Line checks

As specified in Appendix 1 to JAR-OPS 1.965.

7. Specifications for Currency/Recent Experience

JAR-OPS1/EU-OPS operators must meet the requirements of JAR-OPS 1.970 "Recent Experience", or JAR-FCL 1.026 "Recent Experience for pilots not operating in accordance with JAR-OPS 1".

8. Specifications for LIFUS

In the case of an initial pilot type rating on the C560XLS+, a minimum of 10 legs plus a line check is recommended for LIFUS.

9. Additional JOEB findings and Recommendations

Should a differences training be addressed after a full initial training course, the JOEB recommends that these differences be treated after the LIFUS.

The Differences Training Course syllabus Version 4 dated of February 15, 2009 is the reference to be used.

When transitioning from the XLS + to the XL/XLS or from the XL/XLS to the XLS+ , the JOEB recommends that, **in the 6 hours** of Avionics ground training which are requested, that 2 hours be dedicated to the FMS training.

Note: the Simulator is used as a fixed base. A STD level 2 minimum is would be appropriate. However such a STD .2 does not exist for the moment.

10. Aircraft Regulatory Compliance Check-List

See Appendix 3

11. Specifications for Devices and Simulators

The JOEB recommends the use of a C560XLS+ full flight simulator qualified as a minimum to **Level C** according to JAR-FSTD A to undergo the C560XLS+ pilot type rating training course.

12. Application of JOEB Report

This JOEB Report applies to Commercial Operation, however in the case of private operation, JOEB recommends following the findings in this JOEB Report.

13. Alternate means of compliance

Not applicable

14 Miscellaneous

14.1 Cabin Crew

There is no requirement for cabin crew to be carried, but the JOEB recommends that if any are carried, they are to be fully trained in accordance with JAR– OPS 1, subpart O.

14.2 Optional equipment

- EFB (Evaluation not completed)
- **Electronic Check List** (not evaluated and customisation requirements not established)