EUROPEAN AVIATION SAFETY AGENCY
Joint Aviation Authorities

Cessna

Citation 560XL/XLS

Revision 2

Dated 5th February 2007

European Aviation Safety Agency
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Cessna Aviation has requested a JOEB process for the evaluation of the Citation C560XL/XLS
Due to the various subjects, subgroups have been set up and are:

- MMEL Subgroup
- FCL & OPS Subgroup
- JSET Subgroup

The report, which follows, only covers the activities of the FCL & OPS subgroup.
The MMEL and JSET subgroups will submit their individual reports.

Revision Record

Revision No.	Section	Date	Publication
Revision 01	All sections (re-format)	7 December 2006	Draft Rev 01: January 07
Revision 02	All sections	5 th February 2007 20 March 2007	Draft Revision 2 (Final)

Contents

JAA Operation Evaluation Board

FCL & OPS Subgroup

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Dated: 5th February 2007

Preamble

This evaluation has been made in compliance with the EASA/JAA JOEB Terms of References.

This report specifies the EASA/JAA recommendation for the minimum requirements for the initial type rating training course, difference's training, checking and currency on the Citation C560XL/XLS, as specified in JAR-FCL1 and JAR-OPS1.

This report also contains the findings of the operational acceptability of Citation C560XL/XLS with regards to JAR-OPS1. The Operational Evaluation was conducted in accordance with the processes detailed in the common procedures document dated 10th June 2004 signed jointly by JAA, FAA, TCCA.

EASA/JAA recommends the approval of the Citation proposed training course for initial type rating on the Citation C560XL/XLS, including the necessary differences training.

EASA/JAA recommend the licence endorsement will be Citation C560XL/XLS.

Evan Nielsen
Head of Certification Flight Standard Department

Date: 5th February 2007

Acronyms

AC	Advisory Circular
AFM	Airplane Flight Manual
AFCS	Automatic Flight Control System
AGM	Advanced Graphic Modules
AP	Autopilot
CCD	Cursor Control Device
CCW	Counter Clock Wise
CMC	Centralised Maintenance Computer
COMM	Communication
DC	Display Controller
EASA	European Aviation Safety Agency.
EEC	Electronic Engine Control
EDM	Emergency Descent Maneuver
EFIS	Electronic Flight Instrument System
EGPWS	Enhanced Ground Proximity Warning System
EICAS	Engine Indicating and Crew Alerting System
FAA	Federal Aviation Administration
FGS	Flight Guidance System
FMA	Flight Mode Annunciator
FMS	Flight Management System
FSB	Flight Standardization Board
FTD	Flight Training Device
FFS	Full Flight Simulator
GPWS	Ground Proximity Warning System
HUD	Head Up Guidance Display
I-NAV	Integrated Navigation Display
IRS	Inertial Reference System
JAA	Joint Aviation Authority
MCDU	Multi-Function Control Display Units
MDU	Multi-functions Display Units
MKB	Multi-functions Keyboard
NAA	National Aviation Authorities
ND	Navigation Display
PDU	Primary Display Unit
PFD	Primary Flight Display
QRH	Quick Reference Handbook
RMU	Radio Frequency Management Unit
SFD	Secondary Flight Display
TCAS	Traffic Alert and Collision Avoidance System
TRTO	Type Rating Training Organization
VGS	Visual Guidance System
VNAV	Vertical Navigation
WOW	Weight on Wheels

Executive Summary

Throughout this document, reference is made to the Citation C560XL/XLS

This evaluation has been performed in compliance with JAR OPS1 and FCL1.

Revision 02:

The JOEB Team worked for six months from July 2006 to January 2007.

The JOEB recommend the acceptance of this report.

Operational Evaluation Report / FCL & OPS Subgroup

1. Purpose and applicability

This report:

- Defines the Type Rating assigned to the Citation C560XL/XLS
- Makes recommendations for initial Training,
- Makes recommendations for checking,
- Makes recommendations for currency,
- Makes recommendations for differences training

1.1 Overview

The Citation C560XL is an existing type of aircraft and this JOEB was to evaluate the differences between the 560XL and the 560XLS and the training requirements in agreement with the Manufacturer.

The JOEB team had two dedicated pilots:

-One pilot was current on the C560XL aircraft but not the 560XLS.

-One pilot had not flown the C560XL or XLS

Both Pilots attended courses at Flight Safety Internationals Orlando training centre. One of the Pilots attended a 3 day recurrent training course followed by the XLS differences course. The other pilot attended a full initial type rating course with XLS differences, with the task to assess the training course on behalf of the EASA.

1.2 General Information on the flights

Flights are planned in the Citation C560XL/XLS to complete the type rating however due to aircraft and pilot availability this cannot take place until 2007.

As the result of this, Operational Acceptability flights have not been performed yet.

This report will be amended accordingly after the flights have taken place.

1.3 Type Rating Course

The JOEB performed an equivalent to T2 and T5 test, according to JAA specific regulation and guidance.

The Citation C560XL/XLS initial pilot and recurrent ground school course, provided by Flight Safety International (FSI) at FSI Orlando, Florida. A small number of FSI instructors gave both the computer based classroom instruction, the differences training and simulator training and testing. From 30th October to 2nd November for the recurrent course (Appendix A). From 30th October to 11th November 2006 for the Initial course (Appendix B)

2. Pilot Type Rating Requirements

With reference to JAR FCL 1.220 and the JOEB Evaluation Process, a variation to the Type Rating is assigned to the Citation C560XL and the new designated Licence Endorsement is: Citation C560XL/XLS.

3. Specific operational issues

3.1 Minimum Height for use of autopilot :

As specified in the approved AFM.

3.2 Avionics

The C560XL and XLS use Honeywell PRIMUS 1000 INTEGRATED AVIONICS SYSTEM

1). However it is included in JOEB report just to avoid confusions :

The various colours are :

1-Red

2-Amber

3-Green

4-Magenta

5-Cyan

6-White

7-Grey

8-Blue

9-Brown

10-Yellow

11-Black

1-Red :

Red is associated with short term danger and emergency. That includes fires, loss of such basic information as attitudes, or features as airspeed and altitude, guidance cues and autopilot connection. It is also relevant to flight conditions or systems status that are abnormal. In these cases, an immediate flight crew action is required.

2-Amber :

Amber is associated with abnormal conditions and aims at alerting the crew. Amber may be the result of either a failure or a direct crew error. It is also used to indicate that a protection device is working properly, typically protection against stall such as automatic slats extension or automatic airbrakes retraction.

Pre-alerting mode when raw information may be not presented (ie . Cabin Altitude to be checked).

Crew attention is required even if no immediate action is necessary.

3-Magenta :

Magenta is the active target (ie. What the system is closing the loop on)

4-Green :

Green is a system-computed data. It depicts a system current or active data ;

5-Cyan :

Cyan means about to happen. As such means armed mode, pending modification and also mean « about to become a problem » for a TCAS proximate traffic for instance.

6-White :

White is a default colour. Everything which cannot justify another colour will be displayed in white. It is used for all labels on controllers or in windows, pilot selected or overridden data (to, differentiate them from system data).

7-Grey :

Grey is a neutral background colour. It is used to delimit sectors, areas and when used as a background for a character string, it means that this parameter is neither selectable nor modifiable.

In case of synoptic grey is used to depict an element which does not participate in the process.

8-Blue :

Blue is the control feedback for a crew normal selection. It is also used in the flight plan way points list to highlight the row where the CCD is pointing at.

9-Brown :

Brown depicts the earth in the ADI (including stand-by instrument) in the altitude tape and in the I-NAV regular terrain. In this latter different levels of brown are used to render the terrain altitude.

10-Yellow :

Yellow is a legacy colour used for the aeroplane symbol in the ADI, terrain alerts in I-NAV and TNT window and Wx zymology.

11-Black :

Black is the default background colour or string colour for reverse video. In case of a parameter that is black boxed, it means that the parameter is selectable / modifiable.

3.3 Aural warnings

There are :

- Fault aural warning
- EGPWS messages
- TCAS messages

3.4 Aircraft approach and circling category:

The Citation C560XL/XLS is in category B.

3.5 Approach profiles:

The training requirements for Steep approaches have not been assessed by the JOEB.

3.6 Normal Procedures

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

3.7 Abnormal and Emergency procedures:

The QRH provided by FSI has been used as the primary source for the Abnormal and Emergency Procedures.
The adequacy of this QRH has only been assessed against the Abnormal and Emergency Procedures carried out during the Training Course.

4. MASTER / OPERATOR DIFFERENCES REQUIREMENTS (MDR / ODR)

4.1 Master Differences Requirements (MDR)

Master Differences Requirements (MDR) for the Cessna Citation Xl and XLS are shown in the table below, and represent the result of work performed in the joint JAA and FAA,

AIRPLANE MODEL		FROM AIRPLANE	
		Citation XL	Citation XLS
TO AIRPLANE	Citation XL	Not Applicable	A/A/A
	Citation XLS	A/A/A	Not Applicable

Note: Either aircraft could be the base model

In spite of the number of differences listed in Appendix 2, the majority of these will be transparent to the pilots.

Differences Definitions:

Definitions of Level A differences for Training/Checking/Currency are provided below for reference, as extracted from the OPS/FCL Common Procedures for conducting Operational Evaluation Boards, dated June 10, 2004.

Level A Training: Level A difference 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 take place. 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 differences handouts to describe minor differences between aircraft.

Level A Checking: Level A checking indicates that no check related to differences is required at the time of differences training. A crewmember is, however, responsible for knowledge of each variant flown. Differences items should be included as an integral part of subsequent recurring proficiency checks.

Level A Currency: Level A currency is considered to be common to each variant. Thus, assessment or tracking of currency for separate variants is not necessary or applicable. Maintenance of currency in any one variant or a combination of variants suffices for any other variant.

4.2 Operator Differences Requirements (ODR)

Operator Differences Requirements (ODR) tables are used to show an operator's compliance method.
Cessna C560XL/XLS differences are provided in Appendix 1 of this report. This differences list contains Cessna information, and therefore may not include items that are applicable to particular operators. Operator differences assume that pilots are qualified, current and experienced in operating the base aircraft.

Operators flying mixed Citation XL/XLS variants must have NAA approved ODR tables pertinent to their fleet.

5. SPECIFICATIONS FOR TRAINING

5.1 Type Rating Course (Transition Course)

The type rating course for the Citation XL/XLS, as proposed by Cessna, and provided by FSI, was found suitable for pilots with previous experience with EFIS/FMS and multi-engine transport turbojet aircraft. For pilots not having this experience, additional requirements should be established by the individual NAAs.

The type rating course for the Citation XL is also applicable to the Citation XLS, since both share the same type rating provided that the differences training is covered. Therefore, JOEB specifications for training are equally valid for Citation XL and XLS.

The Cessna proposed transition course (type rating) is in compliance with the AMC 1.261 (c) (2) of JAR-FCL 1 (A) Subpart F. It was developed for the Citation XL as a base aircraft. Applicable differences between variants are covered during the training course to comply with operators specific fleet requirements.

The Initial Training Course is divided in the following phases:

- Ground Phase – 48 hours
  - Aeroplane System Instruction
  - Performance, Flight Planning, Mass and Balance
  - Emergency Instruction
- Flight Phase – 24 hours + Skill Test.
  - Flight Instruction Overview
  - Full Flight Simulator Sessions
  - Flight Training

  The Flight training of 24 hours in the FFS is acceptable for pilots with previous EFIS/FMS and JET experience. Pilots without this experience should fulfil the JAR FCL1 AMC 1.261 (c)2.

The objectives and phases breakdown are included in Appendix 3.

Base training consisting of 4 to 6 landings is required in the specific aircraft variant that the pilot is going to operate, regardless of which simulator has been used during the training course. Base training on the Citation XL may be substituted by training on Citation XLS, and vice-versa.

5.2 Specifications for special emphasis training

5.2.1 The type rating course, as proposed by Cessna Aviation, was found suitable for pilots with or without previous experience in operating EFIS/FMS and with experience of operating jet aircraft .
Note: the type rating course is recommended for approval provided that operator specific documentation is used throughout the course.

5.2.2 The JOEB has not identified aircraft systems and/or procedures that should receive special emphasis in a Cessna 560XL/XLS type rating course:

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5.3 Recurrent training.

Recurrent training should be performed as specified in JAR-FCL 1 and JAR OPS 1.

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-0PS 1.965.

7. Specifications for Currency/Recent Experience

Applicants must meet the requirements of JAR-OPS 1.

8. Specifications for LIFUS

In the case of an initial type rating on the Citation C560XL/XLS, a minimum of 10 legs plus a line check is recommended for LIFUS.

9. Additional JOEB findings and Recommendations

9.1. It is recommended that Cessna and Flight Safety International should combine the XLS differences course into the initial type rating course

10. Aircraft Regulatory Compliance Check-List – (JAR-OPS 1 Subpart K and L)

See Appendix 6.

11. Specifications for Devices and Simulators

The C560XLS located in Wichita has not been evaluated in accordance with JAR STD1A. This simulator is the subject of a separate evaluation and report.

12. Application of JOEB Report

This JOEB report applies to all Commercial Air Transport Operators, however in the case of private operation, JOEB recommend to follow the findings in this report.

13. Alternate means of compliance

No remark

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.

15. Appendices

Appendix 1 – ODR/MDR table – reserved

Appendix 2 – Differences from the C560XL

Appendix 3 - Acceptable Initial Type Rating Training Course Syllabus

Appendix 4 – Acceptable Recurrent Training Course

Appendix 5 - Acceptable Differences Course

Appendix 6 -Compliance Check-List (JAR-OPS 1 subpart K and L)