EUROPEAN AVIATION SAFETY AGENCY

Operational Evaluation Board Report

Dassault Aviation Falcon 900EX EASy
Falcon 900DX, Falcon 900LX

Revision 13

24 June 2013

European Aviation Safety Agency
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Contents

Dassault Aviation F900EX EASy, DX, LX

Operational Evaluation Board (OEB)

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Revision Record

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Version 2	Publication	11 May 2004
Version 3	F900EX EASy Step 3, F900DX	15 June 2006
Version 4	Limitations, LIFUS, HUD	15 February 2008
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Revision 8	FAST F2000EX EASy to F900EX EASy	29 May 2009
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Revision 11	Re-formatting	29 June 2012
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Revision 12	No changes to draft revision 12	23 October 2012
Revision 13	EFB and EASy II	24 June 2013

Dassault Falcon900EX EASy, DX, LX OEB Composition

Name	Capacity	Task
Xavier BARRAL [1)]	DGAC	JOEB Chairman
Jean BARIL [5)]	EASA	Special OPS Evaluation Manager
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1) Initial JOEB Evaluation
2) Noise Abatement Departure Procedure (NADP)
3) Steep Approach Landing Procedure
4) RNP AR
5) EFB
6) EASy II

Note on references and reference texts:
Where references are made to requirements and where extracts of reference texts are provided, these are at the amendment state at the time of the evaluation. Readers should take note that it is impractical to update these references to take account of subsequent amendments to the source documents.

Acronyms

AC ..... Advisory Circular

AFM ..... Airplane Flight Manual

AFCS ..... Automatic Flight Control System

AGM ..... Advanced Graphic Modules

AP ..... Autopilot

AT ..... Auto throttle

ATN B1 ..... Aeronautical Telecommunication Network Baseline 1

CAS ..... Crew Alerting System

CCD ..... Cursor Control Device

CCW ..... Counter Clock Wise

CODDE 1 ..... Crew Operational Documentation for Dassault Aviation EASy - Airplane description DGT91832

CODDE 2 ..... Crew Operational Documentation for Dassault Aviation EASy - Operation Manual DGT84973

CODDE 3 ..... Crew Operational Documentation for Dassault Aviation EASy-QRH 1 DGT92995 and QRH 2 DGT92996

CMC ..... Centralised Maintenance Computer

CPD ..... Common Procedures Document for conducting Operational Evaluation Boards, dated 10 June 2004

CPDLC ..... Controller-Pilot Data Link Communications

CPT ..... Cockpit Procedure Trainer

CRM ..... Crew Resource Management

DC ..... Display Controller

EASy ..... Enhanced Avionics System

ECL ..... Electronic Check List

EDM ..... Emergency Descent Manoeuvre

EFIS ..... Electronic Flight Instrument System

EGPWS ..... Enhanced Ground Proximity Warning System

EMI ..... Electro-Magnetic Interference

EVS ..... Enhanced Vision System

EFVS ..... Enhanced Flight Vision System

EU-OPS ..... Commission Regulation (EC) No 859/2008 of 20 August 2008 amending Council Regulation (EEC) No 3922/91 as regards common technical requirements and administrative procedures applicable to commercial transportation by aeroplane.

FAA ..... Federal Aviation Administration

FANS ..... Future Air Navigation System

FAST ..... Falcon Aircraft Shortened Training

FCM ..... Flight Crew Member
FFS ..... Full Flight Simulator
FGS..... Flight Guidance System
FMS ..... Flight Management System
FSB ..... Flight Standardization Board
FTD ..... Flight Training Device
GPWS ..... Ground Proximity Warning System
HMI ..... Human-Machine Interface
HUD ..... Head Up Guidance Display
I-NAV ..... Integrated Navigation Display
IRS ..... Inertial Reference System
JAA ..... Joint Aviation Authority
LOF ..... Line-oriented Flying
MAU ..... Modular Avionics Units
MDU..... Multi-Function Display Units
MDU..... Multi-functions Display Units
MKB ..... Multi-functions Keyboard
NADP ..... Noise Abatement Departure Procedure
NATS ..... North Atlantic Track System
ND..... Navigation Display
ORI..... Operational Review Item
PDU ..... Primary Display Unit
PIC ..... Pilot In Command
RFMU..... Radio Frequency Management Unit
SFD..... Secondary Flight Display
TASE..... Training Area of Special Emphasis
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

An initial Operational Evaluation was performed by a team composed of JAA members. Subsequently EASA performed operational evaluations of the Noise Abatement Departure Procedures (NADP), the steep approach procedures for the F900EX EASy, DX, and LX, EASy II (1st Certification and 2nd Certification) and RNP AR approach procedures for the F900EX EASy II. In 2012 a Special Ops evaluation of optional Class 1 (iPad) and Class 2 (CMC) Electronic Flight Bags was performed. In 2013, the Master Difference Requirements (MDR) from EASy II to EASy Step 3+ have been evaluated by analysis.

These evaluations were performed in compliance with the applicable Terms of Reference, corresponding complementary procedures, the JOEB/OEB Handbook and the CPD.

Throughout this document the designation “F900EX EASy” includes Falcon 900EX EASy, Falcon 900EX EASy Step 3, Falcon 900DX, and Falcon 900LX, including those aircraft modified with EASy II (1st Certification and 2nd Certification).

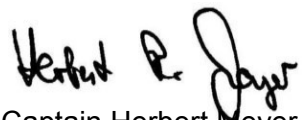
In the frame of FAST, the designation "F2000EX EASy" includes Falcon 2000EX EASy, Falcon 2000DX and Falcon 2000LX variants.

This report specifies the EASA recommendation of minimum requirements for the initial type rating training course, checking and currency on the Dassault Falcon 900EX EASy, as specified in JAR-FCL 1 and EU-OPS.

This report also contains the findings of the operational suitability of the Dassault Falcon 900EX EASy with regards to EU-OPS.

The OEB recommends the approval of the Dassault Aviation proposed training course for initial type rating on the Dassault Falcon 900EX EASy as well as the difference courses in the respective addendums.

The OEB recommends the licence endorsement “**Falcon 900EX EASy”**.



Captain Herbert Meyer
Section Manager, Operational Suitability - Fixed Wing -
Experts Department, EASA Certification Directorate

Operational Evaluation Report FCL/OPS Subgroup

1. Purpose and Applicability

This report:

- defines the type rating assigned to the Falcon 900EXEASy
- proposes the Master Common Requirement –MCR tables
- defines the minimum line flying under supervision (LIFUS)
- recommends checking and currency

1.1 Overview

The Falcon 900EX EASy is a new type of aircraft due to the completely new avionics concept. However, the airframe and some other features are those of the Falcon 900EX.

At the time of initial evaluation cross-qualification or pilot training commonality between F900EX EASy and other existing Falcon types was not evaluated. However some cross-qualifications became available at a later stage and have been addressed in the respective addendums.

The EASy concept has been certified in three Steps on the F900EX EASy: Step 1, Step 2, and Step 3. Each EASy Step has upgraded and improved the avionics. All F900EX EASy have now been retrofitted into Step 3, and there is no more F900EX EASy with Step 1 or Step 2. F900DX has been certified directly with EASy Step 3. Refer to Addendum A and B of this Report for more explanations.

The JOEB team has three pilots dedicated to:

- Human Factors : one pilot was included in the Human Factors process during the certification
- Evaluation of the pilot initial type rating course: two other pilots were sent to TETERBORO (NJ, USA) to follow the first pilot initial type rating course with the task to agree this course on a JAA basis.

1.2 General information on the flights

Capt. Xavier BARRAL (JOEB Chairman) was included in the Human Factors team and used as an expert with the certification pilots from CEV/FAA/Customers.

All the flights and their contents are included in Appendix n°4.

In parallel to have an agreed FFS the F-DGAC accepted to send a team to TETERBORO. The FFS was agreed on JAR-STD 1A Level D.

1.3 Type rating course

Two JOEB team experts have followed the training course and a meeting with Dassault Aviation has permitted to make the necessary changes (see Appendix n°3).

2. Pilot License Endorsement

With reference to JAR-FCL 1.220 and the JOEB evaluation process, we recommend that the licence endorsement for the type will be “**Falcon 900EXEASy”.**

The following table reflects the summarized EASA Class and Type Ratings List and Endorsement List (Aeroplanes) (Table 8) of all airplane variants evaluations contained in this report:

1 Manufacturer	2 Aeroplanes		3	4 Licence Endorsement
	Model	Name		
Dassault		Falcon 900EX EASy Falcon 900DX Falcon 900LX	(D) [7]	Falcon900EX EASy
		Falcon 900EX EASy II Falcon 900DX EASy II Falcon 900LX EASy II		
	[7] The differences training course is valid from the Falcon 900EX EASy/DX/LX to the Falcon 900EX EASy/DX/LX modified with EASy II (M5340 or M5595) for crewmembers previously qualified on the Falcon 900EX EASy/DX/LX. The Falcon 900EX EASy/DX/LX modified with EASy II (M5340 or M5595) to Falcon 900EX EASy/DX/LX differences training shall be evaluated or a full type rating training shall be accomplished.			

See Appendix 3 for the accepted Pilot Initial Type Rating Training Course. However, the normal special procedure and the pilot training have not been assessed by the JOEB in the frame of the initial evaluation.

3. Master Common Requirements (MCR)

3.1 Limitations

For all the limitations, refer to Airplane Flight Manual and/or CODDE2 manual.

3.2 Avionics

The use of EPIC (from Honeywell) and the EASy system developed by Dassault Aviation need to have a strict adherence of the code of colours. The colour code is detailed in CODDE 1.

3.3 Aural warnings

There are:

- fault aural warning
- EGPWS messages
- TCAS messages

Refer to CODDE 2 and / or CODDE 3.

3.4 Aircraft approach and circling category

As per Appendix 2 to JAR-OPS 1.430(c), the F900EXEASy is classified in Category C.

3.5 Approach profiles

F900EX EASy is certified for Steep Approaches up to 6°, and 5.5° for London City airport.

3.6 Abnormal and Emergency procedures

The Electronic Check-List (ECL) is the primary reference for the crew. The AFM, CODDE 3 and ECL should be updated simultaneously (to the extent practicable), to ensure that there are no discrepancy between them. However, any discrepancy that may exist due to the nature of the paper versus the electronic should be brought to the knowledge of the Operator.

3.7 Customization of Normal Checklists

The customization process for Normal Checklists within the ECL was evaluated by the JOEB, and was found acceptable, provided Operators comply with the guidance provided by Dassault' "General Rules - Guidance for Customizing Normal Procedures" document reference DGAC-07-DOT-097 dated 01 April 2008 at Issue 02 and as amended. This document is available at Dassault Aviation upon request.

4. Master Difference Requirements (MDR)

The following table reflects the summarized MDR levels of all evaluations contained in this report:

		FROM AIRPLANE								
		F900EX EASyI	**F900DX EASyI**	**F900LX EASyI**	**F900EX EASy II 1st Cert**	**F900DX EASy II 1st Cert**	**F900LX EASy II 1st Cert**	**F900EX EASy II 2nd Cert**	**F900DX EASy II 2nd Cert**	**F900LX EASy II 2nd Cert**
TO AIRPLANE	**F900EX EASyI**	Not Applicable	B/B/B	B/A/A	D/A/B	D/B/B	D/A/B	D/A/B	D/B/B	D/A/B
	F900DX EASyI	B/B/B	Not Applicable	B/A/A	D/B/B	D/A/B	D/A/B	D/B/B	D/A/B	D/A/B
	F900LX EASyI	B/A/A	B/A/A	Not Applicable	D/A/B	D/A/B	D/A/B	D/A/B	D/A/B	D/A/B
	F900EX EASy II 1st Cert	D/A/B	D/B/B	D/A/B	Not Applicable	B/B/B	B/A/A	A/A/A	B/B/B	B/A/A
	F900DX EASy II 1st Cert	D/B/B	D/A/B	D/A/B	B/B/B	Not Applicable	B/A/A	B/B/B	A/A/A	B/A/A
	F900LX EASy II 1st Cert	D/A/B	D/A/B	D/A/B	B/A/A	B/A/A	Not Applicable	B/A/A	B/A/A	A/A/A
	F900EX EASy II 2nd Cert	D/A/B	D/B/B	D/A/B	B/A/B	B/B/B	B/A/B	Not Applicable	B/B/B	B/A/A
	F900DX EASy II 2nd Cert	D/B/B	D/A/B	D/A/B	B/B/B	B/A/B	B/A/B	B/B/B	Not Applicable	B/A/A
	F900LX EASy II 2nd Cert	D/A/B	D/A/B	D/A/B	B/A/B	B/A/B	B/A/B	B/A/A	B/A/A	Not Applicable

Note: The difference between F900EX EASY Step 2 and Step 3 is not detailed in above MDR table, but is still tracked in Addendum A.

Note: Special training credits apply for crew qualified and current on other EASy II Falcon - refer to Addendum E.

5. Line Flying Under Supervision - LIFUS

In the case of an initial pilot type rating on the Falcon 900EX EASy, a minimum of 10 legs plus a line check is recommended for LIFUS.

For pilots already qualified and current on Falcon 2000EX EASy and / or Falcon 7X, due to similar EASy avionic suits on Falcon 900EX EASy, the JOEB has determined that the Falcon 900EX EASy LIFUS could be reduced to 5 legs plus a line check.

6. Acceptable 'Operator Difference Requirements' (ODR)

At the time of initial evaluation, no ODR tables were available between the variants of F900EX EASy and other Falcon types. In the meantime Operators Difference Requirements for F2000EX EASy to F900EX EASy are provided in the following document:

Operator Differences Requirements - FAST - F2000EX EASy to F900EX EASy (ref. DGAC08DSOF096 Issue 01 dated 2-Oct-2008).

In JOEB Report version 3, dated 9 October 2006, the variants Falcon 900EX EASy Step 3 and Falcon 900DX have been added. Please refer to the Dassault Aviation documents in Appendix n°2 – ODR table (available on request to the Authorities).

In OEB Report version 9, the variant Falcon 900LX has been added. Please refer to Addendum D of this Report.

In OEB Report version 10, the variant Falcon 900EX EASy II 1st Certification has been added. Please refer to Addendum E of this Report.

In OEB Report version 13, the variant Falcon 900EX EASy II 2nd Certification has been added. Please refer to Addendum E of this Report (same as EASy II 1st Certification).

7. Initial Pilot Training Course – Pilot Type Rating Training Course

The JOEB has determined that one Pilot Type Rating Training Course is available (refer to Appendix n°3).

At the time of the evaluation, the only existing FFS was located in TETERBORO (NJ, USA) so the pilot type rating training course was evaluated there.

Note: the pilot type rating course is recommended for approval provided that operator specific documentation is used throughout the course.

8. Familiarization / Differences Pilot Type Rating Training Course

In JOEB Report version 3, dated 9 October 2006, the variants Falcon 900EX EASy Step 3 and Falcon 900DX have been added in Addendum A and B.

In OEB Report version 9, the variant Falcon 900LX has been added in Addendum D of this Report.

In OEB Report version 10, the variant Falcon 900EX EASy II has been added in Addendum E of this Report.

9. Checking

Proficiency checks must be conducted in accordance with JAR-FCL 1.245 'Type and class ratings – Validity, revalidation and renewal' and JAR-OPS 1.965 'Recurrent training and checking'.

10. Currency

Compliance with JAR-OPS 1.970 'Recent experience' or JAR-FCL 1.026 'Recent experience for pilots not operating in accordance with JAR-OPS 1' as appropriate is required for recent experience.

10.1 OPS recommendations

Due to criticality of fuel computations, crews should be familiar with all aspects of fuel management to include normal and abnormal procedures and the manner in which fuel computations are made.

Although not required, it is highly recommended that each operator or flight training centre develop an effective academic and practical upset simulator program.

11. Cabin Crew Requirements

The JOEB has yet to evaluate this requirement if needed.

In the case of a JAR-OPS 1 Operator carries an official cabin crew, that person has to fulfil all the requirements contained in the Subpart O of JAR-OPS 1.

12. Head Up Display – HUD

A HUD is proposed as an option on Falcon 900EX EASy. This HUD is certified for manual Cat II and Cat III operations.

The JOEB Chairman was part of the certification team who performed the simulator runs required for the HUD certification.

The HUD was found acceptable by the JOEB.

Appendix 6 of this JOEB Report provides an acceptable HGS Certification Training course, with a minimum of 4 hours of ground school instruction, followed by a minimum of 2 hours of simulator training (excluding 0.5 hour briefing). Pilots with no HGS experience will first go through a 1 hour simulator training session for HGS familiarization purposes. If HGS Familiarization Training is separated from HGS Certification Training, the familiarization course comprises 2.5 hours of ground school instruction, followed by a minimum of 1.5 hours of simulator training (excluding 0.5 hour briefing).

The check-ride further to the HGS Certification Training should last at least 1 hour, and should be conducted in accordance with Appendix 1 to JAR-OPS 1.450(g).

Note: due to similar installation and use of the HGS on Falcon 2000EX EASy, a pilot who is qualified accordingly with the HGS Certification Training course (resp. HGS Familiarization Training course) on Falcon 2000EX EASy becomes qualified de-facto for the HGS Certification Training (resp. HGS Familiarization Training) on Falcon 900EX EASy.

Crews have to be trained on the HUD, and have to follow CODDE 2 HUD procedures.

13. Enhanced Flight Vision System – EFVS

13.1 EFVS modification M3802 or M5141

The JOEB has evaluated the EFVS on the basis of the Falcon 2000EX EASy EFVS which is similar, and found it satisfactory for its intended functions.

The EFVS is certified for use during all phases of flight and ground operations. The enhanced vision provided by the EFVS may not be used as a basis for descent and operation below instrument approach minimums (e.g. minimum descent altitude, decision altitude/height), i.e. no use of paragraph (h) Appendix 1 (New) to EU-OPS1.430. Refer to appropriate CODDE2 Section for limitations, procedures, and call-outs.

13.2 Improved EFVS modification M-OPT0145

This EFVS is an improvement to the EFVS already evaluated – see above.

The EASA OEB has evaluated this Improved EFVS on the basis of the Falcon 2000EX EASy Improved EFVS which is similar, and found it satisfactory for its intended functions.

This Improved EFVS is certified for use during all phases of flight and ground operations. The enhanced vision provided by the Improved EFVS may not be used as a basis for descent and operation below instrument approach minimums – no use of paragraph (h) Appendix 1 (New) to EU-OPS1.430 (e.g. minimum descent altitude, decision altitude/height). Refer to appropriate CODDE2 Section for limitations, procedures, and call-outs.

13.3 EFVS/Improved EFVS Training

The OEB recommends the EFVS pilot training course in Appendix 8. The OEB has determined that each pilot in command of an aircraft equipped with this (improved) EFVS should receive a minimum of 4 hours of ground school instruction followed by a minimum of 2 hours of simulator training in the left hand seat of a Level C simulator with a daylight visual display, or a Level D simulator.

In addition, the OEB recommends special training emphasis in the following areas:

- First Officer (right seat pilot / PNF) has to be trained with a Captain (left seat pilot / PF) during the (improved) EFVS pilot training course,
- Concerning human factors, to avoid tunnel effect or any other effects affecting the Captain's perception, the task of the First Officer is very important in the final approach phase (when the real scene appears through the enhanced vision). The call-outs from both pilots, during this phase of flight, are paramount,
- The (improved) EVS shall never be used to deviate from CODDE2 standard escape procedures, when EGPWS, TCAS, or Windshear warnings are triggered.
- Pilots should be advised that the visual contrasts in the FFS are better than those in the aircraft;
- The (improved) EFVS as well as the HGS should be used during normal flight as often as possible, and
- The documentation to be used during training and day-to-day operations is CODDE1, CODDE2, CODDE3 provided by Dassault Aviation.

Note 1: Due to similar installation and use of the (Improved) EFVS on Falcon 2000EX EASy, if a pilot is type rated on both the Falcon 900EX EASy and Falcon 2000EX EASy, successful

completion of the Falcon 900EX EASy EFVS Pilot Training Course makes him/her qualified for using the (Improved) EFVS on both types of airplanes, provided he/she is made aware, through self-instruction, of the exclusivity EFVS or HGS Cat II/III, when applicable

Note 2: The F2000EX EASy simulator can be used to train (Improved) EFVS on F900EX EASy, even for those pilots who are not type rated on F2000EX EASy.

Note 3: For pilots who have already been trained on previous EFVS on either F900EX EASy or F2000EX EASy, a familiarization course (Training Level B) is needed to make them qualified for using the Improved EFVS on both types of airplanes. Appendix 8, providing EFVS Pilot Training Specifications, includes specifications for this familiarization course.

14. Alternate means of compliance

14.1 Operational procedure for close-in Noise Abatement Departure Procedure (NADP)

14.1.1 Falcon JOEB Recommendation

Dassault Aviation has proposed the Falcon JOEB to evaluate a thrust reduction procedure at 400 feet AAL during a close-in noise abatement departure procedure (NADP).

Further to the examination made by the Falcon JOEB of the substantiations provided by Dassault Aviation and the simulator trials undertaken by the Falcon JOEB (see paragraph 14.1.2 below), the Falcon JOEB has determined that a thrust reduction at 400 feet AAL during a Noise Abatement Departure Procedure is safe and acceptable.

This thrust reduction height (400 feet AAL) can be used by Operators as an Acceptable Means of Compliance (AMC) to meet OPS 1.235 of JAR-OPS 1 and Annex III to the European Council Regulation (EEC) No. 3922/91 ("EU-OPS 1"), as amended (see applicability in paragraph 14.1.4).

Prior to operating the Falcon 900EX EASy on a close-in NADP with a thrust reduction at 400 feet AAL, the Falcon JOEB recommends the areas of training emphasizes outlined in paragraph 14.1.3 below.

14.1.2 Supporting substantiations provided by Dassault Aviation

This proposal has been substantiated by Dassault Aviation through:

- an analysis document (ref. DGT114673),
- an operational procedure for close-in NADP (CODDE2), and
- an evaluation of the thrust reduction procedure, based on the CODDE2 close-in NADP, using a Falcon 900EX EASy full flight simulator. This evaluation on the full flight simulator has involved a pool of 2 Falcon JOEB pilots, each being under the control of a Dassault Aviation pilot and test engineers. A total of 19 take-offs with thrust reduction at 400 feet AAL have been performed by this pool of Falcon JOEB pilots. Abnormal situations, including engine failure and windshear conditions, were introduced to assess a crew's ability to discontinue the noise abatement procedure and adopt the procedure appropriate to the abnormal condition.

No flight testing in the aeroplane was deemed necessary by the Falcon JOEB.

14.1.3 Training Areas of Special Emphasis

Prior to operating the Falcon 900EX EASy on a close-in NADP with a thrust reduction at 400 feet AAL, the Falcon JOEB recommends the following training areas of special emphasis:

- Crew must be trained using the procedure provided by Dassault Aviation in their CODDE2 (close-in NADP),
- Crew should be made aware that the CODDE2 close-in NADP - and only this one - supersedes normal Falcon 900EX EASy Standards Operating Procedures (SOPs). Crew training should emphasize on the task sharing described in CODDE2, in particular for the thrust reduction at 400 feet AAL which is to be performed by the PNF under the authority of the PF,
- Crew training should emphasize the two key parameters during the departure briefing: N1 to be set at 400 feet AAL, and PATH angle to be set. These two parameters (reduced N1 and PATH angle) are computed by Dassault Aviation and can be found in the CODDE2,
- The initial NADP training should comprise, as a minimum, three normal take-offs, and two abnormal take-offs (e.g. engine failure / medium windshear at thrust reduction),
- The recurrent NADP training should be annually, and should include, as a minimum, one normal take-off and one abnormal take-off,
- If both pilots are intended to act as PF, all take-offs should be conducted with PF position in right seat, then PF position in left seat.

14.1.4 Applicability to specific airports

See Attachment 1: NADP Procedure - London City Airport and Other Airports.

15. Aircraft Regulatory Compliance Check-List

Falcon 900EX EASy has been shown compliant with JAR-OPS 1 Subparts K&L - see Appendix 5 for this Aircraft Regulatory Compliance Check List.

Falcon 900EX EASy, including those aircraft modified with EASy II, have also been shown compliant with Commission Regulation (EC) 859/2008 Subparts K&L which applies in the EU States starting September 20th, 2008 - see Appendix 5bis for this Aircraft Regulatory Compliance Check List.

Note: A cross reference table between Regulation (EC) 859/2008 (EU-OPS) and (EC) 965/2012 (Part-CAT) is available on the EASA web site.

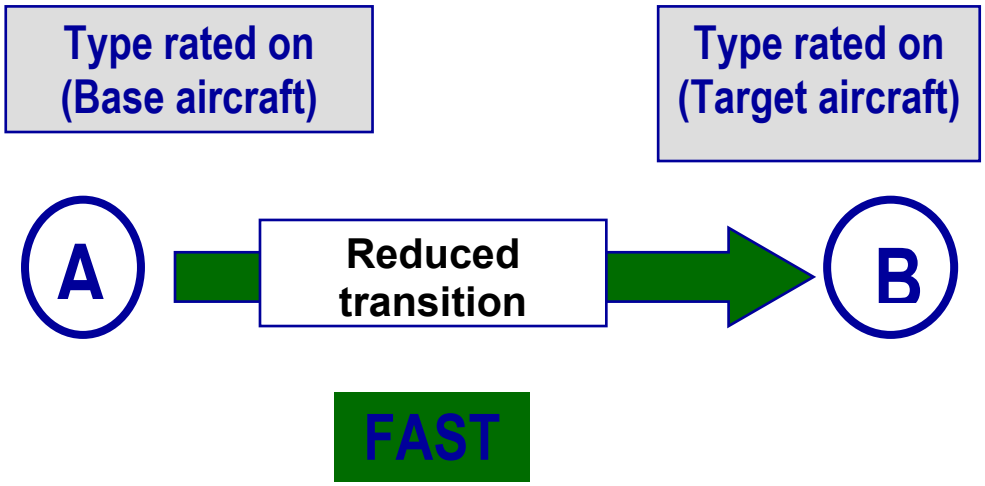
Note: Aircraft Regulatory Compliance Check List to JAR-OPS 1 Subparts K&L (Appendix 5) is kept in this JOEB Report for JAA States not belonging to the EU.

16. Transition course / FAST concept:

16.1 General concept:

FAST designation stands for Falcon Aircraft Shortened Training.

As shown in the figure here below, it designates a short transition course for a pilot being Type Rated on aircraft A, and going for a Type Rating on aircraft B:



This reduced transition training is based on the fact that aircraft A and aircraft B have similar technology, operational procedures, and handling characteristics. Those similarities are documented in ODR tables.

In the frame of FAST, the credits sought are limited to training.

16.2 FAST F2000EX EASy to F900EX EASy:

First application of FAST concept has been demonstrated on a transition course from F2000EX EASy to F900EX EASy.

Evaluation took place on October 2008 and involved both EASA and FAA.

For further details, please refer to Addendum C.

17 Electronic Flight Bag Options

17.1 Class 2 EFB (CMC CMA-1100 – Jeppesen TC chart application).

In a separate evaluation, EASA has reviewed an EFB Class 2 (hardware CMC CMA-1100) for the EASy Cockpit. The conclusions are published in an individual report on the EASA website (see 'Dassault Aviation Class 2 EFB for EASy Cockpit, dated 03 Aug 2011').

The OEB evaluation found that the Dassault Class 2 Electronic Flight Bag and the applications evaluated satisfy the guidelines of TGL 36 and Draft AMC 20-25 for operational approval of this Class 2 EFB system.

EASA recommends the Dassault proposed training course and operational procedures as specified in that Report.

Please refer to the report for specific details.

17.2 Class 1 EFB solution (iPad used in specific conditions).

Dassault Aviation has applied to EASA for an operational evaluation of the use of two iPad 2 (models A1395 and A1396, iOS versions 5.x) to be operated as class 1 Electronic Flight Bags in EASy cockpit aircrafts with the purpose to display:

1. Jeppesen Mobile TC iOS application (version 1.2), as a backup of the Jeppesen terminal charts applications of EASy (in replacement of the current paper backup).
2. Jeppesen Mobile FD iOS application (version 1.0), with terminal charts as a backup of the EASy application, and with en-route charts and airway manuals used as primary means with FMS as a backup.

The evaluation was based upon the following documents:

- A comprehensive Master Policy,
- Flight Crew and Administrator procedures,
- A comprehensive Operational Risk Analysis (ORA),
- A compliance matrix to JAA TGL 36 , AMC 20-25 draft and Operational Review Item n°09 for EFB,
- Other justification documents (HMI assessment, EMI analysis, flight test reports).

The evaluation has considered the integration of the iPad into the EASy avionics environment as a backup. It is based upon the following assumptions:

- The EFB administrator must lock down the location services (own ship position) of the devices using a passcode protection. Activating the own ship position option would qualify the applications as type C, thus requiring an EASA airworthiness approval.
- The EFB administrator ensures that non-EFB software applications do not adversely impact the operation of the EFB.
- A kneeboard that follows Dassault recommendations (form factor) is used. In that case only the approval may be granted for use during all phases of flight.
- The training proposed by Jeppesen for Mobile FD iOS en-route charts proposes a tutorial as a basic means to allow optimizing the use of the en-route charts, however operators must adapt it to their procedures.

This report does not substitute to, or prevail over any of the terms of the Jeppesen applications End User License Agreements (EULA) and of the Apple hardware and software Product Agreements. The users must read the EULA and have the responsibility to accept the different agreements prior to using the applications.

The EASA-OEB sees no technical objections to the grant by the National Authorities of an operational approval for the iPad with Jeppesen Mobile TC iOS and FD iOS applications, taking the proposed recommendations in this report into account.

Addendum A

Operational Evaluation Board Report Dassault F900EX EASy

Variant F900EX EASy Step 3

Addendum A includes the Dassault Aviation comments provided by memo ref. DGT311049 dated 20 February 2006.

A.1 Introduction

The Step 3 is an improvement of the existing Falcon 900EX EASy. Step 3 is defined by modification M3876, approved by certification on 08 August 2005 under n°: EASA A.C 01399.

M3876 only consists in a software modification. However JOEB considers the new functionalities have a direct impact for the crew already using the aircrafts with Step 2.

It should be noted that during the transition period during which Step 3 was certified but not retrofitted yet on all Step 2 aircraft, new aircraft were directly delivered into Step 3, and all existing Step 2 aircraft were retrofitted into Step 3 in accordance with a retrofit planning covering a period of less than one year (end of retrofit for all aircraft was June 2006).

Now, the entire fleet of F900EX EASy is flying in Step 3 configuration.

A.2 Pilot Transition Training from Step 2 to Step 3

With the manufacturer, the JOEB defined what will be the differences and consequently what are the minimum pilot training requested by this modification.

As explained above, this transition training is temporary, and should be useless once all aircraft are retrofitted into Step 3.

The referenced documents for the transition training are:

- CODDE 1 (Airplane Description) ref. DGT91832 issue 04, doc F900-OPS-401
- CODDE 2 (Operations Manual) ref. DGT84973 issue 04, doc F900-OPS-402
- QRH 1 (Quick Reference Handbook 1) - ref. DGT92995 issue 5, doc F900-OPS-403
- QRH 2 (Quick Reference Handbook 2) - ref. DGT92996 issue 5, doc F900-OPS-404
- ODR F900EX EASy Step 2 to Step 3, ref. DOT 05/008-TOD issue 06, doc F900-OPS-410-1
- DA general Pilot Training spec. for F900EX EASy Step 3, ref. DOT 05/021-TOD issue 05, doc F900-OPS-411-1 titled "Dassault Aviation specifications for the pilot training for the third certification of Falcon 900EX EASy ("Step 3")"
- FSI syllabus for Pilot Training, F900EX EASy Step 3, ref. DOT 05/184-TOD issue 01, doc F900-OPS-412 titled "Flight Safety International (FSI) syllabus for the pilot training of the third certification of Falcon 900EX EASy ("Step 3")"

The Master Difference Requirements (MDR) table is:

		FROM Airplane	
		F900EX EASy Step 2	F900EX EASy Step 3
TO Airplane	F900EX EASy Step 2	N/A	N/A
	F900EX EASy Step 3	C / B / B	N/A

Pilot training device to transition from a Step 2 aircraft to a Step 3 aircraft is at the minimum:

- FTD according to JAR STD 2A, or FBS (Fixed Based Simulator).

A.3 Pilot Initial Training on Step 3

The referenced documents for the initial training are:

- CODDE 1 (Airplane Description) ref. DGT91832 issue 04 or later issue, doc F900-OPS-401
- CODDE 2 (Operations Manual) ref. DGT84973 issue 04 or later issue, doc F900-OPS-402
- QRH 1 (Quick Reference Handbook 1) - ref. DGT92995 issue 5 or later issue, doc F900-OPS-403
- QRH 2 (Quick Reference Handbook 2) - ref. DGT92996 issue 5 or later issue, doc F900-OPS-404
- General Pilot Training Specifications for F900EX EASy/F900DX, ref. DSC 03/3105-TOD issue 07 or later issue, doc F900-OPS-411-2 titled "Dassault Aviation specifications F900EX EASy & F900DX Pilot Initial Type Rating Training Course"
- Detailed Pilot Training Specifications for F900EX EASy/F900DX, ref. DSC 3/3516-TOD issue 01 or later issue, doc F900-OPS-411-2 titled "Appendix to Dassault Aviation specifications F900EX EASy & F900DX Pilot Initial Type Rating Training Course"

A.4 Pilot Licence Endorsement

JOEB recommends that the pilot licence endorsement remains the same as for F900EX EASy Step 1/ Step 2, that is to say:

Falcon 900EX EASy.

Addendum B

Operational Evaluation Board Report Dassault F900EX EASy

Variant F900DX

Addendum B includes Dassault Aviation comments provided by memo ref. DGT311049 dated 20 February 2006.

B.1 Introduction

During the JOEB meeting held in Paris on 15/16th February 2005, the JOEB has reviewed the ODR tables dealing with this proposed variant, i.e. F900EX EASy Step 3 towards F900DX (see appendix 2, see Table of Contents on page 5), and also the General Pilot Training Specifications for F900EX EASy/F900DX. These documents were presented by Dassault Aviation.

The F900DX is a F900EX EASy Step 3 with the application of modification M4000.

The modification M4000 concerns mainly the fuel system:

- removal of rear fuel tank, and
- full capacity of 18830 lbs. for the F900DX (range 4000 Nm) instead of 21000 lbs. for the F900EX EASy (range 4500 Nm).

B.2 JOEB Evaluation

A visit of the first aircraft (s/n 601) was scheduled as soon as it is at our disposal.

This visit was done on 11th July 2005 in Dassault Aviation facilities in Bordeaux-Mérignac.

The aircraft was presented to Captain Xavier Barral (JOEB Chairman for Dassault Aviation)by Etienne Faurdessus (Dassault Aviation test pilot), Louis Huchez (JOEB focal point Dassault Aviation), and Christophe Giraudeau (Dassault Aviation).

JOEB had the following questions:

- protection of weights and balance,
- managing of fuel system, cruise transfers,
- ECL: specific or generic.

With the help of the Dassault Aviation's team, we used the EASy concept on the ground, aircraft powered by GPU.

The JOEB followed the normal flow proposed in CODDE 2 and we introduced several flights synopsis.

1. We changed TO (take-off) weights to see if the protections were there and LW (landing weight) as well (Step 3 does not permit to enter weights out of range of this variant : the crew is advised by an amber message and you cannot continue the normal flow)
2. Fuel system: we passed on review, the entire fuel chapter with the use of normal, abnormal and emergency check-lists in both ways: ECL and QRH (paper).

No discrepancies were found and that satisfied the JOEB concerns about this variant.

The results of ODR tables were founded satisfactory and were endorsed by the JOEB.

Consequently, the MDR table for that variant is:

		FROM AIRPLANE	
		F900EX EASy	F900DX
TO AIRPLANE	F900EX EASy	N/A	B/B/B
	F900DX	B / B / B	N/A

Note: Refer to paragraph 4 of this report for the consolidated table reflecting the summarized MDR tables of all evaluations contained in this document.

B.3 Operational Documentation

The final version of the respective CODDE applicable to F900DX was released last October 2005 and EASA gave the type certificate subsequently on 21 October 2005 (reference of EASA approval of M4000 is AC 02186).

JOEB recommends approval of the following Dassault Aviation documents:

- CODDE 1 issue 01 or later - Airplane Description (Ref DGT100785)

- CODDE 2 issue 01 or later -Operations Manual (Ref DGT101524)

- CODDE 3 QRH 1 issue 01 or later (Ref DGT101235)

- CODDE 3 QRH 2 issue 01 or later (Ref DGT101236)

- ODR tables F900EX EASy Step 3 towards F900DX, ref. DSC 04/2030-TOD issue 03, doc F900-OPS-410-2

- General Pilot Training Specifications for F900EX EASy/F900DX, ref. DSC 03/3105-TOD issue 07, doc F900-OPS-411-2 titled "Dassault Aviation specifications F900EX EASy & F900DX Pilot Initial Type Rating Training Course"

- Detailed Pilot Training Specifications for F900EX EASy/F900DX, ref. DSC 3/3516-TOD issue 01, doc F900-OPS-411-2 titled "Appendix to Dassault Aviation specifications F900EX EASy & F900DX Pilot Initial Type Rating Training Course"

Attention

The pilot initial type rating training course of the Falcon 900EX EASy includes the specificities of the F900DX variant. In other words, the same pilot initial type rating training course must be taken for pilots of F900EX EASy and for pilots of F900DX.

Note : For pilots already type rated on the F900EX EASy without having followed a pilot initial type rating training course which included the F900DX specificities, a one hour specific module stressing on F900DX specificities must be taken by these pilots to be authorized to fly the F900DX variant. This one hour module could be included in a recurrent course.

B.4 Pilot Licence Endorsement

JOEB recommends adoption of this variant: F900EX-M4000, called commercially F900DX.The JOEB recommends that the same pilot type rating (single licence endorsement) as the F900EX EASy be applied to the F900DX:

Falcon 900EX EASy

Note: Refer to paragraph 2 of this report for the consolidated table reflecting the summarized EASA Class and Type Ratings List and Endorsement List (Aeroplanes) (Table 8) of all evaluations contained in this document.

Addendum C
Operational Evaluation Board Report Dassault F900EX EASy
Falcon Aircraft Shortened Training (FAST)
F2000EX EASy to F900EX EASy

C.1 Introduction

This addendum covers Falcon Aircraft Shortened Training (FAST) from F2000EX EASy to F900EX EASy.

C.2 Transition from F2000EX EASy to F900EX EASy:

FAST is aimed at pilots with a type rating on F2000EX EASy who are willing to become qualified on F900EX EASy. In addition to being F2000EX EASy type rated, the following pre-requisites shall be met by all FAST program participants by applying:

- A minimum of 150 hours PIC and/or Co-pilot time on the base aircraft
- And by adding the following requirements:
    - A proficiency check must have been performed on the base aircraft within the previous 12 months
    - An approved knowledge test, proposed by the training provider, must have been passed prior to beginning the FAST course.

		FROM AIRPLANE	
		F2000EX EASy/DX/LX	F900EX EASy/DX/LX
TO AIRPLANE	F2000EX EASy/DX/LX	N/A	No Credit
	F900EX EASy/DX/LX	E (training credits)	N/A

C.3 Operator Difference Requirements

Operators Difference Requirements are provided in the following document:

> Operator Differences Requirements - FAST - F2000EX EASy to F900EX EASy (ref. DGAC08DSOF096 Issue 01 dated 2-Oct-2008).

C.4 Training Specifications

Training specifications are provided in the following document:

> FAST F2000EX EASy to F900EX EASy - Technical Specifications (ref. DGAC08DSOF095 Issue 02 dated 4-Nov-08).

C.5 Checking and Currency:

Checking is conducted on the F900EX EASy.

Under the FAST concept, pilot type rating check is a full skill test (it is not limited to the differences identified in the ODR table).

Demonstration conducted with EASA focused on initial transition training. No credit for checking and currency have been sought.

C.6 Operational Documentation

The respective CODDE documentation of each aircraft remains applicable.

C.7 Pilot Licence Endorsement

Existing Pilot Licence Endorsement designations remain applicable.

Addendum D

Operational Evaluation Board Report Dassault F900EX EASy

Variant Falcon F900LX

D.1 Introduction

Dassault Aviation applied in March 2010 to EASA Flight Standards for the evaluation of Falcon 900LX, which is the commercial designation of a Falcon 900EX EASy fitted with winglets installed per Modification M5281. Dassault Aviation proposed the F900LX be a variant to F900EX EASy.

ODR tables dealing with this proposed variant, i.e. F900EX EASy towards F9000LX, are provided in Dassault Aviation document DGAC10DSOF001.

T2 test have been performed by EASA OEB pilot. T2 test was arranged from Dassault Aviation flight test base. T2 test has demonstrated that following winglets installation there is no adverse differences in handling characteristics and no perceptible differences in aircraft stability and manoeuvring characteristics.

D.2 Master Difference Requirement (MDR) - Transition from F900EX EASy / F900DX to F900LX

		FROM AIRPLANE		
		F900EX EASy	F900DX	F900LX
TO AIRPLANE	F900EX EASy	N/A	B/B/B	B/A/A
	F900DX	B/B/B	N/A	B/A/A
	F900LX	B/A/A	B/A/A	N/A

Note: Refer to paragraph 4 of this report for the consolidated table reflecting the summarized MDR tables of all evaluations contained in this document.

D.3 Operational Documentation

Respective CODDE versions applicable to F900LX are listed here below. OEB recommends approval of the following Dassault Aviation documents:

- CODDE 1 (Airplane Description) ref. DGT91832 Revision 10 or later
- CODDE 2 (Operations Manual) ref. DGT84973 Revision 16 or later
- QRH 1 (Quick Reference Handbook 1) - ref. DGT92995 Revision 15 or later
- QRH 2 (Quick Reference Handbook 2) - ref. DGT92996 Revision 14 or later

F900LX cruise performance are covered in a specific Performance Manual: DGT122758.

D.4 Familiarization training

The pilot initial type rating training course of the Falcon 900EX EASy includes the specificities of the F900LX variant. In other words, the same pilot initial type rating training course must be taken for pilots of F900EX EASy and for pilots of F900LX.

Note: For pilots already type rated on the F900EX EASy without having followed a pilot initial type rating training course which included the F900LX variant, a familiarization course (training Level B) covering the difference between the F900EX EASy and the F900LX must be taken by these pilots to be authorized to fly the F900LX variant. In-house training is acceptable, provided Dassault Aviation documentation is used.

The training areas of special emphasis applicable to the F900LX are the following:

- Effect of high speed Arthur failure with AP coupled
- Use of nose wheel steering (NWS) during cross-wind take-off (> 15 knots)
- In case of maximum fuel asymmetry, marked roll tendency during the flare.
- Modification of flight preparation, with restriction on centre of gravity (CG) computation.

D.5 Pilot Licence Endorsement and determination of pilot type rating

OEB recommends adoption of F900LX as a variant to F900EX EASy/DX.

The OEB recommends that the same pilot type rating (single licence endorsement) as the F900EX EASy and F900DX be applied to the F900LX:

Falcon 900EX EASy

Note: Refer to paragraph 2 of this report for the consolidated table reflecting the summarized EASA Class and Type Ratings List and Endorsement List (Aeroplanes) (Table 8) of all evaluations contained in this document.

Addendum E

Operational Evaluation Board Report Dassault F900EX EASy Variant F900EX EASy II

E.1 Introduction

Dassault Aviation applied in May 2010 to EASA Flight Standards for the evaluation of Falcon 900EX EASy II, which is a Falcon 900EX EASy with Modification M5340 (1st Certification). EASy II 2nd Certification (M5595) was then evaluated. The application was a joint application with the FAA FSB. Dassault Aviation proposed the F900EX EASy II be a variant to F900EX EASy.

Major EASy II avionics functions evaluated included the following:

- ADS-B Out (Automatic Dependent Surveillance – Broadcast)
- RAAS (Runway Awareness Advisory System)
- ADM (Automatic Descent Mode)
- Paperless Charts
- LPV approach capability
- SVS (Synthetic Vision System)
- XM™ graphical weather display
- RNP AR 0.3Nm (see paragraph E.8 in this Addendum)
- ATC Datalink (see paragraph E.9 in this Addendum)

EASA OEB found F900EX EASy II (1st and 2nd Certification) operationally suitable provided crew are trained in accordance with the recommendations of this Addendum, and operate the aircraft in accordance with Dassault Aviation CODDE documents philosophy or equivalent.

Note: EASy avionics prior EASy II is called EASyI for the purpose of this Addendum, except for paragraph E.7.

Sample ODR tables dealing with this proposed variant, i.e. F900EX EASy towards F9000EX EASy II, are provided in Dassault Aviation document DGAC08DSOF091. Sample ODR tables addressing the reverse side, i.e. F900EX EASy II towards F900EX EASy, are provided in Dassault Aviation document DGAC12DSOF140.

Sample ODR tables dealing with F900EX EASy II 1st Certification and F900EX EASy II 2nd Certification, are provided in Dassault Aviation document DGAC13DSOF026.

EASy II 1st Certification, EASA OEB agreed with Dassault Aviation proposal to follow the “T test” process as described in the CPD: T1, T2, T3 tests.

- T1 test: T1 test has been waived and integrated in T3 test.
- T2 test: EASA OEB has accepted Dassault Aviation analysis showing that T2 test is successfully passed. The analysis shows that wings, fuselage, and engines, are the same between F900EX EASy and F900EX EASy II, so that handling qualities are unchanged with M5340 applied.
- T3 test: T3 test has been conducted by EASA OEB pilots on a F900EX EASy II full flight simulator: appropriate portion of the proficiency check / LOF-oriented has been

administered. EASA OEB pilots were first given the difference training course F900EX EASy/DX/LX → F900EX EASy II.

Note: For the purpose of this addendum, a Cockpit Procedure Trainer (CPT) is a training device which represents the cockpit environment including the cockpit controls, displays and computer programs necessary to represent the aircraft in ground and flight operations to the extent that the systems appear to function as in an aeroplane.

The purpose of the CPT is to allow learning the functioning of the controls and displays as well as practicing CRM principles and application of procedures.

A CPT is based on software issued from FFS simulation, with the exception of Avionics, which is re-hosted from the aircraft software; it is validated for its intended use.

E.2 Differences between the F900EX EASy II, the F900DX EASy II and the F900LX EASy II

The difference levels between the F900EX EASy II, the F900DX EASy II and the F900LX EASy II (all 1st Certification) have been evaluated by analysis and classified as familiarization training as follows:

		FROM AIRPLANE		
		F900EX EASy II	F900DX EASy II	F900LX EASy II
TO AIRPLANE	F900EX EASy II	N/A	B/B/B	B/A/A
	F900DX EASy II	B/B/B	N/A	B/A/A
	F900LX EASy II	B/A/A	B/A/A	N/A

Note: Refer to paragraph 4 of this report for the consolidated table reflecting the summarized MDR tables of all airplane variants evaluations contained in this document.

E.3 Master Difference Requirement (MDR) - Transition from F900EX EASy / F900DX / F900LX to F900EX EASy II / F900DX EASy II / F900LX EASy II (1st and 2nd Certification)

Refer to paragraph 4 of this Report.

E.4 Operational Documentation

The respective CODDE versions applicable to F900EX EASy II are listed here below. OEB recommends approval of the following Dassault Aviation documents:

- CODDE 1 (Airplane Description) ref. DGT91832 Revision 11 or later
- CODDE 2 (Operations Manual) ref. DGT84973 Revision 18 or later
- QRH 1 (Quick Reference Handbook 1) - ref. DGT92995 Revision 17 or later
- QRH 2 (Quick Reference Handbook 2) - ref. DGT92996 Revision 16 or later

E.5 Difference training:

E.5.1 Difference training EASy to EASy II

The prerequisite to this difference training course (EASy to EASy II) is:

- Either a valid type rating on F900EX EASy, or
- A full initial type rating training on F900EX EASy, up to but excluding the check ride.

As a result of the OEB evaluation, a footprint for the difference training course consisting in 4 hours ground course, 3 hours Cockpit Procedure Trainer (or by default a fixed base simulator without visual facilities) and 2 hours full flight simulator for each crew member has been found to comply with the applicable regulation and Sample ODR Levels.

E.5.2 Difference training EASy II to EASy

This difference training has not been evaluated by OEB. However the associated MDR table has been identified by analysis - see paragraph 4.

E.5.3 Training Areas of Special Emphasis

The training areas of special emphasis applicable to difference training course F900EX EASy/DX/LX → F900EX EASy II are the following:

- Proficiency in using FPV vertical and lateral displacement in new IPFD design
    - The Flight Path Vector, as well as Flight Director, is now subject to wider displacements in case of turbulence, crosswind, or engine failures. The pilot shall be proficient in using the un-caged FPV, especially in low speed manoeuvres such as loss of lateral engine after take-off, or strong crosswind during take-off. Pilots must be alerted to the wide scale relative to pitch attitude and path to avoid over-controlling.
- Proficiency in performing ILS/LPV approaches in raw data
    - Due to the new layout of the IPFD, the sensitivity of the FPV has increased, pilots should be made aware of this new feature. Training in this area should focus on maintaining the desired flight path especially during turbulent conditions.
- Proficiency in using FPV in connection with synthetic vision (terrain, virtual runway)
    - The display of the synthetic vision should be cross-checked with references to ground based navigation aids, pilots must be alerted that the relevance of the synthetic vision depends on GPS accuracy, as well as terrain and airport database. Special emphasis should be given to the display colours (blue and blue) during extended flight over water.

      Note: The SVS should only be used for situational awareness.
- Proficiency in using all Flight Management Computer Windows
    - There are multiple small changes relative to departure and approach windows, pilots must be alerted to and trained on these changes.
- Proficiency in using TO and GA modes of EASy II.
- DME distance in HUD during LPV approach
    - The crew must be aware that the DME distance displayed in the HUD during LPV approach must be disregarded, as per AFM procedure, until a HUD fix is available (DME distance displayed in the IPFD remains correct).

- VNAV mode
    - Any modification to the descent angle on the AVIONICS / AUTO SPEEDS page will only be effective after the next modification to the flight plan (e.g. DIRECT TO).

E.6 Checking

Checking is defined as level A.

E.7 Currency

- Pilot current on Falcon 900EX EASy have to undergo the difference course in order to be proficient on Falcon 900EX EASy II.
- To maintain currency on the Falcon 900 EASy and/or Falcon 900EX EASy II the following applies:
    i. If a pilot has not flown on one variant for more than 6 months, he must perform a self-review on that variant prior to flying on that variant.
    ii. If a pilot has not flown on one variant for more than one year, he must perform a minimum two hours Cockpit Procedure Training (CPT) session on that variant, covering the differences between EASy and EASy II specially take off and go around procedures.
    iii. If the Falcon 900EX EASy II has not been flown within a period of 2 years following the differences training, further differences training or a proficiency check on that variant will be required.
    iv. If the Falcon 900EX EASy has not been flown within a period of 2 years, the pilot shall meet any refresher training requirements as determined by the Authority and complete a proficiency check in accordance with Appendices 1 and 2 to JAR–FCL 1.240.

E.8 RNP AR 0.3Nm

E.8.1 Falcon OEB Recommendation

Dassault Aviation has proposed the Falcon OEB to conduct an Operational Suitability Evaluation of the RNP AR 0.3Nm capability on Falcon 900EX EASy II.

Further to the examination of the substantiations provided by Dassault Aviation and the simulator trials undertaken by the Falcon OEB (see E.8.2 below), the Falcon OEB has confirmed the RNP AR 0.3Nm capability.

The RNP AR 0.3Nm procedures, as proposed by Dassault Aviation, can be used by Operators as an Acceptable Means of Compliance (AMC) to meet OPS 1.243 of EU-OPS 1 and paragraphs 9 and 10 of EASA AMC 20-26 “Airworthiness Approval and Operational Criteria for RNP Authorization Required (RNP AR) Operations”.

Prior to operating the Falcon 900EX EASy II on procedures in accordance with RNP AR 0.3Nm requirements, the Falcon OEB recommends the Training Areas of Special Emphasis outlined in paragraph E.8.5 below.

E.8.2 Supporting substantiations provided by Dassault Aviation

This proposal has been substantiated by Dassault Aviation through:

- A Generic Compliance Checklist (ref. DGAC12DSOF86),

- RNP AR Approaches – Dassault Guidelines (ref. DGAC11DSOF110),
- CODDE 2 Operational Procedures (ref. DGT84973) and related QRH1,
- RNP AR Training Specifications (ref. DGAC08DSOF093),
- An evaluation of the RNP AR 0.3Nm procedures using a Falcon 900LX EASy II full flight simulator. During this evaluation one OEB pilot in pair with one FAA FSB pilot, supported by a Dassault Aviation pilot, performed 6 approaches in total. The approaches included normal operations with no failures, as well as escape ("safe extractions") and go around manoeuvres, to assess a crew's ability to adopt the procedure appropriate to the abnormal condition.

No flight testing in the aeroplane was deemed necessary by the Falcon OEB.

E.8.3 RNP AR training footprint

The following footprint was evaluated and found suitable:

Day 1
Ground Introduction (3:00) **FFS (Level D)** (4:00) **Oral Examination** (0:30)
Note: Time for FFS does not include briefing and debriefing

E.8.4 Prerequisites

Prior to attending the RNP AR 0.3Nm course, an EASy Initial course via an EASy II Initial or an EASy Initial plus EASy II Differences Course is required. The Licence Skill Test need not be accomplished prior to the RNP AR 0.3 Nm course however, all ground and flight training must be satisfactorily completed prior to beginning the EASy RNP AR course.

E.8.5 Minimum pilot training requirements (initial)

Prior to operating the Falcon 900EX EASy II using procedures in accordance with RNP AR 0.3Nm requirements, the Falcon OEB recommends the following Training Areas of Special Emphasis:

Ground Course

- RNP setting in the Avionics page.
- Crew should receive explanation on the Temperature Compensation and instructions on how to calculate and apply these compensations.
- Crew must be made aware about the differences between "Current Nav database" and "Validated Nav database"
- Crew must be made aware about the differences between "Safe Extraction" and "Go Around" and must be trained to perform both manoeuvres;
- Crew training should focus on FMS sensors reversion and the corresponding effect on Estimated Position of Uncertainty (EPU)
- Crew should be provided with a final demonstration of RNP AR flight preparation until landing (e.g. by using video of cockpit indications) at the end of the classroom.

Simulator session:

- The initial RNP AR 0.3Nm training should include a 4 hours simulator session, part as PF and part as PNF (PM), and should include at least one STD approach with no failures, one with escape (“safe extraction”) manoeuvre, one with go around manoeuvre and one with temperature compensation. If HUD is to be used to fly RNP AR 0.3Nm, training programs should recognize and address the necessary seat/position related tasks for the applicable crewmember.

E.8.6 Minimum pilot training requirements (recurrent)

Recurrent training must be compliant with Part FCL and EU-OPS as applicable, and include the 'minimum pilot training requirements' of the initial Ground Course outlined in paragraph E.8.5 above.

For the simulator session, the OEB recommends 2 RNP AR approaches during recurrent training to be flown for each duty position. One approach should be terminated via a missed approach due to navigation degradation near the Final Approach Fix. The second approach should be completed to a landing. The OEB recommends 2 different approaches be conducted.

E.8.7 Minimum pilot checking requirements

Initial evaluation of RNP AR knowledge and procedures should be in accordance with AMC 20-26 Appendix 2 paragraph 4.1, or as revised.

Flight Crew Members (FCMs) performing RNP AR approaches should demonstrate their proficiency during subsequent LPC/OPC sessions.

E.8.8 Pilot recent experience and currency requirements

Compliance with EU-OPS and/or Part FCL as appropriate is required for recent experience. The OEB has found no specific recent experience or currency requirements for RNP AR approaches. The OEB did not evaluate recent experience or currency requirements for specific aerodromes or types of operations used by an operator.

E.9 ATC Datalink

ATC datalink functions (both FANS1A and ATN B1) are part of the EASy II avionics standard (2nd Certification defined by M5595). Operators should ensure that flight crew are thoroughly familiar with all relevant aspects of data link operations according to the Global Operational Data Link Document (GOLD) prior to operation.

E.9.1 Prerequisite

Prerequisite for ATC Datalink training is a type rating training on any EASy Aircraft.

E.9.2 Training Areas of Special Emphasis (TASE)

The following items should receive special emphasis during the ATC Datalink training:

- Crew has to know that the wording used in FANS 1/A and in ATN B1 is not fully identical.
- Crew has to know that the format of data (FL and Mach) to be entered in MCDU is specific and different between FANS 1/A and ATN B1.
- Crew has to know that complete content of message may not be displayed in first page, and in this case, has to look at the other page(s) where a required answer from the crew to the ATC may be displayed (with a specific mention that the acknowledge key for Oceanic Clearances is visible on first page).

- It is recommended that the PNF displays the page in his PDU and not in the MDU shared area.
- Crew has to know that there is no direct access to OCL via shortcut because OCL is part of a sub-page: crew needs to navigate in the page to get the message.
- Crew has to know that the construction of the dialogues are different in FANS 1/A and in ATN B1.
- Crew has to know that there is no automatic handover between FANS 1/A and ATN B1. Handover should follow CODDE2 procedure.
- Crew has to know that FANS 1/A clearance is to be manually loaded in the flight plan (it is not automatic).

E.9.3 Initial Training

Initial Training on ATC Datalink should cover the TASE listed in paragraph E.9.2 above. The initial course should cover the ICAO Global Operational Data Link Document (GOLD) and should include CBT or equivalent to become familiar with the operational use.

The OEB recommends that the first ATC Datalink flight be conducted under supervision.

E.9.4 Checking aspects

As per the regulations.

E.9.5 Pilot recent experience and currency requirements

Compliance with Part-FCL / EU-OPS 1.970 as appropriate is required for recent experience. The OEB recommends one leg using ATC Datalink every 6 months.

E.10 Pilot Licence Endorsement and determination of pilot type rating

The OEB recommends adoption of F900EX EASy II (1st and 2nd Certification) as a variant to F900EX EASy/DX/LX.

The OEB recommends that the same pilot type rating (single licence endorsement) as the F900EX EASy, F900DX, and F900LX be applied to the F900EX EASy II (1st and 2nd Certification): "**Falcon 900EX EASy"**

Note: Refer to paragraph 2 of this report for the consolidated table reflecting the summarized EASA Class and Type Ratings List and Endorsement List (Aeroplanes) (Table 8) of all evaluations contained in this document.

E.11 Training Credits between F900EX EASy II, F2000EX EASy II and F7X EASy II

E.11.1 EASy II (except ATC Datalink)

Considering the similarities in EASy II definitions among F2000EX, F900EX, and Falcon 7X, the following training credits apply - refer to Dassault Aviation document ref. DGAC13DSOF025:

	CREW QUALIFIED AND CURRENT ON		
	F2000EX EASy II 1st Cert	F900EX EASy II 1st Cert	F7X EASy II
F900EX EASy II 2nd Cert	D	A	B

Note that neither checking nor currency credit have been determined yet.

E.11.2 ATC Datalink

Considering the similarities in ATC Datalink definitions among F2000EX, F900EX, and Falcon 7X, an ATC Datalink training is valid for all EASy II Falcon.

Checking and currency credit: not applicable.

Addendum F

Operational Evaluation Board Report Dassault F900EX EASy

STEEP APPROACH LANDING

F.1 General Description of the Steep Approach

F.1.1 A Steep Approach is used primarily when there are obstacles in the approach path that are too high to allow a normal 3° approach path. An approach path angle of 4,5 degrees or more is considered a steep approach.

F.1.2 The EASA OEB has determined that the conduct of steep approach landing operations requires no higher piloting skill level that than of normal 3° approaches. However, since steep approach landing operations are often tailored to demanding airports - located in mountainous areas, having short runways - the EASA OEB requires flight training, including briefing (no formal academic training, i.e. no classroom training), for competency in conducting steep approach landing operations.

F.1.3 The EASA OEB found that Falcon 900EX EASy Series are operationally suitable for steep approach landing operations up to an approach path angle of 6.0 degrees with aircrew trained in accordance with the requirements set in this addendum, and using associated CODDE2 procedures provided by Dassault Aviation.

F.2 The Operational Suitability Evaluation process

An Operational Suitability Evaluation of Falcon 900EX EASy Series Steep Approach, using a Falcon 900EX EASy full flight simulator was performed by EASA OEB on 25 October 2011. No flight testing in the aeroplane was deemed necessary by the EASA OEB.

F.3 EU-OPS Requirements for Steep Approach Procedures

The following EU-OPS and associated AMC references relate to steep approaches:

- Appendix 1 to OPS1.515(a)3: Steep approach procedures
- EU-OPS1.975: Route and aerodrome competence qualification
- AMC OPS1.975 paragraph 5 (TGL44): Route and aerodrome competence qualification (Category C aerodrome)

F.4 Falcon 900EX EASy References

Refer to appropriate CODDE2 and AFM Annexes.

F.5 Steep Approaches Aerodrome Requirements

Operators must comply with any aerodrome specific requirements for steep approaches (e.g. in London City - EGLC).

Note: Pilots performing steep approaches at Lugano airport (LSZA) must be informed about the Dassault letter titled "Falcon - Lettre de non-objection pour les approches de Lugano" (Reference

DGT-DTC/CER 568463 dated 22 June 2006). This letter specifies that Dassault has no objection regarding the initial phase of the approach flown at 6.65º provided that the aircraft is operated in accordance with the AFM or the associated operating manual, and that the operator has obtained operational approval from the competent Authority.

F.6 Specifications for Training

F.6.1 Pilot Training Prerequisite

No prerequisite is required before entering the Steep Approach pilot course except a current type rating on the aeroplane, or full initial type rating training up to, but excluding, the check ride.

F.6.2 The crew must be trained in using the procedure provided in the Dassault Aviation CODDE2 Operating Manual (Normal Operations - Special Procedures - Operations) or in the equivalent company SOP's.

The Steep Approach pilot training course can be included as an integral part of the aeroplane type rating training course.

F.6.3 Steep Approach Pilot Training Programme

F.6.3.1 Flight Training

Flight training (as PF or PNF) may be conducted in a Level C or D FFS, or in the aircraft with a Type Rating Instructor (TRI) and must address the following:

- Briefing prior to the simulator session, or during the flight preparation to include: AFM/CODDE2 Limitations, Normal / Abnormal Procedures, Performance with special emphasis on increased landing distance.
- Phases of the Steep Approach, to include: Stabilized approach concept as a key success for steep approach landing, appropriate slats / flaps configuration, approach speed, and flare initiation.

F.6.3.2 Initial Training

The initial training should comprise, as a minimum, three Steep Approaches:

- one approach following a 5.5° Approach Path Angle with full stop landing to comply with normal procedures; and
- one approach following a 6° Approach Path Angle with engine anti-ice management introducing an abuse in speed, managed by crew using AB1 and AB2 alternatively (pilot has to demonstrate his ability to be stabilized at 1000 ft.), until touchdown followed by a go-around; and
- one approach following a 5.5° or 6° Approach Path Angle with an engine failure below 400 ft., followed by a full stop landing or a go-around at pilot discretion.

When a HUD is installed, the OEB recommends to perform the first approach using the HUD (final phase is VMC), and in accordance with the CODDE2/AFM Limitations section applicable for steep approaches. In flight, the OEB recommends HUD use during the VMC phase.

F.6.3.3 Recurrent Training

The Recurrent Steep Approach training should be performed every 6 months, and should include, as a minimum, one Steep Approach and a second Steep Approach where non-normal situations are introduced during the Approach.

F.6.3.4 Training Areas of Special Emphasis

The approach briefing should include all aspects of the Steep Approach, including as a minimum:

- normal and abnormal procedures during the Steep Approach;
- transition from a glide path reference system to a visual glide path indicating system; and
- computation of the field length data when using steep approach criteria.

The crew should become proficient on the task sharing described in the Special Procedure for Steep Approach, in particular regarding go-around. Both pilots shall be trained in the procedure as PF and PNF, as applicable.

F.6.3.5 EASy II Differences

Differences regarding the EASy II cockpit are addressed in a ground course, describing the flight management windows (descent / approach phase of flight and landing configuration tab).

F.7 Recent Experience / Currency

The OEB determined that there are no specific recent experience or currency requirements for Steep Approaches.

F.8 Training credit

Training credit (Initial and Recurrent) can be given for Steep Approaches training performed on Falcon 2000EX EASy Series.

F.9 Period of Validity of Competence

Before performing Steep Approach Landing Operations, an operator shall ensure that the pilot in command fulfils the same requirements of EU-OPS1.975(b)(c) and (d).

F.10 Checking Requirements

There is no requirement for knowledge checking or flight proficiency testing for Falcon 900EX EASy Series steep approach qualification.

Proof of completion of Falcon 900EX EASy Series or Falcon 2000EX EASy Series steep approach training is sufficient to demonstrate qualification.

Attachment 1

NADP Procedure - London City Airport / Other Airports

1. Applicability to London City Airport

This procedure has been assessed by the Falcon JOEB team for London City Airport.

Refer to Dassault CODDE2, reference DGT84973.

2. Other Airports

The process and the associated close-in NADP procedure have been developed for the London City Airport, and can be validated for other airports, provided:

- The new NADP procedure is accepted by the local Authority, and
- All obstacle clearance requirements are fulfilled.