



EUROPEAN AVIATION SAFETY AGENCY



Operational Evaluation Board Report

Revision 2 dated: 29. OCTOBER 2010

Bombardier Aerospace Challenger 300

European Aviation Safety Agency
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Bombardier - Challenger 300



Revision Record

Revision No.	Section	Pages No.	Date
1.	All	1 - 21	3. May 2004
2.	Appendix 3	19 - 22	29. Nov 2010

Contents

	Page No.
Contents	3
Operational Evaluation Board - OPS/FCL Subgroup	4
Glossary	6
Executive Summary	7
1. Purpose and Applicability	8
2. Pilot Type Rating Definition	9
3. Master Common Requirements – MCR	9
4. Master Difference Requirements - MDR	9
5. Operator Difference Requirements – ODR	9
6. Line Flying Under Supervision	9
7. Initial Training Course	10
8. Differences Training	11
9. Currency	11
10. Cabin Crew Requirements	11
Appendix 1	
JAR OPS Sub Parts K & L Compliance Checklist	12
Appendix 2	
Bombardier Challenger 300 Type Rating Course	13
Appendix 3	
Integrated Flight Information System (IFIS) Evaluation Report	19

Operational Evaluation Board – OPS / FCL Subgroup

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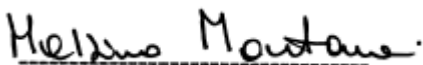


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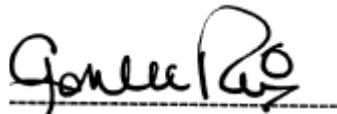


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Capt. M. Montanari – Chairman



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Report prepared by:

Poul Rasmussen

An evaluation of the Challenger 300 was carried out in November 2003 by a JAA Joint Operational Evaluation Board; an earlier, joint exercise with TCCA in March 2003 was abandoned due to a lack of preparedness by the Manufacturer. This report is therefore, applicable to JAA only.

This evaluation was made in compliance with the JAA Terms of References for JOEB and the JOEB Handbook, dated December 2002.

This report specifies the JAA minimum requirements for the Initial Type Rating Training course, Checking and Currency on the Challenger 300

This report also contains the findings of the operational acceptability of the Challenger 300 with regards to JAR OPS1. *(Awaiting Compliance Statement from Bombardier)*

Central JAA recommends the approval of the proposed training course for initial type rating on the Challenger 300.

The initial course fulfils the requirements of JAR-FCL AMC 1.261 (c) (2)



Fergus Woods
Licensing Director



George Rebender
Operations Director

Glossary

ADF	Automatic Direction Finding
AFM	Aeroplane Flight Manual
AFCS	Automatic Flight Control System
AP	Autopilot
APU	Auxiliary Power Unit
BD-100	Challenger 300 Aeroplane
CJAA	Central JAA
CL-30	Challenger 300 Aeroplane
ECS	Environmental Control System
EFIS	Electronic Flight Instrument System
EICAS	Engine Indicating and Crew Alerting System
ENAC	Ente Nazionale per l'Aviazione Civile
FAA	Federal Aviation Administration
FCOM	Flight Crew Operating Manual
FMS	Flight Management System
FSB	Flight Standardization Board
FTD	Flight Training Device
GPS	Global Positioning System
IEM	Interpretative and Explanatory Material
IFIS	Integrated Flight Information System
ILS	Instrument Landing System
ISA	International Standard Atmosphere
JAA	Joint Aviation Authorities
JAR FCL 1	JAA Flight Crew Licensing (Aeroplanes)
JAR OPS	JAR-OPS 1 Commercial Air Transportation (Aeroplanes)
JAR STD	JAR Synthetic Training Devices (Aeroplanes)
JOEB	Joint Operational Evaluation Board
LHS	Left Hand Seat
LIFUS	Line Flying Under Supervision
LOFT	Line Oriented Flying Training
MCR	Master Common Requirements
MDR	Master Difference Requirements
MFD	Multi Function Display
MMEL	Master Minimum Equipment List
NAA	National Aviation Authority
ND	Navigation Display
ODR	Operator Difference Requirements
PFD	Primary Flight Display
PIC	Pilot in Command
PITPM	Pilot Initial Training Program Manual
QRH	Quick Reference Handbook
RHS	Right Hand Seat
RVSM	Reduced Vertical Separation Minima
SIC	Second in Command
SOP	Standard Operating Procedure
TCAS	Traffic Alert and Collision Avoidance System
TRE	Type Rating Examiner
TRTO	Type Rating Training Organisation
VNAV	Vertical Navigation
WOW	Weight on Wheels

Executive Summary

The Joint Aviation Authorities JOEB conducted the theoretical and simulator portions of the Operational Evaluation (OE) in the Bombardier Dallas-Fort Worth training facility followed by a period of flying at the Bombardier flight test centre in Wichita, Kansas. That flying comprised 4 flights, two for initial pilot conversion training and the final two as a brief cross-country operational evaluation. No fully furnished aircraft was available for JOEB inspection.

These phases of the joint evaluation commenced on 05 November 2003 and were completed on 25th November 2003.

Throughout this document reference is made to the Challenger 300; this is the “commercial” name chosen by the company for the aeroplane; the formal License Endorsement for the type will be the CL30 and the Bombardier design name is the BD-100-1A10.

The scope of the evaluation was limited to Category I operations, the aircraft's current clearance limitation. If Category II or III approval is sought in future, further JOEB involvement would be necessary.

Whilst this report was written for use by AOC holders, the Challenger 300 is a complex and capable aeroplane with a large flight envelope and the JOEB recommend that non-AOC holders also follow the report requirements and recommendations.

The initial course fulfils the requirements of JAR-FCL AMC 1.261(c)(2). Central JAA recommends the approval of the proposed training course for initial type rating on the Challenger 300.



Evan Nielsen

EASA, Certification Directorate
Flight Standards Manager

29. November 2010

1. Purpose and applicability

Overview

The Challenger 300 is a swept wing executive aircraft designed for up to 8 passengers and two cockpit crew. It is capable of cruise speeds up to Mach 0.83 at a maximum altitude of 45,000 ft. The elevators and rudder are hydraulically powered and the ailerons are manually controlled. Hydraulically powered spoilers provide roll assistance as well as drag for use in flight and on the ground. The cockpit is modern in style, incorporating a 4 screen EFIS presentation and a Collins FMS. All system controls and indicators were mounted in the centre pedestal, there was no overhead panel. Power is supplied by two aft mounted Honeywell AS907 engines, each providing 6826 lbs of thrust at sea level and ISA+15°C; an automatic power reserve system provides rated thrust to ISA + 20°C at Mean Sea Level. Maximum take off weight is 38,500 lbs.

JAA Flying.

The following flying was carried out by the JAA pilots:

Aircraft: Challenger 300

Registration: C-GJCV

Serial Number: 4

Place: Wichita KS and Colorado Springs CO

Block Times (Z):	20/11/03	Reid	1700-1808
		Montanari	1808-1926
	21/11/03	Montanari	1706-1837
		Reid	1915-2020

Crew: The flights were under the command of Ed Grabman (Bombardier test pilot), who occupied the right hand seat.
The JAA pilots occupied the Left Hand Seat as indicated above.

Purpose: The flying on the 20th of November was carried out to achieve the basic skill manoeuvres required by JAA for type rating qualification and also included steep turns and stall approaches to operation of the stick pusher. The flying on the 21st allowed a brief operational evaluation to be carried out on the route Wichita – Colorado Springs – Wichita. Advantage was taken of the high cruise altitudes on the latter flights to allow both pilots to experience yaw damper off handling from maximum speed and altitude down to the limiting altitude of 31,000 ft for the yaw damper failed condition.

2. Pilot Type Rating Definition

In reference to JAR FCL1 Subpart F JAR-FCL 1.220 (b) (1) and to the JOEB Evaluation process, the type rating nomenclature CL-30 is proposed by Bombardier and being in accordance with ICAO Doc. 86432 and JAR-FCL1.220(b)(1) is accepted by JAA for the Challenger 300. This being a new type rating, Bombardier did not request any credit for training, checking or currency between the Challenger 300 and any other aircraft.

With the acceptance of this report, no previous experience or type ratings other than those set out in JAR-FCL 1, are required of a pilot starting the CL-30 Type Rating Course.

3. Master Common Requirements (MCR) - JAA

The Challenger 300 is a new type rating and thus Master Common Requirements do not apply.

4. Master Difference Requirements (MDR) - JAA

The Challenger 300 is a new type rating and thus Master Difference Requirements do not apply.

5. Acceptable Operator Difference Requirements (ODR) - JAA

The Challenger 300 is a new type rating and thus Operator Difference Requirements do not apply.

6. Line Flying Under Supervision (LIFUS)

JAA requires 'Line Flying Under Supervision', in accordance with JAR OPS (IEM OPS 1.945) as part of:

- Conversion to a new aircraft type
- Introduction of new systems
- Introduction of new operations e.g. oceanic operations
- Experience in a new crew position e.g. PIC & SIC
- Post qualification skill refinement e.g. refining ways of operating efficiency, flexibility and/or convenience
- Special characteristics e.g. high altitude airport operations, air traffic control procedures and non standard airfield operations

In the case of an initial type rating on the Challenger 300, a minimum of 10 sectors plus a line check is recommended for line flying under supervision.

NOTE: In the case of this being a pilot's first turbojet type rating, the LIFUS training should be extended to 20 sectors plus a line check in accordance with JAR OPS 1.945.

7. Initial Training Course – Type Rating Course

The Bombardier Type Rating Training Course comprises the following phases:

- Ground School (7 days, (42 hours))
- A Written Test of theoretical knowledge
- FTD or Fixed Base Simulator Training (7 Days, for a total of 14 hours per crew, run on ground-school days as a follow-up to classroom instruction)
- Flight Simulator Training (6 Details, 24 hours per crew)
- LOFT (Brief LOFT scenarios are incorporated in the simulator training)
- Simulator Skill Test (4 hours per crew, effectively a 7th detail)
- Aeroplane Training As required but for JAA, not less than 4/6 landings per pilot in accordance with JAR FCL 261(c)(2) and associated AMC.

The course followed by the JOEB is shown at Appendix C to this report. The JOEB recommends that the course elements above be regarded as the minimum for all pilots, regardless of previous experience.

Following the ground, simulator and flight training:

- LIFUS in accordance with paragraph 6 of this report.

The Type Rating course is recommended for approval provided that operator specific documentation is used throughout the course.

Areas of Special Emphasis

The JOEB has identified a number of aircraft systems and/or procedures that should receive particular emphasis in a Challenger 300 Training Program. Such training may take place in a Full Flight Simulator approved for the purpose or in an aircraft in flight:

1. Aircraft differences due to the JAA Certification Standard
2. Flight Management System (FMS)

The JOEB recommends that the FMS is a comprehensive and complex system and early exposure to it is important, especially for pilots with no previous EFIS or FMS experience. Establishing confidence in both manual and automatic control of the aircraft using the FMS is of great significance due to the highly integrated nature of the aeroplane.

3. Operation of Stall Identification System (Stick Pusher)(Simulator only)

The JOEB also recommends that all flight crew must be exposed to operation of the Stall Identification System (Stick Pusher) since if this were to operate, either when required or following failure, an unfamiliar crew could be misled into taking inappropriate action.

4. Dutch Roll Characteristics at Altitude Following Damper Failure

The JOEB further recommends that all Challenger 300 pilots must be given exposure to the Dutch Roll characteristics of the aeroplane following a yaw damper failure at high altitude since control of the Dutch Roll mode requires particular techniques.

5. Abnormal Procedures. (Full Flight Simulator - Level C or D and/or aircraft):

- Dual hydraulic system malfunctions. (Simulator only)
- Aileron/elevator disconnect (jammed controls in each axis). (Simulator only)
- Operation of Stick Pusher System.
- ILS approach on standby instruments.
- Primary Flight Display (PFD), Navigation Display (ND), EICAS reversionary modes.
- Integrated use of EICAS messages, switch positions and synoptic pages to determine aircraft system status.
- Yaw Damper failure in high altitude cruise.

8. Differences Training

The Challenger 300 is a new type rating and thus Differences Training does not apply.

9. Currency

There are no specific currency requirements applicable to the Challenger 300 beyond those of JAR OPS 1.965 and 1.970 or JAR FCL 1.026 and 1.245 for private operators.

10. Cabin Crew Requirements

There is no requirement for a cabin crew member on this aircraft and current cabin configurations do not incorporate a cabin crew member's station. The JOEB could not inspect a cabin interior fitted to production standard but note that all aircraft will have a Type 1 Main Door and Type 3 Emergency Exit; in addition, given an extreme emergency, there was ready access via the baggage compartment to the baggage door and good provision was made for its operation from inside the aircraft.

Appendix 1 to JOEB Bombardier Challenger 300 Report

JAR OPS 1 Subpart K & L Compliance List

Not Available

Appendix 2 to JOEB Bombardier Challenger 300 Report

CHALLENGER 300 TYPE RATING TRAINING CURRICULUM

Table of Contents

Table of Contents 12

Type Rating Training Course

 Purpose and Objective 13

 Course Curriculum Chart 14

Aircraft Systems Subjects..... 15

Transition Type Rating Training Course

 Purpose and Objective 16

 Course Curriculum Chart 17

CHALLENGER 300 CURRICULUM

This curriculum provides the recommended basis for all Challenger 300 training. Within this curriculum, combinations of lessons ("Courses") are specified to meet particular JAR-FCL and JAR -OPS requirements.

TYPE RATING TRAINING COURSE

Purpose and Objective

The TYPE RATING Course is designed for a pilot with **no previous experience in high performance aircraft** (capable of cruise flight at or above FL180). It provides the knowledge and skills necessary to meet or exceed the performance criteria set forth in JAR OPS and to demonstrate that the Pilot is the master of the Challenger 300 aircraft with the outcome of a procedure, maneuver, or operation never in doubt. Successful completion of courses in this curriculum satisfies all requirements of :

- JAR-FCL 1 Subpart F 1.240 (a) (2), (3) and (b) (1), Type and Class Ratings Requirements,
- JAR-FCL 1 Subpart F Appendix 1 to JAR-FCL 1 Subpart F 1.240, Skill test and proficiency check for aeroplane type/class ratings and ATPL,
- JAR-FCL 1 Subpart F Appendix 2 to JAR-FCL 1 Subpart F 1.240, Contents of the ATPL/type rating/skill test and proficiency check on multi-engine aeroplanes,
- JAR-FCL 1 Subpart F 1.261 (a) (1), (b) (3), Type and Class Ratings, Knowledge and Flight Instruction,
- Appendix 1 to JAR-FCL 1 Subpart F 1.261 (a), Theoretical knowledge instruction requirements for skill test/proficiency checking for class/type ratings, and
- AMC-FCL 1 Subpart F 1.261 (a), Syllabus of theoretical knowledge for class/type ratings for single- and multi-engine aeroplanes.

Course Prerequisites

Course prerequisites shall be as determined under the Training Organization and their Authorities.

TYPE RATING TRAINING COURSE (Cont'd)

Course Description

The following is a sample of a typical training course.

Simulator times listed are for a crew of two. If a single pilot is training, the simulator times are 50% of those listed. However, simulator session #1 must be completed from both crewmember seats when a single pilot is being trained.

BD 100 TYPE RATING TRAINING COURSE (2 Pilot Crew)					
DAY	GROUND TRAINING	Hours	SIMULATOR/ Systems Integration	Trainin g Hours	Brief/ Debrief hours
1	Introduction, Airplane General, Aural and Visual Warning, Electrical, Lighting, Flight Instruments	6.0	Systems Integration # 1	2.0	
2	Flight Management System, Navigation Systems, Communications Systems, AFCS	6.0	Systems Integration # 2	2.0	
3	FMS, CRM, Auxiliary Power Unit, Powerplant, Fire Protection & Extinguishing	6.0	Systems Integration # 3	2.0	
4	Fuel Systems, Pneumatics, Environmental Control Systems, Ice & Rain Protection, Emer Equip & Oxygen, Hydraulic System	6.0	Systems Integration # 4	2.0	
5	Flight Control System, Landing Gear & Brakes, Instrument Procedures, Cabin Equipment/ Toilet/ Galley,	5.0	Systems Integration # 5	2.0	
6	Cold Weather Ops, Hot Weather Ops, Weight & Balance, Preflight Inspection, Simulator Program / SOPs	6.0	Systems Integration # 6	2.0	
7	Self – Directed Study		Systems Integration # 7	2.0	
8	Performance, CRM	6.0	Simulator Sessions		
9			Simulator Session # 1	4.0	2.0
10			Simulator Session # 2	4.0	2.0
11			Simulator Session # 3	4.0	2.0
12	Review & Written Test	2.0	Simulator Session # 4	4.0	2.0
13			Simulator Session # 5	4.0	2.0
14	Self – Directed Study				
15			Simulator Session # 6	4.0	2.0
	Totals Ground Training (incl. Syst Integration)	57.0	Simulator Training	24.0	12.0
16			Skill TEST	As required	2.0

AIRCRAFT SYSTEMS

The following chart shows the Aircraft Systems and other recommended subjects covered by the Type Rating curricula:

Aircraft Systems		Duration
	Introduction	0.5
1	Airplane General	1.0
2	AFCS	1.5
3	Auxiliary Power Unit	0.5
4	Communications Systems	1.5
5	Electrical	1.5
6	Emergency Equipment & Oxygen	1.0
7	Environmental Protection / Pneumatics	2.0
8	Fire Protection	1.0
9	Flight Controls	1.5
10	Flight Instruments	2.0
11	Fuel System	1.0
12	Hydraulic System	1.5
13	Ice and Rain Protection	1.0
14	Landing Gear/Brakes	1.5
15	Lighting	0.5
16	Cabin Equipment	1.0
17	Navigation / FMS	7.0
18	Power plant/Thrust Reversers	1.5
19	Aural and Visual Warnings	1.0
20	Performance/Weight & Balance	8.5
21	Flight Profiles & Maneuvers	1.0
22	TRTO exam	2.0
23	Preflight Inspection	1.0
24	Simulator Program Overview	0.5
Total	Hours	43.0
AIRPLANE SYSTEMS INTEGRATION TRAINING		
	Systems Integration # 1 to # 7	14.0
	Grand Total	57.0

TRANSITION TYPE RATING

Purpose and Objective

The TRANSITION TYPE RATING course is designed for a pilot **with previous flight crewmember experience in high performance aircraft** (capable of cruise flight at or above FL180). It provides the knowledge and skills necessary to meet or exceed the performance criteria set forth in JAR OPS and to demonstrate that the Pilot is the master of the Challenger 300 aircraft with the outcome of a procedure, maneuver, or operation never in doubt. Successful completion of courses in this curriculum satisfies all requirements of:

- JAR-FCL 1 Subpart F 1.240 (a) (2), (3) and (b) (1), Type and Class Ratings Requirements,
- JAR-FCL 1 Subpart F Appendix 1 to JAR-FCL 1 Subpart F 1.240, Skill test and proficiency check for aeroplane type/class ratings and ATPL,
- JAR-FCL 1 Subpart F Appendix 2 to JAR-FCL 1 Subpart F 1.240, Contents of the ATPL/type rating/skill test and proficiency check on multi-engine aeroplanes,
- JAR-FCL 1 Subpart F 1.261 (a) (1), (b) (3), Type and Class Ratings, Knowledge and Flight Instruction,
- Appendix 1 to JAR-FCL 1 Subpart F 1.261 (a), Theoretical knowledge instruction requirements for skill test/proficiency checking for class/type ratings, and
- AMC-FCL 1 Subpart F 1.261 (a), Syllabus of theoretical knowledge for class/type ratings for single- and multi-engine aeroplanes.

Course Prerequisites

Course prerequisites shall be as determined under the Training Organization and their Authorities.

TRANSITION TYPE RATING (Cont'd)

Course Description

The following is a sample of a typical training course.

Simulator times listed are for a crew of two. If a single pilot is training, the simulator times are 50% of those listed. However, simulator session #1 must be completed from both crewmember seats when a single pilot is being trained.

BD 100 TRANSITION ATP / TYPE RATING TRAINING COURSE (2 Pilot Crew)					
DAY	GROUND TRAINING	Hours	SIMULATOR/ FTD Systems Integration	Training Hours	Brief/ Debrief hours
1	Introduction, Airplane General, Aural and Visual Warning, Electrical, Lighting, Flight Instruments	6.0	Systems Integration # 1	2.0	
2	Flight Management System, Navigation Systems, Communications Systems, AFCS	6.0	Systems Integration # 2	2.0	
3	FMS, Auxiliary Power Unit, Powerplant, Fire Protection & Extinguishing	6.0	Systems Integration # 3	2.0	
4	Fuel Systems, Pneumatics, Environmental Control Systems, Ice & Rain Protection, Emer Equip & Oxygen, Hydraulic System	6.0	Systems Integration # 4	2.0	
5	Flight Control System, Landing Gear & Brakes, RVSM, Cabin Equipment/	5.0	Systems Integration # 5	2.0	
6	Cold Weather Ops, Hot Weather Ops, Weight & Balance, Preflight Inspection, Simulator Program / SOPs	6.0	Systems Integration # 6	2.0	
7	Self – Directed Study		Systems Integration # 7	2.0	
8	Performance, Walk-Around	6.0			
9			Simulator Session 1	4.0*	2.0
10			Simulator Session 2	4.0	2.0
11			Simulator Session 3	4.0	2.0
12			Simulator Session 4	4.0	2.0
13	Review & Written Test	2.0	Simulator Session 5	4.0	2.0
14	Self – Directed Study				
	Totals Ground Training (incl. Syst Integration)	57.0	Simulator Training	20.0	12.0
15			Skill TEST	As required	2.0

Appendix 3.

Integrated Flight Information System (IFIS) Evaluation Report

1.0 BACKGROUND

Bombardier applied for an OEB Evaluation of the BD-100 Integrated Flight Information System (IFIS) on 07th June 2010.

2.0 EVALUATION

The evaluation consisted of a desktop review of Bombardier documentation and a physical inspection of the IFIS system as installed on a BD-100 in Basel, Switzerland on 16th September 2010.

2.1 Evaluation Scope

- Review of the Bombardier BD-100 Flight Crew Operations Manual (FCOM) and Master Minimum Equipment List (MMEL);
- Evaluation of the IFIS switching, selection and display options;
- In-flight evaluation of the Electronic Charts application including the presentation of own-ship position when available;
- In-flight evaluation of the Enhanced Map Data application
- Interviews with type-rated pilots and a Type Rating Examiner (TRE) on in-service use of the applications and associated training issues.

3.0 IFIS description

The IFIS functions are intended to provide situational awareness only and do not provide alerts or warnings. The three major functions provided by the IFIS are; support for navigational charts, enhanced map overlays, and graphical weather images. The charts function allows the viewing of selected Jeppesen navigations charts. The Enhanced Maps function provides map overlays of geopolitical, airspace, and airway data. The Graphical Weather function provides various weather images, such as NEXRAD, that are uploaded via Datalink or XM satellite. The standard aircraft configuration contains the Enhanced Map Overlays functions. Electronic Approach Charts and Graphical Weather are offered as a customer selected options.

Note: The Graphical Weather feature of IFIS had not been embodied on the subject aeroplane and so was not evaluated.

4.0 Findings

- i. Switching options were comprehensive. Though it was not possible to eliminate Engine Indication and Crew Alerting System (EICAS) information with any combination of switching, it was possible to eliminate the navigation display. However, since it is only possible to display the chart application on the inboard Multi Function Display (MFD) displays, raw navigation data was always displayed.

- ii. The chart display was very large and quite bright compared to other flight instruments. However, pilots report that this does not make it more compelling than the primary flight instruments but it could be distracting.
- iii. Icons warning of own-ship position downgrade were extremely small. The loss of the own-ship position icon itself in a downgraded condition, however, mitigates any requirement for the downgrade icons to be more compelling.
- iv. *Note: The following comments relate to situations when own-ship position is displayed.*

In-flight, both the chart display and the enhanced map overlay provided little in the way of aids to actual navigation due to the scale of the display and the nature of the pre-composed chart, though there is no doubt that, in some circumstances, either application could be used for some sort of basic navigation. In the same way that a traditional ND display in “NAV” mode can be used to navigate the aeroplane (by “following the pink string”), a pilot could engage in fairly course navigation by following an approach lateral profile or airway depiction.

However, the ND NAV display and the raw data on the PFD display provide much more useful navigational guidance and it is unlikely that a pilot would choose to navigate using the Electronic Charts Display or the Enhanced Map Data features of IFIS. It was interesting that both pilots on this evaluation flight who are experienced with using the IFIS system on another aeroplane type reported that they only use the Electronic Chart application for briefing purposes when it would normally not display own-ship position and that normally it is the ND in NAV mode that is displayed during the approach since this provides as much, if not more, situational awareness when raw data is being used to actually navigate.

The pilots found that the most useful contribution of the Electronic Charts Display was in providing data and information about a procedure rather than situational awareness when own-ship position was displayed, but that the Enhanced Map Data feature did provide some situational awareness when in remote areas when political boundaries, for example, became significant for communications requirements.

- v. The manufacturer’s FCOM makes no mention of IFIS features in Standard Operation Procedures (SOPs). The Normal Checklist does not include any reference to initialising the system or to checking the validity of the database. Since most operators follow the manufacturer’s SOPs exactly, appropriate checklist items are likely to be missing from their SOPs too.
- vi. The manufacturer’s FCOM technical description of IFIS features is comprehensive.
- vii. The MMEL includes IFIS in ATA Chapter 23 – Communications though IFIS includes no communications functions. As a result, it took some time to locate the item in the subject aircraft’s MEL which is based on the MMEL.

The MMEL contains alleviations for the loss of an IFIS File Server Unit (FSU) in addition to alleviations for the individual features of the IFIS system. For the FSU “C – 0” alleviation, there is a remark that “(O) May be inoperative provided alternate procedures are established and used”. However, it is difficult to imagine what (O) procedure might be available for the loss of a FSU other than the alternative procedure(s) required for the resulting loss of each application dependent on the FSU.

5.0 Specifications for Training, Checking and Currency

5.1 Differences Level Summary.

Difference levels are summarised in the table below for training, checking, and currency. This table is an extract only and complete descriptions of difference levels for training, checking and currency are given in OPS/FCL Common Procedures for conducting Operational Evaluation Boards document.

DIFFERENCE LEVEL TABLE

<u>DIFFERENCE LEVEL</u>	<u>TRAINING</u>	<u>TESTING & CHECKING</u>	<u>PROFICIENCY CHECKING & CURRENCY</u>
A	SELF INSTRUCTION	NOT APPLICABLE (OR INTEGRATED WITH NEXT PC)	NOT APPLICABLE
B	AIDED INSTRUCTION	TASK OR SYSTEM CHECK	SELF REVIEW
C	SYSTEMS DEVICES	PARTIAL CHECK USING DEVICE	DESIGNATED SYSTEM
D	MANOEUVRE DEVICES**	PARTIAL PC USING DEVICE *	DESIGNATED MANOEUVRE(S)
E	SIMULATOR C/D OR AIRCRAFT #	FULL PC USING SIMULATOR C/D OR AIRCRAFT *	AS PER REGULATIONS (TAKEOFFS & LANDINGS IN SIMULATOR C/D OR THE AIRCRAFT)

AT LEVEL E – NEW TYPE RATING IS NORMALLY ASSIGNED

* = IOE/SLF/LIFUS/line indoc. MAY BE REQUIRED ACCORDING TO REGULATIONS

PC = PROFICIENCY CHECK

**FFS or aircraft may be used to accomplish specific manoeuvres

5.1.1 EASA Specifications for Training

Training is set at Level C. Level C training requires that flight crews master the IFIS functions. As a minimum the crew should be trained to pull up the airport depiction charts, Departure Procedures, Arrival Procedures, and approach charts using the IFIS electronic chart function.

5.1.2 EASA Specifications for Checking

Checking is set at Level B. Level B checking requires a demonstration of proficiency in a task or system. A check is required for initial differences training and for re-establishing currency. The check shall be administered by an Approved Training Organisation. Recommended tasks include demonstrating competency in using the electronic chart functions to display departures, arrivals, and approaches, and adherence to company SOP's.

5.1.3 EASA Specifications for Currency

Pilots who have not utilized the IFIS for a period exceeding 90 days should review the operating manual and company SOP's prior to their next operational flight. Operators should establish a means of ensuring that pilots are current. Level B is set.

6.0 IFIS Evaluation Report Summary.

6.1 Display of terminal charts.

For the purposes of the display of terminal charts (i.e. without own-ship position), the Electronic Charts application is acceptable. The Enhanced Map Overlays can be superimposed on both the Electronic Charts display and the ND and can be useful.

6.2 Own-ship position

For situations when the own-ship position is available.

6.2.1 Aeroplane Flight Manual (AFM) statement

The AFM states:

- The aircraft symbol on the electronic charts is advisory and is presented for increased situational awareness. It is not to be used for navigation.
- The aircraft symbol on airport diagram charts during ground operations is advisory and is presented for increased situational awareness. It is not to be used for precision maneuvering on the ground.

6.2.2 OEB assessment.

Interviews with the pilots revealed that there was little or no emphasis during the standard conversion training syllabus on the appropriate use of the applications, and they found the use of own-ship position on ground on other IFIS installations extremely useful, though they were unaware of the system's limitations due to charting accuracy issues.

6.2.3 OEB recommendation.

Operators should ensure that all pilots on those aeroplanes with own ship positions depicted on ground are made aware of the statements in the AFM and the restrictions in the use of the aircraft own-ship position.

Due to charting inaccuracy issues, the own-ship position displayed on the ground can be significantly incorrect and the risks associated with the use of the own-ship position on the ground during Low Visibility Operations should be emphasised during pilot training.

6.2.3.1 EASA Safety Information Bulletin (SIB)

EASA will be publishing a SIB highlighting the risks associated with the own ship position depicted on ground, the recommendations contained in this SIB should be taken into account when operating aeroplanes with this feature installed.

6.2.3.1 Normal Procedures Checklist

The OEB recommends that operators include reference to initialising the IFIS system and to checking the validity of the database in the Normal Check List.

E N D