

Publications and Training Solutions

Course Syllabus: 523-0824946

COURSE TITLE: Pro Line Fusion for Bombardier Global 7500

PREREQUISITES: Students should have a basic knowledge of aircraft avionics systems and a working command of the English language

PURPOSE: This course provides line maintenance personnel with training to operate and perform flightline maintenance for the Bombardier Global 7500 aircraft. This course is designed to teach troubleshooting for LRU replacement and does not include internal maintenance of any component.

OBJECTIVES: This course is intended to:

1. Have an overall understanding of Proline Fusion avionics principles and operation
2. Identify system components and the functional/operational characteristics of each line replaceable unit (LRU) / Line replaceable module (LRM)
3. Perform fault isolation to a faulty LRU using built-in test diagnostics
4. Install and verify software and software configuration

COURSE LENGTH: 5 Days

TRAINING DEVICES:

1. Global 7500 Aircraft (if available)
2. Global 7500 Test Rig (if available)

TRAINING MATERIALS:

1. PowerPoint Presentation with LCD projector
2. Student training manual
3. Information handouts

REFERENCES:

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|--|-------------|
| 1. Bombardier Global Vision 7500 Operators Guide | 523-0824308 |
| 2. Bombardier Global Vision 7500 FMS Operators Guide | 523-0824309 |
| 3. Rockwell Collins Engineering Documents | |

COURSE OUTLINE

0. Welcome & Introductions

- A. Training Overview
- B. Welcome
- C. Student Registration
- D. Student Policies and Procedures
- E. Course Overview

1. ATA Chapter 22 - Automatic Flight Control System (AFCS)

- A. Overview
- B. Flight Control System Application
- C. Flight Control Panel
- D. Flight Director
- E. AFCS Theory
- F. Primary Flight Control Computer (PFCC)
- G. Summary

2. ATA Chapter 23 – Communications

- A. Digital Audio System
- B. Radio Management
- C. VHF-4000
- D. Datalink
- E. HF-9000
- F. Summary

3. ATA Chapter – 31 Indicating and Recording

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- A. Integrated Processing System (IPS)
 - a) Overview
 - b) Integrated Processing Cabinet
 - i) IPC-6210
 - ii) IPC-6220
 - c) Installed Application Software
 - d) IPS Theory
- B. Data Concentration System (DCS)
 - a) Overview
 - b) Data Concentrator Unit Module Cabinet (DMC)
 - c) Aircraft Personality Module (APM)
 - d) Installed Software Applications
 - e) Engine Indicating Crew Alerting System (EICAS)
 - f) Installed Software Applications
 - g) Crew Alerting System (CAS)
 - h) Electronic Checklists
 - i) Aural Alerting
 - j) Data Acquisition and Distribution
 - k) Engine Indicating
 - l) System Synoptic Pages
- C. Display & Display Control System (D&DCS)
 - a) Overview
 - i) Adaptive Flight Displays (AFD)
 - ii) Control Tuning Panel (CTP)
 - iii) Cursor Control Panel (CCP)
 - iv) Multifunction Keyboard Panel (MKP)
 - v) Reversion Switch Panel (RSP)
 - b) Equipment Description

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- i) Adaptive Flight Displays (AFD)
- ii) Control Tuning Panel (CTP)
- iii) Cursor Control Panel (CCP)
- iv) Multifunction Keyboard Panel (MKP)
- v) Reversion Switch Panel (RSP)
- c) Equipment Location
- d) Display Formats
- e) Display Reversion
- f) Comparators/Failures
- g) AFD Software
- h) Summary

4. ATA Chapter 34 – Navigation

- A. Head Up Display (HUD)
 - i. Component Description
 - ii. Component Location
 - iii. System Operation
- B. Enhanced Vision System (EVS)
 - i. Component Description
 - ii. Component Location
 - iii. System Operation
 - i. Calibration
- C. Synthetic Vision System (SVS)
 - i. Component Description
 - ii. Component Location
 - iii. System Operation
- D. Surface Management System (SMS)
 - i. Take-off and Landing Awareness (TLAF)
 - ii. Airport Moving Maps (AMM)
 - iii. Operation
- E. MultiScan™ Weather Radar (WXR)
 - i. Receiver Transmitter Assembly (RTA)

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- ii. Weather Radar Fundamentals
- iii. MultiScan™ Theory
- iv. Operation
- F. Traffic Surveillance System (TSS)
 - i. Component Description
 - ii. Component Location
 - iii. System Operation
 - iv. Cockpit Display of Traffic Information (CDTI)
- G. Radio Altimeter (RALT)
 - i. Component Description
 - ii. Component Location
 - iii. System Operation
- H. Terrain Awareness Warning System (TAWS)
 - i. Component Description
 - ii. Component Location
 - iii. System Operation
- I. Navigation Receiver (NAV)
 - i. Component Description
 - ii. Component Location
 - iii. System Operation
- J. Automatic Direction Finder (ADF)
 - i. Component Description
 - ii. Component Location
 - iii. System Operation
- K. Distance Measuring Equipment (DME)
 - i. Component Description
 - ii. Component Location
 - iii. System Operation
- L. ATC Transponder (XPDR)
 - i. Component Description
 - ii. Component Location
 - iii. System Operation
- M. Global Navigation Satellite System (GNSS)
 - i. Component Description

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- ii. Component Location
- iii. System Operation

N. Flight Management System (FMS)

- i. Overview
- ii. FMS Theory
- iii. Summary

5. 99ATA Chapter 45 – Diagnostic and Maintenance System

A. Onboard Maintenance System (OMS)

- i. Overview
 - 1. Onboard diagnostics
 - 2. Aircraft Condition Monitoring
 - 3. Diagnostic downloads

6. ATA Chapter 46 – Information Systems

A. Data Loading

- i. Overview
 - 1. Information Management System
 - 2. IMS-6010
 - 3. Terminology
- ii. Data Load Architecture
- iii. Data Load Procedures
 - 1. Load New Databases
 - 2. Load New Documents & Tables
 - 3. Load Aircraft Software Set
 - 4. Load New/Misconfigured LRU Item
 - 5. Reload LRU
 - 6. Enable Application License Keys
- iv. Data Loading Theory
- v. Summary

B. Integrated Flight Information System (IFIS)

- i. Electronic Charts
- ii. Graphical Weather
- iii. Document Reader

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7. Course Summary

- A. Review
- B. Summary
- C. Final Test
- D. Course Critique

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EQUIPMENT TYPE:

| EQUIPMENT | NOMENCLATURE | PART NUMBER |
|-----------|---|--------------|
| TLAF-5000 | Take-off & Landing Awareness Function Key | 810-0165-001 |
| DLCA-6500 | Data Link Communications Application | 810-0315-300 |
| DLC-6200 | Dual ATC Data Link Key | 810-0185-001 |
| FAN-6200 | FANS ATC Data Link Key (CPDLC) | 810-0186-001 |
| RIU-4110 | Radio Interface Unit w/ SELCAL | 822-1864-176 |
| ECU-3000 | External Compensation Unit | 822-1200-996 |
| FPLK-6200 | 702A AOC Key (Data Link) | 810-0368-100 |
| RTSA-6000 | Radio Tuning System Application | 810-0048-606 |
| VHF-4000 | VHF Comm Transceiver - 8.33kHz | 822-1468-110 |
| VHF-4000 | VHF Comm Transceiver - 8.33kHz, Data Link | 822-1468-390 |
| VHFA-4020 | VHF Antenna | 822-3256-001 |
| MT-9030A | HF Radio Mount | 622-8116-001 |
| HF-9041 | HF Antenna Coupler | 685-0350-002 |
| MT-9042A | HF Coupler Mount, Dual | 622-8124-001 |
| FL-9006 | HF Feedline | 988-8095-001 |
| NAV-4000 | VOR/ILS/MB/ADF Receiver | 822-1465-101 |
| VLS-4000 | VOR/LOC Antenna Blade | 822-2779-010 |

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| GS-ANT | Glideslope Antenna, Single Port | 866-5002-010 |
| GS-ANT | Glideslope Antenna Splitter | 866-5002-020 |
| MBS-4000 | Marker Beacon Antenna | 822-2777-010 |
| MBS-4000 | MB Antenna Splitter | 822-2777-020 |
| ANT-462B | Dual ADF Antenna | 622-7384-001 |
| DME-4000 | DME Transceiver | 822-1466-001 |
| ANT-4030 | DME/TDR Antenna | 822-2776-010 |
| GPS-4000S | Global Positioning System, SBAS Capable | 822-2189-100 |
| GNA-925 | GPS Antenna | 822-2033-030 |
| XMA-1050G | GPS / XM Combination Antenna | 866-5016-010 |
| ANT-53 | Radio Altimeter Antenna | 822-3201-001 |
| RTA-4218 | MultiScan™ / FLW Weather Radar, 18" | 822-2259-002 |
| WXRK-4001 | Weather Radar Key - Multiscan Mode w/ Turbulence | 810-0267-001 |
| TSS-4100 | Traffic Surveillance System | 822-2132-002 |
| TSM-4100 | Traffic Surveillance Mount, TSM-4100 | 866-0128-020 |
| TSSA-4100 | Traffic Surveillance System Application (ADS-B Out / In) | 810-0052-110 |
| TSSE-4100 | TSS Configuration Table (Global 7000) | 810-0250-150 |

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| IPC-6220 | Integrated Processing Cabinet, Situational Awareness | 822-2142-101 |
| CEM-6220 | Cover and Environmental Module | 822-2406-101 |
| PEM-6210 | Power Environment Module, DC Power | 822-2352-001 |
| DSM-5110 | Digital Switching Module (24 Port ARINC 664 Switch) | 822-2133-020 |
| RNP-6000 | RNP AR \geq 0.3 Key | 810-0201-001 |
| ECDA-6000 | Emulated Control Display Application | 810-0233-200 |
| FMSA-6010 | Flight Management System Application | 810-0163-3B0001 |
| FMS-PERF | FMS Performance Database | 096-7138-xxx |
| FDSA-6500 | Flight Display System Application | 810-0234-3B0001 |
| CTP-6000 | Control Tuning Panel | 822-2493-050 |
| CCP-6000 | Cursor Control Panel | 822-2831-002 |
| MKP-6000 | Multi-Function Key Panel | 822-2471-050 |
| MKPA-6000 | Multi-Function Key Panel Application | 810-0078-003 |
| RSP-6200 | Reversion Switch Panel | 822-2335-010 |
| VSD-6000 | Vertical Situation Display Key | 810-0265-001 |
| RSP-6200 | Reversion Switch Panel | 822-2335-010 |
| VSD-6000 | Vertical Situation Display Key | 810-0265-001 |
| DMC-6000 | DCU Module Cabinet | 822-2403-271 |
| CEM-6000 | DMC Cover and Environmental Module | 822-2401-001 |
| IOCA-6000 | Input/Output Concentrator Application | 810-0193-003 |
| IOCT-6000 | Input Output Concentrator Table | 810-0126-3B0001 |
| PPM-6000 | Data Concentrator Power Producing Module | 822-2395-002 |

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| HMA-6600 | HUD Monitor Application | 810-0281-3B0001 |
| CSV-6600 | HUD Combiner Sun Visor | 5000-8553-001 |
| Combiner Cover LHS | HUD Combiner Cover, Left | 5000-8715-001 |
| EVS-3600 | Enhanced Vision Sensor | 1500-4010-001 |
| VID-6001 | EVS Video Key | 810-0170-001 |
| LPU-6016 | Lightning Protection Unit | 822-3237-001 |
| ATN-6200 | ATN CPDLC Key (Link 2K+) | 810-0187-001 |
| ATN-6200 | ATN CPDLC Key (Link 2K+) | 810-0187-100 |
| VID-6004 | Fiber Optic Video Key | 810-0173-001 |
| IMAA-6000 | Integrated Modular Avionics Application | 810-0311-3B0001 |
| TLAF-5000 | Take-off & Landing Awareness Function Key | 810-0165-001 |
| FCST-5000 | Flight Control System Table | 810-0236-3B0001 |
| TPMA-6000 | TAWS Processing Module Application | 810-0088-210 |
| TPSA-6000 | Terrain Processing System Application | 810-0083-215 |
| TPM-6000 | TAWS Processing Module | 822-2586-001 |
| CCM-6210 | Common Computing Module, 440 Processor | 822-2192-002 |
| OMSA-6000 | Onboard Maintenance System Application | 810-0106-310 |
| OMST-6000 | Onboard Maintenance System Table | 810-0099-3B0001 |
| FSA-6000 | File Server Application | 810-0072-005 |
| DOC-6200 | Document Reader Key - Dual IFIS | 810-0150-001 |
| ECH-6200 | Electronic Charts Key - Dual IFIS | 810-0137-001 |
| ENR-6200 | Enroute Charts Key - Dual IFIS | 810-0147-001 |
| OVL-6200 | Enhanced Map Overlays Key - Dual IFIS | 810-0134-001 |
| SVM-6110H | Synthetic Vision Module with Integrated Head-up Display | 822-2539-021 |

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|-----------|--|-----------------|
| SVSA-6000 | Synthetic Vision Module Application | 810-0074-006 |
| SVST-6000 | Synthetic Vision System Table | 810-0260-3B0002 |
| IMS-6010 | Information Management System | 822-3132-101 |
| IMSA-6010 | Information Management System Applications | 810-0331-007 |
| IMST-6010 | Information Management System Tables | 810-0332-3B0001 |
| OHU-6600 | HUD Overhead Unit | 1500-3100-002 |
| CMB-6600 | HUD Combiner, Left | 1500-3110-005 |
| HDA-6600 | HUD Display Application | 810-0282-3B0001 |
| DCM-6000 | Data Concentrator Module | 822-2394-002 |
| DCMR-6000 | Data Concentrator Module Runtime | 810-0179-004 |
| IOM-6000 | Data Concentrator Input / Output Module | 822-2396-072 |
| IOM-6500 | Data Concentrator Input / Output Module | 822-2397-071 |
| APM-5000 | Aircraft Personality Module | 822-2195-001 |
| LDU-4000 | Lamp Driver Unit | 622-9822-101 |
| TSA-4100 | Traffic Surveillance Antenna, Directional | 866-0016-001 |
| ECU-3000 | External Compensation Unit - TDR, TCAS, Ext Sqtr | 822-1200-803 |