

Publications, Training, and Logistic Services

Course Syllabus: 523-0824946

COURSE TITLE: Bombardier Global 7500
Pro Line Fusion Avionics
Flight Line Maintenance.

PREREQUISITES: Students should have basic knowledge of aircraft avionics systems and a working command of the English language (interpreters are available for special cases).

PURPOSE: This course provides line maintenance personnel with training to operate and perform flight-line maintenance for the Bombardier Global 7500 Pro Line Fusion Avionics System.

This course is designed to teach troubleshooting for replacement of line replacement units (LRUs) and does not include internal maintenance of any component.

This course meets the requirements of ATA Spec 104 Level 3.

The Pro Line Fusion System consists of the LRUs identified in the section titled EQUIPMENT TYPE by nomenclature and part number, including associated peripheral equipment identified as deliverable hardware.

OBJECTIVES: Upon completing this course, the student will be able to:

1. Have an overall understanding of Bombardier Global 7500 Pro Line 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 Maintenance Diagnostics.
4. Install and verify software and software configuration.

COURSE LENGTH: 5 Days

Publications, Training, and Logistic Services

Course Syllabus: 523-0824946

TRAINING DEVICES:

1. Special Test Equipment
 - a. Global 7500 Test Rig (if available)
 - b. Global 7500 aircraft (if available)

TRAINING MATERIALS:

1. Power Point Presentations with LCD Projector
2. Student Training Material.
3. Information Handouts.

REFERENCES:

Document Name	Part Number	Edition	Revision	Date
Bombardier Global 7500 Avionics System Avionics System Manual	523-0829304	1	1	17 April 2023
Bombardier Global 7500 Pro Line Fusion Avionics System Pilot Guide	523-0829308	3	0	27 May 2022
Bombardier Global 7500 Flight Management System Pilot Guide	523-0829309	4	0	14 June 2022

**Publications, Training,
and Logistic Services**
Course Syllabus: 523-0824946

COURSE SYLLABUS

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 (FCP)
- D. Flight Director (FD)
- 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

Publications, Training, and Logistic Services

Course Syllabus: 523-0824946

3. ATA Chapter 31 – Indicating and Recording

A. Integrated Processing System (IPS)

- i. Overview
- ii. Integrated Processing Cabinet (IPC)
 - 1. IPC-6210
 - 2. IPC-6220

B. Data Concentrator System (DCS)

- i. Overview
- ii. Data Concentrator Unit Module Cabinet (DMC)
- iii. Aircraft Personality Module (APM)
- iv. Installed Software Applications
- v. Engine Indicating and Crew Alerting System (EICAS)
- vi. EICAS Installed Software Applications
- vii. Crew Alerting System (CAS)
- viii. Electronic Checklists
- ix. Aural Alerting
- x. Data Acquisition and Distribution
- xi. Engine Indicating
- xii. System Synoptic Pages

C. Display and Display Control System (D&DCS)

- i. Overview
 - 1. Adaptive Flight Displays (AFD)
 - 2. Control Tuning Panel (CTP)
 - 3. Cursor Control Panel (CCP)
 - 4. Multifunction Keyboard Panel (MKP)

Publications, Training, and Logistic Services

Course Syllabus: 523-0824946

- 5. Reversion Switch Panel (RSP)
- ii. Equipment Description
 - 1. Adaptive Flight Displays (AFD)
 - 2. Control Tuning Panel (CTP)
 - 3. Cursor Control Panel (CCP)
 - 4. Multifunction Keyboard Panel (MKP)
 - 5. Reversion Switch Panel (RSP)
- iii. Equipment Locations
- iv. Display Formats
- v. Display Reversion
- vi. Comparators and Failures
- vii. AFD Software
- viii. Summary

4. ATA Chapter 34 – Navigation

- A. Air Data System (ADS)
 - i. Component Description
 - ii. System Operation
- B. Head-Up Display (HUD)
 - i. Component Description
 - ii. Component Location
 - iii. System Operation
- C. Enhanced Vision System (EVS)
 - i. Component Description
 - ii. Component Location

Publications, Training, and Logistic Services

Course Syllabus: 523-0824946

- iii. System Operation
- iv. Calibration
- D. Synthetic Vision System (SVS)
 - i. Component Description
 - ii. Component Location
 - iii. System Operation
- E. Surface Management System (SMS)
 - i. Take-off and Landing Awareness Feature (TLAF)
 - ii. Airport Moving Maps (AMM)
- F. MultiScan Weather Radar (WXR)
 - i. Receiver Transmitter Antenna (RTA)
 - ii. Weather Radar Fundamentals
 - iii. MultiScan Theory
 - iv. Operation
- G. Traffic Surveillance System (TSS)
 - i. Component Description
 - ii. Component Locations
 - iii. System Operation
 - iv. Cockpit Display of Traffic Information (CDTI)
- H. Radio Altimeter (RAD ALT)
 - i. Component Description
 - ii. Component Locations
 - iii. System Operation
- I. Terrain Awareness Warning System (TAWS)
 - i. Component Description
 - ii. Component Locations

Publications, Training, and Logistic Services

Course Syllabus: 523-0824946

- iii. System Operation
- J. Navigation Receiver (NAV)
 - i. Component Description
 - ii. Component Locations
 - iii. System Operation
- K. Automatic Direction Finder (ADF)
 - i. Component Description
 - ii. Component Locations
 - iii. System Operation
- L. Distance Measuring Equipment (DME)
 - i. Component Description
 - ii. Component Locations
 - iii. System Operation
- M. Global Positioning System (GPS)
 - i. Component Description
 - ii. Component Locations
 - iii. System Operation
- N. Lightning Detection System (LDS)
 - i. Overview
 - ii. System Components
- O. Flight Management System (FMS)
 - i. Overview
 - ii. FMS Theory and Operation
 - iii. Summary

**Publications, Training,
and Logistic Services**

Course Syllabus: 523-0824946

5. ATA Chapter 45 – Diagnostic and Maintenance System

- A. Onboard Maintenance System (OMS)
 - i. Overview
 - 1. Onboard Diagnostics
 - 2. Aircraft Conditioning Monitoring
 - 3. Diagnostics downloads

6. ATA Chapter 46 – Information Systems

- A. Data Loading
 - i. Overview
 - 1. Information Management System (IMS)
 - 2. IMS-6010
 - 3. Terminology
 - ii. Data Loading Architecture
 - iii. Data Load Procedures
 - 1. Load New Databases
 - 2. Load New Documents and Tables
 - 3. Load Aircraft Software Set
 - 4. Load New/Misconfigured LRU Item
 - 5. Reload LRU

Publications, Training, and Logistic Services

Course Syllabus: 523-0824946

- 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

7. Optional Equipment

- A. Cockpit Printer
- B. Quick Access Recorder (QAR)

8. Course Summary

- A. Review
- B. Summary
- C. Final Exam (if applicable)
- D. Course critique

**Publications, Training,
and Logistic Services**

Course Syllabus: 523-0824946

EQUIPMENT TYPE:

UNIT	DESCRIPTION	PART NUMBER
Air Data System (ADS)		
ADSP	Air Data System Probe Type A (Rosemount)	OEM PN 2015TLA
ADSP	Air Data System Probe Type B (Rosemount)	OEM PN 2015TLB
TAT	Total Air Temperature (TAT) Probe (Rosemount)	OEM PN 0102EY2BH
AOA	Angle of Attack (AOA) Vane Sensor (Rosemount)	OEM PN 0861KG
Automatic Flight Control System (AFCS)		
FCP-5120	Flight Control Panel	822-2468-020
FCSA-5000	Flight Control System Application	810-0046-3B0002
FCST-5000	Flight Control System Table	810-0236-3B0001
Cockpit Printer		
PRNTR-30	Cockpit Printer	866-0155-110
Data Concentration System (DCS)		
APM-5000	Aircraft Personality Module	822-2195-001
CEM-6000	DMC Cover and Environmental Module	822-2401-001
DCM-6000	Data Concentrator Module	822-2394-002
DCMR-6000	Data Concentrator Module Runtime	810-0179-005
DMC-6000	DCU Module Cabinet	822-2403-271
IOCA-6000	Input/Output Concentrator Application	810-0193-003
IOM-6000	Input/Output Module	822-2396-072

Publications, Training, and Logistic Services

Course Syllabus: 523-0824946

IOM-6500	Input/Output Module	822-2397-071
LDU-4000	Lamp Driver Unit	622-9822-101
PPM-6000	Power Producing Module	822-2395-002
Data Link Communication System (DLCS)		
ATN-6200	ATN CPDLC Key (Link 2000+)	810-0187-001
DLC-6500	Dual ATC Key (Data Link)	810-0185-001
DLCA-6000	Data Link Communications Application	810-0315-300
FAN-6200	FANS ATC Key (Data Link, CPDLC)	810-0186-001
Digital Audio System (DAS)		
ACP-6000	Audio Control Panel	822-2928-570
Distance Measuring Equipment (DME)		
ANT-4030	DME/TDR Antenna	822-2776-010
DME-4000	DME Transceiver	822-1466-001
MMT-125	Mount – Piggyback installations	622-9670-001
MMT-125/130	MMT-125 over MMT-130 Piggyback Mount Kit	622-9078-106
Electronic Flight Instrument System (EFIS)		
AFD-6520	Adaptive Flight Display	822-2332-420
AFDR-6500	Adaptive Flight Display Runtime	810-0180-005
CCP-6000	Cursor Control Panel	822-2831-002
CTP-6000	Control Tuning Panel	822-2493-050
ECDA-6000	Emulated Control Display Application	810-0233-200
FDSA-6500	Flight Display System Application	810-0234-3B0002
IMT-6500	Instrument Mounting Tray	822-2337-007
MKP-6000	Multifunction Key Panel	822-2471-050
MKPA-6000	Multifunction Key Panel Application	810-0078-003

**Publications, Training,
and Logistic Services**

Course Syllabus: 523-0824946

RSP-6200	Reversion Switch Panel	822-2335-010
VSD-6000	Vertical Situation Display Key	810-0265-001
Enhanced Vision System (EVS)		
EVS-3600	EVS Sensor	1500-4010-002
VID-6001	EVS Video Key	810-0170-001
Flight Management System (FMS)		
FMSA-6010	Flight Management System Application	810-0163-3B0002
FMS-PERF	FMS Performance Database	096-7138-002B
FSAK-6000	FMS Steep Approach Key	810-0284-001
RNP-6000	RNP ≥ 0.3 Key	810-0201-001
TLAF-5000	Take-off & Landing Awareness Function Key	810-0165-001
Global Positioning System (GPS)		
GNA-925	GPS Antenna	822-2033-030
GPS-4000S	GPS Receiver, SBAS Capable	822-2189-101
MCU-2	Equipment Tray, 2 MCU ARINC	270-2712-010
Head-Up Display System (HUD)		
CMB-6600	HUD Combiner (Left)	1500-3110-005
CMB-6600	HUD Combiner (Right)	1500-3110-006
Combiner Cover LHS	HUD Combiner Cover (Left)	5000-8715-001
CSV-6600	HUD Combiner Sun Visor	5000-8553-001
HDA-6600	HUD Application	810-0282-3B0003
HMA-6600	HUD Monitor Application	810-0281-3B0003
MOUNT KIT	OHU and HUD Combiner Hardware Kit	9762-1004-001
MOUNT KIT	OHU and HUD Combiner Hardware Kit	9762-1046-001

**Publications, Training,
and Logistic Services**

Course Syllabus: 523-0824946

MOUNT KIT	OHU and HUD Combiner Hardware Kit (LHS)	9762-1047-001
OHU-6600	HUD Overhead Unit	1500-3100-002
HF Communication System (HF)		
FL-9006	HF Feedline	988-8095-001
HF-9031A	HF Transceiver	822-0101-002
HF-9041	HF Antenna Coupler	685-0350-002
MT-9030A	HF Radio Mount	622-8116-001
MT-9042A	HF Coupler Mount, Dual	622-8124-001
Information Management System (IMS)		
IMS-6010	Information Management System	822-3132-101
IMSA-6010	IMS Application	810-0331-010
IMSB-6010	IMS Binary Definition File	810-0531-002
IMST-6010	IMS Tables	810-0332-3B0003
Integrated Flight Information System (IFIS)		
DOC-6200	Document Reader Key – Dual IFIS	810-0150-001
DOC-6300	Document Reader Key – Triple IFIS	810-0151-001
DLGWX-6200	Data Link Graphical Weather Key (Dual IFIS)	810-0140-001
ECH-6200	Electronics Charts Key – Dual IFIS	810-0137-001
ECH-6300	Electronic Charts Key – Triple IFIS	810-0138-001
ENR-6200	Enroute Charts Key – Dual IFIS	810-0147-001
ENR-6300	Enroute Charts Key – Triple IFIS	810-0148-001
FSA-6000	File Server Application	810-0072-005
IMAA-6000	Integrated Modular Avionics Application	810-0311-3B0003
OVL-6200	Enhanced Map Overlays Key – Dual IFIS	810-0134-001

Publications, Training, and Logistic Services

Course Syllabus: 523-0824946

OVL-6300	Enhanced Map Overlays Key – Triple IFIS	810-0135-001
XMA-1050G	XM Weather Antenna	866-5016-010
XMWR-1000	XM Weather Receiver	822-2031-003
Integrated Processing System (IPS)		
CCM-5110	Common Computing Module	822-1991-002
CCMR-5110	Common Computing Module Runtime	810-0176-005
CEM-6210	Cover and Environmental Module	822-2405-101
CEM-6220	Cover and Environmental Module	822-2406-101
CMSA-6000	Configuration Manager System Application	810-0229-005
DSM-5110	Digital Switching Module (24 Port ARINC 664 Switch)	822-2133-020
DSMR-5110	Digital Switching Module Runtime	810-0178-020
IMAA-6000	Integrated Modular Avionics Application	810-0311-3B0003
IMAT-6000	Integrated Modular Avionics Table	810-0181-3B0003
IPC-6210	Integrated Processing Cabinet (Common Computing)	822-2404-101
IPC-6220	Integrated Processing Cabinet (Situational Awareness)	822-2142-101
PEM-6210	Power Environment Module	822-2352-001
PMA-6000	Protocol Manager Application	810-0192-080
Lightning Detection System (LDS)		
WX-1000	LDS Antenna	270-2687-030
WX-1000E	LDS Processor	270-2687-010
WX-1000MT	WX-1000E Processor Tray	270-2687-020
Lightning Protection System		

**Publications, Training,
and Logistic Services**

Course Syllabus: 523-0824946

LPU-6016	Lightning Protection Unit	822-3237-001
MultiScan Weather Radar System (WXR)		
RTA-4218	MultiScan Weather Radar with PWS, 18"	822-2259-002
WXRK-4001	Weather Radar Key – Multiscan mode with Turbulence	810-0267-001
WXRK-4002	Weather Radar Key – Multiscan mode with Turbulence	810-0365-001
WXRK-4003	Weather Radar Key – Multiscan mode with Turbulence	810-0366-001
Onboard Maintenance System (OMS)		
ALMA-6000	Application License Manager Application	810-0208-004
OMSA-6000	Onboard Maintenance System Application	810-0106-314
OMST-6000	Onboard Maintenance System Table	810-0099-3B0003
Quick Access Recorder (QAR) (Option)		
QAR-100	Quick Access Recorder – 28 VDC, 2 GB, USB Output	822-2780-020
Radio Altimeter System (RA)		
ALT-4000	Radio Altimeter	822-0615-207
ANT-53	Radio Altimeter Antenna	866-3201-001
UMT-12	Mount	622-5212-004
Radio Management System (RMS)		
ATN-6200	RIU Datalink ATN CPDLC	810-0187-100
ECU-3000	External Compensation Unit	822-1200-996
MMT-130	Mount, Piggyback Installations	622-9671-001
RIU-4010	Radio Interface Unit (SELCAL and Data Link)	822-1863-672
RIU-4110	Radio Interface Unit	822-1864-178

Publications, Training, and Logistic Services

Course Syllabus: 523-0824946

	(SELCAL)	
RTSA-6000	Radio Tuning System Application	810-0048-606
Synthetic Vision System (SVS)		
SVCK-6000	Synthetic Vision System Credit Key	810-0351-001
SVM-6110	Synthetic Vision Module	822-2323-001
SVM-6110H	Synthetic Vision Module with Integrated Head-Up Display	822-2539-021
SVSA-6000	Synthetic Vision System Application	810-0074-006
SVST-6000	Synthetic Vision System Table	810-0260-3B0003
VID-6004	Fiber Optic Video Key	810-0173-001
Terrain Awareness and Warning System (TAWS)		
CCM-6210	Common Computing Module	822-2192-002
TPM-6000	TAWS Processing Module	822-2586-001
TPMA-6000	TAWS Processing Module Application	810-0088-210
TPSA-6000	TAWS Processing System Application	810-0083-215
Traffic Surveillance System (TSS)		
ANT-4030	DME/TDR Antenna	822-2776-010
ECU-3000	External Compensation Unit (TDR, TCAS, Extended Squitter)	822-1200-803
MMT-150	Mount, ½ ATR Short, Dwarf	622-9672-001
TDR-94D	Diversity Mode S Transponder ADS-B and EHS	622-9210-501
TSA-4100	Traffic Surveillance Antenna, Directional	866-0016-001
TSM-4100	Traffic Surveillance Mount	866-0128-020
TSSA-4100	Traffic Surveillance System Application	810-0052-110
TSSE-4100	TSS Configuration Table (Global 7000)	810-0250-150

Publications, Training, and Logistic Services

Course Syllabus: 523-0824946

VHF Communication System (VHF)		
MMT-125	Mount – Piggyback Installations	622-9670-001
MMT-125	Mount – Single Installations	622-9670-002
MMT-125/125	MMT-125 over MMT-125 Piggyback Mount Kit	653-9078-102
VHF-4000	VHF Comms Transceiver - 8.33kHz	822-1468-110
VHF-4000	VHF Comms Transceiver - 8.33kHz, Data Link	822-1468-390
VHFA-4020	VHF Comms Antenna	822-3256-001
VHF Navigation System		
ANT-462B	Dual ADF Antenna	622-7384-001
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	Marker Beacon Antenna Splitter	822-2777-020
MMT-125	Mount – Piggyback Installations	622-9670-001
MMT-125	Mount – Single Installations	622-9670-002
NAV-4000	Navigation Receiver (VOR/ILS/MB/ADF)	822-1465-101
VLS-4000	VOR/LOC Antenna	822-2779-010
VLS-4000	VOR/LOC Antenna Cables	822-2779-020
VLS-4000	VOR/LOC Phasing Coupler	822-2779-030