



Publications and Training Solutions

Course Syllabus: 523-0820485

COURSE TITLE: Embraer L500 Pro Line Fusion
Level I Operations & Flightline Maintenance

EQUIPMENT TYPE:

EQUIPMENT	NOMENCLATURE	PART NUMBER
Adaptive Flight Display, 15.1"	AFD-6520	822-2332-300
Instrument Mounting Tray	IMT-6500	822-2337-007
AFD Software Application	AFDA-6500	810-0063-100
Display Control Panel	DCP-5080	822-2839-001
Cursor Control Panel	CCP-6120	822-2837-001
Multifunction Keyboard Panel	MKP-6100	822-2858-001
Reversion Switch Panel (Pilot side)	RSP-6000	822-2838-001
Reversion Switch Panel (Co-pilot side)	RSP-6000	822-2838-100
Standby Flight Information System	SFIS-3900	866-0205-100
ARINC Clamp, 3ATI, 4 inch deep, with Black mounting screws	SFIS-MNT	139-0969-030
Magnetometer	MGR-3000	866-0206-020
Options Control Module	OCM-3900	866-0210-010
Flight Control Panel	FCP-5070	822-2826-001
Flight Control System Application, Generic	FCSA-5000	810-0046-1E0003
VOR/ILS/MB Receiver	NAV-4500	822-1579-101
Mount - Single Installation	MMT-125	622-9670-002
DME Transceiver	DME-4000	822-1466-001
Mount - Single Installation	MMT-125	622-9670-002
Flight Management System Application	FMSA-6010	810-0163-1E0003
File Server Application - Dual IFIS	FSA-6000	810-0072-001
Electronic Charts Key - Single IFIS	ECH-6100	810-0136-001
Enhanced Map Overlays Key - Single IFIS	OVL-6100	810-0132-001
Document Reader Key - Single IFIS	DOC-6100	810-0149-001
Attitude Heading Computer	AHC-4000	866-0123-110
AHC-4000 Mounting Tray	AHC-4000-MTF	866-0123-050
Installation Data Module	AHC-4000-IDM	866-0123-040

Publications and Training Solutions

Course Syllabus: 523-0820485

EQUIPMENT	NOMENCLATURE	PART NUMBER
Global Positioning System, SBAS Capable	GPS-4000S	822-2189-002
Equipment Tray, 2 MCU ARINC	MCU-2	270-2712-010
Radio Altimeter	ALT-4000	822-0615-206
Mount	UMT-12	622-5212-004
Attitude Heading Computer	AHC-3000	822-1110-002
AHC Mount	MMT-3010	822-1290-003
External Compensation Unit, unprogrammed	ECU-3000	822-1200-999
Audio Control Panel	ACP-6000	822-2928-100
VHF Comm Transceiver - 8.33kHz	VHF-4000	822-1468-102
Mount - Single Installation	MMT-125	622-9670-002
TCAS and Transponder Unit	TSS-4100	822-2132-001
Traffic Surveillance Mount, TSM-4100	TSM-4100	866-0128-020
TSS TCAS & Transponder Application Software	TSSA-4100	810-0052-002
Directional Antenna For TSS	TSA-4100	866-0016-101
Diversity Transponder	TDR-94D	622-9210-310
External Compensation Unit - TDR, TCAS	ECU-3000	822-1200-802
Mount	MMT-150	622-9672-004
TAWS Processing Module	TPM-6000	822-2586-001
Terrain Processing Module Application	TPMA-6000	810-0088-001
Common Computing Module, 440 Processor	CCM-6210	822-2192-001
MultiScan™ Weather Radar, 18"	RTA-4118	822-2256-001
Synthetic Vision Module	SVM-6110	822-2323-001
Synthetic Vision Module W/ HUD	SVM-6110-H	822-2539-001
Synthetic Vision Module Application	SVSA-6000	810-0074-001
Radio Interface Unit (SELCAL)	RIU-4110	822-1864-171
Radio Interface Unit (SELCAL & Data Link)	RIU-4010	822-1863-171
External Compensation Unit	ECU-3000	822-1200-997
Mount - Single Installation	MMT-130	622-9671-002

Publications and Training Solutions

Course Syllabus: 523-0820485

EQUIPMENT	NOMENCLATURE	PART NUMBER
Onboard Maintenance System Application	OMSA-6000	810-0106-301
Information Management System	IMS-6000	822-2327-001
Wireless LAN Antenna	MAA-2000	822-1531-001
Data Concentrator Module Cabinet	DMC-6000	822-2403-261
DMC Cover and Environmental Module	CEM-6000	822-2401-001
Data Concentrator Power Producing Module	PPM-6000	822-2395-002
Data Concentrator Module	DCM-6000	822-2394-002
Data Concentrator Input / Output Module	IOM-6000	822-2396-062
Data Concentrator Input / Output Module	IOM-6500	822-2397-061
Input Output Tables	IOT-3110	810-0043-001
Mount with fan	UMT-18	622-9977-005
Aircraft Personality Module	APM-5000	822-2195-001
Integrated Processing Cabinet, Situational Awareness	IPC-6230	822-2813-251
Cover and Environmental Module	CEM-6230	822-2814-101
Power Environment Module, DC Power	PEM-6210	822-2352-001
Integrated Processing Cabinet, Common Computing	IPC-6210	822-2404-201
Cover and Environmental Module	CEM-6210	822-2405-101
Digital Switching Module (24 Port AFDX Switch)	DSM-5110	822-2133-001
Common Computing Module	CCM-5110	822-1991-002
File Server Application	FSA-6000	810-0072-101
Global Positioning System	GPS-4000	822-0931-002
HF Radio	HF-9031A	822-0101-002
Information Management	IMS-6000	822-2327-201
Radio Interface Unit	RIU-4110	822-1864-232
VHF Radio	VHF-4000	822-1468-110

Publications and Training Solutions

Course Syllabus: 523-0820485

PREREQUISITES: Students should have basic knowledge of aircraft avionics systems.

PURPOSE: This course provides line maintenance personnel with training to operate and perform flightline maintenance for the Embraer Executive Jet L450/500 Proline Fusion System. This course is designed to teach troubleshooting for box replacement and does not include internal maintenance of any component.

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

1. Provide an overall understanding of Pro Line Fusion Avionics principles and operation.
2. Identify system components and the functional/operational characteristics of each line replaceable unit (LRU).
3. Identify typical aircraft system interface/system architecture.
4. Perform fault isolation to a faulty LRU using built-in test diagnostics.
5. Identify end user system software loading requirements

COURSE LENGTH: 5 Days

Publications and Training Solutions

Course Syllabus: 523-0820485

TRAINING DEVICES:

- Embraer Executive Jet L450/L500 Aircraft (if available)
- Embraer Executive Jet L450/L500 Test Rig, Cedar Rapids (if available)

TRAINING MATERIALS:

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

REFERENCES:

1. Embraer Legacy 450/500 Pro Line Fusion® Avionics System Manual 523-0818861
2. Embraer Legacy 450/500 Pro Line Fusion® Avionics System Operator's Guide 523-0818862
3. Embraer Legacy 450/500 Flight Management System Operator's Guide 523-0818863
4. Embraer Legacy 450/500 Pro Line Fusion® Avionics System Diagnostic Guide 523-0818864

Publications and Training Solutions

Course Syllabus: 523-0820485

EMBRAER EXECUTIVE JET L450/L500 FUSION COURSE OUTLINE

I. Welcome & Introduction

- A. Course Overview
- B. Registration
- C. Course Description
- D. Course Objectives
- E. Course Outline
- F. Publications & Services
- G. Summary

II. Display & Display Control System (D&DCS)

- A. Overview
 - 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)
- B. 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)
- C. Equipment Location
- D. Display Formats
- E. Display Reversion
- F. Comparators/Failures
- G. AFD Theory
- H. Summary

Publications and Training Solutions

Course Syllabus: 523-0820485

III. Integrated Processing System (IPS)

- A. Overview
 - 1. Integrated Processing Cabinet and Installed Modules
 - 2. Common Computing Cabinet
 - 3. Situation Awareness Cabinet
 - 4. Installed Application Software
- B. Integrated Processing Cabinet
 - 1. IPC-6210 Left Cabinet
 - 2. IPC-6230 Right Cabinet
- C. Common Computing Cabinet
 - 1. Modules
 - 2. Theory
- D. Situation Awareness Cabinet
 - 1. Modules
 - 2. Theory
- E. Installed Application Software
- F. IPS Theory

IV. Data Concentration System (DCS)

- A. Overview
 - 1. Data Concentrator Unit Module Cabinet (DMC)
 - 2. Aircraft Personality Module
 - 3. Installed Software Applications
 - 4. Engine Indicating Crew Alerting System (EICAS)
 - 5. Stall Protection System (SPS)
- B. Data Concentrator Unit Module Cabinet (DMC)
 - 1. DMC Cover and Environmental Module (CEM-6000)
 - 2. Data Concentrator Module (DCM-6000)
 - 3. Data Concentrator Power Producing Module (PPM-6000)
 - 4. Data Concentrator Input/Output Module (IOM-6000)
 - 5. Data Concentrator Input/Output Module (IOM-6500)
 - 6. Aircraft Personality Module (APM-5000)
- C. Data Concentrator System
 - 1. Crew Alerting System (CAS)
 - 2. Checklists
 - 3. Aural Alerting

Publications and Training Solutions

Course Syllabus: 523-0820485

4. Data Acquisition and Distribution

D. EICAS

1. Engine Indicating System
2. System Synoptics

E. Stall Protection System

F. EICAS Theory

G. Summary

V. **Dataloading**

A. Overview

1. Information Management System
2. IMS-6000
3. Terminology

B. Data Load Architecture

C. Data Load Procedures

1. Load Aircraft Software Set
2. Load New Databases
3. Load New Documents & Tables
4. Load Aircraft Software Set
5. Load New/Misconfigured LRU Item
6. Reload LRU
7. Enable Application License Keys

D. Data Loading Theory

E. Summary

VI. **Onboard Maintenance System (OMS)**

A. Overview

1. Onboard diagnostics
2. Aircraft Condition Monitoring
3. Diagnostic downloads

B. Summary

VII. **Synthetic Vision System (SVS)**

A. Overview

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Course Syllabus: 523-0820485**

- B. SVS Components
- C. Removal/Installation
- D. SVS Elements
- E. Display Images
- F. Operator Interface
- G. SVS Theory
- H. CAS Messages
- I. SVS Block Diagram
- J. Summary

VIII. Air Data System (ADS)

- A. Air Data Computer
- B. Aircraft Configuration Table
- C. Indications
- D. Reversionary Mode
- E. ADS Theory
- F. Troubleshooting
- G. Summary

IX. Attitude Heading System (AHS)

- A. Displays and Indications
- B. Reversionary modes
- C. Summary

X. Integrated Information System (IFIS)

- A. File Server Applications
- B. Electronic Charts

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Course Syllabus: 523-0820485**

- C. Enhanced Map Overlays
- D. Graphical Weather
- E. IFIS Theory
- F. Summary

XI. Automatic Flight Control System (AFCS)

- A. Overview
- B. Flight Control System Application
- C. Flight Control Panel
- D. Servos
- E. Flight Director
- F. Autopilot/Yaw Damper/Trim
- G. Autothrottle
- H. AFCS Theory
- I. Summary

XII. Flight Management System (FMS)

- A. Overview
- B. Flight Planning
- C. FMS Theory
- D. Summary

XIII. Communication System (COMM)

- A. Digital Audio System
- B. Radio Management
- C. VHF-4000
- D. HF-9000

**Publications and Training Solutions
Course Syllabus: 523-0820485**

E. Summary

XIV. Navigation Systems (NAV)

A. NAV-4500

B. DME-4000

C. GPS-4000

D. Radio Altimeter-4000

E. Summary

XV. TSS/TAWS

A. Component Description

B. Component Location

C. System Operation

D. Summary

XVI. MutliScan™ Weather Radar

A. Receiver Transmitter Assembly (RTA)

B. Weather Radar Fundamentals

C. MultiScan™ Theory

D. Operation

E. Summary

XVII. Course Summary

A. Review

B. Summary

C. Final Test

D. Course Critique