

Products and Aftermarket Support

Course Syllabus: 523-0809250



COURSE TITLE:

Cessna Citation Pro Line 21 XLS+. Level I Operations & Flight Line Maintenance

TARGET AUDIENCE:

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

DESCRIPTION:

This course provides line maintenance personnel with training to operate and perform flightline maintenance for the Pro Line 21 System.

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

The Pro Line 21 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:

1. Provide an overall understanding of Pro Line 21 Avionics Principles and Operation.
2. Identify System Components and the Functional/Operational Characteristics of each LRU.
3. Identify Typical Aircraft System Interface/System Architecture.
4. Perform Fault Isolation to a faulty LRU using Built-In Maintenance Diagnostics.

COURSE LENGTH:

5 Days

TRAINING DEVICES:

1. Test Rig, Cedar Rapids (if available)

TRAINING MATERIALS:

1. PowerPoint Presentation with LCD/Box Light projector

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2. Student Guide – Flash drive (pdf) – Training Presentation
3. Student Guide – Flash drive (pdf) – Information Sheets
4. Cessna Citation XLS+ Avionics System Diagnostic Guide (excerpt)
5. Cessna Citation XLS+ Avionics System Diagnostic Guide

REFERENCES:

Document Name	Part Number	Edition	Revision	Date
Cessna Citation XLS+ Avionics System with ProLine 21 and IFIS System Manual	523-0808529	2	0	12/2/2019
Cessna Citation XLS+ Avionics System Diagnostic Guide	523-0808530	4	0	8/20/2010
Cessna Citation XLS+ Pro Line 21 Avionics System with IFIS	523-0808531	5	0	4/15/2019

COURSE OUTLINE:

0. Welcome & Introductions

- A. Course Overview
 - 1. Welcome
 - 2. Student Registration
- B. Course Description and Objectives

1. Data Bus

- A. Why We Use Data Buses
- B. ARINC Data Buses
 - 1. ARINC 429
 - 2. ARINC 453

2. Integrated Avionics Processing System (IAPS)

- A. Overview
- B. System Architecture

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- C. Integrated Card Cage (ICC)
- D. Power Supply Module (PWR)
- E. IAPS Environmental Controller (IEC)
- F. Input/Output Concentrator (IOC)
- G. Maintenance Diagnostic Computer (MDC)
- H. Configuration Strapping Unit (CSU)
- I. Detailed Functional Theory
 - 1. IAPS Power Distribution
 - 2. Temperature Monitoring
 - 3. Overheat Reporting
 - 4. Power Supply Inhibit
 - 5. CSU Detailed Theory
- J. Maintenance and Troubleshooting
 - 1. PWR Fault Indications
 - 2. IEC Fault Indications
 - 3. Status Messages
 - 4. Diagnostics

3. Maintenance Diagnostics

- A. Overview
- B. Maintenance Diagnostic Computer (MDC)

4. Electronic Flight Instrument System (EFIS)

- A. Overview
- B. Adaptive Flight Display
 - 1. Primary Flight Display (PFD)
 - 2. Multifunction Display (MFD)
- C. Reversion Switch Panel (RSP)

5. Integrated Flight Information System (IFIS)

- A. Overview

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B. File Server Unit (FSU)

1. File Server Applications
2. Graphical Weather
3. Enhanced Map Overlays

C. External Compensation Unit (ECU)

D. Encrypted Application Key (EAK)

1. Programming EAK's

E. Electronic Charts Region Access Keys

F. Maintenance and Troubleshooting

1. Database Effective Dates

6. Engine Indicating Crew Alert System (EICAS)

A. Overview

B. MFD

1. Display Synoptics

C. Data Concentrator Unit (DCU)

D. Maintenance and Troubleshooting

1. Status Messages
2. Diagnostics

7. Air Data System (ADS)

A. Overview

B. Air Data Computer (ADC)

C. Maintenance and Troubleshooting

1. Status Messages
2. Diagnostics

8. Attitude Heading System (AHS)

A. Overview

B. Attitude Heading Computer (AHC)

C. Flux Detector Unit (FDU)

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D. External Compensation Unit (ECU)

E. Maintenance and Troubleshooting

1. Diagnostics

2. Post Installation Check

3. Compass Compensation Procedure

4. Automatic Leveling Procedure

9. Flight Guidance System (FGS)

A. Overview

B. Flight Guidance Computers (FGC)

C. Flight Guidance Panel (FGP)

D. Primary Servos (SVO)

E. Autopilot and Yaw Damper Theory of Operation

F. Autopilot Diagnostics

1. Entering and Using Flight Guidance Diagnostics

10. Flight Management System (FMS)

A. Overview

B. Flight Management Computer (FMC)

C. Control Display Unit (CDU)

D. Data Base Unit

11. Data Loading

A. DBU-5000

12. Radio Sensor System (RSS)

A. Overview

B. GPS

C. VOR/ILS/MB/ADF Receiver (NAV)

D. Distance Measuring Equipment (DME)

E. VHF Comm Receiver/Transmitter (VHF)

1. Datalink/CPDLC/Link 2000+

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- F. Mode S Transponder (TDR-94D)
- G. High Frequency Receiver/Transmitter (HF)
- H. Radio Altimeter (ALT)
- I. Radio Tuning Operations

13. Maintenance and Troubleshooting

- 1. Flight Line Diagnostic Procedures

14. Weather Radar (WXR)

- A. Overview
- B. Receiver/Transmitter Assembly (RTA-8xx)
- C. Weather Radar Theory
- D. Maintenance and Troubleshooting
 - 1. Radome Maintenance (AC 43-14)
 - 2. Flight Line Diagnostic Procedures

15. Summary – Review - Critique

- A. Test
- B. Critiques

EQUIPMENT TYPE:

Type	Nomenclature	Part Number
ICC-3111	IAPS Card Cage	822-2191-001
IEC-3001	IAPS Environmental Controller	822-1167-001
IOC-4110	IAPS I/O Concentrator	822-2065-001
PWR-3000	IAPS Power Supply	822-1137-001
CSU-3100	Configuration Strapping Unit	822-1363-002
OCM-3100	Options Control Module	822-1484-228
MDC-3110	Maintenance Diagnostic Computer	822-1987-006
AFD-3310	Adaptive Flight Display (PFD)	822-1993-100

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AFD-3320	Adaptive Flight Display (MFD)	822-2349-100
CCP-3310	Cursor Control Panel	822-2389-001
DCP-3310	Display Control Panel	822-2388-001
FSU-5010	File Server Unit	822-1543-101
XNWR-1000	XM Receiver	822-2031-002
ECU-3000	External Compensation Unit (FSU)	822-1200-998
GWX-3000	Graphical Weather (XM)	810-0007-001
GWX-5000	Graphical Weather (Universal)	810-0004-001
DCU-5010	Data Concentration Unit	822-1538-101
ADC-3000	Air Data Computer	822-1109-126
AHC-3000	Attitude Heading Computer	822-1110-002
ECU-3000	External Compensation Unit	822-1200-003
FDU-3000	Flux Detector Unit	822-1193-001
FGC-3000	Flight Guidance Computer Module	822-1108-043
FGP-3000	Flight Guidance Panel	822-1107-116
SVO-3000	Primary Servo (Aileron, Rudder and Elevator)	822-1168-022
SVO-3000	Primary Servo (Elevator Trim)	822-1168-023
SMT-65	Servo Mount (Aileron and Elevator)	622-5735-021
SMT-65	Servo Mount (Rudder)	622-5735-511
SMT-65	Servo Mount (Elevator Trim)	622-5735-023
FMC-3000	Flight Management Computer	822-0883-039
CDU-3000	Control Display Unit	822-0884-602
CTL-23D	Radio Control	822-2177-001
DBU-5000	Database Unit	822-2215-602

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ALT-4000	Radio Altimeter	822-0615-206
DME-4000	DME Receiver-Transmitter	822-1466-001
GPS-4000S	Global Positioning System w/WAAS	822-2189-101
ANT-4000	GPS/WAAS Antenna	822-2347-010
HF-9031A	HF Receiver-Transmitter	822-0101-002
HF-9041	HF Antenna Coupler	622-8114-002
VHF-4000	VHF Comm Receiver-Transmitter	822-1468-102
NAV-4000	VHF Navigation Receiver (VOR/ILS/MB/ADF)	822-1465-101
NAV-4500	VHF Navigation Receiver (VOR/ILS/MB)	822-1579-001
ANT-462A	ADF Antenna (Single)	622-7383-001
TDR-94D	Mode-S Transponder (Diversity, Use with TCAS)	622-9210-008
TTR-4000	TCAS II Transmitter Receiver	822-1294-002
TRE-920	TCAS II Directional Antenna	622-8973-001
RIU-4010	Radio Interface Unit (Datalink and CPDLC (ATNB1) options)	822-1864-526
RIU-4110	Radio Interface Unit	822-1864-026
ACP-4130	Audio Control Panel	822-2381-015
VHF-4000	VHF Communication Transceiver (Optional 3rd - Datalink)	822-1468-302
RIU-4010	Radio Interface Unit (with CMU option for Datalink option)	822-1863-022
ECU-3000	External Compensation Unit (used with RIU-4010)	822-1200-997
RTA-852	Receiver/Transmitter Antenna with Turbulence Detection	622-8439-004