

Publications and Training Solutions

Course Syllabus: 523-0808360

COURSE TITLE: Pro Line 4 – Learjet 60
Flight Line Maintenance

PREREQUISITES:

Students should have a basic knowledge of aircraft avionics systems and a working command of the English language. Students should be familiar with MS Windows® based Operating Systems.

PURPOSE:

This course provides line maintenance personnel with training to operate and perform flight line maintenance for the Pro Line 4 system.

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

1. Provide an overall understanding of Pro Line 4 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.

COURSE LENGTH: 2 Hours 30 Minutes

REFERENCES:

- | | |
|---|-------------|
| 1. Learjet 60 Avionics System Manual | 523-0776648 |
| 2. Learjet 60 Avionics System Diagnostic Guide | 523-0777299 |
| 3. Collins Pro Line 4 Avionics System for the Learjet 60 Operator's Guide | 523-0777638 |
| 4. MCS-65/AHS-85/86 Compass Swing Procedure Test Program | 523-0777560 |

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COURSE OUTLINE

0. Introduction

1. Data Buses

- A. Introduction
- B. Purpose
- C. ARINC Data Buses
 - i. Specifications
 - ii. ARINC 429
 - iii. ARINC 453
- D. Summary/Test

2. Instrument Display System (IDS)

- A. Introduction
- B. Purpose
- C. Theory of Operation
 - i. Primary Flight Display (PFD)
 - ii. Multifunction Display (MFD)
 - iii. Sensor Display Unit (SDU)
 - iv. Sensor Display Driver (SDD)
- D. Summary Test

3. Integrated Avionics Processing System (IAPS)

- A. Introduction
- B. Purpose
- C. Theory of Operation
 - i. Integrated Card Cage (ICC)
 - ii. IAPS Power Supply
 - iii. Input/Output Concentrator (IOC)

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- D. Maintenance & Troubleshooting
 - i. Power Supply
 - ii. Environmental Control Card
- E. Summary/Test
- 4. Air Data System (ADS)**
 - A. Introduction
 - B. Purpose
 - C. Theory of Operation
 - i. Air Data Computer (ADC)
 - ii. Air Data Reference Panel (ARP)
 - iii. Signal Interface Adapter (SIA-850)
 - D. Summary/Test
- 5. Attitude Heading System (AHS)**
 - A. Introduction
 - B. Purpose
 - C. Theory of Operation
 - i. Attitude Heading Computer (AHC)
 - ii. Flux Detector Unit (FDU)
 - iii. Internal Compensation Unit (ICU)
 - D. Summary/Test
- 6. Compass Swing**
 - A. Introduction
 - B. Purpose
 - C. Compass Alignment Setup
 - i. Pre-Alignment
 - ii. During Alignment

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1. Entered Results
2. Computer Results
- iii. Post-Alignment
- iv. Test Alignment

D. Summary/Test

7. Flight Control System (FCS)

- A. Introduction
- B. Purpose
- C. Theory of Operation
 - i. Flight Control Computer (FCC)
 - ii. Servo Motor (SVO)
 - iii. Flight Control Panel (FCP)
 - iv. Flight Control Switches
- D. FCC Diagnostics
- E. Summary/Test

8. Radio Sensor System (RSS)

- A. Introduction
- B. Purpose
- C. Theory of Operation
 - i. Radio Tuning Unit (RTU)
 - ii. VHF Communication Transceiver
 - iii. Navigation Receiver
 - iv. Distance Measuring Equipment (DME)
 - v. Automatic Direction Finder (ADF)
 - vi. Radio Altimeter (ALT)
 - vii. Radio Altimeter Converter (RAC)

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viii. GPS Navigation Receiver

ix. TCAS II Transmitter/Receiver

D. Troubleshooting

E. Summary/Test

9. Weather Radar System (WXR)

A. Introduction

B. Purpose

C. Theory of Operation

i. Receiver/Transmitter Antenna (RTA)

D. Summary/Test

10. Aircraft Data Acquisition System (ADAS)

A. Introduction

B. Purpose

C. Theory of Operation

i. Data Acquisition Unit (DAU)

D. Summary/Test

11. Troubleshooting

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EQUIPMENT TYPE:

EQUIPMENT	NOMENCLATURE	PART NUMBER
Primary Flight Display	EFD-871	622-9345-006 / 022 / 024 / 026
Multifunction Display	MFD-871	622-9434-006 / 022 / 024 / 026
Sensor Display Unit	SDU-640B	622-9735-002
Sensory Display Driver	SDD-640A	622-9347-001
Integrated Card Cage	ICC-851A	822-0269-001
Input/Output Concentrator	IOC-851A	622-9343-201 / 202 / 203 / 205 / 206 / 220 / 221 / 222 / 223 / 233
IAPS Power Supply	PWR-851A	622-8365-002 / 003
Air Data Computer	ADC-850D	822-0389-109 / 133
Air Data Reference Panel	ARP-851	622-9500-002
Signal Interface Adapter	SIA-850	622-9732-003
Attitude Heading Computer	AHC-85E	622-9336-400
Flux Detector Unit	FDU-70	622-5812-001
Internal Compensation Unit	ICU-85	622-6189-002
Flight Control Computer	FCC-850A	822-0592-007 / 107 / 207 / 307 / 407
Servo Motor	SVO-85B	622-5027-002 / 102
Radio Tuning Unit	RTU-870C	822-1123-102
Radio Tuning Unit	RTU-870F	822-1825-102

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EQUIPMENT	NOMENCLATURE	PART NUMBER
VHF Comm Transceiver	VHF-422A	622-7292-101
VHF Comm Transceiver	VHF-422C	822-1115-001
Navigation Receiver	VIR-432	622-7194-101
Distance Measuring Equipment Transceiver	DME-442	622-7309-101
Automatic Direction Finder Receiver	ADF-462	622-7382-101
Radio Altimeter	ALT-55B	622-2855-001 / 011
Radio Altimeter Converter	RAC-870	622-7209-002
Global Positioning System	GPS-4000	822-0931-002
Transponder	TDR-94	622-9352-002 / 003 / 004
Transponder	TDR-94D	622-9210-003 / 004
Transponder	TDR-90	622-1270-001
TCAS II Transmitter/Receiver	TTR-920	622-8971-112 / 120 / 420
Receiver/Transmitter Antenna	RTA-844	622-9302-003
Receiver/Transmitter Antenna	RTA-854	622-8440-003
Data Acquisition Unit	DAU-650	622-9344-001