

Publications and Training Solutions

Course Syllabus: 523-0808187

COURSE TITLE: Pro Line II – Avionics
Flight Line Maintenance (Level I)

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 the training to operate and perform flight line maintenance for the Pro Line II avionics system.

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

1. Provide an overall understanding of Pro Line II avionics principles and operation.
2. Identify system components and the functional and operational characteristics of each Line Replaceable Unit (LRU).
3. Identify typical aircraft system interface and system architecture.
4. Perform fault isolation to a faulty LRU.

COURSE LENGTH: 8 Hours

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REFERENCES:

- | | |
|---|-------------|
| 1. Collins ADS-80()/82()/85() Air Data System Pilot's Guide | 523-0768038 |
| 2. APS-65A/G Diagnostic's Guide | 523-0777118 |
| 3. APS-65()/FGS-65() Diagnostic's Guide | 523-0774287 |
| 4. Collins Pro Line II Pilot's Guide | 523-0773070 |
| 5. Collins Avionics Pro Line II Comm/Nav/Pulse Systems Flight-Line
Maintenance Troubleshooting Flow Charts | 523-0775841 |
| 6. Pro Line II Comm/Nav/Pulse System Installation Manual | 523-0772719 |
| 7. EHSI-74/74A/74B Electronic HSI System Instruction Book | 523-0772693 |
| 8. MCS-65 Magnetic Compass System Instruction Book | 523-0771835 |
| 9. Compass Swing (AHS-85/MCS-65) System – DVD | 523-0816338 |
| 10. TWR-850 Turbulence Weather Radar System Installation Manual | 523-0774651 |
| 11. Installation Practices Manual Instruction Book | 523-0821285 |

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COURSE OUTLINE

0. Welcome & Introductions

1. Air Data System (ADS-85)

- A. Introduction
 - i. Objectives
- B. Normal Operation
 - i. Introduction
 - ii. System Operations
- C. Diagnostics and Troubleshooting
 - i. Introduction
 - ii. Diagnostic Self-Test
 - iii. Troubleshooting
- D. Summary

2. Autopilot System (APS-65) and Flight Guidance System (FGS-65)

- A. Introduction
 - i. Objectives
- B. Flight Director Modes
 - i. Introduction
 - ii. Flight Director Modes
- C. Normal Operation
 - i. Introduction
 - ii. Ground and Airborne Self-Tests
 - iii. Mode Selection Test
 - iv. Autopilot Operations Test
- D. Diagnostics Codes and Troubleshooting
 - i. Introduction

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- ii. Diagnostic Codes
- iii. System Troubleshooting

E. Summary

3. Comm/Nav Pulse System (CNPS)

A. Introduction

- i. Objectives

B. Normal Operation

- i. Introduction
- ii. Radio Navigation Operations
- iii. Confirm Identification Operations
- iv. Confirm Normal Communications

C. Diagnostics Codes and Troubleshooting

- i. Introduction
- ii. Navigation Diagnostic Tests
- iii. Communication Test

D. Summary

4. Electronic Flight Instrument System (EFIS)

A. Introduction

- i. Objectives

B. Operation

- i. Introduction
- ii. Electronic Flight Display
- iii. Multi-Function Display
- iv. Reversionary Modes

C. Diagnostics and Troubleshooting

- i. Introduction

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- ii. EFIS Related Self-Tests
- iii. Troubleshoot System Faults

D. Summary

5. Electronic Horizontal Situation Indicator (EHSI)

A. Introduction

- i. Objectives

B. Operation

- i. Introduction
- ii. Display Formats
- iii. Operating the Heading Bug
- iv. Displayed Navigational Information

C. Diagnostics and Troubleshooting

- i. Introduction
- ii. Diagnostics
- iii. Troubleshooting

D. Summary

6. Magnetic Compass System (MCS-65)

A. Introduction

- i. Objectives

B. Equipment Controls, Indicators, and Handling

- i. Introduction
- ii. Controls and Indicators
- iii. Equipment and Handling

C. Operation

- i. Introduction
- ii. Normal Operation

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iii. EHSI Annunciations

D. Alignment and Troubleshooting

i. Introduction

ii. Alignment

iii. Troubleshooting

E. Summary

7. Turbulence Weather Radar System (TWR-850)

A. Introduction

i. Objectives

B. System Displays, Annunciations, and Hazards

i. Introduction

ii. Displays and Annunciations

iii. System Hazards and Safety

C. Normal and Abnormal Operations

i. Introduction

ii. System Diagnostics

iii. System Schematics and Troubleshooting

D. Diagnostics and Troubleshooting

i. Introduction

ii. Subsystem Schematics

iii. Troubleshooting

E. Summary

8. Summary

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EQUIPMENT TYPE:

EQUIPMENT	NOMENCLATURE	PART NUMBER
Air Data Computer	ADC-85	622-8051-001 / 002 / 003 / 004 / 005
Air Data Computer	ADC-85A	822-0370-113 / 123 / 139 / 146 / 147 / 148 / 404 / 408 / 425 / 426 / 432 / 451 / 460 / 461 / 462 / 472 / 479 / 492 / 499 / 507 / 519 / 526 / 528 / 531 / 532 / 628 / 632
Air Data Computer	ADC-85L	822-1724-455 / 458
Barometric Altimeter	ALI-80	622-2292-001 / 002 / 003 / 004 / 005 / 006 / 007 / 008
Barometric Altimeter	ALI-80A	622-3975-001 / 002 / 003 / 004 / 005 / 006 / 007 / 008 / 011 / 014 / 015 / 201 / 213
Barometric Altimeter	ALI-80L	622-6238-001 / 002 / 003 / 004 / 005 / 006 / 007 / 008
Airspeed Indicator	ASI-80D	622-5352-011 / 012 / 013 / 014 / 015 / 016 / 017 / 018 / 024 / 034 / 044 / 054
Airspeed Indicator	ASI-80F	622-6728-011 / 012 / 013 / 014 / 015 / 016 / 017 / 018 / 213
Preselector/Alerter	PRE-80A	622-2923-001 / 002 / 003 / 004 / 005 / 006 / 011 / 012 / 013 / 014 / 015 / 016 / 021 / 022 / 023 / 024 / 025 / 026 / 031 / 032 / 033 / 034 / 035 / 036

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EQUIPMENT	NOMENCLATURE	PART NUMBER
Preselector/Alerter	PRE-80C	622-9462-001 / 002 / 003 / 004 / 005 / 006 / 011 / 012 / 013 / 014 / 015 / 016 / 021 / 022 / 023 / 024 / 025 / 026 / 031 / 032 / 033 / 034 / 035 / 036
Vertical Speed Indicator	VSI-80	622-1910-001 / 002 / 003 / 004 / 005 / 006 / 007 / 008
Vertical Speed Indicator	VSI-80A	622-4782-001 / 002 / 003 / 004 / 005 / 006 / 007 / 008 / 201 / 203
Temp – True Airspeed Indicator	TAI-80A	622-2294-001 / 002 / 003 / 004 / 011 / 012 / 013 / 014
Temp – True Airspeed Indicator	TAI-80B	622-3234-001 / 002 / 003 / 004 / 011 / 012 / 013 / 014 / 202
Autopilot Computer	APC-65	622-5796-001 / 002 / 004 / 006 / 007 / 008 / 009 / 010 / 011 / 012 / 013 / 014 / 016 / 033 / 107 / 108 / 109 / 110 / 113 / 209 / 249 / 309 / 409
Autopilot Panel	APP-65A	622-6684-001 / 002 / 003 / 004 / 005 / 006 / 007 / 008 / 009 / 010 / 106
Navigation Control Unit	CTL-32	622-6521-009 / 010 / 011 / 012
Display Select Panel	DSP-85M	822-0967-201
Flight Control Panel	FCP-65	622-5798-007 / 008 / 010 / 011 / 013 / 014 / 025

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EQUIPMENT	NOMENCLATURE	PART NUMBER
Flight Guidance Computer	FGC-65	622-5952-001 / 020 / 120
Radio Altitude Indicator	ALI-55	622-2937-001 / 002 / 003 / 004 / 005 / 008 / 009
COM Control Unit	CTL-22	622-6520-001 / 002 / 003 / 004 / 005 / 006 / 007 / 008
ADF Control Unit	CTL-62	622-6522-001 / 002 / 003 / 004 / 005 / 006 / 007 / 008 / 009 / 010 / 011 / 012 / 013 / 014 / 015 / 016
ATC Control Unit	CTL-92	622-6523-001 / 002 / 003 / 004 / 005 / 006 / 007 / 008 / 201 / 202 / 203 / 204 / 205 / 206 / 207 / 208 / 305 / 306 / 307 / 308
DME Indicator	IND-42A	622-6524-001 / 002 / 003 / 004
Radio Magnetic Indicator	RMI-36	622-2506-001 / 002 / 003 / 004 / 005 / 006 / 007 / 009 / 010 / 011 / 012 / 013 / 014 / 101 / 102 / 103 / 104 / 105 / 106 / 107 / 108 / 109 / 110 / 111
Multi-Function Display	MFD-85B	622-7876-011 / 012 / 211 / 212
Electronic Flight Display	EFD-84	622-9681-001 / 002
Electronic Flight Display	EFD-74	622-6197-001 / 002
HSI Control Panel	HCP-74	622-6200-001 / 002 /003 /004
HSI Control Panel	HCP-74A	622-8793-001 / 002 / 003 / 004
HSI Control Panel	HCP-74B	622-9222-001 / 002 / 003 / 004

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EQUIPMENT	NOMENCLATURE	PART NUMBER
HSI Processing Unit	HPU-74	622-6198-001 / 002 / 003 / 012 / 013 / 014 / 102 / 103 / 112 / 113 / 114
HSI Processing Unit	HPU-74A	622-6199-001 / 002
HSI Processing Unit	HPU-74B	622-9221-001 / 002 / 011 / 012
Control Compensation Unit	CCU-65	622-6135-001 / 002 / 003 / 004 / 005 / 011 / 012 / 013 / 014 / 015
Digital Gyro with Supporting Electronics	DGS-65	622-6136-001 / 002
Magnetic Flux Detector	FDU-70	622-5812-001 / 002 / 003 / 004 / 005 / 006
Remote Compensation Panel	RCP-65	622-6174-001
Multifunction Display	MFD-85A	622-7236-001 / 002 / 011 / 012 / 201 / 202
Multifunction Display	MFD-85B	622-7876-011 / 012 / 211 / 212
Multifunction Display	MFD-85C	622-9849-001 / 002 / 011 / 012 / 201 / 202
Multifunction Display	MFD-85M	822-1001-012 / 121 / 122
Receiver/Transmitter Antenna	RTA-852	622-8439-001 / 002 / 003 / 011
Receiver/Transmitter Antenna	RTA-852L	622-9080-001 / 002 / 003 / 004 / 005 / 006 / 011
Receiver/Transmitter Antenna	RTA-854	622-8440-001 / 002 / 003 / 004 / 011
Receiver/Transmitter Antenna	RTA-858	622-8441-001 / 002 / 003 / 004 / 011
Weather Radar Control	WXP-850A	622-8393-001 / 002 / 003 /

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EQUIPMENT	NOMENCLATURE	PART NUMBER
Panel		004 / 011 / 012 / 013 / 014
Weather Radar Control Panel	WXP-850B	622-8394-001 / 002 / 003 / 004 / 011 / 012 / 013 / 014