



Publications and Training Solutions Course Syllabus: 523-0816741

COURSE TITLE: Pro Line 21 King Air C90/B200/B300/B350 Premier 1/1A
Level I Operations & Flightline Maintenance

EQUIPMENT TYPE:

EQUIPMENT	NOMENCLATURE	PART NUMBER
IAPS Card Cage	ICC-3000	822-1129-XXX
IAPS Environmental Controller	IEC-3001	822-1167-XXX
IAPS Power Supply	PWR-3000	822-1137-XXX
I/O Concentrator	IOC-3100	822-1361-XXX
Options Control Module	OCM-3100	822-1484-XXX
Configuration Strapping Unit	CSU-3100	822-1363-XXX
Maintenance Diagnostic Computer	MDC-3110	822-1987-XXX
Adaptive Flight Display (PFD, MFD)	AFD-3010	822-1084-XXX
Adaptive Flight Display (Ethernet)	AFD-3010E	822-1753-XXX
Display Control Panel	DCP-3030	822-1828-XXX
File Server Unit	FSU-5010	822-1543-XXX
Cursor Control Panel	CCP-3000	822-1746-XXX
Communications Management Unit (Use with 3rd VHF data-link option)	CMU-4000	822-1739-XXX
XM Receiver	XMWR-1000	822-2031-XXX
External Compensation Unit (FSU)	ECU-3000	822-1200-XXX
Data Concentrator Unit	DCU-3001	822-1483-XXX
Air Data Computer	ADC-3010	822-2083-XXX
Attitude Heading Computer	AHC-3000	822-1110-XXX
External Compensation Unit	ECU-3000	822-1200-XXX
Flux Detector Unit	FDU-3000	822-1193-XXX

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EQUIPMENT	NOMENCLATURE	PART NUMBER
Flight Guidance Computer B200	FGC-3000	822-1108-XXX
Flight Guidance Panel	FGP-3000	822-1107-XXX
Aileron Servo	SVO-3000	822-1168-XXX
Rudder Servo B200	SVO-3000	822-1168-XXX
TTR-920	TCAS R/T	822-1293-001
TTR-921	TCAS R/T	822-1293-001
TCAS 4000	*TCAS R/T	822-1293-001
SVO-3000	Elevator Servo	822-1168-XXX
SMT-65	Servo Mount (Aileron)	622-5735-XXX
SMT-65	Servo Mount (Rudder/Elevator)	622-5735-XXX
FMC-3000	Flight Management Computer	822-0883-XXX
CDU-3000	Control Display Unit	822-0884-XXX
DBU-5000	Data Base Unit	822-2215-XXX
ANT-462B	ADF antenna, dual	622-7384-XXX
ALT-4000	Radio Altimeter	822-0615-XXX
DME-4000	Distance Measuring Equipment	822-1466-XXX
GPS-4000A	Global Positioning System	822-1377-XXX
HF-9031A	HF Transceiver	822-0101-XXX
HF-9041	HF Antenna Coupler	685-0350-XXX
NAV-4000	VHF Navigation Receiver	822-1465-XXX
NAV-4500	VHF Navigation Receiver	822-1579-XXX
RTU-4200	Radio Tuning Unit	822-0668-XXX
RTU-4220	Radio Tuning Unit (TCAS)	822-0730-XXX
TDR-94	Mode S Transponder (Baseline)	622-9352-XXX
TDR-94	Mode S Transponder (Diversity)	622-9532-XXX

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EQUIPMENT	NOMENCLATURE	PART NUMBER
VHF-4000	VHF Communication Transceiver	822-1468-XXX
VHF-4000	VHF Communication Transceiver (Optional 3rd - Datalink)	822-1468-XXX
RTA-800	Receiver/Transmitter/Antenna	822-1050-XXX
RTA-852	Receiver/Transmitter/Antenna (12 inch with turbulence detection)	622-8439-XXX

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 Pro Line 21 System.

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

1. Provide an overall understanding of Pro Line 21 Avionics Principles & 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: 5 Days

SPECIAL TEST EQUIPMENT:

- Test Rig, Cedar Rapids (if available)

TRAINING MATERIALS:

1. PowerPoint Presentation with LCD projector
2. Information Sheets/Handouts
3. Student Training Manual
4. Beechcraft King Air C90GTi/B200GT Avionics System Manual Excerpt 523-0808533
5. Beechcraft King Air C90GT/B200GT Diagnostic Guide 523-0808534
6. King Air With IFIS Avionics System Manual Excerpt 523-0807237
7. Raytheon Premier IA Avionics System with IFIS 523-0807233



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REFERENCES:

- | | |
|---|-------------|
| 1. Beechcraft King Air C90GTi/B200GT Avionics System Manual | 5230808533 |
| 2. Beechcraft King Air C90GT/B200GT Diagnostic Guide | 523-0808534 |
| 3. Beechcraft King Air C90GT/B200GT Operator's Guide | 523-0808535 |

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Pro Line 21 King Air C90/B200/B300/B350 Premier 1/1A Outline

I. Welcome

- A. Training Overview
 - 1. Welcome
 - 2. Student Registration
 - 3. Student Policies and Procedures

II. Introduction to Materials and Handouts

- A. System Manual Introduction and Use
- B. Diagnostic Guide Introduction
- C. Equipment Description
 - 1. Business & Regional Systems Equipment – Leading Particulars

III. Data Bus

- A. Why we use Data Buses
- B. ARINC Data Buses
 - 1. ARINC 429
 - 2. ARINC 453

IV. Integrated Avionics Processing System (IAPS)

- A. Overview
- B. System Architecture
- C. Integrated Card Cage (ICC)
 - 1. Description
 - 2. Theory of Operation
- D. Power Supply Module (PWR)
 - 1. Description
 - 2. Theory of Operation
- E. Internal Environmental Controller (IEC)
 - 1. Description
 - 2. Theory of Operation

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- F. Input Output Concentrator (IOC)
 - 1. Description
 - 2. Theory of Operation
- G. Maintenance Diagnostic Computer (MDC)
 - 1. Description
 - 2. Theory of Operation
- H. Configuration Strapping Unit (CSU)
 - 1. Description
 - 2. Theory of Operation
- 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

V. Maintenance Diagnostics

- A. Overview
- B. Maintenance Diagnostic Computer (MDC)
 - 1. Description
 - 2. Theory of Operation
 - 3. Operation

VI. Electronic Flight Instrument System (EFIS)

- A. Overview
- B. Adaptive Flight Display (AFD)
 - 1. Primary Flight Display (PFD)
 - a. Description
 - b. Theory of Operation
 - c. Reversionary Mode Select
 - 2. Multifunction Display (MFD)
 - a. Description
 - b. Theory of Operation
 - c. Reversionary Mode Select
- C. Reversion Switch Panel (RSP)
 - 1. RSP Switch Description
 - 2. Operation
 - 3. Detailed Theory of Operation

VII. Integrated Flight Information System (IFIS)

- A. Overview
 - 1. System Description
- B. File Server Unit (FSU)
 - 1. Description
 - 2. Theory of Operation
 - 3. Operation
 - a. Enhanced Map Functions
 - b. Electronic Charts
 - c. Graphical Weather
- C. External Compensation Unit (ECU)
 - 1. Description
 - 2. Theory of Operation
- D. File Server Application Software (FSA)
 - 1. Description of Applications
 - 2. Theory of Operation
- E. Encrypted Application Key (EAK)
 - 1. Programming EAKs
- F. Electronic Charts Region Access Keys
 - 1. Programming Region Access Keys

- G. Maintenance and Troubleshooting
 - 1. Database Effective Dates

VIII. Engine Indicating System (EIS)

- A. Overview
- B. MFD
 - 1. Display Synoptics
- C. Data Concentrator Unit (DCU)
 - 1. Description
 - 2. Integration Theory
 - 3. Theory of Operation
- D. Engine Data Concentrator Unit (EDC)
 - 1. Description
 - 2. Integration Theory
 - 3. Theory of Operation
- E. Maintenance and Troubleshooting
 - 1. Status Messages
 - 2. Diagnostics

IX. Air Data System (ADS)

- A. Overview
- B. Air Data Computer (ADC)
 - 1. Description
 - 2. Theory of Operation
- C. Maintenance and Troubleshooting
 - 1. Status Message
 - 2. Diagnostics

X. Attitude Heading System (AHS)

- A. Overview
- B. Attitude Heading Computer (AHC)
 - 1. Description
 - 2. Theory of Operation

- C. Flux Detector Unit (FDU)
- D. External Compensation Unit (ECU)
- E. Maintenance and Troubleshooting
 - 1. Diagnostics
 - 2. Post Installation Check
 - 3. Compass Compensation Procedure
 - 4. Automatic Leveling Procedure

XI. Flight Guidance System (FGS)

- A. Overview
- B. Flight Guidance Computers (FGC)
 - 1. Description
 - 2. Theory of Operation
- C. Flight Guidance Panel (FGP)
 - 1. Description
 - 2. FGP Switch Description
 - 3. Operation
 - 4. Theory of Operation
- D. Primary Servos (SVO)
 - 1. Description
 - 2. Theory of Operation
- E. Autopilot and Yaw Damp Theory of Operation
 - 1. Description of Fail Passive System
 - 2. Description of Yaw Damp System
- F. Autopilot Diagnostics
 - 1. Entering and Using Autopilot Diagnostics
 - a. Report Mode
 - b. Input Mode
 - c. Output Mode

XII. Flight Management System (FMS)

- A. Overview
- B. Flight Management Computer (FMC)
 - 1. Description
 - 2. Theory of Operation
- C. Control Display Unit (CDU)
 - 1. Description
 - 2. Theory of Operation
- D. Data Base Unit (DBU)
 - 1. Description
 - 2. Theory of Operation

XIII. Radio Sensor System (RSS)

- A. Overview
- B. GPS
 - 1. Description
 - 2. Operations
 - 3. Theory of Operation
- C. VOR/ILS/MB/ADF Receiver (NAV)
 - 1. Description
 - 2. Theory of Operation
- D. Distance Measuring Equipment (DME)
 - 1. Description
 - 2. Theory of Operation
- E. VHF Comm. Receiver/Transmitter (VHF)
 - 1. Description
 - 2. Theory of Operation
 - 3. Datalink/CPDLC/Link 2000+
- F. Mode S Transponder (TDR-94)
 - 1. Description
 - 2. Theory of Operation

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- G. Traffic Collision Avoidance System (TCAS)
 - 1. Description
 - 2. Theory of Operation
 - 3. TCAS Version 7.1

- H. HF
 - 1. Description
 - 2. Theory of Operation

- I. Radio Altimeter (ALT)
 - 1. Description
 - 2. Theory of Operation

- J. Radio Tuning Operations
 - 1. Description
 - 2. Operations
 - 3. Theory of Operation

- K. General Maintenance Procedures for Comm /Nav /Pulse Equipment
 - 1. Flight Line Diagnostic Procedures

XIV. Weather Radar (WXR)

- A. Overview

- B. Microwave Radiation Hazards
 - 1. AC 20-68B

- C. Weather Radar Theory

- D. Receiver Transmitter Assembly (RTA-8xx)
 - 1. Description
 - 2. Operation
 - 3. Theory of Operation

- E. Maintenance
 - 1. Radome Maintenance (AC 43-14)
 - 2. Flight Line Diagnostic Procedures

XV. Summary

- A. Review & Course Critique