

Publications and Training Solutions

Course Syllabus: 523-0818550

COURSE TITLE: Cabin Electronic System Version 7, 8, 9, and 10

Level I Operations & Flightline Maintenance

PREREQUISITES:

1. Students should have comprehensive knowledge of aircraft avionics systems and troubleshooting techniques and a working command of the English language.
2. It is strongly advised that each class participant has completed the Bombardier CES Familiarization CBT courses (Global 5000 / XRS / 6000 Interiors Operators Training and Global 5000 / XRS / 6000 Interiors Technical Familiarization Training) prior to attending this Flight Line Maintenance training course.

Contact Bombardier at the following website to schedule / access your CBT training:
www.batraining.com or ba_training@aero.bombardier.com (email)

PURPOSE: This course provides line maintenance personnel with training to operate and perform flightline maintenance for the Challenger 605, Global 5000 and Global 6000 (XRS) Cabin Electronic Systems. This course is designed to teach troubleshooting for LRU replacement and maintenance and does not include maintenance of any components inside an LRU. This course is designed to be used after viewing Bombardier CES Familiarization CBT. This course provides an overview of the CES Functional Groups, Backbone and Power Distribution equipment, TSE and Remote Control Units to include operation of Video, Audio, Cabin, and Maintenance menus. This course also provides an in-depth coverage of the Galley TSE/HTSE menu items, Maintenance, and Troubleshooting the CES.

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

1. Provide an overall understanding of Challenger 605, Global 5000 and Global 6000 (XRS), Cabin Electronic System principles and operation.
2. Identify system components and describe the functional/operational characteristics of each line replaceable unit (LRU).
3. Identify CES system interface and architecture to include ring, star and Challenger 605 configurations.
4. Identify TSE/HTSE operations.
5. Perform fault isolation and troubleshooting procedures.
6. Perform CES related software loading procedures

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COURSE LENGTH: 3 Days

TRAINING DEVICES:

1. Engineering Lab (Hot Bench), Cedar Rapids, IA (if available)
2. Aircraft with system installed (if available)
3. Mini-Rig (if available)

TRAINING MATERIALS:

1. Power Point Presentation
2. Student Training Manual
3. Information Handouts
4. Videos or Captivate files of Software Loading

REFERENCES:

- | | |
|---|-------------|
| 1. CES for G5000 and XRS Operator's Guide (V7) | 523-0816897 |
| 2. CES G5000 and XRS CES V7 Installation Manual | 523-0818717 |
| 3. CES-5000 XRS CES with Touch Screen Equipment V7 Quick Start Guide | 523-0819360 |
| 4. CPAS-3000 Data Loader Operator's Guide (V2.6) | 523-0790386 |
| 5. CPAS-3000 Data Loading Instructions Quick Reference Guide (V2.6) | 523-0809167 |
| 6. CES G5000 and G6000 (XRS) CES V8 Installation Manual | 523-0819697 |
| 7. CES for G5000 and G6000 (XRS) Operator's Guide V8 | 523-0819696 |
| 8. CES-5000 and G6000 (XRS) CES with TSE V8 Quick Start Guide | 523-0819720 |
| 9. CES-5000 and G6000 (XRS) CES with WPCU V8 Quick Start Guide | 523-0819721 |
| 10. CES for G5000 and G6000 (XRS) V9 Installation Manual | 523-0820098 |
| 11. CES for G5000 and G6000 (XRS) V9 Operator's Guide | 523-0820100 |
| 12. CES for G5000 and G6000 (XRS) V9 with HTSE Quick Reference Guide | 523-0820102 |
| 13. CES for G5000 and G6000 (XRS) V9 with iPod Quick Reference Guide | 523-0820593 |
| 14. CES for Challenger 605 V9 Installation Guide | 523-0820097 |
| 15. CES for Challenger 605 V9 Operator's Guide | 523-0820099 |
| 16. CES for Challenger 605 V9 with 3.8 inch TSE Quick Reference Guide | 523-0820659 |
| 17. CES for Challenger 605 V9 with HTSE Quick Reference Guide | 523-0820103 |
| 18. CES for Challenger 605 V9 with MX-6000 RCU Quick Reference Guide | 523-0820658 |
| 19. CES for G5000 and G6000 (XRS) V10 Operator's Guide | 523-0821806 |
| 20. CES for G5000 and G6000 (XRS) V10 with iPod/iPad/iPhone, WPCU QRG | 523-0821808 |
| 21. CES for G5000 and G6000 (XRS) V10 with HTSE QRG | 523-0821809 |
| 22. CES for G5000 and G6000 (XRS) V10 Installation Manual | 523-0821805 |

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COURSE OUTLINE

I. Welcome/Introduction

- A. Training Overview
 - 1. Welcome
 - 2. Student Registration
 - 3. Student policy and Procedures
- B. Course Description and Objectives
- C. Course Materials Used
 - 1. Block Diagrams
 - 2. Manuals / Guides
 - 3. Handouts
- D. Pre-Knowledge Test (if applicable)

II. System Overview

- A. Applicable Global / Challenger System Manuals
 - 1. Software Version 7
 - 2. Software Version 8
 - 3. Software Version 9
 - 4. Software Version 10
- B. System Description
 - 1. Global Office
 - a) Satellite Receiver Transmitter (SRT-2100)
 - b) High Speed SATCOM Transceiver (HST-2100)
 - c) Wireless LAN Unit (WLU-6000)
 - d) Sigma 7 telephone
 - e) Aerocomm 3000 Cabin Telephone Unit
 - f) ICS-100 / ICS-200 Iridium Communication System

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- g) HP Printer/Scanner/Fax (Model 6210)
- 2. Cabin Services
 - a) Relay Drive Equipment (RDE)
 - b) Switch Box Equipment (SBE)
 - c) Switch Panel Equipment (SPE)
 - d) Passenger Address Amplifier (AAE)
- 3. Entertainment
 - a) Digital Tapping Equipment (DTE)
 - b) Video Encoder Equipment (VEE)
 - c) Stereo Amplifier Equipment (SAE)
 - d) Jack Panel Equipment (JPE)
 - e) Direct Broadcast Satellite TV System
- 4. Controls and Displays
 - a) Touch Screen Equipment (TSE)
 - b) Electronic Flight Bag (EFB)
 - c) Passenger Control Units
 - d) Bulkhead Display Units
 - e) IR/RF Interpreter
- C. Backbone and Power Distribution
 - 1. Modular Cabinet Equipment (MCE)
 - 2. Zone Distribution Equipment (ZDE)
 - 3. Power Distribution Equipment (PDE)

III. CES Ring Configuration

- A. Overview
- B. Diagram
- C. Components
- D. Summary

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IV. CES Star Configuration

- A. Overview
- B. Diagram
- C. Components
- D. Summary

V. CES Challenger 605 Configuration

- A. Overview
- B. Diagram
- C. Components
- D. Summary

VI. Power Distribution (Globals only)

- A. Background Information
- B. Circuit Breakers
- C. PDE Overview
- D. DC PDE-6000
- E. DC PDE PM-6010
- F. AC PDE-6100
- G. AC PDE PM-6110
- H. RDE-6000
- I. TRU

VII. Software Loading (instructed with Captivate files)

- A. CPAS
 - 1. Initial Installation
 - 2. Importing Data
 - 3. CPAS Configuration for CES

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B. PME

C. MME

1. Version 7
2. Version 8
3. Version 9
4. Version 10

D. Passenger Control Units

1. Pronto
2. HP Units
3. Universal (MX-6000)
4. iPod

E. EFB

1. CMC
2. L3

VIII. Maintenance Global V7 and V8

A. General System Maintenance Information

1. TSE Care & Cleaning

B. Maintenance Menus

1. Diagnostics
2. Configuration
3. Service
4. Circuit Breaker (C/B)
5. Network Settings
6. Test
7. System
 - a) Lighting

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- b) Setup
- c) System Options
- d) Power
- e) ARINC Monitor
- f) Discretes Monitor

IX. Maintenance Global V9

A. General System Maintenance Information

- 1. TSE Care & Cleaning

B. Maintenance Menus

- 1. Power Up Status
- 2. Diagnostics
- 3. Configuration
- 4. Service
- 5. Circuit Breaker (C/B)
- 6. Network Settings
- 7. Test
- 8. System
 - a) Lighting
 - b) Setup
 - c) System Options
 - d) Power
 - e) ARINC Monitor
 - f) Discretes Monitor

X. Maintenance Global V10 (Delta Changes)

A. Maintenance Menus

- 1. Diagnostics

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2. Network Settings
3. System Setup
4. Options

XI. Maintenance CL605 V9 and V10

A. General System Maintenance Information

1. TSE Care & Cleaning

B. Maintenance Menus

1. Power Up Status
2. Diagnostics
3. Configuration
4. Network Settings
5. System
 - a) Lighting
 - b) Climate
 - c) Setup
 - d) System Options
 - e) ARINC Monitor
 - f) Discretes Monitor

XII. G5000 / G6000 Troubleshooting

- A. System Block Diagrams
- B. Ping Testing
- C. CES Network Backbone
- D. Ping Info View Application
- E. Posted Faults
- F. Observed Faults

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XIII. CL605 Troubleshooting

- A. System Block Diagrams
- B. Ping Testing
- C. Ping Info View Application
- D. Posted Faults
- E. Observed Faults

XIV. Summary

- A. Review
- B. End-Of-Course Test
- C. Course Critique

EQUIPMENT TYPE:

| EQUIPMENT | NOMENCLATURE | PART NUMBER |
|----------------------------------|---------------------|----------------------------------|
| CES Backbone | | |
| Modular Cabinet Equipment | MCE-6000 | 822-1877-001 |
| Modular Fan Equipment | MFE-6000 | 822-1916-001 |
| Ethernet Switch Equipment | ESE-6100 | 822-1943-001 |
| Power Supply Equipment | PSE-6000 | 822-1879-001 |
| Processor/Mass Storage Equipment | PME-6000 | 822-1880-001 |
| CES Applications Software | CESA-6000 | 810-0026-001 |
| CES Tail Configuration Database | CCFA-6000 | Assigned to specific tail number |
| Moving Map Equipment (small) | MME-6000 | 822-1881-001 |
| MME Application Software | MMEA-6000 | 810-0012-001 |

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| Moving Map Tail Configuration Database | MCFA-6100 | Assigned to specific tail number |
| Audio/Video On Demand Application Software | AVDA-6000 | Assigned to specific tail number |
| Power Distribution Equipment, DC | PDE-6000 | 10718B01E01 |
| Power Distribution Equipment, DC personality module | PDE-6010 | 10720B01E00 |
| Power Distribution Equipment, AC | PDE-6100 | 10719B01E01 |
| Power Distribution Equipment, AC personality module | PDE-6110 | 10722B01E00 |
| Zone Distribution Equipment | ZDE-6000 | 1308523-100 |
| ZDE Plenum | ZDP-6000 | 822-1954-001 |
| Cabin Services | | |
| Switch Panel Equipment, 1×1, Flush Plating Color Code (pcc): | SPE-6100 | 2600-1-1-Q(pcc)A |
| Switch Box Equipment | SBE-6000 | 2600-3-1 |
| Relay Drive Equipment | RDE-6000 | 2052-1-1 |
| Control Display | | |
| Touch Screen Equipment, 10.4" (Galley) | TSE-6014 | 1308520-100 |
| Electronic Flight Bag (galley backup only) | EFB-6000 | FG-8000RC-001 |
| Bulkhead Display Equipment, 18.1" | BDE-6180 | ALD-1801D |
| High Definition Touch Screen Equipment | HTSE-6116 | 822-2647-100 |