



Global Avionics Training Specialists, LLC

CESSNA CITATION V

SPZ-500C/CITATION V

INTEGRATED FLIGHT CONTROL SYSTEM

LINE MAINTENANCE FAMILIARIZATION COURSE

SYLLABUS

I. INTRODUCTION

A. SYSTEM DESCRIPTION

The System provides three-axis aircraft attitude stabilization and path control. The automatic path mode commands are generated by the FZ-500 Flight Director Computer which integrates the attitude and heading reference, air data, and EFIS into a complete aircraft control system that provides the stabilization and control needed to ensure optimum performance throughout the aircraft flight regime.

The System displays heading, course, radio bearing, pitch and roll attitude, barometric altitude, radio altitude, course deviation, glideslope deviation, to-from and DME indications. Lighted annunciators denote selected flight mode and altitude alert. Pitch and roll steering commands developed by the Flight Director Computer in conjunction with the Mode Selector are displayed by steering pointers to enable the pilot to reach and/or maintain the desired flight path or attitude.

An Avionics Standard Communications Bus (ASCB) is used to interface between the SG-605 Symbol Generator and the optional MG-605 MFD Symbol Generator or the optional NZ-610 Navigation Computer. Other EFIS data is transmitted on private line buses.

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B. COURSE OBJECTIVES

This course of instruction is designed to familiarize and prepare line maintenance avionics specialists to operate, maintain, troubleshoot and test the SPZ-500C Integrated Flight Control System (IFCS) to the LRU level.

Equipment interface, theory of operation and flight operations are thoroughly discussed. Mode logic, interlocks, power distribution and ground maintenance testing procedures are covered in detail.

C. ARRANGEMENT

Based upon past experience, Global Avionics Training Specialists, LLC has arranged the course material in an order of presentation best suited to continuity and ease of comprehension.

D. DURATION

The course is 5 days in length, 8 hours a day, for a total of 40 class hours.

E. STUDENT PREREQUISITES

Students attending this course should be avionics specialists with a working knowledge of:

- Basic flight deck displays
- Radio communications and navigation
- Air pressure relationships
- Servo loop theory

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II. COURSE CURRICULUM

A. ORIENTATION

1. Welcome
2. Student registration
3. Course description
4. Class policies
5. Distribution of training materials
6. Location of facilities
7. Security

B. SYSTEM DESCRIPTION

1. What is an autopilot?
2. What is a flight director?
3. System Flow Diagram
 - a. Electronic Flight Instrument System (EFIS)
 - b. Multifunction Display System (MFD)
 - c. Attitude Heading Reference System (AHRS)
 - d. Air Data System (ADS)
 - e. Radio Altimeter System
 - f. Automatic Flight Control System (AFCS)
 - g. Weather Radar System
 - h. Flight Management System (FMS)
4. Component Locations

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C. SUBSYSTEM DESCRIPTION

1. ATTITUDE HEADING REFERENCE SYSTEM

- a) VG-14A Vertical Gyro
- b) C-14D Directional Gyro
- b) CS-412 Dual Remote Compensator
- c) FX-220 Flux Valve
- d) RG-204 Rate Gyro

2. ADZ-810 Air Data System

- a) AZ-810 Digital Air Data Computer
- b) BA-141 Barometric Altimeter
- c) VN-212 VNAV Computer/Controller

3. AA-300 Radio Altimeter System

- a) RT-300 Receiver Transmitter
- b) AT-22e Antenna

4. EDZ-605 Electronic Flight Instrument System and MDZ-605 Multifunction Display System

- a) ED-600 Electronic Display
 - 1) EADI Displays and Annunciators
 - 2) EADI Warning Flags
 - 3) EADI Comparison Monitoring
 - 4) EADI Excessive Attitude Display
 - 5) EHSI Displays and Annunciators
 - 6) EHSI Weather Radar Displays
 - 7) EHSI NAV Mode Displays
 - 8) EHSI Warning Flags
 - 9) EHSI Comparison Monitoring
 - 10) Composite Display
 - 11) EFIS Reversionary Switching
 - 12) EFIS Self-Test

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- b) MFD Display
 - 1) Weather Radar Display
 - 2) Map Mode Display
 - 3) Plan Mode Display
 - 4) Electronic Checklist
 - 5) EFIS Reversionary Backup
- c) ED-600 Functional Operation
- d) SG-605 Symbol Generator
- e) MG-605 Symbol Generator
- f) DC-811 Display Controller
- g) RI-106S Remote Instrument Controller
- h) MC-800 MFD Controller

5. Electromechanical Flight Instruments

- a) RD-450 Horizontal Situation Indicator

6. FLIGHT CONTROL SYSTEM

- a) SP-200 Autopilot Computer
- b) FZ-500 Flight Director Computer
- c) MS-205 Mode Selector
- d) PC-500 Autopilot Controller
- e) AG-222 Accelerometer
- f) RZ-220 Roll Rate Monitor
- g) SM-200 Servo Drive & Bracket

7. PRIMUS® 650 WEATHER RADAR SYSTEM

- a) WU-650 Receiver/Transmitter/Antenna
- b) WC-650 Weather Radar Controller

8. FLIGHT MANAGEMENT SYSTEM

- a) NZ-610 Navigation Computer
- b) CD-800 Control Display Unit

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- c) DL-800 Data Loader

9. SRZ-850 Integrated Radio System

- a) RNZ-850 Integrated Navigation Unit
- b) RCZ-850 Integrated Communications Unit
- c) ML-850 Microwave Landing System Receiver
- d) RM-850 Radio Management Unit
- e) CD-850 Clearance Delivery Control Unit
- f) DI-851 DME Indicator
- g) AT-860 ADF Antenna
- h) AT-851 MLS Antenna

D. Flight Guidance Modes of Operation

- 1. System Performance/Operating Limits
 - a. Flight Director Mode Logic
 - b. Heading Select and Go-Around Mode
 - c. VOR and VOR Approach Mode
 - d. Localizer, Localizer Approach and Back Course Mode
 - e. Altitude, Vertical Speed and Indicated Airspeed Hold Mode
 - f. Glideslope approach and Go-Around Mode
 - g. Altitude Preselect Mode
 - h. Vertical Navigation Mode
- 2. Autopilot Operation
 - a. Autopilot/Yaw Damper Engage Interlock
 - b. Autopilot Roll Axis Signal Flow
 - c. Autopilot Pitch Axis Signal Flow
 - d. Autopilot Yaw Axis Signal Flow
 - e. Torque Switching
- 3. Ground Checkout Procedure