Global Avionics Training Specialists, LLC

EMBRAER ERJ-145 REGIONAL JET

PRIMUS® 1000 INTEGRATED AVIONICS SYSTEM

LINE MAINTENANCE FAMILIARIZATION COURSE

OVERVIEW

A. SYSTEM DESCRIPTION

The PRIMUS® 1000 Integrated Avionics System is a completely integrated flight director, autopilot, yaw damper and electronic display system. The flight director provides a full complement of vertical and lateral computed steering modes. Three-axis aircraft attitude stabilization and path control are provided by the autopilot for optimum performance throughout the aircraft's normal flight regime. The automatic path mode commands are generated by the IC-600 Integrated Avionics Computer (IAC), which integrates the attitude and heading reference, air data and flight deck display functions into a complete aircraft control system.

The PRIMUS® 1000 system employs two IC-600 Integrated Avionics Computers (IACs), one with autopilot capability, and one without. The IACs are interconnected with a serial digital data bus. This allows either pilot to couple their side flight director function to the single autopilot.

The Electronic Display System (EDS) is totally integrated in the processing of primary flight display data and flight director data. This level of integration greatly simplifies the interface requirements for the overall system. This level of integration also implies that if the EDS is operational, the flight director is operational. Conversely, if the EDS has failed, the flight director has also failed. This approach features all the performance advantages of display integration, flexibility, redundancy and reliability.

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The PRIMUS® 1000 Integrated Avionics System also has provisions for input/output (I/O) and data management with external radio communication and navigation systems through digital/serial data bus interfaces. The PRIMUS® 1000 Integrated Avionics System is derived from a combination of existing Honeywell systems.

The system displays heading, course, radio bearing, pitch and roll attitude, barometric altitude, selected alert altitude, radio altitude, course deviation, glide slope deviation, TO-FROM indications, and DME indications. Lighted annunciators denote selected flight mode, altitude alert, decision height, and go-around mode engagement. Pitch and roll steering commands developed by the IC-600 IAC in conjunction with the GC-550 Guidance Control Unit are displayed by steering pointers on the PFD, to enable the pilot to reach and/or maintain the desired flight path or attitude.

B. COURSE OBJECTIVES

This course of instruction is designed to be supplemental to the line maintenance training provided by Embraer and/or their designated training provider. The material is presented in form and content to familiarize and prepare line maintenance avionic technicians to operate, maintain, troubleshoot and test the PRIMUS® 1000 Integrated Avionics System to the line replaceable unit (LRU) level. Equipment interface, theory of operation and flight operations are thoroughly discussed. Mode logic, signal flow, and ground maintenance testing 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 line maintenance technicians with a working knowledge of flight control, air data and flight deck display systems.