Rockwell Collins Services
Training and Information Solutions
Course Syllabus: 523-0808188

COURSE TITLE: **WXR-2100 MultiScan™ Fully Automatic Weather Radar**
Pilot (Level I Operator) Course

AUDIENCE: Students should be familiar with MS Windows® Based Operating Systems.

PURPOSE: This course provides training to familiarize pilots with the fundamentals of aviation weather detection and basic operation of the WXR-2100 MultiScan™ Fully Automatic Weather Radar System

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

1. Briefly describe the fundamentals of weather detection, including weather reflectivity, thunderstorm formation, turbulence detection, and windshear detection.
2. Describe the purpose of the various switches, knobs, and control settings on the Weather Radar Control Panels.
3. Describe the signification differences between Airbus and Boeing Control Panels.
4. Recognize EFIS display annunciations in the Manual and Automatic modes for Airbus and Boeing aircraft.
5. Describe operation of the WXR-2100 in the Manual and Automatic modes, including activation of System Test.

COURSE LENGTH: Approximately 2 Hrs (Course length will vary from individual to individual, depending on the experience level of the participant and the Pre/Post Testing options that are selected.)

REFERENCES:

1. Collins WXR-2100 Operator's Guide 523-0780944

WXR-2100 MULTISCAN™ FULLY AUTOMATIC WEATHER RADAR COURSE OUTLINE

I. Fundamentals of Aviation Weather

A. Relfectivity Characteristics of Precipitation
   1. Thunderstorm Reflectivity
   2. Thunderstorm Composition
   3. Effects of Antenna Tilt Angle on Reflectivity

B. Thunderstorm Development
   1. Airmass Thunderstorms
   2. Multi-cell Thunderstorms
   3. Steady-state Thunderstorms
   4. Oceanic Thunderstorms

C. Microburst and Windshear

D. Weather Cells
   1. Normal
   2. Severe
E. Hazardous Weather
F. Non-Reflective Weather
G. Summary (Test Option)

II. How Radar Works

A. Factor Affecting Weather, Turbulence and Windshear Detection Performance
   1. Calibrated Gain Scheme
   2. Antenna Characteristics
   3. Radar Beam
   4. Pulse Width and Beam Attenuation
B. Sensitivity Time Control
C. Long Range Color Enhancement
D. Path Attenuation Compensation
E. Doppler Turbulence
F. Windshear Alerts and Alert Regions
   1. Airbus
   2. Boeing
G. Summary (Test Option)

III. Introduction to MultiScan

A. WXR-2100 Operational Overview
   1. Dual-beam System
   2. Variable Temperature-based Gain
   3. Ground Clutter Suppression System
   4. Summary (Test Option)

IV. MultiScan Automatic Mode Operation

A. MultiScan Control Panels
   1. Airbus
   2. Boeing
B. MultiScan Initialization Process
C. Left/Right Receiver-Transmitter Selection
D. Predictive Windshear Operation
E. Display Annunciations
F. Mode Controls
G. Test Procedures
H. Windshear Detection Features
I. Summary (Test Option)

V. MultiScan Manual Mode Operation

A. Manual Mode Selection
   1. Airbus Control Panel
   2. Boeing Control Panel

B. Ground Clutter Suppression Controls (Inoperative during Manual Mode)

C. Tilt Control Settings
   1. Low Altitude Tilt
   2. Takeoff Tilt
   3. Descent Tilt
   4. Mid-Altitude Tilt
   5. High Altitude Tilt

D. Overscan Prevention Techniques

E. Summary (Test Option)