

A dramatic, high-contrast photograph of a stormy sky. Dark, heavy clouds are illuminated from within by a bright, glowing light source, creating a deep red and orange glow. Several bright white lightning bolts are visible, striking down from the clouds. The overall mood is intense and powerful.

Rockwell Collins

Friends/Partners in Aviation Weather

Progress in Turbulence Information
Forum

NBAA - Orlando

Roy E Robertson
November 11, 2005

Rockwell
Collins



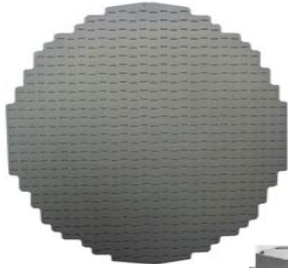
Turbulence Impact

- Unexpected Turbulence Encounters are the Highest Cause of Passenger and Flight Attendant Injuries
- Up to 85 Percent of Turbulence Encounters Related to Convective Activity

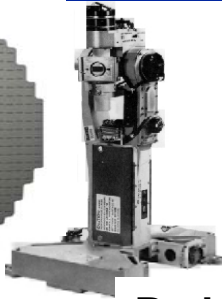
Rockwell Collins Radar Product Families



WRT-2100 R/T

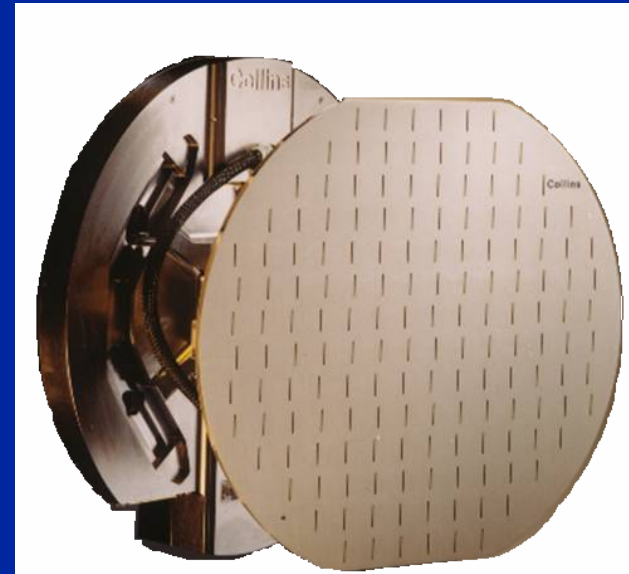


Antenna

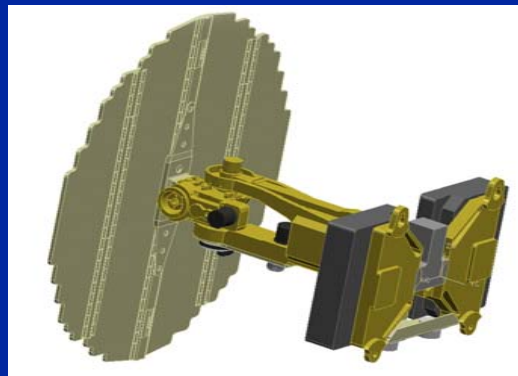


Pedestal

**Collins ARINC 708A MultiScan
and Windshear Radars**



**Collins RTA Family of
Business/Regional Radars**

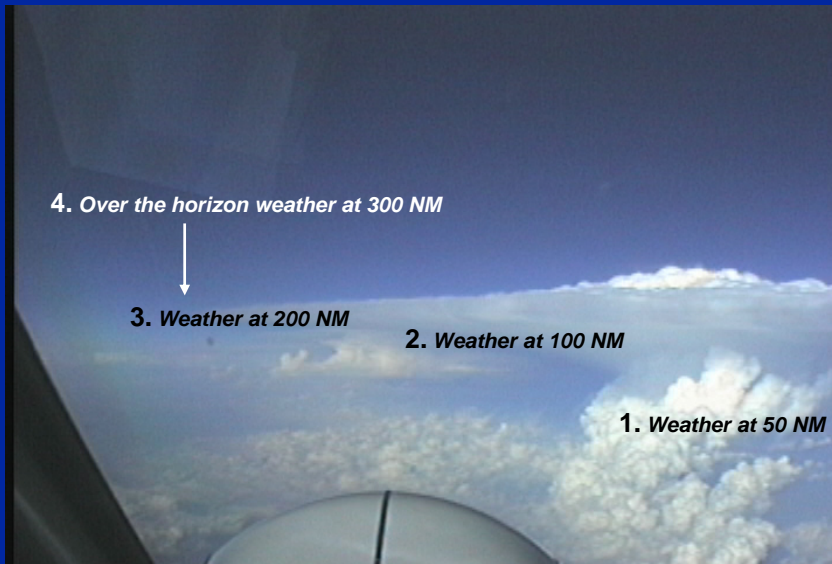


**Collins ISS
ARINC 768
MultiScan
Radar**



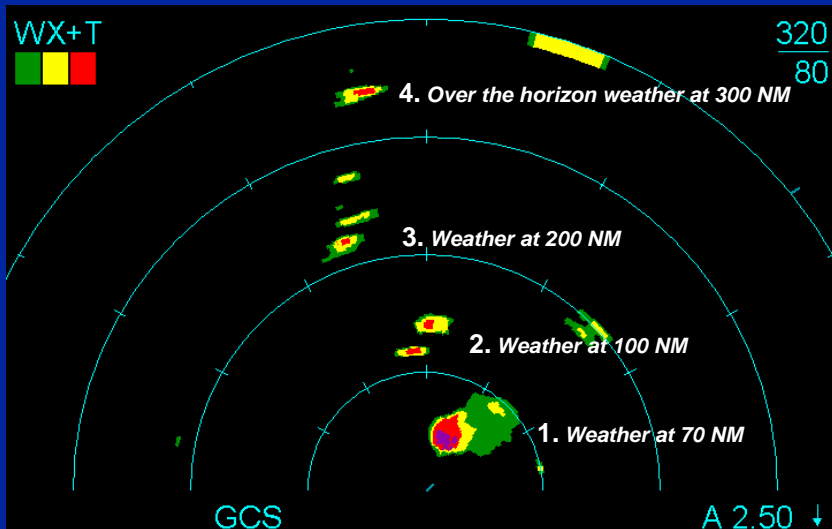
Key Radar Operational Capabilities

Weather as viewed from the cockpit



- Strategic and Tactical Weather Avoidance
- Turbulence Detection
- Overflight™ Protection
- Path Attenuation Compensation / Alert

MultiScan Radar Display



Enhanced Turbulence In-Service Evaluation

Government / Industry Partnership:

NASA, Aero-Tech Research
Delta Airlines, Rockwell Collins



- WXR-2100 MultiScan Platform
- Advanced Turbulence Detection Algorithm
- Displays Predicted Aircraft "G" Loads
- Two Level Turbulence Displays
 - Ride Quality
 - Safety Hazard



On-Board Turbulence Sensor Technologies

- Improved Radar Weather Avoidance Capabilities
- Enhanced Radar Turbulence Detection
 - Improved Detection Algorithms
 - Improved Display Presentations
- Automated Turbulence Reports and Dissemination
- Future Clear Air Turbulence Sensors



User Needs and Issues

- Turbulence Education and Awareness
- Turbulence Communications / Protocols
- Empowerment for Cabin Safety Decision Making
- Harmonization of Turbulence Manuals and Policies
- Operational Limitations - Forecasting