Air Surveillance Applications
NORAD’s Perspective

Lt Col Bryan Miller
NORAD J35W
18 Nov 09
Overview

• Situation
• Background Information
• Sustainment Initiatives
• Future Solution Requirements
• Solutions on the Table Today

NOTE: This brief incorporates NORAD & USNORTHCOM specific equities. It does not encompass all DOD equities.
NORAD’s Air Surveillance Situation

- NORAD shares sensors with the FAA & DHS
  - FAA responsible for air safety for cooperative aircraft
  - NORAD defends North American Airspace against:
    - Cooperative & Non-cooperative manned aircraft, UAS, Cruise missiles, etc.
- NORAD & DHS perform homeland security roles against asymmetric, non-cooperative threats
  - Mission Examples: Counter Drug, Immigration
- NORAD has two homeland defense target sets
  - Traditional – external bomber & cruise missile threat
  - Asymmetric – interior area added as a result of 9-11
Background Information

• Air Surveillance is NORAD’s #1 Issue
  • CDR NORAD’s message to Congress in Mar ‘08
• NORAD’s Radar Coverage is Diminished by:
  • Wind Turbines
  • Man-made Obstructions
  • Aging Air Surveillance Systems
• NORAD Supports & Continues to Support:
  • Existing radar systems thru sustainment initiatives
  • Integration of bridging programs/technologies
  • And promote future systems development
Air Surveillance Sustainment Initiatives

- Service Life Extension Program Continues
  - Pushing life expectancy of vintage radars past 2015
- FPS-117 Essential Parts Replacement Program
  - Radars projected to fail in 2013 w/out EPRP
- FPS-124 Frequency Synthesizer
  - Funding is in place, awaiting fielding
- Wind Farm & Obstacle Mitigation Strategies
  - Mitigation options: Today = Outside RLS solution; In the future = Technological solution
  - DOD policy development in initial stages
Future Air Surveillance Solution Requirements

• Improved Detection & Processing Capability
  • Faster detect rates & initial track establishment
  • Advanced signal processing, filtering & 3D accuracy

• Improved Threat Assessment
  • Faster correlation rates & integrated ID capability
  • Automated flight profile deviation/change flagging

• Increased Air Domain Coverage
  • Low altitude, low radar cross section & low speed
  • Flock Detection & Bird Strike/Hazard mitigation
  • Wind Farm interference, screening & solutions

• Targeting Quality Guidance Capability
Air Surveillance Solutions on the Table Today

- Potential Technology Solutions Include:
  - NextGen Over the Horizon Radar
  - Multifunction Phased Array Radar
  - Aerostats
  - High Altitude Airships
  - Maritime Surveillance Capabilities
  - Many Others
Questions?