RC-135U Combat Sent
17 Apr 1970: “COMBAT SENT” program established to meet AF need for scientific and technical collection capability

1971-1974: 3 RC-135C converted to RC-135U
  - Tails 847, 792, 849

1975: Tail 792 converted to Rivet Joint

1975 to Present: 2 RC-135U
Baseline Upgrades

- Onboard reconnaissance systems and flight deck equipment go through regular modifications
  - Modifications are called “Baseline” upgrades
    - Currently Baseline 5 (BL5)
- Upgrades occur during extensive depot repair cycle and modernization every ~4 years
  - Airframe and systems disassembled, inspected, upgraded
  - Reconnaissance systems replaced or modernized
  - Accomplished by L3 Communication in Greenville, TX
    - Oversight by 645 AESS
Aircraft Overview

- 2 Mission aircraft (847, 849)
  - 849 : Depot Maintenance (Greenville, TX)
  - 847 : Currently deployable

Data provided by Capt Michael Mann and is current as of 11 Jul 17
Performance Capabilities

- Runway Requirement
  - 8,000 feet minimum
- Max T/O Weight: 322.5K lbs
- Operating Altitudes
  - 1,000 – 42,000 feet
- Speed (TAS)
  - Cruise: 420 – 450 kts
  - Loiter: 380 kts
- Un-refueled range
  - 3600 nm or 8 hours duration
- Maximum Duty Duration
  - Up to 24 hours (augmented & air-refueled)
Crew Composition

- 2 Pilots
- 1 Navigators
- 8 Raven positions
- 6 Mission Area Specialist operator positions
- 3 ASE positions
- Augmented Aircrew – Add 1 AC/IP and 1 Nav

Break the barrier... since 1947
Crew Composition

- Ravens
  - R1/2 (PRISMS) – Operates the primary platform sensor
  - R3/4/5 (Manuals) – Performs fine grain analysis of signals; provides threat warning for the mission aircraft
  - R9 (CORVUS) – Operates the automatic collection system; builds locations and identifies emitters
  - R6/8 (Tactical Coordinator/Fusion) – Directs the efforts of the ELINT compartment to ensure national and theater tasking is satisfied and produce the OPREP

- ASEs
  - Monitor and test computer systems onboard the aircraft; repairs affected equipment during flight

- Mission Area Specialists
  - Threat Warning
Collection Capabilities

- Collect fine-grain information to enhance future weapon systems while performing NRT reporting
- Intercept, identify, locate, and exploit electronic signals for Scientific and Technical analysis
- Defensive systems improvements
- Capabilities of targets (strengths and weaknesses)
- Threat avoidance planning
Missions

- Sensitive Reconnaissance Operations (SRO)
  - National Tech ELINT tasking from NSA-C

- Foreign Materiel Exploitation (FME)
  - Test and Evaluation of Red Forces systems in a controlled environment and ideal collection posture

- Operational Test & Evaluation (OT&E)
  - Test and evaluation of Blue Forces systems in a controlled environment and ideal collection posture

- Developmental Test & Evaluation (DT&E)
  - Test and evaluation of non-operational systems in research and development phase

- Contingency Operations
  - Tactical SIGINT collection and NRT reporting
Calibration Sorties

- Most prominent local HHQ sortie
  - Pre-deployment and Post-deployment
  - Calibrations every 60 days per NSA-C
- Ensures validity of collected data from:
  - Relevant antennas
  - Frequency bands
- Flown in the vicinity of Greenville, TX
Deployment

- 5 to 6 planned Tech ELINT deployments per year
  - Durations of 30 – 90 days
  - Multiple OL’s per deployment are possible

- NSA-Colorado retains SIGINT Operator Tasking Authority (SOTA) over Combat Sent while deployed
  - National Tech ELINT tasking takes priority over COCOM tasking

- Multiple consumers for Combat Sent data
  - NSA, NASIC, ONI, CIA, NTI, DEFSMAC, JSF, etc.
Operating Locations

- PACOM
  - EIELSON AFB* (Requires Additional Support)
  - OFFUTT AFB 55WG
- EUCOM
  - RAF MILDENHALL 95 RS
  - NSA SOUDA BAY DET 1, 95 RS (Greece)
- CENTCOM
  - AL UDEID AB 763 ERS (Qatar)
  - DIEGO GARCIA* B.I.O.T.
- PACOM
  - KADENA AB 82 RS (Japan)

*B Requires Additional Support
Summary

- History
- Aircraft Overview
- Crew Composition
- Collection Capabilities
- Missions
Questions?