

Headquarters U.S. Air Force

Integrity - Service - Excellence

RC-135U Combat Sent



Capt Logan Schrank

45 RS/DOF-C

8 Sep 17

Version 1



RC-135U Combat Sent



Breaking Barriers ... Since 1947



History

- **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

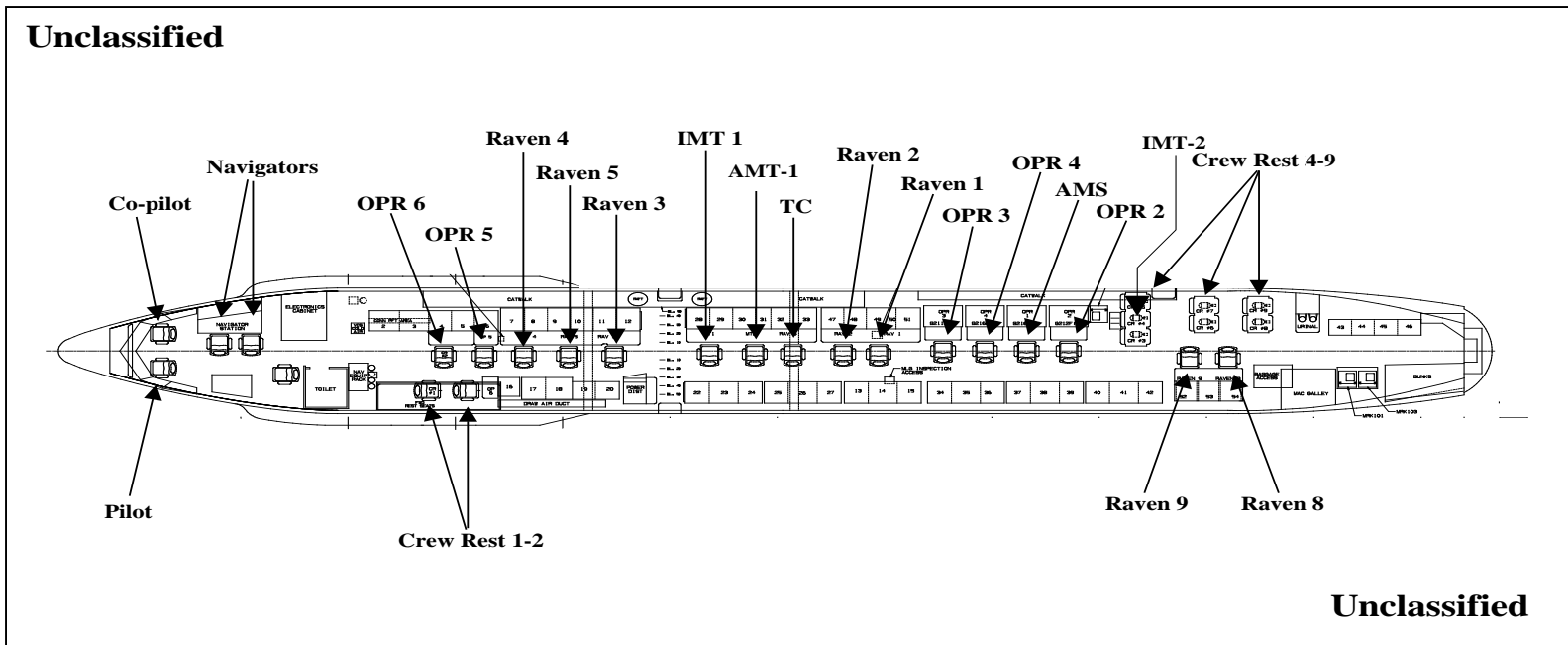
- Runway Requirement
 - 8,000 feet minimum
- Max T/O Weight: 322.5K lbs
- Operating Altitudes
 - 1,000 – 42,000 feet
- Speed (TAS)
 - Cruise: 420 – 450 kts
 - Loiter: 380 kts
- Un-refueled range
 - 3600 nm or 8 hours duration
- Maximum Duty Duration
 - Up to 24 hours (augmented & air-refueled)





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



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
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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**
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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**

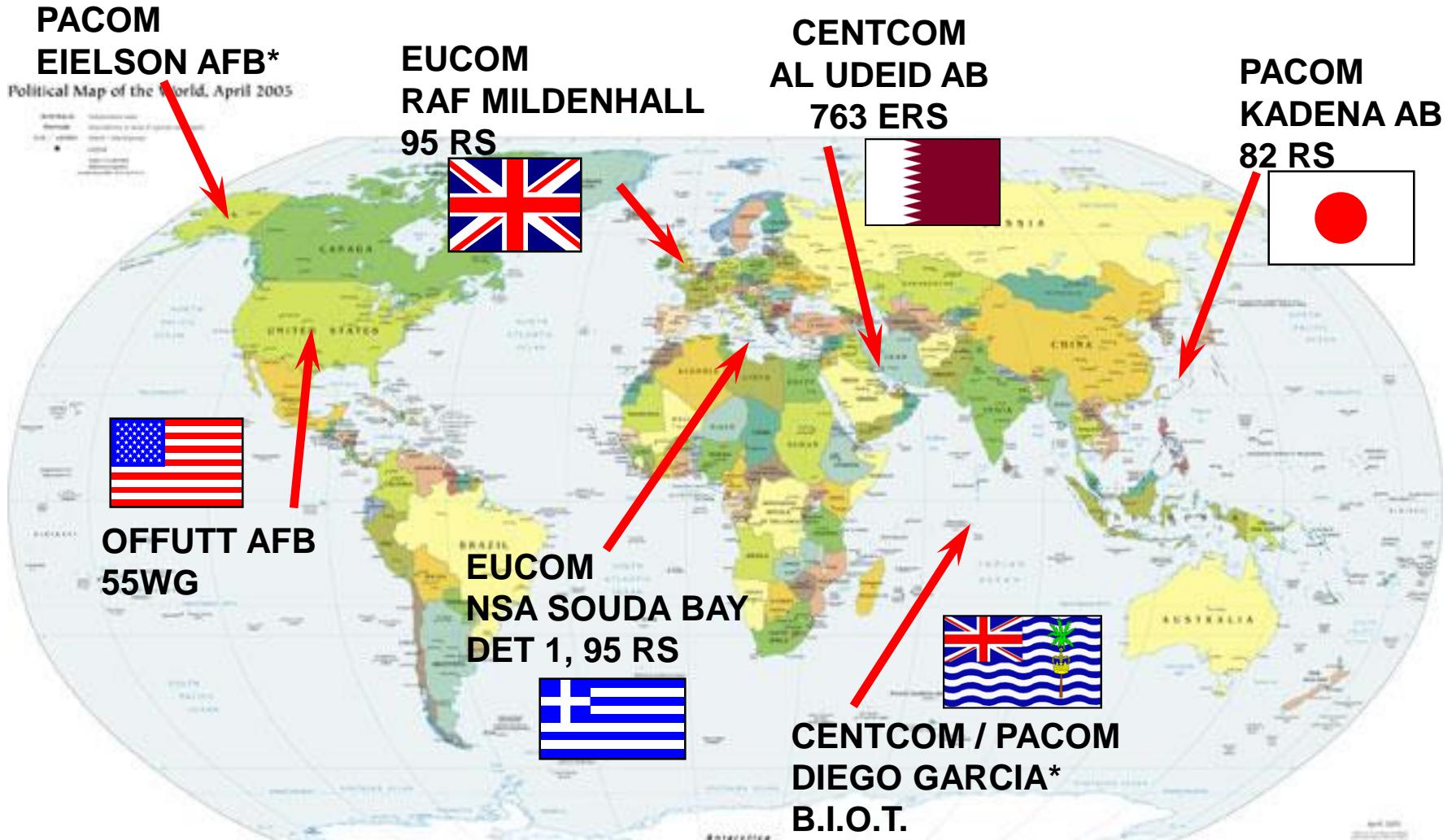


Deployment

- **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



■*Requires Additional Support

Breaking Barriers ... Since 1947



Summary

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



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RC-135U Combat Sent

■ Questions?

