Predator Program Office

Developing, Fielding, and Sustaining America’s Aerospace Force

Predator Program Overview
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Standard Form 298 (Rev. 8-98)  
Prescribed by ANSI Std Z39-18
Predator System Description
System Overview

SATCOM Link Terminal (RQ-1U/W)

Four (4) Predator (RQ-1L) Air Vehicles

Ground Control Station (RQ-1Q) & Line of Sight Link Terminal

55 Personnel
Predator System Description

Concept of Operations (CONOPS)

- **Ku Band SATCOM**
- **COMSAT**
- **GPS**
- **SAR & EO/IR**
- **GCS**
- **Mission Planning & Control**
- **Launch & Recovery**
- **Tasking**
- **JFC**
- **JIC**
- **Unified CDRS**
- **NMJIC**
- **EO/IR AV C³I**
- **AV Status & Imagery**
- **Mission Update & Payload Control**
- **150 nm Line of Sight**
- **Data Link**
- **TS II/PPSL (JTF C⁴I)**
- **Imagery**
- **Mission Update & Payload Control**
- **400 nm (notional)**

**Predator System Description Concept of Operations (CONOPS)**

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### Predator System Description

**Aircraft Characteristics**

- **Wingspan:** 48.7 FT
- **Length:** 26 FT
- **Cruise Velocity:** 70 KTS
- **Radius Of Action:** 400 NM
- **Duration:** >24 hrs
- **Max Altitude:** 25,000 ft MSL
- **Payload Capacity:** 450 lbs
- **Sensors:** EO/IR/SAR
- **Communications:**
  - LOS (C-Band)
  - BLOS (Ku Band)
Predator System Description
Aircraft Internal Layout

1. SAR ANTENNA ASSEMBLY
2. INS/GPS UNIT
3. KU BAND SATCOM ANTENNA
4. AIRBORNE VCR
5. IFF TRANSPONDER
6. KU BAND SATCOM SPMA
7. FORWARD FUEL TANK
8. AFT FUEL TANK
9. PARACHUTE/DE-ICE TANK BAY
10. ENGINE
11. BATTERY #2
12. POWER SUPPLY
13. BATTERY #1

14. REAR BAY AVIONICS TRAY
15. SECONDARY CONTROL MODULE (SCM)
16. SAR PROCESSOR ASSEMBLY
17. PRIMARY CONTROL MODULE (PCM)
18. FRONT BAY AVIONICS TRAY
19. ARC-210 RADIO
20. FLIGHT SENSOR UNIT
21. ENERDYNE VIDEO PROCESSOR UNIT
22. EO/IR PAYLOAD
23. FRONT BAY PAYLOAD TRAY
24. SAR RX/TX ASSEMBLY
25. NOSE CAMERA

NOTE
New payload avionics will most likely be located in space presently occupied by items 1, 3, 6, 9, 16, 22, and 24
Predator System Description
Synthetic Aperture Radar (SAR)

Predator System Description

Synthetic Aperture Radar (SAR)

- **Forward Electronics Bay**
- **Rear Electronics Bay**
- **Engine Bay**

** LN-100G (INS) **

**Receiver/Transmitter**
- Weight: 58 lbs
- Power: 496 W
- Volume: 1.05

**Antenna**
- Weight: 52 lbs
- Power: 132 W
- Volume: 1.03

**Processor**
- Weight: 55.5 lbs
- Power: 530 W
- Volume: 1.5

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Current Predator EO/IR sensor is WESCAM 14
- AN/AAS-44 is the predecessor to MTS
  - Modified and deployed during Kosovo War - Nicknamed “Kosovo Ball”
  - Used to laze targets for others to engage
- Prototype MTS borrowed from Navy for Hellfire Demo
  - Production MTS program will begin 5 Aug 02
Predator System Description
Ground Control Station (GCS)
Predator Development Projects
Hellfire Modifications

MTS (Multispectral Targeting System)
- LRD
- IR and TV
- TV WFOV
- Illuminator

Pylon/launcher
- Missile electronics
- Wing hardpoint/wiring

MTS interface kit

Hellfire-Equipped Predator
Predator Development Projects
Hellfire Modifications

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UAV Battlelab initiative to enhance situational awareness
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Predator Development Projects
Chemical Combat Assessment System

CCAS Kit for Predator RQ-1A/B

Flight Inserted Detection Expendables for Reconnaissance (FINDER)

Spectrometric Point Ionizing Detector Expendable/Recoverable (SPIDER)

Predator Infrared Airborne Narrowband Hyperspectral combat Assessor (PIRANHA)
Predator Development Projects
Talon Radiance

- Congressionally directed AFTENCAP
- See “Tanks-Under-Trees”

HSS Real Time Display

Hyperspectral Camera
Line Scanner

Yugoslav Camouflage Netting
US Desert Camouflage Netting
Tank Decoy
Predator Development Projects

Predator B

Wingspan: 64 FT / 19.5 M
Length: 36 FT / 11.0 M
Powerplant: HONEYWELL 331-10, 950 HP
Max Level Speed: 225 KTAS
Endurance: 24 hrs
Max Altitude: 48,000 ft
TOGW: 10,000 lbs
Fuel: 3,000 lbs

Payload Capacity
Internal: 750 lbs
Wings: 3,000 lbs
“Before the war, the Predator had skeptics because it did not fit the old ways. Now it is clear the military does not have enough unmanned vehicles.”

- President George W. Bush, 11 Dec 01