UAV’s And Homeland Defense

...Now More Critical Than Ever

LCDR Troy Beshears
UAV Platform Manager
United States Coast Guard
Common Maritime Threats

Counter-Terrorism

Maritime Food Supply (Fish)

Mass Migration

Weapons of Mass Destruction

Sanctions Violations

Maritime Domain Awareness

Crime & Violence

Arms Trafficking

Smuggling (Aliens & Drugs)

Safe Ports & Waterways

Environmental Degradation

Search & Rescue

Defense Operations

Interoperability

Regional Crisis & Conflict

Homeland Security
U. S. Coast Guard Missions

Maritime Safety
- Search and Rescue
- International Ice Patrol

Maritime Security
- Drug Interdiction
- General Enforcement of Laws and Treaties
- Alien Migrant Interdiction

Protection of Natural Resources
- Marine Pollution Enforcement & Response
- Living Marine Resource Enforcement

Maritime Mobility
- Lightering Zone Enforcement
- Foreign Vessel Inspection

National Defense
- Homeland Security
- General Defense Operations
- Maritime Interception Operations
- Military Environmental Defense Operations
- Port Operations, Security, & Defense
- Peacetime Military Engagement
- Coastal Sea Control

National Defense
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- Homeland Security
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National Fleet Concept – Homeland Security Considerations

- Build a National Fleet of multimission surface combatants and cutters to meet the full spectrum of threats
- Coordinate surface ship/cutter planning, R&D, and information systems integration
- Build Coast Guard and Navy ships designed around common equipment and systems
- Expand and synchronize joint concept of operations, logistics, training, exercises, and deployments to ensure interoperability
- MOU signed 12 April 2002 between IDS and DDX
- National Fleet Policy Statement signed 08 July 2002 between CNO and COMDT to operationally integrate their forces
- Naval Operational Capabilities (NOC) for National Security Cutter, Medium Endurance Cutter, & Patrol Boats
U.S.C.G. 212 Years of Homeland Security
Homeland Security “Cornerstones”

Prevention and timely response are key to success:
- Active and acceptable presence
- Mission task sequence
- Innovative tactics, techniques & technologies
- Local, regional, national and international cooperation
- Outreach and education
Homeland Security Strategy

Comprehensive National Strategy

Deepwater Mission Task Sequence

Surveil
Detect
Classify
Identify
Prosecute

Coast Guard Homeland Security Strategy

Conduct layered maritime security operations
Establish & maintain a baseline level of maritime security
Strengthen the port security posture
Build & leverage Maritime Domain Awareness
Develop required capabilities, improve core competencies & recapitalize the CG
Organize & sustain a public private sector partnership; increase international partnership
Prepare, equip & train forces to transition between & conduct HLS & HLD ops

National Strategy for Homeland Security

Prevent Terrorist Attacks within the United States
Reduce America’s Vulnerability to Terrorism
Minimize the Danger and Recover from the Attacks that do Occur
Global Mission Requirements

- Surveillance
- Detection
- Classification
- Identification
- Prosecution

TOI = Target of Interest
Homeland Security is a two-front war

High Seas
- Legitimate Trade
- Transnational Threats

Exclusive Economic Zone
- Marine Environmental Protection
- Fisheries
- Offshore Energy

Territorial Sea

Ports & Inland Waterways
- Port Safety
- Port Security

Push the border out

US Navy
US Customs
USCG

Maritime Security Posture
Facilitates operational risk analysis affecting the maritime domain
CONOPS Summary

1 HAEUAV Wide Area Surveillance
2 MPA Prosecution
3 NSC Interoperability
4 Multi Asset Operation
5 Over-the-Horizon Operations
6 Shore-based Command Center
Maximizing UAV Capabilities for Homeland Defense

- **Phase I**: High Altitude
  - SeaVue™ Maritime Radar
  - 169 nmi Range

- **Phase II**: Low Altitude
  - EO/IR
  - 1.75 nmi Spotlight
Evaluation of possible deployment sites based on UAV Capabilities
Persistent Presence provided by UAVs

### BASING ROUTE TORANGE CIRCUITS AREA SEARCH (hr)*

<table>
<thead>
<tr>
<th>BASING</th>
<th>ROUTE</th>
<th>TORANGE</th>
<th>CIRCUITS</th>
<th>AREA SEARCH (hr)*</th>
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<tbody>
<tr>
<td>Miami, FL</td>
<td>EAST1</td>
<td>Bangor, MW : 2,400 nmi</td>
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<td>GULF1</td>
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<td>Cabo San Lucas, MX : 2,000 nmi</td>
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<td>PAC2</td>
<td>Seattle, WA : 2,400 nmi</td>
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<tr>
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<td>AK1</td>
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<tr>
<td></td>
<td>AK2</td>
<td>Aleutian Chain : 3,000 nmi</td>
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<tr>
<td>Honolulu, HI</td>
<td>H11</td>
<td>300 nmi radius : 2,484 nmi</td>
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*Assumes Flight to Max Route Range

**PREDATOR B - Extended Range**

TPE-331-10T Engine
GTOW = 10,000 lb
Total 6,000 lb fuel (2,000 lb external) Range = 3,300 nmi / 6,690 nmi round trip Endurance = 34 hr (1 hr reserve)

Note: Flight Routes = 300 nmi offshore

EAST1
1 circuit
16 hr loiter

AK1
2 circuits
4 hr loiter

AK2
1 circuit
16 hr loiter

PAC1
2 circuits
30 hr loiter

PAC2
2 circuits
5 hr loiter

H11
2 circuits
4 hr loiter

H11
2 circuits
4 hr loiter

GULF1
2 circuits
5 hr loiter

GULF1
2 circuits
5 hr loiter

MEXICO
THE BAHAMAS
Atlantic Ocean
Pacific Ocean
Gulf of Mexico
UAV Activities – UCARS Test

- November 1999
- 10 miles south of Key West, FL
- Test held from USCGC Thetis flight deck

UCARS

CL-327 Landing
VUAV Characteristics

Bell HV-911 “Eagle Eye” VTOL Unmanned Air Vehicle – Delivery 2006-2018 (69)

General Characteristics

- All Composite Construction
- Fully Shipboard Deployable
- Low Maintenance (<1 MMH/FH)
- Up to 4 VUAVs per NSC or OPC
- Modular Mission Payloads (FLIR/EO, Radar, etc.)
- High Speed Dash (220 kts), Cruise (200 kts)
- Airplane Loiter (90 kts)
- 5 Hour Endurance
- Maximum Height 5.7 ft
- Maximum Length 17.23 ft
- Maximum Wing Span 23.6 ft

Flight-Ready Configuration

Stowed Configuration

- FLIR/EO
- Folded Tail Section
- Mission Payload Access
- Engine Access
- Rotor Blades
- FLIR/EO
## General Characteristics

- DoD Surveillance Asset
- Low Risk After USAF Production, Testing, Fielding
- Huge Surveillance Areas Covered per Mission
- >3,000 nm Range, >30 Hours Endurance
- High-resolution Sensors (FLIR/EO, SAR, ISAR/GMTI)
- Range Endurance Allows Operation from Only 2 Sites
- Centralized Control from Ground Control Station
- GCS Integrated into CG-C2 System

## General Specifications

- **Power Plant:** Single Allison AE3007H (Approximately 7,000 Pounds Thrust)
- **Length:** 44 feet
- **Height:** 15 feet
- **Weight:** Approximately 25,600 Gross Take-off Pounds
- **Wingspan:** 116 feet
- **Speed:** 300 to 400 Kt True Air Speed (KTAS)
- **Range:** 1,200 nm Radius with 24 Hours On Station
- **Loiter Altitude:** 50,000 to 65,000 feet
- **Fuel Capacity:** 14,800 Pounds, JP-8
Homeland Security

SEMPRE PARATUS

Coordinated and Focused on the Real Threats

Prepared for the 21st Century
QUESTIONS?

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United States Coast Guard