United States Army Special Operations Aviation Command (USASOAC)

AAAA Aircraft Survivability Equipment Symposium

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Overall Classification: UNCLASSIFIED//FOUO//ORCON
Special Operations Aviation

Video Link
Agenda

- Technology Roadmap
- Fleet Configuration
- Signature Management
- Hostile Fire (IR/RF/Small Arms)
  - CMWS/IRCM
  - RF CM
  - AOBPS/Weight savings
- Future ASE Development and Integration
  - Multi-Spectral (UV, IR)
  - Airborne Mission Networking
- Advanced Tactics, Education, and Training
  - GAP
  - Advanced Education and Training Concept
# Technology Roadmap

<table>
<thead>
<tr>
<th>SIGNATURE MANAGEMENT</th>
<th>THREAT DETECTION</th>
<th>DEGRADED VISUAL ENVIRONMENT SYSTEM</th>
<th>INTEGRATED AIRBORNE NETWORKING SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce Detection Radius, Disrupt Aiming</td>
<td>Detect and counter guided munitions with expendables</td>
<td>Flight Instruments, CAAS cueing</td>
<td>Federated Rover 6 and PRC-117, PRC 152 PRC – 154 (Carry-On) TW-400 , Case-by-case MANET</td>
</tr>
</tbody>
</table>

**Current Capability**
- Exhaust Suppression (Infrared)
- Detect and counter guided munitions with expendables
- Flight Instruments, CAAS cueing

**Tech Path**
- Reduction of visual signature
- Reduction of radar signature; agile and cooperative jamming
- Reduction of acoustic signature
- Dazzle shooters and potential shooters, disable RPG fuses prior to impact

**Objective Capability**
- Active signature manipulation; electromagnetic spectrum exploited for feints, saturation and surprise
- Disable guided and fused weapons prior to launch; surface fire feeds AOR targeting systems
- Integrated Synthetic vision via HUD, expand portion of available of EM spectrum & data available to Crew Members
- Fully Displayable, Modular, Air vehicle OFP de-synched Dynamic Tactical Airborne Network with Anti-Cognitive Jamming

**Increased Effectiveness, Suitability, and Survivability Enroute and on the Objective**
Current Fleet

All ASE systems integrated through Common Avionics Architecture System (CAAS) using a single Dedicated Electronic Warfare Display (DEWD)

SIRFC CMWS/ICMD AVR-2B

SOA CAAS

MH-60M

MH-47G
Infrared (IR) Suppression

- **MH47G: IES-47**
  - SOF unique
  - Fully fielded

- **MH60M: UES**
  - Army common with UH-60M

Reduce signatures to enhance CM effectiveness
Infrared Countermeasures (IRCM)

• Reduced Optical Signature Emissions Solution (ROSES)
  • Low visibility flare
  • Extensive captive seeker testing and modeling
  • 2 x Flare solution fielded
  • Ongoing work to improve solution

Effectiveness with lower optical signature
Radio Frequency Countermeasures (RFCM)

- Suite of Integrated Radio Frequency Countermeasures (SIRFC)
  - Fielding complete, continuing to upgrade capability
  - Premier rotary wing Radar Warning Receiver (RWR)
  - Premier rotary wing Radio Frequency Counter Measures (RFCM)
  - Comprehensive RF solution (RWR and Countermeasure)
    - Replaces four federated legacy systems
      - APR-39, APR-44, ALQ-136, ALQ-162
  - Hosts CMWS, AAQ – 24, and AVR-2B Interface, HFI correlation and sensor fusion
  - Common ASE display
    - Threat data
    - System status

The foundation of the 160th SOAR integrated ASE suite
Aircraft Armor

- **Aircraft Occupant Ballistic Protection System (AOBPS)**
  - Fielding complete
  - Provides focused protection
  - Almost half the weight of steel, equivalent protection, 1366 lb savings with MH-47 crew and pax set installed
  - Fielded to all 3 airframes

- **Multi-hit Transparent Armor System (MITAS)**
  - Fielding complete (Fielded only to the MH-60M fleet)
  - Improved protection while providing improved visibility

Protect our crews and customers
Future ASE Development and Integration

- **Multi-Spectral (UV, IR)**
  - Maximize the use of existing sensors and processors
  - Minimize weight penalty
  - Integrate into SIRFC for crew interface, real time reporting small arms, RPG, and AAA with no impact to MWS
  - Ultimate goal is to provide a countermeasure and geo-location

- **Airborne Mission Networking**
  - Networked Common Operating Picture (COP)
  - Networked ASE Data
  - A/MH-6M Solution(s)
  - Networked DVE Data

**Expedite Situational Awareness**
Advanced Tactics Education and Training Gap

**GAP**

- Special Operations Aviation lacks the capability to conduct Advanced Tactical Education and Training.
  - No SOF Peculiar Aviation Mission Survivability Officer (AMSO) Course
  - No Aviation Advanced Tactics Course (Academic / Simulation / Flight)

**Requirement**

- Strategic level demand for and advanced aviation support capability in an Anti Access Area Denial (A2AD) environment.
  - Recent missions, ongoing and future requirements
  - Denied areas are expanding and trend towards layered, networked, and technologically advanced enemy.
Advanced Tactics, Education, and Training Concept

- **Formalize Advanced Training and SOP**
  - Develop SOF Peculiar AMSO POI (Academic / Simulation) – Advanced
  - Develop SOA Tactics POI (Academic / Simulation / Flight) – Graduate
    - A2AD Focus
      - Denied Area Planning
      - Denied Area Execution
      - Personnel Recovery
  - Integrate Intel support and Electronic Warfare (EW) SOF Aviation peculiar education and training into SOA

- **Special Operations Aviation Mission Survivability (SOAMS) Team**
  - Intelligence personnel trained to support requirements for A2/AD planning
  - EW personnel cross trained in rotor wing (RW) planning methods and ASE capabilities
  - Aviation Mission Survivability personnel cross trained in EW IOT integrate in the EW plan
Questions