SPECIAL OPERATIONS FORCES INDUSTRY CONFERENCE

Win • Transform • People

Col Melissa Johnson  Program Executive Officer

FIXED WING
# Program Executive Office Fixed Wing (FW)

<table>
<thead>
<tr>
<th>ISR - FIND</th>
<th>MOBILITY - INFILTRATE</th>
<th>STRIKE - FINISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQ-1C Gray Eagle</td>
<td>MQ-9 Reaper</td>
<td>MQ-9 Reaper</td>
</tr>
<tr>
<td>RQ-20A Puma</td>
<td>MEUAS 1.5</td>
<td>MQ-1C Gray Eagle</td>
</tr>
<tr>
<td>MEUAS 2.0</td>
<td>JAVAMAN</td>
<td>AC-130U Spooky</td>
</tr>
<tr>
<td>MC-12W</td>
<td>U-28A/PC-12</td>
<td>AC-130W Stinger II</td>
</tr>
</tbody>
</table>

**Technology Insertion**

- **Sensors**
- **Mission Automation**
- **Survivability**
- **Kinetic Effects / DE**

**Program Executive Office Fixed Wing (FW)**

(ISR - FIND)

MQ-1C Gray Eagle

MQ-9 Reaper

RQ-20A Puma

MEUAS 1.5

MEUAS 2.0

JAVAMAN

MC-12W

U-28A/PC-12

**MOBILITY - INFILTRATE**

EC-130J Commando Solo

CV-22 Osprey

C-145A Skytruck

C-146A Wolfhound

MC-130J Commando II

MC-130H Talon II

**STRIKE - FINISH**

MQ-9 Reaper

MQ-1C Gray Eagle

AC-130U Spooky

AC-130W Stinger II

AC-130J Ghostrider

Stand Off Precision Guided Munitions

**TECHNOLOGY INSERTION**

- Sensors
- Mission Automation
- Survivability
- Kinetic Effects / DE
Acquisition Support Enterprise
PEO- FW CY18 Execution Priorities

- Accelerate velocity to the field to meet current and future fight
- Improve overall adaptability and affordability throughout system lifecycle
- Aggressively identify, leverage and implement new technology and new ways of using current technology
Airborne Intel, Surveillance, and Recon (AISR)
Manned ISR

- **Capability Description:** Provide Tactical Airborne Intelligence, Surveillance, and Reconnaissance (ISR)

- **On-Going Efforts:** GPS improvements, engine infrared suppression, and payload

- **Future:** Increased communication bandwidth and data transport

- **Challenges:**
  - Enhanced optics
  - Data automation
  - Enhanced data transport
Unmanned ISR

**GROUP I UAV**
- Max Payload: ~5 LBS
- Max Radius: ~10nm

**GROUP II UAV**
- Max Payload: ~10 LBS
- Max Radius: ~200nm

**GROUP III UAV**
- Max Payload: ~90 LBS
- Max Radius: ~1000nm

**GROUP IV UAV**
- Max Payload: ~1150 LBS
- Max Radius: ~1400nm

**GROUP V UAV**
- Max Payload: ~3750 LBS
- Max Radius: ~10000nm
Medium Altitude Long Endurance Tactical

• **Capability Description:**
  Provide tactical ISR

• **On-Going Efforts:** Ongoing modifications on MQ-1C and MQ-9

• **Future:** Airborne mission networking, signature reduction, automation, precision guided munitions integration, Human Machine Interface (HMI) improvements

• **Challenges:**
  – Signature reduction
  – Automation
  – International airspace access
Medium Endurance/Multi-Mission/Small Tactical UAS (MEUAS/MTUAS/STUAS)

- **Capability Description:** Provide Tactical Airborne Intelligence, Surveillance, and Reconnaissance

- **On-Going Efforts:** System resiliency, data link encryption

- **Future:** Beyond Line of Sight (BLOS) Ops/ Tactical Common Data Link, reduced footprint L/R

- **Challenges:**
  - Reduction in size, weight, and power constraints
  - Improve survivability
  - Increase endurance

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MEUAS 3.0

MEUAS 1.5

MEUAS 2.0

RQ-21

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DISTRIBUTION A: APPROVED FOR PUBLIC RELEASE
Small UAS (SUAS) Expeditionary Organic Tactical Airborne ISR Capability (EOTACS)

- **Capability Description:** Tactical ISR
- **On-Going Efforts:** Payload modification
- **Future:** Common GCS, reduced launch/recovery footprint
- **Challenges:**
  - Increased reliability, supportability, and survivability
  - Vehicle endurance
Special Applications for Contingencies (SAFC)

• **Capability Description:** Develops and integrates Group 1-3 UAS technology and payloads

• **On-Going Efforts:** Multiple payload/platform improvements

• **Future:** Reduced size, weight, power and open system architecture

• **Challenges:**
  – Autonomous mission ops,
  – Teaming/Swarming
Integrated Strike Programs

- Dual EO/IR Sensors
- SOPGM Door
- Battle Management System MOP
- LSDB

AC-130J Block 20

- Griffin
- Medium Caliber Gun

SDB

AC-130W Block 20

- Large Caliber Gun
AC-130W Stinger II

- **Capability Description:** Modified MC-130H with a Precision Strike Package (PSP) to deliver Close Air Support (CAS) and Air Interdiction (AI) missions

- **On-Going Efforts:** Upgraded Missile Warning System, improved visual threat scanning and integration of Small Glide Munition

- **Future:** Operations in contested environment and wireless communications system

- **Challenges:**
  - Improved survivability
  - Hostile Fire Indicator
  - RF Countermeasures
AC-130J Ghostrider

• **Capability Description:** Modified MC-130J with a Precision Strike Package (PSP) to deliver Close Air Support (CAS) and Air Interdiction (AI) missions

• **On-Going Efforts:** Upgraded EO/IR sensor, GPS hardening, munitions integration

• **Future:** IR suppression and all-weather operations

• **Challenges:**
  – Operations in contested/degraded environments
  – Enhance survivability
Stand Off Precision Guided Munitions

- **Capability Description:** Procure and develop Stand-Off Precision Guided Munitions (SOPGM)

- **On-Going Efforts:** Miniature-Munitions demonstrations and data link integration

- **Future:** Guided Ammunition, selectable effects and enhanced sensors

- **Challenges:**
  - Operations in contested/degraded Environments
  - Selectable warhead

Griffin Missile, Small Glide Munition (SGM), Laser Small Diameter Bomb (LSDB), Common Launch Tube (CLT) - Employs Griffin and SGM
SOF C-130s, CV-22, and Mission Systems

- MC-130H
- CV-22
- Color Helmet Mounted Display

- MC-130J
- SMS
- Low Cost Mod (Link 16)

- Multi-Mode Radar
- EC-130J

DISTRIBUTION A: APPROVED FOR PUBLIC RELEASE
MC-130 Recapitalization

• **Capability Description:** Modified C-130Js to Perform Low-level Infiltration/Exfiltration, Detect and Deny Radio Frequency (RF) Threats, Airdrop, Resupply and In-Flight Refueling

• **On-Going Efforts:** RF Countermeasures (RFCM), Terrain Following (TF) Radar and Airborne Mission Networking (AbMN)

• **Future:** SOF Mission systems enhancement

• **Challenges:**
  – Automated route replanning
  – Size, weight, and power reduction
  – EW enhancement
C-130 Modifications

• **Capability Description:** Sustainment Mods to improve reliability and maintainability

• **On-Going Efforts:** Avionics upgrades, structural improvements

• **Future:** Emergency equipment bins and light-weight armor

• **Challenges:**
  – Size, weight, and power reduction,
  – Obsolescence
CV-22B Osprey

- **Capability Description:** Provides Long Range, High Speed, All-Weather, Infil/Exfil, and Resupply of Teams in Hostile, Denied, and Politically Sensitive Areas in a Single Period of Darkness

- **On-Going Efforts:** Silent Knight Radar (SKR), Color Helmet Mounted Display, Suite of Integrated RF Countermeasures (SIRFC) upgrades, and Search/Landing Light

- **Future:** Forward defense weapons system

- **Challenges:** Airborne Mission Networking
NSAv and AvFID

- **Capability Description:** Non-Standard Aviation (NSAv) supports worldwide Special Operations Force Tactical/Strategic missions. Aviation Foreign Internal Defense (AvFID) provides Combat Aviation Advisor proficiency in preparation for Partner Nation training in Special Operations Force Techniques, Tactics & Procedures.

- **On-Going Efforts:** Cockpit, communication and cabin upgrades.

- **Future:** Continued avionic obsolescence avoidance and compliance.

- **Challenges:** Maintaining civil aviation compliance in an obsolescence environment.
FW Technology Insertion Process and Enablers

PEO-FW Tech Insertion
- Identify Innovative Solutions

Fiscal Year Priorities
- Funding
- PM Tracking
- Contract Vehicle
- Schedule
- Technology maturation

Transition

Lab Capabilities
- ONR
- DARPA
- ARL

User Requirements
- Various logos and symbols representing different organizations

Tech Insertion Roadmaps

POM & Budget

Industry Engagement

BAAs
- Capability Collaboration Events

OTAs
- Contracts / Agreements

CRADAs
- Cougar Demo Platform

SBIR
- Funding Resources

JCTD
- Eng Analysis

RIF
Enablers

• Flying Testbed:
  – Rapid Configurable Demonstration Platform for:
  – Requirement Validation of Programs of Record
  – Technology Advancement, Transition, and Insertion
  – Risk Reduction
  – Technique Tactics & Procedure Development

• PEO-FW Engaging/Collaborating on Focused Problem Set with Industry, Government Labs, and Academia

• Technology Push with Direct User Participation/Feedback
  – Requirements/Capability Gap definition
  – White Boarding/Brainstorming/ Crosstalk
  – White Paper/Product Pitch
  – Example: “GPS out of the Box” event
AC-130J High Energy Laser

- **Objective:** Demo a Precise Airborne Low Kinetic Weapon System Capable of Ground Based Scalable Effects

- **HEL Development Approach:**
  - Perform Risk Reduction at low power levels
  - Identify “best of breed” sub-systems
  - Inform DoD on Performance of Airborne Electric High Energy Lasers
Challenges

• Improve power storage efficiency
• Develop assured Position Navigation & Timing (PN&T) solutions for airborne platform applications
• SWaP reduction while increasing standoff distance
QUESTIONS?