Presented to the
DOD Maintenance Symposium
by
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Topics

• UAS Fleet (Family of Systems)
• UAS Life Cycle Support Concept
• UAS Sustainment Transition / Path Forward
• Ongoing (Joint) UAS Fleet Management Initiatives
• Summary
UAS Fleet (Family of Systems)

Assigned to the Combat Aviation Brigade to provide Division Fires and Battlefield Surveillance Brigades, Brigade Combat Teams (BCTs), and other Army and Joint Force units, dedicated mission configured UAS support. (Weapons Capable)

Persistent Corps-level reconnaissance, surveillance, target acquisition (RSTA). (One system 21 days on station)

Corps-level reconnaissance, surveillance, target acquisition (RSTA), and battle damage assessment. (Weapons Capable)

Brigade level RSTA, Sensing & Targeting, Imagery to detect, classify, recognize, designate and track targets at operational ranges, day or night, and in adverse weather

Provides Army Brigade Commanders with tactical level reconnaissance, surveillance, target acquisition (RSTA), and battle damage assessment

Provides small units with organic capability to perform Beyond visual Line-Of-Sight (BLOS) Reconnaissance, Surveillance, & Target Acquisition

OSGCS – One System Ground Control Station

UGCS – Universal Ground Control Station

OSRVT – One System Remote Video Terminal

OSGCS / UGCS

OSRVT

Gray Eagle

LEMV

Hunter

Hummingbird

Shadow

Raven and Family

Medium Altitude Endurance

Acquisition Demonstration

Tactical Concepts

Ground Maneuver

Small Unmanned Aircraft Systems

Small Unmanned Aircraft Systems

Persistence Corps-level reconnaissance, surveillance, target acquisition (RSTA). (One system 21 days on station)

ACAT I

TBD

(ACAT I)

NOT POR

TBD

(ACAT I)

ACAT II

(Pre ACAT I)

ACAT III

TBD

(ACAT I)

(ACAT III)
UAS Life Cycle Support Concept

**Field Level (Soldiers with the UAS Units)**

- **15W Operators**
  - Operations / PMCS

- **15E/15J Maintainers**
  - Field Level Maintenance

- **Portable Maintenance Aid (PMA)**

- **IETM**
  - BIT/BITE

**Maintenance**

- **Field-Level** (On-System Repair by Replacement)
  - PMCS
  - Scheduled Maintenance
  - Unscheduled Maintenance
  - Limited Troubleshooting
  - LRU Remove & Replace
  - Preflight / Post Flight
  - ULLS-A(E) TAMMS-A

- **Sustainment-Level** (Off-System Repair / Return to Supply System)

**Supply**

- **Direct Vendor Delivery**

**Depot Decisions - TBD**

- **Corpus Christi (CCAD)**
- **Tobyhanna (TYAD)**
- **Letterkenny (LEAD)**
- **Ogden ALC (Hill AFB)**
- **Other Organic TBD**

**Public Private Partnerships (PPP)**

- **GA-ASI**
- **L-3 Com**
- **AAI**
- **Other OEM**

**Supply Support (LRU/SRU)**

- Supply Chain Management
- Inventory Control Point
- Procurement
- Non-Stock / Non-Recurring Supply

**Product Support Transition to Organic Timeline**

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<td>CLS PBL</td>
<td>CLS PBL with PPP</td>
<td>Organic/PBL Depot Integration Efforts</td>
<td>Goal: PBL with Organic Depots fully Integrated</td>
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UAS Fleet Sustainment Transition

- Must meet requirements to balance Organic vs. Industry sustainability / depot-level maintenance and repair (USC Title 10-2466)

- Support Public / Private Partnership (PPP) goals (USC Title 10-2474)

- Provide Army control of critical inventory needed for the Soldier (USC Title 10-2460 and 2464)

- Maintain readiness with current SW/ HW and Repairables (ARs 750-1 and 700-127)

Optimized ORG + OEM+ Public-Private Partnerships (PPP) Mix = Triple Win (Soldier / Industry / Service)
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<th>Goals</th>
<th>Support Measures</th>
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| 1. ARFORGEN / RESET drives UAS depot maintenance operations | • Institutionalize UAS Depot Maintenance policies, procedures, and process improvements  
• Align UAS Depot Maintenance Enterprise (DME) production with Army Priorities/ Fielding Schedules  
• Minimize risk | **Obj 1**: Ensure UAS SOPs adhere to policies and regulations governing depot maintenance priorities required to support ARFORGEN  
**Obj 2**: Establish processes resulting in depot production that supports high priority Dynamic Army Resourcing Priority List (DARPL) unit equipment needs  
**Obj 3**: Ensure UAS Life Cycle Readiness (maintain UAS Core Capabilities, integrate new technologies, and balance with future requirements) |
| 2. Establish an effective UAS Fleet sustainment base | • Ensure Army depots are poised to meet future UAS requirements and able to meet surge  
• Ensure Army depots remain essential providers of reliable equipment to the Soldier | **Obj 4**: Improve unmanned aviation policies and procedures across the UAS Depot Maintenance enterprise (DME) to ensure core capabilities and workloads are adequately programmed through the Future Years Defense Plan (FYDP)  
**Obj 5**: Ensure UAS DME adheres to OSD guidance/ applicable regs regarding submission of timely Depot Source of Repair (DSOR) actions  
**Obj 6**: Ensure UAS DME adheres to CITE considerations and work with Army depots to ensure their human capital plans supports current and future UAS core capability requirements  
**Obj 7**: Assist Army depots with infrastructure planning and facilitization to support the depots’ current and future UAS core capabilities |
| 3. Plan and implement UAS support efficiency initiatives | • Minimize burden on the Soldier  
• Improve readiness and availability of PM UAS systems/equipment/supplies  
• Add capacity to Army organic depots  
• Reduce total cost of ownership | **Obj 8**: Employ Condition Based Maintenance (CBM) in UAS to optimize the use of depot maintenance and extend the economic useful life of materiel based upon CBM derived strategies  
**Obj 9**: Adhere to AMC policies regarding optimization of Public Private Partnerships (PPP) and all other “best value” practices outlined in the U.S. Army Industrial Base Strategic Plan and AMC Partnership Program Business Development Plan  
**Obj 10**: Work with depots to continuously improve depot maintenance processes and reduce repair cycle time / use Value Stream Analysis (VSA) mapping for depot processes and procedures |
Joint UAS Initiatives

• Continue working Joint UAS initiatives including:
  - Assist Predator/Reaper LOG Chief in establishing Total Asset Visibility / Supply Chain Management based on successful Gray Eagle model via COLTS / General Atomics
  - Establish Forward Repair Activity (FRA): Dugway Proving Grounds (DPG) for Post Depot Maintenance Flights
  - Resolve Tech Data issues as a team (Gray Eagle/ Predator/ Reaper-General Atomics)
  - Pursue partnering opportunities (FRC-SE / TYAD: Sensor Payloads)
  - Collaborate on Depot Transition - Early Induction Opportunities

• Collaborate on USAF BCA/ DMAWG (Predator/Reaper) and USA BCA/DMAWG (Gray Eagle)

• Advise / participate with OSD regarding Joint UAS maintenance matters
UAS Fleet Management = Total Asset Visibility & Fully Integrated Supply Chain

Configuration Management
As-designed configurations
Create library of structure templates to represent standard configurations
Use templates to create asset configurations with a single click
Create templates for configuration variants e.g. ECs, EOs, ECPs
As-built configurations
Rapid configuration/re-configuration to meet mission needs
Integrated IUID - scan-in, scan-out
Changes automatically recorded during work orders

Inventory Management
From a single control screen, point and click:
Issues, transfers, adjustments
Real time link to work orders: see requests - issue parts
Worldwide availability: inventory, on-order, in transit
Parts history – receipts, transfers, issues
Generation of PBUSE adjustments and/or lateral transfers
Physical inventory
Management by lot number and shelf life

Support for multiple business models
Control multiple defense activity (fleet) inventories using asset/part ownership (UAS Fleet- Gray Eagle, Shadow, Raven, LEMV, etc.)

Total Asset Visibility
Serialized Item Management
Location and condition of all systems and parts worldwide
Assets are issued or transferred v. forgotten
Comprehensive history
Supply chain events: received, transferred, issued, etc.
Maintenance events: failures, modifications, upgrades, etc.
Configuration events: remove/replace

Maintenance Management
Modification Management
Integrated IUID scanning
Knowledge-based environment (Failures/Reliability/ detailed maintenance history)
Work Orders – Point & Click
Equipment Returns to Vendor

Integrated Supply Chain
Separate tech/supply authority
Tech - part requests from work order via real time link to supply - see requests, check availability/issue parts
Combined tech/supply authority
Authorized techs can issue parts from inventory
Authorized techs can create requisitions/ship parts from work order
Gray Eagle: Supply Chain Management

Real Time-Total Asset Visibility Using COLTS/ IUID
Like any Aviation System, after Depot repairs are complete, UAS *must fly an acceptance test flight* before the repaired system is returned to the Soldier!

The restricted airspace required for these acceptance flight tests (regardless whether its new or repaired equipment) *does not exist* at ‘any’ organic depot

For the above reason – All UAS acceptance Flight Tests for new equipment occurs at UAS’s Rapid Integration and Acceptance Center (RIAC) location at Dugway Proving Ground (DPG)

To support depot level final system integration, maintenance test flights, and RESET requirements– PM UAS is establishing a Forward Repair Activity as part of the RIAC at DPG

Analysis of quantitative (cost) and qualitative (physical capabilities) comparison of alternative sites for a UAS Fleet Depot was conducted- DPG provides best value

A UAS Forward Repair Activity at DPG will centralize and optimize Depot maintenance and flight acceptance testing for the Army - can support other DoD UAS systems as well
UAS Product Support (Airspace) – DPG

- DPG controlled Restricted Airspace
  Approximately 1,300 mi² surface to 58,000’ MSL

- DPG/UTTR Restricted Airspace
  Nearly 8,000 mi² surface to 58,000’ MSL

- Four major impact areas up to 60 km firing distance

- Main Runway 11,000 ft, Taxi Way B 9,000 ft, Taxi Way C 2,000 ft

- Frequency Spectrum Available for UAS Data Transmission and Command/Control

Yuma has the only comparable airspace yet it is smaller than Dugway’s airspace.

Congressional support
Summary

- Multiple (Joint) UAS support initiatives underway and excellent opportunities to forge other Joint efforts

- UAS Fleet Sustainment transitioning to optimized mix of CLS / ORG support to include UAS FRA at DPG

- UAS path forward is a triple win scenario: Soldier/ Industry/ Service
QUESTIONS?