

## Parachute Industry Association 28 AUG 09



#### Agenda

- PEO Soldier Organization
- PM SCIE Mission
- Why Modernize our Parachute Systems?
  - Increased Total Jumper Weight
  - Reduced Jump Related Injuries
- Advanced Tactical Parachute System (ATPS)
  - T-11 System
  - MC-6 System
- Military Free Fall Systems



## **Program Executive Office Soldier**



#### Mission



#### Develop and provide superior and sustainable integrated clothing and equipment in a rapidly changing global environment for the Army's most important combat system... the Soldier



#### **SCIE Areas of Responsibility**



Modular Ghille Suit/GSAK Upgrade

Coverall

GEN III Extended Cold Weather Clothing System

Field Tarp



#### What's Changed Structure

- June 2002 PEO Soldier Established
- November 2002 PM SEQ \_ Static Line Personal Parachutes
- June 2004 PM SEQ \_\_\_\_ Military Free Fall Parachutes





#### Airborne Operations Have Changed



Designed For Total Jumper Weight: Less Than 300lbs Total Jumper Weight: Greater Than 350lbs T-10 Total Jumper Weight: Up To 400lbs

T-11 Designed For Total Jumper Weight: 400+ lbs



#### T-10 Inadequate For Today's Combat Loads



MC-6

## **ATPS Description**

ATPS consists of a maneuverable canopy (MC-6) variant used for precision airdrop and a nonmaneuverable canopy (T-11) variant which is used for mass tactical static line air drop capability. Both variants use a common harness and reserve parachute



T-11





## **T-11 Main Canopy**

#### Description

- Rate of Descent (ROD) 19 fps at 7,500 MSL w/ TJW of 400lbs
- Lower Opening Shock than T-10, < 10 G's</li>
- Minimal Oscillation due to canopy design
- Improved Maintenance
   Concepts & Procedures
- Modified Cross Parachute
  - Hem diameter = 28ft
  - Vent slots
  - Drogue parachute
  - Deployment Sleeve
  - Slider to aid opening









## **Much More Stable Canopy**

#### • C-17 AC

- 100 Jumpers, 1 pass, Altitude 1,250 AGL
- Jumper L-49 and R-45
- Both Deployed Reserves
- ROD Too Slow to Open 2d Reserve
- Average ROD 15.7 ft/sec
- ROD at impact: R-45, 12.6 ft, sec and L-49 12.9 ft/sec
- NO Injuries
- T-10 Main ROD 24 ft/sec





#### Better Rate Of Descent Better than T-10 NOT Entangled



## **MC-6 Main Canopy**

- Main Canopy: SF-10A
- Non-Developmental Item
- <18 fps ROD at 8K' MSL</p>
- Hem diameter 32 ft
- Improved turn-and-glide capability over MC-1
- Low Opening Shock
- Improved Maintenance Concepts & Procedures









#### T-11R Reserve & T-11 Harness



#### T-11 Reserve Canopy (T-11R)

- Significant improvement over MIRPS
  Improved structural strength and enhanced deployment techniques
- Low opening shock less than 15 g's during total malfunction
- Deployed using either handSupports TJW 400 lbs alleviating weight and altitude restrictions for MIRPS
- ROD ~26 FPS, low oscillation
- 99.6 reliability rate Significant improvement over MIRPS

#### T-11 Harness

- Reserve opening loads exerted along long axis of the body
- Fully adjustable over the 5th to 95th percentile female/male range
- Improved fit/comfort
- Compatible with current and future equipment (Land Warrior 1.0 and MOLLE)







## **ATPS Program Status**

- ATPS T-11
  - LRIP Decision 8 Jul 08 (5,200 systems)
  - Operational Testing completed Oct 08, 3,646 jumps
  - Full Rate Production Decision Jun 09
  - Begin Fielding Ranger Regiment Mar 09
  - One-for-one replacement for T-10 series
  - Replacement of approximately 52,000 systems
  - Full Rate Production contracts awarded ~Sep 09
- MC-6
  - One-for-one replacement for MC1-1 Series
  - Replacement of approximately 19,000 systems
  - Fielded to: USASOC, USSOCOM, USAF, Rigger School & 1-507<sup>th</sup> PIR
  - In Full Rate Production



#### Military Free Fall (MFF) Products





## **MFF Life Cycle Manager**





6 February 2004 the Army Acquisition Executive designated PEO Soldier as life cycle manager for US Army Military Freefall (MFF) equipment

## **MFF ARAPS Program History**



- Proof of concept conducted in Feb 06 by USASOC to determine the feasibility of Static Line Ram Air insertion by non MFF qualified personnel
  - Bottom line: static line parachutists can be trained to successfully operate a static line deployed Ram Air parachute system
- 2006 PM-CIE market survey identified 3 commercial off the shelf (COTS) systems that have the potential to meet the user's requirements





## **MFF ARAPS User Evaluation**

- User Evaluation conducted Sep-Dec 06 at Yuma Proving Grounds, AZ and Fort Bragg, NC using systems identified through market survey
- Total of 131 live user jumps conducted
  - One system removed from competition early due to excessive harness slippage
  - System jumped with and without combat equipment using both HALO and HAHO techniques
  - System evaluated for sustainability and maintainability
- Information and feedback from User Evaluation used to:
  - Determine if commercial systems exist that can meet requirements



#### MFF ARAPS Performance Requirements

- System Requirements
  - Provide increased jumper exit weight up to 450Lbs
  - Static Line and MFF capable
  - Reduced opening shock at exit altitude
  - EAAD compatible using 1500ft model
  - Commercially available system
  - Fully adjustable Harness fits the 5 to 95<sup>th</sup> percentile





#### **MFF ARAPS Timeline**

- Capabilities Production Document (CPD) in approval cycle anticipated approval mid Sep 09
- Request for Proposal (RFP) release projected 1QFY10
  - SSEB evaluates proposals and competitive range is determined
  - Purchase systems from companies within competitive range for design validation
  - SSEB down selects to one company using results from design validation
- Design Validation 2QFY10
  - Static Line mannequin drops at upper weight and altitude
- Developmental Testing 4QFY10-1QFY11
  - Live jumps in both MFF and static line configurations
- Operational Testing 2QFY11-4QFY11
  - Prove system reliability, suitability and effectiveness for operations



# Electronic Automatic Activation Device (EAAD)

- Soldier Enhancement Program (SEP)
  - Replacement for the Automatic Ripcord Release (AR2)
  - Military variant of a commercially available Automatic Opening Device
  - Activates the reserve using speed and altitude as criteria
  - Contract awarded in Mar 07
  - FUE 1<sup>st</sup> SFG Ft. Lewis, WA Aug 07
  - 1,615 units fielded to date
  - Fielding completed Mar 09
  - Feb 09 During Arch Angel rotation, 7th SFG(A) jumper conducting Night Combat Equipment O2 jump grabbed his oxygen hose during pull and lost altitude awareness till EAAD fired, saving his life







#### Parachutist Oxygen System Components





## **POS Intent and Status**

- Incremental approach to replace current oxygen system
  - 1<sup>st</sup> Increment Mask
  - Oxygen TM development
  - 2<sup>nd</sup> Increment Bailout Bottles system
  - 3<sup>rd</sup> Increment Pre-breathing Consoles
- The POM will:
  - Replace current MBU-12P mask
  - Use a low profile mask with improved hose routing
  - Have improved performance
  - Have reduced maintenance level
    - Replaceable regulator
    - Removal of AIROX VIII



#### Parachutist Oxygen Mask (POM)

- Currently fielded MBU-12P mask was originally designed for pilots and adopted for use by MFF community
- Numerous MFF safety incidents were attributed to across the chest delivery hose location



#### • The POM will:

- Provide the MFF parachutist with a safer, more dependable method of receiving supplemental oxygen
- ✓ Support HALO/HAHO operations from 35,000-ft to 10,000-ft pressure altitude
- ✓ Be physically and functionally compatible with legacy ASFS and PHAOS bailout and console systems
- ✓ Utilize miniature on-demand regulator easily replaceable at unit level
- ✓ Have lower maintenance requirements
- ✓ Have a lower profile than current mask
   ✓ Weigh less than 0.75 lb



## **POM Status**

- Carleton PHANTOM mask selected in response to Request for Proposal (RFP)
- Contract awarded 14 Apr 08
- Testing
  - DT completed Sep 08
  - OT completed Feb 09 with 232 jumps
  - 121 HALO and 111 HAHO
  - User feedback has been uniformly positive
- Type Classified Standard/Full Material Release Aug 09
- MS C/FRP Decision Aug 09
- First Unit Equipped 1QFY10

POM System with Advanced Combat Helmet





#### **PARANAVSYS** Program

- Capability Gap
  - Identified by USASOC in Joint Aerial Insertion Capability (JAIC) ICD, 22 Feb 2006, validated by SOCOM
  - Critical need to conduct low-signature, standoff aerial insertion operations (Military Freefall)
  - Current Navigation Technology for Military Freefall does not take advantage of GPS guided navigation (compass only)
- Acquisition Objectives
  - 1500 Navigation Systems (1 per Jumper)
  - 45 Mission Planners (1 per Team)
- Program Objective
  - To provide GPS guided navigation and mission planning technology for Military Freefall standoff operations.



- System Description/Requirements
  - Reliable and easy to use Mission Planning
  - Military SAASM GPS (Fielding Requirement)
  - Lightweight, Clear Display (Screen or Goggle-Mounted) with no interference to User
- Current Program Status
  - Release RFP in 3QFY09
    - Down select to one system for DT and OT
  - Required Test Activities
    - Design Validation down select 1QFY11
    - Developmental Testing- 3QFY11-4QFY11
    - Operational Testing- 1QFY12-3QFY12
  - First Unit Equipped 2QFY13



#### **PARANAVSYS** Options





#### Helmet or chest mounted systems



#### **Navigation Screen Display**





Selected LZ name

Note: Navigation information is for this LZ

Box indicates selected LZ

Yes/No on making the LZ



## Summary



The requirements of today's Paratroopers are more demanding than past generations. As the Paratrooper moves into the future, so must the equipment they use.

















## **POC List**

Project Manager - Soldier Protection & Individual Equipment 10170 Beach Road (Bldg 325) Fort Belvoir, VA 22060-5850

COL William Cole – PM SPIE Comm (703) 704-3322, DSN 654-3322 William.cole@us.army.mil

Mr. Fred Coppola – Deputy PM SPIE Comm (703) 704-3321, DSN 654-3324 fred.coppola@us.army.mil

Product Manager – Soldier Clothing & Individual Equipment 10170 Beach Road (Bldg 325T) Fort Belvoir, VA 22060-5850 LTC Michael E. Sloane – PM - SCIE Comm (703) 704-1465, DSN 654-1465 michael.sloane@us.army.mil Comm (703) 704-1465, DSN 654-1465

> MAJ Jason Morneault – APM Personnel Airdrop Systems Comm (703) 704-9369 jason.morneault@us.army.mil



#### PEO Soldier T-11 Video