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*AFLCMC... Providing the Warfighter's Edge*



# **Joint Advanced Planning Brief To Industry 19 Oct 2016**



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AFPEO Agile Combat Support**



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# Agenda



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- **Org overview**
- **Dress Clothing**
- **Utility Clothing**
- **Organizational Clothing**
- **Individual Equipment**



# Human Systems Division Mission

**Acquire and support human systems to  
enhance warfighter performance,  
protection, and survivability**





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# Aircrew Performance Branch Mission



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**Develop, Test, Field and Sustain Air Force  
Uniforms and Aircrew Flight Equipment (AFE)  
to Increase Warfighter Capabilities**

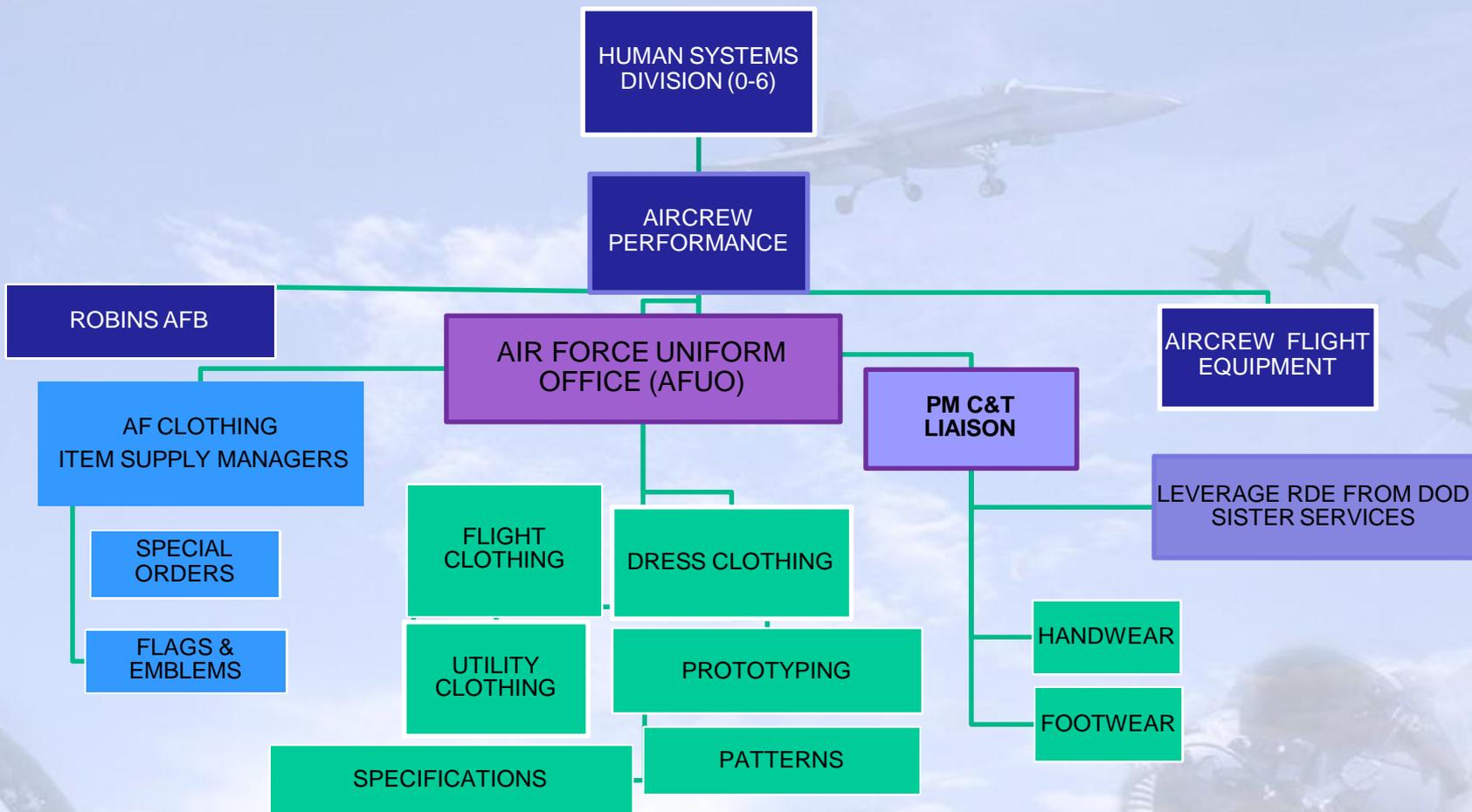




# Air Force Clothing & Textiles Product Domain Area



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# Human Systems Division

## Product Group



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### Product Sections/Domains

1	2	3	4	5	6	7
Egress	Survival	Head Gear (neck up)	Body Wear (neck down)	Clothing & Textiles	CBRN	AeroMed
Materials & Textiles Lab					AeroMedical Test Lab	
<p><b>IPTs</b></p> <p><u>Seat</u></p> <p><b>B-2 ACES2 SSIP</b> ACES2 SSIP ACES2 Legacy T-38 ESUP B-52 Fixed</p> <p><u>Parachute</u></p> <p>LPP BA-x All Chutes Harnesses</p> <p><b>Domain Leads</b></p> <p>LTC Patrick Gillette Bridges, Regina</p>	<p><u>Gear</u></p> <p><b>PLB</b> AirSave Kit/Vest Beacon/Radio</p> <p><u>Flotation</u></p> <p>LPU Raft/Slides</p> <p>Major Pina, Tom McDonald, Jean</p>	<p><u>Helmet</u></p> <p>BAH Helmets</p> <p><u>Accessory</u></p> <p><b>ALEP</b> NFB PLTZ/NVG</p> <p>Derespinis, Mike Perine, Dennis</p>	<p><u>Suit</u></p> <p><b>IAE</b> CWAS G-Suits Anti-Exposure A2CU Flt Suit</p> <p><u>Accessory</u></p> <p>Body Armor Boots Gloves</p> <p>Tobin, Chris Wilson, Dave</p>	<p>DLA Philly</p> <p>Natick Liaison</p> <p><b>AFUO</b></p> <p><u>Garments</u></p> <p>Service Dress Serv. Dress Shirt Maternity Airman Airmen Battle Unif Serv. Dress Coat Manikin Girdle FR Product List</p> <p>Wilson, Yvonne McLean, Debra</p>	<p><u>JPEO JPMs</u></p> <p>Cont Avoid Guardian Protection Info Sys Med CMs Rad/Nuc Def</p> <p>NFTP CB Suit Resp. Protection CB Hydration Dosimeter</p> <p>LTC Bordner, Ralph Owings, James</p>	<p><u>Equipment</u></p> <p><b>DOGS-S</b> <b>NIWCD</b> <b>RAC</b> <b>Centrifuge</b></p> <p>McCammant, Chris</p>

**AFUO also supports Body Wear Domain: boots, gloves, cold weather, flight clothing, vests**



# Air Force Uniform Office



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- **AF Service Dress, Utility, Physical Fitness, and Combat Uniforms**
- **AF environmental protective clothing**
- **Footwear**
- **Gloves**



**Our Goal: Quality Products for Every Service Member Through Testing, Research, and Continuous Product Improvement**



# Air Force Uniform Office



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- Head Covers, tags, bags
- Design shop prototypes and patterning
- Tech Data Packages (specifications/ PDs/Certifications)





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# Continuous Product Improvements (CPI)



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## Current CPI

1. Service Dress Shirting Fabric
2. Women's Service Dress Overblouse
3. Women's Service Dress Tuck-in Shirt
4. Men's Service Dress Shirt
5. Men's Service Dress Coat
6. Women's Service Dress Coat
7. Maternity Airmen's Battle Uniform Jacket
8. Maternity Airmen's Battle Uniform Trousers

## Future CPI

1. Men's Service Dress Trousers
2. Women's Service Dress Coat
3. Women's Service Dress Slack
4. Women's Service Dress Skirt
5. Maternity Service Dress Shirt
6. Maternity Service Dress Slacks
7. Flyer's Jacket 36P
8. Flyer's Jacket, Cold Weather 45P



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# Dress Clothing



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# Premier Service Dress



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## System Description



Updated our high end formal dress uniform

## Program Schedule

- Dec 16: Available in AAFES

## Requirements

Fabric Upgrade

Improved Comfort

Stain/wrinkle resistant

Breathable

Soft hand

## Program Status

- Evaluated by multiple general officers
- CSAF Approved



# Service Dress Shirts



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## System Description

### Product Improvements

- Fit/mobility
- Fabric technology
- Minimize user alterations
- Reduce size tariff



## Program Schedule

- Aug 16 - Wear Test Pentagon/WPAFB
- Aug 16 - Pattern modifications
- Sep 16 - Verification samples
- Oct 16 - Fit verification
- Oct 16 - Fabric wicking test
- Oct 16 - CCB
- Nov 16 - **Transition to DLA**

## Requirements

- Address documented issues with fit, care, and professional appearance
- Cost savings recognized through reduced need for alterations
- Update design and fabric

## Program Status

- Wear test complete
- Finalized draft PDs
- Working SRP



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# On The Horizon



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## – FY 17-18 (early)

- Women's SDU Slacks
- Men's SDU Trousers
- Maternity SDU Shirt



Women's SDU Slacks



Men's SDU Trousers

## Maternity S/S SD Blue Shirts



## Maternity L/S SD Blue Shirts





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# On The Horizon



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- FY 17-18 (late)
  - Light Weight Blue Jacket
  - Women's SDU Skirt
  - Maternity SDU Ensemble (Skirt, Slacks, Jumper)



**Men's and Women's  
Lightweight Blue Jacket**



**SDU Skirt**



**Skirt**



**Slacks**



**Jumper**

**Maternity SDU Ensemble**



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# Utility Clothing



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# Airman Battle Uniform (ABU)



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- ABU nylon/cotton ripstop cloth
- Issued in recruit bags
- No Fire Resistance variant at this time





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# Improved Maternity ABU



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## System Description

### Product improvements

- Removed side pleat
- Second button for adjustment
- Chest flaps
- Pencil pocket
- Hip pockets
- Full stretch panel, new fabric

## Program Schedule

- Oct 16 - DLA Contract Conversion
- Jan 17 - Production Lead Time
- Oct 17 - Available Estimated Date of Supply (EDOS)

## Requirements

- Address documented issues
- Cost savings
- Reduced sizes by over 30% going from numeric sizes to adjective
- (S-M-L) sizes

## Program Status

- Oct 16 – **DLA-TS reviewing** Supply Request Package (SRP)





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# Organizational Clothing



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# Environmental Protection



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**COTS FR  
Base layers**



**AF CWU-45P**

**Army Gen III  
ECWCs Fleece  
(No FR reqd)**



**Navy  
MultiClimate Protection System**



Available today

**USMC All Purpose Env Clothing  
System parka (APEC) NO FR**





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# Cold Weather Aviation System (CWAS) Ensemble



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## System Description

Provide pilots flying in extreme cold weather conditions with a multi-layer garment, boots and gloves that are Safe-to-Fly in extreme cold



CWAS System

## Program Schedule

- Sep 16: Operation Test Readiness Review
- Oct 16: Operational Test Begins
- Feb 17: Operational Test Complete
- Apr 17: Safe to Fly Decision
- May 17: Submit SRP

## Requirements

Protects in environments from -20 degrees F to -49 degrees F for 2 hours (6 hours for boots)

Fire Resistant

Minimal bulk - Easy ingress/egress of aircrew

Can withstand windblast of 450 KEAS

Moisture wicking

Compatible with existing AFE

## Program Status

Ensemble Integration Test – Completed

Way-Ahead:

- **Operational Testing starts Oct 16**
- Sustainment Planning
  - FREE EWOL (all except ejection seat aviators)
  - Type II IWOL modified for AF
  - FR base and mid-layers (MCPS)



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# Cold Weather Aviation System (CWAS) Gloves



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## System Description

- Provide all aircrew with flight gloves for below zero F (THRESHOLD)  
-20F for 2 hrs (OBJECTIVE)  
-49F for 6 hrs



## Program Schedule

- Mar14 RFI and Purchase Requests
- Oct 14 Gloves Delivered
- Nov 14 Technical Tests initiated
- Jan 15 Limited User Eval for Interim STF
- Jul 15 Safe To Fly Board

## Program Status

- Sep 15 Approved Safe To Fly List
- Nov 16 Update HAU-15/P Flyer Glove PD
- Dec 16 Update HAU-14/P Flyer Glove PD
- Jan 17 Transition PDs, pattern chgs to DLA

Approved 3 COTS variants:

- Improved tactility/not warmer than HAU-15 CW Flyer Glove (0F to +25F)
- Less tactility/ Increased Warmth/water-resistant treated (+25F to -20F)
- Less tactility/greatest Warmth/Water-proof, breathable (0F to -20F)



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# CWAS Flight Boots



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## System Description

- Outer full grain leather
- Higher insulation clo, without excessive bulk
- Meet NFPA Boot Flame and Heat Requirements
- Steel Toe and
- Non-Steel Toe variants

(T) -20F for 2 hrs  
 (O) -49F for 6 hrs



## Program Schedule

2014-2015

- Two mfgs submitted samples from RFIs
- Total boot clo, leak/flex test, and slip tests
- RFP - 2 contracts awarded for test assets
- Integration w F22, HH60, F16, F15, C-17, C-130H

2016-2017

- **Op Test with CWAS Ensembles**
- Prepare DOD CW Flight Boot specification

## Requirements

- Improve warmth in extreme cold temps (-20F)
- 55 mph winds, 3 sec 450 KEAS windblast
- Cannot interfere with footwork in tight space
- Ankle support
- Reduce bulk
- Slip resistance
- Pass water flex leak test
- No snag hazards

## Program Status

- 2 styles under consideration
- One approved on Safe To Fly Boot List Jun 2016
- DLA Lab completed FR tests, soles/uppers
- **2<sup>nd</sup> candidate will undergo Op Test (Oct- Dec 16)**
- multi-service interest



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# Touch Screen Summer Flyer Gloves



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## System Description

Summer Flyer Glove (SFG with special leather for operating TS devices



## Program Schedule

- 2015:
- Industry Request For Quotes
  - Material/ Whole Glove Physical Lab Tests
  - Limited User Evaluations
  - Aircraft H20 egress test
  - Approve COTS gloves for STF List

## Requirements

Multi-service product

Touch screen operability for Electronic Flight Bag (EFB) without having to remove hand from glove

Ability to use "E-tools" tablets & IPAD

Meet summer flyer glove STDs

## Program Status

July 2016

- Technical Data Package transitioned to DLA
  - Summer Flyer Glove PD updated
  - New Leather Sheepskin PD
- Added Handheld QA test- to measure efficacy of glove electrical conductivity



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# Flyer's Coveralls - Continuous Product Improvement (CPI)



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## System Description

- Update CWU-27/P Flight coverall
- AF/ NAVAIR partnership
- Improve and expand qualified fabrics
- No significant cost increase

## Program Schedule

- Bench test & select candidates
- Samples made for testing
- Procure yardage required
- Procure assets for assessment
- Limited user assessment

## Requirements

- Improve comfort (moisture management)
- Update with newer FR fabric blends, balancing protection (burn, antistatic) with human performance

## Program Status

- Request For Info - NAVAIR released
- Industry responses received
- Preliminary testing initiated
- Anticipate effort to complete in FY18





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# Individual Equipment Programs



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# Aircrew Body Armor



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## System Description

Body armor system that will protect non-ejection seat aircrew against 9mm (soft) and high velocity 7.62X39mm with ballistic inserts, while using currently fielded hard plate options



## Program Schedule

- Aug 16: Example FBA received from Army
- Sep 16: Army conducts FAT
- Dec 16: USAF analyzes FAT results
- Mar 17: Buy off Army Initial purchase
- Oct 17: AF Supply Request Pkg - transition to DLA

## Requirements

*Requirements Memo, 2013*

Weight: 18-23 lbs, 320 Type I-CDE

28-33 lbs, 4000 Type BCDF

Donned/Doffed with 2 hands within 25 secs

Quick release that allows hard armor inserts to be jettisoned from body

Soft armor areal density not to exceed 1.9lbs/sqft

## Program Risks/Issues

- Sustainment strategy
  - Legacy Air Warrior – DLA
  - LT WEIGHT AIR WARRIOR – use Army program, await transition to DLA
  - Once transitioned, USAF send rqmts to DLA to become a user



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# Airsave Survival Vest



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## System Description

Airsave is a modular, scalable survival vest with a MOLLE system that allows for easy accessory attachment and larger area to distribute loads



## Program Schedule

- Mar 16: OT complete
- Aug 16: StF Recommendation complete
- Aug 16: Holsters ordered
- Sep 16: Contract CLIN 0003 Exercised
- Sep 16: Holsters received/accepted
- Oct 16: Drawings update
- Jan 17: 135 vests delivered

## Requirements

*Air Combat Command Memo, 2008*

Platform for Joint Service Aircrew Mask (JSAM)

Survival vest for “everyday use”

## Program Status/ Threats

- CLIN 0003 exercised, vendor currently working towards production start (initial fielding)
- Nylon zippers on backorder, can be deferred to very end of construction
- Update TDP for DLA to include updated drawings



# Fixed Wing Helmet (FWH)



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## System Description

A lightweight and stable helmet platform that enables fixed wing aircrew to easily and rapidly transition between helmet mounted devices or use them simultaneously for optimum combat capability.

## Program Schedule

- Oct 2016 RFI release
- Estimated FY 18 Award
- Preliminary acquisition strategy and schedule being developed

## Requirements

**Stability** – stable fixed reference to user’s eye thru full range of aircraft operations

**Equipment Compatibility** – The system and its components will be compatible with existing aircrew flight equipment and helmet mounted devices

The weight, Center of Gravity (CG), and principal Moments of Inertia (MOI) of the FWH (in all configurations) will decrease aircrew neck loads (compared to the helmet(s) it replaces) during high-G maneuvers, bailout, ejection, parachute opening, ditching, and crash landing scenarios.

## Program Status

- Ranked #14 on 2016 APEC
- Dec 2011: MACH (fixed wing/rotary wing) program canceled
- MACH fixed wing helmet requirements from basis of FWH program
- Requirements have been socialized and are in final coordination
- Budget in work
- Conducting market research



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# Aircrew Laser Eye Protection (ALEP) Block 3



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## System Description



Day



Night

### Day & Night Variants

Multiple in-band/out-of-band wavelength protection with sufficient luminous transmission for night-time operations

## Program Schedule

- FY17 Program Review with ACC and AFRL to develop requirements
- FY17 Finalize requirements for market research
- FY18 Target date to be on contract for EMD

## Requirements

Visor form

Ballistic protection

Visually compatible with:

- JHMCS, NVG, PNVG, HMIT
- Canopies, windscreens, HUD, color cockpit displays
- Cockpit interior lighting, external aircraft lights, airfield lights

## Program Status

- Provide(s) aircrew with visual protection from laser hazards and threats while maintaining the visual acuity required for flight operations.
- Scale-up current state-of-the-art 5-line protection into a visor
- Number of Users: ~ 21,000



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# Integrated Aircrew Ensemble



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## System Description

- Neck-down clothing ensemble designed to maximize aircrew performance



## Schedule (Ejection Seat)

- First Article Test Jun16 – Sep 17
- Low Rate Production Oct 17 – Mar 18
- IOT&E April 18 – Apr 19
- Ejection Seat Production FY 20 – FY 23
- Non-Ejection EMD FY 20 – FY 22
- Non-Ejection Seat Prod. FY 23

## Requirements

Thermal Stress – impose less burden than the equipment it replaces; core body temp not to exceed 102.2F

Mobility – enable a full range of motion

Bulk – objectively/subjectively less bulky than legacy equip; compatible w/crew duty stations

Acceleration Protection – be better than legacy full coverage G-suit in relaxed rapid onset series tests

Ejection – Withstand ejection up to 600 KEAS

Non – Seat Variant: Add ballistic protection & 2 piece coverall for non-ejection IAE

## Program Status

- Identify any significant differences b/w ejection seat and rotary-wg/non-ejection IAE components
- Non-Ejection EMD Mar 17 – Feb 18



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# Questions?



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