

# 77<sup>th</sup> Aeronautical Systems Wing

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*Dominant Air Power: Design For Tomorrow...Deliver Today*



**U.S. AIR FORCE**

## 77<sup>th</sup> Aeronautical Systems Group Mission Brief

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# Every Airman...Every Aircraft...Every Day!



Welcome to the Air Force



Never Forget

Induction:  
Uniform Issue  
\*Blues  
\*BDUs

Warrior Building

Warrior:  
\*Flight Suits  
\*Helmets



Safer Force & New Requirements

Analyses:  
\*POW/MIA Artifacts  
\*Materials Lab  
\*Ranch Hand

Combat Power:  
\*Anti G-loc  
\*Laser Eye Protection  
\*Night Vision

Multiplying of Combat Power



Mishap Investigation:  
\*Lessons Learned  
\*Safer Systems



FedEx For Patients

Transport/Track Patients:  
\*Reserve Air  
\*Medical Info Systems

Protection:  
\*Chem/Bio Protections  
\*Positive Pressure Breathing

Increasing The Envelope



Safely Transport Wounded

Aeromedical:  
\*Hospitals  
\*Spinal Cord Transport  
\*Oxygen Generation

NBC Protection:  
\*Detectors  
\*Suits & Masks  
\*Enclosures



Protecting The Troops

Life Support:  
\*Ejection Seats  
\*Parachutes  
\*Life Rafts  
\*Survival Radios



Safety Through Sustainment





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# Mission



*Dominant Air Power: Design For Tomorrow...Deliver Today*

**The 77th Aeronautical Systems Group maximizes combat power and survivability of Airmen through cross-enterprise materiel solutions that address required AF capabilities**

- **Develop and procure aircrew performance; chemical, biological, radiological, nuclear (CBRN) defense; aeromedical equipment, and medical information systems**
  - **Acquire, modernize, field, and test Aircrew Performance equipment: personal flight equipment, protective clothing; ejection seats; restraint systems; escape and descent systems; survival equipment; and support systems**
- **Manage AF uniform efforts, conduct life support mishap investigations, and support Joint POW/MIA identification efforts**

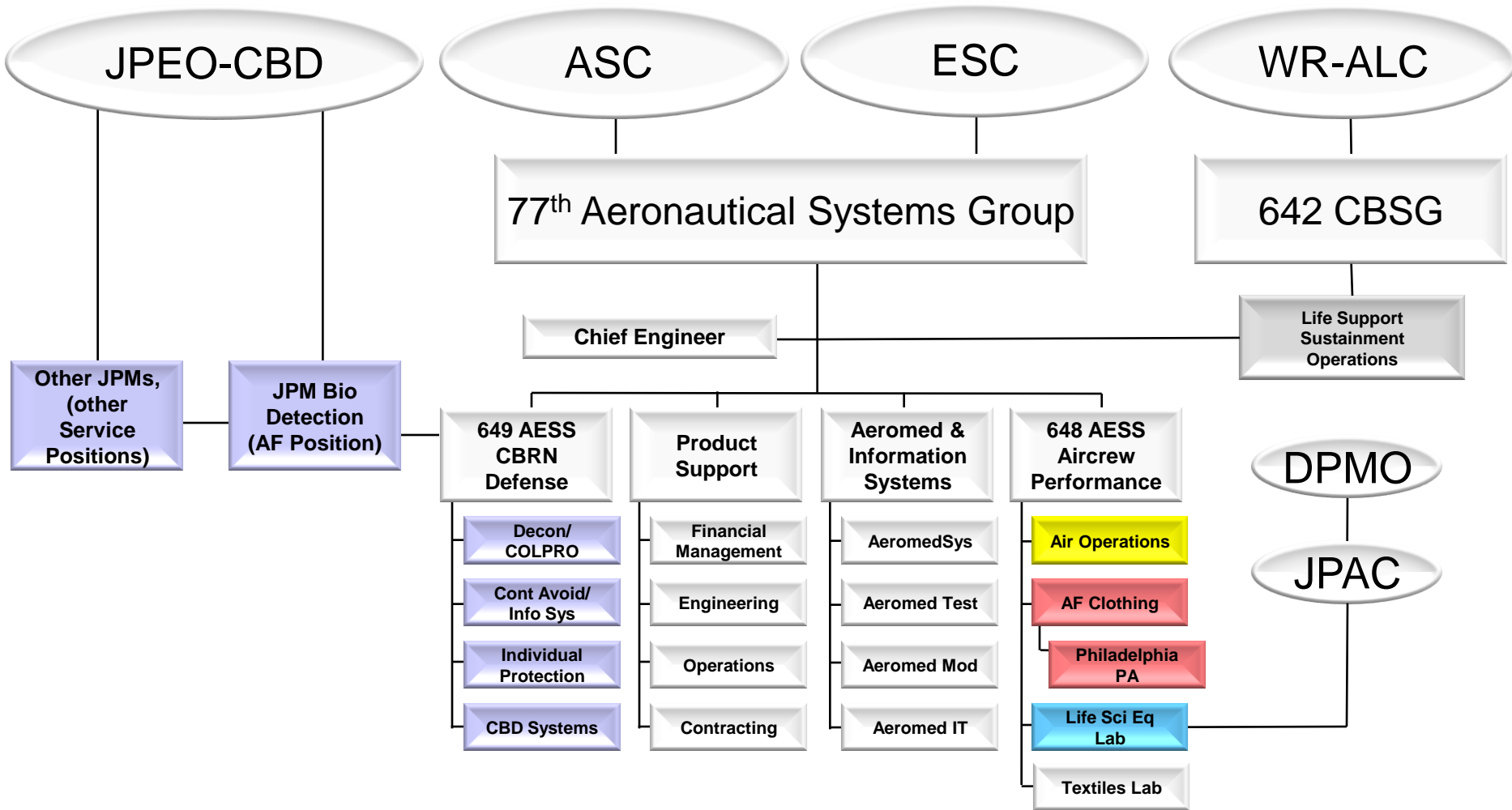


# 77<sup>th</sup> Aeronautical Systems Group



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Light Purple Box - Joint PEO for Chemical Biological Defense

Yellow Box - AFPEO/AC

Red Box - CSAF, AF Uniform Board

Grey Box - WR-ALC OL

Green Box - AFPEO/C<sup>2</sup>&CS

Blue Box - DPMO (OSD Dept POW/Missing Personnel)



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# Our Locations

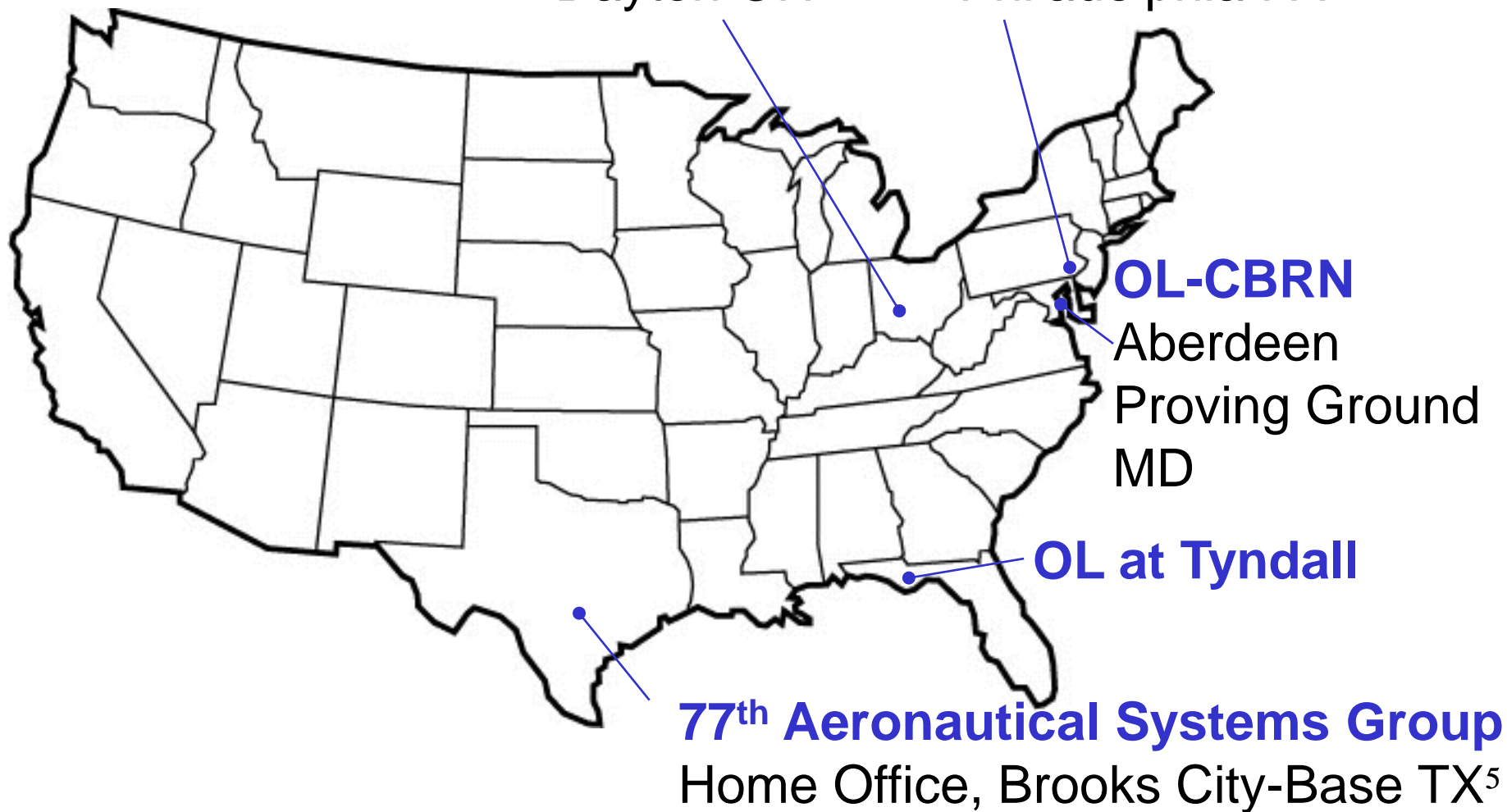
*Dominant Air Power: Design For Tomorrow...Deliver Today*

**OL at WPAFB**

Dayton OH

**OL-DLA**

Philadelphia PA





# Our Primary Customers



*Dominant Air Power: Design For Tomorrow...Deliver Today*

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# Professionals

*Maximizing War-winning Capabilities For... Every Airman...Every Aircraft*



**Acquisition Manager**

**Aerospace Medicine  
Physiologist**

**Aeromedical Nurse and  
Technician**

**Aircrew Life Support  
Technician**

**AF CBRN Subject Matter  
Expert**

**CBRN Analyst**

**Disaster Preparedness**

**Avionic Systems Technician**

**Chemist**

**Clothing**

**Designer/Fabricator**

**Contract Buyer**

**Contracting Officer**

**Computer Systems  
Operator**

**Cost Analyst**

**Financial Manager**

**Engineer**

**Bio-Medical**

**Developmental**

**Electrical**

**Software**

**Systems**

**Test**

**Flight Surgeon**

**Information Manager**

**Item Manager**

**Logistics Manager**

**Survival Equipment  
Specialist**

**Textile Technologist**



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# 25+ Programs, Projects and Tasks



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**ACES II**

**Aeromedical Lab**

**Aircrew Helmet**

**Noise Reduction**

**Aircrew Laser Eye**

**Protection**

**Aircrew Mission**

**Extender Device**

**Backpack Medical**

**Oxygen Systems**

**Deployable Oxygen**

**System**

**Fixed Aircrew Seat**

**Standardization**

**Fluid Intravenous**

**Reconstitution**

**Helicopter**

**Restraints**

**Improved Rescue**

**Beacon**

**Integrated Aircrew**

**Ensemble**

**Joint Service**

**Aircrew Mask**

**JPEO Individual**

**Protection**

**JPEO**

**DECON/COLPRO**

**JPEO Contamination**

**Avoidance**

**Life Sciences**

**Equipment Lab**

**Lower Anti-G**

**Replacement**

**Materials Lab**

**Modular Aircrew**

**Common Helmet**

**Patient Isolation Unit**

**Quick-Don Mask**

**Safe-To-Fly/COTS/NDI**

**Items**

**TRAC2ES**

**Uniform Program Office**

- **Aircrew Performance Sustainment supporting over 10,000 fielded items: Parachutes, Flotation Equipment, Personal Equipment, Seats, Inertia Reels, Egress Systems, Batteries, Radios, Beacons and CBRN Equipment**

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Warrior:  
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\*Helmets



Safer Force & New Requirements



Mishap Investigation:  
\*Lessons Learned  
\*Safer Systems

Combat Power:  
\*Anti G-loc  
\*Laser Eye Protection  
\*Night Vision

Multiplying of Combat Power



FedEx For Patients

Transport/Track Patients:  
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\*Medical Info Systems

Protection:  
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\*Positive Pressure Breathing

Increasing The Envelope



Safely Transport Wounded

Aeromedical:  
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\*Oxygen Generation

NBC Protection:  
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Protecting The Troops



Safety Through Sustainment

Life Support:  
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# 648<sup>th</sup> Aeronautical Systems Squadron

## Aircrew Performance



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- **Aircrew Performance encompasses**
  - **Development, procurement, sustainment of life support, egress, survival & recovery systems**
    - **Masks, helmets, g-suits, cold weather gear, ejection seats, parachutes, life rafts, survival radios, aircrew decon, etc.**
  - **Air Force Uniform Program Office**
  - **Life Science Equipment Laboratory**
    - **Support mishap analysis & POW/MIA artifact analysis**
  - **Materials Laboratory**
    - **AF Life Support textiles and equipment testing**
- **Aircrew Performance equipment impacts**
  - **Every Crewmember - Protection, Safety, Survival, and Rescue**
  - **Mission Performance - Endurance, Mobility and Concentration**



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# Aircrew Performance Modernization Roadmap

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- **Equipment hasn't evolved with mission needs**
  - 50s/60s designs with 70s/80s technology
  - Impacts aircrews safety and mission performance
- **Aircrew Performance Exec Council working to modernize AP equipment**
  - Develop AP Roadmap based on MAJCOM priorities
- **CSAF approved addition funds for FY05-FY11**
  - Jump starts next generation AP equipment development and production

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## Warrior Building



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## Safer Force & New Requirements



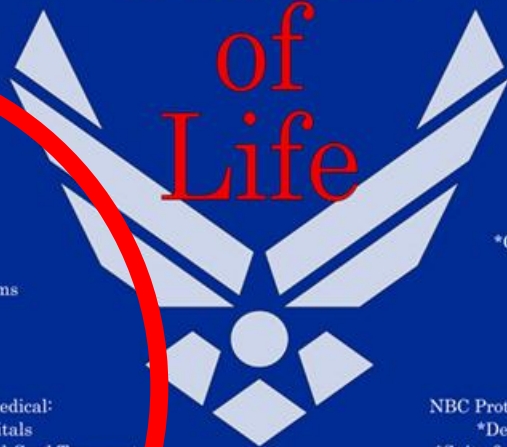
Mishap Investigation:  
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## Multiplying of Combat Power



# Circle of Life



Transport/Track Patients:  
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## Increasing The Envelope



## FedEx For Patients

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# Aeromedical & Medical Information Systems



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- **Aeromedical Readiness**
  - Defines, develops, modifies, & sustains AE & medical systems
    - Supports USAF, USA, & USN warfighters
  - Aeromedical evacuation solutions, medical devices, & deployable oxygen systems
- **TRAC2ES TRANSCOM Regulating And Command & Control Evacuation System - Reports to AFPEO/C2&CS**
  - Web-based info system for TRANSCOM & medical units (all Services)
  - Medical units request aeromedical evacuations
  - Transportation planners schedule airlift
    - >45K requests processed for OIF & OEF
    - 2600+ patients moved during hurricane relief efforts
- **Aeromedical Test Branch**
  - Conducts testing and process safe-to-fly recommendations for Patient Movement Items (PMI) required for in flight use

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# 649<sup>th</sup> Aeronautical Systems Squadron

## CBRN Defense



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- **Supports all Joint CBRN Defense Capabilities**
  - AF interface to Joint CBRN development, procurement, and sustainment processes
  - DoD Program Lead for Joint Service Aircrew Mask – Fixed Wing
  - Enables joint warfighters to operate in a CBRN contaminated environment
- **AF CBRN Materiel Developer**
  - Supports development and fielding of over 20 Joint CBRN systems
  - Acquisition expert to AF CBRN Modernization Working Group
- **Encompasses all Joint Enabling Concept Operational Elements:**
  - Shape, Sense, Shield and Sustain
- **CBRN Defense Impacts:**
  - **Contamination Avoidance:** point/standoff detectors for use in CBRN reconnaissance, detection and identification
  - **Information Systems:** automatic collection and fusion of CBRN information throughout the battlespace and C4I systems
  - **Decontamination:** reduce, eliminate or neutralize hazards after CBRN weapons employment
  - **Protection:** individual or collective, provides life sustainment and continued operational capability in CBRN contaminated environment
  - **Medical Systems:** preserve combat effectiveness by timely identification, diagnosis, and provision of medical countermeasures

# USAF aircraft currently fly 2 million hours per year



We're on-board with every warfighter every second of every mission ...

maximizing combat power and  
increasing survivability



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