

Aeronautical Systems Center

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Acquisition ESOH Programmatic Risk Tools (16 Jun 10)

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Air Force Materiel Command



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- **Our Mission:**
 - **Deliver War-Winning Expeditionary Capabilities to the Warfighter**



- **Our Vision:**
 - **War-Winning Capabilities ... On Time, On Cost**



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AFMC at a Glance

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Product Centers

Sustainment Centers

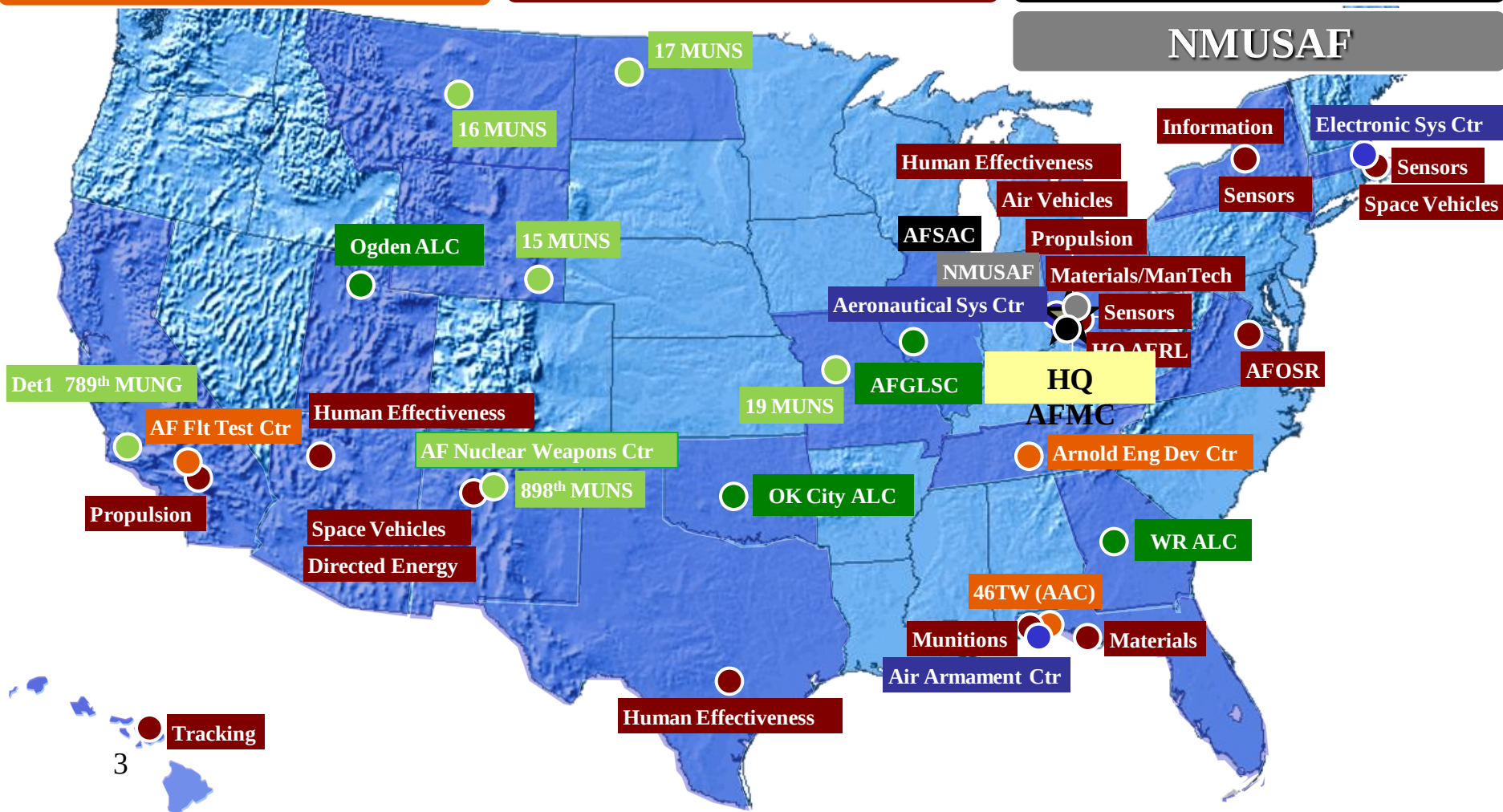
Nuclear Weapons Center

Test Centers

Research Laboratories

AFSAC

NMUSAF





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Aeronautical Systems Center



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- **ASC Mission**
 - Deliver affordable, sustainable and effective aerospace capabilities to US and International forces - on time, on cost
- **ASC Strategic Principle**
 - Dominant Air Power: Design for tomorrow...
Deliver today
- **ASC Strategic Priorities**
 - Successfully Restructure Our Organization
 - Implement Integrated Life Cycle Management
 - Develop and Care for Our People
 - Improve Our Business Processes



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ASC Programs



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Aeronautical Systems Center
Lt General Thomas J. Owen
Commander

- Manages 568 AF, Joint & Int'l aircraft acquisition programs/projects
- \$23.2B FY09 Budget



77 AESW - Agile Combat Support Program Office

- Simulators, Propulsion, Combat Electronics, Training Aircraft, Human Systems



303 AESW - Reconnaissance Program Office

- Global Hawk, Predator, CV-22



312 AESW - Fighter/Bomber Program Office

- A-10, B-1, B-2, B-52, F-15, F-16, F-22, F-35, JHMCS, PNVG



516 AESW - Mobility Program Office

- C-17, C-5, C-130



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Environmental & Health Risk Mngt



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- **Our Mission (ASC/ENV)**
 - Integrate ESOH requirements into weapon system procurement
 - Reduce ESOH risk to programs & warfighters
 - Reduce ESOH risk at Air Force's Government Owned Contractor Operated (GOCO) facilities
- **Functional Office for weapon system environmental managers**
 - Support Wings, Groups, Squadrons, SPOs
 - Develop/maintain environmental and health management processes

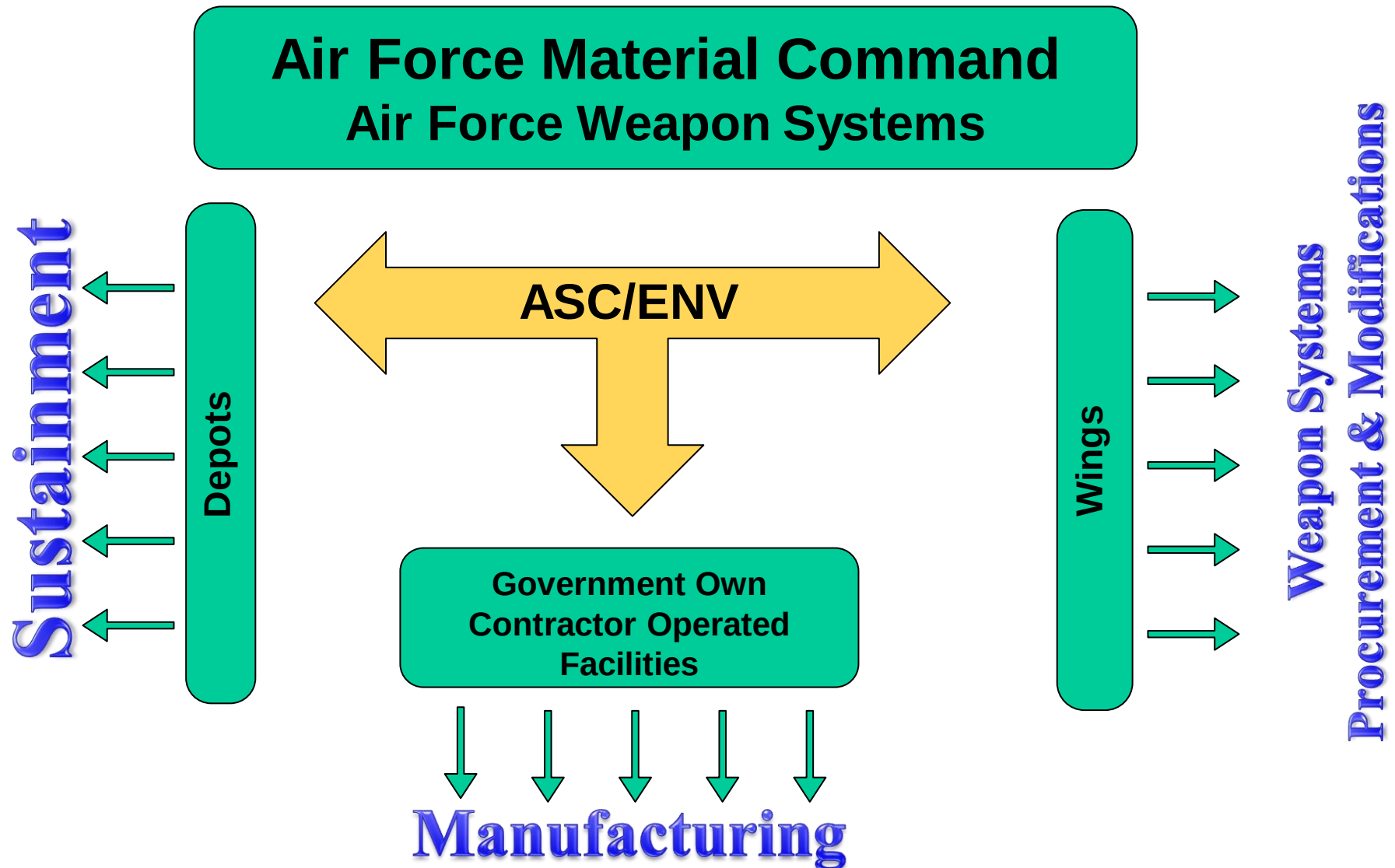


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ASC ESOH Risk Management



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Environmental & Health Risk Mngt



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- **Institutionalize ESOH into Acquisition Process**
 - Acquisition Strategy Panel (ASP) Member
 - Programmatic Environmental , Safety & Health Evaluations
 - ESOH Council chaired by ASC/CV
- **Institutionalize ESOH into Sys Engineering**
 - Support Wings, Groups, Squadrons, SPOs
 - Assess impacts of updates to laws/regulations
 - Provide expertise for NEPA, PESHE, Noise, Deicing
 - Training Courses, tool set, cross-feed
 - Material Substitution Projects for Wings & GOCOs
 - Technology Investment
 - Occupational Health



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Examples of Program Managers ESOH Responsibilities

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- **Identify ESOH considerations early**
- **Structured risk management/acceptance**
- **Integrate ESOH into acquisition strategy**
- **Integrate ESOH into systems engineering**
- **Minimized ESOH risk across life cycle**
 - Prevent ESOH risk when possible
 - Manage ESOH risk when unavoidable
- **Provide system specific NEPA analyses data**



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Acquisition ESOH Drivers

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- **DoD Instruction 5000.02**
 - PESHE
- **Defense Acquisition Guide Book**
- **Code of Federal Regulations**
- **Executive Orders**
- **Air Force Instructions**
 - 32 / 48 / 63 / 90 / 91 Series AFIs

Acquisition ESOH requirements embedded in multiple regulations and documents



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ASC Acquisition ESOH Tools



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- **ESOH Programmatic Risk Model**
 - Lessons Learned
- **PESHE Templates**
 - PESHE Checklist
- **Other ASC Acquisition ESOH Tools**
 - ESOH Circular
 - NEPA Circular
 - NEPA Compliance Checklist
 - Environmental criteria for pre-award documents
 - Acquisition ESOH Training

Reduce ESOH risk through integration into the acquisition strategy & systems engineering



ASC ESOH Programmatic Risk Model



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- **Assists PMs, ESOH Practitioners & Systems Engineers**
 - Manage ESOH over life cycle
 - Gauge effectiveness of ESOH management program
 - Integrate ESOH in acquisition strategy
 - Integrate ESOH in systems engineering
 - Provide data for the PESHE



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ASC ESOH Programmatic Risk Model



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- Detailed understanding of ESOH requirements
- Quantifies ESOH programmatic risk
- Assesses regulatory compliance
- Builds mitigation plans
- Standardizes ESOH across program offices
- Link to ESOH Lessons Learned
 - ESOH risk minimization & acceptance benefits
 - ESOH burdens from similar systems



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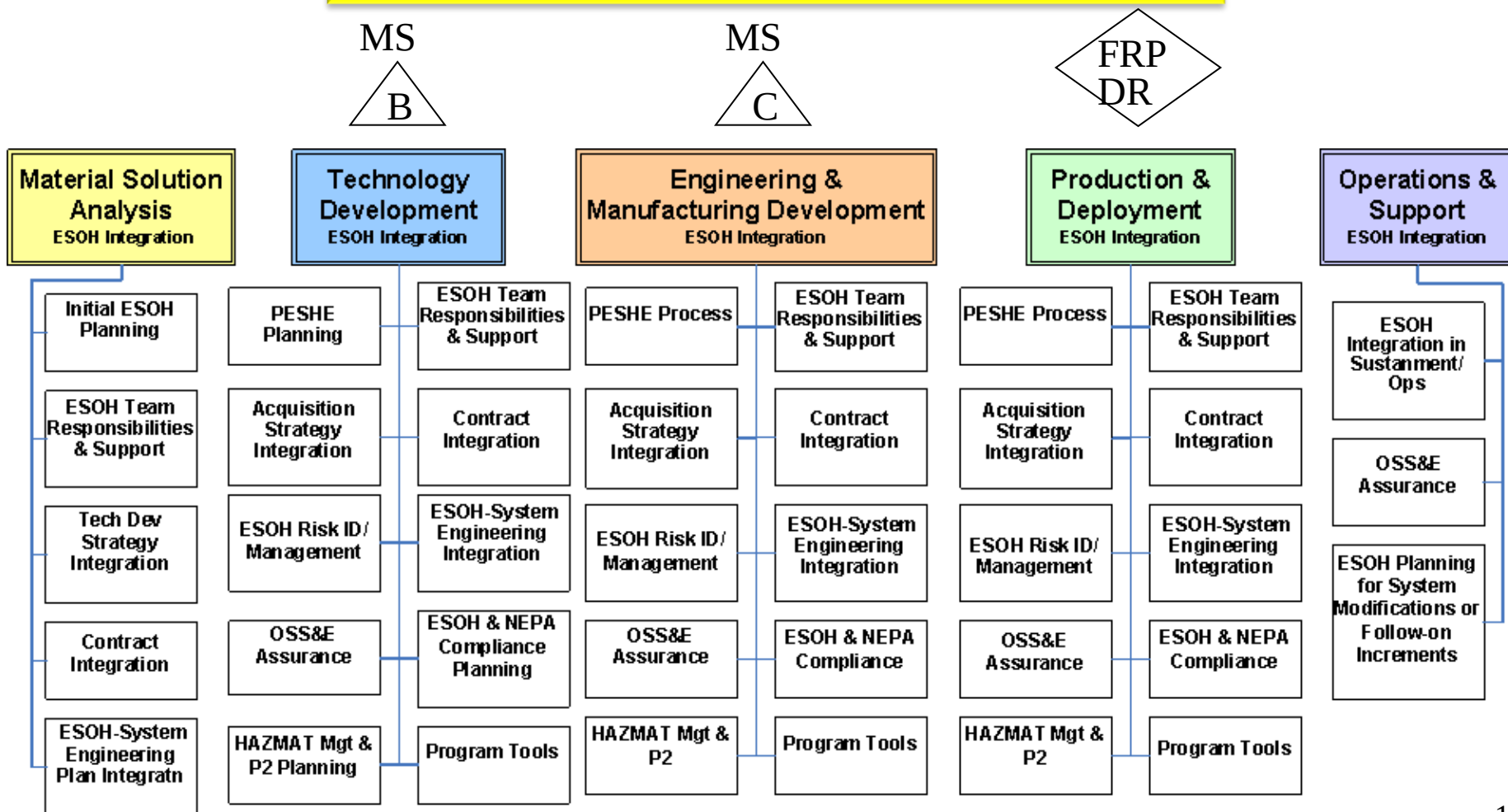
ESOH PRT Model

Current Work Breakdown Structure

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Useful for event-based risk evaluations



of Questions: MSA – 7, TD – 30, EMD – 38, P&D 38, O&S - 19



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ESOH PRT Model Example Questions for TD



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A-6 PESHE Planning

A-6.1 Has the PM developed an initial PESHE to identify the ESOH risk management approach per MIL-STD-882, a strategy for integrating ESOH considerations into SE, ESOH responsibilities, risk acceptance authorities, a method for tracking progress and the NEPA compliance schedule? (DoD ESOH Management Evaluation Criteria)

A-6.2 Has the Program Office documented the initial ESOH hazards/risks and management actions in the PESHE, i.e., identified and assessed compliance requirements and hazards/risks, including hazardous materials and the results from the DoD ESOH Management Evaluation Criteria? (AFI 63-101, 3.49.3, 3.49.7)

A-7 ESOH Team Responsibilities & Support

A-7.1 Have ESOH responsibilities (govt and contract) been assigned and effectively implemented to ensure ESOH criteria, requirements and risks are being managed and integrated into Program and contractor processes and products? (DoD ESOH Risk Mgt Evaluation Criteria)

A-7.2 Where appropriate, has a System Safety Group and/or ESOH Integrated Process Team (IPT) been established, chartered and manned to achieve Program ESOH objectives and requirements and integrate ESOH across disciplines? (AFI 91-202, 9.3.5.11 and 9.4)

A-8 Acquisition Strategy Integration

A-8.1 Does the acquisition strategy (Life Cycle Management Plan or equivalent document) include a summary of the ESOH integration strategy, criteria, requirements and risks documented in the PESHE? (DoDI 5000.02, E 6a; AFI 63-101, 3.39.3.4.32; DoD ESOH Risk Mgt Evaluation Criteria)

A-8.2 Have significant ESOH considerations such as hazard-related and programmatic risks, NEPA compliance, PESHE status, ESOH compliance and hazardous material management been addressed at strategy sessions and considered for inclusion in the Acquisition Strategy Panel briefing? (ASC ASP process)

A-9 Contract Integration

A-9.1 Has the Program Office integrated ESOH criteria, requirements, and the initial ESOH risk assessment into the system specification, source selection planning process and resulting contract solicitation documents being developed for EMD? (DoD ESOH Risk Mgt Evaluation Criteria)

A-9.2 Has the Program Office tailored the Contract Data Requirements List and accompanying Data Item Descriptions to obtain contractor-produced plans, studies, data, and support that satisfy Program ESOH needs? (DoD ESOH Risk Mgt Evaluation Criteria)

A-10 ESOH (System Safety) Risk ID/Mgt

A-10.1 Has the PM employed an ESOH risk management program that applies the system safety risk management standard practice methodologies using MIL-STD-882 to identify and control ESOH hazards/risks? (AFI 91-202, 9.3.3.5 and 9.3.5.1; AFMCI 91-202, 2.3.7, 9.2.3, and 9.3.3.5)

A-7.2 Where appropriate, has a System Safety Group and/or ESOH Integration Process Team (IPT) been established, chartered and manned to achieve Program ESOH objectives and requirements and integrate ESOH across disciplines?
(AFI 91-202, 9.3.5.11 and 9.4)



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Example Lesson Learned

HAZMAT Management

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Template:	HAZMAT Management/P2 – HAZMAT Impact on Demil/Disposal Costs
Title:	Planning for Demil and Disposal
Process:	HAZMAT Management
Description:	Ground-to-ground missiles were designed containing numerous components with hazardous materials.
Burden/ Cost/ Impact:	The failure to incorporate non-hazardous materials in missile systems greatly increased demilitarization and disposal costs. When the missiles were destroyed to comply with the Intermediate-Range Nuclear Forces Treaty, disposal of the hazardous materials used in the missile increased program costs by over \$100 million!
Source:	<i>Environmental Considerations in the Systems Acquisition Process</i>



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Programmatic Env. Safety & Health Evaluation (PESHE) Templates

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- Three template types based on program size
- Provides outline and instructions for PESHE
- ESOH risk management approach
- Summary of ESOH risk/hazard data
- The PESHE shall transition from an ESOH strategy to an identification of residual ESOH risk and the status of implementing mitigation measures

PESHE transitions from ESOH strategy to a synopsis of residual risk and mitigation measures



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ASC PESHE Checklist



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- Simple MS Excel Tool -- 24 Questions
- Provides a quick check on ESOH planning and integration – for milestone reviews
 - Program ESOH Responsibilities
 - Acquisition Strategy, Contract Documents
 - SE, T&E, Demil & Disposal Integration
 - ESOH Risk Management,
 - NEPA Compliance,
 - HAZMAT Management
 - Based on AFI 63-101, AFI 63-1201, DoDI 5000.02, Def Acquisition Guidebook

PESHE assertions should be traceable to acquisition and contract documents

Programmatic Environment, Safety and Occupational Health Evaluation (PESHE) Scorecard		
Category	Percent Compliant	Assessment
Program Office Activities	71%	Y
PESHE Management	100%	G
Acquisition Strategy Integration	43%	R
Systems Engineering Integration	100%	G
ESOH Risk Management	88%	G
NEPA Compliance Schedule	90%	G
HAZMAT Management	75%	Y
(Pgm Name)		
PESHE Assessment		
Overall Compliance with DoDI 5000.2 and DAG		
PESHE % Compliant	79%	
	0%	100%



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ESOH Circular

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- **ASC ENV Support Team**
- **Acquisition Strategy Integration**
- **Sys Engineering Integration**
 - **Sys Engineering Plan & process**
 - **PESHE**
 - **HAZMAT Management**
 - **ASC Pollution Prevention**
 - **ESOH PRT**
- **ASC ESOH Council**

**Addresses requirements, responsibilities,
resources & lessons learned**



National Environmental Policy Act (NEPA) for Acquisition

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- **NEPA Circular**
 - **Responsibilities for NEPA in ASC**
 - NEPA Planning Approach (PESHE)
 - NEPA Compliance Schedule Requirement & Responsibilities
 - System-Related NEPA Responsibilities
 - **Example NEPA Compliance Schedule**
- **NEPA Compliance Checklist**
 - ASC checklist unique for acquisition
 - Documents needed to pursue further NEPA actions



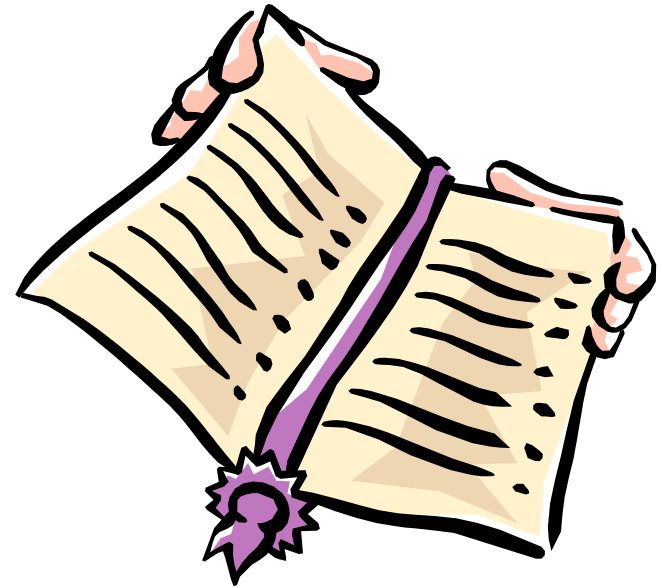
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ESOH Criteria for Pre-award



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- ***Integrating Environmental Requirements into System Acquisition Contract Documents***
 - Briefly describes typical contract documents
 - Provides examples or explained inputs
 - SOO, SRD, TRD, SOW, Sections L&M
 - CDRL and DID examples





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Acquisition ESOH Training



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- **ENV 101 – Intro to ESOH in Acquisition**
- **ENV 110 – ESOH Programmatic Risk Model**
- **ENV 120 – Developing the PESHE**
- **Integration of ESOH into System Engineering for Weapon System Acquisition**
 - **SYS 196* (Complete)**
 - Overview
 - **SYS 197* (30 Aug 10)**
 - Material Solutions Analysis – Technology Development
 - **SYS 198* (TBD)**
 - Eng Mfgr Development – Disposal



***AFIT Distance Learning Courses**



Conclusion



- **Tools ensure compliance with DoD and Air Force acquisition ESOH policy**
- **Consolidate & document acquisition ESOH requirements & approach**
- **Integrate ESOH into acquisition strategy**
 - **Appropriate ESOH program management**
 - **Ensure ESOH risk mitigation & tracking**
- **Integrate ESOH into systems engineering**
 - **Appropriate ESOH trade offs over life cycle**

ESOH Central SharePoint (AFMC Only)
ESOH Central COP (AF Portal)