Environment, Safety, and Occupational Health (ESOH) – Design Considerations to Support Sustainability and Readiness

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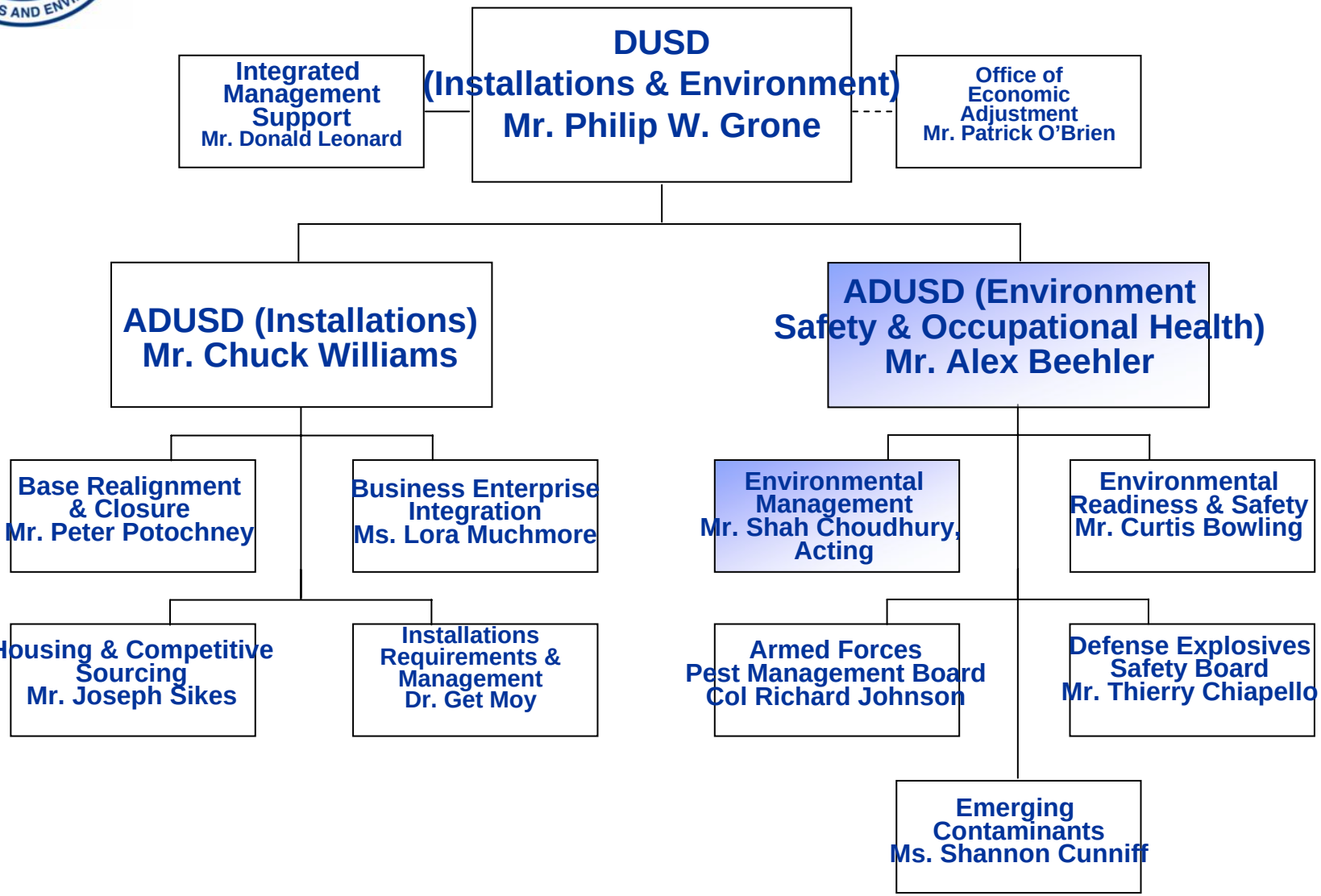
ODUSD(I&E) Vision and Mission

Vision: Installations assets and services are available when and where needed, with the joint capabilities and capacities necessary to effectively and efficiently support DoD Missions.

Mission: Provide installations assets and services necessary to support our military forces in a cost effective, safe, sustainable and environmentally sound manner.

ODUSD (Installations and Environment)

Acquisition, Technology and Logistics



ODUSD(I&E) Role in Acquisition

- AT&L Advisor for ESOH considerations
- Oversight of ACAT ID, IAM, and AT&L Special Interest programs
- Develop/Contribute ESOH Input to DoDI 5000.2
- Identify OSD ESOH expectations in the Defense Acquisition Guidebook (DAG)
- Provide additional guidance for policy implementation on the Acquisition Community Connection (ACC)
- Provide ESOH input to CJCSI/M 3170.01 - JCIDS

ADUSD(ESOH) Supports Acquisition

- Chair DoD Acquisition ESOH IPT
  - Component consensus on ESOH in Acquisition policy and guidance
  - Influence NSS Acquisition Policy and JCIDS
  - Opportunity to share tools, best practices, and collaboration across OSD and Components
- Member of the Defense Acquisition Policy Working Group (DAPWG)
  - DoDI 5000.2 and Defense Acquisition Guidebook
  - ESOH Special Interest Area on the ACC site
- Member of Defense Safety Oversight Council (DSOC)
  - Co-chair DSOC Integration Group
  - Acquisition and Technology Programs Task Force

Training and Testing Are Important As Ever

- Realistic training requires realistic training environments
- Ability to field and use advanced military technology is fundamental to U.S. warfare
- Our weapons and tactics require increasingly large battlespaces
- Readiness is perishable – Skills must be maintained through regular training
- OPTEMPO, PERSTEMPO are up - ready access to training is essential
- Live Fire is fundamental to training

We must train as we fight because we fight as we train

Bases and Ranges Are at Risk

Encroachment: Restrictions that inhibit accomplishment of our live training and testing as required

- Force Readiness is fundamentally linked to the quality and frequency of test and training
- The impact of encroachment Is broad -- affecting our ability to execute realistic air, ground, and naval training across the nation, as well as beyond its borders

Incompatible Development….

…Inhibits Effective Military Training

- Increases complaints of noise, dust and other training related activities from new neighbors
- Reduces or eliminates any future mission flexibility
- Limits off-range species and habitat conservation opportunities

Fort Bragg, NC

Sustainable Ranges Initiative

- Sustainable Ranges are the Foundation for Future Training
  - Readiness Depends on Range Access and Live Fire Capability
  - Sound Range Stewardship Supports Training Realism and Environmental Excellence
  - Working “Outside the Fence” is a Must
- Requires a Comprehensive Solution That Integrates
  - Training Requirements
  - Natural Environment & Stewardship
  - Community Economic and Social Interests
  - Legislative and Regulatory Framework

Range Sustainment Initiative Strategy Elements

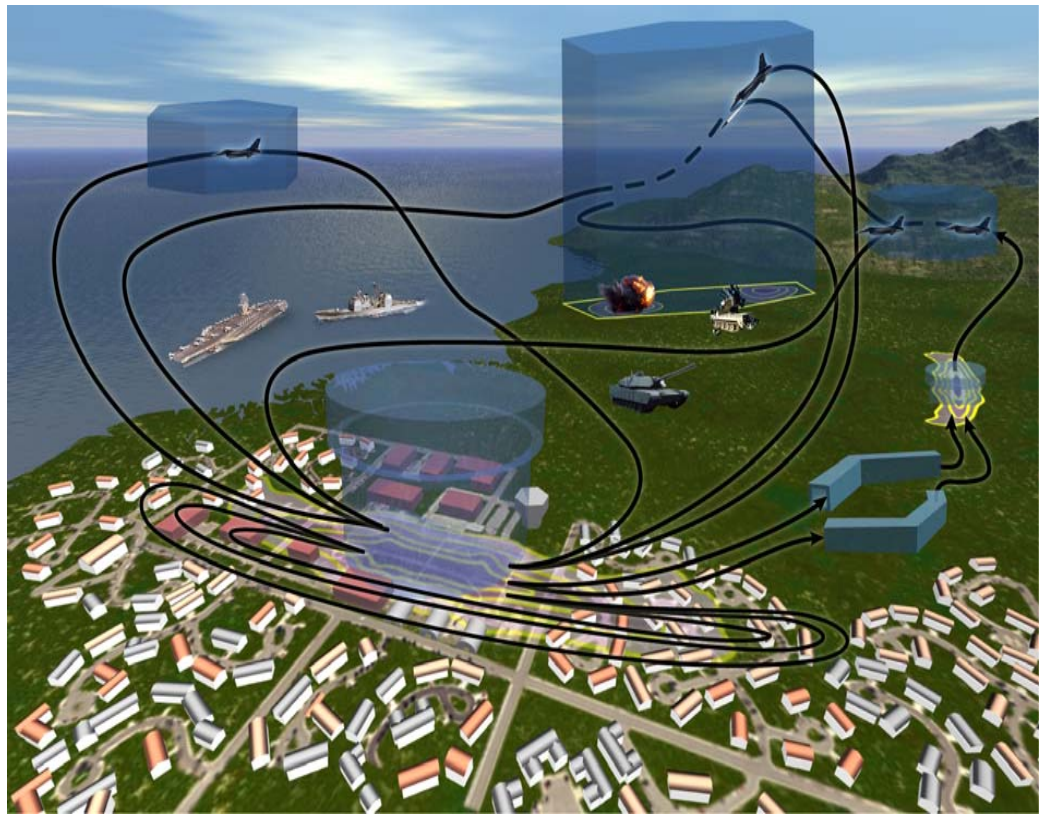
- **Policy**
- **Programming**
- **Leadership & Organization**
- **Legislation & Regulation**
- **Outreach and Engagement**
- **Compatible Land Use & Buffering**
- **Comprehensive Reporting**

Natural Infrastructure Management (NIM)

- To be mission ready at the installation and range level, in addition to built infrastructure and personnel, DoD needs an adequate supply of air, land, and water assets (i.e., natural infrastructure) to train, test, and perform its varied missions
- The Natural Infrastructure Capability Work Group (NICWG) is working to develop and implement a common framework for NIM to support mission requirements

NIM Framework

- NICWG tested and refined two major aspects of a common management framework:
  - Natural Infrastructure assessments provide data to determine NI “readiness” to meet current and emerging operational requirements
  - Natural Infrastructure asset valuation is used to assess military, ecological, and economic values provided by NI assets



Acquisition programs and operators must provide system specific data to support NIM

Acquisition ESOH Policy and Guidance

Plan Ahead & Influence Design

- Identify system life cycle ESOH risks early to influence design, not address them afterwards as operational considerations
- System design is most effectively influenced through the system engineering (SE) process
  - Active participation in the IPTs is critical to success
- ESOH hazards and associated risks are best managed using a standard approach and structured process
- E, S, and OH inputs to SE must be optimized across the disciplines to meet cost and performance requirements and needs throughout the life cycle

Life Cycle ESOH Risks

- ESOH risks may include
  - Toxic and hazardous materials and wastes
  - Environmental and occupational noise
  - Impacts to personnel safety and occupational health
  - Inability to maintain regulatory compliance requirements
- Need to manage ESOH risks associated with
  - Routine system development, testing, training, operation, sustainment, maintenance, and demilitarization/disposal
  - System failures or mishaps, including critical software failures
  - Life cycle cost, schedule, and performance impacts from ESOH compliance requirements

Top Level DoD Acquisition ESOH Policy

- Use a total systems approach to minimize or eliminate characteristics that produce environmental, safety or occupational health hazards, where practicable and cost effective
- Address safety throughout the acquisition process
- Use the system safety methodology in MIL-STD-882D to eliminate ESOH hazards where possible and manage ESOH risks where hazards cannot be eliminated
- Ensure formal risk acceptance at designated management level
- Document hazardous materials associated with the system and plan for their safe disposal, beginning during system design
- Provide safety releases to developmental and operational testers prior to any test using personnel

Recent USD(AT&L) Policy Memorandums

- Defense Acquisition System Safety, 23 September 2004
  - Use Standard Practice for System Safety, MIL-STD-882D to manage ESOH risk
  - Report ESOH risk status and acceptance decisions at technical and program reviews
- Reducing Preventable Accidents, 21 November 2006
  - Develop process to provide ESOH input for JCIDS
  - Address the status of each High and Serious ESOH risk and compliance with applicable safety technology requirements at all program reviews
  - PMs will support system-related Class A and B mishap investigations
- Defense Acquisition System Safety – ESOH Risk Acceptance, 7 March 2007
  - Formal acceptance of ESOH risks prior to exposing people, equipment, or the environment to a known system-related ESOH hazard
  - User representative formal concurrence for Serious and High ESOH risks

Programmatic ESOH Evaluation (PESHE)

- PESHE document communicates ESOH planning and the status of ESOH risk management for the system
- PESHE must include:
  - Identification of ESOH responsibilities
  - The strategy for integrating ESOH considerations into the systems engineering process
  - Identification of ESOH risks and their status
  - A description of the method for tracking hazards throughout the life cycle of the system
  - A compliance schedule for National Environmental Policy Act (NEPA) and Executive Order 12114
- All programs, regardless of ACAT, are required to prepare a PESHE to support Program Initiation for Ships, MS B, MS C, and Full-Rate Production Decision Review

Acquisition ESOH Focus Areas and Initiatives

ACAT I Program Oversight/Reviews

- Participate in MS review process
  - Attend program WIPT/OIPT meetings
  - OSD coordination/review of program documents
    - Acquisition Strategy
    - PESHE
  - Assist Component and program staff to
    - Clarify DoDI 5000.2 ESOH policy requirements
    - Emphasize integration of ESOH into SE
    - Focus on life cycle ESOH risk management

- Developing a pilot to identify procedures to implement briefing ESOH risks at acquisition program reviews
  - Defining expectations of PM reporting is critical

Acquisition ESOH Policy and Guidance Updates

- Input to DoDI 5000.2 (in SD 106 coordination)
  - Updated and moved ESOH requirements to the new Enclosure 12 - Systems Engineering
  - Incorporated the 3 USD(AT&L) memorandums
  - Clarified existing DoDI 5000.2 policy requirements
  - Hazardous materials, wastes, and pollutants (discharges/emissions/ noise) associated with the system must be included in the PESHE
  - PM shall provide system-specific analyses and data to support other organizations' NEPA and EO 12114 analyses
- Updated ESOH input for the Defense Acquisition Guidebook
  - "System Safety Analyses" added to the SE V model Inputs and Outputs and to "The Wall Chart"
  - Clarified expectations
- Initiating update for ESOH Special Interest Area on the ACC

System Safety - ESOH Management Evaluation Criteria

- Tool to assess an acquisition program's overall management of ESOH as part of SE process
  - Technical and Program Reviews (self assessment)
  - Milestone Review Process (oversight assessment)
- Four key areas for evaluation
  - Planning
  - Requirements Analysis
  - Hazard Analysis
  - Resources
- Assessment criteria for key each area for each life cycle phase, and can be combined for overall rating for each life cycle phase
- To be incorporated into Defense Acquisition Program Support (DAPS) SE Assessment Methodology
- Available on ACC at https://acc.dau.mil/esoh and included in booklet handouts

DAU Curricula

- Working with DAU to improve ESOH training for the acquisition workforce since 2000
- Review courses and provide ESOH input consistent with current DoD policy, guidance, and best practices
  - Courses reviewed include Acquisition; Systems Engineering; Program Management; Logistics; Test and Evaluation; Software Acquisition; Facilities Engineering; and Production, Quality, and Manufacturing
- Technical Management Functional Advisor support and DSOC funding provided means to more aggressively review and provide ESOH input for the courses over past 2 years

DAU CLE009 - System Safety in SE

- ODUSD(I&E) and ODUSD(A&T)/SSE effort
- Roadmap for using the MIL-STD-882D system safety methodology for eliminating or mitigating ESOH hazards and associated risks
- Discusses system safety/ESOH efforts to be conducted throughout the system's life cycle
- Helps define how ESOH and SE communities should work together
- Available on-line since April 2005 at https://learn.dau.mil
- Over 1600 graduates to date

Integrating ESOH Into SE Booklet

- Builds on CLE009 and depicts when ESOH activities should be performed to influence system design throughout the systems engineering process
- System Safety-ESOH Management Evaluation Criteria are included

Copies available here, and will be discussed during System Safety Track, Session 4B7 on Thursday, 25 Oct 10:15am-12pm

Way Ahead

- Continue to mature the ESOH risk management process for acquisition
  - Update guidance on PESHE requirements and expectations
  - Revise MIL-STD-882D to better support DoD policy and initiatives, expand importance of integration into SE, and inclusion of environmental efforts
  - Provide guidance on implementing ESOH risk acceptance policy
  - Develop tools to help identify system ESOH requirements
- Continue to lead and support ESOH efforts to influence system design and development

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INSTALLATIONS AND ENVIRONMENT