

# Department of Defense Explosives Safety Board (DDESB)



## Explosives Safety Munitions Risk Management

### Intro

August 2018



- John Lenox, Director, Military Operations DDESB
- Commander, A. K. Williams, Navy Military Representative DDESB
- Dr. Josephine Covino, Science Advisor DDESB
- Steve Darby, GIS Program Manager, NAVFAC PAC
- Dr. Mike Oesterle, NAVFAC, EXWC
- David Bianchi, NAVFAC, EXWC



# Training Session Objectives

---

- Educate symposium on DDESB roles, functions, resident expertise, and support capabilities
- Provide insight into current DoD Explosives Safety Munitions Risk Management (ESMRM) policy
- Educate participants on the ESMRM Assessment process
- Gain forum participants perspective on explosives safety and risk management
- Serve as exchange venue for explosives safety best practices; trends; procedures; and lessons learned for applicability within and across forum participants



# Training Session Agenda

---

- **Intro Brief**
- ESMRM Policy
- Technical Paper 23 Overview
- ESMRM Assessment Process
- ESMRM Assessment Examples
- ESS risk based capabilities in ESS 6.1.4



# Intro Brief Agenda

---

- DoD Explosives Safety Board (DDESB)
- DDESB Organizational Alignment
- DDESB Functional Organization
- MILOPS – Organization & Functions
- Why? The case for ESMRM...
- Summary



# DoD Explosives Safety Board (DDESB)

- Created in 1928 due to large-scale accident from retrograded munitions at Lake Denmark, NJ
  - 21 killed; 53 seriously injured; 200 buildings destroyed; \$47M in damage...blast debris spread over 35km
- Congressional mandate: *“Prevent and preclude similar recurrences...”*





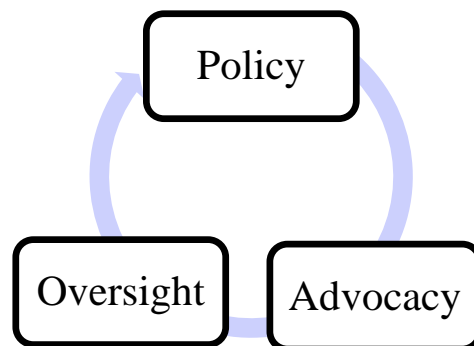
# DoD Explosives Safety Board (DDESB)

## MAJOR FUNCTIONS

- **Develop and maintain the DoD Explosives Safety Program**
- **Support Combatant Commanders Mission where DoD Munitions are involved**
- **Support Multinational Organizations and Operations (NATO, UN, and State Dept)**
- **Support Joint Staff Mission Assurance Assessments**
- **Develop and maintain DoD Explosives Safety Policy and Regulations**
- **Evaluate Explosives Safety Programs**
- **Perform R&D**

## STRATEGIC STAKEHOLDERS

- **Secretary of Defense** (USD – Policy (P), Acquisition & Sustainment (A&S), ASD – Energy, Installations and Environment (EI&E), and International Programs)
- **Chairman of the Joint Chiefs of Staff** (Joint Staff J2/J3/J4/J5/J7)
- **Combatant Commanders**
- **Military Services** (Army, Navy, Air Force Marine Corps)
- **NATO** (Acquisition – Munitions Safety AC/326, Logistics AC/305, SHAPE)
- **DoD Support Agencies**





# DDESB Organizational Alignment

**Jim Mattis**  
**Secretary of Defense**



**Ellen M. Lord**  
**Under Secretary of Defense**  
**(Acquisition & Sustainment)**



**Lucian Niemyer**  
**Assistant Secretary of Defense**  
**(Energy, Installations & Environment )**



**Maureen Sullivan**  
**Deputy Assistant Secretary of Defense**  
**(Environment, Safety & Occupational Health )**



**Thierry Chiapello**  
**Executive Director**  
**Department of Defense Explosives Safety Board**







# DDESB Functional Organization

## Executive Director

- Directs DDESB staff
- Strategy (planning & implementation)
- Strategic Engagement
- Chairs Voting Board (per DoDD 6055.09E)

## ORGANIZATION

- 24 Civilians
- 4 Military

## Voting Board

- Votes on proposed explosives safety standards changes on behalf of their Service
- Communicates and advocates Service explosives safety issues and priorities
- Presents safety standard change proposals for Board consideration

## Business Operations

- Financial Management
- Personnel Management
- General Administration
- Financial Planning
- Knowledge Management

## Policy Development

- Technical Standards & Tools
- Explosives Safety RDT&E
- Protective Construction
- Mishap Analysis
- Hazard Classification
- Acquisition
- Strategic Partnering

## Program Evaluation

- Evaluations
- DoD Explosives Safety Site Planning Oversight
- Munitions Response

## Military Operations

- Service Liaison
- Joint Staff & CCMD Liaison
- Operational Support
- Future Operations
- US & NATO ESMRM



# MILOPS – Organization & Functions

**Mr. John Lenox**  
Explosives Safety Specialist  
• Division Director

**COL Mike Evans**  
EOD Officer  
• Army Military Representative  
• NATO integration  
• EUCOM / AFRICOM Rep

**Vacant**  
• Air Force Representative  
• CJCSI / JS lead  
• CENTCOM Rep

**Mr. Mike Darnell**  
Explosives Safety Specialist  
• COCOM integration Coord.  
• NATO ESMRM Rep

**CDR Amahl “A. K.” Williams**  
EOD Officer  
• Navy Military Representative  
• DTRA Mission Assurance lead  
• PACOM Rep

**Maj Jamie Arnold**  
Ordnance Officer  
• USMC Military Representative  
• NATO Exercise plans  
• TRANSCOM / SDDC Rep

**MAJOR FUNCTIONS**

**Explosives Safety Munitions Risk Management (ESMRM)**

- CCMD ESMRM Training
- CCMD MRMA Support
- NATO ESMRM Integration

**Joint Staff Support**

- CJCSI 4360.01A
- Mission Assurance

**Service Liaison Support**

**Program Evaluation Support**

- Site Planning Process
- ESMP evaluations

**Policy Development Support**

- Criteria/Policy
- Mishap Investigation
- RDT&E

CCMD – Combatant Command  
ESMRM - Explosives Safety Munitions Risk Management  
ESMP - Explosives Safety Management Program  
MRMA – Munitions Risk Management Assessment



# Why? The case for ESMRM...

- In 2014, The Small Arms Survey, Graduate Institute of International and Development Studies published a handbook on unplanned explosions at munitions sites. The Study highlighted the pervasiveness of incidents worldwide:
  - Documented over 500 incidents in a 35 year period between 1979-2013
  - Noted explosives incidents in over 100 countries, including 10 NATO countries
  - Estimated that since 1993 there were an average of 20 incidents per year
  - Recorded fatality rates in excess of 800 annually
  - Identified various social, economic, geopolitical consequences associated with unplanned explosions at munitions sites<sup>1</sup>

<sup>1</sup> Berman, E., Gobinet, P., King, B., & Reina, P. (2014). *Unplanned Explosions at Munitions Sites (UEMS) Excess Stockpiles as Liabilities rather than Assets*. Graduate Institute of International and Development Studies. Switzerland: Small Arms Survey.

***“There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know we don't know.”***

***Donald Rumsfeld, Secretary of Defense (Rumsfeld n.d)***



# Why? The case for ESMRM...

(2. Wikipedia n.d.)



**Gerdic, Albania (2008) – 26 Fatalities**

(3. Sharp, Taylor and Staff 2013)



**Evangelos Florakis NB, Cyprus (2011) – 13 Fatalities**

(4. rense.com n.d.)



**FOB Falcon, Afghanistan Iraq (2006)**



# Summary

---

- Case is clear...explosives safety is an operational imperative
- DDESB is the focal point for DoD-wide explosive safety management: Policy...Advocacy...Oversight.
- DoD policy is nested across the DoD specifying:
  - DoD Component responsibilities
  - Minimum explosives safety requirements
  - Deviation processes and risk acceptance authorities
  - Joint Staff policy amplifies these requirements for overseas locations



# Questions / Comments / Discussion



Source 1. (DDESB Historical Files 2018)

**Ammunition Depot, Lake Denmark, New Jersey Explosion of 10 July 1926.** At approximately 5:15 on the evening of the July 10<sup>th</sup>, 1926 a fire was report on the arsenal near magazine #8 following an intense lightning storm. Five minutes later the first of several detonations rocked to ammunition depot. More than 600,000 tons of explosives stored inside the depot detonated, resulting in one of the most catastrophic man-made explosions in the United States. The blast completely destroyed nearly 200 buildings in a half-mile radius, resulting in \$47 million in damages, 21 deaths, and dozens more injuries. The explosion was so powerful that fragments from steel beams and metal trusses were found over 5000 feet away with some report of debris being found nearly 22 miles away.