

# Department of Defense Explosives Safety Board (DDESB)



## Explosives Safety and Munitions Risk Management (ESMRM) Policy

August 2018



# Training Session Objectives

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- 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

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



# ESMRM Policy Brief Agenda

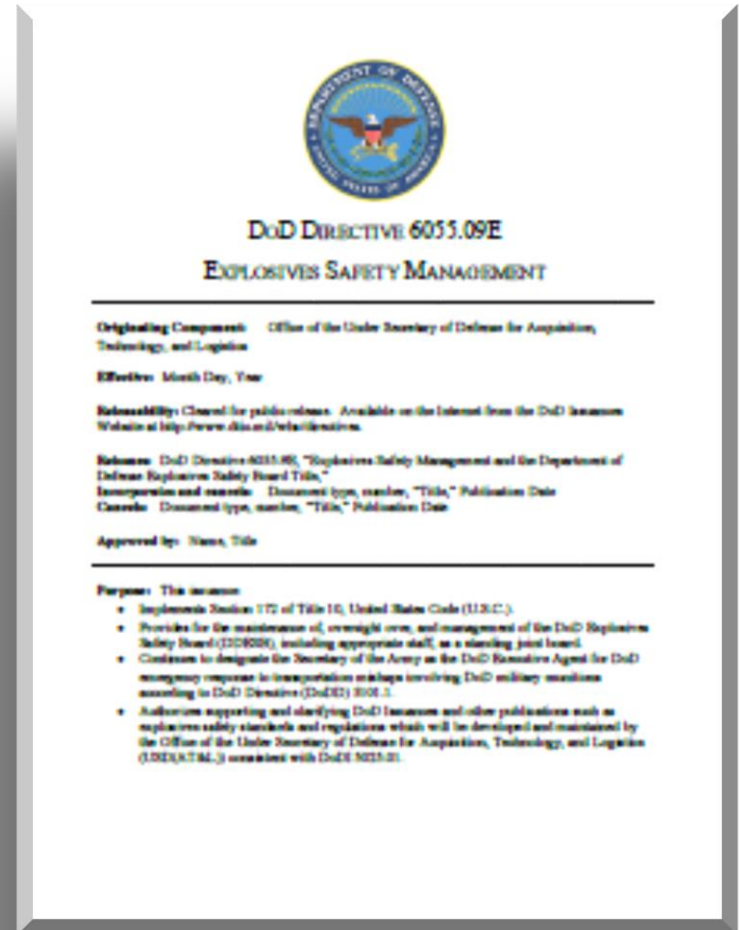
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- DoDD 6055.09E *Explosives Safety Management*
- DoDI 6055.16 *Explosives Safety Management Program*
- DoDM 6055.09 *Ammunition and Explosives Safety Standards*
- Joint Staff Policy on ESMRM
- ESMRM Implementation



# DoDD 6055.9E *Explosives Safety Management*

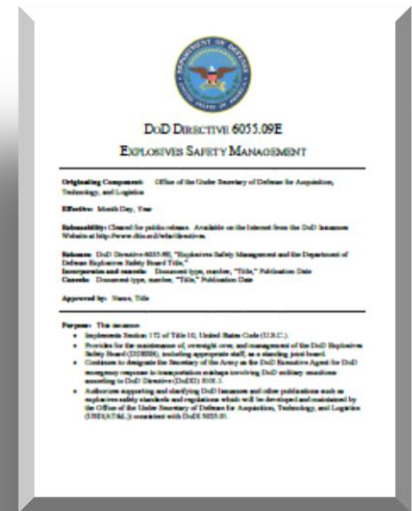
The U.S. Policy on explosives safety is outlined in Department of Defense Directive 6055.09E (DoDD 6055.09E)  
*Explosives Safety Management*





# DoDD 6055.9E *Explosives Safety Management*

- DoD policy on explosives safety states that the DoD:
  - Protects people and property from the unintentional, potentially-damaging effects of DoD military munitions
  - Exposes the minimum number of people for the minimum time to the minimum amount of DoD military munitions required to safely and effectively execute the mission
  - Provides for the explosives and chemical agent safety of DoD military munitions throughout the munition's life cycle as a DoD military munition and without regard to its location
  - Requires DoD Components to implement and maintain an effective ESM Program (ESMP)

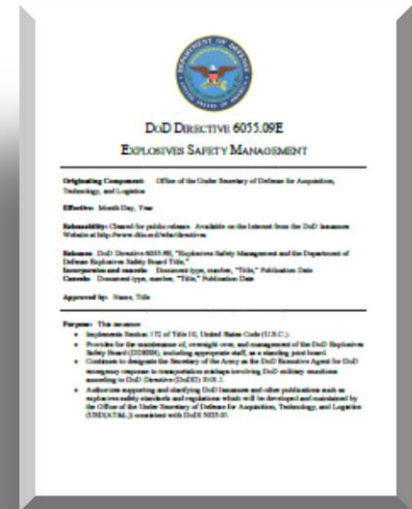


*An approved site plan or a risk decision, at the appropriate level, is required for all locations where DoD-titled munitions are located or forecasted to be located*



# DoDD 6055.9E *Explosives Safety Management*

- Responsibilities.
  - Integrate ESMRM into all phases of operations planning, training, and warfighting
  - Accept risk greater than that afforded by the minimum explosives safety standards only when required by strategic or compelling operational necessity and when acceptance is supported by a written risk assessment leading to an informed management decision
  - Base these decisions on the methodology and requirements prescribed in related issuances, DoD explosives safety regulations and standards, and the Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 4360.01B



***In certain situations, strict compliance with explosives safety standards could adversely affect the successful outcome of DoD operations. In such situations, any DoD military munitions safety risk must be weighed against strategic or compelling operational requirements***



# DoDI 6055.16 *Explosives Safety Management Program*

Implements and prescribes the manner for carrying out the policies contained in DoDD 6055.09E



## Department of Defense INSTRUCTION

NUMBER 6055.16  
July 29, 2008

*Incorporating Change 2, November 14, 2017*

USD(AT&L)

SUBJECT: Explosives Safety Management Program

References: See Enclosure 1

1. PURPOSE. This Instruction:

- a. Implements and prescribes the manner for carrying out the policies contained in DoD Directive (DoDD) ~~6055.0E~~ 6055.09E (Reference (a)) and DoDD 4715.1E (Reference (b)).
- b. Prescribes procedures for the operation of the DoD Explosives Safety Management Program (ESMP) for DoD military munitions and military toxic chemical agents.

2. APPLICABILITY. This Instruction applies to the OSD, the Military Departments (including their Reserve Components), the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the Department of Defense (hereafter referred to collectively as the "DoD Components"). The term "Military Services," as used herein, refers to the Army, Navy, Air Force, and Marine Corps.

3. DEFINITIONS. See Glossary.

4. POLICY. It is DoD policy to:

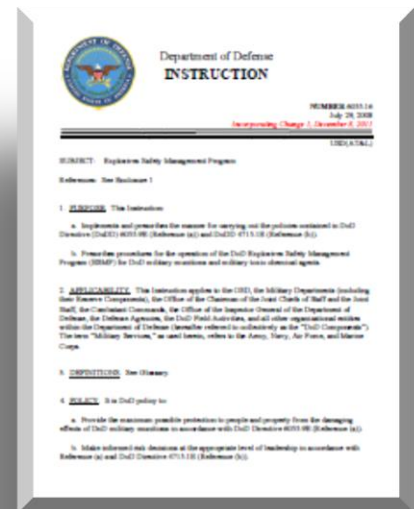
- a. Provide the maximum possible protection to people and property from the damaging effects of DoD military munitions in accordance with ~~DoD Directive 6055.0E~~ (Reference (a)).
- b. Make informed risk decisions at the appropriate level of leadership in accordance with Reference (a) and ~~DoD Directive 4715.1E~~ (Reference (b)).





# DoDI 6055.16 *Explosives Safety Management Program*

- The Instruction reiterates that it is DoD Policy to:
  - Provide the maximum possible protection to people and property from the damaging effects of DoD military munitions
  - Make informed risk decisions at the appropriate level of leadership
  - Implement management systems approaches and best business practices to maintain ESMPs

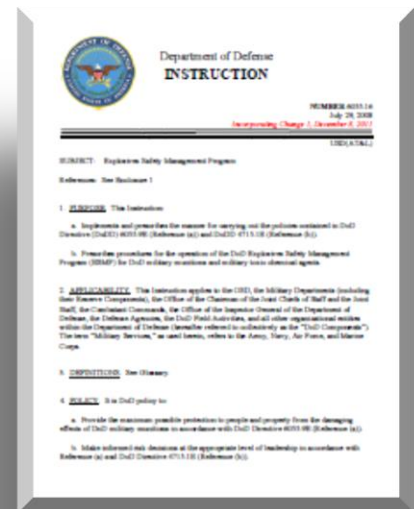


*The term “deviation” refers to the mechanism(s) by which a DoD Component can accept, assess, and document the risk for not complying with or “deviating” from the requirements*



# DoDI 6055.16 *Explosives Safety Management Program*

- Responsibilities. Military Departments:
  - Establish, resource, implement, and maintain effective DoD Component-level ESMPs that comply with the requirements in {this instruction} for all DoD activities that involve or have the potential to involve DoD military munitions
  - Implement procedures that allow for acceptance of ESMRM associated risk at the appropriate leadership level when deviating from established ESMP standards
  - Maintain awareness of and, where appropriate, take action to eliminate or mitigate deviations from ESMP standards

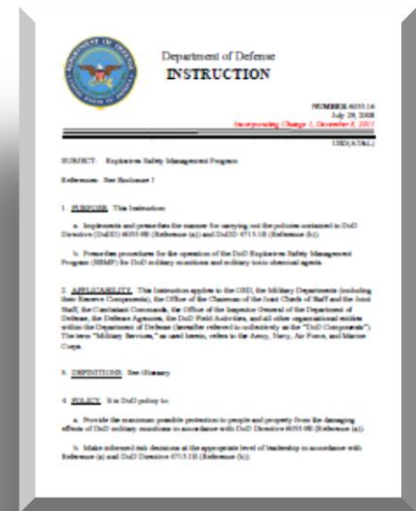


***Submit copies of approved deviations from minimum explosives safety standards, including supporting rationale documentation, to the affected Military Services and the Executive Director, DDESB***



# DoDI 6055.16 *Explosives Safety Management Program*

- Responsibilities. Combatant Command:
  - By direction provided by the Chairman of the Joint Chiefs of Staff, integrate the ESMP into operational and exercise planning and execution of operations
  - Maintain awareness of deviations within their respective area of responsibility (AOR) and, where appropriate, take action to eliminate or mitigate such deviations
  - Coordinate ESMP decisions, as appropriate, with affected Commands, Military Services, and local U.S. and host nation government officials



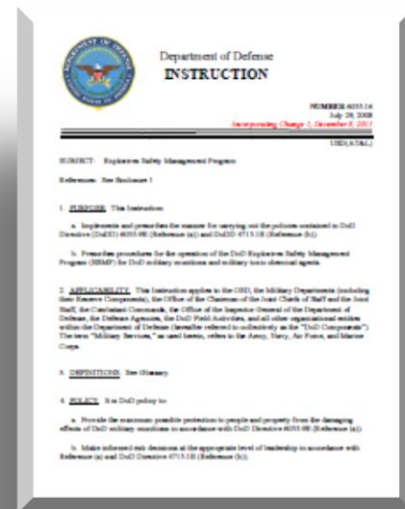
***Notify, as appropriate, affected local U.S. and host nation government officials to ensure communication of the risk of DoD operations involving DoD military munitions. Communications with host nation government officials shall be made in coordination with the U.S. Embassy***



# DoDI 6055.16 *Explosives Safety Management Program*

## ■ Deviations from Standards:

- The term “deviation” refers to the mechanism(s) by which a DoD Component can accept, assess, and document the risk for not complying with or “deviating” from the requirements of DoDM 6055.09E
- In certain situations, strict compliance with explosives safety standards could adversely affect the successful outcome of DoD operations
- In such situations, any DoD military munitions safety risk must be weighed against strategic or compelling operational requirements. DoD Components will ensure:
  - ✓ Informed risk decisions are made at the appropriate leadership level
  - ✓ Hazards or the risk associated with deviations from explosives safety standards are appropriately mitigated following DoD Component-specific requirements

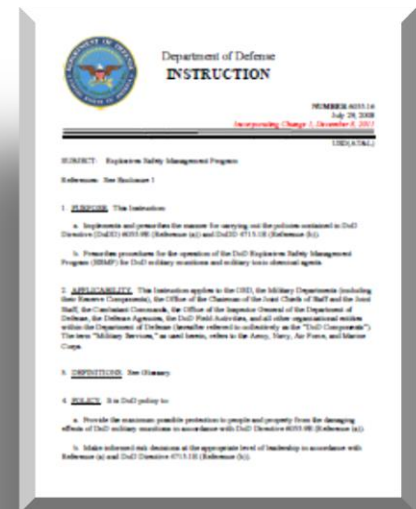


***Deviations Mechanisms. Waivers, exemptions, and Secretarial exemptions or certifications are used to accept risk and document deviations from explosives safety standards***



# DoDI 6055.16 *Explosives Safety Management Program*

- Waivers are initiated at the appropriate level when a solution cannot be immediately implemented to bring explosives safety practices in compliance with explosives safety standards
  - Waivers will be reviewed for applicability and currency at intervals not to exceed 2 years and the risk assessment used as the basis for the waiver to confirm:
    - ✓ Conditions that required the waiver have not changed
    - ✓ Risk has not increased
    - ✓ Mitigating measures remain effective
- There are two type of waivers:
  - Event Waivers (Nonrecurring) - Initiated for deviations expected to last less than 1 year and are not expected to reoccur. (not reported to DDESB)
  - Recurring Waivers - Initiated for deviations expected to last more then 1 year. (Recurring waivers and supporting documentation, including risk acceptance documents, are reported to the DDESB.)

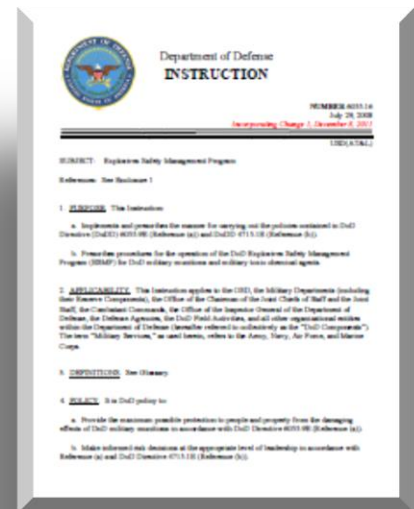


***DoD Components will ensure a waiver is initiated at the appropriate level when a solution cannot be immediately implemented to bring explosives safety practices in compliance with explosives safety standards***



# DoDI 6055.16 *Explosives Safety Management Program*

- Exemptions are written authorities that permit long-term noncompliance with the explosives safety standards and are reviewed for applicability, currently at intervals not to exceed 5 years
  - The risk assessment used as the basis for an exemption is reviewed concurrently when the exemption is reviewed (exemptions or certifications shall be reviewed at intervals not to exceed 5 years) to confirm:
    - ✓ Conditions that required the exemption have not changed
    - ✓ Risk has not increased
    - ✓ Mitigating measures remain effective

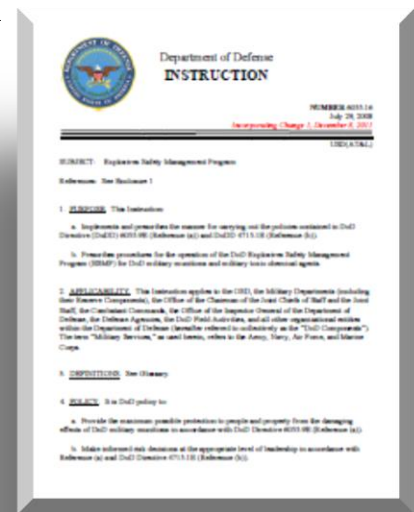


*Exemptions and supporting documentation, including risk acceptance documents, are reported to the DDESB*



# DoDI 6055.16 *Explosives Safety Management Program*

- Secretarial Exemption or Certification. A Secretary of a Military Department may issue an exemption (a Secretarial exemption) or a certification (a Secretarial certification) when there is a valid requirement for the DoD Component to deviate from explosives safety standards to:
  - Allow for the construction of new PESs or ESs or major modifications to PESs or ESs in violation of the standards; or
  - Maintain an operational capability for strategic or compelling requirements
- DoD Components will review Secretarial exemptions and certifications at intervals not to exceed 5 years



*The Secretary of the Military Department will approve continuation of the exemption or certification and any changes to be made to mitigating measures*



# DoDM 6055.09 Ammunitions and Explosives Safety Standards

## General Explosives Safety Information and Requirements



Department of Defense  
MANUAL

NUMBER 6055.09-M, Volume 1  
February 29, 2008  
Administratively Reissued August 4, 2010  
*Incorporating Change 1, March 12, 2012*

USD(AT&L)

SUBJECT: DoD Ammunition and Explosives Safety Standards: General Explosives Safety Information and Requirements

References: See Enclosure 1

### VI.1. PURPOSE

VI.1.1. Manual. This Manual is composed of several volumes, each containing its own purpose, and administratively reissues DoD 6055.09-STD (Reference (a)). The purpose of the overall Manual, in accordance with the authority in DoD Directives 5134.01 and 6055.9E (References (b) and (c)), is to establish explosives safety standards (hereafter referred to as "standards") for the Department of Defense.

VI.1.1.1. These standards are designed to manage risks associated with DoD-titled ammunition and explosives (AE) by providing protection criteria to minimize serious injury, loss of life, and damage to property.

VI.1.1.2. Due to the size and complexity of this Manual, alternate paragraph numbering has been approved for use throughout. The initial numeric set (V#) refers to the volume number within the Manual; the second set (E#) refers to the enclosure number, and subsequent numbers refer to the section, paragraph, and subparagraph numbers. If there is no E#, the reference is to a section above the signature of the volume.

VI.1.2. Volume. This Volume provides general explosives safety information and requirements.

### VI.2. APPLICABILITY. This Volume:

VI.2.1. Applies to:

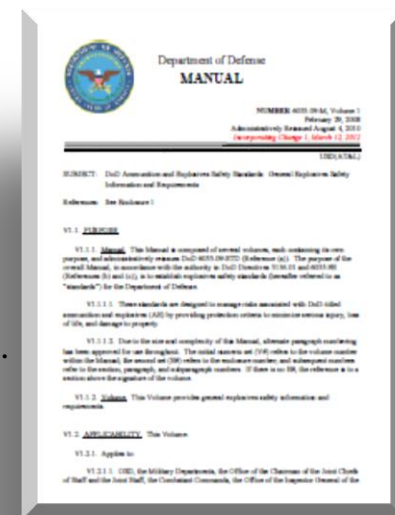
VI.2.1.1. OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the





# DoDM 6055.09 *Ammunition and Explosives Safety Standards*

- DoDM 6055.09 provides additional guidance on deviating for explosives safety standards
  - Deviations - When strategic or compelling operational requirements necessitate deviation from these standards, the DoD Components shall:
    - ✓ Acknowledge and accept the added risk to personnel or property
    - ✓ Document both the risk and methods used to reduce it to an acceptable level in relation to the operational requirements
  - Three types of Deviations:
    - ✓ A **Waiver** is a written authority that permits temporary deviation from standards.
      - Not to exceed 5 years / Requires review every 2 years
      - Subsequent re-issuances require next higher approval authority (up to the CCDR level)
    - ✓ An **Exemption** is written authority that permits long-term noncompliance from standards. Requires review every 5 years
    - ✓ A **Secretarial Exemption or Certification** allows for construction in violation of standards. Requires review every 5 years



*Applying the standards herein provides only the minimum protection criteria for personnel and property, and greater protection should always be provided when practicable*



# Joint Staff Policy on ESMRM

## Chairman of the Joint Chiefs of Staff Instruction (CJCSI 4360.01A) *Explosives Safety and Munitions Risk Management for Joint Operations Planning, Training and Execution*



### CHAIRMAN OF THE JOINT CHIEFS OF STAFF INSTRUCTION

J-4  
DISTRIBUTION: A, B, C

CJCSI 4360.01A  
Xx Xxxxxx 2018

EXPLOSIVES SAFETY AND MUNITIONS RISK MANAGEMENT FOR JOINT  
OPERATIONS PLANNING, TRAINING, AND EXECUTION

Reference: See Enclosure D.

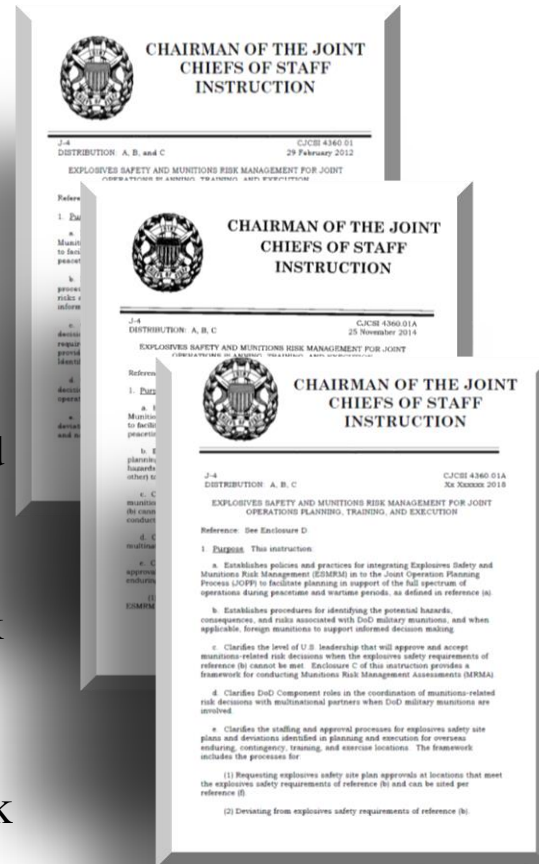
1. Purpose. This instruction:

- a. Establishes policies and practices for integrating Explosives Safety and Munitions Risk Management (ESMRM) in to the Joint Operation Planning Process (JOPP) to facilitate planning in support of the full spectrum of operations during peacetime and wartime periods, as defined in reference (a).
- b. Establishes procedures for identifying the potential hazards, consequences, and risks associated with DoD military munitions, and when applicable, foreign munitions to support informed decision making.
- c. Clarifies the level of U.S. leadership that will approve and accept munitions-related risk decisions when the explosives safety requirements of reference (b) cannot be met. Enclosure C of this instruction provides a framework for conducting Munitions Risk Management Assessments (MRMA).
- d. Clarifies DoD Component roles in the coordination of munitions-related risk decisions with multinational partners when DoD military munitions are involved.
- e. Clarifies the staffing and approval processes for explosives safety site plans and deviations identified in planning and execution for overseas enduring, contingency, training, and exercise locations. The framework includes the processes for:
  - (1) Requesting explosives safety site plan approvals at locations that meet the explosives safety requirements of reference (b) and can be sited per reference (f).
  - (2) Deviating from explosives safety requirements of reference (b).



# Joint Staff Policy on ESMRM

- CJCSI 4360.01 was first published in 2012 in an effort to integrate ESMRM into the joint operation planning process based on lessons learned in Iraq and Afghanistan
  - Focused on ESMRM at “non-enduring” locations established to support war and contingency operations
- In Nov 2014 CJCSI 4360.01A was re-published to clarify that:
  - The ESMRM process could be used at “enduring and non-enduring” locations (i.e., Main Operating Bases (MOBs), Forward Operating Sites (FOSs), and Cooperative Security Locations (CSLs))
  - The Geographic Combatant Commander (GCC) may delegate risk decision authority subordinate commanders
- In July 2018, CJCSI 4360.01B was updated to clarify that the Combatant Commander (CCDR) is responsible for making risk decisions when ESMRM requirements cannot be met at overseas operating locations

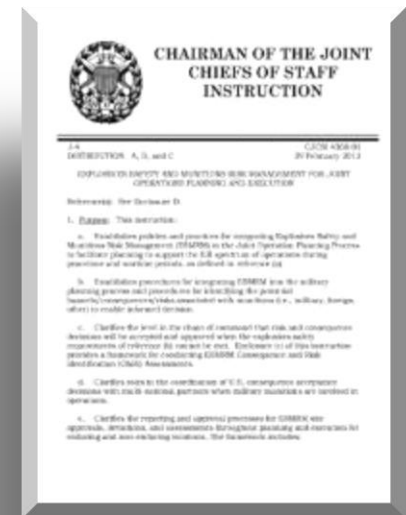


***The foundational premise of ESMRM involves upfront identification and clear communication, to the appropriate level of command, of the risks and consequences to and from DoD military munitions during all phases of military planning, training, and operations***



# Joint Staff Policy on ESMRM

- CJCSI 4360.01B, *Explosives Safety and Munitions Risk Management for Joint Operations Planning, Training, and Execution*
  - Establishes procedures for integrating ESMRM into the military planning process and for identifying the potential hazards/consequences/risks associated with munitions operations to enable informed risk decisions
  - Clarifies the **level of U.S. leadership** that will approve and accept munitions-related risk decision when explosives safety requirements cannot be met
  - Clarifies the staffing and approval process for explosives safety site plans and deviations identified in planning and execution for **overseas enduring, contingency, training, and exercise locations**
  - Provides a framework for conducting Munitions Risk Management Assessments (MRMAs)

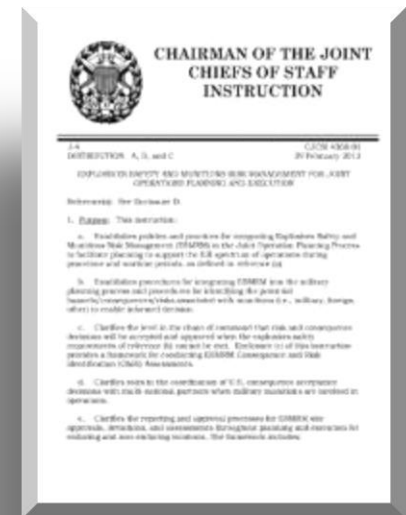


*This instruction provides a process to incorporate ESMRM into planning, training, and execution, and to enable the appropriate level within the operational chain of command to make munitions risk decisions* 20



# Joint Staff Policy on ESMRM

- Acceptance of munitions-related risk requires CCDR approval unless the commander delegates risk decision authority in writing to a general/flag officer (GO/FO), subordinate commander, component commander, or staff directorate
  - At no time will risk decision authority for high/serious or greater risk be delegated below the GO/FO level
  - In each case, both the MRMA and the derived quantitative measures used to identify the hazards severity will be forwarded up the operational chain of command as a consolidated package
- The MRMA methodology provides a framework on how to assess munitions-related risks when the explosives safety requirements cannot be met
- Deviations accomplished for enduring locations will be **executed in accordance with the lead Service's process and approved by the CCDR or delegated authority**

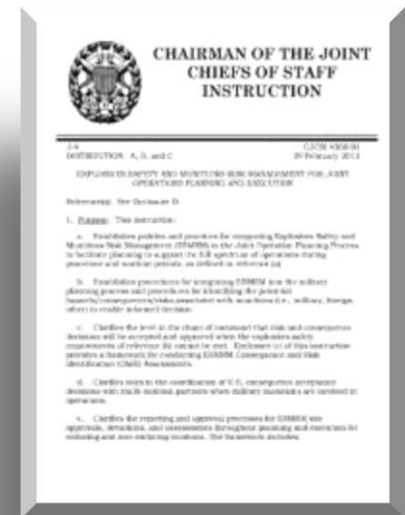


*Combatant Command, command authority (COCOM) “...provides full authority for a CCDR to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training..., and logistics necessary to accomplish the missions assigned to the command”*



# Joint Staff Policy on ESMRM

- Implementing effective ESMRM procedures to identify and address the potential hazards, consequences, and risks associated with DoD military munitions is a command priority
- ESMRM requires advanced planning to support assessing munitions-related risks
- An MRMA process should be implemented during all military planning, training, and operational cycles to support risk decision making when the operating location does not meet the explosives safety requirements
- Continuous evaluation of mission, planning factors, and operating environment which may alter MRMA variables and increase risk to and from munitions

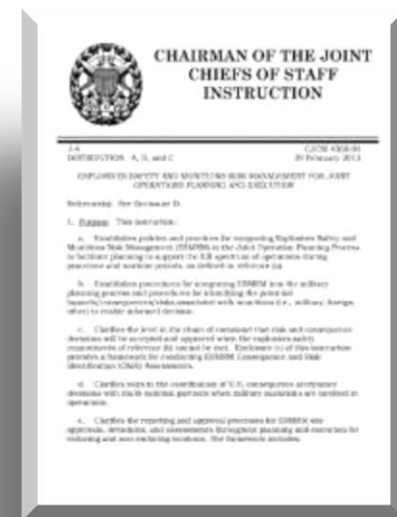


***When strategic or compelling operational requirements necessitate deviation from DoD explosives safety standards of DoDM 6055.09, and required explosives safety submissions cannot be accomplished, the GCC or delegated commander shall perform a ESMRM Assessment.***



# Joint Staff Policy on ESMRM

- **Multinational Operations:**
  - Integrate ESMRM into Coalition and multinational operations. For example, utilize North Atlantic Treaty Organization (NATO) ESMRM Standardization Agreement (STANAG), as implemented in Allied Logistics Publication-16, *Explosives Safety and Munitions Risk Management (ESMRM) in NATO Planning, Training, and Operations*, for NATO specific planning, training, and operations
  - Communicate U.S. ESMRM risk decisions to Coalition, and multinational partners
  - When Coalition, Host Nation, or multinational partners are encumbered by DoD military munitions operations which do not meet the requirements, a signed statement of risk acknowledgement by the encumbered force commander is required as part of the risk decision package

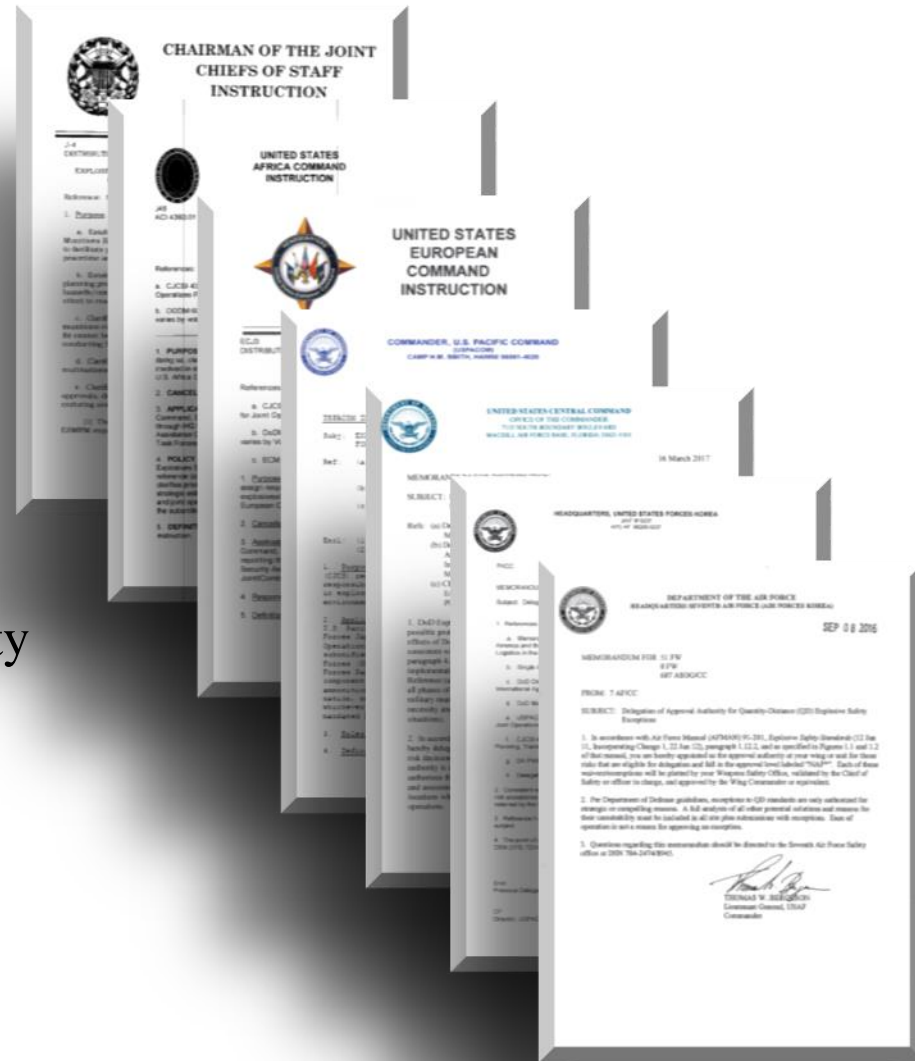


***Integrating ESMRM into the military planning process enables commanders to minimize exposure to the damaging consequences of munitions from accidental initiation or enemy fire to facilitate mission success***



# ESMRM Implementation

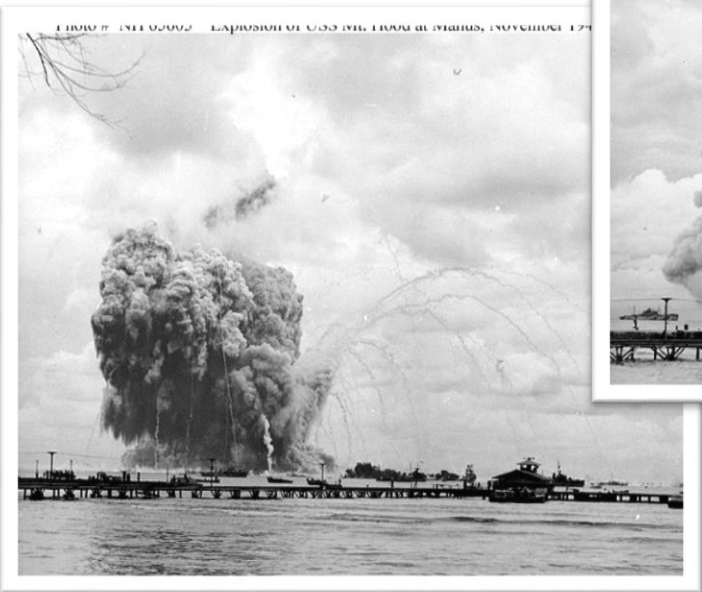
- CJCSI 4360.01B
- AFRICOM ACI 4360.01
- USEUCOM ECI 4360.01
- USPACOM INST 0601.8
- CENTCOM ESMRM Delegation of Authority
- USFK ESMRM Delegation of Authority
- 7<sup>th</sup> Air Force Delegation of Authority







# Questions / Comments / Discussion



**Explosion of the USS Mt. Hood (AE-11), Admiralty Islands, 10 November 1944.** While moored at the Manus Naval Base, Admiralty Islands, the Mount Hood's cargo ~2.3M pounds of munitions detonated. Damage and casualties were inflicted on ships anchored as far as 2000 yards away. Personnel casualties on Mount Hood and on other vessels totaled 45 known dead, 327 missing and 371 injured. Over 30 large ships damaged, including the USS Mindanao (ARG-3), pictured above. 13 small boats and landing craft were sunk, destroyed or damaged beyond repair and 33 were damaged but reparable.