



# Navy Insensitive Munitions (IM) Program Planning and Execution

---

*Presented by Don Porada  
Booz Allen Hamilton  
Arlington, VA*



# Acknowledgements

---

## **SPONSOR**

**Naval Ordnance Safety and Security Activity  
(NOSSA)**

## **NOSSA co-authors**

**Ken Tomasello and Heather Hayden, PhD**

## **Booz Allen Hamilton co-author**

**Jerry Ward, PhD**



# Outline

---

- **BLUF**
- **Introduction and History of IM**
- **Scope and Background – NAVSEAINST 8010.5C**
- **Policy**
- **Organization**
- **Requirements**
- **Joint IM Tests and Passing Criteria**
- **Actions**
- **Concluding Remarks**



## BLUF

- To inform the international IM and Munitions Safety communities that the Naval Sea Systems Command (NAVSEASYSKOM) has issued revised policy and procedures for the execution of an integrated Department of Navy (DON) IM program. This paper will:
  - Briefly describe the history and background of the Navy IM program
  - Review the applicability of the completely revised NAVSEASYSKOM Instruction (NAVSEAINST) 8010.5C (IM Program Planning and Execution) and provide selected highlights from and changes within the instruction.

**Note:** The revised instruction augments Department of Defense (DoD) and Joint Requirements Oversight Council (JROC) IM Strategic Planning (IMSP) policy and guidance.



# Introduction and History of IM

- 1984 – The Chief of Naval Operations issued the DON’s first policy on IM (OPNAVINST 8010.13)
- 1987-1988 – Joint agreements and IM requirements
- 1995 – JROC approval of IM waivers
- 1997 – DoD IM Integrated Process Team
- 1999 – Joint Service IM Technical Panel
- 1999 – Office of the Undersecretary of Defense (OUSD) “Gansler” Memo exempting existing inventory to IM requirements
- 2001 – OUSD Memo deemed small arms .50 caliber and below to be IM compliant
- 2002 - 10 United States Code (U.S.C.) §2389, Chapter 141, Ensuring Safety Regarding IM
- 2003 – OUSD Memo deemed Cartridge Activated Devices/Propellant Activated Devices to be IM compliant
- 2004 – OUSD Memo issued policy for IMSP
- 2006 – JROC issued standardized set of IM tests and passing criteria
- 2010 – OUSD Memo approved standardized set of IM tests and passing criteria



## Scope and Background - NAVSEAINST 8010.5C

- Applicable to all U.S. Navy and U.S. Marine Corps conventional munitions that went aboard Navy ships no matter where developed or produced. Fleet ballistic missiles, strategic weapons and nuclear weapons are excluded.
- Applicable to munition items that are Non-Programs of Record; Joint Concept Technology Demonstrations; directed requirements; and those covered by an Urgent Operational Need Statement, Joint Urgent Operational Need Statement, or Urgent Materiel Release.
- Defines/refines when IM policies apply for developmental items. Included are:
  - Munition items being developed,
  - Those undergoing block upgrades and product improvements,
  - Those under evaluation (such as Foreign Comparative Test),
  - Non-Developmental Items, and
  - Those adapting commercial Off-the-Shelf technology or hardware.



# Policy

- Per DoD Directive 5000.1, all systems with energetics must meet IM requirements
  - NAVSEAINST 8010.5C applies to all DON munitions
  - In the development of new munitions that use non-IM munition components from inventory systems, IM requirements still must be addressed. → Constitutes a window of opportunity for incremental IM improvement and must be part of a coordinated acquisition strategy.
- Joint Capabilities Integration and Development System (JCIDS) documents relating to DON munitions shall address IM requirements.



## Policy (continued)

---

- Program Executive Offices with munition responsibilities will address and prioritize their entire munitions portfolio using the DoD Standard Operating Procedure (SOP) for IMSP and Plans of Action and Milestones (POA&Ms) for Key Elements of IMSPs and format requirements for POA&Ms.
- An out-of-cycle request for an Approval to Procure non-IM compliant munitions is possible in the unusual case where such a request is needed to meet specific urgent programmatic milestones or documented urgent operational requirements in a timely manner.





## Policy (continued)

- JROC approval of an IMSP authorizes the procurement of munitions in the plan and is independent of the determination of safety and suitability for service use, which remains with the individual Service, Agency, or Combatant Command.  
**NOTE:** For the DON, this responsibility is assigned to the Navy Weapon Systems Explosives Safety Review Board (WSESRB).
- Munitions PMs shall seek every window of opportunity to incorporate appropriate technologies developed by the Joint Munitions Program, Joint IM Technology Program, IM Advanced Development Program, IM Technology Transition Program, and similar programs of other services in order to provide IM-compliant munitions for the Fleet.



# Organization

---

- Deputy Director, Surface Warfare Division, Office of the Chief of Naval Operations (OPNAV) (N96B)
  - Responsible for overseeing and coordinating the planning, funding, and execution of the DON IM Program
  - Chairs the IMC
- NAVSEASYSKOM, Director for Ordnance, Safety and Explosives (SEA OOV) and the Executive Director, NOSSA (SEA OOVW)
  - Support the IMC by evaluating munitions' compliance with IM requirements and recommending IM technology for transition to munitions' development programs
- NOSSA, Navy IM Office (IMO) (N85)
  - DON IM technical and programmatic lead activity



# Requirements

- All energetic material in Navy munitions must satisfy qualification and final (type) qualification requirements, per NAVSEAINST 8020.5C (Qualification and Final (Type) Qualification Procedures for Navy Explosives (High Explosives, Propellants, Pyrotechnics and Blasting Agents)).  
**NOTE:** Ensures that the energetic materials are safe and suitable for use in Navy munitions before operational, safety and IM evaluation of the end item munition.
- IM must be successfully integrated into a total system safety program per MIL-STD-882E (DoD Standard Practice, System Safety).
- Test methodologies must be based on JROC and Office of the Undersecretary of Defense (OUSD) approved Standardized IM Tests and Passing Criteria.



# Joint IM Tests and Passing Criteria

IM TEST	TEST PARAMETERS*	CONFIGURATION (Number of tests)	PASSING CRITERIA**
Liquid Fuel Fire/ Fast Cook-off (FCO)	STANAG 4240E2, Liquid Fuel/External Fire, Munition Test Procedures, Standard Procedure (Annex A)	Logistical (1) Operational (1)	No response more severe than Type V (Burning)
Slow Heating/ Slow Cook-off (SCO)	STANAG 4382E2, Slow Heating, Munitions Test Procedures, Procedure 1	Logistical (2)	No response more severe than Type V (Burning) or If no reaction occurs upon reaching 365°C (689°F)
Small Arms Attack/ Bullet Impact (BI)	STANAG 4241E2, Bullet Impact, Munition Test Procedures, Procedure 1	Logistical (1) Operational (1)	No response more severe than Type V (Burning)
Fragment Impact (FI)	STANAG 4496E1, Fragment Impact, Munitions Test Procedure, Standard Procedure: Annex A Standard Fragment fired with impact velocity of 2,530 m/s (8,300 ft/s)	Logistical (1) Operational (1)	No response more severe than Type V (Burning)
Sympathetic Reaction (SR)/Sympathetic Detonation (SD)	STANAG 4396E2, Sympathetic Reaction, Munition Test Procedures, Standard Procedure	Logistical confined(1) Logistical unconfined (1)	No propagation of reaction more severe than Type III (Explosion) reaction (of like acceptor munitions)
Shaped Charge Jet Impact (SCJI)	STANAG 4526E2, Shaped Charge Jet, Munitions Test Procedure, Procedure 2: Standardized 81mm precision shaped charge	Logistical (1) Operational (1)	No response more severe than Type III (Explosion) reaction

\*MIL-STD-2105D test parameters apply to all tests. \*\*Per STANAG 4439 (Ed. 3).

PROVIDING WEAPONS AND ORDNANCE SAFETY ... TODAY AND TOMORROW



## Actions

- NAVSEAINST 8010.5C requires that Navy Program Executive Offices (PEOs) with munition responsibilities shall:
  - Prepare and submit biennial IMSPs to the JROC and OUSD via the Chief of Naval Operations (CNO) after coordination with the Navy IMO.
  - Include all out-of-cycle requests in the next IMSP.
  - Advise the Navy IMO of their IM program status and changes.
  - Brief the (Joint Service IM Technical Panel (JSIMTP) regularly. **Note:** For IM priority munitions as defined in the DoD SOP for IMSP and POA&Ms, those briefings shall be once per IMSP cycle at a minimum.



## Concluding Remarks

---

- NAVSEAINST 8010.5C represents a major milestone in the DON IM program.
  - It provides specific guidance and direction for the DON PEOs to prepare and process their IMSPs within DON
  - DoD IMSP policy represents a major change in the manner by which the IM Program is managed and reported.
    - The previous JROC waiver process was not optimal and only allowed JROC and management visibility into discrete munition programs, typically one at a time.
    - By addressing the PEO's entire munitions portfolio in their IMSPs, the CNO (via the IMC), OUSD and JROC are given insight and recognition of all related IM efforts and investment priorities, enabling decisions to be made in a broader context.



# Questions?

PROVIDING WEAPONS AND ORDNANCE SAFETY ... TODAY AND TOMORROW