



## DoD MANUAL 4140.72

# MANAGEMENT OF MATERIAL POTENTIALLY PRESENTING AN EXPLOSIVE HAZARD

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**Originating Component:** Office of the Under Secretary of Defense for Acquisition and Sustainment

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**Purpose:** In accordance with the authority in DoD Directive (DoDD) 5135.02 and DoD Instruction (DoDI) 4140.62, this issuance implements policy, assigns responsibilities, and provides procedures for the management and disposition of material potentially presenting an explosive hazard (MPPEH).

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## SECTION 1: GENERAL ISSUANCE INFORMATION

### 1.1. APPLICABILITY.

This issuance:

a. Applies to:

(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 Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD (referred to collectively in this issuance as the “DoD Components”).

(2) Munitions-related materials that are MPPEH, material documented as an explosive hazard (MDEH), and material documented as safe (MDAS), that are under DoD or DoD contractor control to the extent provided in the contract.

b. Does not apply to:

(1) DoD military munitions (referred to in this issuance as “munitions”) and munitions-related materials, including wholly inert components that:

(a) Are within a DoD Component’s established munitions management system.

(b) Have been used or recovered, and returned to the DoD Component’s established munitions management system for reuse.

(2) Non-munitions-related material (e.g., horseshoes, rebar, other solid objects) and munitions debris (MD) that are solid metal fragments that do not realistically present an explosive hazard.

(3) Other items (e.g., gasoline cans, compressed gas cylinders) that are not munitions or munitions-related material but may present an explosive hazard.

(4) Subsurface material.

(5) Equipment, tools, and personal protective equipment (PPE) (e.g., explosive handlers’ coveralls) or similar materials associated with an explosives operation that are otherwise governed by a facility or workplace standard operating procedure (SOP) or other procedures when such equipment, tools, and PPE are not released from DoD control and they:

(a) Do not pose an explosive hazard; or

(b) Are used or transferred for the same or similar explosives operations.

(6) Materials being managed pursuant to Section 6901 of Title 42, United States Code (U.S.C.), also known and referred to in this issuance as the “Resource Conservation and

Recovery Act of 1976” (RCRA), as an explosive hazardous waste (i.e., meets the characteristic of reactive). Material determined to be waste whose explosives safety status has been documented as MDEH is considered reactive hazardous waste.

## **1.2. POLICY.**

In accordance with DoDI 4140.62, the DoD:

a. Ensures the management and disposition of MPPEH, MDEH, and MDAS processed for transfer within, or released from, DoD control:

(1) Complies with operational range sustainability, supply chain material management procedures, environmental requirements, and DoD explosives safety criteria.

(2) Maintains and supports operational readiness and meets the Military Services’ mission requirements.

(3) Supports reuse, recycling, reclamation, and disposal.

(4) Prevents comingling or misidentification.

b. Requires compliance with these MPPEH management procedures by all non-DoD entities that possess, manage, process, or provide disposition of MPPEH, MDEH, or MDAS for the DoD by contract or other legal agreement.

## **1.3. INFORMATION COLLECTIONS.**

a. The incident reports referred to in Paragraph 10.2.b., and described in DoDI 6055.07, does not require licensing with a report control symbol in accordance with Volume 1 of DoD Manual (DoDM) 8910.01.

b. The miscellaneous equipment, referred to in Paragraph 7.9., does not require licensing with a report control symbol in accordance with Paragraph 2 of Volume 1 of DoDM 8910.01.

c. DLA Form 1822, “End-Use Certificate,” referred to in Paragraph 5.2.b and throughout this issuance, has been assigned Office of Management and Budget control number 0704-0382 in accordance with the procedures in Volume 2 of DoDM 8910.01. The expiration date of this information collection can be found on the Office of Information and Regulatory Affairs website at <https://www.reginfo.gov/public/do/PRASearch>.

d. DD Form 1348-1A, “Issue Release/Receipt Document,” referred to in Paragraph 4.1.a.(1) and throughout this issuance, has been assigned Office of Management and Budget control number 0704-0246 in accordance with the procedures in Volume 2 of DoDM 8910.01. The expiration date of this information collection can be found on the Office of Information and Regulatory Affairs website at <https://www.reginfo.gov/public/do/PRASearch>.

## SECTION 2: RESPONSIBILITIES

### 2.1. UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT (USD(A&S)).

The USD(A&S) oversees the responsibilities specified in this issuance, including directing the Director, Defense Logistics Agency (DLA), to establish and approve demilitarization and disposition requirements for MPPEH, MDEH, and MDAS.

### 2.2. ASSISTANT SECRETARY OF DEFENSE FOR SUSTAINMENT (ASD(S)).

Under the authority, direction, and control of the USD(A&S), the ASD(S):

- a. Oversees environmental management and explosives safety related to the implementation of this issuance.
- b. Oversees implementation of:
  - (1) MPPEH management procedures, including procedures as written within this issuance for managing material where the explosives safety status has been determined (i.e., MDEH and MDAS).
  - (2) Qualification standards for DoD personnel and DoD contractors, including qualified receivers that:
    - (a) Manage disposition of MPPEH, MDEH, and MDAS.
    - (b) Determine if MDEH is safe for transport over public traffic routes.
- c. Creates qualification standards for non-DoD entities or individuals involved in the management and disposition of MPPEH, MDEH, and MDAS.
- d. Coordinates with the Director, DLA, on demilitarization and disposal policy as it relates to this issuance.
- e. Monitors the implementation of this issuance and issues additional guidance and direction, as necessary.
- f. Monitors the effectiveness and efficiency of logistics systems related to the implementation of this issuance.



### **2.3. DIRECTOR, DLA.**

Under the authority, direction, and control of the USD(A&S), and in addition to the responsibilities in Paragraph 2.4., the Director, DLA, establishes demilitarization and disposition requirements for MPPEH, MDEH, and MDAS in accordance with DoDI 4140.62.

### **2.4. DOD COMPONENT HEADS.**

The DoD Component heads:

a. Require commanders:

- (1) Provide procedures, programs, and funds in accordance with this issuance.
- (2) Or authorized officials to:

(a) Certify that DoD Component personnel and DoD contractor personnel who are responsible for the management and disposition of MPPEH, MDEH, and MDAS meet the qualifications and requirements prescribed in Section 8.

(b) Control and manage MPPEH, MDEH, and MDAS to prevent its unauthorized use, transfer, or release. Ensure MPPEH and MDEH holding areas are considered in local facility threat assessments.

b. Establish criteria for:

(1) Determining when MDAS that contains small arms ammunition (SAA) can no longer be considered MDAS and must be reprocessed as MPPEH.

(2) Applying expert knowledge as an alternative approved means to determine that the transfer or release of material does not present an unknown explosive hazard to the receiver.

(3) Identifying MDAS that, in its current form or condition, may not be suitable for release to the general public and should only be released for further processing (e.g., by the recycling industry) or managed in compliance with applicable environmental laws and regulations. Such material may be contaminated with explosive residues (e.g., explosive handler coveralls, packaging material for bulk energetics, MD) that does not pose an explosive hazard but is not acceptable for release to the general public.

c. Coordinate with the Director, DLA, to establish approved demilitarization requirements in accordance with DoDI 4160.28.

### **2.5. SECRETARY OF THE ARMY.**

In addition to the responsibilities in Paragraph 2.4., and the Secretary's capacity as the single manager for conventional ammunition, the Secretary of the Army:

a. Demilitarizes and disposes of munitions within DoD Component-established munitions management systems in accordance with DoDIs 4160.28 and 5160.68.

b. Provides procedures to demilitarize single manager for conventional ammunition-managed munitions while complying with:

(1) Applicable policies for demilitarization and disposal.

(2) Trade security controls (TSC) in accordance with DoDI 2030.08.

## SECTION 3: IDENTIFYING MPPEH

### 3.1. GENERAL.

a. In response to inadvertent releases of munitions and other MPPEH, the DoD has developed management and disposition requirements for MPPEH, MDEH, and MDAS. The DoD defined explosives safety criteria in Defense Explosives Safety Regulation (DESR) 6055.09, and management and disposition requirements in DoDI 4140.62. As such, MPPEH will only be transferred within, or released from, DoD control in compliance with these issuances.

b. Materials that may be considered MPPEH include materials:

(1) Owned or controlled by the DoD that, before determination of its explosives safety status, potentially contains:

(a) Explosives or munitions; or

(b) A high enough concentration of explosives residues such that the material poses an explosive hazard (see DoDI 4140.62).

(2) That have been used, and are not intended to be reused, for their intended purpose. Examples include material that will be:

(a) Transferred within DoD to a qualified recycling program (QRP) or DLA Disposition Services or qualified receiver;

(b) Released to a non-DoD qualified receiver or an authorized facility;

(c) Disposed of as a solid waste;

(d) Used for a new purpose (e.g., display item); or

(e) Are not actively managed (e.g., left in place).

### 3.2. TYPES OF MPPEH.

It is not the intent of this issuance to provide an exhaustive list of material that may be considered MPPEH. Typical types of material that may be collected or processed as MPPEH for transfer within, or release from, DoD control may include:

a. Used and unused munitions and MD; range-related debris, including three-dimensional (3-D) targets; and non-munitions-related materials no longer within a munitions management system, collected and removed during routine operational range clearance activities or munitions responses.

b. Used munitions containers and packaging material typically collected and returned to the munitions storage area (e.g., ammunition supply point, weapons department).

c. Munitions-related material generated as a by-product of munitions manufacturing, maintenance, or demilitarization.

d. Equipment, drainage systems, holding tanks, piping, ventilation ducts, and building materials (e.g., wood, concrete) associated with munitions production, demilitarization, or treatment operations.

e. Soil or other environmental media containing concentrations of explosives such that the mixture potentially presents an explosive hazard that is not managed under Paragraph 1.1.b.(6).

### 3.3. CATEGORIES OF MPPEH.

Material may be grouped into five broad MPPEH categories based on the source of the material: munitions and MD, range-related debris, munitions containers and packaging material, munitions-related facilities and associated equipment, and other debris. See Section 9 for category-specific management procedures.

#### a. Munitions and MD.

This category includes munitions no longer in the DoD munitions management system (e.g., unexploded ordnance (UXO), discarded military munitions (DMM) and MD). MD includes remnants of munitions (e.g., fragments, shell casings) remaining after munitions use, treatment, or demilitarization. Munitions and MD can present different levels of explosive hazard that warrant consideration when selecting the most appropriate management and disposition process. MD is typically generated at ranges during live-fire training or testing, range clearance activities, or activities related to the reconfiguration or modernization of an operational range facility. Munitions and MD may also be encountered at other locations, such as munitions storage areas, processing yards, and munitions response sites, or be generated as a by-product of demilitarization operations or industrial activities. Subcategories of munitions and associated MD are:

##### (1) Munitions.

This subcategory includes munitions that are unused or have failed to function as designed (i.e., DMM, UXO) such as:

(a) Medium- to large-caliber projectiles, rockets and missiles, bombs, mines, satchel charges, and grenades.

(b) Flares, practice grenade fuzes, igniters, cartridge actuated devices, and propellant actuated devices.

##### (2) MD Other than Expended Cartridge Cases.

This subcategory includes debris originating from munitions with the exception of expended cartridge casings. Examples of MD are expended rocket and missile motors, flares, fuzes and ignitors, tail fins and links, and unrecognizable metal fragments.

### (3) Expended Cartridge Cases.

This subcategory includes:

(a) Expended small arms cartridge cases (ESACCs) that are typically composed of brass, steel, or aluminum and generated from the live-fire of SAA.

(b) Expended small- to large-caliber cartridge (e.g., artillery, tank gun) casings that consist of expended casings generated from live-fire of weapons other than small arms (also referred to as personal or individual weapons). Munitions generating these casings include:

1. Small caliber munitions that are not SAA up to and including 30 millimeter (mm).
2. Medium caliber munitions larger than 30 mm up to and including 105 mm.
3. Large caliber munitions larger than 105 mm.

### (4) Inert Munitions Components.

This subcategory includes munitions components that were manufactured without energetic materials (i.e., propellants, explosives, and pyrotechnics), but were assembled or commingled with explosive components or explosives, such as bomb fins, sabot sleeves, and kinetic energy penetrators. Many of these items do not have internal cavities that could contain energetic material and generally do not pose an explosive hazard.

## **b. Range-Related Debris.**

This category of MPPEH includes material, other than munitions and MD, collected from operational or former ranges and related to range operations. The most common types of range-related debris are target materials and munitions containers and packaging material.

### (1) Target Materials.

This subcategory of range-related debris includes:

(a) 3-D targets, target holders, lifters, and movers; vehicle hulks; sea vans; shipping containers; remotely controlled vehicles (ground, waterborne, and airborne); and weapons platforms used as targets on operational ranges. These target materials may contain munitions that have not functioned as designed (i.e., UXO) and potentially present an explosive hazard.

(b) Two-dimensional (2-D) target material (e.g., paper and plastic silhouettes, witness plates, flat sheet metal targets) is not considered MPPEH. However, when 2-D target material has been stored on an operational range after use, a visual check should be made to

confirm MPPEH has not become commingled with it. Such a check requires minimal qualifications that can, in most cases, be met by on-the-job training that includes recognition of munitions.

**(2) Munitions Containers and Packaging Material.**

This subcategory includes munitions cans, boxes, tubes, and packaging (e.g., paper, plastic) that allow safe movement and handling of unused munitions. See Paragraph 3.3.c. for additional guidance.

**c. Munitions Containers and Packaging Material Other than Range Related.**

This category includes munitions containers and packaging material that are not being reused for their intended purpose and are not within a DoD Component's established management system.

(1) Containers and packaging materials need to be managed as MPPEH because of the possibility that munitions, including bulk explosives or explosive residues, may remain inside containers or be mixed with packaging material.

(2) Operations that generate this type of MPPEH include munitions development, production, testing, and demilitarization; weapons buildup; and aircraft maintenance.

(3) Additional factors may be considered when determining whether containers and packaging materials in an inventory system should be managed as MPPEH. These factors include:

(a) The possibility that munitions, including bulk explosives or explosive residues, may remain inside containers or be mixed with packaging material.

(b) Its configuration and condition and whether it:

1. Was returned from a theater of operations, stored in an unsecured area, or never processed as MPPEH for reuse or sale;

2. Originated in a munitions operating facility, particularly a munitions demilitarization facility; or

3. Was recovered from tactical vehicles returned from a theater of operations. Tactical and other vehicles returning from theater involved in combat or combat-related operations may inadvertently contain munitions (e.g., under seats, in voids). These vehicles should be inspected as MPPEH.

**d. Munitions-Related Facilities and Associated Equipment.**

This category of MPPEH includes facilities or equipment associated with munitions manufacturing, maintenance, renovation, and demilitarization. Munitions operating buildings and equipment may contain explosives in high enough concentrations to present an explosive

hazard. Of particular concern are building or laboratory features (e.g., floors, roofs, walls, drains and drainage systems, internal and external piping, ventilation systems) where explosives residue may have accumulated, and industrial equipment with internal cavities that were used in munitions-related operations that generated explosives residues (e.g., dust, vapors, liquids).

**e. Other Debris.**

This category of MPPEH from non-munitions or range-related debris (e.g., refrigerators, junk cars) includes debris or environmental media that is not related to military operations, but has become commingled with munitions and explosives or contaminated with high enough concentrations of explosives that the mixture potentially presents an explosive hazard.

**(1) Debris.**

Debris may be deposited on the range and then removed during range clearance or munitions response. Although these materials are not inherently associated with munitions, once they accumulate on a range they may become commingled with munitions and explosives and must be managed as MPPEH. Such debris includes rebar, household items (e.g., refrigerators, washing machines), automobile parts and automobiles not associated with range targets, troop-generated solid waste, fence posts, and fence wire.

**(2) Environmental Media.**

Soil or other environmental media may become contaminated with a high concentration of explosives as a result of munitions manufacturing, use, or demilitarization operations. It is possible for soil near certain operating facilities (e.g., trinitrotoluene washout plants, melt-pour lines), or under drainage systems, to contain a high enough concentrations of explosives to pose an explosive hazard. This soil should be analyzed to determine whether it poses an explosive hazard when it is part of the ground surface or when the material covering it is removed (e.g., floors of certain production buildings, drainage systems).

**3.4. DISPLAY ITEMS.**

**a. Munitions Used for Training or Display.**

(1) Munitions used for training or display will be assessed and documented as safe (i.e., MDAS) and permanently marked as inert when used for training or display purposes. These training or display items, which may be made from live, expended, or functioned munitions, will be managed as follows:

**(a) Live Munitions.**

U.S. Marine Corps explosive ordnance disposal (EOD) personnel or other authorized EOD personnel, in accordance with Joint Publication 3-42, will inert such munitions using EOD procedures, document the explosive status as safe, and permanently mark each munition as inert.

**(b) Expended or Functioned Munitions.**

Qualified and authorized personnel, who meet the criteria contained in Section 8, may assess and document the explosive safety status as MDAS, and permanently mark as inert.

(2) Must be included in an inventory management system that maintains MDAS documentation.

(3) May be transferred within or between DoD Components as long as the inert certification or MDAS documentation accompanies the item and the receiver complies with the other requirements of Paragraph 3.4. and other applicable requirements of this issuance.

(4) Must meet applicable demilitarization and TSC requirements, and be altered (e.g., cut in quarters) so that they no longer resemble a munition when removed from use and the inventory management system.

(5) MDAS documentation or chain-of-custody will be maintained for 3 years following the release of the training or display item from DoD control in accordance with Paragraph 4.5.b.(2).

#### **b. Replicas Used for Training or Display.**

Replicas that are manufactured wholly inert must be included in an established tracking system that monitors and actively manages the inventory of such items used for training or display purposes. When replica munitions used for training or display purposes are removed from use, they must meet applicable demilitarization and TSC requirements, and be altered so that they no longer resemble a munition.

### **3.5. MILITARY MEMENTOS MADE FROM MUNITIONS AND OTHER MUNITIONS-RELATED MATERIAL.**

As authorized by the DoD Components, military mementos may be made from inert munitions or other munitions-related material that has been documented as MDAS.

#### **a. Mementos must:**

(1) Be permanently marked as inert.

(2) Include a unique serial number, identification of the generating command, and contact information so the memento can be returned if no longer wanted or needed.

b. The generating command must maintain a list of each memento generated, including the item type, unique serial number, associated MDAS documentation, and recipient name and contact information, in accordance with DoDIs 4161.02 and 5000.64.



**3.6. MPPEH, INCLUDING MUNITIONS AND EXPLOSIVES OF CONCERN, ENCOUNTERED DURING RANGE CLEARANCE ACTIVITIES AND MUNITIONS RESPONSES.**

Munitions, MD, range-related debris, and other debris encountered during range clearance or munitions response activities are managed as MPPEH until evaluated by authorized and qualified personnel (i.e., EOD or UXO-qualified personnel). MPPEH determined to pose an explosive hazard (i.e., determined to be munitions and explosives of concern), which will be detonated in place or at a consolidated location, does not require documentation as MDEH. Once explosive hazards are addressed, the remaining material is managed and processed in accordance with this issuance and DoDI 4140.62.

## SECTION 4: EXPLOSIVES SAFETY REQUIREMENTS

### 4.1. GENERAL.

The potential for MPPEH to present an explosive hazard is the primary characteristic that distinguishes it from other DoD material that may be reused, recycled, or otherwise dispositioned. Although other requirements (e.g., TSC, demilitarization, and environmental) may apply to MPPEH and affect its management, the potential explosive hazards associated with MPPEH make it unique. MPPEH must be managed in accordance with applicable explosives safety criteria from DESR 6055.09, and its explosives safety status documented before its transfer within, or release from, DoD control.

a. Transfers within, or release from, DoD control are considered to occur when a receiver:

(1) Acknowledges receipt of the material by signed documentation (i.e., DD Form 1348-1A, "Issue Release/Receipt Document," available at <https://www.esd.whs.mil/Directives/forms/>, or an equivalent form).

(2) Takes physical custody of the MDEH or MDAS from the DoD in accordance with DoDI 4140.62.

b. Once the explosives safety status is documented, the material must be segregated and secured to prevent commingling. See Paragraph 4.5. for information on commingling.

c. The chain of custody for MDEH and MDAS must be maintained until the material is released from DoD control. See Paragraph 4.5.b. for information on chain of custody.

### 4.2. EXPLOSIVES SAFETY STATUS OF MPPEH.

When determining the explosives safety status of MPPEH, consider the type of MPPEH, its condition, and final disposition. There are two explosives safety status categories:

#### a. MDEH.

(1) Once MPPEH is assessed and documented as MDEH, it is no longer considered to be MPPEH. The MDEH characterization addresses the explosives safety status of the material and the explosive hazard it is known or suspected to contain. Documentation of a material's explosives safety status as MDEH only remains valid if the material is properly segregated and secured and the chain of custody is maintained until the material's final disposition (i.e., transfer within or release from DoD control).

(2) MDEH poses a known or suspected explosive hazard; therefore, it must only be transferred or released to a qualified receiver (as defined on DoDI 4140.62). Before transferring MDEH to qualified receivers, identify, document, and provide the:

(a) Type of explosive hazard that exists.

- (b) Actual or estimated net explosive weight (NEW).
- (c) Configuration of any explosives.
- (d) Existence of internal cavities.

(3) MDEH management must comply with applicable explosives safety criteria of DESR 6055.09. Compliance with these criteria provides the maximum possible protection to people and property from the potential damaging effects of munitions. Such compliance includes specific personnel qualifications and criteria for storage and transport. Other requirements, such as TSC and demilitarization and environmental compliance, may apply to MDEH.

#### **b. MDAS.**

(1) Once MPPEH is assessed and documented as MDAS, it is no longer considered to be MPPEH.

(2) MDAS does not present an explosive hazard and:

(a) Does not need to be managed as explosive material (i.e., sited in accordance with DESR 6055.09, transported as explosives, or handled by explosives qualified personnel).

(b) Is safe for transfer within, or release from, DoD control. Documentation of a material's explosives safety status as MDAS only remains valid if the material is properly segregated and secured and the chain of custody is maintained until the material's final disposition (i.e., transfer within or release from DoD control).

(3) MDAS may contain residual explosives. Residue must not be in concentrations or configurations sufficient to pose an explosive hazard. See Paragraph 8.1. for qualifications of personnel making these determinations.

(4) MDAS does not, from an explosives safety perspective, have any additional management requirements. However, other requirements (e.g., TSC, demilitarization, and environmental) may apply to MDAS.

### **4.3. METHODS FOR DETERMINING THE EXPLOSIVES SAFETY STATUS OF MPPEH.**

The explosives safety status of MPPEH must be determined by one of the methods discussed in Paragraphs 4.3.a. through 4.3.c. A key consideration in selecting the method to determine explosives safety status is the type of material involved.

#### **a. Visual Inspection.**

(1) To determine and document the explosives safety status of MPPEH as safe (i.e., MDAS) by a visual inspection, qualified personnel must conduct a 100 percent initial visual inspection of the MPPEH, followed by an independent 100 percent visual re-inspection of the

material by qualified personnel. Each visual inspection will include inspection of every surface, including cracks, crevices, and internal cavities that could potentially contain explosives or other energetic materials. Both individuals must agree that the material does not pose an explosives hazard before it can be MDAS. See Section 8.2.b.(3) for qualifications of personnel managing MPPEH.

(a) Different types of MPPEH normally require different procedures for visual inspection. Visual inspections are used to determine whether explosive hazards (i.e., unused munitions, UXO, or explosives) are present in the material. Borescopes may be used to perform or aid visual inspections if every surface that potentially contains explosives or other energetic materials can be observed using the equipment. If only a partial visual inspection can be completed, with or without the assistance of a borescope, the material cannot be assessed and documented as safe by visual inspection.

(b) Sensors, color reagents, or other aids that detect minute amounts of explosives residue may be used to augment visual inspections. The presence of explosives residue does not necessarily indicate an explosive hazard. If explosives residue is detected using these aids, qualified personnel must determine if the explosives residue present poses an explosive hazard.

(2) To determine and document MPPEH as MDAS by visual inspection, internal cavities must be vented to make every surface accessible for visual inspection to confirm it does not pose an explosive hazard.

(a) Venting is necessary to open sections of the munitions that could contain energetic material. Munitions suspected of having inert filler may contain spotting or signal charges that have failed to function as intended and continue to present an explosive hazard.

(b) Department of Defense Explosives Safety Board (DDESB)- or DoD Component-approved procedures must be used when venting, cutting, or otherwise exposing internal cavities of MPPEH.

(c) MPPEH that normally requires venting before being determined and documented as safe includes:

1. Munitions and munitions-related facilities involving building or structural features (e.g., drains and piping).

2. 3-D target materials and equipment used in munitions production or demilitarization operations (e.g., cast loading, milling, or steam-out) where explosives residue (e.g., dust, vapors, liquids, sludge) may have been deposited.

(3) When the internal cavities of MPPEH are not vented during visual inspection before being transferred within or released from DoD control, the material must be documented as an explosive hazard, and the receiver must be made aware of the presence of unvented cavities. See Paragraph 4.3.c. for the application of expert knowledge.

(4) When a visual inspection is used to document MPPEH as MDEH, and the 100 percent visual inspection allows the material to be documented as the maximum explosive

hazard known or suspected to be present, an independent 100 percent visual re-inspection is not required.

**b. DDESB-Approved Processing.**

(1) As an alternative to the visual inspection process outlined in Paragraph 4.3.a., qualified personnel responsible for managing or processing MPPEH or MDEH may document its explosives safety status by using DDESB-approved methods with appropriate post-processing inspection. Such methods may include physical, thermal, or chemical processing of MPPEH or MDEH.

(2) Requests for DDESB approval of methods to determine the explosives safety status of MPPEH or MDEH must be submitted through the appropriate DoD Component's explosives safety office or center. Contractors must seek sponsorship for a proposal from one of the DoD Components.

(a) These submissions must provide details of any testing accomplished and the proposed procedures, processes, or technologies, including post-processing inspections in enough detail to enable the DoD Component explosives safety office or center and the DDESB to determine its adequacy.

(b) After its review, the DoD Component's explosives safety office or center will submit the proposal and a recommendation to the DDESB for its consideration. The application must address:

1. Types and condition of MPPEH or MDEH to be processed.
2. Total NEW capable of being safely processed at any time.
3. Process flow diagrams.
4. Operating procedures, including safety measures.
5. Design drawings, including material compositions of the equipment.
6. Personnel qualifications or training required.
7. Anticipated condition of the material when the processing is complete.
8. Quality control (QC) and quality assurance (QA) measures.
9. Preventive maintenance procedures and post-process inspection procedures, including recordkeeping procedures required.

(3) When DDESB-approved processing is used to determine the explosives safety status of MPPEH or MDEH, appropriate post-processing inspection (e.g., sampling) of the processed material must be performed.

(4) Several types of technologies are effective methods for neutralizing energetic materials (e.g., RDX, HMX) or confirming that MPPEH does not present an explosive hazard.

(a) The technologies include:

1. Physical mutilation and thermal neutralization (e.g., flashing furnaces, hot gas decontamination systems).

2. Chemical neutralization (e.g., base hydrolysis) and automated explosives sensors and sorting equipment (i.e., optical, by mass, by x-ray, or by electromagnetic field).

(b) The DDESB may approve the use of these technologies for operations at a single site or to document MPPEH or MDEH as MDAS. The DDESB may also authorize the use of these technologies on a case-by-case basis to identify the amount, type, and configuration of energetic materials present when documenting the material as MDEH. Some of these same technologies may be used to vent materials for visual inspection. This venting may also meet demilitarization requirements. During a munitions response, use will be governed by a DDESB-approved required explosives safety submission.

### **c. Application of Expert Knowledge.**

(1) Expert knowledge may be applied to determine the explosives safety status of MPPEH provided all of the following criteria are met:

(a) The DoD Component's explosive safety management office establishes a process to review and approve technical justifications for the application of expert knowledge to the MPPEH to which it will be applied.

(b) Based on their knowledge of the specific type of MPPEH, the DoD requester proposes the expert knowledge criteria required to determine and verify the explosives safety status of the MPPEH in question, and develops a technical justification for the material's explosives safety status.

(c) Approval of the application of expert knowledge for the specific type of MPPEH identified must be documented. This documentation must include the explosive hazard posed and inspection criteria to be applied to verify the explosives safety status of the MPPEH to which expert knowledge was applied.

(2) The application of a DoD Component's approved expert knowledge may be used to determine that MPPEH does not pose an explosive hazard.

(a) Expert knowledge can be used to document MPPEH (e.g., thermal batteries (C/D 1.4S) for missiles) as MDAS without venting.

(b) For MDAS, the explosives safety status documentation requires two signatures by two independent experts in accordance with Paragraph 4.4.c.(3).

#### 4.4. DOCUMENTATION OF THE EXPLOSIVES SAFETY STATUS.

a. Documentation of the explosives safety status attests that the material:

(1) Does not present an explosive hazard and is safe for transfer within, or release from, DoD control; or

(2) Has known or suspected explosive hazards and will only be transferred or released to a qualified receiver.

b. Once the explosives safety status is determined, it must be documented by completing a disposition turn-in document (DTID) using a DD Form 1348-1A or an equivalent form for MDEH or MDAS. This documentation must include a Service-unique identifier, such as container seal number, to link the document to the material that has been determined to be MDEH or MDAS. Documentation of a visual inspection indicates the information and the statement for the explosives safety status determination that must be contained on the DD Form 1348-1A or an equivalent form for MDEH or MDAS. See Figure 1 for a sample MDAS form for DLA turn-in.

c. For MDAS, the explosives-safety-status documentation requires two independent signatures, either or both of which may be electronic. The signatories must be designated in writing by the responsible authority (e.g., installation commander) as technically qualified and authorized to determine the material's explosives safety status. See Section 8 for applicable personnel qualifications.

##### (1) Documentation of Visual Inspection.

The first signatory must be technically qualified and either a DoD employee or a DoD contractor. This signatory must have performed or witnessed the initial 100 percent inspection. See Paragraph 4.3.a. for visual inspection requirements. The second signatory must be a technically qualified U.S. citizen who is either a DoD employee or a DoD contractor. This signatory must have performed or witnessed the independent 100 percent re-inspection. Each signatory must ensure the chain of custody was maintained before signing the explosives-safety-status documentation.

##### (2) Documentation of DDESB-Approved Processing.

The first signatory must be technically qualified and either a DoD employee or a DoD contractor. This signatory must have performed or witnessed the DDESB-approved processing of the material. See Paragraph 4.3.b. for DDESB-approved processing requirements. The second signatory must be a technically qualified U.S. citizen who is either a DoD employee or a DoD contractor. This signatory must have conducted an independent inspection of an appropriate sampling of the processed material as specified by the DDESB approval. Each signatory must ensure the chain of custody was maintained before signing the explosives-safety-status documentation. The DDESB letter approving the method must be referenced on the documentation.

**Figure 1. Sample MDAS Form for DLA Turn-in**

TITLE	MDAS CERTIFICATE	
Requirements	<p>The explosives safety status of MPPEH must be determined by:</p> <p>(a) 100-percent visual inspection and an independent 100-percent re-inspection by qualified personnel;</p> <p>(b) Processing by a DDESB-approved method with appropriate post-processing inspection (e.g., sampling) of the material; or</p> <p>(c) Application of DoD Component-approved expert knowledge. A certification or verification statement as shown must be signed and dated by a DoD contracted person or a government employee.</p> <p>This documentation is only valid if the material listed is properly segregated and secured, and the chain of custody is maintained until the material’s release from DoD control.</p>	
	Disposal Turn-In Document:	Quantity:
National Stock Number or Description:		
Certification Statement		
<p>The material listed on this form has been inspected, processed by DDESB-approved means, or undergone the application of expert knowledge, in compliance with DoD policy, and to the best of my knowledge and belief does not pose an explosive hazard.</p> <p>Signature: _____</p> <p>Date: _____</p> <p>Printed Name/Position: _____</p> <p>Organization/Address: _____</p> <p>Phone (Commercial/Defense Switched Network (DSN)/Fax)/E-mail Address: _____</p>		
<p>Signature: _____</p> <p>Date: _____</p> <p>Printed Name/Position: _____</p> <p>Organization/Address: _____</p> <p>Phone (Commercial/DSN/Fax)/E-mail Address: _____</p>		

**(3) Documentation of Expert Knowledge.**

An alternative to visual inspection is the application of expert knowledge under a DoD Component-approved methodology. The first signatory must be technically qualified and either a DoD employee or a DoD contractor. This signatory must have performed or witnessed the application of the DoD Component-approved expert knowledge criteria to the material. See Paragraph 4.3.c. for expert knowledge requirements. The second signatory must be a technically qualified U.S. citizen who is either a DoD employee or a DoD contractor. This signatory must have conducted an independent application of the expert knowledge criteria to the material as specified by the DoD Component approval. Each signatory must ensure the chain of custody



was maintained before signing the explosives-safety-status documentation. In addition, the DoD Component approval of expert knowledge application must be referenced on the documentation.

#### (4) MDAS Certification Statement.

The following statement is required on MDAS documentation and it must identify which methodology is used: “The material listed on this form has been inspected, processed by DDESB-approved means, or undergone the application of expert knowledge, in compliance with DoD policy, and to the best of my knowledge and belief, does not pose an explosive hazard.”

d. For MDEH, the explosives-safety-status documentation requires a single signature, which may be electronic. The signatory must be designated in writing by the responsible authority as technically qualified to determine the material’s explosives safety status.

(1) Only one signature is required if the initial visual inspection allows the material to be documented as the maximum explosive hazard it is known or suspected to present without further inspection. This signatory must be a U.S. citizen who may be either a DoD employee or a DoD contractor.

(2) The following certification statement is required on MDEH documentation: “The material listed on this form has been inspected as required by DoD policy, and to the best of my knowledge and belief, presents an explosive hazard.”

### 4.5. SEGREGATION, SECURITY, AND CHAIN OF CUSTODY.

#### a. General Requirements.

The documentation of the explosives safety status is only valid if MDEH and MDAS are properly segregated and secured, and the chain of custody is maintained before transfer within, or release from, DoD control. Transfer within or release from DoD control means the receiver has acknowledged receipt of MDEH or MDAS by signed documentation (i.e., DD Form 1348-1A or an equivalent form) and taken physical custody of the MDEH or MDAS from the DoD in accordance with DoDI 4140.62. Segregation, security, and chain-of-custody measures must manage:

(1) MDEH to prevent it from being:

(a) Commingled with either MPPEH or MDAS.

(b) Misidentified as either MPPEH or MDAS.

(c) Commingled with incompatible MDEH (i.e., MDEH that poses a greater or lesser explosive hazard than that documented).

(2) MDAS to prevent it from being:

(a) Commingled with either MPPEH and MDEH.

(b) Misidentified as either MPPEH or MDEH.

**b. Chain of Custody.**

(1) A chain of custody and accountability must be maintained for MDEH and MDAS from the time its explosives safety status is documented until it is transferred within, or released from, DoD control.

(2) A legible copy of the explosives-safety-status documentation that includes a unique identifier linking it to the specific MDEH or MDAS certified must accompany documented material. The DoD Components generating or managing MDEH or MDAS must keep copies of explosives-safety-status documentation for 3 years after transfer within, or release from, DoD control.

(3) Local activities and DoD Components may develop written procedures that allow for multiple lots of MDAS to be consolidated into a single container, as long as the material is tracked in accordance with written procedures as described within this issuance and the chain of custody is maintained.

(4) If the chain of custody is broken while the material is still under DoD control, the explosives-safety-status documentation is no longer valid, and the affected material is subsequently considered MPPEH. To re-establish the explosives safety status as MDAS, the affected material must be re-inspected (i.e., a 100 percent visual inspection and an independent 100 percent re-inspection), re-processed using a DDESB-approved method with appropriate post-processing inspection, or DoD Component-approved expert knowledge must be re-applied.

**c. Segregation and Security.**

Commingling can be prevented by using a suitable combination of segregation and security methods. These methods include:

(1) Controlled access areas.

(2) Separate storage locations.

(3) Moveable signs and ribbon barriers, provided positive controls for their movement are implemented and maintained.

(4) Lockable gates and facilities.

(5) Sealable tamper-proof containers.

(6) Container seals that are traceable (e.g., coded) to the explosives-safety-status documentation.

(7) Other locally approved methods that maintain the integrity of the materials' documented explosives safety status and are included in written procedures as described in this issuance.

**d. Closed-circuit Process.**

This process should be managed by a single entity that maintains a chain of custody from collection of the material as MPPEH through its final disposition (e.g., melting).

**4.6. TRANSPORTATION REQUIREMENTS.**

**a. MPPEH.**

MPPEH will not be transported or shipped over public transportation routes.

**b. MDEH.**

MDEH will not be transported or shipped over public transportation routes unless personnel who are qualified and authorized by the responsible authority determine that it is safe for transport. Shipment of MDEH over public transportation routes must comply with DESR 6055.09; Part II, Chapter 204 of Defense Transportation Regulation 4500.9-R; and other applicable DoD, Department of Transportation, and U.S. Environmental Protection Agency (EPA) hazardous material or waste transportation regulations. Shipments outside the United States must comply with applicable agreements, statutes, policies, and host-nation requirements.

(1) Technically qualified personnel must verify that the receiver or transporter has all applicable licenses and permits before allowing MDEH to be transported from a DoD facility.

(2) From an explosives safety perspective, MDEH may be transported or shipped over public transportation routes only when the criteria in Paragraphs 4.6.b.(1)(a) through (c) are met

(a) Technically qualified personnel (e.g., EOD, QA specialist (ammunition surveillance)) must determine it is safe for transport. Before MDEH that contains UXO may be transported or shipped over public transportation routes, EOD personnel must determine it is safe for transport in accordance with Joint Technical Bulletin (TB) 700-2/NAVSEAINST 8020.8C/Air Force TO 11A-1-47 and Title 49, Code of Federal Regulations (CFR).

(b) The MDEH must be assigned an approved interim hazard classification based on types, quantities, configurations, and condition of munitions present.

(c) The MDEH explosives-safety-status documentation must accompany shipments transferred within the DoD, and be provided to the transferee on the material's release from DoD control.

**c. MDAS.**

MDAS does not pose an explosive hazard. As such, there are no explosives safety restrictions on its transport; however, other requirements may apply.

## SECTION 5: TSC AND DEMILITARIZATION REQUIREMENTS

### 5.1. GENERAL.

a. TSCs are designed to prevent the unauthorized transfer of defense and dual-use technology, goods, services, and munitions, by or to individuals, entities, or countries whose interests are adverse to the United States, and those who are unauthorized to receive such items in accordance with U.S. export control laws and regulations.

b. Some MPPEH, MDEH, or MDAS may inherently have offensive or defensive characteristics for which TSC requires demilitarization to remove these characteristics. Additional requirements (e.g., local security and trade control provisions, applicable agreements, host-nation requirements) may also apply outside the United States. Demilitarization requirements are separate from explosives safety and environmental requirements.

### 5.2. DETERMINING DEMILITARIZATION CODES AND REQUIREMENTS FOR MPPEH.

a. Only MPPEH identified as U.S. munitions list items (MLIs) or commerce control list items (CCLIs) require TSC, demilitarization, or both. The release of MLIs or CCLIs outside DoD control is subject to TSC in accordance with DoDI 2030.08. A demilitarization code must be assigned to every item of DoD property, including unused items and used or damaged items in accordance with Volume 1 of DoDM 4160.28.

b. The end-use certificate (EUC) indicates the disposition and end-use of military material or item. DLA Form 1822 “End-Use Certificate,” notifies the recipient that an export license or letter of authorization is required from the Department of State or Department of Commerce if the material or item is to be exported. Instructions for completing the form are available on the DLA website (see [https://www.dla.mil/Portals/104/Documents/DispositionServices/Sales/DISP\\_EUCInstructionsRevisionFeb282013Final\\_150820.pdf](https://www.dla.mil/Portals/104/Documents/DispositionServices/Sales/DISP_EUCInstructionsRevisionFeb282013Final_150820.pdf)). In signing this form, the recipient agrees to cooperate with, and permit, authorized government representatives to inspect and verify the existence and condition of the MLIs, CCLIs, or property acquired.

c. After identifying the appropriate demilitarization code, material may be subject to TSC or demilitarization requirements as listed in Paragraphs 5.2.a., 5.2.b., and 5.2.d. The applicable demilitarization requirements and methods depend on material or property type. These requirements are described in Paragraph 5.3. and Volume 2 of DoDM 4160.28.

d. Some MPPEH, MDEH, or MDAS (e.g., CCLIs) that do not require demilitarization may still be subject to TSC to prevent its sale, export, or transfer to ineligible nations or entities. Under these circumstances, the release of MLIs or CCLIs from DoD control may only be made after completion of DLA Form 1822 and a TSC assessment. Information on the EUC is on the DoD Demilitarization Program Website at <https://demil.osd.mil/> (Common Access Card access only).

### **5.3. METHODS AND DEGREES OF DEMILITARIZATION.**

a. Demilitarization requirements apply to serviceable, unserviceable, and used munitions.

(1) The condition of used or badly damaged end items (e.g., munitions) may not require additional processing to satisfy demilitarization requirements.

(2) Personnel responsible for the management and disposition of MPPEH, MDEH, and MDAS will:

(a) Evaluate the condition of used material against corresponding demilitarization requirements to determine whether additional demilitarization is necessary.

(b) Seek guidance from the technical manager of the material in question when making these determinations.

b. Demilitarization of ESACCs requires crushing, shredding, granulating, or deformation before their export overseas or transfer through a QRP. These requirements are typically met by using an ordnance (munitions) deformer, hammermill, shredder, or rotary blade granulator.

c. Demilitarization should be conducted as economically as possible, while complying with applicable laws, regulations, and DoD policy. Sometimes, demilitarization requirements may be satisfied during processing (e.g., venting, cutting) required to determine and document the explosives safety status of the material as safe and vice versa. Using one process to satisfy multiple requirements improves the efficiency of the management and disposition of MPPEH, MDEH, and MDAS.

### **5.4. DOCUMENTATION OF DEMILITARIZATION.**

a. When MPPEH, MDEH, or MDAS requires demilitarization, the DoD organization with property accountability for the material must certify completion of demilitarization in accordance with Volume 3 of DoDM 4160.28. A certification statement must be provided on or attached to the DD Form 1348-1A or equivalent form in accordance with Volume 3 of DoDM 4160.28. This certificate:

(1) Is different from an EUC. See Paragraph 5.2.b. for detailed information about the EUC.

(2) Is required before the material's release to the public.

(3) Must be signed by a technically qualified DoD employee or DoD contractor who performed or witnessed the material's demilitarization. A technically qualified DoD employee or DoD contractor who witnessed the material's demilitarization or inspected the residue from it must verify and countersign the certificate.

(4) Must indicate that the material was demilitarized in accordance with Volume 3 of DoDM 4160.28 and with the terms of the contract when conducted by a DoD contractor.

b. When possible, render the demilitarization certification on the same form (i.e., DD Form 1348-1A or an equivalent form) that was used to document the material's explosives safety status.

## **5.5. DEMILITARIZATION AS A CONDITION OF SALE.**

Under special circumstances, demilitarization as a condition of sale may be used to transfer MDAS, MLIs, and CCLIs; however, TSC must still be applied.

a. A TSC assessment must be completed to evaluate the eligibility and suitability of a recipient to acquire MLIs or CCLIs.

b. The DoD Component that releases an MLI or CCLI must complete the administrative procedures that verify the item's intended use and the eligibility of a recipient. These administrative procedures include completion of an EUC (i.e., DLA Form 1822).

c. The EUC must be made part of the contract file for the release or sale of the item. See Paragraph 5.2. for further description of TSC and EUCs.

d. An MLI and CCLI that is acquired and subsequently demilitarized, as a condition of sale, also requires documentation using a demilitarization certificate in accordance with Paragraph 5.4.

## **5.6. SPECIAL PROCESSING CONSIDERATIONS.**

Some munitions that are determined to be MDAS that do not require demilitarization may resemble munitions. When such material is released from DoD control, it can be mistaken for live munitions. A public encounter with MDAS that resembles munitions can trigger the same explosives or emergency response as a live round. These encounters often result in a waste of resources (e.g., involvement of local law enforcement and EOD personnel) and unnecessary public inconvenience (e.g., closing of transportation modes) until the materials are evaluated and determined safe. To avoid such occurrences, the DoD Components transferring MDAS must, when possible:

a. Alter the material's appearance so that it no longer resembles live munitions, or

b. Only transfer or release such munitions to receivers that will further process (e.g., melting, smelting, cutting into quarters) the material to eliminate any resemblance to munitions.

## SECTION 6: ENVIRONMENTAL MANAGEMENT

### 6.1. ENVIRONMENTAL CONSIDERATIONS.

a. Environmental considerations affect MPPEH, MDEH, or MDAS management when there is the potential for activities or operations to release, emit, or dispose of pollutants and contaminants, hazardous substances, or solid wastes into the environment.

b. Compliance with applicable requirements during MPPEH, MDEH, and MDAS management will help reduce potential impact to human health and the environment. Environmental management requirements:

(1) Include performing recycling, storing, treatment, or disposal in accordance with applicable Federal and State environmental laws and regulations, and preventing unauthorized releases or disposals.

(2) Are specified in applicable Federal and State environmental statutes and regulations, including RCRA, “Comprehensive Environmental Response, Compensation, and Liability Act” (CERCLA).

(3) Include State statutes and regulations, which vary and may be more stringent than Federal statutes and regulations, so consult with legal counsel to understand the applicable requirements of both Federal and State standards and requirements.

(4) Include country-specific final governing standards or, in their absence, DoDM 4715.05 or international agreements, for the management and disposition of MPPEH, MDEH, and MDAS outside of the United States.

### 6.2. RECYCLING.

a. The DoD preferred method of achieving and maintaining environmental compliance is pollution prevention. See DoDI 4715.23 for information about pollution prevention.

(1) Federal and State regulations (e.g., RCRA) provide some exemptions and exclusions from regulatory requirements when materials are recycled.

(2) The DoD Components should familiarize themselves with these exemptions and exclusions and, when appropriate, maximize their use.

b. Because a large percentage of MPPEH or MDEH is scrap metal, the exclusions applicable to scrap metal recycling in accordance with Part 261 of Title 40, CFR are particularly relevant to the management of MDAS. RCRA hazardous waste requirements may apply before actual recycling. The exclusions are:

(1) Processed Scrap Metal.

Processed scrap metal being recycled is excluded from the regulatory definition of solid waste in accordance with Section 261.4(a)(13) of Title 40, CFR and in States that have authorization and adopted this exclusion. State requirements may be more stringent, so State adoption of the exclusion must be verified. To qualify for this exclusion, material must:

(a) Meet the definition of “scrap metal.”

(b) Be processed for recycling as described in Section 261.1(c)(10) of Title 40, CFR. Processing includes sorting, segregating, shredding (i.e., demilitarizing or cutting), and baling to improve the value of the material.

(2) Scrap Metal.

Scrap metal is not subject to regulation as a hazardous waste in accordance with Section 261.6(a)(3)(ii) of Title 40, CFR.

(a) Section 261.6(a)(3)(ii) of Title 40, CFR is intended for scrap metal items that do not qualify for the processed scrap metal exclusion.

(b) None of the RCRA requirements of Parts 124, 262 through 266, 268, or 270 of Title 40, CFR apply at the point the scrap metal is recycled. See Section 261.6(a)(3)(ii) of Title 40, CFR for further information about the scrap metal exemption. State requirements may be more stringent, so State adoption of the exclusion must be verified.

(3) Spent Material.

Spent material, including ESACC, being recycled is excluded from the regulatory definition of solid waste in accordance with RCRA (Section 261.1(c)(1) of Title 40, CFR).

c. MDAS that meets the definitions and conditions of scrap metal recycling can be processed under significantly reduced administrative and operational burdens for storage, transportation, and sale. See Paragraph 6.6., regarding potential CERCLA liability.

### **6.3. PREVENTING MUNITION CONSTITUENTS RELEASE TO THE ENVIRONMENT.**

a. The DoD Components must limit the amount of time MPPEH, MDEH, and MDAS are accumulated or retained at a location and attempt to minimize the release of munitions constituents (MC) into the environment during its management and processing activities.

(1) When establishing an MPPEH processing area, installations must comply with Section 1251 of Title 33, U.S.C., also known as “The Clean Water Act of 1972,” and regulations and local permits regarding design criteria, and consider installing non-permeable surfaces (e.g., paving, concrete slab) with drainage to storm water management systems.



(2) When possible, MPPEH, MDEH, and MDAS should be covered or stored in closed containers to prevent exposure to precipitation, weathering, and dispersion of MC and to maintain the integrity of the material's explosives-safety-status documentation.

b. In addition to MC, MPPEH, MDEH, or MDAS may contain other hazardous contaminants or be a RCRA-regulated hazardous waste identified in Parts 260 and 261 of Title 40, CFR.

(1) Materials or contaminants may include asbestos from rocket and missile liners, petroleum products, lubricants, and mercury switches from target vehicles.

(2) Materials or contaminants must be removed, characterized, and prepared for transportation, storage, and disposal in accordance with applicable Federal and State environmental regulatory requirements and installation-specific procedures.

(3) The management of these materials must be coordinated with the installation activity responsible for environmental compliance.

c. Some MPPEH, MDEH, or MDAS may contain low-level radioactive waste or by-product material (e.g., radium dials from vehicles used as targets) in accordance with Section 2011 of Title 42, U.S.C., also known as "The Atomic Energy Act of 1954."

(1) Radiological materials must be removed, contained, and prepared for transportation using DoD Component- or installation-specific procedures.

(2) Suspected depleted uranium (DU) must be left in place pending receipt of guidance from the appropriate radiation safety officer. The radiation safety officer will develop and issue guidance for the management of DU including, the need for a Nuclear Regulatory Commission license, if required.

(3) DU penetrators or munitions containing such penetrators must not be thermally (e.g., flashed) or physically processed (e.g., cut, shredded).

(4) Once radiological material is removed and segregated and related material is decontaminated, if required, or contained for disposal, it will be cataloged and disposed of in accordance with the DoD Component requirements for disposal of radiological waste. The U.S. Army Joint Munitions Command Safety/Radioactive Waste Program is the point of contact (POC) if DoD Component requirements are not available or applicable (see <https://www.jmc.army.mil/Leadership.aspx?id=SafetyRadWaste>).

#### **6.4. RANGE CLEARANCE ACTIVITIES.**

Part 260 of Title 40, CFR established that range clearance activities, including the recovery, collection, and on-range destruction of UXO or munitions fragments, do not constitute solid waste management. Munitions intentionally buried within an operational range for the purpose of disposal or that are removed from an operational range for reclamation, treatment, or disposal are subject to regulation in accordance with DoDM 4715.26.

## **6.5. PROCESSING EQUIPMENT.**

Potentially applicable requirements in accordance with Section 7401 of Title 42, U.S.C., also known as the “Clean Air Act,” are primarily associated with the use of thermal processing equipment to treat (e.g., neutralize) explosive residues that might remain in or on MPPEH, MDEH, or MDAS (e.g., munitions or range-related debris) being processed. Such treatment is not normally required for such residues that do not pose an explosive hazard.

a. Thermal processing equipment must be included in an installation’s air emissions inventory and may be added to its air quality permit, if appropriate.

b. State- or airshed-specific standards and regulations must be consulted to identify applicable requirements.

c. The thermal processing equipment may require an RCRA permit for treatment of a hazardous waste if the material qualifies as a reactive characteristic hazardous waste and the scrap metal recycling exclusion or exemption does not apply at this point in the process (i.e., thermal processing is the first step of processing).

## **6.6. DUE DILIGENCE.**

a. When MDAS is transferred to a recycler for processing in compliance with this issuance, the DoD Component must obtain a certificate of destruction for the MDAS. The transfer of materials for recycling does not completely relieve the transferring party of potential liability if the material is mismanaged or is the source or cause of environmental damage. The potential for liability is established and described in the CERCLA. Section 9627 of Title 42, U.S.C. describes criteria under which entities that arrange for recycling of recyclable materials or transport of such materials are exempt from liability in accordance with Section 9607 of Title 42, U.S.C. To meet this exemption:

(1) The material must meet the definition of scrap metal in accordance with Section 9627 of Title 42, U.S.C. and meet a commercial specification grade.

(2) A market must exist for the material.

(3) A substantial portion of the recycled material must be made available for use as a feedstock for the manufacture of a new saleable product.

(4) The recycled material must be a viable replacement or a substitute for a virgin raw material, or the product to be made from the recyclable material must be a viable replacement of or a substitute for a product made, in whole or in part, from a virgin raw material.

(5) The entity must comply with any applicable regulations or standards regarding the storage, transport, management, or other activities associated with the recycling of scrap metal that the EPA Administrator issues under RCRA.

(6) The scrap metal must not have been melted before the transaction.

(7) The person arranging for the transaction must demonstrate reasonable care that the receiver of the recycled material complies with substantive provisions of Federal, State, and local environmental laws and regulations. Factors considered in evaluating if a person demonstrates reasonable care include:

(a) The price paid.

(b) The ability of the DoD recycling agent to detect the nature of the receiver's consuming facility's operations, concerning its handling, processing, reclamation, or other management activities associated with recyclable material.

(c) The result of inquiries made to the appropriate Federal, State, or local environmental agencies regarding the facility's past and current compliance with substantive provisions of any Federal, State, and local environmental law or regulation, or compliance order or decree issued pursuant thereto, applicable to the handling, processing, reclamation, storage, or other management activities associated with the recyclable materials. For purposes of this paragraph, a requirement to obtain a permit applicable to the handling, processing, reclamation, or other management activities associated with the recyclable materials must be deemed a substantive provision.

b. DoD organizations transferring MDAS for purposes of recycling must evaluate the material and receiver using the criteria listed in Paragraph 6.6.a. This evaluation is satisfied by understanding the nature of the material being transferred, the process used to recycle it, and the environmental compliance posture of the entities involved in the transaction. These principles support multiple management requirements associated with explosives safety and TSC, as well as environmental management.

## SECTION 7: EQUIPMENT, INFRASTRUCTURE, AND LOGISTICS FOR MPPEH PROCESSING

### 7.1. GENERAL.

a. The equipment and facilities used for processing MPPEH or MDEH must prevent the unnecessary exposure of people, infrastructure, or operations to the explosive hazards potentially associated with the material being processed. The maximum possible protection to people and property from the potential effects of such explosive hazards is by exposing the minimum number of people for the minimum time to the minimum amount of such material.

b. Appendix 7A describes the steps for setting up an MPPEH management process.

### 7.2. EXPLOSIVES SAFETY SITING.

MPPEH processing areas must be sited in accordance with explosives safety siting criteria in DESR 6055.09 and the DoD Component requirements. These areas must be designed to support the safe conduct of demanding and often dangerous work, while minimizing public exposure to any hazards and limiting the materials' exposure to the elements. To obtain a DDESB-approved explosives site plan (ESP) before use of the processing area:

a. For installations:

(1) Develop an ESP for the MPPEH processing area and submit it through their respective DoD Component explosives safety management office for Service approval and submission to the DDESB for approval or endorsement; or

(2) Locate the MPPEH processing area within the boundary of a munitions storage area (e.g., an ammunition supply point) that is sited, with DDESB approval, and amend the approved ESP to reflect MPPEH processing area.

b. For munitions response, include the proposed process in the ESP or submission.

c. For operational ranges, manage and process MPPEH associated with operational range activities on the operational range where it was generated, or at the site of munitions use, to minimize handling and movement.

(1) In accordance with DESR 6055.09, a DDESB-approved ESP is not required for MPPEH collection points on operational ranges that are used temporarily during range clearance activities for intermediate management of collected MPPEH.

(2) Range managers must ensure that MPPEH collection points do not interfere with operations and are located so that explosives safety quantity distance arcs associated with collection points remain within the operational range and associated safety buffer zones.

(3) Locations on an operational range that are used as MPPEH processing areas require a DDESB-approved ESP.

(4) The movement of MPPEH that includes or are munitions (i.e., UXO or DMM) from operational ranges or the site of use may require its management as waste military munitions in accordance with DoDM 4715.26, as applicable, and Federal or State regulations.

### **7.3. PPE.**

Processing of MPPEH may at times include the use of hand tools, forklifts, banding equipment, ESACC deformers, and other equipment. Personnel must wear the proper PPE, such as gloves, safety glasses, hearing protection, and hardhats, as required by approved on-site procedures (e.g., operational SOP).

### **7.4. EQUIPMENT FOR COLLECTION AND LOCAL TRANSPORT.**

a. An MPPEH management program may include the collection and transport of MPPEH from the point of generation to an on-site MPPEH processing area.

(1) A detailed description of the range-clearance process is beyond the scope of this issuance. MPPEH collected on the range will typically need to be moved to a processing area to avoid any adverse impact on range operations or remaining range-clearance efforts.

(2) Accumulations of MPPEH generated from industrial munitions operations (e.g., demilitarization) may also require transport to other buildings or areas within the installation for management.

(3) MPPEH may need to be transported within the processing area. Safely and efficiently collecting and transporting MPPEH requires some commonly available equipment, including trucks, four wheelers, hoppers or bins, front-end loaders, and forklifts.

b. MPPEH material types and generation rates will determine the size, type, and quantity of required collection and transportation equipment.

### **7.5. SECURE STORAGE.**

a. The process of segregating and securing the MPPEH, MDEH, and MDAS, and maintaining a chain of custody, begins immediately when the material is collected and identified. Access to collection points, MPPEH processing areas, and equipment (e.g., hoppers, bins, trucks) used to segregate MPPEH that has not been processed from MDEH or MDAS must be controlled throughout the management and disposition of MPPEH, MDEH, and MDAS.

(1) The collection process is often where most explosive material is screened out of MPPEH.

(2) During a munitions response, MPPEH (e.g., shrapnel) may undergo multiple 100 percent inspections during the collection process, before arriving at the MPPEH processing area.

b. Once MPPEH arrives at the MPPEH processing area, it must have its explosives safety status determined and documented as soon as reasonably practical in compliance with this issuance. Consideration must be given to ensuring MPPEH, MDEH, and MDAS are segregated and secured to prevent commingling.

(1) MPPEH awaiting documentation of its explosives safety status must be segregated from material for which the explosives safety status has been documented.

(2) MPPEH must be segregated by material type (e.g., target materials, ESACCs, large-caliber munitions).

(3) MDEH must be segregated from MPPEH, incompatible MDEH (e.g., MDEH that poses a greater or lesser explosive hazard than that documented), and MDAS, and clearly marked as to its explosives safety status and secured.

(4) Material awaiting demilitarization must be segregated from demilitarized material.

(5) Material being recycled must be segregated from RCRA solid and hazardous waste not being recycled.

c. Segregating and managing material by metal type, using scrap metal industry guidelines or other criteria, may enhance its sales value. Segregation will be conducted when determined cost effective.

d. A suitable combination of methods described in the approved written operating procedures will be used to prevent commingling. Such methods include use of controlled access areas, locked containers, separate storage locations within a storage site, moveable signs and ribbon barriers, waterproof documentation of a container's or material's explosives safety status attached to boxes, and container seals traceable to the transfer documentation.

(1) Equipment used for securing and storing MPPEH, MDEH, and MDAS includes 55-gallon drums with sealable lids, military-owned or -leased demountable container or commercial cargo transport containers, heavy-duty corrugated cardboard boxes, pallets and banding, and hoppers with lids.

(2) Specific types of storage methods for different types of MPPEH, MDEH, and MDAS are listed in Section 9 of this issuance.

e. Personnel responsible for the management and disposition of MPPEH, MDEH, and MDAS will:

(1) Determine how long MPPEH, MDEH, or MDAS will be stored at any particular point in the management process. MPPEH awaiting determination of its explosives safety status should be processed as soon as possible to minimize the amount of time it must be managed as MPPEH.

(2) Ensure the process used prevents commingling or misidentification. In cases where processed material will be sold, expeditious processing allows a prompt return of revenue to the installation.

## **7.6. PHYSICAL PROCESSING (VENTING, DEMILITARIZING, AND MUTILATION) EQUIPMENT.**

Personnel responsible for the management and disposition of MPPEH, MDEH, and MDAS must seek to leverage individual processes to meet multiple requirements. DDESB- or DoD Component-approved physical processing equipment may be used to vent MPPEH to expose every surface and internal cavities for visual inspection and determination of the material's explosives safety status. In some cases, venting and demilitarization of MLIs and CCLIs, in accordance with Volume 3 of DoDM 4160.28, can be accomplished in the same operation. Physical processing can also change the appearance of munitions documented as MDAS to a degree that makes it unlikely that they will be mistaken as live munitions.

## **7.7. THERMAL OR CHEMICAL NEUTRALIZATION EQUIPMENT.**

Thermal or chemical neutralization, when used by trained personnel, can eliminate the explosive or chemical agent hazards associated with MPPEH. The DDESB has approved certain equipment and procedures for determining the explosives safety status of MPPEH or MDEH. The DDESB may approve additional technologies or procedures for this purpose after review and approval of the submission of required documentation (e.g., equipment specifications, operational procedures, limits, post-processing inspection procedures) as outlined in Paragraph 4.3.b. This type of equipment falls into two categories using:

- a. Thermal energy to cause any energetic material (i.e., propellants, explosives, and pyrotechnics) present to react.
- b. Chemical reactions (e.g., base hydrolysis) to neutralize energetic materials.

## **7.8. INFRASTRUCTURE AND LOGISTICS.**

The use of heavy industrial machinery to process MPPEH or MDEH at an MPPEH processing area located at a remote location (e.g., on an operational range) may require additional infrastructure. This infrastructure may include access roads, paved areas or concrete pads, fencing, administrative areas, electricity, or fuel tanks. When deciding where to locate a MPPEH processing area, installation personnel should take advantage of existing infrastructure or unused (mothballed) facilities and consider the location's proximity to the MPPEH or MDEH generating source or activity. Installations should seek to minimize investments in infrastructure and support sustainment requirements.

## 7.9. MISCELLANEOUS EQUIPMENT.

a. Accountability and accurate recordkeeping are vital to safe and efficient MPPEH, MDEH, and MDAS management. Personnel responsible for the management and disposition of MPPEH, MDEH, and MDAS should track the type and amount of MPPEH, MDEH, and MDAS processed and record the total processing time from collection through its disposition. Among other purposes, managers can use these records to identify where efficiencies can be attained in the management process. Computers, software, and filing systems can be used to track:

- (1) Material in the management stream.
- (2) Access to MPPEH, MDEH, and MDAS.
- (3) Compliance with chain of custody requirements.
- (4) Qualifications and training records for personnel.
- (5) Qualifications of receivers (e.g., TSC, explosives safety, environmental compliance status).
- (6) Costs and revenues.

b. The management of MPPEH, MDEH, and MDAS often requires certified scales to weigh material before transfer to a receiver. Because most scrap metal market prices are established on a price-per-pound basis, personnel responsible for the management and disposition of MPPEH, MDEH, and MDAS must be able to certify the total net weight of material in a given lot. Certified scales may also assist in the performance of QA- or QC-processing operations by comparing the known weight of an item (e.g., a full container) against the weight that the item should be after processing (e.g., an empty container).



## **APPENDIX 7A: SETTING UP AN MPPEH, MDEH, AND MDAS MANAGEMENT PROCESS**

7A.1. Personnel responsible for the management and disposition of MPPEH, MDEH, and MDAS should develop a business plan and establish SOPs or written procedures specific to their installation that prescribe how MPPEH, MDEH, and MDAS will be managed. Site-specific SOPs or written procedures will help establish that MPPEH, MDEH, and MDAS are managed as safely and efficiently as possible.

7A.2. Business plans and SOPs or written procedures should include these steps for setting up an MPPEH, MDEH, and MDAS management process:

### **a. Identify the Munitions-Related Operations that Could Generate MPPEH.**

Munitions-related operations that generate MPPEH include live-fire training and testing, range clearance activities, munitions production, demilitarization, and munitions response (cleanup) activities. It may also include material generated in laboratories, other research, development, test, and evaluation activities and storage facilities.

### **b. Identify the Types of MPPEH Generated.**

(1) At most installations, the types of MPPEH generated should be available from the munitions operating facilities (e.g., storage, manufacturing) and the range control office.

(a) Munitions operating facilities may provide information about the types of munitions used and other activities (e.g., production, renovation, demilitarization) conducted on the installation.

(b) Personnel responsible for the management and disposition of MPPEH, MDEH, and MDAS should also consult the range control office to confirm the types of munitions used or retained on the ranges being processed for disposition.

(2) Typically, installations have multiple types of MPPEH that require varying degrees of management and processing. These methods should be as efficient as possible while ensuring explosives safety and other applicable criteria (e.g., environmental) are met.

### **c. Identify the Rates of Production for Each Type of MPPEH.**

Once each type of MPPEH is identified, personnel responsible for the management and disposition of MPPEH, MDEH, and MDAS should determine the amount and frequency at which each type of MPPEH may be generated.

(1) The munitions storage area records may be used to determine the types and quantities of munitions issued.

(2) Range control offices may be used as the basis for the quantities and types of munitions used.

(3) The amount and frequency of MPPEH generated at munitions operating facilities must be predicted based on the operations performed and operational schedules (e.g., annual, monthly, or weekly work plan).

(4) Munitions operating facilities can predict the amount of MPPEH generated by looking at an annual, monthly, or weekly work plan and calculating numbers and masses of the anticipated material outputs (e.g., numbers of a particular component's disassembles).

**d. Identify the Processes Necessary to Manage the Disposition of MPPEH, MDEH, or MDAS.**

**(1) Collection.**

The explosive safety and operational risks associated with the process used to collect MPPEH from various munitions-related activities must be assessed. In particular, operational range clearance activities may pose higher explosive safety risks due to the potential presence of UXO.

**(2) Transportation.**

Transportation costs can be significant when MPPEH is generated across a wide area (e.g., an operational range) and moved to a separate MPPEH processing area. Besides explosives, other regulated hazardous materials may also be commingled with MPPEH, making compliance with hazardous materials transportation regulations particularly problematic. MPPEH cannot be transported on public transportation routes until qualified personnel determine its explosives safety status and that it is safe-to-transport. See Title 49, CFR and Joint TB 700-2/NAVSEAINST 8020.8C/Air Force TO 11A-1-47 for MPPEH and MDEH transportation requirements, including those for interim explosives hazard classification assignment.

**(3) Explosives Safety Siting.**

(a) MPPEH processing areas must be sited in compliance with the DESR 6055.09 and DoD Component requirements.

(b) DDESB approval of siting is not required for MPPEH collection points located on operational ranges. See Paragraph 7.2. for more detail.

**(4) Segregation and Storage.**

The processes used to confirm chain of custody and integrity of the material's documentation of the explosives safety status, and to prevent commingling MPPEH, MDEH, and MDAS, must be documented in site-specific SOPs or written procedures.

**(5) Assessment and Documentation of Explosives Safety Status.**

The process used to assess and document the explosives safety status of material must be included in SOPs or written procedures for each type or category of MPPEH managed or dispositioned at an installation.

(6) Demilitarization.

The demilitarization processes must be documented in SOPs or written procedures for each type of material to be considered as MPPEH, or category (e.g., MPPEH, MDEH, or MDAS) managed or dispositioned by an installation.

**e. Identify Personnel, Personnel Qualifications, and Associated Costs with the MPPEH Process.**

Identify personnel, personnel qualifications, and the associated costs to:

- (1) Collect the various types of MPPEH.
- (2) Inspect or process MPPEH, MDEH, or MDAS.
- (3) Document the explosives safety status of MPPEH as MDEH or MDAS.
- (4) Demilitarize material, if required.
- (5) Transport MPPEH to MPPEH processing areas and, if required, transport MDEH and MDAS.
- (6) Comply with Title 49, CFR and Joint TB 700-2/NAVSEAINST 8020.8C/Air Force TO 11A-1-47 requirements.
- (7) Segregate material by type (e.g., metals) if determined cost effective.
- (8) Dispose of the material.

**f. Recycling Evaluation.**

(1) Evaluate the recycling potential associated with the MPPEH and identify the most profitable transfer mechanism available as directed by DoD Component guidance. When evaluating transfer mechanisms, consider:

- (a) Market demand.
  - (b) Price.
  - (c) Available qualified receivers.
  - (d) Available qualified buyers.
  - (e) Local recyclers.
- (2) More than one transfer mechanism may be used depending on the management capabilities of the installation staff and the types of MPPEH generated.

**g. Identify Methods, Equipment, Procedures, and Associated Costs with MPPEH.**

Identify methods, equipment, procedures, and associated costs to effectively record and track:

- (1) Quantities and types of material managed.
- (2) Access to, and chain of custody of, material managed.
- (3) Personnel qualifications and training records.
- (4) Receiver qualifications.
- (5) Costs and revenues.

**h. Nonrecurring and Recurring Costs.**

Estimate expected revenue calculated from generation rates and proposed transfer mechanism(s) (e.g., nonrecurring acquisition of equipment costs and recurring personnel salaries, equipment maintenance or parts costs, fuel costs). Plan, program, and budget for necessary resources.

## **SECTION 8: PERSONNEL MANAGING MPPEH, MDEH, OR MDAS**

### **8.1. GENERAL PERSONNEL QUALIFICATIONS.**

Personnel must be trained and experienced in the identification, safe handling, and potential explosive hazards associated with the specific MPPEH or MDEH they are processing. Personnel qualifications vary greatly based on the material involved. Most personnel that manage MPPEH, MDEH, or MDAS must be trained and qualified to comply with applicable TSC and environmental requirements. The responsible authority must confirm that personnel processing MPPEH or MDEH are technically qualified to determine the material's explosives safety status, including documenting the material as MDAS.

### **8.2. PERSONNEL QUALIFICATIONS FOR MPPEH OR MDEH MANAGEMENT AND DISPOSITION.**

a. The DoD Components must comply with applicable guidance in DoDI 4140.62 to ensure personnel who process MPPEH or MDEH are technically qualified, based on the category of material being processed and the task assigned. Contractor personnel must have qualifications equivalent to those required for DoD personnel and any additional requirements established in the contract.

b. Before transferring MDEH within the DoD, or releasing it from DoD control, the managing or processing activity must, in accordance with this issuance, evaluate the receiver's qualifications. If the receiver is not a DoD activity or installation meeting the criteria of Paragraph 3.2.j. of DoDI 4140.62, the DoD Component must determine the receiver's qualifications by conducting a risk assessment that must be approved by the commander or a responsible official before transferring the material.

(1) The risk assessment considers the MDEH and any known or suspected explosive hazards, and evaluates the adequacy of the receiver's personnel, experience, equipment, and operations to safely receive, manage, and process the material.

(2) The organization receiving MDEH must have:

(a) The licenses, permits, and site approvals, as appropriate, required to manage and dispose of the materials being received.

(b) The facilities, capacity, and technical expertise required to safely manage the explosive hazards associated with the MDEH being received.

(c) Procedures in place for the management and disposition of MDEH in accordance with this issuance and DoDD 5134.01, DoDM 4160.21, and DoDI 4160.28.

(d) Personnel who meet criteria specified in Paragraph 4.3.c of this issuance.

c. When appropriate, personnel must be qualified in accordance with DDESB Technical Paper (TP) 18 or trained in accordance with DoD Component policy and guidance for training and qualifying personnel who handle munitions.

d. Personnel qualifications, particularly those related to TSC or environmental management, may also apply to personnel managing MDAS.

e. Depending on the specific types of hazardous exposures associated with any material processed, personnel may need to participate in the DoD Components' occupational health programs in accordance with the DoD, DoD Component, and installation policies.

### **8.3. PERSONNEL QUALIFICATIONS FOR DOCUMENTING EXPLOSIVES SAFETY STATUS.**

a. The authority (e.g., installation or activity commander) directly responsible for controlling the transfer or release of MDEH or MDAS must certify, in writing, that the personnel who inspect, process, or document material as MDEH or MDAS are technically qualified to perform such functions in accordance with DoDI 4140.62, DESR 6055.09, DDESB TP 18, or DoD Component procedures for management of MPPEH, as applicable.

(1) Contractor personnel must be certified to be in conformance with any contract requirements. Certifications must indicate the specific categories of MPPEH that each individual may document as MDEH or MDAS.

(2) The DoD Component contracting officers must require contractors to provide and maintain a current listing of personnel authorized to document the explosives safety status of MPPEH.

b. Minimum training qualifications of personnel documenting the explosives safety status of MPPEH must include:

(1) Basic familiarity and knowledge of the material they are documenting.

(2) Recognition of potential explosive hazards in material being documented.

(3) Proper response if an unsafe condition is identified.

c. Qualifications and training for personnel documenting the explosives safety status of MPPEH vary dramatically based on the type of MPPEH as shown in Table 1. Examples include:

(1) Personnel documenting the explosives safety status of ammunition containers, packaging materials, or ESACCs must satisfy minimal qualifications and could be trained to perform the required task through on-the-job training.

(2) Individuals documenting the explosives safety status of munitions or range-related debris from range clearance activities require extensive formal training and levels of experience commensurate with DDESB TP 18 UXO Technician III qualification.

**Table 1. Qualifications and Training Guidelines for Documenting the Explosives Safety Status of MPPEH**

<b>MPPEH Type</b>	<b>Qualifications and Training</b>
ESACCs	Minimal qualifications. Can be trained sufficiently to perform the task through on-the-job training; however, training must include recognition of munitions. Must be able to identify live rounds from ESACCs.
Other debris	Qualifications required depend on the material and circumstances under which the debris was collected. Generally, minimal qualifications are required. In most cases, training requirements can be met by on-the-job training. Training must include recognition of munitions.
Expended cartridge casings other than ESACCs	Minimal qualifications. Can be trained sufficiently to perform the task through on-the-job training. Training must include recognition of specific munitions configurations. Must be able to identify presence of live rounds, primers, and propellants.
Used medium- and large-caliber munitions, bombs, rockets, missiles	Extensive formal training and levels of experience commensurate with DDESB TP 18 UXO Technician III minimum qualification standards (minimum 8 years) or, if authorized by the Service, DDESB TP 18 UXO Technician II.
Inert components of used or demilitarized munitions (e.g., training aides) and components (bomb fins, sabot petals, and kinetic energy penetrators) that have never contained energetic materials	Qualifications required depend on the material and circumstances under which the debris was collected. Generally, minimal qualifications are required. In most cases, training requirements can be met by on-the-job training. Training must include recognition of munitions.
Other used munitions components typically recovered from the firing point	Qualifications required depend on the material and circumstances under which the debris was collected. Qualifications must include training in munitions recognition, and may include Introduction to Ammunition, Technical Ammunition, and Risk Management.
3-D target material (e.g., vehicle hulks, target lifters, target movers)*	Extensive formal training and levels of experience commensurate with DDESB TP 18 UXO Technician III qualification standards (minimum 8 years) or, if authorized by the Service, DDESB TP 18 UXO Technician II.
Munitions containers and packaging material	Generally, minimal qualifications are required. In most cases, training requirements can be met by on-the-job training and must include recognition of munitions.

**Table 1. Qualifications and Training Guidelines for Documenting the Explosives Safety Status of MPPEH, Continued**

MPPEH Type	Qualifications and Training
Material generated as a by-product of munitions manufacturing, maintenance, demilitarization, and permitted open-burning (OB) or open-detonation sites	Qualified in accordance with installation position descriptions and DoD Component guidance.
Explosives-contaminated facilities and equipment	Very specialized experience and knowledge of munitions operating facility processes. Qualifications include, but are not limited to, personnel with extensive operational knowledge of munitions manufacturing and demilitarization operations and of potential release and accumulation points for explosives residue.
Material generated from research, development, test, and evaluation and other non-training operations that involve live fire (e.g., pilot production testing, component testing before assembly, lot acceptance testing, stockpile reliability function testing)	Based on DoD Component requirements for the specific operation (research, development, test, and evaluation, etc.), including: <ul style="list-style-type: none"> <li>• Qualification or certification for each type of munitions involved.</li> <li>• Detailed training, including on-the-job training.</li> <li>• Documentation of training and demonstrated proficiency.</li> <li>• Written procedures, including conditions under which EOD support is necessary.</li> </ul>
*2-D target material (e.g., paper and plastic silhouettes) is not considered MPPEH. When target material is stored on an operational range after use, a cursory check should be made to enforce no MPPEH has become commingled with it. A check requires minimal qualifications that can, in most cases, be met by on-the-job training that includes recognition of munitions.	

#### 8.4. Personnel Qualifications for TSC and Demilitarization.

a. Personnel conducting demilitarization to meet MLI and CCLI requirements must be trained, qualified (e.g., meet DDESB TP 18 criteria), and authorized in safe handling of MPPEH and MDEH, proper use of equipment, demilitarization performance standards, and documentation requirements. Demilitarization must be accomplished for MLIs and CCLIs, unless the material will be sold with demilitarization as a condition of sale. See Paragraph 5.5. for further information on demilitarization as a condition of sale.

b. Personnel who document the demilitarization of MPPEH, MDEH, or MDAS must be qualified U.S. representatives who comply with demilitarization and TSC requirements applicable to the MLI or CCLI being managed.

c. Personnel who conduct demilitarization to meet MLI or CCLI requirements must attend the Defense Demilitarization Program Course for instruction on the management, administration, or oversight of the TSC and demilitarization programs. The Defense Demilitarization Program Course is available through the DoD Demilitarization and TSC Program Office, as well as the



U.S. Army Logistics Management College, School of Logistics Science. See Enclosure 4 of Volume 1 of DoDM 4160.28 for further information on demilitarization training.

## **8.5. MANAGING ENVIRONMENTAL CONSIDERATIONS.**

Organizations that manage MPPEH, MDEH, or MDAS must confirm through a records check that personnel are trained to comply with the environmental provisions of Federal, State, or local laws and regulations applicable to material they manage and process. Personnel must be familiar with applicable provisions of Part 260 of Title 40, CFR (i.e., the general provisions of the hazardous waste management system). These requirements will vary greatly based on:

- a. The type of material to be managed.
- b. The characteristics of the material.
- c. The management process (e.g., thermal processing, transportation) used.
- d. The final disposition of the material (e.g., recycling, disposal).
- e. Applicable Federal, State, and local environmental laws and regulations.
- f. The degree to which the State has adopted key environmental provisions (e.g., scrap metal exclusions) of Federal environmental statutes and regulations.

## **8.6. QRP.**

While munitions should not be present in material transferred to a QRP, the potential for human error makes it necessary for QRP personnel to be able to recognize munitions that may pose an explosive hazard, if present. QRP personnel must be able to identify munitions, including live and blank SAA that may be mixed in with ESACCs or mixed scrap metal gleaned from a range.

- a. At a minimum, QRP personnel must be trained in accordance with DoD requirements. These requirements can be met by completing the Air Force Institute of Technology's QRP Management Course or the U.S. Army Corps of Engineers' QRP Ordnance and Explosives Recognition and Safety Course. Contact the Service training office for course details.
- b. QRPs that receive ESACCs or mixed metal (e.g., unrecognizable scrap metal, 2-D metal targets, unserviceable SAA containers) gleaned from operational ranges must ensure personnel are trained to:
  - (1) Recognize QRP-eligible material and non-QRP-eligible material (e.g., small-, medium- and large-caliber casings, pyrotechnics, smoke grenades, aircraft flares, munitions mixed in with MDAS).
  - (2) Respond in accordance with established procedures if an unsafe condition is identified.

(3) Verify signatures on DTIDs against a current list of personnel authorized to document MPPEH as MDAS.

(4) Maintain chain of custody (e.g., copies of certifications) if MDAS is consolidated into larger containers.

## SECTION 9: MATERIAL-SPECIFIC MPPEH MANAGEMENT REQUIREMENTS

### 9.1. GENERAL.

a. This section provides guidance and establishes key management requirements for common categories of MPPEH. This guidance can be applied to the management of particular categories of MPPEH from collection to the point of transfer or release at most installations.

b. Installations should evaluate this guidance against installation-specific conditions and customize them to meet their needs, while satisfying procedural requirements. However, the use of expert knowledge may be applied to MPPEH in these categories in accordance with criteria established by the DoD Components.

### 9.2. ESACCS.

#### a. Material Type Description.

These metal (i.e., brass, steel, and aluminum) casings are generated during the use of various types (e.g., ball, tracer, blank) of SAA.

#### b. Collection and Consolidation.

ESACCS, which are typically policed from the firing line or point of use by a using unit, or other personnel, are consolidated for turn-in at a munitions storage area or other range residue processing area. ESACCS can be collected in ammunition containers, drums, or hoppers for transport to a consolidation point for processing and management.

#### c. Determining Explosives Safety Status.

(1) The explosives safety status of ESACCS is primarily determined by two independent 100 percent visual inspections or processing using DDESB-approved means. The intent is to remove live SAA and safeguard that no other munitions (e.g., live .50-caliber cartridges with projectiles that contain explosives, other than tracers; hand grenades; 40-mm rounds) that may pose an explosive hazard are commingled with the ESACCS.

(a) Live SAA mixed with ESACCS documented as MDAS must be removed. The finding of live SAA mixed with ESACCS does not:

1. Constitute an explosives or munitions emergency that would require EOD support.

2. Automatically invalidate its explosives safety status as MDAS.

(b) Live SAA mixed with ESACCS may require material to be reprocessed in accordance with DoD Component criteria.

(c) Live SAA found must be placed in a metal box (e.g., ammunition box) or other suitable container and returned to the nearest military installation for disposition.

(2) Systems to demilitarize, identify, or remove live SAA that may be mixed with ESACCs could be submitted to the DDESB for approval as an alternative method to document the explosives safety status of ESACCs. As examples:

(a) The Ammunition Peculiar Equipment 1408 Safety Certification System uses a propane-fired thermal chamber to activate an occasional live SAA round mixed with ESACCs and to destroy energetics residue remaining on ESACCs.

(b) Various sized hammermills are available to mutilate ESACCs to varying degrees, with the more powerful of these capable of demilitarizing live SAA that may be commingled, with the ESACCs.

(c) The Ammunition Peculiar Equipment 1412 Spent Brass Sorter is a DDESB-approved technical method for certifying ESACCs as MDAS.

#### **d. Segregating and Securing.**

ESACCs can be stored in large containers, preferably with sealable lids or large hoppers, 55-gallon drums, or heavy-duty cardboard boxes. These must be secured to preclude commingling with ESACCs or other munitions for which the explosives safety status has not been determined and documented. A copy of the explosives-safety-status documentation must be affixed or traceable to each container to confirm proper segregation, security, and lot integrity.

#### **e. Demilitarizing.**

(1) ESACCs must be demilitarized before release in overseas locations or before export from the United States in accordance with DoDI 4715.23. ESACCs can be demilitarized by crushing, shredding, or granulating. A TSC assessment and EUC must be used when ESACCs are released without demilitarization.

(2) ESACCs transferred through a QRP must be crushed, shredded, granulated, or otherwise destroyed before public sale in accordance with DoDI 4715.23 and the June 23, 2011 Under Secretary of Defense for Acquisition, Technology, and Logistics Memorandum.

(3) The DoD Components are encouraged to transfer intact ESACCs to the DLA to be offered for sale to the public in accordance with the June 23, 2011 Under Secretary of Defense for Acquisition, Technology, and Logistics Memorandum. When ESACCs are released without the application of TSC (e.g., EUC and TSC assessment), a physical processing step is needed to satisfy demilitarization requirements.

(4) Installations can employ hammermills or other deforming equipment to accomplish demilitarization. ESACCs can also be demilitarized by being exposed to sufficient temperatures for sufficient periods of time (i.e., typically greater than 800 degrees Fahrenheit [426.6 degrees Celsius] for at least 30 seconds). Heating to this degree and cooling, a process called annealing,

reduces the strength and softens some metals, making the ESACCs useless for reloading or military purposes.

### **9.3. MUNITIONS AND MD OTHER THAN SAA.**

#### **a. Material Type Description.**

(1) Munitions that do not meet the definition of SAA commonly include:

(a) Casings from small-caliber (i.e., munitions that are not SAA up to and including 30 mm), medium-caliber (i.e., munitions that are larger than 30 mm up to and including 105 mm), and large-caliber (i.e., munitions larger than 105 mm) munitions.

(b) Expended flares, grenades and fuzes, igniters, cartridge actuated devices, propellant actuated devices, rocket motors and warheads, artillery projectiles, mortar projectiles, bombs, missiles, mines, bomb fins, sabot sleeves, bomb ejection racks, bomb dispensers, rocket pods, and kinetic energy penetrators.

(2) MPPEH from munitions and MD other than SAA:

(a) May include munitions used in training that are high explosives, incendiary, illumination, smoke, anti-tank, anti-personnel, high explosive incendiary, high explosive anti-tank, and other combinations of munitions. It also includes target practice rounds that may contain a variety of pyrotechnic signal spotting charges.

(b) Can represent some of the most dangerous and difficult MPPEH to manage. Therefore, it is important that only EOD, UXO-qualified personnel, or other personnel, who are qualified and specifically authorized to assess and document the explosive safety status of these materials, recommend its disposition.

(c) May also include munitions components generated from industrial demilitarization processes or off-specification rejects from manufacturing. Some operations may require a DDESB-approved ESP.

#### **b. Collection and Consolidation.**

(1) An initial evaluation of MPPEH that includes munitions larger than SAA must be conducted by qualified individuals in accordance with Table 1.

(a) Explosive hazards must be segregated at an appropriate location (e.g., on an operational range) using approved procedures.

(b) In accordance with DDESB TP 18, once evaluated by UXO-qualified personnel, sweep personnel may collect and consolidate the material for movement to an MPPEH processing area.

(c) MPPEH that has not yet undergone the required initial evaluation, which has been consolidated in an MPPEH processing area, must not be commingled with MDEH or MDAS.

(2) MPPEH comprised of munitions larger than SAA may be generated during industrial munitions operations or may accumulate at the output of such industrial processes. This MPPEH is generated in a controlled industrial setting and may be segregated and stored by methods similar to those used for the munitions being generated, maintained, or demilitarized.

### **c. Determining Explosives Safety Status.**

(1) An MDAS determination requires two independent 100 percent visual inspections by qualified personnel, processing by a DDESB-approved method, with appropriate post-processing inspection, or application of DoD Component-approved expert knowledge criteria. Currently, the performance of two independent 100 percent visual inspections is the most common method used to determine and document the explosives safety status of munitions larger than SAA.

(a) During inspections, all internal cavities must be vented to make all surfaces available for inspection if the material is to be documented as MDAS.

(b) DDESB- or DoD Component-approved physical processing equipment may be used to vent MPPEH to expose all surfaces and internal cavities for visual inspection and determination of the material's explosives safety status.

(2) Hydraulic shears, metal shredding systems, saws, water jet cutters, and explosive cutting charges are sometimes used to expose internal cavities. The processing equipment must be remotely operated or the operator must be provided with protection from blast and fragmentation due to the potential explosives safety risk associated with processing this type of MPPEH that exposes energetics present to high-energy impacts.

(3) MPPEH that is generated from certain industrial demilitarization operations typically undergo a process (e.g., steam-out, wash-out) intended to remove all explosive filler material. Trace amounts of explosives residue that do not normally pose an explosive hazard may remain on the munitions.

(a) During and on completion of the demilitarization process, QC and QA checks are made to confirm the process is properly functioning.

(b) Once the process is completed, qualified personnel check each item against a standard to confirm that explosive hazards have been removed.

(c) MPPEH generated from industrial demilitarization methods that contain sufficient amounts of energetic material to pose an explosive hazard must be documented as MDEH and only transferred to qualified receivers or undergo secondary processing to eliminate any remaining explosive hazards.

(4) The DoD Components may be able to use the demilitarization processes as a DDESB-approved means for documenting the explosives safety status of this MPPEH as MDAS

once the process is documented, submitted through the appropriate DoD Component explosives safety management office to DDESB for review, and approved by the DDESB.

(5) For some MD, large-scale flashing furnaces could be used to thermally remove all energetics remaining in or on the material.

(a) If used for documenting the explosives safety status as MDAS, the process must be documented and submitted through the appropriate DoD Component explosives safety management office for review and approval by the DDESB.

(b) The appropriate DoD Component environmental office must be contacted to determine whether environmental requirements apply.

#### **d. Segregating and Securing.**

(1) MPPEH for which the explosives safety status has been documented as either MDEH or MDAS must be strictly segregated and secured from each other and MPPEH.

(2) The processing of munitions that are larger than SAA must take place within a secured (e.g., fenced and locked) facility or restricted area where access is limited to those directly involved in MPPEH management. Once the explosives safety status is documented, the documented material must be secured in an appropriate sized container (e.g., hopper with sealable lids).

#### **e. Demilitarizing.**

(1) Demilitarization is typically accomplished using heavy equipment (e.g., deactivation furnaces, shears, saws, hammermills, torches, melting furnaces) to destroy, cut, or mutilate the material.

(2) Munitions that are larger than SAA are commonly MLIs and CCLIs. Such items must be demilitarized in accordance with Volumes 2 and 3 of DoDM 4160.28. This type of material generally falls within MLI Categories III, IV, and V, in accordance with Volume 2 of DoDM 4160.28. In general, demilitarization of munitions, including components, is accomplished by one or more of the following:

(a) Total destruction of the energetic materials, including explosives, pyrotechnics, propellants, incendiary, toxic, and smoke fillers.

(b) Cutting or removing the rotating band, bourrelet, or gas check band on projectiles.

(c) Total destruction of primers.

(d) Total destruction of detonating devices (e.g., fuzes).

(e) Deforming fuze cavity threads on munitions bodies.

(f) Deforming fin assembly threads on munitions bodies or fin blades.

(g) Deforming cartridge cases through off-center primer punch out, splitting the case neck, puncturing the lower sidewall with a minimum 3/4-inch hole, deforming the lower sidewall to prevent chambering, or completely crushing or pressing the entire case.

(h) Exposing inert fillers by puncturing or cutting the main body of the munitions item.

(3) Installations should attempt to vent internal cavities and perform demilitarization through the application of a single process, where possible and cost effective.

## **9.4. TARGET MATERIALS.**

### **a. Material Type Description.**

(1) These materials include specially designed targets, target holders, lifters, and movers, as well as vehicles, weapons platforms, and even household goods that were used as targets on military ranges. Historically, target materials have ranged from painted markings and tires on the ground, to retired military vehicles, to arrangements of prefabricated wooden or sheet metal blocks, to fully automated moving (e.g., on tracks and lifters) target silhouettes.

(2) The most problematic target materials are retired military vehicles because many include internal cavities and concealed spaces where UXO may be hidden. Target movers and lifters are typically constructed of light metal and can be cut with saws or shredding equipment.

(a) Light target vehicles (e.g., trucks, airframes) can also be disassembled or sectioned with saws and the sections further mutilated through the use of shears or shredding equipment.

(b) Heavy armored vehicles (e.g., tanks) require the use of extremely high-temperature cutting tools such as gasoline or oxygen cutting torches or magnesium cutting rods.

(3) Targets are generally removed from use when they are damaged to the point they no longer provide a useful representation of the intended target, or the range is being modernized, reconfigured, or put to another use.

### **b. Collection and Consolidation.**

(1) When MPPEH is comprised of range-related debris (e.g., target material), an initial evaluation or hazard assessment must be conducted by qualified individuals (see Table 1) to ensure explosive hazards (e.g., UXO) are not hidden in the debris prior to its removal from the operational range.

(a) Recognizable explosive hazards on-range must be eliminated as part of range clearance activities, as soon as reasonably practical.



(b) If possible, range-related debris must be disassembled on the range to facilitate visual inspection. Range-related debris, particularly 3-D targets (e.g., target vehicles, automated target lifters and movers) must be, at least, visually inspected for the presence of explosive hazards before any movement.

(c) When vehicles (e.g., armored vehicles) have been used as targets, qualified personnel authorized by the responsible authority must conduct a visual inspection of each target prior to its removal from the operational range to ensure that it does not contain UXO.

(2) Following the initial evaluation or hazard assessment, the debris is collected and consolidated for further processing or final disposition.

### **c. Determining Explosives Safety Status.**

To determine the explosives safety status of 3-D material as safe, use:

(1) Two independent 100 percent visual inspections by EOD, UXO-qualified personnel, or other personnel that the responsible authority determines qualified and authorizes;

(2) Processing by a DDESB-approved method, with appropriate post-processing, must be performed; or

(3) The application of DoD Component-approved expert knowledge criteria.

### **d. Segregating and Securing.**

It may be necessary to store target material in large cargo containers once the material's explosives safety status has been documented.

(1) Containers should have oversized doors that can accommodate the bulky pieces of metal generated by disassembly or demilitarization of target vehicles. The doors of these containers can be locked, sealed, and numbered to correspond to the documentation of explosives safety status, as well as to track the material's chain of custody.

(2) Containers can also be loaded on semi-tractor trailers or on rail cars for economical transport.

### **e. Demilitarizing.**

(1) MLIs and CCLIs used for targets, such as tanks, other vehicles or airframes, must be demilitarized in accordance with Volumes 2 and 3 of DoDM 4160.28 before its use on a range without compromising the realistic combat target. These types of targets may contain sensitive electronic or mechanical equipment that must also be demilitarized. Any such instrumentation or equipment that is not essential for a vehicle to represent a realistic combat target should be removed, demilitarized, and disposed of before placing the vehicle on an operational range.

(2) To meet demilitarization and TSC requirements, most target vehicles require demilitarization. See Volumes 2 and 3 of DoDM 4160.28 for the proper demilitarization code and method and degree of demilitarization required.

(3) When cutting a target vehicle body, a single process should, when possible, be used to satisfy explosives safety and demilitarization requirements.

## **9.5. FACILITIES AND EQUIPMENT POTENTIALLY CONTAINING EXPLOSIVES RESIDUE.**

### **a. Material Type Description.**

(1) Munitions operating buildings (e.g., munitions production or demilitarization facilities) and any installed equipment may contain residual explosives that present an explosive hazard. Of particular concern are building features (e.g., floors, roofs, walls, drains, internal and external piping, ventilation systems) in which explosives residue may have accumulated in sufficient quantities to present an explosive hazard. Industrial equipment, particularly equipment with internal cavities, from facilities used in munitions production or demilitarization operations (e.g., cast loading, milling, steam-out) may also contain explosives residue.

(2) Buildings or equipment used in munitions manufacturing or demilitarization must be characterized to determine if explosive hazards exist before demolition or are put to a use that may be incompatible with the explosive hazards present. If such hazards exist, they must be addressed (e.g., decontaminated, neutralized) during the building's demolition (e.g., using wet dismantlement) or before reuse.

### **b. Collection and Consolidation.**

Operating buildings (e.g., munitions production or demilitarization facilities) and installed equipment are normally decontaminated in place. Installed equipment may be consolidated for processing at a central area that is in accordance with Paragraph V7.E4.4.2. of DESR 6055.09. Building materials that have been determined not to be contaminated with explosives residue may be dismantled and removed from the operating facility for further processing, or release from, DoD control.

### **c. Determining Explosives Safety Status.**

(1) Documentation of the explosives safety status of munitions-related facilities and equipment must occur before transfer within, or release from, DoD control.

(2) Although visual inspection may be suitable for documenting the explosives safety status of installed equipment, in most cases, it is not sufficient for determining the explosives safety status of operating buildings and their features (e.g., floors, roofs, walls, drains, internal and external piping, ventilations systems) because explosives residue (e.g., dust, vapors, and liquids) may have accumulated in cracks and crevices of porous materials (e.g., concrete, insulation, plaster, soil). Chemical reagents may be useful to indicate the presence of explosives; however, characterization of concentrations may require more sensitive analytical methods.

(3) Operating facilities and installed equipment are sometimes transferred for direct reuse within the munitions manufacturing industry. When such transfers occur, the recipient must be a qualified receiver and be informed of any explosive hazards present.

(4) When a munitions operating facility is dismantled, thermal or chemical neutralization may provide a safer and more cost effective means of decontamination. Although acquiring the necessary approvals and permits is often difficult, OB of explosives-contaminated operating buildings has been one of the most common methods for demolishing these types of buildings. From an explosives safety perspective, OB is widely considered the safest means of demolishing buildings determined to contain explosives hazards. However, recent concerns about the creation and distribution of toxic compounds during OB of explosives-contaminated buildings have curtailed the practice.

#### **d. Segregating and Securing.**

(1) This material type must be segregated, stored, and secured from material for which the explosives safety status has been documented as MDEH or MDAS. Labeling and marking must clearly identify the material's explosives safety status and be traceable to the actual signed documentation.

(2) Buildings that are awaiting thermal or chemical decontamination must be secured. Clearly mark the building's explosives safety status on signage and fencing.

(a) The building's status must be annotated in the installation's master plan.

(b) The explosives safety status of any remaining debris will need to be determined by analytical testing or visual inspection after decontamination. If determined appropriate, the testing or inspection may be done on a sampling basis.

(3) Individual pieces of equipment or building materials not documented as safe must be managed as MPPEH (e.g., secured in locked storage containers or storage structures).

#### **e. Demilitarizing.**

Although buildings and construction materials are not subject to demilitarization requirements, munitions manufacturing equipment have the potential to provide substantial military capability or utility and is subject to demilitarization requirements in accordance with Volume 2 of DoDM 4160.28. Munitions manufacturing and loading machines are typically assigned demilitarization code "D." See Volume 2 of DoDM 4160.28 for demilitarization requirements.

### **9.6. OTHER DEBRIS.**

#### **a. Material Type Description.**

(1) Some materials (e.g., tires, appliances, junk cars) encountered on operational or former ranges, and other areas managed by the DoD do not meet the description of other

MPPEH categories. These materials represent the myriad of man-made objects that may be encountered and which often must be inspected as MPPEH. Other debris includes, but is not limited to:

- (a) Trash generated by personnel that have used ranges.
- (b) Abandoned household goods (e.g., appliances).
- (c) Material placed on the range (e.g., barbed wire, communications wire, tires, constructed obstacles) during prior uses.

(2) Debris must not be allowed to accumulate on operational ranges. Accumulation of debris or individual pieces of debris (e.g., appliances) may attract live fire from personnel training on the range or become attractive locations for personnel to improperly abandon munitions.

(3) Munitions and MD may be commingled with the other debris, depending on the material and circumstances under which it is recovered. Installation, facility, or range managers must evaluate if munitions and MD needs to be processed as MPPEH. This is not intended to mean that all trash generated from any activity conducted on a military range is subject to the full set of MPPEH management requirements.

#### **b. Collection and Consolidation.**

(1) Trash is commonly collected by units using a range or by range management personnel in accordance with locally established SOPs. Trash from areas where munitions may have been deposited should be collected in clear plastic bags to facilitate inspection. Trash is normally accumulated in temporary dumpsters or taken directly to a waste disposal facility (e.g., landfills).

(2) Other debris may be collected from operational ranges during scheduled range clearance activities, routine cleanup, or when ranges are modernized or reconfigured. Military or civilian labor typically removes debris using trucks or roll-off containers. Debris must be collected and consolidated by qualified personnel for determination of its explosives safety status in accordance with MPPEH guidance.

#### **c. Determining Explosives Safety Status.**

When other debris is thought to present an explosive hazard, it must be visually inspected or processed by a DDESB-approved method to determine and document its explosives safety status. The nature of most of this type of debris makes visual inspection a relatively easy and quick process. When managing trash as MPPEH, it should be removed from the collection container (e.g., bags, dumpsters) to allow visual inspection.

#### **d. Segregating and Securing.**

(1) When other debris is determined to be MPPEH, it must be segregated, stored, and secured from already documented material. As with all MPPEH, this material type must be

labeled and marked to clearly identify the material's explosives safety status so it is traceable to the original signed documentation.

(2) Once other debris has been documented as safe and enters the solid waste management stream (i.e., separate and secure from munitions operations or MPPEH generation areas), it must be managed as solid waste and is exempt from MPPEH chain-of-custody requirements.

(3) For the relatively few situations in which other debris is determined to pose an explosive hazard, it must be processed as MDEH.

**e. Demilitarizing.**

This type of debris does not require demilitarization after documenting the material's explosives safety status as MDAS.

**9.7. MUNITIONS CONTAINERS AND RELATED MATERIAL.**

**a. Material Type Description.**

Munitions containers and packaging materials may contain or conceal munitions or explosive residues and must be inspected to confirm they do not present an explosive hazard. Some missiles are launched directly out of their logistical packaging, and explosive components may be embedded within that packaging.

**b. Collection and Consolidation.**

Munition containers and some packaging materials are collected after live-fire training and returned to the point of issue for inventory reconciliation. When munitions containers (e.g., ammunition cans, missile containers) and packaging materials are reused within the DoD or sold as surplus, they are stacked and palletized.

**c. Determining Explosives Safety Status.**

(1) Remove and visually inspect the internal packaging material so that the container is empty to ensure that munitions containers and internal packaging material do not pose an explosive hazard.

(a) If the container is not empty, internal packaging material should be removed and managed in accordance with the appropriate DoD and DoD Component guidance.

1. Once internal packaging material is removed from a container or the container and packaging material remaining in the container is inspected in accordance with DoD Component procedures, and the container is determined not to contain an explosive hazard, the container may be documented as safe.

2. The determination of the explosives safety status of containers must be documented in accordance with Section 4 of this issuance.

(b) When internal packaging material is not removed (e.g., packaging material that is integral to the container or preformed), the DoD Component must confirm procedures are implemented to inspect the internal packaging material and the container to confirm explosive hazards (e.g., munitions, explosive components, high concentrations of explosive residues) are not present.

(2) After documenting the explosives safety status of containers as MDAS, it is advisable to place a tag, ribbon, or other material between the container and its lid as an overt indication that the container has been processed.

(a) Container markings and color codes that indicate munitions or explosives are present must be obliterated or covered with an “empty” label.

(b) Munitions containers documented as MDAS are not exempt from chain-of-custody requirements.

(3) Once cardboard, plastic, or wooden outer packaging is broken down, it and the internal material must be visually inspected by on-site personnel for material that has been determined not to contain munitions or explosive residues using written procedures before it is recycled or processed and managed as solid waste.

(a) Exterior markings and color codes that indicate munitions or explosives are present must be obliterated.

(b) If these criteria are met, there is no requirement to document cardboard, plastic, or wooden outer packaging or internal packaging material (e.g., cardboard, plastic, Styrofoam) as MDAS.

(c) Packaging materials must be separated and secured from explosive operations, MDEH, or MPPEH and comply with chain-of-custody requirements until removed from the operational range, munitions response site, or other location where a potential for explosives contamination exists.

(d) The disposition of cardboard-, plastic- or wooden-outer packaging or internal packaging materials must comply with applicable environmental requirements.

#### **d. Segregating and Securing.**

Segregating and securing munitions containers may be accomplished by palletizing them to prevent the addition of any material (e.g., with lids in place and wrapped in plastic or banded).

(1) They may be stored in sealable shipping containers, but the bulky nature of munitions containers tends to make this approach inefficient.

(2) When possible, reduce the volume of the scrap metal by shredding or crushing using common scrap metal recycling industry equipment before placement within a container. The scrap material can then be segregated, stored, and secured.

(3) MDAS must remain segregated and secured until released from DoD control to preserve the validity of the explosives-safety-status documentation.

**e. Demilitarizing.**

Munitions containers and related materials do not require demilitarization.

## SECTION 10: TRANSFER AND RELEASE OF MATERIAL

### 10.1. METHODS FOR TRANSFERRING MATERIAL.

#### a. General.

(1) Several methods are available for transferring ownership and custody of MDEH or MDAS. In general, three parties participate in the transfer of material from DoD control:

- (a) The generating activity (i.e., the DoD installation).
- (b) The transferring agent (e.g., DLA Disposition Services Site).
- (c) The receiver.

(2) The generating activity and transferring agent responsibilities are discussed in Paragraphs 10.1.b.(1) and 10.1.b.(2), respectively. The transferring agent normally identifies the receiver of the material being transferred. The receiver's responsibility is defined by the requirements the generator and the transferring agent established for the transfer.

(3) Requirements specific to each transfer mechanism should be evaluated against site-specific conditions to select the most appropriate and economical transfer mechanism. To assist in this evaluation, a list of advantages and limitations of each mechanism should be provided for each one.

#### b. Roles and Responsibilities for Transferring MDEH and MDAS.

##### (1) MPPEH Generating Activity Responsibilities.

The MPPEH generating activity works with the transferring agent to facilitate the transfer of material. The generating activity must provide the receiver with proper documentation, including documentation of the explosives safety status and any required demilitarization actions the receiver will be required to perform on the transferred material. The MPPEH generating activity must:

(a) Comply with segregation, security, and accountability requirements applicable to the material until the time of transfer.

(b) Provide a list of material to be transferred and its explosives safety status documented as MDEH or MDAS.

(c) Maintain or, if the transferring agent is a separate entity, provide the transferring agent written authorization specifying individuals that the generating activity's commander or responsible authority authorized to determine and document the explosives safety status of MPPEH, MDEH, or MDAS. The authorization provided must indicate the individual's qualifications, limitations, and the types of materials that each individual may document.



(d) Confirm any required demilitarization or declassification is accomplished and documented before the transfer of material, unless demilitarization will be conducted as a condition of the transfer or sale.

(e) Confirm the explosive hazards present in MDEH are documented to the extent known. The documentation must indicate:

1. The type of explosive hazards.
2. The actual or estimated NEW.
3. The configuration of any explosives present.
4. The existence of any internal cavities.

(f) Confirm each MDEH container is clearly labeled so that the explosive characteristics are evident.

(g) Perform the responsibilities of a transferring agent to include:

1. Providing a separate, secured consolidation or storage area for MDEH or MDAS that will be sold in-place by the transferring agent.
2. Verifying that material qualifying for reimbursement is identified on the DTID documentation.
3. Working with the transferring agent to determine the applicable fund citation and account where funds are deposited. This information must be indicated on the DTID.

(h) When transferring material through DLA Disposition Services or Sites, work with them to:

1. Provide, before the execution of a sale, on-site familiarization to purchasers regarding potential hazards associated with material being sold.
2. Conduct a pre-award survey when required.

## (2) Transferring Agent Responsibilities.

(a) The transferring agent, if a separate entity, provides administrative support to the generating activity. In addition to all requirements stated in their contract or agreement, the transferring agent must:

1. Verify all applicable documents (e.g., explosives-safety-status documentation, demilitarization certificate) are complete (e.g., contain required data including the name of the authorizing official and authorized signatures).
2. Provide a list of property for sale, advertise and conduct the sale, provide contract monitoring, and deposit receipts to appropriate accounts.

3. Confirm MDEH or MDAS remains properly segregated and secured. Maintain the chain of custody until the material is released from DoD control.

4. Ensure compliance with the terms and conditions established for the sale. This is particularly important when MDEH is being transferred.

5. If sales proceeds are reimbursable, work with the MPPEH generating activity to allow the DTID to specify the applicable fund citation to deposit proceeds.

6. Document and retain records of transfers, as required by applicable laws, regulations, guidance, or agreements, and report or provide the records as required or requested to the generating activity and the DLA.

(b) The transferring agent's demilitarization- and TSC-related responsibilities include:

1. When material to be transferred contains MLIs or CCLIs, advise purchasers that MLIs and CCLIs may not be exported or sold to any parties outside of the United States without first being demilitarized.

2. Ensure, before sale, that MDAS does not require additional demilitarization unless demilitarization is a condition of sale.

3. Coordinate with the DLA Office of Inspector General, Investigative Division's TSC Assessment Office, to confirm a completed EUC and obtain a TSC assessment of the highest bidder or other proposed recipient of MLIs or CCLIs.

4. Assist MPPEH generating activities in assessing and determining a receiver's qualifications to perform any required demilitarization or TSC requirements.

(c) The transferring agent's environmental management-related responsibilities include:

1. Comply with applicable environmental laws and regulations.

2. Ensure compliance with all applicable requirements of Section 9627 of Title 42, U.S.C., including:

a. Demonstrating reasonable care that the receiver of recycled material is in compliance with substantive provisions of applicable Federal, State, and local environmental laws and regulations.

b. Understanding the nature of the material being transferred, the process used to recycle it, and the environmental compliance posture of the entities involved in the transaction.

**c. DLA Disposition Services.**

**(1) DLA Disposition Services Site.**

A DLA Disposition Services Site typically executes the responsibilities of a transferring agent, identified in Paragraph 10.1.b.(2) of this issuance, when providing in-place sales services for DoD material. Transferring material through a DLA Disposition Services Site helps clarify proper management of demilitarization and TSC requirements. A DLA Disposition Services Site:

- (a) Will normally not accept physical custody of MD, including MDAS, particularly when it resembles munitions.
- (b) Must provide a sales service to generating activities for authorized recyclable scrap materials that are MDAS.
- (c) May accept physical custody of ESACCs when documented as MDAS.
- (d) Uses a memorandum of agreement (MOA) with the generating activity (e.g., installation) to guide their relationship. See Figure 2 in Appendix 10A for a sample MOA.

**(2) DLA Disposition Services or TSC Site Responsibilities and Procedures.**

The Director, DLA Disposition Services, must ensure that DLA Disposition Services Sites assist the DoD Components to:

- (a) Identify qualified buyers and provide sales service to the selling party. Qualified buyers will be identified in accordance with DoD TSC requirements in DoDI 2030.08.
- (b) Provide general sales assistance to the MPPEH generating activities.
- (c) Implement applicable provisions of an MOA.
- (d) Provide administrative and sales support to the MPPEH generating activities.

1. Obtain commitments from purchasers to hold the United States harmless from demands, suits, actions, or claims arising from or otherwise relating to the purchase of the material. The U.S. Government assumes no liability for damages to property of the purchaser or for personal injury, disability, or death of the purchaser, its employees, or to any other person arising from or affiliated with the purchase, use, or disposition of this material.

2. Maintain accountability.

- (e) Assist and provide guidance to MPPEH generating activities for identifying material requiring demilitarization and on proper demilitarization processes.
- (f) Accept physical custody of ESACCs that are MDAS.
- (g) Provide general assistance to MPPEH generating activities:

1. Work with MPPEH generating activities and their contractors if material is being disposed of by a waste disposal service contract.

2. Assist MPPEH generating activities with identifying materials eligible for reimbursement or direct sale through the QRP.

**(3) Advantages of Transfer through DLA Disposition Services or Sites.**

(a) The DLA Disposition Services or Sites mission is to provide dedicated sales support to the DoD. DLA Disposition Services or Sites must list, sell, and monitor the sales contracts for material on a national market with a broad range of bids and buyers.

(b) From a TSC perspective, DLA Disposition Services or Sites identifies buyers that are qualified to receive or demilitarize MLIs or CCLIs, negating the need for the generating activity or installation to conduct or request a TSC assessment of potential buyers.

**d. QRP.**

(1) The DoD established the QRP to allow installations to collect and sell certain recyclable scrap materials in accordance with DoDI 4715.23.

(2) A QRP typically performs the functions and executes the general responsibilities of a transferring agent as identified in Paragraph 10.1.b.(2). In addition, a QRP must maintain accountability of all materials processed through its program and confirm that only QRP-eligible material enters the program.

(3) Only ESACCs and metal scrap gleaned from ranges that are not recognizable as munitions, and have been documented as MDAS, may be transferred to a QRP. Material that requires demilitarization and MLIs and CCLIs are not QRP eligible. See DLA requirements in Figure 1.

(4) Transferring eligible MDAS through a QRP provides an opportunity for reimbursement of sales proceeds to an installation to cover operating and overhead costs of the installation's QRP.

**e. Cost-Offset Contracts.**

(1) If possible, MDAS should be recycled. To the extent allowed by law, the DoD Components may be able to offset some costs associated with contracts for managing and processing range-related MPPEH (e.g., MD or range-related debris) with money contractors generate by the sale of recyclable material. When advantageous to the government, MPPEH management contracts will provide for a cost offset (i.e., credits to the contract) from the sale of any salvageable material the contractor recycles.

(a) See Volume 1 of DoD 7000.14-R for further information concerning these issues.

(b) Legal counsel must be consulted before exploring use of this option.

(2) Contractors with cost-offset contracts tend to manage MPPEH and MDEH from collection through processing and, ultimately, its transfer as MDAS. When directed by contract, contractors normally perform the functions and responsibilities of the generating activity and transferring agent.

(3) Contractors must track the actual market value of any salvaged material, and payments received from the sale of the material, in accordance with contract requirements. The contract is credited for payments, with project costs offset by the proceeds. Unused cash proceeds (i.e., proceeds beyond the total cost of the contract) are deposited into a designated U.S. Treasury account. Records of these transactions and activities must be maintained and available for inspection and audit.

(4) Use of cost-offset contracts for certain activities (e.g., range clearance activities) may allow revenues from the sale of material to offset costs associated with contracts for the management of MPPEH. These have limitations as to the types of material that may be processed.

(5) Contractors can generally execute all phases of MPPEH management, including providing storage, documenting explosives safety status, procuring and operating processing equipment, and identifying qualified buyers.

#### **f. Sales of Recyclable Material from Demilitarization of Conventional Munitions.**

(1) Section 4690 of Title 10, U.S.C. authorizes the Secretary of the Army to establish a separate program to sell recyclable munitions materials resulting from the DoD industrial base's demilitarization of conventional munitions in the United States. The program is exempt from Chapter 5 of Title 40, U.S.C., which relates to Federal property management. Legal counsel must be consulted before exploring use of this option. Note that the Army has not issued implementing regulations, which is a requirement of this funding authority.

(2) The proceeds from sales of this material are credited to a specified account for the demilitarization of munitions. These funds are available only for reclamation, recycling, and reuse of conventional munitions, including research and development and equipment purchased for such purposes.

(3) Generating activities must execute the recycling process and ensure it is implemented in accordance with the RCRA and its implementing regulations.

(4) Proceeds from the sale of demilitarized or excess material provides the DoD industrial base use of funds to support the industrial demilitarization program.

## **10.2. UNAUTHORIZED TRANSFERS OR RELEASES.**

a. When an unauthorized transfer or release of MPPEH, MDEH, or MDAS occurs, it must be thoroughly investigated and the appropriate corrective action implemented based on the findings from the investigation. Generating activities must report such transfers or releases to

their chain of command. If the release occurred because of a contractor's actions, the contracting officer's representative must be notified.

b. The DoD Components must maintain a database of unauthorized transfers and releases and provide quarterly summaries to the DDESB, including corrective actions, in accordance with DoDI 4140.62.

(1) Unauthorized releases of MPPEH, MDEH, or MDAS that involve mishaps in which explosives are present (even if there is no explosive incident); result in damage or injury from an explosive incident; the functioning, inadvertent actuation, release, or launch of munitions; or the impact of a munition off a range must be reported in accordance with DoDI 6055.07 with a copy provided to the Deputy Assistant Secretary of Defense (Environment) and DDESB.

(2) Releases that present a condition or situation requiring immediate action to protect DoD personnel or the public and that meet the reporting criteria in DoDM 5100.76 must be reported in accordance with DoDI 6055.07, with a copy provided to the ASD(S).

(3) Unauthorized transfers or releases involving foreign persons or suspected violations of U.S. export laws and regulations will be reported in accordance with DoDD 5106.01, DoDIs 5505.02 and 2030.08, and U.S. export control laws and regulations.

c. When an unauthorized release of MPPEH or MDEH occurs and the generating activity cannot be readily identified, the nearest military installation capable of addressing the material will coordinate or support the material's retrieval, with cost reimbursement by the managing DoD Component once the origin of the MPPEH is identified.

d. If MPPEH or MDEH is known or suspected to present an imminent or substantial danger, local law enforcement must be notified. Local law enforcement agencies will arrange for required support from the nearest EOD unit. The applicable DoD transfer agent or generating activity may provide assistance, if requested, to local law enforcement in determining an initial course of action.

e. When an unauthorized transfer or release of MPPEH or MDEH occurs because of a DLA Disposition Services sale, the DLA Disposition Services must notify the DoD Demilitarization Program Office, the generating activity's DoD Component Demilitarization Program administrators, the DoD Component explosives management safety office, and Headquarters (HQ), DLA, of the incident.

(1) The DoD Component explosives safety management office must notify the DDESB. This notification must include a situation report prepared by the applicable DLA Disposition Services Site.

(2) Incidents in which the documentation of the material's explosives safety status is found to be incorrect must be investigated by the managing DoD Component that generated the material. DLA Disposition Services must cooperate and support this investigation.

f. If the MPPEH generating activities and DLA Disposition Services do not agree on the facts or corrective actions, the issues must be elevated to the managing DoD Component HQ and

HQ, DLA. If agreement still cannot be reached, any unresolved matters must be referred to the ASD(S).

### **10.3. MARKET RECEIVERS FOR MDEH AND MDAS.**

DoD organizations that transfer MDEH or MDAS for recycling must evaluate the material and determine the receiver's qualifications to handle the material as described in Paragraphs 6.6.a. (MDAS) and 8.2.b. (MDEH).

#### **a. Scrap Metal Processors – Dealers or Recyclers.**

Scrap metal processors collect, sort, process, and sell scrap metal to foundries, mills, mini-mills, and other purchasers.

(1) Typical scrap metal processors may not accept or receive MPPEH or MDEH. Generating activities must only transfer scrap metal that is MDAS to scrap metal processors for recycling or disposal.

(2) If DLA has determined a firm to be qualified, it is eligible to receive MLIs or CCLIs.

(3) Demilitarization will be listed as a condition of sale. The requirement to certify that all required demilitarization has occurred still applies.

#### **b. Scrap Metal Consumers – Foundries and Mills.**

(1) MDAS may be sold to scrap metal consumers for recycling.

(2) Demilitarization must be listed as a condition of a sale to a qualified scrap metal consumer that is eligible to receive MLIs and CCLIs based on a DLA TSC assessment. DLA must certify that all required demilitarization occurred.

#### **c. Solid or Hazardous Waste Treatment, Storage, or Disposal Facilities (TSDFs).**

TSDFs are permitted to receive and manage specific solid or hazardous waste. MDEH or MDAS that is considered to be a solid or hazardous waste may, after complying with all applicable requirements of this issuance, be treated at a TSDF permitted to treat the material. When such material is transferred to a TSDF by a DoD Component, the DoD Component must ensure the TSDF is permitted to receive and treat the material and that it complies with applicable Federal and State solid or hazardous waste regulations.

#### **d. Munitions Demilitarization Facilities.**

Private firms that conduct munitions demilitarization operations qualify to receive MDEH or MDAS. These firms may also be qualified by DLA to receive MLIs or CCLIs.

#### **e. POCs for MPPEH Compliance Issues.**

See Table 2 in Section 11.

## APPENDIX 10A: SAMPLE MOA

Figure 2. Sample MOA

<p>Letterhead</p>
<p>SUBJECT: Memorandum of Agreement (MOA)</p>
<p>MEMORANDUM FOR (Installation Commander, Address)</p>
<p>1. References:</p> <ul style="list-style-type: none"><li>a. DoD Manual 5100.76, "Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives (AA&amp;E)"</li><li>b. DoD Manual 4160.21, "Defense Materiel Disposition Manual"</li><li>c. DoD Manual 4160.28, "Defense Demilitarization," Volumes 1-3</li></ul>
<p>2. This MOA between DLA Disposition Services and the Commanding Officer, (Address), provides for the disposal processing of material potentially presenting an explosive hazard (MPPEH), material documented as an explosive hazard (MDEH), or material documented as safe (MDAS) that was removed from operational ranges during range clearance or other activities that generate such material.</p> <ul style="list-style-type: none"><li>a. DLA Disposition Services Site must provide sales service including submitting a list of properties for sale, recommending special conditions, printing and mailing of sales offerings, conducting sales, providing contract monitoring, depositing sales proceeds, and recordkeeping only.</li><li>b. (Cite Specific Activity) must retain accountability and custody of range residue materiel.</li><li>c. (Cite Specific Activity, Address) agrees to:<ul style="list-style-type: none"><li>(1) Provide a central collection point and workspace at site for residue and ensure material is segregated.</li><li>(2) Provide physical security. Must have overall responsibility for the security of the material, safeguarding and protecting it from damage or theft in accordance with Reference a.</li><li>(3) Provide a complete list of all types of munitions used, targets or target materials used, etc.</li><li>(4) Provide point of contact: name, rank organization, and telephone number.</li><li>(5) Segregate residue into groups in accordance with Reference b.</li></ul></li></ul>



**Figure 2. Sample MOA, Continued**

- (6) Provide technically qualified personnel to inspect residue and sign the DD Form 1348-1 A, "Issue Release/Receipt Document," available at <https://www.esd.whs.mil/Directives/forms/>, or an equivalent form, certifying applicable material as MDEH or MDAS. Certification is required for all material. If necessary, specify times that technical personnel will be available (e.g., 0700-1700 weekdays, except on Federal holidays).
- (7) Provide for quality assurance (QA) inspection, certification, and venting (where applicable) by qualified personnel.
- (8) Provide, when necessary, technically qualified personnel for QA inspection at designated collection site to re-certify material before being loaded into the contractor's conveyance.
- (9) In coordination with the DLA Disposition Services Site's demilitarization coordinator, identify material that requires demilitarization and the appropriate methods of demilitarization. Segregate material requiring demilitarization from non-demilitarization required property and provide qualified personnel to certify and verify demilitarization has been accomplished in accordance with Reference c.
- (10) Provide qualified personnel to certify that range residue contains no radioactive residue. Confirm that all material is radiation checked before being loaded into the contractor's conveyance.
- (11) Provide escorts for potential customers during the hours of inspection.
- (12) Prepare a DD Form 1348-1A (containing the appropriate radiation check, demilitarization, declassification, and MDEH or MDAS certifications) and weight ticket for each load of material removed.
- (13) If officially designated as the contracting officer's representative or authorized releasing official, prepare DLA Form 1367, "Shipment Receipt/Delivery Pass" (available at [https://www.dla.mil/Portals/104/Documents/FormsSite/forms/DL1367.pdf?ver=8OmdnQOt\\_xW\\_Nw88tjHhhg%3d%3d](https://www.dla.mil/Portals/104/Documents/FormsSite/forms/DL1367.pdf?ver=8OmdnQOt_xW_Nw88tjHhhg%3d%3d)) for each load of material released.
- (14) Use DLA Form 1367 to certify M151 jeeps, GAMMA Goats, GOERS, or other material required to be destroyed or mutilated by DoD directives or instructions (other than demilitarization) included in the material (e.g., range residue) as required by Reference b.
- (15) Assign two weighmasters, primary and alternate, who will escort contractor vehicles to the scale for outweighthing.
- (16) Be responsible for re-inspection, re-certification, retrieval, accountability, and custody of material that has been identified as containing military munitions or radioactive material before or after sales removal. At the time of award, and before the removal of any material, qualified individuals must provide a briefing to the purchaser and DLA Disposition Services Site personnel regarding the types of material being disposed of, recognition and identification of associated hazards, and response actions to be taken in the event that live or suspected military munitions and dangerous articles are discovered during removal or at the contractor's site.

**Figure 2. Sample MOA, Continued**

<p>3. DLA Disposition Services Site _____ agrees to:</p> <ul style="list-style-type: none"><li>a. Receive documentation and weight ticket from the generating activity regarding property including: DoD Form 1348-1A (with radiation check, MDEH, MDAS, demilitarization and declassification certifications, as appropriate) and DLA Form 1367, when applicable, for each load removed.</li><li>b. Provide assistance and guidance for identification of property requiring further demilitarization. [Write this paragraph depending on the type of sale. Provide sales assistance for range residue that may be offered on a (state type of sale). Determine the terms and conditions of sale such as hours of inspection, appointment only, 48-hours advance notice before pickup, loading hours, and performance bond equal to 50 percent of contract bid price.]</li><li>c. Provide accountability through a wash-post transaction from weight tickets, including a running total of tonnage removed. The DLA Disposition Services Site must receive copies of certified weight tickets, DD Form 1348-1A, and DLA Forms 1367 with proper certification acknowledging receipt and release of property. The receipt and release of property must be recorded in appropriate inventories/records.</li><li>d. Provide technical assistance in identifying property requiring demilitarization and the appropriate methods of demilitarization. Review demilitarization performance to ensure adequacy and compliance with References b. and c.</li></ul>	
<p>4. Termination: This MOA will remain in effect until 365 days beyond completion of the contract. The party proposing to terminate the MOA must furnish the other party with a written notice 60 days before the effective date.</p>	
<p>5. MPPEH incidents pose a significant safety threat to all parties involved in the disposal of the material. (Cite specific activity) and DLA agree to work cooperatively and in good faith to carry out the purpose of this MOA. Each must direct their subordinate personnel to adhere to the terms of this MOA and ensure the safety of all operations.</p>	
<p>Installation or Generating Activity Commander Date</p>	<p>DLA Disposition Services or DLA Disposition Services Site Commander or Supervisor Date</p>

## SECTION 11: POCs FOR MPPEH COMPLIANCE ISSUES

**Table 2. POCs for Assistance with MPPEH Compliance Issues**

Service	Explosives Safety Issues	TSC and Demilitarization Procedures	Environmental Management
	DoD Component Explosives Safety Management Office POCs	DoD Component Munitions Logistics Proponent Office POCs	DoD Component Environmental Management Proponent Office POCs
Army	<p>U.S. Army Technical Center for Explosives Safety ACTL-ACE usarmy.mcalester.usamc.list.dac-es@mail.mil Defense Ammunition Center Technical Center 1 C Tree Road, Bldg 35 McAlester, OK 74501-9053 Phone: DSN 956-8992/8407 Commercial (918) 420-8992/8407</p> <p>Technical questions on ammunition or explosives safety should be directed to AmmoHelp: <a href="https://mhp.redstone.army.mil/modules/AMMO_HELP/AskQuestion.aspx">https://mhp.redstone.army.mil/modules/AMMO_HELP/AskQuestion.aspx</a></p>	<p>Headquarters, Department of the Army ATTN: DCS, G-4 Supply Policy Division (DALO-SUM) 500 Army Pentagon Washington, DC 20310-0500 Phone: DSN 224-4058 Commercial (703) 614 4058</p>	<p>Installation Management Command – Army Environmental Command U.S. Army Environmental Command 5179 Hoadley Road Aberdeen Proving Ground, MD 21010-5401 Phone: Commercial (410) 436-2657</p> <p>Army Environmental Hotline: 1-800-USA-3845 Outside the continental United States: Commercial (410) 436-1699</p> <p>Questions should be submitted to <a href="https://aec.army.mil/index.php/AskAEC">https://aec.army.mil/index.php/AskAEC</a></p>
Navy	<p>Naval Ordnance Safety and Security Activity (NOSSA)/Ordnance Environmental Support Office NOSSA Code N4 4324 Steve’s Way Indian Head, MD 20640-5058 Phone: Commercial (301) 744-4450 E-mail: INHDNOSA-ESTECHSUPPORT@navy.mil Website: <a href="https://www.navsea.navy.mil/Home/NOSSA/">https://www.navsea.navy.mil/Home/NOSSA/</a></p>	<p>NOSSA Code N4 4324 Steve’s Way Indian Head, MD 20640-5058 Phone: Commercial (301) 744-4450 E-mail: INHDNOSA-ESTECHSUPPORT@navy.mil Website: <a href="https://www.navsea.navy.mil/Home/NOSSA/">https://www.navsea.navy.mil/Home/NOSSA/</a></p>	<p>NOSSA/Ordnance Environmental Support Office NOSSA Code N4 4324 Steve’s Way Indian Head, MD 20640-5058 Phone: Commercial (301) 744-4450 E-mail: INHDNOSA-ESTECHSUPPORT@navy.mil Website: <a href="https://www.navsea.navy.mil/Home/NOSSA/">https://www.navsea.navy.mil/Home/NOSSA/</a></p>

**Table 2. POCs for Assistance with MPPEH Compliance Issues, Continued**

Service	Explosives Safety Issues	TSC and Demilitarization Procedures	Environmental Management
	DoD Component Explosives Safety Management Office POCs	DoD Component Munitions Logistics Proponent Office POCs	DoD Component Environmental Management Proponent Office POCs
Air Force	Air Force Safety Center Weapons Safety Division 9700 G Avenue, Suite 130 Kirtland AFB, NM 87117-5670 Phone: DSN 246-0248 Commercial (505) 846-0248	Air Force Materiel Command To contact a specific organization or individual, call the Wright-Patterson Air Force Base operator at DSN 787-1110 Commercial (937) 257-1110  Questions should be submitted to <a href="https://www.afmc.af.mil/Contact-Us/">https://www.afmc.af.mil/Contact-Us/</a>	HQ USAF/A7CEV 1260 Air Force Pentagon Washington, DC 20330-1260 Phone: DSN 612-4252 Commercial (240) 612-4252
Marine Corps	Marine Corps Systems Command Program Manager for Ammunition 2200 Lester Street Quantico, VA 22134-6050 Phone: Commercial (703) 432-8781	Contact the Program Manager or Ammunition Office Manager at Commercial (703) 432-8781	Marine Corps Systems Command Program Manager for Ammunition 2200 Lester Street Quantico, VA 22134-6050 Phone: Commercial (703) 432-8781
DoD	DDESB 4800 Mark Center Drive, Suite 16E12 Alexandria, VA 22350-3606 Phone: DSN 372-6688/6705 Commercial (571) 372-6688/6705	DLA Disposition Services Hart-Dole-Inouye Federal Center 74 Washington Ave. Battle Creek, MI 49037-3092 Phone: DSN 932-7932/7387/7321  DoD Trade Security Controls Program Office Andrew T. McNamara Building 8725 John J. Kingman Road Fort Belvoir, VA 22060-6221  DoD Demilitarization Office Andrew T. McNamara Building 8725 John J. Kingman Road Fort Belvoir, VA 22060-6221	Office of the Under Secretary of Defense for Acquisition and Sustainment 3400 Defense Pentagon Room 5C646 Washington, DC 20301-3400

## GLOSSARY

### G.1. ACRONYMS.

ACRONYM	MEANING
2-D	two-dimensional
3-D	three-dimensional
ASD(S)	Assistant Secretary of Defense for Sustainment
CCLI	commerce control list item
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DDESB	Department of Defense Explosives Safety Board
DESR	Defense Explosives Safety Regulation
DLA	Defense Logistics Agency
DMM	discarded military munitions
DoDD	DoD directive
DoDI	DoD instruction
DoDM	DoD manual
DSN	Defense Switched Network
DTID	disposition turn-in document
DU	depleted uranium
EOD	explosive ordnance disposal
EPA	Environmental Protection Agency
ESACC	expended small arms cartridge case
ESP	explosives site plan
EUC	end-use certificate
HQ	headquarters
MC	munitions constituents
MD	munitions debris
MDAS	material documented as safe
MDEH	material documented as an explosive hazard
MLI	munitions list item
mm	millimeter
MOA	memorandum of agreement
MPPEH	material potentially presenting an explosive hazard
NAVSEAINST	Naval Sea Systems Command Instruction
NEW	net explosive weight

<b>ACRONYM</b>	<b>MEANING</b>
NOSSA	Naval Ordnance Safety and Security Activity
OB	open-burning
POC	point of contact
PPE	personal protective equipment
QA	quality assurance
QC	quality control
QRP	qualified recycling program
RCRA	Resource Conservation and Recovery Act
SAA	small arms ammunition
SOP	standard operating procedure
TB	technical bulletin
TO	technical order
TP	technical paper
TSC	trade security controls
TSDF	treatment, storage, or disposal facility
U.S.C.	United States Code
USD(A&S)	Under Secretary of Defense for Acquisition and Sustainment
UXO	unexploded ordnance

## **G.2. DEFINITIONS.**

Unless otherwise noted, these terms and their definitions are for the purpose of this issuance.

<b>TERM</b>	<b>DEFINITION</b>
<b>authorized facility</b>	A facility that can <b>only</b> receive MDAS. It is not the same as a qualified receiver that can receive MDEH and MDAS.
<b>CCLI</b>	Defined in Volume 1 of DoDM 4160.28.
<b>certified personnel</b>	As indicated in writing by the commander or responsible leadership authority, personnel who have the technical proficiencies required to make acceptability determinations, in writing, that enable the movement of recovered explosives over public transportation routes.
<b>chain of custody</b>	Defined in DESR 6055.09.

<b>TERM</b>	<b>DEFINITION</b>
<b>collection points</b>	Locations on operational ranges used during range clearance activities to collect MPPEH before its transfer to an MPPEH processing area.
<b>demilitarization</b>	Defined in Volume 1 of DoDM 4160.28.
<b>demilitarization code</b>	Defined in Volume 1 of DoDM 4160.28.
<b>DMM</b>	Defined in Section 2710(e)(2) of Title 10, U.S.C.
<b>documentation of explosives safety status</b>	Documentation that attests the material: Does not present an explosive hazard and is consequently safe for release (MDAS), or has known or suspected explosive hazards and may only be transferred or released to a qualified receiver (MDEH).
<b>EUC</b>	Defined in DoDI 2030.08.
<b>expert knowledge</b>	Technical information, knowledge, or expertise associated with a specific munition or assembly to support a justification that an explosive hazard does not remain in the munition or assembly after functioning. This technical data may be analytical or empirical in nature and must be approved by the respective DoD Component.
<b>explosive hazard</b>	Defined in DESR 6055.09.
<b>explosives or munitions emergency</b>	Defined in Section 260.10 of Title 40, CFR.
<b>generate</b>	The origin or source of the MPPEH. It does not mean generation of solid or hazardous waste as used in the RCRA.
<b>inert munition</b>	A munition from which explosive substances and other hazardous items (e.g., batteries, high-pressure vessels, spring high tension assemblies) are physically removed by authorized EOD personnel in accordance with Joint Publication 3-42, and the remaining material does not pose an explosive or mechanical hazard.
<b>management and disposition of MPPEH, MDEH, and MDAS</b>	Defined in DoDI 4140.62.
<b>MC</b>	Defined in Section 2710(e)(3) of Title 10, U.S.C.

<b>TERM</b>	<b>DEFINITION</b>
<b>MD</b>	Defined in DESR 6055.09.
<b>MDAS</b>	Defined in DoDI 4140.62.
<b>MDEH</b>	Defined in DoDI 4140.62.
<b>military munitions</b>	Defined in Section 101(e)(4) of Title 10, U.S.C.
<b>mills</b>	Facilities where metals are made from ore or scrap.
<b>MLI</b>	Defined in Volume 1 of DoDM 4160.28.
<b>MPPEH</b>	Defined in DoDI 4140.62
<b>MPPEH generating activity</b>	Entities having produced MPPEH, and the follow-on responsibility for processing it, including appropriate handling and management for ultimate disposal.
<b>MPPEH processing</b>	Defined in DoDI 4140.62.
<b>munitions and explosives of concern</b>	Defined in DESR 6055.09.
<b>munitions response site</b>	Defined in Section 179.3 of Title 32, CFR.
<b>NEW</b>	Defined in DESR 6055.09.
<b>other debris</b>	Debris found on operational ranges or munitions response sites that may be removed to facilitate a range clearance or munitions response that is not related to munitions or range operations. Such debris includes, but is not limited to, rebar, household items (e.g., refrigerators, washing machines), automobile parts and automobiles that were not associated with range targets, fence posts, and fence wire.
<b>PPE</b>	Equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards.
<b>QRP</b>	Defined in DoDI 4715.23.
<b>qualified receiver</b>	Defined in DoDI 4140.62.



<b>TERM</b>	<b>DEFINITION</b>
<b>range-related debris</b>	Defined in DESR 6055.09.
<b>recyclable material</b>	Includes brass, scrap metal, propellants, and explosives.
<b>SAA</b>	Defined in DESR 6055.09.
<b>scrap</b>	Recyclable waste and discarded materials derived from items that have been rendered useless beyond repair, rehabilitation, or restoration such that the item's original identity, utility, form, fit, and function have been destroyed. Items can be classified as scrap if processed by cutting, tearing, crushing, mangling, shredding, or melting. Intact or recognizable MLIs and CCLIs, components, and parts are not scrap.
<b>scrap metal</b>	Defined in Section 261.1(c)(6) of Title 40, CFR and Section 9627(d)(3) of Title 42, U.S.C. EPA guidance clarified that scrap metal is at least 50 percent metal and is in a non-dispersible form. EPA guidance (i.e., preamble to the EPA Military Munitions Rule at Page 6631 of Volume 62, Federal Register) has also clarified that metal fragments from fired munitions can be classified as scrap metal.
<b>target materials</b>	Materials specially designed as targets, target holders, lifters, and movers, as well as vehicles, weapons platforms, and even household goods that were used as targets on military ranges.
<b>transferred within, or released from, DoD control</b>	Defined in DoDI 4140.62.
<b>TSC</b>	Defined in DoDI 2030.08.
<b>TSC assessment</b>	Defined in DoDI 2030.08.
<b>unauthorized transfers or releases of MPPEH, MDEH, or MDAS</b>	Such transfers or releases are a transfer within or release from DoD control of:  MPPEH for which the explosives safety status has not been documented.  MPPEH or MDEH to a receiver who is not qualified from an explosives safety or TSC perspective to receive material.

**TERM**

**DEFINITION**

MDAS that is determined to contain munitions that pose an explosive hazard or other material (e.g., containers or target materials) that contain munitions. The release of MDAS that contains SAA is not considered to pose an explosive hazard, but will be reported when the quantity of live SAA requires the MDAS to be reprocessed in compliance with DoD Component guidance.

**UXO**

Defined in Section 101(e)(5) of Title 10, U.S.C.

**vent**

Defined in DESR 6055.09.

**wholly inert**

Defined in DESR 6055.09.

## REFERENCES

- Code of Federal Regulations, Title 32, Section 179.3
- Code of Federal Regulations, Title 40
- Defense Transportation Regulation 4500.9-R, Part II, “Cargo Movement,” June 22, 2020
- DoD 7000.14-R, Volume 1, “Department of Defense Financial Management Regulation (DoD FMR),” December 2020
- DoD Directive 5106.01, “Inspector General of the Department of Defense (IG DoD),” April 20, 2012, as amended
- DoD Directive 5135.02, “Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)),” July 15, 2020
- DoD Explosives Safety Board Technical Paper 18, “Minimum Qualifications for Personnel Conducting Munitions and Explosives of Concern-Related Activities,” June 24, 2020
- DoD Instruction 2030.08, “Implementation of Trade Security Controls (TSC) for Transfers of DoD Personal Property to Parties Outside DoD Control,” February 19, 2015, as amended
- DoD Instruction 4140.62, “Material Potentially Presenting an Explosive Hazard (MPPEH),” August 20, 2015, as amended
- DoD Instruction 4160.28, “DoD Demilitarization (DEMIL) Program,” April 7, 2011, as amended
- DoD Instruction 4161.02, “Accountability and Management of Government Contract Property,” April 27, 2012, as amended
- DoD Instruction 4715.23, “Integrated Recycling and Solid Waste Management,” October 24, 2016, as amended
- DoD Instruction 5000.64, “Accountability and Management of DoD Equipment and Other Accountable Property,” May 27, 2017, as amended
- DoD Instruction 5160.68, “Single Manager for Conventional Ammunition (SMCA): Responsibilities of the SMCA, the Military Services, and United States Special Operations Command (USSOCOM),” December 29, 2008, as amended
- DoD Instruction 5505.02, “Criminal Investigations of Fraud Offenses,” August 29, 2013, as amended
- DoD Instruction 6055.07, “Mishap Notification, Investigation, Reporting, and Record Keeping,” June 6, 2011, as amended
- DoD Manual 4160.21, “Defense Materiel Disposition,” October 22, 2015, as amended
- DoD Manual 4160.28, Volume 1, “Defense Demilitarization: Program Administration,” August 9, 2017, as amended
- DoD Manual 4160.28, Volume 2, “Defense Demilitarization: Demilitarization Coding,” March 9, 2017, as amended
- DoD Manual 4160.28, Volume 3, “Defense Demilitarization: Procedural Guidance,” June 7, 2011, as amended
- DoD Manual 4715.05, “Overseas Environmental Baseline Guidance Document,” June 29, 2020
- DoD Manual 4715.26, “DoD Military Munitions Rule (MR) Implementation Procedures,” April 25, 2017, as amended

DoD Manual 5100.76, “Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives (AA&E),” April 17, 2012, as amended

DoD Manual 8910.01, Volume 1, “DoD Information Collections Manual: Procedures for DoD Internal Information Collections,” June 30, 2014, as amended

DoD Manual 8910.01, Volume 2, “DoD Information Collections Manual: Procedures for DoD Public Information Collections,” June 30, 2014, as amended

Federal Register, Volume 62, Page 6631, February 12, 1997

Joint Publication 3-42, “Joint Explosive Ordnance Disposal,” September 9, 2016

Joint Technical Bulletin 700-2/Naval Sea Systems Command Instruction 8020.8C/Air Force Technical Order 11A-1-47, “Department of Defense Ammunition and Explosives Hazard Classification Procedures,” July 30, 2012

Under Secretary of Defense for Acquisition and Sustainment, “Defense Explosives Safety Regulation 6055.09,” Edition 1, January 13, 2019

Under Secretary of Defense for Acquisition, Technology, and Logistics Memorandum, “Department of Defense (DoD) Implementing Guidance for the Commercial Sale of Expended Small Arms Cartridge Cases (ESACC),” June 23, 2011

United States Code, Title 10

United States Code, Title 33, Section 1251 (also known as “The Clean Water Act of 1972”)

United States Code, Title 40, Chapter 5

United States Code, Title 42