Department of the Army Pamphlet 742–1

Inspection of Supplies and Equipment

Ammunition Surveillance Procedures

Headquarters
Department of the Army
Washington, DC
22 November 2016

UNCLASSIFIED

SUMMARY

DA PAM 742–1
Ammunition Surveillance Procedures

This new Department of the Army, dated 22 November 2016—

- Contains introductory information (chap 1).
- Addresses surveillance of ammunition by inspection (chap 2).
- Describes activities that directly support the Ammunition Stockpile Reliability Program test programs (chap 3).
- Provides guidance for conducting the Ammunition Surveillance Program at the installation level and in support of other contingency operations (chaps 4 through 6).
- Provides item specific guidance for large rockets, precision guided munitions (to include missiles, guided rockets and guided projectiles), toxic chemical munitions and propellants and propelling charges (chaps 7 through 9).
- Provides specific guidance for supporting the Security Assistance Program (chap 10).
- Provides overarching guidance for required records and reports (chap 11).
- Provides detailed guidance and/or instructions for conducting ammunition surveillance activities in support of four major Ammunition Stockpile Reliability Program elements; Ammunition Surveillance Program; research, development, test and evaluation; Function Test Program; and Stockpile Laboratory Test Program (throughout).
- Establishes and prescribes System Generated (SG) form; DA Form 3022–SG, Army Depot Surveillance Record for use within the Munitions History Program (throughout).
- Prescribes DA Form 3022, Army Depot Surveillance Record and DA Form 984, Munitions Surveillance Report (throughout).
- Changes the proponent of DA Form 984, Munitions Surveillance Report and DA Form 3022, Army Depot Surveillance Record from U.S. Army Materiel Command to Deputy Chief of Staff, G–4 (throughout).

Headquarters
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*Department of the Army Pamphlet 742–1

Series Title

Ammunition Surveillance Procedures

By Order of the Secretary of the Army:

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History. This publication is a new publication.

Summary. This pamphlet implements the Department of the Army Ammunition Surveillance policies established by AR 702–6 and describes the functions that constitute the Department of the Army Ammunition Surveillance Program as defined in AR 740–1.

Applicability. This pamphlet applies to the Active Army, the Army National Guard/Army National Guard of the United States, and the U.S. Army Reserve, unless otherwise stated.

Proponent and exception authority. The proponent of this pamphlet is the Deputy Chief of Staff, G–4. The proponent has the authority to approve exceptions or waivers to this pamphlet that are consistent with controlling law and regulations. The proponent may delegate this approval authority, in writing, to a division chief within the proponent agency or its direct reporting unit or field operating agency, in the grade of colonel or the civilian equivalent. Activities may request a waiver to this pamphlet by providing justification that includes a full analysis of the expected benefits and must include formal review by the activity's senior legal officer. All waiver requests will be endorsed by the commander or senior leader of the requesting activity and forwarded through their higher headquarters to the policy proponent. Refer to AR 25–30 for further guidance.

Suggested improvements. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to the Deputy Chief of Staff, G–4 (DALO–SUM), 500 Army Pentagon, Washington, DC 20310–0500.

Distribution. Distribution of this publication is available in electronic media only and is intended for command levels C, D, and E for the Active Army, the Army National Guard/Army National Guard of the United States, and the U.S. Army Reserve.

Contents (Listed by paragraph and page number)

*This publication supersedes SB 742–1, dated 1 September 2008.

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Chapter 1
Introduction

1–1. Purpose

The publication implement the Department of the Army (DA) Ammunition Surveillance policies and functions established by AR 702–6 and AR 740–1. This document also prescribes the procedures to assure quality requirements for ammunition and explosives (AE) (also referred to as Department of Defense (DOD) military munitions or Class V) and materiel provided to foreign governments under the Army Security Assistance Program. This pamphlet also applies to standard and nonstandard munitions including commercial and foreign munitions, and nonstandard munitions approved for use by U.S. Forces, including such munitions as that used with developmental or experimental ammunition, for example, a charge used to propel experimental projectiles, munitions issued for comparison purposes during research, developmental, or test phases of new items, munitions used for seating, warming, spotting, or other purposes during testing, and munitions being evaluated for lot acceptance purposes or fly-to-buy contracts (guided missiles and large rockets only).

1–2. References

See appendix A.

1–3. Explanation of abbreviations and terms

See glossary.

1–4. Scope

a. This publication encompasses military munitions at both the wholesale and retail level. Military munitions means all ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the DOD, the Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants; explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives and chemical warfare agents; chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, and demolition charges; and devices and components of any item thereof. The term does not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components, other than nonnuclear components of nuclear devices that are managed under the nuclear weapons program of the Department of Energy after all required sanitization operations under the Title 42, United States Code (USC), Section 2011 (42 USC 2011) have been completed. Additionally, this document addresses research, development test and evaluation (RDT&E) stocks in storage.

b. The procedures contained herein apply to military munitions in the wholesale, retail, combat support stockpiles, and ammunition in the hands of troops worldwide. This includes, but is not limited to depots, munitions centers, ammunition plants, RDT&E facilities, proving grounds, theater storage areas, ammunition supply points (ASPs), ammunition transfer and holding points (ATPs), and combat load storage areas.

c. Use of this publication is mandatory for each DA element that has a receipt, storage, issue, maintenance, demilitarization (DEMIL) and/or disposal, surveillance, transportation, or test mission for military munitions.

1–5. Ammunition Surveillance Program

The Ammunition Surveillance Program is an integral part of the Ammunition Stockpile Reliability Program (ASRP), is executed by ammunition surveillance personnel, and applies to all Army organizations that have AE related missions (for example, receipt, storage, issue, maintenance, surveillance, DEMIL, transportation or test). It evaluates the functional and nonfunctional characteristics of the AE stockpile. The program includes, but is not limited to, visual inspections and tests (for example, initial receipt, readiness inspection, and combat load), review and evaluation of the full range of AE related logistic operations, and includes explosives safety functions. It is also conducted as part of both the supply readiness program and other quality control activities. AR 702–6, AR 702–12, and AR 740–1 establish the Ammunition Surveillance Program, with implementation procedures provided by DA Pam 742–1, ammunition stockpile test procedures (ASTPs), and supply bulletins (SBs). DA Civilian quality assurance specialists (ammunition Surveillance) (QASAS), GS–1910 series (CP–20) manage and execute the Army's Ammunition Surveillance Program.

a. The ASRP functions identified by this pamphlet are accomplished under the technical direction of a QASAS. Technical direction is a continual process of oversight, review, and assessment. The experience and knowledge of non-QASAS

ammunition personnel conducting and supporting the ASRP surveillance functions will be continually evaluated and considered in the oversight process.

b. The commander of organizations with assigned QASAS will appoint the QASAS in charge. Normally the commander appoints the senior QASAS, by grade, within the organization as the QASAS in charge. The QASAS in charge will ensure that the Ammunition Surveillance Program functions defined in this pamphlet are executed. Ammunition warrant officers (military occupational specialty (MOS) 890A) and military ammunition inspectors, MOS 89B, in the grade of staff sergeant or above, or designated civilian technicians (including local nationals at locations outside the United States), who have been trained and/or certified by the Defense Ammunition Center may supplement and assist the QASAS for the accomplishment of the following ammunition surveillance functions:

(1) Inspecting AE.

(2) Assisting and/or advising using units in AE surveillance, storage, and explosives safety matters.

(3) Applying inspection criteria resident in the Munitions History Program (MHP).

(4) Recommending ammunition condition code (CC) assignment.

(5) Applying AE suspensions and restrictions.

(6) Inspecting AE laden conveyances including required blocking and bracing, to ensure the load's suitability for transport.

(7) Advising commanders on AE surveillance and explosives safety matters.

(8) Inspecting AE storage locations to ensure compliance with applicable explosives safety criteria, including, among other matters, storage compatibility, and correct computation of explosives safety quantity distances.

(9) Performing other ammunition surveillance related activities as directed and/or approved by the QASAS in charge.

c. Throughout this publication, the term "QASAS in charge" is defined as the senior or chief QASAS of the local surveillance organization. For application in organizations without an assigned QASAS, the term relates to the "QASAS in charge" of the supporting ammunition surveillance organization.

d. Technical publications, drawings, specifications, and instructions issued by appropriate life cycle management commands (LCMCs) and materiel developers will be used to supplement this document.

e. Tests and inspections.

(1) The only tests and inspections authorized for ammunition surveillance operations are those covered by applicable technical publications, or specific written authorization from U.S. Research Development and Engineering Command (RDECOM) and/or the appropriate commodity command.

(2) Test, measurement, and diagnostic equipment; tools and gages; and ammunition peculiar equipment (APE) used in these operations will be limited to those specifically authorized for the item under test or examination.

(3) Modification of ammunition items will not be attempted unless specifically authorized by the above mentioned publications or by specific written authorization from RDECOM or the appropriate LCMC.

(4) Disassembly and reassembly of ammunition items may be authorized as part of the visual inspection provided that—

(a) There is reasonable cause to justify disassembly of samples.

(b) Disassembly and reassembly is conducted in accordance with approved procedures.

(c) Approved facilities and equipment are available and used.

f. The words "will" and "must" are used in this publication to indicate mandatory requirements. The word "should" indicates a normally required method of accomplishment which can be deviated from only upon the documented authorization of the QASAS in charge. A written record of the justification or rationale for the deviation must be maintained. The term "may" indicates an acceptable or suggested means of accomplishment.

g. Due to the inherently hazardous nature of AE operations, ammunition surveillance personnel must:

(1) Follow all AE safety standards of AR 385–10, AR 385–63, DA Pam 385–63, and DA Pam 385–64, as applicable.

(2) Ensure personnel are trained in accordance with requirements in DA Pam 385–64.

(3) Take prompt action to control any hazard. If a dangerous item or situation is encountered take action to shut down all operations in the immediate area. Evacuate personnel to a safe site. Report the incident immediately through the proper chain of command. As required, call explosive ordnance disposal or other authorized personnel for help in eliminating the hazard. Resume operations only after the hazard has been eliminated.

(4) Ensure hazards and explosives safety risks are formally identified, controlled or accepted in accordance with DA Pam 385–30.

1–6. Quality Assurance Specialist (Ammunition Surveillance)

Management of the QASAS civilian career program is defined in AR 690–950 and AR 702–12.

1–7. Technical assistance

a. Direct requests for technical assistance concerning implementation of this publication to the appropriate command having management responsibility for the commodity involved. Addresses are available in the MHP, https://mhp.redstone.army.mil.

(1) U.S Army Aviation and Missile Research & Development Engineering Center (RDMR–SER), 5400 Fowler Road, Redstone Arsenal, AL 35898–5000.

(2) U.S. Army Joint Munitions Command (JMC) (AMSJM–QAS) 1 Rock Island Rock Island, IL 61299–6000

(3) U.S. Army Chemical Materials Activity (AMSCM–SOP–SMO) E4585 Hoadley Road (Building E4517), Aberdeen Proving Ground, MD 21010–5424.

b. Direct queries concerning the surveillance of items under single manager for conventional ammunition (SMCA) to JMC (AMSJM–QAS). This includes items in industrial and field service accounts, regardless of the owning Service.

c. A listing of recommended Web sites for the following topics is maintained in the MHP and are available at https://mhp.redstone.army.mil. Available information includes the following:

(1) Propellant stability information.
(2) Publications.
(3) Joint Hazard Classification System.
(4) Special packaging instructions (SPIs).
(5) Conventional ammunition priority listing.
(6) DD Form 1650 (Ammunition Data Card)
(7) Aviation and Missile Command (AMCOM) electronic ordering of drawing hard copies.
(8) Outloading and/or unitization drawings.
(9) Deterioration check test and/or functional clearance request.
(10) Cartridge actuated devices (CADs) disposition worksheet.
(11) Automatic returns list.

Chapter 2
Surveillance of Ammunition by Inspection

2–1. General

a. The Ammunition Surveillance Program is structured to ensure that materiel in the stockpile meets established serviceability and explosives safety criteria and is properly classified. Trained and qualified personnel accomplish inspections using statistical sampling techniques and procedures prescribed in this publication. The program identifies items for timely maintenance, DEMIL and/or disposal, priority of issue, and restricted use. The classification of defects and standards in this publication provides the ammunition surveillance organization with necessary guidance to accomplish program goals and assigned missions.

b. The JMC (AMSJM–QAS) maintains a priority listing for readiness inspections for Army stocks based on training and combat requirements. Commands should use the priority listing, consistent with command operating requirements available at Web site listed in paragraph 1–7*c*. Large rocket and guided missile inspection, maintenance and stockpile reliability test priorities are provided in chapter 7.

c. Types of inspections and inspection intervals are specified in paragraphs 2–5 and 2–6, respectively.

d. Use the general inspection criteria of this chapter supplemented by the guidance for specific items in the MHP for defect classification. In the event of conflict between general and specific requirements, the specific requirements will take precedence.

2–2. Selection and inspection of samples

a. *Sample selection.*

(1) The ammunition surveillance organization will select and tag samples in storage for inspection. Samples will be representative of the entire lot or lot cluster under evaluation. The evaluation will include overall condition of the lot or lot cluster in storage and will be recorded on the inspection report. The ammunition surveillance organization must exercise judgment to ensure maximum representation without unnecessary rewarehousing.

(2) Samples of items that cannot be returned to the original package configuration (for example, hermetically sealed containers, small arms ammunition packed in metal (terneplate) lined M1917 boxes, and heat-sealed barrier bags) will be used on a recurring basis if sampled lot is not part of a cluster. Ammunition surveillance organizations will reseal barrier bags. If the recurring samples indicate progressing deterioration, lot acceptability will be determined by inspection of an additional sample equal in size to the original sample from original sealed containers.

(3) Accomplish selection and preparation of ASRP test program samples according to instructions contained in this publication, the applicable ASTPs or supply bulletin (SB) for the particular item and instructions from the appropriate LCMC. Accomplish selection and preparation of samples for shipment to a test facility in accordance with chapter 3.

b. *Sample inspection.*

(1) Conduct all inspections and tests under the technical direction of a QASAS. Use the appropriate sampling plan from chapter 2 or 10 (Security Assistance). Use inspection and design criteria contained in the MHP, drawings, ammunition information notices (AINs), missile information notices (MINs), military specifications (MIL–SPECs), and DD Form 1650, supplemented by related technical publications, during all prescribed inspections. Record all deviations from standards in the MHP, DA Form 3022–SG (Army Depot Surveillance Record), in the event MHP is unavailable DA Form 3022 (Army Depot Surveillance Record) is acceptable.

(a) Compare item being inspected with the drawing or specification with the same revision under which it was manufactured or modified.

(b) In the event of a conflict between defect classifications in this pamphlet and/or defect classifications in the inspection and design criteria contained in the MHP, specific item SBs and the MIL–SPECs, information in this pamphlet, and/or the specific item SB takes precedence over the MIL–SPEC when classifying defects.

(c) Inspection criteria contained in the MHP are approved for ammunition that has been accepted into the field service account. The inspections will assess serviceability, as well as suitability for storage and transportation. Defect classification contained in the MHP may differ from manufacturing criteria contained on drawings and in specifications. Where this occurs, the criteria contained in the MHP will take precedence. Contact the applicable LCMC for guidance, as required.

(2) Make requests for ammunition drawings to the applicable LCMC.

(3) DD Form 1650. Conduct examination of samples at the ammunition surveillance workshop building; however, examinations may be performed at alternative locations properly sited in accordance with explosives safety criteria found in DA Pam 385–64.

(4) Inspect samples for manufacturing defects, deterioration, damage, and unsafe conditions. Use gages and precision-measuring instruments during the inspections according to paragraph 2–8.

(5) Inspection results for each lot number or serial number (SN) inspected must be considered in conjunction with the results of previous inspections for that lot or SN. JMC (AMSJM–QAS) and AMCOM analyzes deterioration trends. Analysis may indicate that inspection intervals for items need to be expanded or reduced.

2–3. Application of inspection results

a. Sample inspection will apply to the entire lot or lot cluster and accept and reject numbers in table 2–2 will be used for lot classification (see para 2–6*c*). For inspections involving lot clusters, application of inspection results will be in accordance with paragraph 2–6*c*(14).

b. Rejected lots and/or lot clusters or defective samples must be reported in accordance with owning service requirements.

c. Locally suspend lots containing a critical defect, assign CC J and expeditiously report telephonically or via email to the LCMC Emergency Operations Center. Include item nomenclature, national stock number (NSN), lot and/or SN (both, if available), defect(s) encountered, number of defectives, and number of samples examined in the report. If possible and appropriate, include photographs.

2–4. Sample disposition

a. *General.* Return serviceable samples to storage with the parent lot.

b. *Samples.* Disposition of samples with critical defects.

(1) Tag samples and tag and/or mark outer packs. Tags and/or markings will contain the words “CRITICAL DEFECT.” Use DD Form 1577 (Unserviceable (Condemned) Tag - Material).

(2) Segregate and demilitarize (DEMIL) samples considered hazardous to store as soon as possible according to approved procedures.

(3) Return samples not considered hazardous to storage with the parent lot.

c. *Samples with major defects.*

(1) When defective samples are insufficient to cause lot rejection, tag samples and tag and/or mark outer packs. Segregate defective sample(s) and assign appropriate CC to the sample.

(2) When defective samples are sufficient to cause lot rejection, tag samples and tag and/or mark outer packs. Return defective samples to the parent lot and reclassify the lot to the proper CC.

d. *Samples with minor defects.*

(1) When defective samples are insufficient to cause lot rejection, defective sample(s) may be segregated and assigned an appropriate unserviceable CC or they may be repaired and returned to storage with the parent lot. Defective samples must be segregated, tagged and marked if they are not to be repaired.

(2) When defective samples are sufficient to cause lot rejection, tag samples and tag and/or mark outer packs. Return defective samples to the parent lot and reclassify the lot to the proper CC.

e. *Sample repackaging instructions.*

(1) Reseal hermetically sealed containers with pressure-sensitive adhesive, filament reinforced tape, military technical specification (MIL–T–43036). The tape will be minimum of 11/2 inch in width and will be applied using three wraps with a 1-inch pull-tab. Use lot inspection samples on a recurring basis for subsequent inspections. Mark or tag exterior package of samples as surveillance samples that are not to be shipped unless the total lot quantity is being shipped.

(2) Use inspection samples of small arms ammunition packed in metal-lined (terneplate) M1917 boxes on a recurring basis. Reseal terneplate lids using pressure-sensitive adhesive, filament reinforced tape. Exterior package of samples will be marked or tagged as surveillance samples that are not to be shipped unless the total lot quantity is being shipped.

(3) Barrier bags opened for inspection should have the air evacuated and be resealed with a sealing iron. Detailed instructions for sealing barrier material are contained in military standard (MIL–STD–2073–18) and detail specification bags, heat-sealable (see MIL–DTL–117H). Replacement bags must be prepared if the original bag cannot be resealed and equivalent barrier material is available. Properly resealed samples need not be used on a recurring basis. Barrier bags that cannot be resealed as outlined above will be secured using pressure-sensitive adhesive, filament reinforced tape. Mark or tag exterior package of these samples as surveillance samples that are not to be shipped unless the total lot quantity is being shipped.

(4) Reseal samples in jungle pack using pressure-sensitive adhesive, filament reinforced tape. Use inspection samples on a recurring basis. Exterior package of samples will be marked or tagged as surveillance samples that are not to be shipped unless the total lot quantity is being shipped.

(5) Implement the following procedures when unpacking or repacking M2A1 containers with polystyrene inserts:

(a) M2A1 containers with polystyrene inserts will remain open for the minimum time possible to conduct inspection.

(b) When possible, desiccant packed in M2A1 container will be replaced with fresh desiccant prior to repack. As an alternate method of minimizing moisture absorption, place removed desiccant and polystyrene inserts in an approved desiccant container. Return previously removed desiccant and supports to M2A1 container immediately prior to material repack and container closing.

(c) If procedure in paragraph 2–4*c* is not possible, repack desiccant and all inner packing in M2A1 container immediately after removal of contents. Close the M2A1 container until time of repack.

2–5. Types of inspection

a. Material received from an activity with a DA Form 3022–SG stating that required inspections and/or tests were performed on the lot within the specified time interval, inspection will be inspected for damage in transit (DIT). Initial receipt inspection (IRI) will be performed on all lots within 30 days after receipt or prior to shipment (whichever comes first) on materiel received directly from the manufacturer and that has been inspected and accepted by the Government (Defense Contract Management Agency or Army quality assurance representative). This inspection is expected to identify gross manufacturer errors and is not intended as a manufacturer's acceptance type inspection.

b. Receipt inspection.

(1) Material received from an activity with a DA Form 3022–SG stating that required inspections and/or tests were performed on the lot within the specified time interval, material will be inspected for DIT.

(2) If observed conditions during receipt inspection (RI) differ from the last DA Form 3022–SG comments, CC conflicts with MHP suspension restriction data or there is damage indicated, the QASAS in charge or the designated representative will determine the scope of additional inspection.

(3) If the condition of the lot cannot be determined by review of the DA Form 3022–SG or the observed condition does not match the latest DA Form 3022–SG comment, assign the lot CC K and schedule for inspection within 45 days of receipt.

(4) Material received from an Army activity should have a current DA Form 3022–SG. These forms are in the MHP for all Army activities and should be accessible to all receiving organizations. Link the Forms from the shipping activity to the current inspection in MHP. If ammunition is received without a current DA Form 3022–SG and the DA Form 3022–SG is not in MHP, request it from the shipping activity.

(5) Material received from a Navy activity and/or Marine Corps activity will be assigned the appropriate CC based on the material condition tag and the shipping documentation. If material is received without a material condition tag, the ammunition surveillance organization will contact the shipper and request information pertaining to the last inspection. Pending receipt of previous inspection information, assign material CC K.

(6) Material received from an Air Force activity will be assigned the appropriate CC based on the munitions inspection document (or equivalent) and shipping documentation. The ammunition surveillance organization will contact the shipper and request information pertaining to the last inspection if material is received without the inspection documents (or equivalent). Pending receipt of previous inspection information, material will be assigned CC K.

(7) AR 725–50 limits the assignment of CC K to a period not to exceed 45 days.

c. Materiel assigned CC K will be inspected as follows:

(1) Inspect containers 100 percent for presence of seals. Inspect contents of unsealed containers 100 percent. Assess veracity or credibility of seals on field returns. Perform gaging, as required by paragraph 2–8.

(2) Inspect properly sealed containers and their contents on a sampling basis by lot for deterioration and nonstandard conditions.

(3) QASAS in charge may alter extent of inspection when the documentation received or the condition or configuration of the material indicates that an increase is required or justified. Used packaging material (that is, boxes, fiber containers, filler material, eyebolt lifting plugs, and closing plugs) will be inspected as follows:

(a) Receipts from storage installations, posts, camps, and stations with qualified ammunition surveillance personnel and with documentation that certifies the materiel has been subjected to 100 percent inspection for serviceability and explosive contamination should be accepted in the condition assigned by the inspecting installation. Material certified and verified free of explosive contamination by the shipping installation is suitable for storage in inert areas.

(b) Materiel generated from maintenance, DEMIL, load, assembly, and pack operations will be properly condition coded and stored in segregated areas set aside for the exclusive storage of Class V materiel. The material will be given a 100-percent inspection prior to shipment, use, disposal, or storage in an inert area.

(c) Materiel placed in inert storage areas or offered to Defense Reutilization and Marketing Office (DRMO) must have had a 100 percent inspection, certified as explosive free according to DOD 4160.21–M and verified on a sampling basis by the ammunition surveillance organization. Certifications and inspection records must be maintained for material held in inert storage areas. Storage area and material must be controlled to ensure inspected and certified stocks are separated from material not properly inspected and certified as being free of explosive contamination.

(d) Serviceability will be determined using appropriate criteria provided in paragraph 2–7. Determine degree of explosive contamination, if any, in conjunction with foregoing inspections.

(e) Properly identify wooden packing materials treated with pentachlorophenol.

(f) Test containers that have contained depleted uranium cartridges to ensure residual radiation levels do not exceed limits specified in DA Pam 385–24.

(g) Material received with proper certification or documentation can be shipped to other depots or plants without additional inspection prior to shipment. Copies of the certification and/or documentation will be provided to the consignee.

d. Perform unit turn-in inspection on all ammunition returned from using units. This includes ammunition in the hands of units conducting training, units with ammunition in operational loads, and units with combat loads. This inspection is normally conducted at an ammunition transfer point (ATP) or ammunition supply point (ASP). The following steps apply:

(1) Sealed containers (depot or manufacture seal).

(a) Inspect 100 percent of the outer packs for damage or tampering. Determine if outer containers have been opened or damaged to the point that the condition of contents could be affected.

(b) If no damage or tampering noted, no further action required.

(2) Contents of unsealed packaging will be inspected 100 percent to the extent to determine serviceability of stocks.

(3) Unpackaged ammunition.

(a) Pack all ammunition before placing in storage. Pack ammunition in original packaging, where available.

(b) If not available, repack ammunition in nonstandard packaging to ensure safe storage and handling.

(4) Documentation. Inspection entries for serviceable ammunition received during unit turn-in are not required unless the QASAS in charge determines the entries are useful. All nonstandard conditions noted during unit turn-in inspections will be entered in the MHP.

e. All ammunition in CCs A, B, C, D, E, N, and all lots of propellant will be subjected to a periodic inspection (PI) for deterioration and nonstandard conditions. When lot clustering is used, procedures in paragraph 2–6*c* will be followed.

(1) For all Army-owned field service stocks, perform PIs at inspection intervals established by the JMC (AMSJM–QAS). The listing by NSN in the MHP is the sole source of inspection interval information. If an item is not included in the listing, contact the JMC (AMSJM–QAS) for clarification.

(2) Inspection intervals for AMCOM-managed items are directed by the item SB.

(3) For non-Army, non-SMCA stocks; perform PIs at inspection intervals established by the owning service.

(4) For nonstandard nonmissile ammunition, establish PI interval using table 2–1. If a nonstandard ammunition item is not adequately described in table 2–1, contact JMC or AMCOM, as appropriate, for technical assistance.

(5) Examine stocks stored under adverse conditions more frequently as determined necessary by the QASAS in charge.

(6) Assign a high priority for PI to materiel with high turnover rates, needed to fill issue and/or shipment requirements.

(7) Lots overdue for PI will not be issued and/or shipped. For items with a doubled inspection interval, item will be considered "overdue for inspection" if the assigned inspection interval in the MHP has been exceeded. For example, an item is assigned an inspection interval of four years; based on priorities the interval was doubled to 8 years. If a shipment request is received 6 years from the date of last inspection, the item cannot be shipped without conducting a PI.

(8) Application of inspection intervals.

(a) Normal interval of inspection is based on the expected rate of deterioration for specific item types. These deterioration rates have been developed into inspection interval categories that are assigned to items as appropriate.

(b) The inspection interval for each category is given in table 2–2. This interval applies unless specified otherwise in the inspection procedures for a specific item or is adjusted according to paragraphs (c) through (d).

(c) When the inspection results of a specific lot or lot cluster reveal progressive degradation to such degree that the lot may become unserviceable before expiration of the assigned category interval, the QASAS in charge will schedule the next inspection at a shorter interval based on conditions detected, storage conditions and materiel involved.

(d) For operational efficiency, schedule all similar items during the same month of a given year's PI schedule. To establish and maintain a schedule by like items, it is permissible to vary the date of next inspection by decreasing or increasing the interval by as much as 12 months. Adjusting the schedule in this manner will have no effect on the provisions of paragraph 2–6.

(e) Required remaining PI intervals for shipments.

1. Shipments between continental United States (CONUS) locations will have at least 8 months remaining on the inspection cycle when the lot is cleared for shipment, that is, depot to depot, depot to post, camp or station (PCS), and PCS to depot, and PCS to PCS.

2. Shipments to outside the continental United States (OCONUS) including Hawaii and Alaska locations will have at least 18 months remaining on the inspection cycle when the lot is cleared for shipment.

3. Shipments to the Air Force, Navy, and Marine Corps, and other non-DOD customers will have at least 18 months remaining on the inspection cycle when the lot is cleared for shipment.

4. Shipments from OCONUS locations to CONUS will have at least 18 months remaining on the inspection cycle when the lot is cleared for shipment. Exception: Ammunition retrograded from a Theater Storage Area supporting other contingency operations will have 9 months remaining on the inspection cycle.

5. Inter-theater shipments between OCONUS locations will have at least 18 months remaining on the inspection cycle when the lot is cleared for shipment.

6. Intra-theater shipments in OCONUS commands will be made in accordance with command developed time standards.

f. This is an inspection other than a PI that is performed prior to issue. Examples are ammunition requiring a special check for specific defects as determined by QASAS in charge or as directed by the LCMC or higher headquarters. A lot or lot cluster overdue for PI will be given a PI prior to shipment, not a pre-issue inspection (PII). The appropriate sampling plan in paragraphs 2–6 or chapters 3, 8, and 9 will be used. Reasons for conducting PII will be fully documented in inspection reports.

g. Storage monitoring inspection (SMI) is performed as required by applicable technical instructions for specific items or more frequently if deemed necessary by the QASAS in charge. It is performed on items while in the storage site and includes but is not necessarily limited to the following:

(1) Inspection of toxic chemical agent munitions, containers of toxic chemical agent, or containerized toxic chemical agent munitions to detect leaks and other visually detectable defects.

(2) Reading and recording pressure and relative humidity of items packaged in pressurized or desiccated containers.

(3) To the maximum extent practicable, SMI should be scheduled in conjunction with magazine inspections and/or any other scheduled visit to the storage location.

(4) Record inspection results in the MHP.

h. Special inspections are performed at the direction of LCMC or higher headquarters; or to satisfy special or local requirements when directed by the QASAS in charge. Reason(s) for conducting special inspections must be entered in the inspection remarks. Inspections performed during preparation of samples in support of the ASRP testing will include all requirements of a complete PI.

i. For purposes of this publication, the term combat load inspection includes munitions in the possession of military units or civilian security forces. This includes training, security, and operational stocks. Chapters 5 and 6 of this publication contain additional instructions.

j. Verification inspection is performed on materiel processed during preservation and packaging and maintenance (renovation, modification, and overhaul) type operations. Verification inspections will be performed in accordance with procedures contained in chapter 4 of this publication.

k. Acceptance inspection (AI) is performed on material received from a contractor or plant requiring inspection and acceptance at destination, material inspected at origin and requiring acceptance at destination, and components from DEMIL to be reused or restored to stockpile. Instructions for AI will be furnished by the applicable LCMC, when required. Depots receiving material from procurement for stock will process DD Form 250 (Materiel Inspection and Receiving Report), as directed by Defense Federal Acquisition Regulation Supplement, appendix F.

l. Damage in transit is conducted as soon as the material arrives at destination and/or during the download process. Operations personnel will assist the ammunition surveillance organization in identifying deficiencies.

(1) DITs include the inspection of exterior packaging and marking, correct unitization procedures and nonstandard conditions on packaging based on applicable references and shipping documentation.

(2) If no damage is identified, shipping documents will be annotated to indicate "No DIT noted" or "No Damage noted" along with the inspector's signature.

(3) If there is obvious damage that requires further inspection the documents will be marked as "Damage noted," inspector's signature and CC will be changed to CC K, pending further inspection.

(4) Prepare MHP comments for each inspection and link comments to previous inspection comments received from the shipping activity. DIT will not be used as a basis for establishing a lot cluster.

m. Perform safety-in-storage (SIS) inspections on all CCs F, G, H, P, and all stocks in the resource recovery and disposition accounts regardless of owner to ensure stocks are safe for continued storage and handling.

Note. Handling includes those preparatory actions necessary to demilitarize the item. The QASAS will determine whether the conditions noted are immediately hazardous or could result in a hazardous situation for handling and storage. Ammunition surveillance will inspect for defects that could affect safe storage and handling; such as, exposed explosives, corrosion that could lead to exposed explosives or missing safety devices.

(1) Perform SIS inspection on all Navy-owned stocks regardless of condition. Exception: Navy-owned propellant and propelling charges will receive a PI.

(2) SIS inspections are not required for inert ammunition.

(3) Lot clustering is not authorized for ammunition requiring SIS inspection.

(4) Lots determined to be nonhazardous in terms of normal storage and handling will receive an SIS at twice the designated inspection interval listed in the MHP. Ammunition with deteriorative defects that could impact safe storage and handling will be inspected as frequently as necessary to assure continued safe storage of the lot. The QASAS in charge will determine the appropriate inspection interval for these ammunition lots.

(5) Lots determined to pose a threat to life, health, or Government property will be immediately reported to the QASAS in charge.

(6) The sample size for SIS items is one-half that indicated in table 2–2. Accept-reject criteria will not be used. The QASAS will determine whether the lot can be expected to remain safe for continued storage and handling for the next SIS inspection interval.

(7) SIS inspections will normally be performed in the surveillance workshop and must include inspection of outer pack, inner pack, and item. Projectiles, bombs, cluster bomb units, "wooden rounds" and items assigned hazard class and/or division 1.4 may be inspected in the storage location.

2–6. Ammunition inspection categories and/or intervals and sampling plans

a. Ammunition items (except toxic chemical and AMCOM-managed items) are separated into categories for assignment of inspection intervals as listed in the MHP. Category determination is based primarily on susceptibility to and rate of deterioration. Items not listed in one of the existing categories will be reported to the JMC (AMSJM–QAS) and be considered as Category Z until a category is assigned. Changes to inspection intervals for specific items will be disseminated by an ammunition information notice (AIN). Categories for specific items or family of items covered by guidance in the MHP supersede guidance given in table 2–1. JMC (AMSJM–QAS) maintains an inspection category listing by Department of Defense identification code (DODIC) and/or national inventory identification number within the MHP.

b. Use table 2–2 to determine the inspection sample sizes for IRI, RI, PI, and PII.

c. Lot clustering.

Note.

Ammunition lot clustering procedures will only be applied to lots of ammunition that have had an IRI, RI or PI accomplished. Clusters formed prior to the date of this publication will be retained in the current cluster regardless of past inspection history. IRI, RI or PI must have been performed on any lots added to an existing lot cluster. DIT inspections will not be used as a basis for establishing a lot cluster

(1) Ammunition lot clustering procedures are used to administratively combine ammunition lots into homogeneous groupings for conducting classification (readiness) inspections. This procedure is applicable to inspection of Army-owned,

Air Force-owned, and Marine Corps-owned conventional ammunition stocks. Those lots that do not meet the criteria for clustering will be evaluated using applicable guidance for individual lot inspections. Lot clusters may not contain more than 50 individual lots.

(2) Clustering will be performed within individual installations. Lot clusters exist only on the installation where they have been created to perform inspections. Receiving installations will re-establish a lot cluster, as required and/or necessary.

(3) When a cluster is being formed the date of next inspection will be based on the lot having the most recent date of last inspection (does not include inspection for DIT). If all lots within the new cluster are past due inspection, one lot must be inspected. This date then becomes the date of last inspection for the cluster.

(4) Use normal PI intervals of table 2–1 for lot clusters.

(5) Lots may be added (up to 50 lots) or deleted from a cluster at any time. Suspension or restrictions issued by higher commands or receipt and/or issue of a lot at the installation may be cause for the addition and/or deletion, but will not alter the date of next inspection for the lot cluster.

(6) Select representative samples from a single lot within the cluster. A different lot will be selected at subsequent intervals until all lots in a cluster have been sampled. Table 2–2 specifies sample size and accept and/or reject criteria.

(7) All lots within a cluster are considered equally suitable for issue. Further inspection will not be required for shipping individual lots of a cluster, which is within inspection cycle, unless directed by higher headquarters for specific PII requirement. Receiving installation will apply the results and date of last inspection to the actual lot received from a cluster. Whenever practicable, ship the inspected lot until exhausted.

(8) Lots deleted from a cluster for any reason will retain the date of next inspection of the cluster. DA Form 3022–SG will show inspection results of the sampled lot from the cluster.

(9) In all cases, annotate the DA Form 3022–SG for each lot in the cluster with inspection results of sampled lot. Include the cluster lot index number and the lot number sampled in the inspection remark.

(10) Each individual lot within a cluster must be evaluated in its storage locations for visual degradation. Any indication that a particular lot is showing a different rate of deterioration will be cause for deletion of that lot from the cluster. This evaluation may be performed in conjunction with magazine inspections or at the time samples are selected in the storage structure.

(11) Lots considered for inclusion into a lot cluster must meet the clustering criteria that follow.

(a) Same mode and/or series of ammunition. All lots in a cluster will have the same DOD ammunition code (DODAC) (for example, 1305–A071).

(b) Same manufacturer. This will be indicated by the manufacturer prefix for ammunition lot numbers (see Military Handbook (MIL–HDBK)–1461).

Note. Depot lots (for example, RR, Stockpile Reliability Program (SRP), and RHN) that are formed from grouping ammunition lots and ammunition with locally assigned lot numbers will not be considered for lot clustering.

(c) Same lot interfix. The number of lots within a particular cluster is dependent on the number of lots within an interfix at the individual installation.

(d) Similar method of pack. The intent here is to separate lots within the same DODAC that have significantly different types of packaging. Examples are mortar ammunition with and without jungle wrap.

(e) Same condition code. All lots must have the same CC to be included in the cluster.

(f) Similar lot history. QASAS must review the DA Forms 3022–SG to ascertain the similarity of lot histories for lots to be considered for clustering. Lots that have been uploaded will not be clustered.

(12) Propelling charges, Modular Artillery Charge System (MACS), and bulk propellant are not eligible for clustering.

(13) Chapter 11 provides suggested format for tracking local lot clusters.

(14) Apply sample inspection results to the entire cluster for cluster classification. If the sample lot fails to meet serviceability criteria, apply instructions in paragraph 2–7*c* for inspection of additional samples and lot disposition.

(a) Lot clusters with 2 to 5 lots, inclusive: dissolve cluster and inspect each individual lot in accordance with this chapter.

(b) Lot cluster with 6 to 10 lots, inclusive: inspect two additional lots. If both additional lots meet serviceability criteria, remove first inspected (failed) lot from cluster and retain cluster in appropriate serviceable CC. If either of the additional lots fails to meet serviceability criteria, reject the entire lot cluster and assign CC accordingly.

(c) Lot clusters with 11 to 20 lots, inclusive: inspect three additional lots. If all of the additional lots meet serviceability criteria, remove first inspected (failed) lot from cluster and retain cluster in appropriate serviceable CC. If any of the additional lots fail to meet serviceability criteria, reject the entire lot cluster and assign CC accordingly.

(d) Lot cluster with 21 to 50 lots, inclusive: inspect five additional lots. If all of the additional lots meet serviceability criteria, remove first inspected (failed) lot from cluster and retain cluster in appropriate serviceable CC. If any of the additional lots fail to meet serviceability criteria, reject the entire lot cluster and assign CC accordingly.

(e) Individual failed lots that are removed from the cluster due to conditions stated in paragraphs 2–6*c*(14)(*a*) through 2–6*c*(14)(*d*) will be treated as individual lots and be assigned the appropriate CC based upon original inspection.

(f) Sample sizes and accept and/or reject criteria for all lots inspected within a cluster subsequent to the failure of the first lot will be in accordance with requirements of table 2–2.

2–7. Surveillance defect standards

a. Ammunition defects are classified into the following four categories:

(1) *Critical.* A defect that is likely to result in hazardous or unsafe conditions for individuals using, maintaining or depending on the item, or a defect that is likely to cause the destruction of and/or or serious damage to the weapon or launcher under normal training or combat conditions.

(2) *Major.* A defect other than critical that is likely to result in failure in tactical use or which precludes or reduces materially the usability of the item for its intended use.

(3) *Minor.* A defect other than critical or major that is not likely to result in failure during use or reduce the intended use of the item, but which should be corrected prior to issue.

(4) *Incidental.* Defects not of the critical, major, or minor types will be classified as incidental and corrected when maintenance is performed on the item. Incidental defects will not normally be reported to the LCMC unless specifically requested but will be recorded on the card.

b. Defectives are items having one or more defects; for example, an ammunition item or unit having one or more major defects is considered a major defective. An ammunition item or unit having one or more critical defects and one or more major defects and one or more minor defects will be classified as a critical defective, a major defective, and as a minor defective. The severity of the defective is never more severe than the severity of the most severe defect; that is, an item with multiple minor defects is a minor defective, regardless of the number of minor defects observed.

c. The following criteria are furnished as a guide to assist the QASAS in classifying metal, plastic and rubber component deterioration, or corrosion, mixed ammunition, damage, packaging, and marking defects into one of the four defect categories:

(1) *Metal, plastic, and rubber component deterioration.*

(a) Critical deterioration is deterioration that creates a hazardous condition for persons using or maintaining the item.

(b) Major deterioration is deterioration that significantly reduces or precludes the functioning or use of the item and requires maintenance or renovation prior to issue.

(c) Minor deterioration is deterioration that does not significantly reduce the functioning or use of the item but normally requires minor maintenance to restore the materiel to an issuable condition or to prevent the progression of deterioration to a more serious degree.

(d) Incidental deterioration is superficial deterioration that affects only the surface of the item and does not affect the intended use of the item. Items with incidental defects are acceptable for issue at the time of inspection.

(2) *Corrosion.*

(a) Critical corrosion is rust or corrosion that has progressed to the point that the material is hazardous to retain.

(b) Major corrosion is rust or corrosion accompanied singly or in combination with etching, pitting, or more extensive surface damage and may include a loose or granular degradation.

(c) Minor corrosion is loose rust or corrosion accompanied by minor etching and pitting of the surface.

(d) Incidental corrosion is discoloration or staining with no direct visual evidence of pitting, etching or other surface damage.

(3) *Ammunition marking.*

(a) Critical is a condition where the marking can result in hazardous or unsafe conditions for persons using or maintaining the item, for example, incorrect delay time, incorrect color or type of smoke or signal, high explosives (HE) ammunition with practice marking.

(b) Major is a condition where the marking can cause misuse or failure, for example, incorrect model or type of round or fuze, and HE instead of high explosives anti-tank (HEAT).

(c) Minor marking defects are those other than critical or major that normally should be corrected prior to issue. Examples of minor marking defects are incorrect or missing lot number.

(4) *Damage.*

(a) Critical damage is a condition where the damage can cause hazardous or unsafe conditions for persons using or maintaining the item, for example, broken safety devices and broken fins on fin-stabilized projectiles.

(b) Major damage is a condition where the damage can cause failure or materially reduce the intended use of an item, for example, dented or distorted cartridge cases, damaged rotating bands, and misaligned components.

(c) Minor or incidental defects - none are defined. Any damage other than defined above will be noted on the DA Form 3022–SG for information. Damage other than critical or major will not be used as acceptance or rejection criteria (except for clearance of materiel pertaining to security assistance program) unless specifically required by appropriate item military standards or procedures.

(5) *Packaging.*

(a) Critical is a condition where the packaging or the absence of packaging components can cause hazardous or unsafe conditions for persons using, handling, transporting, or maintaining the materiel.

(b) Major is a condition where containers are damaged, weathered, or decayed to the extent that-—

1. The contents cannot be adequately protected.
2. The containers require replacement.
3. The containers are damaged to the extent that contents cannot be readily removed.
4. The container cap or closure is damaged or insecure to the extent that contents cannot be adequately protected.
5. The container contents are loose to the extent that the item cannot be adequately protected during handling and transportation.

(c) Minor is a condition where containers are weathered or deteriorated to the extent that maintenance is normally required prior to issue or use. Examples of minor packaging defects are wet, moldy, or mildewed inner containers (except metal) and improper or inadequate sealing of fiber containers.

(d) Incidental is any packaging defect other than critical, major, or minor that should be corrected if and when maintenance becomes necessary. Examples of incidental packaging defects are broken or missing handles or cleats, and broken, missing or ineffective hardware, banding, or packing components. However, contents must be safe and adequately protected for storage and shipment.

(6) *Used packing material.* The standards for evaluating used packing materiel are SB 725–12 and SB 755–1 for SMCA-managed items and the applicable SB 742 series ammunition surveillance procedures for AMCOM items. Packing material that is acceptable for use will be classified as CC B.

(7) *Markings.* Markings that are missing, illegible, incorrect, or misleading will be classified defective as follows:

(a) Critical is a condition where the marking can result in hazardous or unsafe conditions for persons using or maintaining the item, for example, incorrect delay time, incorrect color or type of smoke or signal, HE ammunition with practice marking.

(b) Major is a condition where the marking can cause misuse or failure, for example, incorrect model or type of round or fuze, and HE instead of HEAT.

(c) Minor marking defects are those other than critical or major that normally should be corrected prior to issue. Examples of minor marking defects are incorrect or missing lot number or Department of Transportation (DOT) name on the item or packing.

(d) Incidental marking defects are those other than critical, major, or minor that should be corrected when maintenance becomes necessary. Examples of incidental marking defects are use of ammunition identification code (AIC) versus NSN; illegible or missing marking such as nomenclature, NSN, DODIC, cube, weight; and incorrect weight format or placement.

2–8. Use of gages and precision-measuring instruments

a. Use of gages.

(1) Gage every lot of ammunition which can be gaged (that is, small caliber, medium caliber, and artillery, mortar and tank) at least once during its storage life cycle.

(2) Ammunition lots for which the specified gages are not immediately available will not be reclassified to a lesser CC, nor will shipments to users be denied, pending gaging.

(3) Requisition gages expeditiously for ammunition on-hand or due in from new production. Retention and deployment of gages associated with the policies stated herein should be centrally managed on a theater, command, or other basis to minimize costs and maximize usage.

(4) Ammunition surveillance will perform gaging whenever possible during initial RI or at the next regularly scheduled PI. Table 2–2 specifies sample size and accept and/or reject criteria. For a lot that has been gaged at least once during its storage life cycle, use of gages during subsequent inspections will only be required when specifically directed by the JMC, Surveillance Division, or when conditions (that is, damage, deterioration, or exposure to adverse conditions) impel the QASAS in charge to direct additional gaging.

(5) Document results of gaging on the DA Form 3022–SG. Honor gaging results on DA Form 3022–SG received from installations with surveillance organizations.

(6) Apply procedures and actions listed below in the event that ammunition items fail to meet gaging requirements listed in the MHP for a specific item, specification, or drawing during surveillance inspections. Report gaging failures in the following detail, where applicable.

(a) NSN and lot number.

(b) Sample size.

(c) Type of failure.

(d) Number of failures.

(e) Gage drawing and revision number.

(f) Gage SN.

(g) Number of passes since calibration.

(h) Gage dimensions at last calibration (if available).

(i) Actual measurements of item failing to gage (if available).

(j) All other defects observed are to be identified.

(7) For individual items that fail to gage without causing lot rejection, compile and report data required by paragraph 2–8*a* (6) on a quarterly basis to the appropriate LCMC.

(8) Reclassify lots rejected for failure to gage during IRI to CC L and report on Standard Form (SF) 368 (Product Quality Deficiency Report) (PQDR). If the defect encountered is classified as critical, the SF 368 will contain the information required in paragraph 2–8*a*(6) and will be reported expeditiously to the appropriate LCMC.

(9) Reclassify lots rejected for failure to gage during other than IRI to CC F (for major or minor defects) or CC J (for critical defects) pending receipt of disposition instructions from the appropriate LCMC. Report information required by paragraph 2–8*a*(6) to addressee in paragraph 1–7, as appropriate.

b. *Use of precision-measuring equipment.* During every readiness inspection, use precision-measuring instruments that are not ammunition peculiar (for example, torque wrenches, feeler gap gages, and micrometers) to inspect for defects whenever specifically required by this publication, the complete round drawing, military specification, or by direction from the LCMC or higher headquarters.

2–9. Condition codes

a. Information on the use of CCs is listed in appendix C.

b. A QASAS must assign all CCs. Supervisory or team leader QASAS must review and approve any reclassification action.

Table 2–1
Inspection Intervals

Item	Category	Interval
Activators	X	4
Additive jacket	Y	3
Ammunition fixed and semi-fixed, 37mm through 165mm for guns and howitzers		
a. AP1 , antipersonnel (APERS) 2 , HE3 (all types), WP4 , TP5 , canister, blank, and illuminating	W	5
b. Chemical, colored smoke, HC6 leaflet, pyrotechnic, and riot control	X	4
c. Cartridge, 105mm, semi-fixed for howitzer assembled with M67 propelling charges less than 15 years old (except M84 series HC, smoke, and M629 tactical CS7)	Y	3
d. Cartridge, 105mm, semi-fixed for howitzer assembled with M67 propelling charges 15 years or older, M84 series HC smoke, and M629 tactical chlorobenzalmalononitrile (CS)	Z	2
e. Cartridge, 105mm, semi-fixed for howitzer assembled with propelling charges other than M67	W	5
f. 120mm tank rounds	Y	3
Ammunition for mortars (mono pack)	Z	2
Ammunition for mortars (jungle pack)		
a. HE, WP, and practice with explosive components	V	6

Table 2–1
Inspection Intervals—Continued

Item	Category	Interval
b. Practice without explosive components (Inert)	U	7
c. FS8 smoke, leaflet riot control	X	4
d. Illuminating	W	5
Ammunition for mortars (regular pack)		
a. Practice without explosive components (inert) and illuminating	W	5
b. HE, WP, RP9 , practice with explosive components, chemical, FS smoke, leaflet, and riot control	X	4
Ammunition for Recoilless Rifles	X	4
Ammunition, close combat mission capability kit	W	5
Ammunition, inert, all types	W	5
Ammunition, small arms, through 30mm (except through cal. 50 packed in steel cans with gaskets)	X	4
Ammunition, small arms, through cal. 50 packed in steel cans with gaskets (including inert small arms ammunition)	W	5
Bag loading assemblies for mortars	Y	3
Bangalore torpedoes	X	4
Black powder charges		
a. In hermetically sealed containers	Y	3
b. Not in hermetically sealed containers	Z	2
Blasting caps, electric and nonelectric	V	6
Bombs		
a. HE, noncluster type, unfuzed	U	7
b. Fragmentation and WP unfuzed	W	5
c. HE, fragmentation, WP, fuzed or packed with fuze, and photoflash	Y	3
Boosters, all types	X	4
Bursters	Y	3
Canisters, smoke	Z	2
CAD10 s and/or PAD11 s	W	5
Note: All CAD and/or PAD items listed in TB 9–1300–385 and TM 43–0001–39 are Inspection Category W (5 years). This includes DODICs MS80 and MS90 series, canopy removal detonating cords, and DODICs (SP02 and SP03) thin layer explosives.		
Cartridge, bomb ejection	W	5
Cartridge cases, primed		
a. Artillery	W	5
b. Small arms	Y	3
Cartridge, photoflash	W	5
Charge, practice, hand grenade	Z	2
Coupling Base with Primer	Y	3
Delay elements and delay plungers		
a. Hermetically sealed elements	Y	3
b. Not hermetically sealed	Z	2
Demolition kit, projected charge	X	4
Demolition block charges, C4 or TNT	V	6
Demolition block charges (except C4 or TNT)	X	4
Destroyers, all types (document, cryptographic equipment, and file)	Z	2
Destructors	Y	3
Detonating cord		
a. In hermetically sealed container	W	5
b. Not in hermetically sealed container	Z	2
Detonation simulator, explosive M80	Z	2
Detonators	Y	3
Dispenser, aircraft mine, M56 and practice M132 loaded, and reload kits	Y	3
Dispenser, riot control	X	4
Dynamite, Military	Y	3
Expelling Charges		

Table 2–1
Inspection Intervals—Continued

Item	Category	Interval
a. Black Powder Filled	Z	2
b. Propellant Filled	Y	3
Explosive Bolts	X	4
Fire Starters	Z	2
Firing Devices	Y	3
Flares	Z	2
Fuse, Blasting, Time	Z	2
Fusee	Z	2
Fuzes, All Types except Fuzes with Black Powder Time Train Rings or Unsealed Black Powder Delay Elements		
a. Artillery, All Container Types	W	5
b. Grenades, All Container Types	Y	3
Fuzes Containing Black Powder Time Train Rings or Unsealed Black Powder Delay Elements	Z	2
Grenades		
a. Practice, without explosive component, inert	W	5
b. TA14 , riot control	X	4
c. HE, HEAT15 , offensive, WP, practice with explosive components	Y	3
d. Colored smoke, HC, and incendiary	Z	2
HE, bulk	X	4
Igniters, all types	Z	2
Ignition cylinders	Z	2
Incendiary devices, all types	Z	2
Increment, propellant	Y	3
Inert ammunition, all types (except SAA packed in steel cans with gaskets)	W	5
Inert components and metal parts for ammunition items	W	5
Initiators for bomb fuzes	X	4
Launcher and 35mm cartridges CS	Z	2
Launcher and grenade, smoke M176, M226	Z	2
Mines		
a. APERS16 , AT17 , practice with explosive components	X	4
b. Practice without explosive components, inert, empty	W	5
Packing material	R	10
Primers		
a. Artillery	W	5
b. Small arms	Y	3
Projectiles separate loading and naval separated		
a. Unfuzed non-ICM18 HE (except 8-inch M424)	U	7
b. Unfuzed ADAM19 , baseburner, HERA20 , ICM21 HE, illuminating, practice w/explosive components RAAM16 , WP	W	5
c. 155mm M485 (D505)	Y	3
d. Fuzed ADAM, baseburner, HE, HERA, illuminating, practice with explosive components RAAM, WP	Y	3
e. Colored smoke, HC	X	4
f. 8-inch M424	X	4
Projectile 64mm, riot control M742, M743	Z	2
Propellant, bulk and component charges	Y	3
Propelling charge, separate loading		
a. First interval	R	10
b. Subsequent interval	V	6

Table 2–1
Inspection Intervals—Continued

Item	Category	Interval
Propelling charge, separate loading (Navy)	W	5
Reducer, flash	Y	3
Rocket motors	X	4
Rockets, complete rounds		
a. Flechette, HE, WP, RP, MPSM22 and practice	X	4
b. Flare and illuminating	Y	3
c. Incendiary, riot control	Y	3
Shaped charges		
Signals	Y	3
Simulators	Z	2
Smoke pots	Z	2
Spotting charges	Z	2
Squibs	Z	2
Supplementary charges	X	4
Thermal batteries	X	4
Thickener	W	5
Tracers, all types	Y	3
Warheads, warhead sections		
a. Flechette, HE, WP, RP, and practice with explosive components	X	4
b. Flare and illuminating	Y	3
c. Incendiary, riot control	Z	2

Legend
ADAM – area denial artillery munitions
AP – armor piercing
APERS – antipersonnel
AT – antitank
CAD – cartridge actuated device
CS – chlorobenzalmalononitrile
FS – sulfur-trioxide chlorosulfonic acid solution
HC – Hexachloroethane
HE – High explosive
HEAT – high explosive, antitank
HERA – high explosive, rocket assisted
ICM – improved conventional munitions
MPSM – multipurpose submunition
PAD – propellant actuated device
RP – Red phosphorus
TA – terephthalic acid
TB – technical bulletin
TM – technical manual
TP – target practice
WP – white phosphorus

Table 2–2
Sample sizes and acceptance and rejection numbers

		Accept and/or reject numbers (defectives)					
Item	Sample size	Critical		Major		Minor	
		Accept	Reject	Accept	Reject	Accept	Reject
Outer pack[1]	20	0	1	1	2	2	3
Inner pack	20	0	1	1	2	2	3
Item –individual lot	20	0	1	1	2	2	3
Item (SAA) [2,3,4] –individual lot	300	0	1	14	15	21	22
Belt, 5.56mm[3]	10	0	1	1	2	1	2
Belt, 7.62mm[3]	10	0	1	1	2	1	2
Belt, .30 cal. [3]	10	0	1	1	2	1	2
Belt, .50 cal. [3]	10	0	1	1	2	1	2
Belt, 20mm[3]	10	0	1	1	2	1	2
Belt, 30mm[3]	10	0	1	1	2	1	2

Note:

[1] Inner pack and item samples must be selected from a minimum of ten outer packs. Additional outer packs must be inspected at either the inspection or storage location(s) to make a total sample size of 20.

[2] For the purpose of table 2–2, SAA is defined as up to and including caliber.50.

[3] Samples for linked SAA will be taken from 10 belts; all other linked ammunition will be a 20 item sample.

[4] If lot size is less than indicated sample size, inspect lot 100 percent.

Chapter 3
Surveillance Support to Ammunition Testing of U.S. Joint Munitions Command-Managed Munitions

The provisions of this chapter apply only to conventional ammunition stocks managed by the JMC. Procedures for AMCOM-managed items are contained in chapter 7.

3–1. General

a. Tests are performed at designated storage installations, ammunition test facilities or laboratories according to procedures in the item's SB or ASTP. These publications prescribe the sample size, equipment to be used, test methods, data to be recorded and the criteria for evaluating the lot tested.

b. Lots selected for function test represent the world wide stockpile.

c. The year designation pertaining to ASRP testing will refer to the fiscal year (FY) in which funding for the testing is appropriated, regardless of the FY in which testing is intended to be performed or actually conducted.

d. The primary responsibility for worldwide ammunition surveillance organizations is preparation of samples for shipment to the testing activities.

3–2. Ammunition Stockpile Reliability Program specific requirements

a. Preparation of ammunition samples for functional tests.

(1) JMC, Quality Engineering Division (QAE) distributes a list of lots and quantities nominated for testing annually to each storage site and/or activity. The surveillance organization will notify JMC, QAE regarding availability of candidate lots and quantities.

(2) The storage site and/or activity will execute shipping actions to ensure arrival of samples at the test facility on or before the required delivery date (RDD).

(3) JMC, QAE will include detailed instructions for any nominated item that requires special processing during sample preparation. Hermetically-sealed containers, waterproof bags, and lead foil envelopes (that would be opened for an inspection conducted in conjunction with a readiness inspection) will not be opened on samples requiring a wet phase test of the sealed container by the SB or ASTP.

(4) Selection and preparation of samples for shipment to a test facility will be as follows:

(a) Ammunition surveillance personnel will select all samples. Samples will represent the entire lot in storage at the specific site and/or activity.

(b) Parent ammunition lot from which samples are selected will remain in its current CC pending test. Test samples may be selected from lots in other than CC A. To ensure that the nominated lot has had no significant change since the last inspection, all lots with inspection intervals expiring prior to the RDD for the samples will undergo a readiness inspection prior to or during sample selection.

(c) It is permissible to ship two of more lot samples within one shipping container provided each lot sample is fully identified and separated. Different models and types are also permissible within the same shipping container, provided positive identification of samples is maintained.

(d) Stencil NSN and DODIC on the outer packing boxes and ensure markings agree with the NSN and/or DODIC on the shipping documents. Annotate shipping documents and containers "FOR ASRP FYxx, TEST SAMPLES."

(e) The sample size required for testing will be furnished with the request for samples. It is permissible to exceed the sample size by shipping standard packs in sufficient quantity to provide the required sample.

(f) Candidate lot test samples at the installation will be assigned CC D, tagged with DD Form 1576 (Test/Modification Tag-Materiel) and obligated for shipment. Material release order (MRO) for shipment of samples to the test facility will normally be issued by the JMC.

(g) The shipping container must comply with Title 49, Code of Federal Regulations (49 CFR) and/or the International Maritime Dangerous Goods Code.

(h) Document selection of samples and inspection results in the MHP.

(i) Furnish a reports of shipment (REPSHIP) to the designated test facility and JMC QAE.

b. Function test at designated facilities.

(1) Coordinate test scheduling with JMC, QAE.
(2) Access installation inspection results via MHP.
(3) Upload results of function test directly in the MHP.
(4) Malfunctions during testing.
(a) Notify JMC (AMSJM–QAS) and JMC, QAE by the most expeditious means when a critical defect is encountered.
(b) Submit malfunction reports to the JMC in accordance with AR 75–1.
(c) If available, forward photographs and videotape of malfunctioned items to JMC, QAE.
(d) Maintain fragments of malfunctioned items pending receipt of disposition instructions.
(e) Consistent with operational safety considerations test all samples to acquire as much data as possible.

c. Laboratory tests.

(1) The JMC, QAE manages the stockpile laboratory tests of ammunition. These tests are conducted in accordance with the ASTPs for each item tested. Destructive and/or nondestructive tests are performed to detect trends or changes in the item's quality and to determine the items serviceability or safety status.

(2) Chemical stability tests for propellant and propelling charges are conducted in accordance with chapter 9 of this publication that describes the Propellant Stability Program (PSP). JMC (AMSJM–QAS) issues memorandums and emails nominating candidate lots for the PSP to the storage sites and/or activities annually. Refer to chapter 9 for specific details.

Chapter 4
Ammunition Quality Assurance Procedures for Maintenance Operations

4–1. General

This chapter prescribes procedures to ensure that ammunition assembled, maintained, modified, disassembled for DEMIL or renovated at installations meets the established quality requirements.

4–2. Functions

a. The LCMCs are responsible for furnishing the technical requirements for each ammunition maintenance program. At a minimum, the technical requirements should include the following:
(1) Depot maintenance work requirement (DMWR) or letter of instruction (LOI).
(2) List of required drawings and specifications.
(3) List of required APE.
(4) Quality standards.
(5) Lot number and/or suffix assignment criteria.
(6) Pre-renovation requirements.
(7) Post renovation test requirements.
(8) DD Form 1650 requirement.
(9) Reports requirement.
(10) Valid restrictions which will apply post renovation.

b. The ammunition operations organization is responsible for producing a product of acceptable quality. Specific responsibilities include the following:
(1) Identifying specific safety requirements.
(2) Producing a standard operating procedure (SOP) that contains production techniques, standards and controls necessary to produce a quality product. Each SOP contains as a minimum:
(a) Required quality characteristics for each operation.
(b) Detailed description of the quality standards.
(c) Method used to assure quality characteristics conformance (gage and visual).
(d) Operator quality checks.
(e) Quality assurance audit procedures.
(f) Specific safety requirements.
(3) Performing a pre-operational check prior to beginning maintenance operations.
(4) Performing according to a SOP that contains the detailed production techniques, standards and process control necessary to produce a quality product.
(5) Determining process capability and maintaining control can best be accomplished by using statistical quality control techniques, such as X-charts and R-charts, P-charts, NP-charts, and C-charts.
(6) Implementing process control techniques wherever practicable to ensure efficient and effective product quality and overall cost of operation.

c. The ammunition surveillance organization is responsible for management of the installation ammunition quality program. Specific responsibilities include:

(1) Ensuring an economical system to control product quality.

(2) Reviewing the work authorization (job order), SOP, drawings, SBs, TMs, and other required reference material for use by the operations organization prior to beginning the maintenance operation.

(3) Conducting detailed review of maintenance and/or renovation operations to include:

(a) Reviewing line layout and equipment setup during the pre-operational check.

(b) Reviewing procedural steps of the SOP that affect the quality of the product and safety of the operation.

(c) Evaluating the implementation of the SOP.

(d) Using quality audit procedures to (see para 4–9):

1. Construct a quality audit check sheet.
2. Review procedures to control the calibration of electrical measuring and test equipment, gages, and precision-measuring instruments.
3. Review procedures for control of nonconforming materiel.
4. Verify the quality control procedures of the ammunition operations element.
5. Complete quality audit check sheets during each monitoring visit to maintenance and/or renovation operations.
6. Document quality audit activities using quality audit check sheets.

4–3. Military–Standard–1916

This MIL–STD establishes movement away from an acceptable quality level based inspection strategy to implementation of an effective prevention based strategy, including a comprehensive quality system and continuous improvement. The objective is to create an atmosphere where every noncompliance is an opportunity for corrective action and improvement rather than one where acceptable quality levels are the contractually sufficient goals.

4–4. Product verification sampling plan

a. MIL–STD–1916 was approved for use in April 1996 and will be used as the preferred method for acceptance of product. It requires the demonstration and maintenance of an effective process focused quality system. Maintenance operation elements are encouraged to submit their systems as an alternative to acceptance sampling requirements.

b. The operational element must have—

(1) A Quality System Plan.

(2) Prevention based system.

(3) Process focused quality system.

(4) Objective evidence that system works.

c. Alternative acceptance can be submitted for one or more contractually specified sampling inspection requirements or for a systemic alternate acceptance method. Submission is made in accordance with the requirements of MIL–STD–1916. If they do not have such a system, MIL–STD–1916 provides the preferred acceptance sampling plans. When using MIL–STD–1916, the following verification levels (VLs) should be used:

(1) Always use VL VII for critical characteristics.

(2) Use VL IV, normal level of severity, for major characteristics and VL II for minor characteristics if not otherwise specified.

d. Continuous sampling is the preferred method of performing acceptance sampling for inspection by attributes. Use lot or batch sampling if continuous sampling procedures are not employed (for example, if the operations organization lacks adequate screening capability). Continuous sampling procedures are outlined in MIL–STD–1916. In addition to sampling at frequency "f," the ammunition surveillance organization will monitor the screening phases to ensure correct application of proper "i" values and VLs.

e. Inspection by attributes MIL–STD–1916. If for any reason the continuous sampling procedure noted above is not employed (for example, if the operations organization lacks adequate screening capability), use the appropriate plan from MIL–STD–1916. Each inspection batch or lot will contain homogeneous material produced in a specified time interval (normally a single shift or day).

f. Inspection by variables - Variable sampling plans are provided in MIL–STD–1916. Each inspection lot or batch will contain homogeneous material produced in a specified time interval (normally a shift or day). K and F values will be provided upon request by the national inventory control point (NICP) directing the maintenance.

g. Inspection for critical characteristics. The operations organization will perform a 100 percent inspection for all critical characteristics. Surveillance will inspect for critical defects using verification level VII and will always accept on zero defects and reject on one. The presence of a critical defect in any sample or in any other item which has passed 100 percent

inspection by operation personnel will normally require rejection of all material processed since the process was last accepted regardless of which sampling plan is used. The extent of rejection may be modified depending on the circumstances creating the critical defect upon agreement between the ammunition operations organization and the quality assurance organization. If the defect cause can be isolated to a particular quantity of material or production interval then rejection may be limited to that quantity of material or production interval as determined by agreement between the ammunition operations organization and the quality assurance organization. The process will not be restarted until a root cause analysis determines the cause of the critical release. The process will be changed to incorporate required corrective actions. Material that has been reprocessed and resubmitted for acceptance will be inspected in accordance with MIL–STD–1916.

h. Continuous sampling procedures will always be on a moving product basis. Selection of samples for inspection by attributes may be on either a moving lot basis or on a stationary lot basis. Inspection by variables will be on a stationary lot basis. Inspections requiring disassembly will be performed on a moving lot basis as close as practical to the operations organization process on the part or parts being inspected.

i. Maintenance type operations of short duration and limited scope (5 days or less). These operations should be inspected using continuous sampling or lot and/or batch sampling plans. Regardless of the duration of a maintenance operation, a spot check or roving inspection may never be used in place of a quality audit.

4–5. Ammunition lot number and suffix assignment

a. Ammunition to be modified, inspected 100 percent, or renovated will have a lot suffix assigned by the LCMC, or a lot number will be assigned locally as outlined in MIL–STD–1168. Assignment of lot number must be approved by the LCMC. Request suffixes or lot number approval from the addressees in paragraph 1–7.

b. Email requests for lot suffix for SMCA-managed assets to addressee in paragraph 1–7. Request lot suffixes at least 30 days prior to the start of approved or funded programmed projects. Lot suffix requests must include:

(1) A list including lot number or SN, quantity, model number, and NSN of materiel to be reworked.

(2) Scope of rework to be accomplished, applicable DMWR and resulting model number and NSN if changed as a result of maintenance.

(3) List of replacement and/or added components involved by NSN, model, lot number, and manufacture date to include, where applicable, component reassessment and/or deterioration check test date. Lot suffix will be denied if these tests are not current.

(4) Established start date and date of availability of samples for shipment to proving ground (PG) for test.

c. When an assigned lot suffix is not used, notify suffix issuer by email of desire to cancel requested suffix.

d. When a change in the scope of work or components to be used is contemplated after a lot suffix has been assigned, notify the applicable LCMC of the proposed changes by an amendment to the request for the lot suffix.

e. Prepare and submit revised DD 1650 in accordance with MIL–STD–1168 when any rework results in a lot number change. For JMC managed items, maintain lot in CC D until data cards are approved.

f. To ensure uniformity of inspection and/or classification, the following definitions of lot "None," "Mixed," and "Unknown" are provided.

(1) *Lot none.* Ammunition items and components without a lot number assigned at time of manufacture.

(2) *Lot mixed.* Ammunition items and components with a lot number assigned at time of manufacture that can be separated by lot, when appropriate.

(3) *Lot unknown.* Ammunition items and components with a lot number assigned at time of manufacture that cannot now be identified and separated by lot.

4–6. Ballistic test of ammunition

a. The LCMC determines the requirement for testing of components and/or end items.

b. The LCMC will prepare a ballistic test report (BTR) for ammunition requiring PG test. Copies will be furnished to the testing agency. Sample shipping instructions will be furnished to the shipping installation. On selection and preparation of samples, the installation ammunition surveillance organization will coordinate with local supply and transportation organization to assure timely shipment of samples.

c. The LCMC will determine the requirements for ballistic testing of reworked items.

(1) Information submitted according to paragraph 4–5*b* will be reviewed by the LCMC to determine the necessity for ballistic test of the reworked lot. The installation performing the maintenance and/or renovation will be notified whether or not ballistic testing is required.

(2) The LCMC will prepare a BTR for each reworked lot determined to require test. The BTR will provide necessary direction for selecting and shipping samples, methods of test and acceptance and/or rejection criteria. Copies of the BTR will be furnished to the test agency and the shipping installation.

(3) The LCMC will issue an MRO for the movement of all test samples to a PG for ballistic test.

(4) The test facility will furnish ballistic test results to the LCMC. On acceptance notification by the LCMC, action will be taken by the installation performing the maintenance and/or renovation to place the lot in the appropriate CC for issue and use.

(a) If retest is determined appropriate by the LCMC, the installation will be requested to furnish additional samples.

(b) Special instructions as outlined in test facility request or shipping and marking instructions contained in the original BTR apply. Reference will be made to the original BTR on retest sample shipment to maintain continuity.

(c) In the event of ballistic failure, the LCMC will, if appropriate, initiate a request for waiver and/or deviation for subject materiel.

(d) Retain the materiel involved in CC D, pending final decision and disposition.

d. Furnish DD Form 1650 for each lot shipped in paragraph 4–6*a* and 4–6*b* to the test activity with the documentation covering the sample shipment. A DD Form 1650 will also be placed in box number one of each lot shipped for test. If DD Forms 1650 are not available, coordination will be made with the LCMC prior to release of shipment.

e. Ammunition that is restricted or remains suspended following renovation will be reported to the appropriate LCMC to provide for lot number inclusion in TB 9–1300–385.

4–7. Reassessment of bulk propellant and bulk-backed component charges

These charges will be accomplished in accordance with the Propellant Reassessment Program (PRP) requirements of chapter 9. Reassessment involves the test and evaluation of stored propellant to determine functional serviceability prior to loading into a major end item.

4–8. Deterioration check test (explosives filled components)

a. Specific explosives filled components such as primers, ignition cartridges and delay elements require a deterioration check test (DCT) in accordance with the applicable military specifications. The DCT is a test of functional characteristics and moisture content of the black powder in the component. The DCT ensures suitability for use of these components before assembly into complete rounds. A successful test will allow components to be used (uploaded) for a period of 3 years.

b. Effective component usage planning for maintenance, renovation, and production processes is critical for components requiring a DCT. Installation level ammunition managers and workload planners should identify components requiring a DCT at least 6 months prior to projected use. Notify the JMC, Quality Assurance Directorate to verify suitability for uploading components and/or scheduling required assessments.

c. Explosive component lots requiring a DCT may be tested by the storing installation for local use. Prior to performing the test, make telephonic or written notification to the JMC, Quality Assurance Directorate to assure that a local test will not duplicate test efforts underway or completed elsewhere.

d. Report DCTs of explosive components to the JMC, Quality Assurance Directorate by DA Form 984 (Munitions Surveillance Report) with documentation necessary for test evaluation.

e. The JMC, Quality Assurance Directorate will periodically issue a letter with instructions listing components that require testing. Components that require testing will be listed by model and type.

f. When explosive components are to be shipped to an OCONUS installation, they must have a minimum of 1 year remaining before expiration of the DCT test or assessment interval. To ensure that remaining time is compatible with overseas command's planned usage, all lots selected for shipment to OCONUS will be telephonically reported to JMC, Quality Assurance Directorate for coordination with consignee. Additionally, annotate test or assessment expiration date on the shipping documents.

g. Component lots may be uploaded up to six months after expiration of DCT provided the operation is continuous. The JMC, maintenance program manager must be notified if a break in the operation of over one week occurs and at the beginning of the 6 months extension date.

h. Ammunition components requiring a DCT and without a current test will be assigned CC D and defect code CAA870. Tests will only be conducted when a requirement exists to upload the components.

i. Classify all ammunition components failing the DCT to CC H. The JMC will notify storage installations of lots failing DCT.

j. Upon completion of maintenance programs, request disposition of components from the JMC, Maintenance Program Manager. Disposition requests will include NSN, part number, lot number, CC, and quantity.

k. For a listing of DCT items, go to the address in paragraph 1–7. Notify JMC, Quality Assurance Directorate of any discrepancies between MIL–SPEC requirements and the listing posted on the surveillance Web site.

4–9. Basic quality audit procedures

a. The following are standard steps to follow when conducting an audit. Prior to conducting the audit:

(1) Create and maintain audit schedules for all operations to be audited.

(2) Obtain copies of and review modification work orders (MWOs), SOP's, drawings, specifications, standards, and prior audit reports. Place special emphasis on prior corrective action requests (CARs). Review MWO in accordance with paragraph 4–12.

(3) Prepare audit checklist and develop sample plan in accordance with paragraph 4–10 and MIL–STD–1916.

(4) Brief operation team leader on purpose and scope of audit.

b. An observation is a statement of fact made during an audit and substantiated by objective evidence. Observations may be positive or negative. The terms nonconformance, nonconformities and findings will be used interchangeably to describe and report failures to comply with specified product or quality system requirements (negative observations). Objective evidence is qualitative or quantitative information, records, or statements of fact pertaining to the quality of an item or service. Objective evidence may also be generated by the existence and implementation of a quality system element, which is based on observation, measurement, or test and which can be verified.

c. Conduct audit of nonconforming materiel process and record results.

d. It is anticipated that ammunition maintenance operations audits will be conducted on a daily basis. When this is not possible, increase batch and sample sizes in accordance with MIL–STD–1916.

e. Determine operation compliance and product acceptance in accordance with paragraph 4–11.

f. A CAR must be completed every time a nonconformance is observed. Locally developed and approved CAR format and recording system is recommended.

(1) The first time a checkpoint is found not in conformance, the CAR is addressed to the operation team leader and/or supervisor, with a copy furnished to the QASAS in charge.

(2) If the same check point is found non-conforming during a subsequent audit, a CAR is completed referencing both the original and current nonconformance. Include the control number (CAR no.) of the original CAR. This CAR is addressed to the next level supervisor, with copies furnished to the operation team leader and/or supervisor and QASAS in charge.

(3) If the same check point is found nonconforming a third time, a CAR is completed referencing both prior nonconformances, (including CAR control numbers). This CAR is addressed to the installation commander with copies furnished to the next level supervisor, the operation team leader and the QASAS in charge.

g. After conducting audit:

(1) Brief operation team leader on findings after each audit.

(2) Distribute the CARs in accordance with local procedures.

(3) Complete audit and CAR status logs.

(4) File audit checklists and CARs.

h. Review CAR status log monthly for open CARs past suspense date.

i. Send memo to operation team leader, next level supervisor, and QASAS in charge if CAR response not received by the suspense date.

j. Schedule follow-up inspection to review CAR compliance. Post follow-up date on CAR, CAR status log and audit schedule.

k. Conduct follow-up audit. Close out CAR if corrective action is effectively implemented.

l. If corrective action is not correctly implemented, issue second CAR referencing the original CAR and failure to correct the nonconformance. Include the control number (CAR no.) of the original CAR. This CAR is addressed to the next level supervisor with copies furnished to the operation team leader and/or supervisor and QASAS in charge.

m. Follow-up the new CAR's as outlined in paragraphs 4–9*i* and 4–9*j*.

n. If corrective action is still not effectively implemented, a third CAR is completed referencing both prior CARs and failures to correct the nonconformance (include CAR control numbers). This CAR is addressed to the installation commander with copies furnished to the next level supervisor, the operation team leader and the QASAS in charge.

4–10. Procedure A-audit checklist and sample plan preparation procedure

a. Audit checklist preparation—

(1) Extract all check points from item SB's, SOPs, TM's, MWO's, and special inspection requirements directed by higher headquarters.

(2) List checkpoints on audit checklist and classify as critical, major, and minor defects.

(3) Randomly select checkpoints to monitor during the audit. Each checkpoint is a sample. List the number of times each checkpoint is monitored. Continue to select and monitor check points until the correct sample size is accomplished.

(4) Sign and date the audit checklist and list the sample size.

b. Sample plan preparation (for inspection by lot or batch)—

(1) Multiply the number of inspection check points for critical characteristics by number of rounds run since completion of last audit. This yields critical characteristic batch size.

(2) Using the batch size calculated in paragraph 4–10*b*(1), determine the sample size from table 5–2, with VL–VII. This gives the number of critical characteristic checkpoints that will be selected for the audit.

(3) Multiply the number of inspection check points for major characteristics by number of rounds run since completion of last audit. This yields major characteristic batch size.

(4) Using the batch size calculated in paragraph 4–10*b*(6), determine the sample size from table 5–2, with VL–IV. This gives the number of major characteristic check points that will be selected for the audit.

(5) Multiply the number of inspection check points for minor characteristics by number of rounds run since completion of last audit. This yields minor characteristic batch size.

(6) Using the batch size calculated in paragraph 4–10*b*(8), determine the sample size from table 5–2, with VL–II. This gives the number of minor characteristic checkpoints that will be selected for the audit.

(7) MIL–STD–1916 provides continuous sampling plans.

(8) Maintenance workflow limits the maximum number of samples that can be checked during an audit. When workload is such that an audit cannot be performed for several days and sample size becomes too great to allow performance of an audit, all production will be assigned to CC D or CC J as determined by QASAS in charge.

(9) To minimize lot rework, it is necessary to identify batches of production. Daily production runs are the recommended batch grouping.

(10) Reduced audit intervals may be applied in accordance with MIL–STD–1916.

4–11. Procedure B-operation compliance and product acceptance

a. Operation compliance and product acceptance will be determined through performance of quality audits using audit checklists.

b. If no deficiencies are noted, accept process and product produced since last inspection. Audit checkpoints will be divided between process and product at the auditor's discretion (that is, the operators performance may be checked, the item may be checked after the operator has finished his and/or her assigned step, or both).

c. If discrepancies are noted—

(1) Complete CAR.

(2) Critical or major discrepancies – exercise rework option that was chosen during a MWO preparation and/or review. Two options exist – rework of rounds run since process was last accepted or implementation of 100 percent inspection by a line operator deemed suitable by the audit team. These options will be weighed on a case-by-case basis during each work order review. The selected option will be included in the work order prior to job start. If rounds are to be reworked, place production run since process was last accepted in appropriate unserviceable CC based on nature of defect and requirements of this pamphlet.

(3) Minor discrepancies – Tighten inspection for reject check point in accordance with MIL–STD–1916. If no additional deficiencies are found, correct defective round and accept process and production. If additional deficiencies are found, reject process and production as in paragraph 4–11*c*(2).

4–12. Procedure C-procedures to review ammunition maintenance work orders

a. Determine type MWO—

(1) Renovation MWO operations (lot suffix, open box, and work on round) require audit checklist preparation and audit. Renovation MWO review is a function of the audit team.

(2) Check pre-shipment MWO operations (for such things as palletization and outer pack remarking).

b. Check for suspensions and/or restrictions on each lot to assure suitability for rework.

c. Determine shelf life, propellant reassessment and DCT of lots and components.

d. Check for applicable MIN, AINs and safety of use messages (SOUMs) and other applicable local safety information and references.

e. Review DA Form 3022–SG, lot location and quantity records for each lot to be processed and verify lot condition is adequately addressed by MWO scope of work. Check for any DA Form 2415 (Ammunition Condition Report) that apply and applicable defect codes. Make any changes required to scope of work to assure that all maintenance required is performed to yield the desired product CC.

f. Verify proposed CC, lot number and NSN are correct. Ensure all CC segments of lot are upgraded if possible.

g. Verify accuracy of all marking information in the MWO (hazard class, division, and proper shipping name (PSN), United Nations (UN), SN, NSN, and lot number.)

h. Check whether a lot suffix is required and/or received and/or correct. Verify lot suffix is included in the MWO.

i. Verify MWO includes project start and completion dates.

j. Obtain a copy of written authorization for every deviation from required procedures.

k. Discuss rework contingency option with planners. Assure that rework option has been chosen and is listed on the MWO. Two options exist – rework of rounds run since process was last accepted or implementation of 100 percent inspection by a line operator deemed suitable by the audit team. These options will be weighed on a case-by-case basis during each work order review. The selected option will be included in the work order prior to job start.

l. Assure all required references are on hand. Check for most current version using DA Pam 25–30. Order if necessary (drawings, TM's, SBs, MWO's, and SOPs).

Chapter 5
Support to Ammunition Logistics Functions

5–1. General

a. The ammunition operations organization performing an ammunition mission is responsible for the safe and proper conduct of all operations.

Note. QASAS, military ammunition inspectors MOS 89B (staff sergeant and/or sergeant first class), and properly trained and certified civilian technicians (including local nationals in OCONUS locations) have the authority and responsibility to stop unsafe operations where imminent danger is involved.

b. Safety and logistics functions described in this chapter are the responsibility of QASAS personnel. Surveillance personnel will coordinate inspection and safety issues with the safety director or manager. These functions include inspection of buildings and areas in which AE are stored, including ASP, ATPs, arms rooms, and PGs; outside storage; operations involving handling, storing, maintenance, shipping, research, development, test, evaluation, and destruction of AE; and transport vehicles and vessels used for transportation of AE. In instances where there are no QASAS and/or surveillance personnel assigned to the organization having responsibility for these functions, an installation services support agreement or memorandum of agreement will be executed with the organization providing QASAS and/or surveillance personnel to accomplish these functions.

(1) Primary areas of concern include the following:

(a) Safety while conducting operations.

(b) Ammunition readiness.

(c) Compliance with SOPs. The following areas need to be considered when reviewing SOPs:

1. SOPs provide supervisors and operators the level of detail necessary to execute the task or operation in an efficient, effective, and safe manner.

2. SOPs contain results of a complete composite risk assessment and/or hazard analysis of all phases of the task or operation and resulting recommended controls.

3. SOPs describe all necessary operational, safety and health requirements.

4. SOPs have been reviewed and concurred with by subject matter experts and are current.

5. SOPs address emergency response procedures, and equipment required to execute the operation safely.

6. Supervisors and employees have read and indicate they understand all the requirements of the SOP relative to the operation and that it can be executed in an efficient, effective, and safe manner following the SOP.

7. SOPs for operations in progress must be present and readily available at the work site.

8. Observed operations are conducted in accordance with SOP.

(2) Ammunition identity (lot integrity.)

(a) If possible, correct unsafe practices, methods, or conditions immediately. Report noted conditions and actions taken through appropriate channels for long-term corrective action.

(b) The QASAS in charge will maintain close coordination with the directors of both safety and operations.

(c) Use applicable safety, transportation, storage, maintenance, DEMIL, supply regulations, and directives issued by responsible commands in conducting inspections. In the absence of such documents, follow the procedures detailed in this chapter.

c. Army service component commands (ASCCs), direct reporting units, and other organizations will comply with AR 385–10 and DA Pam 385–64 when developing SOPs. Additionally, U.S. Army Materiel Command (AMC) installations and/or organizations will comply with specific command requirements. QASAS in charge will support organizations conducting explosives operation in preparing a SOP prior to beginning operations.

d. The QASAS in charge will personally conduct periodic on-site reviews of ammunition operations to assure that operations are being conducted satisfactorily from both a quality and a safety perspective.

5–2. Storage buildings and areas

a. Perform a formal inspection annually of all magazines, arms rooms, and other buildings in which AE are stored (except as noted in para 5–2*c*). Maintain a formal report and record of the inspection results for 5 years including discrepancy reports forwarded to responsible organizations and the resolution or corrective actions resulting from these reports.

(1) Record any unusual or changing conditions encountered during an inspection that have or could have an adverse effect on specific ammunition lots on the applicable DA Form 3022–SG. QASAS will apply knowledge of such conditions on specific lots of materiel to consider the potential effect on item serviceability or suitability for continued safe storage.

(a) Specifically note and report such conditions, along with any potentially hazardous conditions, to the appropriate organization for prompt corrective action.

(b) The QASAS in charge may deem it necessary to conduct special inspections or adjust the assigned inspection intervals for materiel that has been adversely effected by such storage conditions.

(2) Consider the following conditions during inspections of magazines and storage buildings:

(a) Compliance with storage drawings.

(b) Segregation of lots and CCs.

(c) Adequacy of aisles.

(d) Stability of stacks.

(e) Separation of stacks by safety distance, when required.

(f) Compliance with quantity distance limits in stacks and magazines.

(g) Compliance with storage compatibility requirements of explosives and ammunition.

(h) Satisfactory housekeeping in the magazines for the type of materiel in storage.

(i) Suitability of the magazine for the type of materiel in storage.

(j) Condition of magazine, doors, and ventilators. Magazine door flashings need not be inspected or reported unless they present an obvious safety hazard.

(k) Maintenance of adequate firebreaks (where required) around magazines and storage sites.

(l) Presence and proper types of fusible links on doors and ventilators, where required.

(m) Check adequacy, composition, and depth of earth cover every 24 months.

(n) Capability of magazine contents to continue to be stored safely.

(o) Presence of required CC tags.

(p) Visual inspection of the lightning protection system, if present.

(q) Review of lightning protection system electrical test results.

(3) QASAS in charge will determine serious conditions that warrant re-inspection to verify that discrepancies have been corrected.

b. The magazine inspection interval may be increased to a maximum of 24 months or reduced to a minimum of quarterly depending on activity or local conditions which would increase or decrease the possibility for deficiencies to occur with concurrence of the Army service component command; document reasons for changing intervals.

c. Inspect empty magazines upon notification of removal of materiel. An empty magazine need not be re-inspected before being reused for storage provided:

(1) Magazine was inspected after it was emptied.

(2) Magazines and storage sites having had chemical surety materiel stored therein have been certified free of toxic hazard (see AR 50–6).

(3) All defects noted during the inspection have been verified, as being corrected.

(4) Use for storage is accomplished within 24 months following the last inspection.

d. Any magazine or storage building that is to be used for storage of inert ammunition or non-ammunition items (general supplies), or which is to remain empty for more than one year should have the magazine inspection interval lengthened. Qualified facilities engineer personnel instead of the ammunition surveillance organization may conduct these inspections.

(1) The lengthened interval is to be based on local conditions but should not be less than 24 months and must not exceed 36 months. Continued magazine inspection is required to detect any damage or deterioration before extensive and costly repairs may be necessary for restoration.

(2) The organization performing the inspection will document and report any damage and deterioration to the appropriate installation organization for planning or programming of preventative maintenance so that the magazine remains suitable for ammunition storage. The correction of all deficiencies must be verified by the ammunition surveillance organization.

(3) Installations that have been identified under the Base Realignment and Closure Act, need not conduct inspections on empty magazines. A final inspection will be made prior to base transfer. This final inspection is limited to a check for ammunition items or residue.

5–3. Lightning protection system inspection and test

Lightning protection systems will be installed, inspected and tested in accordance with DOD 6055.9–M, AR 385–10, and/or DA Pam 385–64. The garrison or installation safety officer will retain the inspection and test reports for the last six inspections cycles (12 years for records on a 24-month inspection cycle).

a. Visual inspections are normally conducted by the ammunition surveillance organization and electrical tests will normally be conducted by a designated operations organization within the installation.

b. Review installation records to determine if testing for electrical continuity and adequacy of grounding is performed.

c. Monitor and review these procedures and the results of these inspections and tests to assure that lightning protection systems are properly inspected and tested.

5–4. Ammunition and explosive materiel in outside storage

a. Inspect ammunition placed in outside storage on a continuing basis to ensure packaging is not damaged or deteriorated to the extent that ammunition contents are exposed in any manner not intended by the original design of the package (for specific instructions related to other contingency operations, refer to chap 6).

(1) Repair damaged packages before placing in outside storage. Store all ammunition in stable stacks with ventilation provided according to existing requirements.

(2) Ensure that outside storage complies with explosives safety and security standards.

b. Conduct a formal examination quarterly of each outside site in which ammunition is stored. This inspection will consist of an exterior examination of the ammunition packaging for evidence of deterioration or damage and for the presence of any conditions indicating the possibility of future deterioration.

(1) If the exterior examination reveals any evidence of deterioration or nonstandard conditions, additional detailed inspections will be made as necessary to determine the condition of the entire quantity of ammunition affected. Primary emphasis is to detect any evidence of deterioration or hazardous conditions that may affect the continued serviceability or storage safety of the ammunition.

(2) Additionally, examine each outside site immediately following any unusual weather condition such as severe rain, snow, or wind storms, which might damage or affect the ammunition.

5–5. Handling, storage, and shipping operations

a. Surveillance personnel will review handling, storage and shipping operations for compliance with applicable safety and operational regulations. Forward reports of deficiencies through appropriate channels to obtain corrective actions, as required. Follow-up to assure deficiencies are corrected.

b. Surveillance personnel will "clear" all lots of ammunition, components, and related materiel designated for shipment or issue. Surveillance personnel will work with supply personnel to assure oldest assets are issued first whenever possible.

c. Lot clearance will include reviewing the DA Form 3022–SG, suspension records and other applicable references to ensure the right ammunition is shipped and/or issued and meets user requirements. Lots and lot clusters overdue for inspection will not be cleared for shipment or issue. Refer to paragraph 2–5.

d. Design local procedures to ensure that all necessary actions required prior to shipment are as follows:

(1) Noted on the appropriate shipping documents.

(2) Provided to the operating element for action.

(3) Checked to assure completion prior to release of items for issue or shipment.

5–6. Transport vehicles and vessels

a. Thoroughly examine the exterior and interior of transport vehicles and vessels (motor vehicles, rail cars, barges, ships, aircraft, and various containers) to be used for transportation of AE to determine suitability to transport the materiel involved.

b. Thoroughly examine the exterior and interior of ammunition and/or explosives-laden transport vehicles and vessels upon receipt at a military establishment before unloading operations are started.

(1) Examine each conveyance to uncover evidence of tampering or sabotage (such as broken seals, wire twists, or other security devices), missing cargo, and hazardous conditions resulting from DIT.

(2) Observe condition of the lading upon receipt and during unloading operations to detect damaged cargo and to determine if improper blocking, bracing, and staying methods were employed.

c. Basic policy and guidance for transportation of AE are contained in DTR 4500.9–R. Guidance on specific areas of interest is contained in 46 CFR and 49 CFR, AR 190–11, DA Pam 385–64, and TM 38–250.

5–7. Demilitarization

a. Supporting ammunition surveillance organization will monitor and evaluate AE DEMIL operations and sites and will verify currency of DEMIL SOPs.

b. Supporting ammunition surveillance organization will provide daily support to each DEMIL operation. Determine support requirements based on nature of the DEMIL operation; document support daily.

c. The surveillance organization will develop a SOP to support DEMIL operations. The SOP will include the following information:

(1) Ammunition surveillance pre-operational checklist with the following steps.

(a) Monitor DD Form 1348–1A (Issue Release/Receipt Document) to verify that item being DEMIL is of the proper NSN, lot, quantity, and nomenclature.

(b) Verify that the proposed method of DEMIL is compatible with current DEMIL directives.

(c) Verify the availability of approved operation SOP and that operation SOP or a dedicated surveillance SOP contains all surveillance inspection criteria and severity of quality characteristics.

(2) Ammunition surveillance DEMIL site pre-inspection.

(a) Verify site to be used is as authorized in SOP.

(b) Verify all safety; protective and firefighting equipment required by SOP is available and operational.

(c) Determine availability of all required references cited in SOP.

(d) Verify that a copy of the governing SOP is posted and available.

(e) Verify that all required fire and chemical hazard symbols are posted.

(f) Verify that operations are in compliance with environmental regulations as stated in the SOP.

(g) Verify that communication equipment is available and functioning properly.

(h) Verify that sensitive items are provided proper security.

(3) Ammunition surveillance inspection and evaluation of DEMIL operations.

(a) Evaluate process in accordance with the SOP for the specific DEMIL operation.

(b) Examine DEMIL area (including service magazines) for compliance with explosives limits reflected in SOP, good housekeeping, and storage compatibility.

(c) Verify that required personal protective equipment is used on each operation.

(d) Verify compliance with all environmental requirements as stated in the SOP.

(e) In coordination with the operations element, correct discrepancies noted during the inspection and evaluation that require immediate remedial action prior to continuing the operation. Report unresolved problems immediately to the QASAS in charge.

(4) Ammunition surveillance post-operational checklist with the following steps:

(a) Verify that scrap metal, casings, fragments and related items are recovered from open burning and open detonation grounds and disposed of according to local SOPs.

(b) Verify that a search of the surrounding area is conducted to locate and identify any unexploded ordnance. Recovery and detonation of ammunition or explosives will be performed per local SOPs.

(c) Verify that ammunition or explosives are not left unsecured.

(5) Ammunition surveillance of DEMIL residue.

(a) Conduct inspection of all items of DEMIL residue produced during one work shift. Material will be offered for ammunition surveillance inspection daily.

(b) The ammunition surveillance organization will perform random sampling in accordance with MIL–STD–1916 to verify the adequacy of the DEMIL and decontamination process performed by the activity generating DEMIL residue. Inspection will be performed based on attribute sampling. Document results of verification inspection and sampling.

1. For critical characteristics, the activity generating the DEMIL residue will implement a fail-safe screening operation and additionally will apply sampling plan VL–VII to verify the performance of the screening operation.

2. For major characteristics, the ammunition surveillance will perform sampling of the product from the DEMIL process, applying sampling plan VL–IV.

3. For minor characteristics, the ammunition surveillance will perform sampling of the product from the DEMIL process, applying sampling plan VL–II.

4. The sample size code letter will be determined from MIL–STD–1916, table 5–1.

5. Sample size will be determined from MIL–STD–1916, table 5–2. Based on the sample size code letter, the ammunition surveillance organization will inspect randomly selected samples in accordance with the sample sizes designated in table 5–2.

6. The switching procedures described in MIL–STD–1916 will be applied for each level of characteristic. Refer to MIL–STD–1916 for detailed description of switching procedures.

7. Document results of sampling and verification inspections.

(c) Surveillance personnel will inspect materiel generated from DEMIL to be returned to stock or offered for sale (for example, propellant, explosives, washed out projectiles, scrap metal and packaging material) by a using the same sampling plan as above. Appropriate DMWR or LOI specifies functional classification and quality standards of components and materiel generated from DEMIL. Where classification and quality standards are not stated, data will be requested from the appropriate LCMC.

(d) The ammunition surveillance organization will ensure that all reclaimed propellant is certified as stable for continued storage prior to re-use, return to stock, or offering for sale through DRMO channels. Specific guidance and instructions for determining the chemical stability of propellant is contained in chapter 9 of this publication.

(6) Certification of reclaimed scrap (see DOD 4160.21–M and DA Pam 385–64).

(a) Scrap will be certified by the generating activity (ammunition operations organization) as being properly processed, as either inert or free from explosive hazard. If mutilation is required by the DEMIL code, it will be part of DEMIL and accomplished prior to turn-in DRMO or sale by the program manager DEMIL authorized installation. QASAS will ensure the process is accomplished in accordance with DOD instruction (DODI) 4140.62.

(b) A sample of the scrap certified in paragraph 5–7 will be selected and inspected by the surveillance organization. When the inspection results determine the processed scrap to be free of hazardous material, the supporting ammunition surveillance organization will verify that the certification provided by the operations organization is valid. Both the certification and verification must be documented and maintained per current regulations.

(7) The ammunition surveillance organization will verify that a certification record of DEMIL items is prepared on a daily basis.

5–8. Protective clothing and equipment

a. Use suitable personal protective clothing, equipment, and devices to protect against hazards inherent in specific operations, according to AR 385–10, DA Pam 385–64, and/or other appropriate publications.

b. When conductive clothing or equipment is required in an operation, check the conductive reliability of such equipment using APE 1953 or other approved equipment. Maintain daily records of test results.

5–9. Handling of treated packing material

a. *Pentachlorophenol treated packing material.*

(1) “P” treated material is treated with a preservative containing Pentachlorophenol. The letters “P,” "PB, “or, “PC” stamped on the material indicate such treatment.

(2) Personnel handling treated packing material must follow all hygiene and protective clothing and/or equipment requirements as stated in applicable DMWRs, Environmental Protection Agency (EPA) guidance that is available at http://www.epa.gov/pesticides/factsheets/chemicals/pentachlorophenol.htm.

(3) Personnel must always wash their hands with soap and water prior to eating, drinking, smoking, or using toilet facilities to prevent possible contamination after handling “P” treated material.

b. *Zinc Napthenate and/or Copper Napthenate-treated material*. Personnel handling such material must observe precautions according to applicable DMWR or Surgeon General Directives.

5–10. Ammunition information notices and missile information notices

a. AINs are intended as an immediate, but temporary means of disseminating Class V information until it can be permanently updated in a regulatory publication, as required to—

(1) Disseminate technical information for ammunition items.

(2) Provide information relating to the conduct of the Ammunition Surveillance Program.

(3) Dispense precautions pertaining to specific munitions.

(4) Retransmit SOUM and ground precautionary advisories.

b. MIN are used to—

(1) Disseminate initial shelf life and shelf life extension data.

(2) Provide surveillance information regarding guided missiles and large rockets.

(3) Retransmit SOUMs.

(4) Disseminate technical information for AMCOM-managed items.

c. Surveillance organizations will disseminate and implement guidance, as appropriate.

5–11. Major training area operations

a. *Ammunition surveillance functions.*

(1) Ammunition surveillance personnel assigned to live firing training areas are responsible for providing technical assistance and support on ammunition quality and explosives safety matters to locally assigned personnel and to organizations and/or troops training at the facility. This includes, but is not limited to, range support during training exercises and investigating and reporting malfunctions involving ammunition in accordance with AR 75–1. These personnel will ensure that a 24/7 notification process is in place at all ranges to ensure compliance with AR 75–1.

(2) Ammunition surveillance personnel should be available to assist range and installation safety officers to assure that units are properly briefed prior to commencement of training exercises. This will include as a minimum, safety in handling and transportation, protection of ammunition from the elements, malfunction reporting requirements and turn-in procedures for unused ammunition and residue (packing material and fired cartridge cases). In addition, the need to inform the ammunition surveillance personnel of any suspect or otherwise defective ammunition that might affect user safety or mission accomplishment should also be emphasized. Examples of defective ammunition include, but are not limited to, rounds that fail to chamber, assemble or disassemble, deteriorated propellant bags, excessive misfires, and short rounds.

(3) Ammunition surveillance personnel must be thoroughly familiar with the requirements of AR 75–1, AR 385–10, AR 385–63, AR 702–6, AR 710–1, AR 710–2, AR 740–1, DA Pam 385–30, DA Pam 385–40, DA Pam 385–63, DA Pam 385–64, FM 4–30, local procedures, and make extensive efforts to ensure they are met.

(4) Ammunition surveillance personnel will assure that suspended or restricted munitions and ammunition lots cleared or not cleared for overhead fire are identified and appropriate action taken.

b. *Malfunction investigations.* Ammunition surveillance personnel should be available to prepare or provide assistance in preparation of reports required by AR 75–1 and local procedures. An automated malfunction report is available in the MHP. Typical examples of steps that may be taken in the event of a malfunction are listed below. It must be understood that the following is not intended to be an all-inclusive list.

(1) Obtain general information concerning the incident at the time the initial report is made in accordance with AR 75–1.

(2) Inform reporting individual that ammunition and weapons involved in the incident must be left in place and not disturbed until an investigation has been conducted.

(3) Conduct visual inspection of malfunction site in conjunction with logistics assistance representative U.S. Army Tactical Command LCMC for weapons and AMCOM for missiles), officer-in-charge and/or explosive ordnance disposal, if needed.

(4) Visually inspect unpackaged ammunition as well as any residue from the expended ammunition. Give particular attention to the condition of ammunition prepared for firing, that is, tampering or unauthorized firing configurations or procedures, exposure to elements and length of time unpackaged.

(5) Every effort will be made to interview all personnel involved in the malfunction and other personnel who witnessed the incident. Personnel will be thoroughly questioned on events, procedures, and actions that took place before, during, and after the malfunction.

(6) Locally suspend ammunition from use when it is determined that the ammunition is the possible cause of a malfunction.

(7) Preliminary reporting requirements.

(a) Preliminary reports for malfunctions of conventional ammunition will be patterned after DA Form 4379 (Ammunition Malfunction Report), including all Army-designated Class V items except guided missiles and large rockets. This includes warheads and warhead sections (when not assembled to guided missiles or large rockets) and small rockets (2.75 inch and smaller). The preliminary report will contain all applicable information requested in DA Form 4379 but will not be delayed if some of the information is not immediately available. All ammunition malfunctions (to include all duds and misfires) will be reported (by telephone if possible) to the JMC Operations Center (Defense Service Network (DSN) 312–793–7270/6321; commercial 309–782–7270/6321; or email usarmy.ria.jmc.mbx.opctr-ops@mail.mil and usarmy.ria.jmc.mbx.amsjm-qas@mail.mil. Malfunction reports considered classified due to operational necessity will be sent to the JMC Operations Center via the operations center secure internet protocol router network email at usarmy.ria.jmc.mbx.g3-ammo@mail.smil,mil.

(b) Preliminary reports of Class A and Class B malfunctions for guided missiles and large rockets will be patterned after DA Form 4379–1 (Missile and Rocket Malfunction Report). These reports will be submitted to the Commander, Program Executive Officer Missile and Space (SFAE–MSL–SL), Redstone Arsenal, AL 35898–5679; (DSN 897–2066 or commercial 256–313–2066; or email usarmy.redstone.amcom.mbx.g3-amcom-operations-center@mail.mil). During non-duty hours (including holidays and weekends), reports will be made to the AMCOM staff duty officer by phone DSN 897–2066 or commercial 256–313–2066.

c. *Malfunction reporting.* All malfunctions will be reported in accordance with AR 75–1, para 2–1 and 2–2. The preferred format for reporting is via MHP, DA Form 4379 –SG (Ammunition Malfunction Report) or DA Form 4379–1 –SG

(Missile and Rocket Malfunction Report). In the event MHP is unavailable DA Form 4379 and DA Form 4379–1 are acceptable.

5–12. Range area operations

a. QASAS will conduct area inspections periodically (daily when possible) of the ranges to assure that ammunition is properly handled, stored, and transported. Make these inspections a matter of record; maintain records for a minimum of 2 years. Pay particular attention to safety or operational requirements such as explosive limits, rough handling of ammunition, excessive amounts of ammunition packages opened, and so forth. When discrepancies are noted, make on- the-spot corrections. Record and report discrepancies according to locally established procedures.

b. When visiting firing ranges the QASAS will observe firing and, if possible, consult with troops to determine if problems were encountered with the ammunition during training. Investigate problems that are brought to the attention of the QASAS and report through command channels to the appropriate LCMC.

c. Areas of concern include, but are not limited to, the following:

(1) Storage of packing material, excess dunnage, and residue - store minimum of 50 feet away from live ammunition.

(2) Cover ammunition with canvas (tarpaulin) to protect items from the elements. Use dunnage and packaging to create ventilation between the packages and the tarpaulin.

(3) Point all propulsive items (rockets and missiles) in the same direction (that is, nose ends pointed the same way). All rockets should be pointed toward a dirt berm or in a direction offering the least exposure to personnel and property.

d. Each ammunition pad will have as a minimum two 10BC (or greater) fire extinguishers. Extinguishers of lesser capacity may not be combined to meet this requirement. Units may use two 10 ABC fire extinguishers. Use of the 10 ABC extinguishers negates the need for the water type extinguisher.

e. Matches or other flame and/or spark producing devices will not be taken into any ammunition storage area. Use of cellular phones and radio frequency devices within 100 feet of ammunition holding area is strictly prohibited.

f. Ammunition must be on dunnage (that is, pallets keeping ammunition off the ground).

g. Once opened, boxes still containing ammunition must be secured (banded, sealed with authorized anitpilferage seals, or closed by any means to preclude unauthorized access).

h. Ammunition-laden vehicles may be parked on a firing point pad if the following conditions are met:

(1) A valid DD Form 626 (Motor Vehicle Inspection (Transporting Hazardous Materials)) is readily available while parked.

(2) All ammunition is compatible.

(3) The vehicle is not parked on the pad for more than 24 hours.

(4) Units will only store ammunition on firing point pads that can be fired at that firing point.

i. Vehicles will be parked no closer than 10 meters to other vehicles and ammunition stacks.

5–13. Prepositioned ships

a. Guidance in this section applies to Army prepositioned material (PREPO) - APS–3 (afloat). Criteria addressing Marine Corps maritime prepositioning ships (MPS) and Air Force afloat prepositioned fleet (APF) can be found in applicable service policies and procedures and paragraphs 5–13*g* and 5–13*h*.

b. Munitions supplied for APS–3 (afloat) is intended for long-term storage aboard ship and for rapid deployment in a combat situation.

c. The following selection criteria are applicable to APS–3 (afloat) stocks:

(1) Avoid any supply and/or transportation action that will complicate inventory or surveillance procedures, contribute to delays in shipping or handling, and increase demurrage charges at the port, or increase battlefield litter during deployment.

(2) Specific palletization instructions and/or criteria. The Army Sustainment Command (ASC) must approve any exceptions to the requirements of paragraphs 5–13*c*(2)(*a*) and (b). Document all approval actions in the MHP for the affected lots.

(a) Black banding is not suitable for palletizing units on APS–3 ships. Galvanized steel strapping with the following specifications is required: ASTM D3953, type 1, heavy duty finish, “B” (grade 2), size3/4 or 11/4 X.0.35 or.031.

Note. Brite or slit edges will have a finish overlay.

(b) Four-way entry pallets are required for all palletized loads. Pallets should be International Standards for Phytosanitary Measures (ISPM)–15 compliant, to the extent practicable. Contact ASC prior to selecting any non-ISPM–15 compliant stocks.

(3) Lot integrity must be maintained by supply source and all transshipment activities. To the maximum extent possible, an entire lot must be loaded in the same conveyance(s). Quantities of one lot that can be contained in one conveyance must not be shipped in several conveyances. When multiple lots within a conveyance are necessary, segregate each lot.

(4) Marine prepositioned ammunition stocks requests can be identified by project code MEA, MEB, MEC, or 830.

(5) Use all feasible procedures to prevent moisture contamination of ammunition and boxes during loading and shipment.

(6) Repair broken pallets, and/or skids and loose and/or corroded banding at time of shipment.

(7) Ensure all containers with air test plugs (propelling charges and/or 120mm) have the plug in place.

d. Following criteria are applicable to APS–3 stocks:

(1) Program is managed by ASC. All stocks being considered for APS–3 require a functional clearance from the ASC Ammunition Surveillance Office. Submit automated functional clearance request located on the JMC Ammunition Surveillance Directorate's Web site. Revalidate clearance if stocks are not shipped within 180 days of initial functional clearance.

(2) Lot selection guidelines:

(a) ASC will identify and select specific lots for JMC managed munitions. AMCOM will identify and select specific lots and/or SNs for AMCOM managed munitions.

(b) Lot selection will consist of two but not more than three lots per DODIC on board each vessel, when possible. Multiple lots reduce the impact of possible future suspension actions against stocks aboard the APS–3 fleet.

(c) Shippers will not substitute lots without coordination with the ASC or the AMCOM, as appropriate.

(d) MROs will use exception data to inform storage locations of specific shipment requirements.

(e) Lite boxes will only be shipped when specifically directed by the ASC.

(f) Small lots (less than one pallet) will be avoided in the selection process, where alternatives exist. For multiple pallet shipments, round up the shipment quantity to the next full pallet if requisition quantity does not equate to full pallets.

(g) PIIs will be directed, as required, by the ASC after review of individual lot history.

(h) Shipping activities must ensure barrier bagged assets are sealed in accordance with paragraph 2–4*e*(3). Recurring samples and/or barrier bags closed are unacceptable for APS–3 conditions.

e. International Standardization Organization containers will have at least 24 months remaining on their container safety convention certification at time of upload.

f. A listing of candidate propelling charge lots to be considered for storage aboard PREPO AFLOAT–APS–3 ships will be transmitted by a representative of the ASC to the JMC, Surveillance Division for review.

(1) Each propellant lot selected for APS–3 (afloat) storage must meet the following conditions:

(a) Have at least 3 years remaining on the PI interval prior to shipment to port.

(b) Is classified as propellant stability Category "A."

(c) Propellant remaining effective stabilizer (RES) retest not required for at least 5 years.

(2) A lot will not be selected for APS–3 (afloat) storage unless current test results support a predicted minimum of 30 months safe shipboard storage.

(3) The JMC (AMSJM–QAS) will assist the ASC representative when propellant lots require samples to be prepared and shipped to a laboratory for test.

g. Following selection criteria are applicable to Marine Corps prepositioned ammunition stocks only:

(1) Lots will be selected for Marine Corps prepositioned stocks in accordance with the program manager for Ammunition Conventional Ammunition Strategic Plan, and the Inventory Management Systems Division Team Operating Strategy. Lots do not require a functional clearance from the Army.

(2) Only the best Marine Corps assets are to be shipped for Marine prepositioned stocks.

(3) Lots with a current inspection will not require a PII.

(4) Marine prepositioned ammunition stocks requests can be identified by project code MEA, MEB, MEC, or 830 on the Ammunition Shipment Planning Worksheet sometimes called Shipment Planning Worksheet.

(5) Questions pertaining to Marine Corps pre-positioned ammunition stocks should be addressed to the PM for Ammunition Inventory Management Team, or the local Marine Corps liaison. In the absence of a local liaison, contact the Marine Corps liaison at JMC.

h. Criteria applicable to Air Force (AF), stock only:

(1) Use current Technical Order 11A–1–10 for up-to-date guidance on AF APF stocks.

(2) AF APF stocks do not require an Army functional clearance and there is no requirement to request clearance from the AF.

(3) Only CC A munitions will be shipped to or placed on APF vessels unless otherwise permitted by the APF program superintendent. Only CC A assets with at least 6 years shelf and/or service life remaining (to the greatest extent possible) will be shipped to support APF operations.

(4) Depots and units will perform a PI prior to releasing shipments to support APF operations.

(5) Items directed to support APF operations will be shipped in full quantity unit pack configuration. Absolutely no light boxes will be shipped to support the APF program.

(6) Direct questions to the APF program office, program manager, and/or program superintendent, using the Global Ammunition Control Point (GACP) Customer Relationship Management tool on the GACP Web site at https://www.my.af.mil/wm/.

5–14. Water port operations

Ammunition surveillance personnel assigned to water ports:

a. Advise the senior DOD official and safety directors operating the port and its support facilities concerning explosives safety and ammunition quality assurance.

b. Provide advice and planning support in the areas of site planning, ammunition handling procedures and techniques, preparation of hazardous cargo documents and repair and/or evaluation of damaged ammunition items and/or packages.

c. Monitor pier and ship operations to assure proper equipment and procedures are used in the handling, movement, lifting and the securing of AE.

d. Assure that proper firefighting precautions are taken.

e. Monitor all operating locations, to include supporting marshaling areas, assure explosive weight limits are not exceeded and that pier and shipboard personnel observe common precautions for personnel handling or operating in the vicinity of AE.

f. Coordinate with Coast Guard elements, as necessary.

g. Also see paragraph 5–6 for guidance concerning transport vehicle inspection.

5–15. Explosives safety support

Ammunition surveillance personnel will support Army commands, Army service component command, direct reporting units, garrisons, installations, units, and/or organizations with an AE mission by providing technical assistance to commanders and safety directors in the areas listed below.

a. Developing explosives safety site plans, submissions and explosives licenses.

b. Preparing explosives safety Certificates of Risk Acceptance and Certificates of Compelling Reason.

c. Reviewing protective construction designs for AE operational facilities (for example, production, and manufacture, testing, storage, surveillance, maintenance, DEMIL, and disposal facilities) for compliance with explosives safety standards.

d. Conducting safety inspections of AE handling, storage, use, maintenance, and disposal areas at least annually.

e. Monitoring AE uploads and other activities that involve the transportation, storage or conduct of other AE-related operations for which a Certificates of Risk Acceptance or Certificates of Compelling Reason has been approved or is awaiting approval to ensure that pertinent requirements are met.

f. Reviewing quantity distance compliance of existing and planned facilities, both prior to and after construction.

g. Reviewing SOPs and directives for compliance with explosives safety requirements.

h. Assisting garrison or installation master planning process and reviewing the garrison or installation master plan to ensure construction is not planned within explosives safety quantity distance arcs.

i. Monitoring AE-related operations to assist Army units with understanding and complying with Explosives Safety Management Program requirements.

j. Assisting in AE accident, incident and mishap investigations.

k. Ensuring the Explosives Safety Management Program policies and procedures are followed for operational and tactical AE-related activities, such as—

(1) Siting and operation of ammunition holding areas and ATPs.

(2) Siting of uploaded tactical vehicles.

(3) Relief in place and transfer of authority for AE operations.

(4) Storage and processing of captured AE.

(5) AE retrograde, reconstitution, and reset activities in a tactical area of operation.

Chapter 6
Support of other Contingency Operations

6–1. General

a. This chapter provides guidance to ammunition surveillance personnel. Operations are often conducted in austere conditions. Ammunition surveillance personnel must be able to adapt and overcome in order to support ammunition operations. As ammunition operations mature in the area of responsibility, ammunition surveillance operations become more similar to operations conducted in garrison.

b. Ammunition surveillance personnel will conduct inspections of on-hand ammunition stocks and provide technical assistance. Material inspected will include, but is not limited to, the following:

(1) Combat loads (see para 6–2).
(2) Contingency stocks (see para 6–3).
(3) Training ammunition.

c. Support will be provided to the full spectrum of units to include the following:

(1) Active Army.
(2) Reserve Component units.
(3) National Guard units.
(4) Security forces.
(5) Other U.S. military services.
(6) Coalition partners.

d. Consistent with theater command regulations, ammunition surveillance support will be provided as established by the supporting AMC, Army field support brigade with geographic responsibility for the supported area. In certain cases, QASAS may deploy with military units or as individual augmentees to positions not supported by the Army field support brigade.

6–2. Combat load inspections

a. Inspections encompass all ammunition in the hands of deployed units and includes ammunition referred to as “mission load,” ”combat load,” ”basic load,” and/or ”operational load.” Scope of inspection will include all uploaded munitions and/or open (unsealed) containers, as well as all ammunition in unit custody stored in unit controlled storage (unit area or in unit controlled storage within the supporting ammunition storage area).

b. Frequency of inspections will be determined by the QASAS in charge, but in no case should visits occur less frequently than 12–15 months.

c. Emphasis will be placed on ensuring the conduct of an inspection in conjunction with relief in place and/or transfer of authority actions, if appropriate. Purposes of this inspection include the following:

(1) Inspection of outgoing unit’s ammunition.
(2) Checking of suspensions and restrictions.
(3) Turn-in of all unserviceable ammunition.
(4) Turn-in of all excess and/or unauthorized ammunition.
(5) Assist in transfer of serviceable combat load to incoming unit.
(6) Review incoming unit requirements — turn-in of all ammunition that exceeds authorizations.
(7) Locating legacy ammunition not on record.
(8) Evaluation of storage conditions.
(9) Education of incoming unit concerning ammunition management requirements.
(10) Evaluation of explosives safety posture.

d. Ammunition surveillance personnel will conduct all inspections.

e. Inspected unit should furnish support personnel for efficient handling, unpacking, correction of minor deficiencies, repacking, and storage of munitions.

f. Munitions sealed in original package will be opened and inspected to the extent necessary to verify serviceability and/or usability based on such parameters as storage conditions, appearance of outer pack, lot size, or length of time in unit hands. All light boxes will be opened to verify lot number, condition and quantity.

g. Ammunition must meet minimum serviceability and/or usability standards for the specific type of munitions in order to be retained in storage.

h. Special attention will be given to ensure appropriate models and quantities of ammunition are on hand to support the unit’s weapon systems based on Total Ammunition Management Information System. Ammunition excess to unit requirements will be recommended for turn-in to the supporting ammunition storage area.

i. Appropriate SBs and TMs will be used for the inspection.

j. Munitions factory sealed in original package will be opened and inspected only to the extent necessary to verify serviceability.

k. Barrier material packaged items will be treated according to paragraph 2–4*e*. If heat sealing materials are unavailable, munitions without shelf life and service live restrictions with opened barrier bags should be placed in a hermetic type container (M19A1, M2A1, and M548).

l. The appropriate models and quantities of ammunition required to support the unit's applicable weapon systems will be in the combat load. If used, command letter of authorization for combat load should be on hand and match the recorded quantities on property book unit supply-enhanced for the unit.

6–3. Ammunition support above the unit level

a. Ammunition surveillance personnel will provide support to theater storage areas, corps storage areas, ASPs, and ATPs as directed by the Army Component Command and/or Joint Task Force Commander. Support includes the following:

(1) Evaluating the readiness of munitions.

(2) Assisting safety managers in the preparation of explosives safety documentation (site plans, licenses, and safety risk assessments).

(3) Provide commander status updates on munitions surveillance and explosives safety matters per DA Pam 385–64.

(4) Inspecting munitions to determine quality, safety, and deterioration.

(5) Evaluating storage facilities and/or sites for compliance with storage standards.

(6) Evaluating land use surrounding ammunition storage area for encroachment, fire hazards and other nonstandard conditions.

(7) Checking for conditions that could accelerate deterioration of items in storage.

(8) Teaching surveillance and munitions safety.

(9) Preparing and maintaining records and reports to cover all surveillance activities.

(10) Monitoring storage, handling, and maintenance operations and recommending changes to enhance safety and operational effectiveness.

b. Inspections directed by this document will be accomplished and documented within the MHP. Sample sizes and sample disposition will be in accordance with the requirements of chapter 2, based on the type inspection performed.

6–4. Technical assistance visits

a. These visits include the wide variety of interaction between ammunition surveillance personnel and supported units. A technical assistance visit may be a formal, scheduled event or more mundane, routine interaction.

b. Areas of concern include, but are not limited, to the following:

(1) Explosives safety.

(2) Ammunition storage (inventory requirements and housekeeping).

(3) Unit procedures for transportation of ammunition.

(4) Upload plans.

(5) Disposition of excess ammunition.

(6) Investigating and reporting malfunctions.

(7) Property books and ammunition records and reports.

(8) Suspension and/or restriction management.

(9) AINs and MIN availability and application.

(10) Conduct of preventive maintenance checks and services of on-hand stocks in accordance with applicable technical publications.

c. Review property books and inventory systems to determine authorized versus on-hand stocks and determine if items are correctly identified (NSN, DODIC, line item number, lot number, and/or SN, and quantity).

d. Review of all ammunition related records. Review is to include but not limited to magazine data cards, monthly inventory and monthly humidity indicator checks. Special attention should be given to items issued and/or uploaded and returned to storage. Items indicating unsatisfactory humidity must be identified, serviced, and reported in accordance with the item SB. Failure to maintain these assets could result in reduced reliability and possible failure.

e. Check lots against suspension and/or restriction files TB 9–1300–385 and AINs and MINs. Check shelf life and service life on all items. Provide guidance for turn-in of unserviceable, suspended, and/or restricted ammunition.

f. Inform units of their responsibility to have an adequate suspension system (receiving suspension and restriction messages and procedures for expediting turn-in of suspended or restricted munitions).

6–5. Reporting requirements

a. Document all inspection results in the MHP.

b. Combat load inspection report.

(1) Consistent with Army Component Command guidance, a memorandum format report should be forwarded to the unit commander within 30 days. A copy should be sent to the supporting theater and/or command materiel management activity. The report and out brief will include positive attributes and specific discrepancies.

(2) Out brief identified discrepancies noted during the inspection and annotate in the MHP.

(3) Ammunition surveillance personnel will identify recommended corrective action to include suspense dates and conduct follow-up actions to monitor compliance, if practical.

(4) Primary emphasis will be providing timely and accurate feedback to the unit commander concerning the status of on-hand ammunition to support operational requirements. Memorandum format report is preferred; however, operations pace will dictate the extent of documentation.

Chapter 7
Large Rocket and Guided Missile Ammunition

7–1. Stockpile Reliability Programs for Army large rockets and guided missiles

a. *General.* The SRP Program established by AR 702–6 prescribes policy, designates responsibilities and outlines objectives for all ammunition items to include AMCOM-managed large rocket and guided missile systems. There are two essential elements to this program.

b. *Ammunition Surveillance Program.* Activities conducted by organizations at the wholesale and retail level to evaluate the quality of the large rocket and guided missile stockpile. DA SBs for each large rocket or missile system provide system specific detailed surveillance guidance.

c. *Stockpile reliability test.* Army large rocket and guided missile test programs are developed and managed by Army Aviation and Missile Research Development and Engineering Center (AMRDEC). The test plans are coordinated with the system PM. The Stockpile Test Program consists of flight testing and component testing of the various strata (lots, manufacturer, storage location, and geographical areas). Comprehensive SRP reports for each system, summarizing the cumulative results of SRP tests and analyses, are published by the AMRDEC. The objectives of these programs are as follows:

(1) Provide maximum assurance that large rocket and guided missiles continue to meet user established explosives safety and reliability requirements for continued storage, handling and use.

(2) Identify and track reliability trends for large rocket and guided missile items at the system and component level.

(3) Predict, establish, and validate shelf life for fielded assets.

(4) Accumulate and analyze data and findings from inspections and test to identify need for priority of issue, restrictions, suspension from issue or use, and disposal.

(5) Provide input for design improvements and logistics decisions for use in training, repair, and replacement.

(6) Stockpile reliability test subprograms.

(a) Flight testing.

1. AMRDEC coordinates annual SRP flight test samples, funding requirements, and specified flight test scenarios.

a) Annually, AMRDEC identifies specific large rocket and guided missiles by SN.

b) AMRDEC provides shipping documentation to the storing activity.

c) The storage site and/or activity will execute shipping actions to ensure arrival of samples at the test facility on or before the RDD. If the RDD cannot be met, the storage installation will notify AMRDEC expeditiously.

2. Serial numbered items will be in the CC designated in the selection documentation. Do not reclassify SRP samples unless directed by AMRDEC.

(b) Component test. AMRDEC coordinates annual SRP component test samples, funding requirements, and test procedures. Components may be set aside during production, but more often are removed from complete rounds. Large rockets and missiles containing components to be harvested at the testing facility will be processed following the procedures in paragraphs 7–1*c*(6)(*a*)(1)(a) through 7–1c(6)(a)(1) (c).

(c) Propellant chemical and/or mechanical properties test. This test evaluates chemical and mechanical properties to assure safety during storage, handling and use. Propellant stability is tracked and centrally managed by AMRDEC.

1. Large rockets and missiles containing propellant to be harvested at the testing facility will be processed following the procedures in paragraphs 7–1*c*(6)(*a*)(1)(a) through 7-1c(6)(a)(1)(c).

2. Normally, the shipping command will initiate a MRO for shipment of test samples to the test facility.

(d) Mobile surveillance testing currently supports large rocket and guided missile systems at worldwide storage installations. Surveillance testing provides a functional assessment of the missile by taking the missile through a series of electrical checkouts. Testing is in addition to visual inspections and tests conducted by assigned surveillance personnel using the applicable SB.

1. The ammunition surveillance organization will do the following:

a) Conduct required inspections IRI, RI, PI, PII, and SMI in conjunction with the nondestructive testing.

b) Report unserviceable missiles on DA Form 2415 will identify details of the test failure to include test date, test location, test equipment, failure codes, and failure descriptions.

c) Annotate all nondestructive test results (successes and failures) in the MHP.

2. The testing organization will do the following:

a) Conduct testing in accordance with prescribed procedures.

b) Provide test results to the local ammunition surveillance organization. Results will include details of the test failure to include test date, test location, test equipment, failure codes, failure descriptions, and so forth.

c) Brief test results to the local commander or the designated representative.

7–2. Missile information notices

a. MIN are used to—

(1) Disseminate initial shelf life and shelf life extension data.

(2) Provide surveillance information regarding guided missiles and large rockets.

(3) Retransmit SOUMs.

(4) Disseminate technical information for AMCOM-managed items.

b. Surveillance organizations will disseminate to supported units and implement guidance, as appropriate.

7–3. Missile supplemental notices

a. Missile supplemental notices (MSNs) are used to—

(1) Disseminate suspension and/or restriction actions.

(2) Disseminate release actions.

b. Surveillance organizations will disseminate to supported units and implement guidance, as appropriate.

7–4. Malfunction reporting

Report large rocket and guided missile malfunctions in accordance with procedures of paragraph 5–11. AMCOM evaluates each malfunction to determine if further investigation, suspension and/or restriction and and/or or fix are needed. A malfunction report is needed in addition to the missile firing data report. If malfunction closeout results in reclassifying the asset to an unserviceable CC, submit a DA Form 2415.

7–5. Missile firing data reports

Ammunition surveillance personnel will assist units submitting missile firing data reports required by DA Pam 700–19. With agreement from the supported unit, ammunition surveillance personnel may prepare the missile firing data reports. These reports provide a vital link with missile field performance and are used, along with the flight test and component test, to evaluate missile performance and reliability trends for the purposes of shelf life assessment.

7–6. Shelf life for Army large rockets and guided missiles

a. *Shelf life determination.* Missiles are manufactured with a minimum shelf life as specified in specifications and procurement contracts. Shelf life starts from date of manufacture. Date of manufacture can be determined from the lot number. Large rockets and guided missiles that are subsequently modified usually retain this original manufacture date as the basis for shelf life computation.

b. *Shelf life extension.* Based on favorable results obtained by analyzing all available data, shelf life is generally extended in short increments of 2 to 3 years at a time. Shelf life extension information is published via MIN for Army field use. Additionally, each active large rocket and missile system variant will have a shelf life listed in TB 9–1300–385. Classify missiles with expired shelf life to CC J and report by DA Form 2415 for disposition. A consolidated DA Form 2415 for all missiles whose shelf life expired in the previous month is authorized; submit DA Form 2415 by the 5th working day of the following month.

c. *Special guidance for Patriot missiles.* Patriot missile shelf life is determined on SN basis through the recertification process. AMCOM determines the shelf life for each missile and disseminates this information via MSN. Additionally, shelf life for each SN is posted to the Patriot Life Data file in the MHP. Classify missiles with expired shelf life to CC J and report by DA Form 2415 for disposition. A consolidated DA Form 2415 for all missiles whose shelf life expired in the previous month is authorized; submit DA Form 2415 by the 5th working day of the following month.

d. *Other Services and security assistance customers.* The Services and customers establish shelf life for their assets. By agreement, other Services and security assistance customers may have their assets evaluated by the SRP program. AMCOM-assigned shelf life is only applicable to Army-owned assets.

7–7. Explanation of “wooden round” versus “certified round”

a. Wooden rounds have a predictable and acceptable level of reliability over the assigned shelf life. Wooden rounds are considered maintenance free with exceptions for minor cleaning, painting, packing, and marking. Performance trend analysis determines whether shelf life can be extended for all or a portion of the stock.

b. Certified rounds derive shelf life from their components. Limited life components have an assigned shelf life and each expires individually. Certified rounds may also include electronically enhanced projectiles or ammunition requiring operational software and periodic software upgrades. Missile shelf life is determined by the shelf life expiration date of the most limiting limited life components. Shelf life extension is obtained by replacing and/or extending the shelf life of components.

7–8. Storage of Army large rockets and guided missiles

a. Earth covered and standard aboveground magazines as defined in DA Pam 385–64 are preferred storage for large rockets and guided missiles.

b. In accordance with AR 702–6, units will report missiles not in preferred storage in excess of 30 days to Commander, U.S. Aviation and Missile Command, Program Executive Office Missiles and Space, (SFAE–MSLS–L), Redstone Arsenal, AL 35898–5000. By agreement with the supported unit ammunition surveillance personnel may prepare the report.

c. Document actual storage during conduct of surveillance inspections in the MHP. Impute will include the lot and SN, actual storage conditions and duration of non-preferred storage. Separate SRP testing may be established when storage and use exceed normal anticipated life cycle model parameters.

7–9. Large rocket and guided missile unique inspection requirements

a. *Record inspection results in MHP by lot and SN.* When a complete round missile or component is only assigned a SN, the lot number field in MHP will be left blank.

b. *Periodic inspections.*

(1) Conduct PIs in accordance with item SB. QASAS in charge may shorten specified interval based on inspection history and local storage conditions. Normally, do not remove large rockets and large guided missiles from storage to conduct visual inspections of the container exterior. Check the condition of each missile container including the humidity indicator of the lot in storage during sample selection to satisfy SMI requirements.

(2) Ensure availability of tools, parts, and supplies needed to conduct the inspection. Replace desiccant and humidity indicator, as necessary.

c. *Storage monitoring inspections.*

(1) Conduct SMIs in accordance with procedures stated in the applicable SB for timely identification of adverse conditions, damage, or deterioration. The QASAS in charge may shorten the interval to match the annual magazine inspection schedule. Record the SMI results and desiccant and/or humidity indicator replacement in the MHP, for each lot and/or SN that is inspected.

(2) If noted defects are not corrected, assign large rocket or guided missile an unserviceable CC and submit a DA Form 2415.

(3) Submit an email report to Commander, U.S. Aviation and Missile Command Program Executive Office Missiles and Space (SFAE–MSLS–L), Redstone Arsenal, AL 35898–5000 for large rockets and guided missiles suspected to have been exposed to high humidity inside the missile container for more than 30 days. Report is required even if desiccant and humidity indicator are replaced and high humidity condition corrected.

d. *Combat load.* Perform combat load inspection in accordance with chapter 6. Inspection will include all large rockets and guided missiles issued to units for combat load and those uploaded on launchers and ready transport.

(1) Inspect all items 100 percent. Focus special attention on humidity indicators and gaskets in addition to other defects listed in the item SB.

(2) As part of the inspection, ammunition surveillance personnel will verify unit records and/or documentation that confirm unit inspections and maintenance have been performed, as required by their technical manual. Evaluation includes verification that the unit missile stocks are correctly listed on the property book and unit supply-enhanced accountable records by DODIC, Federal supply classification (FSC), national inventory identification number, lot, and SN. Units should demonstrate that they have the proper publications, tools, parts, and materials to maintain the missiles in their account (desiccant, humidity indicators, gaskets and sealant).

7–10. Large rocket and guided missile logistics functions

a. Actions incident to shipment. Inspect every large rocket or guided missile outer pack prior to shipment or issue to identify damage, check humidity readings and assure that the missile remains safe to ship in accordance with the item system SB. Ensure assets are still within shelf life listed in TB 9–1300–385. Take corrective actions to properly redesiccate

each outer pack with high humidity or substitute different SNs, as appropriate. Document corrective actions accomplished incident to shipment in MHP. These actions are not considered either a PII or PI. PIs that are past due are required to be performed in accordance with the item SB prior to shipment and/or issue.

b. Coordinate security assistance shipments with AMCOM to assure nominated assets meet contract quality and shelf life requirements.

c. Special indicator "W" provides identification for large rockets and guided missiles issued and shipped into Iraq and Afghanistan. The "W" marking indicators apply solely to lot number markings. All large rockets and guided missiles shipped into Iraq or Afghanistan will have the "W" identifier physically added to the lot number markings before return to Kuwait or CONUS. The "W" identifier will also be part of the lot number accountable records. The "W" indicator is applied at the end of the lot number unless there is a suffix. If previously suffixed, the "W" is inserted between the interfix and series to replace the dash. Do not revise DD Forms 1650 solely for addition of "W" indicators.

d. Process DD Forms 1650 through MHP Worldwide Ammunition Repository Program for each U.S. Army large rocket and guided missile lot and/or SN when manufactured, modified, or renovated.

7–11. Ammunition condition reporting process for unserviceable Army large rockets and guided missiles

a. DA Forms 2415 are required for CCs (E, F, G, H, P, J, and N).

b. Submit DA Forms 2415 IAW DA PAM 750–8. Complete every field including the description of any specific defects or issues, the cause (if known) and local action taken. If electrical testing was completed, state so and provide error codes, test set SNs and test personnel contact information.

c. AMCOM coordinates and responds to each DA Form 2415 with disposition instructions. Recommendations included in DA Forms 2415 will be limited to that authorized for the unit or storage installation in the system TM.

Chapter 8
Toxic Chemical Material

8–1. General

a. This chapter contains specific instructions relative to surveillance operations involving toxic chemical munitions (TCM) and bulk chemical agents. Surveillance operations will be performed using this publication, other SB's, TMs, drawings, specifications, local SOPs, and other applicable publications. Selected TCM and bulk agents have been classified as solid or hazardous wastes. These materials are also regulated under the Federal Resource Conservation and Recovery Act (RCRA) or an equivalent authorized State program for waste management. The activities directed in this chapter do not supersede or diminish the requirements imposed by other Federal, State, or local regulations, requirements, or agreements. Personnel involved with surveillance operations will coordinate activities directed in this chapter with individuals that are responsible for the installation's compliance with environmental regulations.

b. The addressee in paragraph 1–7*a*(3) will provide technical assistance at the request of a chemical installation. All abnormal conditions encountered during surveillance operations will be reported in memorandum format via email or fax.

8–2. Definitions

a. *Confirmed agent detection.* To be confirmed, an initial detection of chemical agent leakage must be corroborated by a second, different method of detection. Monitors used for detection are differentiated by the analytical methods employed.

b. *Containment.* A physical condition, which mitigates or prevents agent migration from munitions, bulk agent containers such as DOT bottles or ton containers, agent vessels, packaged, and/or overpacked items, or storage magazines. Containment may be achieved by overpacking, powered filtration, or passive filtration.

c. *Filter units.* Any system or equipment that will separate airborne agents from ambient air by means of adsorption and prevent airborne agent from being exhausted from the storage structure to the outside environment. Air movement may be accomplished by means of a powered filtration unit with a motor blower (active filtration) or a system such as a wind powered or natural draft device used in concert with an adsorbent unit (passive filtration).

d. *Inspection intervals.* As listed in table 8–1, two intervals are identified for the SMI of chemical surety items.

(1) *Quarterly inspection interval.* This inspection means one inspection per quarter at approximately 90-day intervals. Intervals between quarterly inspections may not exceed 120 days or the end of the quarter in which they are due, whichever comes first. Subsequent inspections may be scheduled based upon either the originally forecast date of inspection or the actual date of completion.

(2) *Annual inspection interval.* This inspection means one inspection per year at approximately 12-month intervals. This interval may be extended up to 15 months. If the inspection interval is extended, subsequent inspections will be scheduled based upon the originally forecast 12 month inspection date.

(3) *Inspections not included in guidelines.* The inspections not completed in accordance with the above scheduling guidelines will be documented by the QASAS in charge, and the documentation retained locally. The documentation will include a full description of the circumstances that resulted in the overdue condition. Overdue inspections will be performed as a higher priority than routinely scheduled recurring inspections.

e. *Leaker lot.* An M55 GB Rocket lot so designated by headquarters addressee reference paragraph 1–7*a*, because of a demonstrated, increased tendency to leak. These lots are subjected to a more aggressive surveillance regimen to ensure prompt identification and control of agent leaks. The use of the term "leaker lot" within the context of this publication does not mean that all munitions within the lot are leaking.

f. *Overpacked munitions.* Items packaged in one or more of the approved overpacks listed in table 8–4. These items include, but may not be limited to munitions previously identified as leakers; M56 warheads generated during the M55 rocket assessment; recovered chemical warfare materiel; and munitions subjected to various ASRPs (including Surveillance Program Lethal Chemical Agents and Munitions, Surveillance Test Program - Metallurgical), which have been drilled, sampled, and plugged.

g. *Vapor screening level.* A vapor concentration term that is independent of time. For the purposes of this chapter, these levels are considered to be at the short term exposure limit concentrations.

h. *Special definitions for M55 GB rockets.*

(1) *Compound gate (agent Ggate).* The window, in seconds, around the retention time of the compound of interest.

(2) *Leaking munition.* Munitions from which there has been a confirmed detection of chemical agent outside the munition body (see AR 50–6).

(3) *Leaker isolation.* GB rockets may be isolated in much the same way as other leaking rounds, that is, by drapping stacks, pallets and individual rounds. It is permissible to bag the ends of individual shipping and firing tubes (SFTs) or to wrap the individual rocket motor in plastic and wait 2 hours for monitoring. Each SFT will be subjected to an independent monitoring cycle with a low-level monitor. It is also permissible to monitor for a leaker by using intrusive sampling as described in paragraph 8–8, this document. If intrusive sampling is used, the sampling ports on only 1 SFT at a time may be open and an alternative detection method must be used for confirmation.

(4) *Quality process sample.* A QP sample is a sample that has been spiked with a dilute solution of agent and exposed to ambient air for the same time and at the same flow rate as ordinary samples. For this procedure the dilute solution contains 0.5ng of GB. The ambient air is shipping and firing tube air.

(5) *Near real time.* A NRT low-level monitor (within the context of this document only): An automatic air monitoring system that can detect 0.5 ng of chemical agent GB within 15 minutes.

8–3. Documenting results of inspections, maintenance, ammunition anomalies, and ammunition transactions

a. All meaningful information (such as, results of inspections, tests, technical investigations, agent sampling, disposal process anomalies, maintenance, and re-warehousing) will be recorded on the DA Form 3022–SG. Documents cited to clarify or supplement the form's comments must be retained as part of the lot history. In addition, surveillance organizations should capture all information that could have an impact on waste munitions management or treatment. Accomplishment of SMIs may be recorded on the DA Form 3022–SG or via a locally developed record keeping system. If a locally developed system is adopted, records attesting to the accomplishment of SMIs must be retained indefinitely.

b. DA Forms 3022–SG will be retained by chemical storage depots and/or activities for at least 1 year after completing a disposal campaign for each stock numbered item (unless plant closure occurs earlier than one year following the munitions campaign). Upon completion of this holding period, DA Forms 3022–SG will be forwarded to the addressee in paragraph 1–7*a*(3), for records retention by the NICP.

8–4. Chemical agent and munitions demilitarization operations

a. Chemical agent and munitions DEMIL operations carried out by the Army will have ammunition surveillance support provided. Only qualified personnel will perform and/or monitor the performance of ammunition surveillance duties. Government personnel will be QASAS, or in the event QASAS are not available, personnel with locally approved training and/or experience. When chemical DEMIL operations are performed by a contractor, the systems contractor (SC) may use personnel who have been authorized by the Government field office to perform this function.

b. Where DEMIL operations are conducted by a contractor, the performance of ammunition surveillance duties is both a SC and a government responsibility. The SC must implement specific requirements. The government is obliged to verify

implementation, and monitor SC performance. This is intended to assure accuracy of documentation, control of the operational process, safety and integrity of operations, and compliance with established safety, surety, environmental, and operational standards. Ammunition surveillance activities include, but are not limited to, the following:

(1) Verify and/or review site plans and quantity distance calculations.

(2) Verify the presence of approved operational procedures (SOPs and local operating procedures), for operations being performed.

(3) Verify that procedures contain provisions to assure that incoming material receipt documentation correctly identifies the items being demilitarized by proper NSN, DODIC, lot number, quantity, and nomenclature.

(4) Verify the presence and serviceability of all required safety and protective equipment.

(5) Verify that required lightning protection and grounding system inspections and tests have been performed as necessary.

(6) Verify that required calibration and/or load test for equipment has been performed and is current.

(7) Verify that DEMIL area(s) comply with explosive safety and personnel limits.

(8) On a daily basis, verify that destruction certificate memorandums are accurately prepared, signed as prescribed, and copies maintained.

(9) Verify compliance with all approved operational and safety procedures.

(10) Verify that noted operational deficiencies are properly documented and reported in accordance with site-specific requirements and the local Ammunition Surveillance Plan. Follow-up verification of corrective actions will be accomplished in accordance with local procedures to assure that deficiencies have been corrected.

8–5. Types of inspections

a. *Periodic inspections.* PIs are no longer performed on TCM and agents. Surveillance organizations will, nonetheless, emphasize those inspections and/or operations that are necessary to assure items are safe for storage, on post movement, and DEMIL. Such efforts may involve, but are not limited to, storage monitoring, leaker isolation and/or containerization, special inspections, and assessments. Eliminating the PI requirement does not relieve surveillance organizations from reclassifying ammunition based upon information gathered during other types of inspections. Accurate classification of the stockpile is still required, to the extent that existing inspection protocols make this feasible. If sufficient information is available to justify assigning a new CC, surveillance organizations will do so and submit a DA Form 2415 to the NICP at the address in paragraph 1–7*a*(3).

b. *Storage monitoring inspection.* SMIs will be conducted as indicated in table 8–1 regardless of CC. Each storage configuration (package, container, or item) will be visually inspected for evidence of leakage, condition of the outer pack, dunnage, or any other condition affecting suitability for continued safe storage, to the extent possible without re-warehousing. Items, whether in original shipping and storage container or overpacks, will have outer pack inspected without opening.

Table 8–1
Storage monitoring inspection requirements for toxic chemical items

Item	Not overpacked	Overpacked
Projectiles and/or cartridges	Annual	Quarterly
M55 Rockets	Quarterly	Quarterly

c. Special inspections and/or assessments. Special inspections and/or assessments will be performed as directed by the office referenced in paragraph 1–7*a*(3).

d. *Magazine inspection.* These inspections will be performed in accordance with chapter 5.

e. *Storage structure air sampling.* All storage structure air sampling TCM storage structures will be air monitored to the VSL concentration at the intervals specified in table 8–2. Air sampling may be conducted more frequently due to site-specific requirements. The rational for the increase and the site-specific frequency will be documented and provided to the addressee at paragraph 1–7*a*(3).

Table 8–2
Storage structure air sampling requirements

M55 GB leaker lots	Once every normal duty
All other TCM storage structures	Weekly

8–6. Storage monitoring inspection procedures for projectiles, fuzed, and unfazed

Agent leakage sometime occurs at the juncture of the fuze or lifting plug and the projectile body. These leaks, if not detecting early in the leakage process, often become “self-sealing.” Workers should be aware of this phenomenon and

recognize that any built-up area between the fuze and/or lifting plug and projectile or the presence of a dry residue may be an indication of agent leakage. Dry residual agent leakers will be reported as "exudates" on a locally generated leaker report.

8–7. Storage monitoring inspection procedures for M55 VX rockets

The use of any procedures other than the following must be authorized in writing by the addressee in paragraph 1–7*a*(3).

a. Under normal circumstances SMIs for VX rockets will be in accordance with paragraph 8–5*b*.

b. If for any reason it is necessary to perform intrusive sampling of VX rockets, the same process used for M55 GB rockets in paragraph 8–8 will be used with the following exceptions:

(1) VX analytical monitoring methods will be substituted for GB analytical monitoring methods.

(2) These methods will include the use of the V to G conversion pads.

8–8. Storage monitoring inspection procedures for M55 GB rockets

The use of any procedures other than the following must be authorized in writing by addressee in paragraph 1–7*a*(3).

a. *Safety and environmental guidelines.*

(1) Guidance provided in this chapter does not supersede requirements of the RCRA or State environmental statutes. Installations must assure compliance with all current Environmental Protection Agency (EPA) regulations and State guidelines pertaining to these munitions, and incorporate such information in local policy or SOPs, where appropriate.

(2) All SMI operations will be performed in a manner that minimizes the potential for agent release to the environment and affords maximum safety to operators and the general population. Implementing organizations will ensure SMI's are conducted in accordance with safety and health guidelines contained herein and in listed references.

(3) Monitoring of ambient air inside chemical storage magazines while performing inspections will be accomplished in accordance with chemical storage site's approved monitoring plan.

(4) The wrench used for removing the front and aft end cap sampling port plugs must be fitted with a splash shield to reduce the possibility of operators being exposed to liquid agent.

(5) As a minimum, operators performing intrusive monitoring will wear Occupational Health and Safety Administration Level C protective clothing with hood and apron. A hazard analysis will be performed to determine the level of protective clothing required for leaker isolation.

(6) The sample line for initial intrusive monitoring of M55 rockets will not be used for exposure monitoring of personnel.

(7) When conducting intrusive monitoring operations on designated Leaker Lots, an igloo filtration system must be operating unless a hazard analysis indicates otherwise.

b. *Training and certification.*

(1) The sample collection, laboratory, and monitoring personnel involved in the collection, analysis and monitoring of chemical surety material will be certified and trained as outlined in the Chemical Materials Activity (CMA) Laboratory Monitoring Quality Assurance Plan (LMQAP) and site-specific training plan.

(2) Inspection functions identified in this chapter must be accomplished by a QASAS. Under the direction of a QASAS, properly trained in accordance with DA Pam 385–64, and designated civilian technicians may supplement and assist the QASAS in the accomplishment of these functions.

c. *Documentation.*

(1) All inspections must be documented in accordance with chapter 11.

(2) In addition to other documentation requirements in this chapter, a photocopy of the analytical monitoring results for all confirmed leaking rockets will be maintained in the Ammunition Surveillance Office. The lot number(s) and sample number(s) will be annotated on the monitoring results.

(3) Leaking rockets will be reported in accordance with paragraph 8–14.

d. *Sample selection.*

(1) Samples from each lot will be tested for agent contamination inside the M441 SFT, in accordance with table 8–3.

(a) Sampling Plan A will be used for lots that have not experienced leakers in their life cycle.

(b) Sampling Plan B will be used for lots that have experienced leakers, but have not been designated as leaker lots.

(c) Sampling Plan C will be used for those lots that have been designated as leaker lots at your location. Lots in Sampling Plan B that have not leaked in five or more years and contain a known stable GB agent lot may be considered for re-inclusion in Sample Plan A. Requests for re-inclusion will be forwarded to the addressee in paragraph 1–7*a* (3) for approval.

(2) When performing leaker isolation of M55, GB rockets, any intrusive monitoring can be credited toward the current quarter's sampling requirements. If the lot has already been sampled for the current quarter, no credit can be taken. If a

leaker is encountered during the intrusive monitoring, the remainder of the total sample size still must be completed for this lot.

Table 8–3
M55 GB rocket storage monitoring inspection sampling plans

Lot size	Quarterly (unless otherwise indicated) sample size		
	A (nonleaker lots)	B (leaker lots)	C (designated leaker lots)
0–25	8[1]	20[1]	100 percent
26–150	16[1]	44[1]	25[1]
151–300	6	16	40[2]
301–750	9	23	64
751–3000	12	30	75
>3000	15	35	85

Note:

[1] Quantity indicated is to be sampled over a period of 3 years. This sampling may be accomplished at one time within the 3 years or in increments as determined by the QASAS in charge.

[2] When total annual sample size exceeds the lot size, the lot will be sampled 100 percent each year. This 100 percent sampling may be accomplished at one time within the year or in increments as determined by the QASAS in charge.

[3] When a rocket lot(s), or portion of a lot(s), has been scheduled for DEMIL within a designated calendar quarter (3 months), the lot(s), or portion of lot(s), may be excluded from sampling during that quarter. If DEMIL has not commenced during the scheduled quarter (or is not imminent), sampling will resume in subsequent quarters. Further delays are not authorized unless justified in writing by the QASAS in charge, based upon changes in the DEMIL timeline. Sample sizes need not be increased in ensuing quarters to account for rockets that were not sampled in a quarter during which a lot was scheduled for DEMIL.

e. Inspection operations.

(1) Visually inspect all accessible M441 SFT in the structure for evidence of leakage and general condition. Inspect for stability of stacks, condition of pallets and any other condition that could affect suitability for continued safe storage pending DEMIL. Visual inspections should be performed only to the extent possible without re-warehousing.

(2) Identify M55 rocket lot selected for sampling.

(3) Identify individual rockets designated for testing. Rockets not previously tested should be sampled first. Those rockets that have been previously inspected should have been tagged as such.

(4) Verify that sampling plug in the front end cap of the SFT is in the 12 o'clock position. If sampling plug is not in the proper position, rotate M441 SFT until correct orientation is obtained. If M441 SFT cannot be rotated, check the position of the aft end-sampling plug. The sampling plug closest to the 12 o'clock position will be removed first.

Note. CAUTION: In rare instances, the M441 SFT may develop internal pressure during storage. Potential release of pressure associated with presence of liquid agent may result in expulsion of agent from sampling port when plug is removed. Equal care should be taken when removing either end-sampling plug. Situations have been experienced in which agent under pressure sprayed from one end of the firing tube but not the other. Plug removal wrench must be fitted with a splash shield.

(5) Remove sampling plugs from front and rear end cap's and examine for the presence of agent contamination. If contamination is suspected, test with M8 paper. Look inside of the sample port for evidence of solidified or crystallized agent. If present, monitor from outside the sample port; do not insert sample probe.

(6) If front or rear end cap plug cannot be removed, and no evidence of agent leakage is present, select a different sample.

Note. With time, M441 SFTs have a tendency to settle within the pallet that causes the end caps of the SFTs to become misaligned with the openings in the end boards of the pallets. It is permissible to remove the end boards from the pallet. It is not necessary to replace the end boards when the operation is completed.

(7) In the event damaged sampling port threads are noted, a thread chaser may be used or a self-tapping screw will be installed as a replacement for the plug that was just removed. If either plug cannot be reinstalled the rocket must be containerized in a single round container (SRC) and tagged as a nonleaking rocket, missing sample plugs.

f. Sampling operations.

(1) The Chemical Agent Air Monitoring Program described in the following section is based upon the ability of the equipment to detect the presence of 0.5ng of GB in the collected air sample. A mass of 0.5ng of GB will be the action level for this program.

(2) Gross level testing to prevent saturation of the low-level detector separation column is optional. Maintain a1/4 inch separation distance between the front end sample port and the end of the sample line or probe. If agent vapor is detected during gross level testing begin leaker isolation.

(3) A NRT low-level monitor will be used for this inspection. The NRT will be loaded with a Class III method to determine the presence or absence of agent at the 0.5 ng level. General quality assurance (QA) procedures will be per the LMQAP. Methods and monitors developed and certified per the Chemical Agent Standard Analytical Reference Material QA Plan need not be recertified. The following specific quality control requirements will be enforced.

(a) One QP in the beginning of operations and one QP at the end of operations; an additional QP after 5 hours of operation. The QP samples will be injected at the end of the heated sample line or at the instrument. The QP samples must be exposed to shipping and firing tube air for the same time and at the same flow rate as ordinary samples. Corrective action is required if the QP cannot be detected at or above the 3:1 noise ratio of the instrument.

(b) Check flow rate prior to start of operations at the distal end of the sample line.

(4) The void volume of air in the sample line must be taken into account during operations. Additional sample collection time must be added for continuous flow monitors, approximately 1 minute depending on line length and flow rate.

(5) Intrusive sampling will be conducted with a single line. The heat traced sample line used for intrusive monitoring of M55 rockets will be connected to no more than 100 ft of unheated Teflon line between the probe and the heated sample line.

(6) To minimize interferent response recommend the compound gate on monitoring equipment be set at 5 to 6 seconds.

(7) Sample lines used with real time low-level monitoring equipment should be provided preventive maintenance by having lines cleaned or flushed with solvent at intervals to be determined by the laboratory and/or monitoring office.

(8) Rodent feces have been identified as an interferent in real time low-level monitors. Ensure all areas around rocket pallet(s) are cleaned of feces prior to using monitors. Proper industrial hygiene procedures will be observed.

(9) If an unusual number of leakers are encountered during an operation, the laboratory/monitoring supervisor and QASAS in charge will review the sampling process for anomalies (for example, contaminated sample lines, cross contamination, or interference). If agreed upon, new samples may be taken to ensure the monitoring process has not been compromised.

(10) Sample lines that become contaminated will be decontaminated and monitored in accordance with approved local procedures.

(11) When intrusively monitoring leaker lots the following precautions will be taken to minimize the potential for cross contamination of subsequent samples.

(a) All opened SFTs must be in horizontal alignment with one another.

(b) No more than five SFTs will be sampled at one time.

(c) No more than 15 SFTs will be open at one time. To the extent practicable and consistent with efficient operations, operators should minimize the amount of time that SFTs remain open. Sampling port plugs should be replaced as soon as possible after intrusively monitoring. Each series of five SFTs and plugs should not be removed from SFTs awaiting sampling until necessary.

(d) Each series of SFTs will be opened, commencing with samples located lowest in a pallet or stack staying within the lot.

(12) Single line sampling:

(a) The sample line will be assembled and attached to the monitoring line as shown in figure 8–1

(b) Operator will insert sample line into sample port so that the Tygon stopper is flush against the sample port of the SFT. The sample line will extend no more than1/2 inch into the SFT.

(c) Holding the sample line in the SFT for 1/5 of the cycle time for the instrument, operator will provide a minimum of 32 seconds of sample time per rocket based on a 3 minute sample time.

(d) When monitoring less than 5 rockets operator(s) will still monitor each shipping and firing tube for 1/5 of the cycle time of the instrument and igloo air for the remainder of the sample time.

(13) Upon detecting chemical agent vapor, at or above the action level, (a mass of 0.5ng of GB) operators will begin leaker isolation procedures as follows:

(a) Reinstall all sample port plugs. Ensure rubber gasket is placed on sample plug and is serviceable.

Note. If the vapor concentrations saturate the monitoring instrument's separation column, place instrument in a standby status and begin isolation procedure using alternate monitoring equipment.

(b) Ensure sample line is clear of agent vapor by allowing monitoring instrument to aspirate clean ambient air.

(c) After verifying magazine's ambient air is free of agent vapor, begin Leaker Isolation. If an alternate detection method is used when initiating the isolation process, it may be used for confirmation. NOTE: Real time low-level monitors that are being used to monitor the workers exposure profile may be used to verify that magazine ambient air is clear.

(d) During the isolation process, operator(s) will ensure that each SFT is subjected to an independent monitoring cycle. Placement of the sample line and the decision to monitor for a complete cycle will be based on the initial reading. The sample will not be considered a negative until one (1) complete NRT low-level monitoring sample cycle has been run.

(e) If agent is detected on any one of the samples and leaker isolation is being performed using an alternate detection method, confirmation has been obtained. However, if leaker isolation is being conducted with the same detection method as used when agent was first detected an alternate detection method must be used for confirmation. The confirmation method/monitor must employ a different analytical method than the primary method.

(f) If using a continuous flow monitor and agent cannot be confirmed with an alternate method or no agent vapor is detected on last sampled rocket reinstall sample port plug with serviceable gasket and return item(s) to storage configuration and continue with SMI.

(g) When using a noncontinuous monitor and agent cannot be confirmed with alternate method, or no agent vapor is detected on last sampled SFT, resample the previous set of SFT's sampled. If no agent vapor is detected on last sampled rocket reinstall sample port plug with serviceable gasket and return item(s) to storage configuration and continue with SMI.

(h) If agent is detected and then confirmed, containerize leaking rocket(s) in approved overpack container, apply required markings and place in approved storage location, in accordance with local procedures, and resume SMI. The decision to delay containerizing leakers will be based on ambient air contamination and the anticipated number of leakers in a structure. Movement of leakers to isolated storage may also be delayed to consolidate movements.

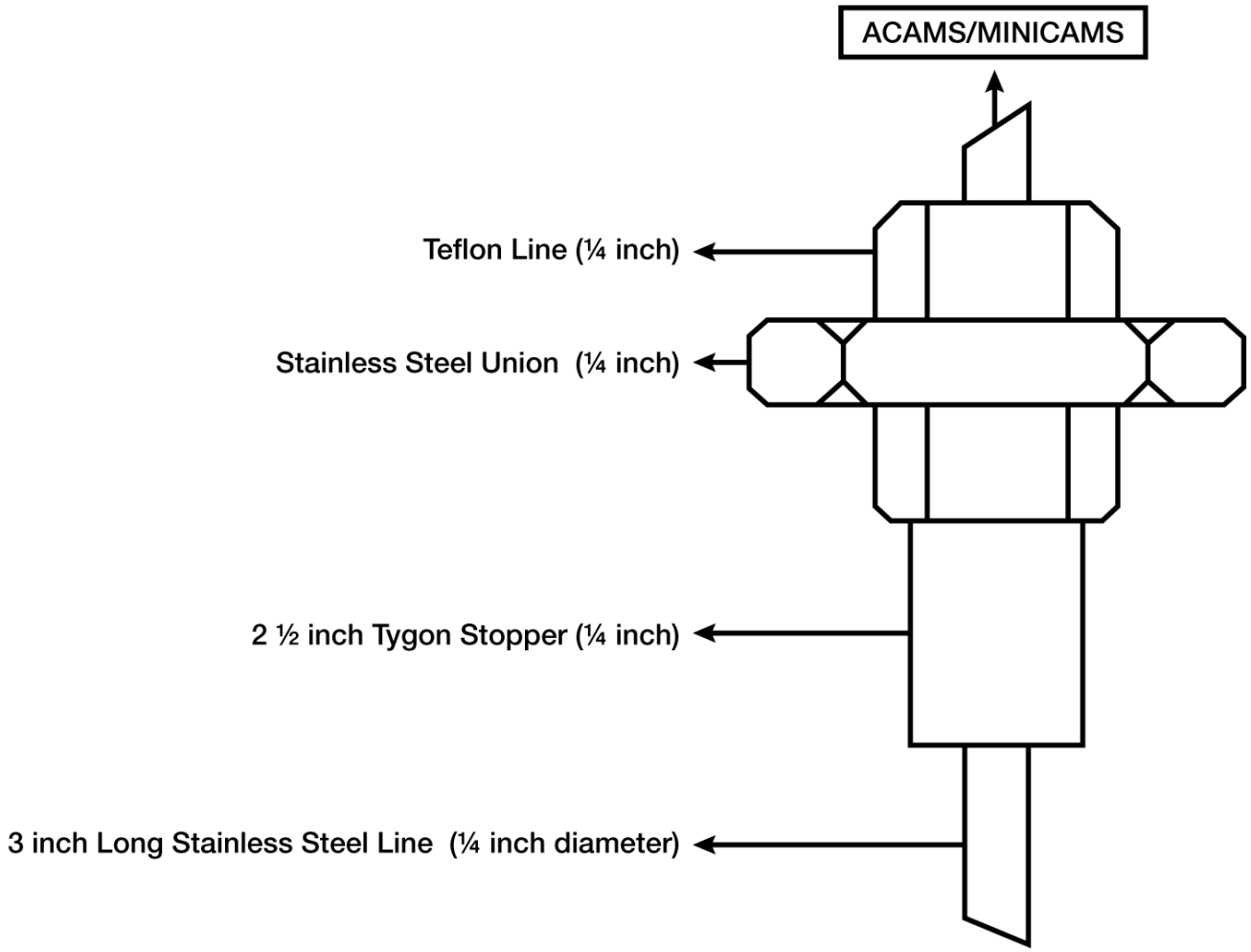

Figure 8–1. Stainless steel union placed at the end of the unheated sample line

8–9. Detection of leaking munitions and/or containers

a. Agent monitoring is conducted in accordance with specified requirements for the type of munitions or agent in storage, and the type of operation being conducted. Testing munitions and bulk agent containers for agent leakage (hereinafter referred to as leakers) will be performed with detection equipment or monitors listed in DA Pam 385–61 or the site-specific monitoring plan. The proper use, maintenance and calibration of equipment will be in accordance with applicable equipment or users publications, TMs, TBs, and/or the organization's chemical agent monitoring plan and supporting Laboratory Quality Control Plan. Selection of equipment and procedures should be based on compatibility with the operation to be performed and, to the extent practicable, should incorporate the most sensitive and accurate technology available. Departures from this approach will be justified and documented in the leaker report.

b. The prompt identification, isolation, and containment of all agent leakage are of primary concern to ensure the safety of workers, the general public, and the environment. When the presence of chemical agent is confirmed at any level, the source will be located, isolated, and contained as soon as practical consistent with all safety, security, and environmental protection requirements. The chemical storage site commander or his designated representative must evaluate safety and environmental risks associated with leakers prior to commencing or suspending leaker isolation operations. Risk assessment factors to be considered should include impending nightfall, weather conditions, protective clothing wear times, time of day, availability of personnel, supplies or equipment, or any other condition that impacts risk. Isolation operations need not extend beyond normal duty hours and should not prevent the accomplishment of unrelated, concurrent operations such as environmental monitoring and SIS inspections. Note. In addition to notifying addressee in paragraph 1–7*a*(3) in accordance with paragraph 8–14, the installation element responsible for chemical event reporting will be informed of any confirmed agent leak to determine whether submission of a chemical event report is required in accordance with AR 50–6.

c. When agent is detected in enclosed structures, the following procedures will be performed.

(1) Close storage structure vents.

(2) Perform confirmation procedures. If chemical agent is confirmed at any level, perform the following:

(a) Vents remain closed.

(b) Install and operate powered filtration system(s) and open vents.

(c) An inspection of the materiel in storage will be conducted to the maximum extent possible without re-warehousing in an attempt to visually locate the source of the contamination. Packaged items will have the outer pack inspected without opening. Peeling, discolored, or blistered paint, or the presence of liquid is considered evidence of possible leakage. Positive tests will be confirmed with a second test. The presence or absence of leakage will be as indicated by the second test.

(d) If during visual inspection the leaking item cannot be located, begin leaker isolation procedures.

(3) If confirmation cannot be obtained, the storage structure will not be considered contaminated and storage structure vents may be opened. However, actions should be taken to assess the cause of the original “false positive” agent detection.

8–10. Leaker isolation and containment operations

a. Leaker isolation is a process of shrouding individual stacks, pallets, or items for additional localized monitoring. Shrouding consists of covering individual stacks, pallets, or items with any type of plastic sheeting (as an alternative, individual items, in lieu of using plastic sheeting, may be temporarily encapsulated in a locally approved container) in order to create a separate environment and concentrate agent for monitoring purposes. Proper shrouding is accomplished using plastic sheeting free of rips and tears. Suspect stacks or pallets should be completely enclosed from top to the floor. It is not necessary for the enclosure to be taped or otherwise sealed to the floor. Shrouding individual items or containers may involve completely enclosing the suspect item or probable source of leakage. Projectile sample ports, lifting plugs, or nose closures may be removed on the last pallet isolated provided they are removed, monitored and replaced one at a time.

(1) Shrouding will be completed with minimal re-warehousing.

(2) Individual shrouded stacks, pallets, or items will be monitored in order to isolate specific stacks, pallets, or munitions with elevated readings.

(3) Shrouded stacks, pallets, or items with elevated reading will be visually inspected and monitored in order to further isolate the leaker(s).

(4) If operators elect to use a container to concentrate agent vapor, items that are not confirmed as leakers must be removed from containers after isolation is completed.

(5) For M55 rockets, intrusive low-level monitoring of the shipping and firing container may be required to confirm the presence of leaking agent.

b. When the leaking item is located, it will be repaired and/or containerized as soon as practical. Refer to table 8–4 for applicable overpack. Vapor leakers should not be decontaminated. A heavy grade plastic bag, 4 mil or thicker, may be used as an interim drip container for leaking liquid agent. Liquid leakers should not be decontaminated unless it will reduce the spread of liquid contamination or reduce the potential for personnel exposure during containerization. No water or decontamination solution (except residual liquid on the item), sand, vermiculite, or other material will be placed in overpack containers with leaking munitions. If vapor containment or interim drip bags are needed in the overpack container, obtain approval from the addressee in paragraph 1–7*a*(3) and fully document the use of drip bags or vapor containment in the DA Form 3022–SG remarks. When bags are present, care must be taken to avoid tearing or catching bags between gaskets and flanges during packaging. All records regarding leaker packaging will include remarks on the absence or presence of bags. This includes DA Form 3022–SG, DD Form 1577, leaker report, and any other applicable record.

c. Once leaker isolation and overpacking have been accomplished, overpacked leakers must remain in the storage structure until air monitoring indicates that agent containment and cleanup operations have been effective. Additionally, the overpacked item will be shrouded and monitored to confirm no contamination is on the exterior of the container before the item can be moved and/or transferred to an appropriate storage location.

d. Leaker containment procedures for selected items.

(1) *Cartridge 105mm.* Leakers should not be repackaged in a fiber container if the original fiber container can be removed. The cartridge case and propellant should be separated from the 105mm projectile whenever possible and the projectile and cartridge case should be containerized separately. Annotate records to fully identify the packaging configuration of the containerized cartridge and disassociated explosive and inert components.

(2) *Cartridge 4.2-inch.* Isolate leaking munitions down to the individual fiber container(s) without opening the fiber. Leaking munitions will be placed nose end up in the overpack container without removing the fiber, propellant or ignition cartridge. Annotate records to fully identify the packaging configuration of the containerized cartridge.

(3) *Overpacks.* Leaking overpacks (to include propelling charge containers) will not be automatically double overpacked in SRCs. The initial course of action is to torque lids, bolts, test plugs or other closures to the value listed in paragraphs 8–13*g*(7)(*a*) through 8–13*g*(7)(*i*), the appropriate LOI or drawing. If leak continues, isolate the leaking overpack and place into an approved secondary overpack.

8–11. Overpack container requirements

Overpack containers for leaking chemical munitions do not require color code markings. Existing color code markings may not be a reliable source of information. Information pertaining to the explosive make up of an overpacked munition will be annotated on DA Form(s) 3022–SG.

a. All overpack containers will be visually inspected immediately prior to use in accordance with the inspection guidance referenced in container specific LOI. In addition, individual containers requiring leak test must be leak tested prior to use, unless leak testing has occurred within the preceding 90 days.

Note. Container specific LOI's and drawings may be obtained by contacting addressee in paragraph 1–7a(3).

b. Overpacks used for containerization of leakers will have a properly prepared DD Form 1577 attached to container. Presence or absence of bags, fiber containers and propellant, type leaker, and leaker report number will be annotated on the tag and DA Forms 3022–SG. Additionally, the following data will be placed on the container either by stencil or a vinyl label (similar to hazardous waste labels):

(1) NSN and DODIC.
(2) Nomenclature.
(3) Lot number.
(4) Quantity.
(5) Date packaged.
(6) Type leaker.
(7) Leaker report number.
(8) "NOSE END" on appropriate end of rocket container.

Note. Vinyl label must be a high strength, high conformity, solid safety hazard tape and resistant to solvents. All headings and markings will be legible and applied with permanent ink.

c. Additional labels or markings are permitted consistent with operational requirements and RCRA permits. Overpacks marked prior to 1 March 2000 do not require remarking solely to comply with this criterion.

8–12. Magazine filtration and monitoring

a. Once chemical agent has been confirmed and powered filtration of a magazine has begun, filtration system(s) will remain in operation until leaker isolation and containerization or repair operations are completed, or until the agent source is eliminated. The interior of all magazines will be monitored to verify the effectiveness of operations intended to eliminate an agent source, including magazines equipped with filtration systems. However, powered filtration may mask a continuous agent source making it difficult to verify the effectiveness of leaker isolation, leaker packaging, bulk agent container repair, or general area decontamination. Therefore, prior to monitoring the interior of magazines to verify the effectiveness of remediation operations, vents will be closed and powered filtration units will be shut down for a period of not less than twenty minutes. Sample point(s) within the storage structure should be determined based on the location of the original agent source and/or operations to eliminate the source.

Note. A vent with a powered filtration unit attached is considered closed when the powered filtration unit is turned off as long as the hoses connecting the filter to the magazine are serviceable and adequately secure.

(1) If the presence of agent is confirmed, powered filtration will be resumed and the vents reopened. Filtration and periodic monitoring will continue until the agent source is eliminated or no airborne agent can be detected. The frequency of periodic monitoring should be determined locally, based on general and site-specific risk factors. Should agent levels in the storage structure not be eliminated after leaker isolation and containerization, further isolation may be necessary.

(2) If the presence of agent is not confirmed, filters will remain shut down, vents will remain closed, and the structure monitored at least once daily for three consecutive workdays. If all results are negative, vents may be reopened, powered filtration systems may be removed and no further action is required.

b. If a powered filtration system is being operated because the presence of agent has been detected and confirmed, and action has not yet been taken to eliminate the source or has not been successful, the system need not be shut down to ascertain agent concentrations within the storage magazine. Filtration should continue until the agent source is isolated and contained or until airborne agent can no longer be detected. Remote magazine monitoring may be used as the basis for initial determination of levels of personal protective equipment for operators performing leaker isolation and repair or containerization, and so forth. General area air monitoring in the immediate vicinity of operations may require operators to modify levels of personal protective equipment.

c. If a powered filter system is being operated in the absence of agent confirmation (such as pre-emptive or precautionary filtration in "high risk" structures), the vents will be closed and filtration systems will be shut off for at least twenty minutes prior to monitoring the interior of the magazine to confirm the presence or absence of airborne chemical agent. If airborne agent is detected and confirmed, powered filtration will be resumed and vents can be reopened. Operations will proceed as described in paragraph 8–9*c*(2).

d. Vents may remain open or closed while monitoring the interior of magazines equipped with wind or natural draft filtration systems. No waiting period is required prior to monitoring. If the presence of agent is confirmed these systems must be supplemented with a powered filtration system and operations will proceed as described in paragraph 8–9*c*(2).

8–13. Overpack containers for toxic chemical munitions and agents

a. This section provides a listing of approved types of overpacks for containerization of TCM and agents identified as leakers. Unless otherwise specified, listed overpacks are for depot storage and intra-depot movement only. Overpack requisitioning procedures, inspection criteria, and storage requirements are also included.

b. Table 8–4 lists overpacks authorized for containerization of specific items. Primary overpacks are intended for use in the packaging of individual TCM and agent items identified as leakers. Secondary overpacks are intended for use in the packaging of leaking primary overpacks.

c. Propelling charge containers are no longer authorized for use as a primary or secondary overpack unless specifically, and on a case-by-case basis, approved by National Maintenance Point. However, site commanders may elect to retain some propelling charge containers in local retail accounts to confront accident scenarios that would require rapid packaging to mitigate uncontrolled hazards or minimize prolonged worker stay-time in protective clothing. Inspection criteria for propelling charge containers are listed in table 8–5.

d. Leaking munitions containerized prior to the effective date of this pamphlet do not have to be repackaged solely to meet this criterion.

e. Requisitioning procedures. Overpacks may be requisitioned through the addressee in paragraph 1–7*a*(3). Questions pertaining to supply status of these containers will be referred to the NICP (addressee in paragraph 1–7*a*(3)).

f. Each storage installation will identify a portion of their retail stocks of overpack containers as contingency stocks. Contingency stocks are defined as those quantities of containers issued to local retail accounts that are projected for use during a 2-year period. Two-year projections will be based on local leaker histories or, by exception, can be directed by higher headquarters.

g. Overpack inspection and storage requirements.

(1) These requirements are applicable to containers authorized for use as overpacks for leaking chemical munitions and leaking overpacks in depot storage. Requirements presented herein do not supersede requirements of the RCRA or State environmental laws. Installations must ensure compliance with all current EPA regulations pertaining to these munitions and incorporate such information in local policy or SOP's, where appropriate.

(2) Inspection procedures for the SRC are contained in the container specific LOI for each container. The container specific LOI's are available from the addressee in paragraph 1–7*a*(3). If the procedures presented here are in conflict with those provided in the container specific LOI, the container specific procedures will take precedence.

(3) Inspection requirements and intervals are established to ensure that a serviceable stockpile of overpack containers is available to address current and future leaker contingencies. Installation personnel must compile and retain records of all inspections. Periodically, this information will be requested by the NICP and/or National Maintenance Point to assess long-term container performance. All container defects must be recorded (by SN, if applicable) even if user maintenance is successful and the container is suitable for use.

(4) Rejected overpacks that cannot be repaired at the user level will be assigned appropriate CC and reported by memorandum to the NICP addressee in paragraph 1–7*a*(3).

(5) Installations will perform inspection for DIT when overpacks are received directly from a government or contractor production facility and the overpacks have been subjected to 100 percent leak testing and inspection by the manufacturer.

Containers which were not subjected to 100 percent leak testing and inspection by the manufacturer will be 100 percent inspected and tested at time of receipt.

(6) Periodic inspection—

(a) Overpack containers that are either maintained in the wholesale account, under control of the NICP or issued to local retail accounts but not designated as contingency stocks, will undergo visual inspection of the external surface of the container so that 20 percent of the containers are inspected annually and 100 percent of the stockpile is inspected each 5 years. It is neither necessary nor desirable to access the interior of the container to perform annual inspections, unless serviceability is in question, based upon an external inspection. Unnecessary handling can damage the container. A leak test is not required but may be performed at the discretion of the inspector if serviceability is in question, based upon visual inspection.

(b) One hundred percent of contingency stocks at user installations will be visually inspected (internally and externally, including components) and leak tested annually.

(c) A tag or label will be affixed to each overpack container indicating date and results of last test.

(7) Overpack container lid closure torque values are provided below:

(a) M10A4 225–350 inch-pounds.

(b) M13A2 200–325 inch-pounds.

(c) M14A2 175–300 inch-pounds.

(d) M16 Series 200–325 inch-pounds.

(e) M18 Series 225–350 inch-pounds.

(f) M460A2 225–350 inch-pounds.

(g) Test plugs for all propelling charge container lids are to be seated with a torque of 2.5 foot-pounds (30 inch-pounds) minimum.

(h) Identification set M1, 8110–00–340–2006, lid closure torque requirements follows: The bolts and/or nuts will be torque diametrically opposed from each other to 30 foot-pounds (plus or minus 2 foot-pounds). In addition, bolt threads must be fully engaged to nut. A minimum of two threads must extend from the nut after torque.

(i) For SRC's see container specific LOIs.

Table 8–4
Approved overpacks for storage of toxic chemical munitions

Item	Primary overpack and NSN	Secondary overpack and NSN
M55 RKT, GB/VX	M55 SRC 8140–01–286–0482	10" X 96" SRC P/N ACV00402
105mm projectile only and 4.2 Inch	7" X 27" SRC P/N S727001 5.4" X 36" Retrofit M55 SRC	NA (see note 1).
105mm with ctg case	5.4" X 36" Retrofit M55 SRC	NA (see note 1).
155mm projectile	9" X 41" SRC P/N ACV00655	NA (see note 1).
8 inch projectile	9" X 41" SRC P/N ACV00655	NA (see note 1).
Previously overpacked leakers in M10, M13, M14 or M16 propelling charge containers, or ID set M1 container		12" X 56" SRC, P/N ACV00649 12" X 56" nonstandard SRC, NSN: 8140–00–01–375–7070

Note:

[1] No secondary overpack is identified for the 5.4" X 36" Retrofit M55, 7" X 27" and 9" X 41" SRC's. Due to extensive product testing and demonstrated performance history, it has been determined that the probability of these containers leaking is negligible. If a leak is detected, addressee in paragraph 1–7a(3) will be notified and sites will be provided with a plan to mitigate the situation.

[2] Leaking munitions containerized prior to the effective date of this publication do not have to be repackaged solely to meet the criterion of this table.

Table 8–5
Inspection procedures for propelling charge containers

Checklist	Corrective action
Metal container lid gasket missing, out of place, damaged, or deteriorated.	Replace gasket.
Failure to pass leak test.	Replace gasket and retest. If fails a second time, reject container.
Air sampling plug missing.	Replace plug.
Damaged threads on air sampling plug and/or port.	Replace sampling plug and/or lid.
Container dented precluding use: munitions do not fit into container or container does not seal.	Reject container.
Foreign material, rust, dust, paint chips, and so forth, which would not allow container sealing or allow markings to be stenciled on the container.	Repair and renovate container to serviceable standards. If not possible, reject container.

8–14. Reporting of leaking munitions

a. All occurrences of confirmed positive agent concentrations will be telephonically reported to addressee in paragraph 1–7*a*(3). Should this condition exist for more than 1 day, periodic telephonic or email updates will be provided as necessary to keep headquarters apprised of progress, but will not occur less than weekly. As a closeout action, when the positive agent concentration no longer exists, and leaker(s) have been found and containerized, a written leaker report will be submitted.

b. Items received at DEMIL facilities which are determined to be leaking, and are subsequently overpacked and returned to storage will be classified and reported as leakers. If processing was attempted but not completed, the condition of the item will be fully documented on the leaker report. If processing can be accomplished, items will not be identified as leakers and no reporting is necessary.

c. Written and telephonic munitions leaker reports must contain, as a minimum, the information reflected below. If the prescribed format for the munitions leaker report is too restrictive to convey details, provide additional narrative.

(1) Leaker report number consists of an installation acronym, 2-digit calendar year, and a sequential number, for example, BGCA–12–01, BGCAPP–12–01, PCD–12–01, PCAPP–12–01.

(2) Leaker report date: DDMMYY

(3) Chemical event report number.

(4) Date agent first detected: DDMMYY. (Should be consistent with initial chemical event report date.)

(5) Date leaker isolated: DDMMYY.

(6) Item data.

(a) Nomenclature.

(b) NSN.

(c) DODIC: Individual reports will be submitted for each DODIC.

(d) Lot number and/or SN: Individual reports will be submitted for each lot number.

(7) Leaker category: State one of the following, as appropriate.

(a) Original item: Leak attributable to deterioration of the original item.

(b) Overpack: Item that leaked in the past and was overpacked to contain leakage.

(c) Surveillance Program Lethal Chemical Agents and Munitions or other stockpile reliability test item that has not previously leaked, even if it was overpacked as a precautionary measure.

(d) Other: Explain any leaking item that does not fall clearly into one of the three previously stated categories, such as, ineffective maintenance - changed brass valves for steel plugs and ton leaked the following day; dropped pallet while loading on-site container for shipment to the DEMIL plant, initiating leakage.

(8) Leaker data.

(a) Quantity and type: State type of agent involved and define leak as vapor, liquid, or exudate. If liquid, give approximate quantity of agent leaked, for example, approximately 1 teaspoon.

(b) Leak location (geographical): State where leaking munitions was initially located at time of leak and where ultimately moved to, if applicable. Include building, truck, and general location inside any given structure, such as, igloo 1202, grid (or stack) XXX.

(c) Leak location (physical): Physical location of the leak on the round, such as, nose end sample port, around lifting plug. If unknown, so state.

(9) Initial operation and detection.

(a) Operation and monitoring: State the type of operation being supported and related monitoring (or visual inspection) when presence of agent was first detected and confirmed, consistent with number (4) above. Examples include: Daily headwall monitoring; headwall monitoring for first entry in support of treaty inspection; general area air monitoring during inventory; visual inspection during first entry for SMI.

(b) Detection method used and reading: State initial and confirmation readings and method used in detection, giving exact readings if possible. Estimate readings if necessary and explain why estimated, such as, MINICAMS® initial readings estimated to be >120 VSL concentration - column saturated.

(10) Isolation operation and detection.

(a) Monitoring and operation: Indicate leaker isolation process relating specifically to readings obtained, such as, obtained readings of under shrouded pallet, visual inspection then revealed liquid agent leaking from one round, confirmed with M8 paper.

(b) Detection method used and reading: Same type of information as paragraph 8–14*c*(9)(b), relevant to the isolated round.

(11) Corrective actions taken: Include type and, if applicable, SN of overpack used. State if packed with or without interim drip bag or other materials and any decontamination efforts conducted on round and/or structure.

(12) Remarks: Include any additional information that may help to clarify conditions encountered during operations or serve as a basis for process improvement. Examples include, but are not limited to, unusual deterioration of munitions or packaging; filter breakthrough; agent confirmed during general area air monitoring (if not reported previously); agent release and/or detection outside the storage structure and related details, such as, agent confirmed 25 feet downwind of structure with MINICAMS®reading of 0.8 VSL concentration; equipment failure, personnel injuries and/or exposures or unique personal protective equipment issues; clarification of previously reported information that may have since changed, such as that contained in a chemical event report. Cite previous leaker reports and overpacks, if applicable.

(13) Point of contact: The name and phone number of a QASAS who drafted the report and the name of an individual who was present during leaker isolation and containment operations - QASAS, toxic material handler and surveillance inspector.

Chapter 9
Propellant and propelling charges

9–1. Purpose

This chapter provides methods for determining serviceability and chemical stability of nitrocellulose-based propellant and propelling charges.

9–2. Scope

The provisions of this chapter apply to all Army organizations that store bulk propellant, bulk-packed propellant components, or propelling charges, regardless of service ownership. Proper use of this chapter will ensure safe storage and/or serviceability of "standard" propellant items (items that have been assigned standard DODIC's and/or NSN's and "non-standard" propellant items (items that have not been assigned standard DODIC's and/or NSN's). "Standard" and "non-standard" propellant items include the following:

a. Bulk propellant used in the loading of production quantities of cartridges and/or cartridge cases and also used in the assembly of component charges for field service items, such as mortar increments, or used for the manufacture of propellant-filled components such as ignition and/or igniter bags, expulsion charges, and so forth.

b. Separate loading and separated charges.

c. Propellant derived (downloaded) from rework or DEMIL operations.

d. Propellant-filled ammunition components (such as, expulsion charges, igniter bags).

e. Bulk-packed components of nitrocellulose construction (such as, mortar increment capsules). Warning: Nitrocellulose-based propellants can become thermally unstable as they age. The normal aging process of the propellants involves deterioration of the nitrocellulose with an accompanying generation of heat. At some point, the propellant may reach a state where heat is generated faster than it can be dissipated. The accumulation of heat can lead to combustion (auto-ignition). Chemical stabilizers are added to propellants to slow the aging process. In time, the stabilizer levels will drop to a point where the RES is not sufficient to prevent an accelerating rate of decomposition. When this point is reached, the propellant may auto-ignite, with possible catastrophic results to property and life. Monitoring the stability level of each propellant lot is essential for continued safe storage (see table 9–2).

f. Each Army organization storing propellant and propelling charges is responsible for managing its propellant stocks, which includes RES monitoring. The Propellant Management Guide, published by U.S. Army Defense Ammunition Center, should be utilized in this effort. Any stabilized propellant lot with unknown RES in storage at any Army installation, regardless of ownership is considered to be potentially hazardous and must be reported to the JMC (AMSJM–QAS) immediately. Any stabilized propellant lot in storage, regardless of ownership, which has exceeded its "Next-Test-Date," must be reported to the JMC (AMSJM–QAS) for disposition. Stabilized propellant (except for RDECOM and Army Test and Evaluation Command nonstandard items) in quantities less than the minimum recommended lot size per organization should be issued immediately, or scheduled for DEMIL as soon as practical (see table 9–3). Continued monitoring of RES levels is required until DEMIL is complete.

9–3. Definitions

a. *Bulk propellant.* All types and models of granular, sheet, stick, flake, or ball propellant packaged in a bulk container, to be used in loading cartridge cases, for production of separate loading or separated propelling charges, or component charges, or for any other application where nitrocellulose-based propellant is required. Bulk propellant is usually assigned FSC 1376.

b. *Bulk-packed components.* Propellant components used in the assembly of complete rounds. Includes made-up charges or increments, such as bagged charges for howitzer ammunition; propellant-loaded cartridge cases, primed or

unprimed; mortar increments in sheets, bags, or capsules; expelling or expulsion charges (loaded with other than black powder, propellant-filled igniter bags); and small rocket motor grains (rocket assist grains). Component charges are usually assigned FSC 1310, FSC 1315, or FSC 1340.

c. Complete round. The assembly of ammunition components necessary to fire a specific weapon, one time.

d. Separate loading charges. Bagged and combustible-cased charges stored and issued as end items. Separate loading charges are usually assigned FSC 1320.

e. Separated charges. Navy propelling charges assembled to a primed cartridge case and issued as end items.

f. Demilitarization. The process of removing military characteristics from materiel. The process of DEMIL involves these two broad categories of methods:

(1) Resource recovery and recycling (R3) military munitions for which R3 actions are designated are not considered to be waste military munitions (WMM). For propellants, these of actions include conversion to fertilizer, nitrocellulose extraction, re-blending for commercial or military use, and use as a component of blasting gel. R3 involves recovering and reusing all or part of the propellant.

(2) Treatment, involves partial or total destruction of the material, which may involve the recycling of component materials, such as metal parts. Items that undergo treatment are usually those that have been declared to be WMM. Treatment is a term used in the world of environmental science. For propellant, the method of treatment most commonly used is destruction by burning.

g. Disposal. Refers to the removal of military munitions from government ownership and/or control.

h. Propellant stability list. A list identifying all nitrocellulose-based Army propellant lots under test by the Army can be accessed on the JMC (AMSJM–QAS) share point site. If unable to access this data electronically, contact the JMC (AMSJM–QAS) for assistance.

i. Propellant stabilizer. Chemical ingredient added to propellant to neutralize the deterioration products of nitrocellulose by slowing down nitrogen oxide attacks. The stabilizer lengthens the effective life of the propellant and prevents auto-ignition from occurring during normal use and storage. The stabilizer level must be periodically monitored via testing and analysis throughout the storage life of the propellant. Commonly used stabilizers are—

(1) Diphenylamine.

(2) 2–Nitrodiphenylamine.

(3) Ethyl Centralite.

(4) Akardite II.

j. Thermal stability and/or instability. Propellants can auto-ignite when they become thermally unstable. Nitrocellulose-based propellants naturally decompose over time, with an attendant generation of heat. The heat generated can increase the rate of decomposition, which in turn increases the rate of heat generation. As the rate of heat generation accelerates, the system may reach a point where combustion will occur. A system is said to be thermally stable if the heat generated by propellant decomposition can be removed from the system at least as rapidly as it is generated.

9–4. Safety

Observe safety precautions cited in DA, AMC, and Army service support command regulations, as well as in DA Pam 385–64, as applicable.

9–5. Personnel

QASAS, or others under their technical direction, will conduct sample selection and visual inspection of propellants and propelling charges, air testing of containers, and field stability testing. Bring questions and concerns to the attention of the responsible QASAS for resolution.

9–6. Surveillance

Surveillance of propellant falls into two categories: visual inspections performed at storage and production activities, and tests, which are conducted as part of the Stockpile Laboratory Test Program. Surveillance determination of serviceability will be based on visual inspection, air testing of propelling charge containers and tests for stabilizer levels and thermal stability. For bulk stored propellant, also consider the currency of the loading authorization, as reflected in TB 9–1300–385.

9–7. Visual inspection and air test

Sample size and frequency will be in accordance with chapter 2.

a. Bulk propellant. Inspection will generally be limited to inner and outer packaging, although any unusual conditions noted concerning the physical state or odor of the propellant will be reported. If condition of packing, such as obvious structural damage or water damage, requires opening the container to determine extent of damage, note the condition of

the propellant and any other unusual conditions in writing. Apply acceptance and rejection criteria in accordance with chapter 2.

b. *Separate loading and component charges.*

(1) Air test containers for separate loading charges selected for visual inspection prior to opening and after closing. Perform air test in accordance with operational manual for APE 1052 series. If the samples test satisfactorily before opening, all containers in the lot are considered to be satisfactory. Containers which leak only after closing will not be considered defective for lot evaluation, but will be repaired or replaced before returning to storage. Replace damaged gaskets on sample containers.

(2) Visual inspection will include all external surfaces of each increment, including surfaces where individual increments abut one another. Use the APE 1991 to test the tensile strength of 155mm propelling charges.

Note. The condition of bags, stitching, wrappings, and so forth. Details of visual inspection and classification of defects are contained in paragraph 9–7 and table 9–1. Expose charges to the air for the minimum time necessary.

(3) 155mm propelling charges 1320–D540 and 1320–D541 returned from South West Asia (SWA).

(a) Perform a PI on 155mm propelling charges retrograded from SWA in 1991 or 1992 (lots with "y" identifier) prior to issue. If a PI has been performed within the last 90 days, the QASAS in charge can exempt lots from this requirement.

(b) Do not clear lots retrograde from SWA for shipment to combat load, Army PREPO APS–3 or Marine Corps MPS.

(c) Test of tensile strength will include cloth on all bags and especially the ends of the bags. Test in accordance with paragraph 9–7*b*(2). Test must assure that thread used to assemble bag is not deteriorated to a point that it would fail during normal handling.

c. *Classification of defects.* Table 9–1 lists defects for separate loading and component charges that supplement surveillance defect standards in chapter 2.

Table 9–1
Propellant defects classification and standards

Classification	Method of inspection	Defect standard
1. Critical:		
a. Cracked and/or broken igniter tube.	Visual and/or manual - nonferrous rod	
b. Assembly damaged to the extent that clean burning igniter or black powder igniter can escape without force.	Visual	
c. Igniter charge assembly missing.	Visual	
d. Increments cracked, torn or missing.	Visual	
2. Major:		
a. Metal container lid gasket missing, out of place, damaged, or deteriorated.	Visual	
b. Failure to pass air test.	Air test	DS–1
c. Deteriorated propellant bag.	Visual	DS–2
d. Damaged propellant bag.	Visual	DS–3
e. Mildew or moisture stain on propellant bag.	Visual	
f. Caked igniter.	Manual	
g. Improper and/or inadequate assembly.	Visual	DS–4
h. Missing components (packing, primer, and igniter).	Visual	
i. Container (metal, fiber, barrier bag, and wood, excluding separate loading propelling charge containers) deteriorated or damaged to extent requiring replacement. Perforation and/or tears in plastic liners of M1 additive jacket are acceptable if jacket remains secure to charge.	Visual	
j. Container for separate loading propelling charges deteriorated or damaged to extent requiring replacement.	Visual	
k. Flash reducer assembly damaged to the extent that salt can escape without force.	Visual	
l. Test plug missing.	Visual	
m. Torque test failure of plug.	Manual	
n. Damaged threads on air sampling port.	Visual	
o. Damaged threads on air sampling plug.	Visual	
p. Combustible case broken or damaged to the extent that propellant can escape (DODICs DA12 and DA13).	Visual	
q. Combustible case with uneven cap (crooked, tilted, or slanted. (DODICs DA12 and DA13).	Visual	

Table 9–1
Propellant defects classification and standards—Continued

Classification	Method of inspection	Defect standard
r. Combustible case with cut or puncture through case wall (DODICs DA12 and DA13).	Visual	
s. Combustible case that cannot be repacked into its sleeve due to exterior damage (DODICs DA12 and DA13).	Manual	
t. M67 propelling charge missing lead foil or lead carbonate.	Visual and DD Form 1650	DS–7
3. Minor:		
a. Paint coverage inadequate.	Visual	DS–5
b. Loose lacing and/or wrapping.		
c. Container (metal, fiber, barrier bag, and wood) Deteriorated or damaged to extent requiring reconditioning.	Visual	DS–5
d. Any seam or opening incompletely stitched.		
e. Marking missing, misleading, or unidentifiable.		
f. Evidence of poor workmanship.	Manual	
g. Test plug not greased.	Visual	
h. Container seal missing or incorrectly applied.	Visual	
i. Cover incompletely engaged.	Visual	
j. Unit not palletized in accordance with approved drawings.	Visual	
4. Incidental:		
a. Discolored propellant bag.	Visual	DS–6
b. Container for separate loading propelling charge deteriorated or damaged.	Visual	DS–5
c. Caked flash reducer. (1) If found, inspect an additional 20 rounds for all defect criteria in this table. (2) Do not reject for caked flash reducer. Note: This requirement is for an inspection of only one additional sample of 20. Do not repeat if caked flash reducer is found in the second sample.	Visual	

Legend:
*Defect standards:
DS–1 Metal container is to be tested at 3–5 PSI, using APE 1052, before opening for inspection and after replacing container cover. Container must be capable of maintaining constant pressure for 10 seconds. Visible decrease in pressure gage reading during the 10-second interval will classify container as defective.
DS–2 Propellant bag with loss of tensile strength is usually accompanied by cloth discoloration as follows:
(a) Brown spots on white silk bags.
(b) Orange spots on green silk bags.
(c) Blue spots on white cotton or rayon blend bags. The APE 1991 should be used to test the tensile strength of 155mm propellant bags.
DS–3 Propellant bag damaged or incompletely stitched to extent propellant can escape.
DS–4 Stitches, bags, and seals will be without breaks, tears, grease, or noticeable foreign matter. Increment is in improper order; that is, charge five assembled where charge three should be.
DS–5 Separate loading propelling charge containers should be considered serviceable if all the following are true:
(a) Sample passes air test regardless of visual condition of lid gasket. Torn or cracked gaskets on samples must be replaced.
(b) Marking is legible.
(c) Rust has not progressed to major defect stage (see para 2–7c(2)). Above criteria apply only to material in storage not to new production or to renovated material. DS–6 Propellant bag discolored (see DS–2) without loss of tensile strength. Lots exhibiting this defect will receive priority of issue for training.
DS–7 M67 Propelling charges for 105mm cartridges may be manufactured with or without lead foil assembled to increment number 5. If visual inspection reveals the absence of lead foil, the DD Form 1650 will be reviewed to verify lead carbonate as a component. Lead carbonate, an acceptable substitute for lead foil, is an integral part of the propellant grain and its presence cannot be determined by visual inspection. Component propellant lots (charges 3 through 7) beginning with lot RAD84C–070356 and all subsequent lots may contain lead carbonate.
Note 1. 105mm HERA cartridge (DODAC 1315–C546) has a propelling charge bag which fits very tightly in the cartridge case. Since removing the bag for PIs could cause tearing of the bag and subsequent propellant spillage, the defect criteria listed in table 13–1 will not be applied to this round.

9–8. Ammunition Stockpile Reliability Program testing

The ASRP for propellant contains two distinct stockpile laboratory test programs: The PSP and the PRP.

9–9. Propellant Stability Program

The PSP monitors and analyzes stabilizer levels and stability trends of Army-managed propellant lots in order to identify potentially unstable propellants in sufficient time to safely remove them from the stockpile through use or DEMIL. JMC (AMSJM–QAS) centrally administers the PSP. The PSP consists of two subprograms: Master Propellant Program and Stockpile Propellant Program (SPP).

a. Master propellant program. Within 6 months after government acceptance, a five-pound sample of each newly produced lot of bulk propellant is sent to the Army Propellant Surveillance Laboratory at the Armament, Research, Development, and Engineering Center, or as specified in the contract. Samples are monitored throughout the life of the propellant, and master sample stabilizer trends are compared with field-stored propellant stabilizer trends.

(1) When a master sample test result is stability Category "D" a notice of ammunition reclassification (NAR) for that specific lot is issued. The NAR will direct DEMIL of the propellant within 60 days when stored in bulk form, as bulk-packed propellant components or component charges, or as separate loading propelling charges.

Note. These suspension actions do not apply to propellant uploaded into fixed or semi-fixed rounds.

(2) A master sample with test results of stability Category "C" will be compared with field sample results of that lot. Field samples from that lot (index) from all Army storage locations visible on the WARS will be tested. If testing of field samples confirm stabilizer Category "C," the lot will be reclassified to CC C by NAR. Category "C" propellant lots on hand after 1 year will be retested. If the lot has not deteriorated to Category "D," it will be retested each year until it has been expended, or it has deteriorated to Category "D," at which point it will be demilitarized within 60 days.

(3) Notification of ammunition suspensions, restrictions and releases for Army account propellant will be managed in accordance with TB 9–1300–385. US Army organizations storing wholesale and retail assets are required per DOD 5160.65–M to apply NAVSUP P 801 to all Navy, Marine Corps, and Coast Guard-owned assets. The NAVSUP P 801 provides a listing of suspended, limited use, and unserviceable ammunition and propellant. Apply temporary suspensions to all services; apply permanent suspensions only to the owning service.

Note. Navy NARs for Navy-specific bulk propellants or bulk-packed component charges will not apply when loaded into weapons systems smaller than 5 inch (127mm) that are currently in an Army account. Army experience has demonstrated that uploaded propellants in such rounds have never auto-ignited.

b. The SPP tests fielded Army propellant assets to assure that environmental effects are accounted for in determining their safe storage condition. The SPP test frequencies vary depending on propellant type, lot history and chemical stability. The Propellant Surveillance Laboratory at Armament, Research, Development, and Engineering Center compares field sample test results with master sample test results. The SPP includes bulk propellant, bulk-packed components, and separate loading charges. The following items are not included in the SPP and will not be tested unless specifically directed by the JMC (AMSJM–QAS):

(1) Propellant when assembled to complete rounds; that is, mortar, fixed, or semi-fixed ammunition.
(2) Propellant components when assembled as part of a projectile; for example, expelling charges, expulsion charges.
(3) Rocket propellant, to include rocket assist grains for artillery projectiles.
(4) Any HE or propellant ingredient not chemically stabilized; such as, black powder, RDX, and TNT.
(5) LOVA propellant.
(6) Propellant with lost lot identity (see para 9–14).
(7) Combustible container components (except when bulk stored, such as mortar increment capsules).
(8) Clean burning igniter powder in bags when assembled to propelling charges.

(a) All propellants stored on an Army installation and not specifically excluded above are part of the SPP. All propellant not assembled to a complete round, regardless of how it is stored, is part of the SPP. Bulk propellants and component items containing propellant are included in the SPP prior to loading into complete rounds; any remaining quantities from the lot not uploaded remain in the program for future, periodic testing.

(b) If the entire worldwide quantity of a specific propellant lot is assembled into complete rounds, that lot is not tested under the SPP but is continuously monitored in the Master Propellant Program. When a propellant lot is downloaded (removed) from an end item, its stability must be determined.

(c) Downloaded propellant should be scheduled for re-use, destruction, or transfer to a third party owner within 1 year of generation (see para 9–13).

(d) Organizations conducting maintenance or DEMIL operations will contact the JMC (AMSJM–QAS) for stability determination prior to any maintenance or DEMIL operation that will generate propellant.

(e) Lot integrity and RES level of the downloaded propellant will be maintained if the lot is to be retained for any period in excess of 24 hours. Downloaded propellant that is being bulk stored and marketed for sale must be physically removed from the installation after sale.

c. At the beginning of each FY, the JMC (AMSJM–QAS) selects candidate lots for SPP testing that FY. JMC emails the list of candidate lots to specific organizations to determine availability of samples.

(1) Prior to the shipment of any propellant lot, review applicable DA Form 3022–SG for availability of the current stability category, the date of the last test, and the date of the next test. If the DA Form 3022 -SG does not reflect current information, the local QASAS should first consult the propellant stability database, then the JMC (AMSJM–QAS), if necessary.

(2) Retain serviceable requested samples in CC D. Retain samples in CC H at time of request. Obligate sample quantities for shipment to the test facility. Retain parent lot quantities in the current CC; these lots may be issued, pending receipt of sample test results.

(a) Select and prepare requested samples for shipment in accordance with paragraph 9–11. Forward a copy of the DA Form 3022–SG to the test activity for each sample shipped. DA Form 984 is not required for sample propellant lots. JMC MLRC issues MROs for shipment of samples.

(b) After completion of testing from a test code group, the propellant stability database will be updated with the latest test results. The JMC (AMSJM–QAS) forwards the test results to the installation from which the lot samples were drawn. Annotate the results on the local DA Form 3022–SG. The JMC (AMSJM–QAS) issues a NAR for any Army propellant lot in stability Category "C" or "D."

Table 9–2
Propellant stability category codes

Stability category	Percent effective stabilizer
A	0.30 or more
C	0.29 – 0.20
D	Less than 0.20

A - Acceptable stabilizer loss; safe for continued storage.

C - Significant stabilizer loss. Lot does not represent an immediate hazard, but is approaching a potentially hazardous stability condition. Loss of stabilizer does not adversely affect functioning in an uploaded configuration. Disposition instructions will be furnished by NAR. All stability Category "C" assets on the installation must be reported in writing to the office in paragraph 1–7*a*(2). Report may be sent by fax, email, or telephone.
—Bulk propellant and bulk-packed component lots will be offered for resource recovery and recycling as soon they become stability Category "C." One year after becoming stability Category "C," a sample of the bulk propellant lot or the bulk-packed component lot will be retested. If the lot has not deteriorated to Category "D," it will be retested each year until it has been expended, or it has deteriorated to category "D," at which point it will be demilitarized within 60 days. Exceptions may be approved by the JMC, Ammunition Surveillance Office.
—Separate loading propelling charges should be issued for use to preclude loss of assets. One year after becoming stability Category "C," a sample from the lot will be retested. If the lot has not deteriorated to Category "D," it will be retested each year until it has been expended, or it has deteriorated to category "D," at which point it will be demilitarized within 60 days. Exceptions may be approved by the JMC, Ammunition Surveillance Office.

D – Unacceptable stabilizer loss. Lots identified as stability Category "D" present a potential safety hazard and are unsafe for continued storage as bulk, bulk-packed components, or as separate loading propelling charges. Bulk propellant, bulk-packed components, and separate loading propelling charges will be demilitarized within 60 days after notification of Category "D" status. After the lots are demilitarized, written notification will be made to the surveillance office at JMC, which will forward the notification to the JMC, Demilitarization Office. If the 60-day DEMIL suspense cannot be met under any circumstance, local commanders will elevate this critical shortfall through their chain of command. Notification will also be sent to the JMC, Ammunition Surveillance Office.

--Southwest Asia (SWA) "Y" lots - Stability test results for SWA "Y" lots will apply to the basic (non-SWA) lot as well, and vice versa, unless otherwise directed by JMC, Ammunition Surveillance Office.

Note:

[1] Unless otherwise specified in an Army NAR, any stability-related suspensions or restrictions of Army bulk propellant or bulk-pack components will not apply to propellant configured and uploaded as a component of fixed, semi-fixed, or separated munitions, for gun systems less than 5 inches (127mm) diameter. Army experience has demonstrated that propellant uploaded in such rounds has never auto-ignited. If downloaded, any and all stability-related suspensions and restrictions will apply.

[2] The stability level of bulk WC 864 propellant and bulk stored igniters containing WC 864 propellant will not be considered as representing the stability of igniters assembled to the MACS propelling charges – (DODICs) DA12 and/or DA13. When assembled as a charge, stabilizer from the main propellant charge of the MACS migrates to the igniter which increases the stability level of the igniters.

[3] Propellant stability data for Category "D" propellant will be entered on the end item DA Form 3022–SG for information purposes.

9–10. Propellant Reassessment Program

The PRP involves the test and evaluation of stored propellant to determine the functional serviceability prior to loading into a major item. It does not apply to items intended exclusively for RDT&E. Whenever possible, the oldest propellant lot(s) will be selected for the PRP. The JMC (AMSJM–QAS) is responsible for the final determination of functional serviceability of bulk propellant and component charges under the PRP, and is also for providing the notification of loading authorization via TB 9–1300–385. The functional serviceability will be determined by a laboratory reassessment test (closed bomb), a ballistic test, or combination of both. These tests will be performed only when an actual need for the propellant or bulk-packed component exists. Sample selection and shipment will be in accordance with paragraph 9–11 unless otherwise directed by the JMC (AMSJM–QAS). Laboratory reassessment tests will be performed only when an actual need for the propellant exists. Propellant classified as "Master" or "Reference" lots are exempt from the PRP requirements. Bulk propellant and bulk-packed component charges having a current loading authorization, and that are otherwise serviceable, will be classified CC A; those otherwise serviceable lots without a current loading authorization will be classified CC D.

a. Request for reassessment testing of field service stocks will be coordinated with the JMC (AMSJM–QAS) and the supply item manager not less than 120 days before the loading is to commence. The reassessment request will contain:

(1) Lot number and NSN of propellant and/or propelling charge requiring reassessment.

(2) Estimated start date of project requiring reassessed lot(s).

(3) NSN, lot number(s), and quantity of material to be reworked.

b. JMC, item manager will coordinate the reassessment test so that the samples arrive at the test facility no later than 60 days before the maintenance project is to commence.

c. Ballistic testing at a PG will be performed, as required by the JMC, item manager.

d. Loading authorizations are issued at time of initial acceptance, and are provided via TB 9–1300–385, appendix I for reassessments performed in accordance with the requirements of the PRP. Component functional serviceability is determined at time of performance test and renewed with each successive performance test. Expiration dates of initial acceptance and performance test are based on the following:

(1) Propellant compositions M5, M10, M26, and M26E1 are valid for 2 years, regardless of pack.

(2) Other types stored in metal or metal-lined wood containers (level A) are valid for 5 years.

(3) All types stored in fiber drums are valid for 2 years.

e. Annotate expiration date of the loading authorization for the lot on the DA Form 3022–SG and note on the shipping documents. All applicable propellant lots with a current loading authorization will be listed in the latest edition of the TB 9–1300–385, appendix I, or in the JMC (AMSJM–QAS) share point site.

f. If a propellant loading authorization expires during a maintenance program, the QASAS in charge may permit an extension of up to 180 days to allow completion of the maintenance project under which the loading authorization was granted. Otherwise, lots with expired loading authorizations cannot be loaded until reassessed.

g. Clear all OCONUS shipments of bulk propellant or component charges through the JMC (AMSJM–QAS) and only approve CC A material for shipment.

9–11. Selection, preparation and shipment of propellant samples for Stockpile Propellant Program

a. *Sample selection.*

(1) Bulk-packed increments and charges for mortars will be shipped in quantity specified by sample requests. The propellant will not be removed from the increment bags. Sample shipment will be made using the current NSN and lot number. The sample size will be approximately one-half pound of propellant per lot, with every effort made to request sample quantities that are standard units of issue.

(2) Unless otherwise designated, the bulk propellant sample size will be one pound.

(3) Separate loading charges and 105mm propelling charges will consist of complete charges to be shipped in the quantity specified by the sample request (usually one pound).

b. *Sample preparation.*

(1) Outer pack for samples will consist of standard ammunition packs meeting the requirements of 49 CFR. Approved outer packs for propellant samples include M2A1 ammunition container (as allowed per the latest revision of Special Packaging Inspection (SPI) ADP1376–002), metal-lined wood boxes, metal drums, and fiber drums, which meet both the maximum container load limit for which they were performance oriented packaging tested, and the applicable packaging drawing marking requirement.

(2) Place samples in a heat sealable conductive plastic bag, of minimum size to hold the sample and allow grounding if necessary that meets requirements of MIL–B–82645. Seal bag by one of the three following methods: (1) folding the opening over three times to close and apply two single wraps of tape that overlaps a minimum of one inch; (2) gather the opening together and tie with a twist tie; (3) use a zip-lock closure. Place the cushioned samples in an M2A1 Small Arms Container, in accordance with SPI ADP 1376–002. Alternate packaging methods that meet performance oriented packaging requirements are as follows: MIL–B–82647 is available at http://quicksearch.dla.mil/qsdocdetails.aspx?ident_number=33394.

(a) 8135–01–185–6816 (roll of MIL–PRF–81705 barrier material); 8105–00–837–7756 (Ziploc type bag 11 X 10); 8105–00–837–7757 (Ziploc type bag 12 X 12); 8135–00–282–0565 (MIL–PRF–131 barrier material to overpack plastic bags); 8135–01–015–2810 (MIL–PRF–131 barrier material to overpack plastic bags); 8105–01–274–3585 and 8105–01–382–7369 (MIL–B–82647 material).

(b) Refer to MIL–STD–652D for bulk container using metal drums, fiber drums, or metal-lined wood boxes.

(c) If a telescoping spiral-wound fiber container having metal ends and double-foil inner wrap is used for bagged propellant and/or increment(s), add cushioning at both ends as required to obtain a tight pack, and close with two wraps of tape.

(d) If large grain or stick propellant is to be shipped, wrap each item with plastic wrap or bag and tape it. Cushion as required with bubble-wrap or closed-cell foam material.

(3) Expose samples to the air for the minimum time needed to package. Do not desiccate samples. Type or print legibly on a card the following information: NSN, lot number (if dual granulation, both lot numbers), name of the submitting installation, and test. Enclose card with sample in the inner pack. Include DA Form 3022–SG and DD Form 1650 for each lot. Pack dual grain charges separately; on the identification card, identify the grain as single-perforated or multi-perforated. Do not print sample data directly on inner pack, that is, aluminized bag. Flaking of bag material results in loss of sample data.

(4) Sample shipments will be shipped per directions in the MRO from JMC for shipment to the designated test installation.

9–12. Selection, preparation, and shipment of samples for Propellant Reassessment Program

a. *Bulk propellant sample selection.*

(1) Select five containers that are representative of the entire lot.

(2) Remove two pounds of propellant from each container. If charge is of dual granulation, remove 2 pounds of each component propellant lot from each container. If propellant is packaged as component charges, bags must be removed. After sample quantity has been removed, residue from component charges is authorized for DEMIL

b. *Bulk-packed component sample selection.*

(1) Sample size will be in accordance with lot acceptance test requirements of the load, assemble and pack specification for the component.

(2) Select samples that are representative of the entire lot. Remove two pounds of propellant from each container. If charge is of dual granulation, remove two pounds of each component propellant lot from each container. If propellant is packed as component charges, bags must be removed. After sample quantity has been removed, residue from component charges is authorized for DEMIL.

c. *Bulk propellant sample preparation.*

(1) Seal and package separately each two pound sample as specified in paragraph 9–11*b*.

(2) Each two pound sample container will be marked with propellant nomenclature, lot number, and number of container from which removed; such as, container 1, 2, 3, 4, or 5. Do not print sample data directly on the inner pack; such as, aluminized bag.

Note. Flaking of bag material results in loss of sample data.

(3) The outer pack will be as specified in paragraph 9–11*b* (1), except for one end, which will be painted white and stenciled in black ink, “For Reassessment Test PROP–QAS (assigned number).” The outer pack will contain the entire 10-pound sample.

d. Bulk-pack component sample preparation.

(1) The outer pack will be as specified in paragraph 9–11, except for one end, which will be painted white and stenciled in blank ink, “For Performance Verification Test PROP–QAS (then assigned number from JMC ((AMSJM–QAS)).”

(2) Each container will be marked with the component nomenclature and lot number.

e. Sample shipment. Ship samples in accordance with directions in the MRO from JMC.

f. Samples will be shipped per directions in the MRO from JMC for shipment to the designated test installation.

9–13. Reclaimed and/or derived propellant

Written coordination with the JMC (AMSJM–QAS) will occur before the start of any operation generating bulk propellant which will not be demilitarized within 60 days of generation. If the propellant will not be demilitarized within 60 days, the following will occur:

a. The local ammunition surveillance organization and the JMC (will review the storage history of each end item lot, looking for evidence of storage in extended temperature or moisture extremes that might have adversely affected the propellant. Separate loading or bulk propellant in any account with an unknown storage history will be considered as having been exposed to extended periods of extremes of heat and/or moisture and will be burned within 60 days of discovery unless otherwise directed by the JMC, propellant stability PM.

b. A sample of each propellant lot to be downloaded will be tested for stabilizer. In lieu of testing, the propellant can be downloaded if the quantity downloaded is demilitarized within 60 days of downloading. Bulk propellant of either unknown stability or Category “D” that is retained for any length of time greater than 24 hours must be isolated from other AE (for example, placed in a dedicated magazine).

Note. Propellant lots that have been determined by the JMC, (AMSJM(AMSJM–QAS) to be potentially hazardous to retain in storage, regardless of stability category, will be demilitarized within 60 days after download.

9–14. Lost lot identity

Propellants with lost lot identity cannot be tested to determine current level of stabilizer, since the specific propellant index cannot be identified. Therefore, these lots represent a potential safety hazard. Propellant with lost lot identity will not be retained in storage in any account. Propellant with lot numbers "MIXED," "UNKNOWN," or "NONE" as part of the lot number will be demilitarized within 60 days of discovery. Immediately contact JMC (AMSJM–QAS) if further instructions and/or assistance are needed. Installations will annually screen assets of all ownerships for lots with lost lot identity.

9–15. Minimum lot size

Installations are responsible for managing their propellant stocks. Table 9–3 establishes a recommended minimum lot size per installation for retention.

Table 9–3
Propellant minimum lot size

Weapons System	Propellant charges or increments
105mm	100 propelling charges
155mm	50 propelling charges
60mm	1200 increments
81mm	300 increments A 2400 increments B
4.2 inch	7500 full increments 300 half-increments
120 mm	1200 donut increments
Bulk propellant	50 pounds

9–16. Reporting requirements of stabilized propellant

At least one yearly review (at interval not to exceed 15 months) of propellant lots in storage against the information contained in the "Propellant Stability Database". This database resides in the MHP. The review is needed to ensure that stability Category (A, C, D) is determined by the percentage result entered in the "MIN" column of the "Propellant Database." Column heading "MIN" is the lowest result ever recorded for a lot. Errors or omissions discovered during a review will be immediately reported to the JMC (AMSJM–QAS).

a. Bulk propellant, bulk-packed components, and separate loading charges in storage in government owned facilities, and not reported via the WARS, will be reported to JMC (AMSJM–QAS). This reporting requirement ensures that both the surveillance office at JMC and the local surveillance office have the latest stability test results for all non-WARS propellant that is located inside the installation boundary in a configuration capable of auto-ignition (such as, bulk packaged, separate loaded charges, and so forth). Current stabilizer visibility must be maintained for all propellant lots stored on each government installation even if the propellant is owned by or under the control of a non-DOD or commercial activity. The QASAS having direct oversight responsibilities at installation(s) not reporting propellant assets via the WARS will ensure the timely submission, each March, of the following data:

(1) NSN and/or DODIC.
(2) Propellant lot number and/or index number.
(3) Quantity (pounds, charges, and increments).
(4) Stability category.
(5) Date of last stability test.
(6) Government-owned and/or non-Government-owned (indicate which).
(7) Owner account.

b. Storage of propellant declared "excess" by JMC will not exceed 2 years at installations lacking nonemergency DEMIL capability, unless authority to deviate is granted in writing by the JMC (AMSJM–QAS).

9–17. Propellant on prepositioned material ships

A listing of candidate propelling charge lots to be considered for storage aboard PREPO AFLOAT ships will be transmitted by a representative of the ASC to the JMC (AMSJM–QAS) for review.

a. Each propellant lot selected for PREPO - APS–3 AFLOAT storage must meet the following conditions:

(1) Have at least 3 years remaining on the PI interval prior to shipment to port.
(2) Is in stability category "A."
(3) Propellant RES retest not required for at least 5 years.
(4) Stability retest not required for at least five years.

b. A lot will not be selected for PREPO–APS–3 AFLOAT storage unless current test results support a predicted minimum of 30 months safe shipboard storage.

c. At least 60 days prior to any PREPO–APS–3 AFLOAT vessel's return to port for maintenance and inspections, the ASC representative will submit a list of all propellant lots aboard with their respective RES to the JMC (AMSJM–QAS). Propellant lots with less than 3 years remaining on their next RES test date require retesting or replacement by a substitute lot. The JMC (AMSJM–QAS) will assist the ASC representative when propellant lots require samples to be prepared and shipped to a laboratory for test, or in arranging on-site testing at the maintenance and/or inspection port.

9–18. Safety surveillance of Navy gun propellant

This program applies to Navy-developed propellant, and is centrally administered by the Navy. The Navy performs safety surveillance of gun propellant in a program that parallels that of the Army. The Navy relies heavily upon fume tests of master samples. It applies the results of fume test failures to the propellant lot in bulk and to the end item into which the propellant lot is assembled. Fume test failures result in reclassification actions directed by permanent NAR and documented in NAVSUP P 801.

Note. Since the Army is the DOD single manager for DEMIL, condemned Navy-developed materiel will be transferred to Army ownership for DEMIL. Once under Army ownership and control, all of the propellant stability management practices described in this chapter for Army propellant will prevail.

9–19. Storage and demilitarization of nonstandard propellants

a. This chapter defines nonstandard propellant and provides guidance for the storage, DEMIL and testing of nonstandard propellant and propellant items that do not fall under the PSP.

b. The JMC (AMSJM–QAS) manages the Army's PSP for nitrocellulose-based propellant and propellant items containing any of the stabilizers listed in paragraph 9–3 and specifically listed in the "National Stocks Numbers for Propellant Items" spreadsheet located under the Policies and Procedures tab on the JMC (AMSJM–QAS) share point site at https://jmcsp.osc.army.mil/sites/mlrc/qa/qas/qasurveillance/default.aspx.

c. Nonstandard propellant and propellant items that do not fall under the PSP are those typically defined with one or more of the following and will be tested for stability by the owner:

(1) Are not assigned a NSN or DODIC.

(2) Do not have an assigned propellant index.

(3) Do not have a propellant description sheet and/or propellant acceptance sheet.

(4) Are of foreign origin and not produced under DOD contract.

(5) Propellant that is manufactured and/or procured specifically for research development and test.

(6) Propellant that has been mixed or is a mixture of two or more propellant lots (does not include propellant produced under DOD contract in accordance with applicable military specification.

(7) Any propellant that cannot be tested due to unknown origin, unknown type, unknown index or unknown formulation

(8) Any propellant or propellant item that does not meet the definition of a military munitions as defined in 40 CFR 260.10.

d. Any nonstandard propellant in storage longer than 2 years, that has not been identified with a DOD program or test will be considered WMM and is authorized for DEMIL. Demilitarization will not be accomplished until the owner and/or program office has been notified. The local QASAS and installation safety office will ensure the owner complies with DEMIL and environmental requirements.

e. The DOD and/or SMCA designated disposition authority has authorized the assignment of CC V to those propellant and propellant items above and remaining in storage longer than 2 years.

f. Nonstandard propellant in storage should be limited to the minimum amount required and should be stored separate from Government furnished material.

g. All nonstandard propellant assigned to a DOD program or test retained in storage longer than two years is required to be tested in accordance with this chapter at owner's expense. The test results will be provided to the installation senior QASAS and safety office. The local QASAS may also request a formulation test at owner's expense of nitrocellulose-based nonstandard propellant to determine composition and testability for continued safe storage.

h. Local QASAS and safety will monitor RES levels of these propellant lots to ensure no unstable and/or untested propellant remains in storage. The propellant stability category specified in table 9–2 will be used for determining if propellant is safe for continued storage.

Chapter 10
Security Assistance Program

10–1. General

a. The requirements in this chapter are applicable to Security Assistance Program (SAP) including foreign military sales (FMS) and grant aid (GRA).

b. Materiel that reflects favorably on the United States and meets the quality requirements as specified in this chapter will be supplied to foreign governments. Materiel will be tested and quality checked to the same degree as that supplied to the Army.

c. Materiel selected for the SAP will be from the best available stocks. Packaging will have no extraneous markings that might cause the identity of the contents to be questioned. SAP customers may request and be supplied "as is" materiel as specified in the specific SAP case. All ammunition will also meet the requirements prescribed by the technical publication(s) for the item concerned.

d. JMC (AMSJM–QAS) will provide functional clearance for all JMC managed Army materiel offered for the SAP by the JMC (AMSJM–SA). Sites and/or activities will not release this materiel that does not meet prescribed specifications without written authority from the JMC (AMSJM–SA).

e. Materiel accepted on waiver (due to deviations from specifications or drawings affecting safety, reliability, interchangeability, or specified performance characteristics) is not suitable unless the customer has been apprised of the nature and extent of the deviation and agrees to accept the materiel as indicated in the specific SAP case. Similarly, customer approval is required for any other deviation from the requirements specified in this chapter. Storage sites will not release such materiel until written authority has been obtained from the appropriate LCMC. The LCMC will not provide written authority to the shipper until the customer has been fully informed of materiel characteristics and has agreed to accept the materiel.

f. Items in excess defense article accounts are furnished in "as is" condition with the recipient government waiving the right to submit claims against the Government through the DOD discrepancy report system. The LOA defines in general terms the condition constituting "as is" and states that preservation and packaging will be the minimum for safety and to reduce further deterioration during shipment. Markings will comply with DOT and United Nations Organization requirements. Unless otherwise stated, the lack of a current inspection, trace test, function test, DCT, or reassessment of materiel is not cause to disqualify a lot from shipment. Unless otherwise stated, a functional clearance is not required for excess defense article.

g. Additional inspection requirements or instructions for specific materiel may be provided by the appropriate LCMC on an "as required" basis for selected shipments.

10–2. Functional clearance procedures

a. JMC-managed Army materiel.

(1) A functional clearance is obtained from JMC (AMSJM–QAS). Functional clearance will be obtained by submitting automated Functional Clearance Request at https://jmc.aep.army.mil/lrc/QA/QSA/QAsurveillance/defaults.aspx located on JMC, Ammunition Surveillance Share Point. Provide the following information for candidate items:

(a) Requestor name and phone number.
(b) Country and case designator.
(c) Nomenclature, NSN and DODIC.
(d) MRO number (FMS requisition and/or document number).
(e) Lot or SN and quantity to be shipped assigned to each MRO by MRO suffix.
(f) Date of manufacture and latest test date (if applicable).
(g) Functional deviations or waivers from local records.
(h) Restrictions or suspensions.
(i) Identify whether or not outer pack is P-treated.
(j) Issuing facility.

(2) The site and/or activity quality assurance and/or ammunition surveillance organization will evaluate materiel not shipped within 360 days from date of FMS inspection. Consider type of storage and last inspection or test results. Site and/or activity Senior QASAS will determine re-inspection requirements.

b. Air Force, Navy, and Marine Corps-managed and/or -owned materiel is functionally cleared by owning service requirements.

c. AMCOM will provide functional clearance requirements for AMCOM-managed materiel.

d. Inert materiel does not require a functional clearance.

e. Materiel not shipped within 360 days from date of functional clearance must have functional clearance updated by LCMC or service.

10–3. Inspection criteria

a. *Joint Munitions Command-managed Army materiel.* Use sample size and criteria in paragraphs 10–4*a* and 10–5*a* to determine the acceptability for FMS shipments and for the outer pack for GRA (see table 10–1). Classification of defects will be according to chapter 2 of this pamphlet and acceptance criteria for defectives will be according to table 10–1.

b. Aviation and Missile Command–managed materiel.

(1) The sample size, defect classification and rejection criteria are contained in the applicable TMs, SBs, or other procedural documents.

(2) Pressurized and desiccated containers will be 100-percent inspected prior to release for shipment to ensure that they have adequate internal pressure and a satisfactory internal relative humidity as specified in the applicable technical manual.

10–4. Materiel acceptability criteria

a. Joint Munitions Command-managed Army materiel.

(1) Small arms tracer ammunition selected for FMS will have a specification trace of 80 percent or greater. Absence of test data will not disqualify a lot from shipment.

(2) Materiel selected for GRA will be CC A quality and comply with issue requirements for the U.S. Army.

(3) Ammunition accepted without waiver of functional deficiencies at an Army ammunition plant may be considered suitable for issue under FMS, provided—

(a) Materiel has had an AI or IRI.

(b) Lots are classified as CC A.

(c) Containers have original manufacturer's seals.

(d) Lots will be shipped before interval of 360 days from date of AI or IRI and functional clearance.

(e) Functional clearance is requested and received from JMC (AMSJM–QAS).

(f) If shipment is not executed within 360 days from date of AI or IRI, apply normal FMS inspection procedures.

(4) Materiel selected for FMS or GRA will be afforded preservation and packaging level A/B except for parcel post and air shipment for which level B/B is authorized as stated in AR 700–15. Guidance for less than level A/B packaging and preservation will be contained in the requisition and annotated on the MRO as exception data.

(5) Ammunition with the following conditions will not be released by the local quality assurance and/or ammunition surveillance organization without written authorization from JMC (AMSJM–QAS). Materiel that does not meet the prescribed standards will be reported by the site and/or activity to JMC (AMSJM–QAS) for waiver of deviation consideration and customer acceptance. Where applicable, provide detailed deficiencies and rework requirements (preservation, packaging, and maintenance) to include estimated cost(s).

(a) Restricted from issue or use for any reason.

(b) Accepted at time of manufacture or renovation under a waiver that affects safety, reliability, interchangeability, specified performance characteristics, or maintainability.

(c) Appearance of the item or its related packing undesirable in that it could cause an unfavorable reaction from the customer.

(d) Preservation and packaging level is less than that prescribed by AR 700–15 based upon item, package configuration, shipment mode, and handling conditions, and storage conditions.

(6) Bulk propellant, propelling component charges and ammunition components.

(a) Bulk propellant and component charges. Materiel selected for FMS shipment will have a minimum of one year remaining on the loading authorization (as specified at TB 9–1300–385) at the time of shipment unless otherwise authorized by JMC (AMSJM–QAS).

(b) Ammunition components (such as primers, ignition cartridges, or delay elements) selected for FMS shipments will have a minimum of 1 year remaining on the DCT interval unless otherwise authorized by addressee in paragraph 1–7*a*(3).

(c) Materiel selected for GRA shipments will be CC A quality and comply with those issue requirements for the Army.

(7) HE and white phosphorous fixed and semi-fixed ammunition, mortar ammunition, separate loading projectiles, and separate loading propelling charges with less than 100 rounds per lot will not be issued for GRA or FMS shipments, unless specifically authorized in the LOA, or the quantity requisitioned is less than 100 rounds.

(8) Tag end lots of ammunition and specifically a lot for which the quantity remaining is less than a standard pack will not be utilized for GRA or FMS unless authorized in the command letter of authorization, or the quantity required is less than one standard pack.

b. Aviation and Missile Command–managed materiel.

(1) All materiel selected for shipment under the FMS will be subjected to a PII prior to release for shipment. This inspection will be performed according to the applicable ammunition surveillance procedure and technical manuals.

(2) All outstanding URGENT MWO must be applied to materiel selected for FMS shipment prior to the required PII.

(3) All other MWOs should be applied to materiel selected for FMS shipments prior to the required PII. Exceptions to these criteria, which must have prior approval from AMCOM, are as follows:

(a) Modifications developed for limited geographical application that is not required by the recipient.

(b) Modifications that are not available and application would delay the scheduled shipment release date.

(4) Missiles, rockets, and related separately packaged components selected for shipment to FMS customers must have at least 50 percent or 4 years, whichever is less, of the established shelf life remaining at the time the shipment is released to the carrier at the point of origin. Materiel selected for shipment to GRA customers must have at least 2 years of the established shelf life remaining at the time the shipment is released to the carrier at the point of origin.

10–5. Special instructions

a. Joint Munitions Command–managed Army materiel.

(1) Renovated or reworked ammunition.

(a) Package renovated or reworked ammunition according to the applicable drawing for the item concerned.

(b) Ammunition previously renovated or reworked and meeting the requirements of this pamphlet is suitable for GRA or FMS.

(c) Ammunition that is renovated or reworked to fill a GRA or FMS requirement must meet the requirements of this pamphlet.

(d) Ammunition requiring a post renovation test will be tested prior to release for shipment.

(2) Marking defects.

(a) Marking defects that do not exceed the limits established by the inspection criteria of this supply bulletin are acceptable.

(b) Apply address marking according to the latest revision of MIL–STD–129, AR 725–50, and special instructions as may be furnished by the Security Assistance case manager.

(c) Lots of ammunition marked with AIC or Federal stock number in place of the NSN and DODIC are acceptable. The DD Form 1348–1A and document accompanying the shipment must either reflect the AIC, the Federal stock number and DODIC, or the correct NSN and DODIC. If the ammunition requires reworking, the correct NSN and DODIC will be applied according to applicable drawings.

(d) Weapon model designation on boxes need not be corrected to comply with drawing requirements unless containers required reworking at which time weapon designation will be applied according to applicable drawings.

(e) Changing the nomenclature from "shell" to cartridge on the round, container, or box is not required unless the round, container, or box requires reworking. Items containing both nomenclatures within a lot (such as cartridges on boxes and fiber containers, and shell on round) are acceptable.

(f) Mark light boxes (less than a standard pack) in accordance with AMC drawing 8796522. (Available at https://acc.dau.mil/communitybrowser.aspx?id=692579).

(g) When obliteration is done during processing through maintenance, packing or renovation facilities, completely paint the entire side, top, or end with sufficient coverage to effectively prevent "bleeding through" of previously applied markings.

(h) The color of the obliterating paint, or lacquer used will match as closely as possible the color of the boxes or containers. Care will be exercised when obliterating and remarking cleats of boxes to ensure that the color of the paint, size of lettering, and position of stenciling will clearly identify the contents and not cause misinterpretation of applicable color markings for practice, smoke, or chemical ammunition.

(i) Remarking will be according to the packing and marking drawing for the item concerned.

(j) When impressed marking is obliterated, stencil the new marking on the opposite side of the box. Stencil destination marking on the obliterated, impressed marking side of the box. Boxes previously stenciled over the obliterated impressed marking are acceptable if the stenciling is legible and the obliteration was accomplished over the entire panel of the box.

(k) Obliteration, when required, must be consistent throughout a lot (such as same color or paint, enamel, or lacquer; uniform coverage; and uniform lettering).

(l) Obliterated impressed marking on metal components due to changes in production or modification is acceptable if covered by X punch or knurling. When X punch or knurling is not feasible due to hardness of metal or possibility of component deformation, the markings may be obliterated with black paint or lacquer. Obliteration will be applied neatly. New markings will be applied by stamping or stenciling as appropriate. Recipient will be advised that items have been remarked to comply with the proper nomenclature and that serviceability and reliability are not affected.

(m) The following paint and stencil ink specifications are authorized for obliteration and remarking of materiel required for GRA and FMS:

1. MIL–P–52108 (MR), water emulsion paint for stenciling and obliteration.
2. A–A–208, Type I, opaque stencil marking ink for nonporous surfaces.
3. A–A–208, Type II, opaque stencil marking ink for porous surfaces.
4. A–A–208, Type III, opaque stencil marking ink for both porous and nonporous surfaces (applied by a pressurized container).
5. A–A–208, Type IV, opaque stencil marking ink for both porous and nonporous surfaces (applied by a stencil roller).

(n) Marking obliteration should be done according to the current MIL–STD–129. Repainting should be done with sand color paint for natural color wood boxes and remarked in black. For dark wood or weathered boxes use olive drab paint with yellow markings.

(o) All items selected for shipment to GRA or FMS recipients will have “U.S. Army” markings deleted.

1. When loss of paint coverage is excessive, complete repainting will be required. Metal containers metal boxes, or metal crates that have minor scratches and small unpainted areas which would present an unsightly appearance if retouched, may be shipped without repainting. Where packing supports in containers causes loss of paint coverage, repainting is not required (unless rust or corrosion is present).

2. Metal strapping or wire bands must be properly and uniformly applied and must be tight. Tightening of existing loose wire bands is permissible by utilizing a suitable wire-crimping tool to crimp the wire and staple the crimp to the box. Staples will be sufficient length to afford strength without protruding through the thickness of the applied surface. If wire bands are replaced with metal strapping, it is permissible to cover box markings if no unmarked spaces are available and if essential markings such as lot numbers are not covered. The same type of wire strapping will be used on an individual box. However, wire and strap banding are permitted within a lot. Flat steel strapping, specification ASTM–D3953, is the authorized strapping for GRA or FMS shipments. Lots presently banded with other strapping, which is satisfactory in appearance and application, are acceptable. Only authorized strapping will be used when strapping is replaced due to reworking of materiel, poor appearance, rust on loose bands, and so forth. Palletized projectiles or bombs (empty or loaded), required for GRA or FMS will be strapped using steel strapping, specification ASTM–D3953.

3. Minor rust or corrosion on hasps, hinges, or screw heads is acceptable. Major rust or corrosion on hardware will be removed. Where the protective plating is affected by removal of rust or corrosion, the hardware will be painted the same color as the box.

4. Boxes with dry rot, termite infestation, or other conditions conducive to eventual complete deterioration of the wood or having appearance of weathering or abuse are not acceptable.

5. Boxes with cleats in different positions (vertical and horizontal) or without cleats within a lot are acceptable if the box meets all other requirements.

6. Fiber containers opened for inspection or rework operations will be resealed using tape of the same type and size if the container meets appearance standards. If minor fraying occurs during removal of old tape and the waterproof impregnated layer beyond the area normally covered by tape are not destroyed, the container is considered acceptable. It is acceptable to use a wider tape of the same type to cover frayed edges at time of resealing when waterproof impregnated layer is destroyed. Re-taping to merely cover frayed edges is not considered necessary. Fiber containers opened for inspection will be resealed with tape pressure-sensitive adhesive, plastic film, filament reinforced, MIL–T–43036 if tape of original type and color is not available.

7. Discoloration or fingerprints on cartridge cases or marks on base caused by felt pads and chipboard fillers are acceptable if no active corrosion is present. Efforts will be made to improve the appearance of the cartridge case base if reworking is required.

8. Fixed and semi-fixed ammunition assemblies with fired or resized cartridge cases are not acceptable for FMS.

9. Containers with tear strips or other self-destroying closing devices that destroy the hermetic seal when opened for any required sample inspection will be acceptable when lids are resealed by means of three wraps of plastic film, pressure sensitive, and filament reinforced adhesive tape (see MIL–T–43036). A pull-tab is also required for easy removal of the tape.

b. *Aviation and Missile Command–managed materiel.*

(1) A QASAS will select samples and samples must be representative of the entire lot under evaluation. The evaluation will include overall condition of the lot in storage.

(2) Rebuilt, repaired, or modified materiel must conform to applicable standards and drawing requirements.

(3) All items selected for shipment to FMS recipients will have "U.S. Army" markings deleted.

(4) Spot paint is allowable provided it does not detract from the appearance of the item and is not on a critical surface. Paint used for spot painting will blend as nearly as possible with the original paint. Brush marks are allowable if runs or sags are not evident. These criteria also apply to spot painting of containers, except that minor scratches (those not exposing the surface) need not be spot painted if they do not materially detract from the appearance of the containers.

(5) Containers with tear strips or other self-destroying closing devices that destroy the hermetic seal when opened for any required sample inspection will be acceptable when lids are resealed by means of three wraps of plastic film, pressure sensitive, and filament, reinforced adhesive tape (see MIL–T–43036) A pull-tab is also required for easy removal of the tape.

(6) Obliteration of box or container markings will be accomplished as specified by the current MIL–STD–129. The color of the obliterating paint, enamel or lacquer will match the original basic coloring of the boxes or containers, as nearly as possible. Sand color (30277 of Federal Standard 595) will be used on unpainted wooden boxes for obliteration of old

markings. The same color and kind of ink will be used to obliterate original markings on any package surface. Embossed markings will be sanded or planed smooth or the panel(s) reversed and the corrected markings applied to match the balance of the markings on the box.

(7) Metal strapping or wire bands must be properly applied, uniform, and secured. Tightness should be determined by using procedures contained in AMC Drawing 19–48–4116–20 PA 1002 (Unitizing Procedures for Boxed Ammunition and Components in Palletized Units-Strapped). (Available at https://mhp.redstone.army.mil/modules/asis/spi.aspx.)

(8) Boxes with evidence of dry rot, termite infestation, or other conditions conducive to deterioration of wood or boxes or giving the appearance of weathering or abuse are unacceptable. Boxes must be serviceable.

(9) Items produced and accepted under various waivers and deviations, as indicated by remarks on DD Form 1650 or log books, requires AMCOM clearance prior to FMS shipment. Some clearances may also require customer approval.

10–6. Shipment procedures for Joint Munitions Command-managed Army materiel

a. Forward REPSHIP notification to JMC for all GRA or FMS shipments. Local transportation officers will provide a REPSHIP electrical transmission message is within three days of shipment.

b. Forward DD Form 1650 for SAP shipments to the designated recipient in accordance with DOD 4000.25–8–M. One copy of the DD Form 1650 for each item or lot will accompany FMS shipments according to DOD 5160.65M. Purified copy of DD Form 1650 will be furnished or reviewed by JMC (AMSJM–QAS) as part of the functional clearance process. Purify DD Form 1650 to eliminate waiver or deviation remarks that may be misconstrued by a recipient country.

c. Do not ship DA Form 3022–SG or other quality management information for FMS or GRA shipments.

Table 10–1
Sample size and acceptance criteria for foreign military sales and grant aid

Lot size	Sample size	Defective					
		Critical		Major		Minor	
Item lot size		Accept	Reject	Accept	Reject	Accept	Reject
5000 or less	40	0	1	0	1	1	2
5001 –20,000	80	0	1	1	2	3	4
20, 001 or more	120	0	1	2	3	4	4
Small arms ammunition lot size (up to .50 caliber)	450	0	1	7	8	19	20
Number of inner packs in lot							
5000 or less	40	0	1	0	1	1	2
5001 – 20,000	80	0	1	1	2	3	4
20,001 or more	120	0	1	2	3	4	5
Number of outer packs in lot							
5000 or less	40	0	1	0	1	1	2
5001 – 20,000	80	0	1	1	2	3	4
20,001 or more	120	0	1	2	3	4	5

Chapter 11
Records and Reports

11–1. Technical history

a. The surveillance organization maintains the technical history of each lot, serial, or group documenting results of each inspection, test, investigation, and any unusual or changing condition affecting the ammunition. The technical history of materiel is an important record used in evaluating the serviceability and reliability of ammunition items, and it is important that all data recorded for inspections, tests, and investigations be accurate and concise.

b. The type of information required for recording and reporting is dependent on the type of information required by the organizations supported by surveillance, that is, supply, maintenance, and stockpile reliability organizations.

(1) The information required for supply purposes is determined by local procedures for satisfying local and higher headquarters supply actions. For example, corrective actions required prior to shipment.

(2) The information required for maintenance purposes normally is more detailed on the extent of deficiencies and work required to return the item to an issuable condition.

c. Required information includes the following:

(1) Condition of materiel.

(2) Quantity.

(3) Date of manufacture.
(4) Type of storage.
(5) Type of defects.
(6) Assignable cause of defect.
(7) Results of tests.

11–2. Records

a. DA Forms 3022–SG.

(1) Prepare and maintain DA Forms 3022–SG in an up-to-date status for each lot, serial, or group of ammunition in storage. Use these forms at all organizations that store ammunition or explosives at any level above the user level (that is, depots, theater storage areas, corps storage areas, ASPs, ammunition transfer, and handling points). DA Form 3022–SG contains information on the technical history of the materiel such as the results of each investigation, examination, test, any unusual or changing condition affecting the ammunition, and type of storage.

(a) Record all inspection results and other technical history in the MHP.

(b) Do not maintain a printed "hard copy" system.

(2) Use all DA Form 3022–SG data fields unless the QASAS in charge determines that a certain data field is not applicable at a particular location. It is the responsibility of the QASAS performing the last inspection to assure that all data fields in use contain accurate and up-to-date information.

(3) The recorded inspection remark will contain:

(a) Date of inspection.

(b) Type of inspection accomplished.

(c) CC.

(d) Number of samples. Include a statement concerning the source of the samples inspected, ensuring that the requirements of table 2–2 and accompanying Note 1 are satisfied. "Inner pack and item samples must be selected from a minimum of 10 outer packs. Additional outer packs must be inspected at either the inspection or storage location(s) to make a total sample size of 20." Example statement "Inspected 20 items from 10 outer packs. Additional 10 outer packs were inspected (at storage location or inspection location)."

(e) Inspection reference(s).

(f) Approximate quantity. Quantity is for information only, is not intended as a stock record requirement, and will not be used if prohibited by a security classification.

(g) Type of storage.

(h) A brief and accurate description of conditions encountered to include packaging unitization information, and type banding. Remarks will include the defect codes that best identify the defects observed during the inspection.

(i) Statement of actions taken and assignment of CC.

(j) Status of missile alteration or MWO (if applicable).

(k) Pertinent reference to documents other than normal inspection references such as DA Forms 2415 and memoranda of disposition.

(l) QASAS identification. The completed inspection will reflect the name of the QASAS who conducted the inspection.

(m) The latest entry should be compared with previous inspection results given on the DA Form 3022 -SG for possible findings that may require additional action.

(4) DA Forms 3022 -SG for missile materiel will normally be prepared for each lot or SN item.

(5) Exceptions from the requirement to prepare and maintain DA Forms 3022–SG:

(a) Test samples held at the test site.

(b) Army ammunition plants need not prepare DA Forms 3022 SG for new materiel in the industrial account, provided no significant events necessitating a DA Form 3022–SG entry (such as suspensions, restrictions, releases, special inspections, or conditions code changes) occur. Processed industrial stocks, which have not yet "been accepted" by the Government, will have DA Forms 3022–SG initiated as specified by appropriate regulatory requirements. For materiel identified as "work in process," logbooks containing pertinent information may be used in lieu of DA Form 3022–SG If lots are shipped prior to initiation of DA Forms 3022–SG, shipping documents will be annotated with a statement that DA Forms 3022–SG have not been initiated; reference this paragraph.

(c) Combat load, basic load, and/or operational load munitions.

b. Ammunition suspension record.

(1) Suspend ammunition suspected of being unsafe or containing a critical defect to prohibit its issue and use. The ammunition surveillance organization will base actions on malfunction or accident reports, function test reports, and inspection reports.

(a) JMC and AMCOM disseminate Army NARs and MSNs, respectively.

(b) Other service suspensions are covered in may be checked at the (GACP) Web site at https://www.my.af.mil/ammoprod/wm/ (Air Force) and Naval Supply Systems Command - NAVSUP Logistics Operations Center Web site https://www.ois.disa.mil/portal/nolsc (Navy and/or Marine Corps).

(c) In accordance with JMC guidelines, a temporary suspension issued by the Army, Navy, Air Force, or Marine Corps applies to all stocks regardless of owner. If a service does not agree with the temporary suspension it will release its stocks; that release applies only to that service's stocks. A permanent suspension issued by the Army, Navy, Air Force, or Marine Corps applies only to stocks of the service issuing the permanent suspension. Permanent suspensions issued by any service will apply to stocks in the DEMIL accounts unless JMC (AMSJM–QAS) nonconcurs in the suspension action.

(2) The ammunition surveillance organization is responsible for control of suspended stocks and for maintaining the installation's master suspension records. The ammunition surveillance organization is also responsible for ensuring that suspended items that are restricted from handling or movement are not moved, handled, or shipped except as specifically authorized by higher headquarters. Monitor munitions locally issued for training for suspensions.

(a) Appropriately identify suspended stocks in storage using DD Form 1575 (Suspended Tag-Materiel) or DD Form 1575–1 (Suspended Label-Materiel) to preclude unauthorized handling or issue.

(b) In addition to applicable information as requested on the form, annotate the tag with one of the following remarks as applicable:

1. "Suspended—Issue Prohibited."
2. "Suspended from Issue, Movement, and Use."
3. "Suspended Except for Emergency Combat Use."

(c) Lettering will be the largest possible that is compatible with the forms. OCONUS commands may fabricate and use multilingual versions of forms, as needed.

(d) Attach forms to the affected lot's stack in storage and to the magazine data card to preclude loss during magazine storage operations. Verify presence of suspension tags during each magazine inspection. Suspension control during non-duty hours. The ammunition surveillance organization will establish an after duty hours procedure to ensure that all suspension and/or restriction messages are received at a monitored work station. As a general rule, the suspension and/or restriction message should be sent to the installation and/or organization operations center, range control, or other locally designated office. The message recipient will establish procedures to notify the supporting ammunition surveillance organization designated on-call point of contact of any suspension and/or restriction message directing assignment of CC J. The supporting ammunition surveillance organization on-call point of contact will take appropriate action based on items issued to support ongoing training.

c. Ammunition gage record card. DA Form 3023 (Gage Record Card) is received with each gage and includes pertinent gage information. Maintain the card in an up-to-date manner with the record of actual gage usage recorded on the reverse side. Use the DA Form 3023 to determine when gages should be submitted for a dimensional check. Return gage record cards with gages requiring use-test checks.

d. DD Form 1650. The appropriate ammunition operations organization will prepare new or revised D when ammunition is renovated, inspected 100 percent for critical defects, modified or regrouped. The ammunition surveillance organization will review and approve all locally prepared DD Form 1650s. Requirement for new DD Forms 1650 are outlined in MIL–STD–1168 and specific instructions from LCMC. Revised DD Form 1650 will be forwarded using the MHP.

e. Equipment logbooks and maintenance logs. Maintain results of inspection and maintenance of test and handling equipment on applicable forms according to DA Pam 750–8.

f. Materiel condition tags and labels.

(1) Prior to shipment, affix materiel condition tags, or labels to all materiel destined for Navy or Marine Corps use.

(2) Use tags or labels to identify suspended stocks and to identify containerized chemical surety munitions.

g. Lot cluster logs. Maintain a log for each cluster that identifies all lots belonging to the cluster.

(1) Minimum data elements required for creating a local log are: Index #, Item Description CC, Lot Number, an entry indicating which lot was inspected, representative of the cluster, date inspected. Maintain a master log to identify all lot clusters.

(2) A local data base system using data elements from paragraph 11–2*g* (1) meet the requirements for lot cluster logs.

11–3. Reports

a. DA Form 2415. This form is used to report failures, discrepancies, and other conditions of ammunition materiel. The instructions for use, completion, and distribution of DA Form 2415 are outlined in DA Pam 750–8.

b. SF 368. This form is the authorized means for users of Army materiel to report:

(1) Equipment faults in design, operations, and manufacturing.

(2) Equipment improvement recommendations for Army materiel.

(3) Unsatisfactory new equipment received that is a direct result of below standard quality or workmanship.

(4) Report SF 368 for Army-owned or managed ammunition in accordance with AR 702–7 using the NAVSEA Web-based automated Product Data Reporting and Evaluation Program (PDREP). PDREP is accessible via MHP.

c. *SF 364 (Report of Discrepancy) (ROD).* This form is used for reporting and adjusting supply discrepancies related to shipments with damage due to improper unitization, packaging, preservation; and with incorrect shipping markings, quantity or documentation in accordance with AR 735–5.

d. *DD Form 361(Transportation Discrepancy Report) (TDR).* Report shipments received at an installation that are astray, lost, or damaged; improperly blocked and braced; incompatible; handled improperly by carrier; tender or use of carrier's inadequate equipment or facilities; misdirected shipments; improper documents; or shipped in violation of military regulation on DD Form 361 according to DOD 4500.9–R.

e. *DA Form 3524–R (Small Arms Ammunition Trace Test Record) (LRA)* Use the small arms ammunition trace test record for recording and reporting the trace test results according to SB 742–1305–94–20 (available at https://www.logsa.army.mil/).

f. Submit reports of explosions, chemical agent releases, and serious accidents in accordance with AR 385–10 and applicable supplements.

g. *DD Form 250.* User will process all the actions related to DD Form 250 in the Wide Area Workflow-Receiving Report Access to Wide Area Workflow-Receiving Report's Web site is available at https://wawf.eb.mil/.

11–4. Distribution of DD Forms 1650 and DA Form 3022–SG to Army activities

DD Forms 1650 and DA Forms 3022–SG are important documents for activities that store, ship, receive, or issue ammunition. Use MHP for the storage and retrieval of DA Forms 3022–SG. Do not forward the DA Forms 3022–SG to the receiving activity if MHP is available to both, shipper and receiver. If MHP is not available to either shipper or receiver, transmit the DA Form 3022 -SG by fax or email.

11–5. Distribution of DD Forms 1650 and DA Forms 3022–SG to other than Army activities

a. For all Navy and Marine Corps shipments, forward one copy of the DD Form 1650 and DA Form 3022–SG for each lot or serial numbered item of ammunition to the consignee utilizing DA Form 200 (Transmittal Record). For Air Force shipments, distribute according to Technical Order 11–A–1–10, which specifies to both mail and send the DD Form 1650 and/or DA Form 3022–SG and/or surveillance records with the ammunition shipment.

b. Do not provide DA Form(s) 3022–SG to FMS or security assistance customers. Provide DD Forms 1650 to these customers (see chap 10).

11–6. Reporting of offshore procured ammunition

a. There is ammunition in or entering the Army Inventory that was manufactured in foreign countries. This ammunition is commonly called "offshore procured ammunition" and may or may not have restrictions on its use by U.S. Forces.

b. If during inspection it is determined that the ammunition is offshore procured and there is a question as to the authorization for issue and use by U.S. Forces, assign CC J. Report the lot to the appropriate LCMC, regardless of quantity. Reported data will include nomenclature, NSN, lot number, pack, manufacturer markings, and details. The report should also include a request for appropriate technical data, including item specific inspection criteria. Send report to JMC (AMSJM–QAS) or AMCOM, as appropriate.

c. For ammunition which there is no question as to the authority for existence in the stockpile for use by U.S. Forces, assign the appropriate CC based on inspection and test conducted according to this publication.

Appendix A

References

Section I

Required Publications

AR 75–1
Malfunctions Involving Ammunition and Explosives (Cited in para 3–2*b*(4)(*b*).)

AR 385–10
The Army Safety Program (Cited in para 1–5*g*(1).)

AR 385–63
Range Safety (Cited in para 1–5g(1.)

AR 702–6
Ammunition Stockpile Reliability Program (Cited on the title page.)

AR 702–12
Quality Assurance Specialist (Ammunition Surveillance) Program (Cited in para 1–5.)

AR 725–50
Requisition, Receipt, and Issue System (Cited in para 2–5*b*(7).)

AR 740–1
Storage and Supply Activity Operations (Cited on the title page, para 1–1.)

DA Pam 385–30
Mishap Risk Management (Cited in para 1–5*g*(4).)

DA Pam 385–40
Army Accident Investigations and Reporting (Cited in para 5–11*a*(3) .)

DA Pam 385–61
Toxic Chemical Agent Safety Standards (Cited in para 8–9*a*.)

DA Pam 385–63
Range Safety (Cited in para 1–5*g*(1).)

DA Pam 385–64
Ammunition and Explosives Safety Standards (Cited in para 1–5*g*(1).)

DA Pam 700–19
Procedures of U.S. Army Munitions Reporting System (Cited in para 7–5.)

TB 9–1300–385
Munitions, Restricted, or Suspended (Cited in para 4–6*e*.)

Section II

Related Publications

A related publication is a source of additional information. The user does not have to read it to understand this publication. DOD publications are available at http://www.dtic.mil/whs/directives/. USC s are available at http://www.access.gpo.gov/uscode/.

APE 1052 series
Air Test Kit

AR 11–2
Managers' Internal Control Program

AR 25–30
The Army Publishing Program

AR 50–6
Chemical Surety

AR 190–11
Physical Security of Arms, Ammunition, and Explosives

AR 690–950
Career Management

AR 700–15
Packaging of Material

AR 702–7
Product Quality Deficiency Report Program

AR 710–1
Centralized Inventory Management of the Army Supply System

AR 710–2
Supply Policy Below the National Level

AR 735–5
Property Accountability Policies

ASTM D3953
Standard Specification for Strapping, Flat Steel, and Seals (Available at http://www.astm.org/standards/d3953.htm)

Bureau of Explosives (BOE) Tariff 6000
(Available at http://www.boepublications.com)

DA Pam 385–24
The Army Radiation Safety Program

DOD 4000.25–8–M
Military Assistance Program Address Directory (available at http://dcmo.defense.gov)

DOD 4160.21–M
Defense Materiel Disposition Manual (Available at http://www.dtic.mil/whs/directives/.)

DOD 5160.65
Single Manager for Conventional Ammunition (Available at http://www.dtic.mil/whs/directives/.)

DODI 4140.62
Material Potentially Presenting an Explosive Hazard (Available at http://www.dtic.mil/whs/directives.)

DTR 4500.9–R
Defense Transportation Regulations (Available at http://www.transcom.mil/dtr/dtrhome/)

Federal Resource Conservation and Recovery Act
(Available at http://www.epa.gov.)

FM 4–30
Ordnance Operations

MIL–B–82647 Bag

Conductive Plastic, Heat–Sealable, Flexible (Available at http://quicksearch.dla.mil.)

MIL–DTL–117H
Detail Specification Bags, Heat-sealable (Available at http://quicksearch.dla.mil.)

MIL–HDBK–1461
Ammunition Manufacturers and their Symbols (Available at http://quicksearch.dla.mil.)

MIL–PRF–131
Barrier Materials, Water/vapor proof, Greaseproof, Flexible, Heat-Sealable (Available at http://quicksearch.dla.mil.)

MIL–PRF–81705
Barrier Materials, Flexible, Electrostatic Discharge Protective, Heat-Sealable (Available at http://quicksearch.dla.mil.)

MIL–STD–129
Military Marking for Shipment and Storage (Available at http://quicksearch.dla.mil/.)

MIL–STD–652D
Propellants, Solid, for Cannons Requirements and Packing

MIL–STD–1168C
Ammunition Lot Numbering and Ammunition Data Card

MIL–STD–1916
DOD Preferred Methods for Acceptance of Product

MIL–STD–2073
Standard Practice for Military Packaging

MIL–T–43036
Tape, Pressure-Sensitive Adhesive, Plastic Film (for Sealing Fiber Containers and Cans) (Per http://quicksearch.dla.mil specification inactive, however stocks meeting this SPEC can be used until supplies exhausted.)

NAVSUP P801
Ammunition Unserviceable, Suspended and Limited Use

SB 725–12
Nonexpendable Reusable Shipping and Storage Containers (Available at https://www.logsa.army.mil/.)

SB 742–1305–94–20
Small Arms Ammunition Trace Testing (Available at https://www.logsa.army.mil/.)

SB 755–1
Disposition of Used Ammunition Packing Material and Certain Specified Ammunition Components (Available at https://www.logsa.army.mil/.)

Surgeon General Directives
(Available at http://www.surgeongeneral.gov/)

TB 700–2
Preparing Hazardous Materials For Military Air Shipments (Available at https://www.logsa.army.mil/.)

TO 11A–1–10
(Available at https://www.my.af.mil/ammoprod/wm/.)

U.S. Army Environmental Hygiene Agency Technical Guide Number 146
(Available at http://phc.amedd.army.mil/organization/institute/dehe/pages/hmwp.aspx.)

40 CFR
Protection of Environment (Available at http://www.gpo.gov/.)

42 USC 2011
Atomic Energy Act of 1954

46 CFR
Shipping

49 CFR
Transportation

Section III

Prescribed Forms

Unless otherwise indicated, DA forms are available on the Army Publishing Directorate Web site (http://www.apd.army.mil); System Generated (SG) forms are available on the Munitions History Program (MHP) Web site at https://mhp.redstone.army.mil/mhpmain.aspx.

DA Form 984
Munitions Surveillance Report (Prescribed in paras 4–8*d*.)

DA Form 3022
Army Depot Surveillance Record (Prescribed in para 2–2*b*(1).)

DA Form 3022–SG
Army Depot Surveillance Record (Prescribed in para 2–2*b*(1).)

Section IV

Referenced Forms

Unless otherwise indicated, DA forms are available on the Army Publishing Directorate (APD) Web site (http://www.apd.army.mil); DD forms are available on the Office of the Secretary of Defense (OSD) Web site http://www.dtic.mil/whs/directives/forms/index.htm. Standard Forms (SF) are available on the U.S. General Services Administration (GSA) Web site (http://www.gsa.gov/portal/forms/type/sf). System Generated (SG) forms are available on the Munitions History Program (MHP) Web site at https://mhp.redstone.army.mil/mhpmain.aspx.

DA Form 200
Transmittal Record

DA Form 2028
Recommended Changes to Publications and Blank Forms

DA Form 2415

Ammunition Condition Report

DA Form 3023
Gage Record

DA Form 3524–R
Small Arms Ammunition Trace Test Record (LRA)

DA Form 4379
Ammunition Malfunction Report

DA Form 4379–1
Missile and Rocket Malfunction Report

DA Form 4379–SG
Ammunition Malfunction Report

DA Form 4379–1–SG
Missile and Rocket Malfunction Report

DD Form 250
Materiel Inspection and Receiving Report

DD Form 361
Transportation Discrepancy Report (TDR)

DD Form 626
Motor Vehicle Inspection (Transporting Hazardous Materials)

DD Form 1348–1A
Issue Release/Receipt Document

DD Form 1575
Suspended Tag-Materiel (Available through normal supply channels.)

DD Form 1575–1
Suspended Label-Materiel (Available through normal supply channels.)

DD Form 1576
Test/Modification Tag - Materiel (Available through normal supply channels.)

DD Form 1577
Unserviceable (Condemned) Tag - Materiel (Available through normal supply channels.)

DD Form 1650
Ammunition Data Card

SF 364
Report of Discrepancy (ROD)

SF 368
Product Quality Deficiency Report (PQDR)

Appendix B

Munitions History Program

B–1. General

MHP is a Web-based application that supports the Army's ammunition surveillance mission. The application provides a fully integrated solution for munitions information. Ammunition related modules and functionality continue to be added as the Army moves toward consolidation and centralization. MHP provides ammunition managers at all levels with a universal data management system that is fully deployable, easy to use, and allows maximum flexibility for a true "Train Once - Deploy Anywhere" System.

B–2. Web access

MHP can be accessed through a Web browser at https://mhp.redstone.army.mil. MHP uses PKI authentication which requires a DOD approved certificate. All users must register in order to access MHP and submit a request for the functionality that is needed. Access requests are approved by the JMC administrator.

B–3. Application

MHP has been a cost effective and efficient vehicle to automate the Army's ammunition business processes, provide data integrity, and establish one location for reliable accessibility MHP is an evolving application that is continuously enhanced to meet the needs of the ammunition community. Currently MHP is used for the following core ammunition business processes:

a. *Inspection module.*

(1) Contains inspection data for both wholesale and retail.

(2) Interfaces with accountability systems.

(3) Ability to search and view all approved inspections and legacy DA Forms 3022–SG.

(4) New inspection process - inspections are submitted and go through an approval process.

(5) Ability to upload inspections produced from Stockpile Reliability Program QASAS User Inspection Device.

(6) Ammunition Surveillance Information System module.

(7) Contains ammunition related Army publications, drawings, inspection videos and other ammunition related information.

b. *Notices module.*

(1) Contains important ammunition safety information, including reclassification notices, AINs, MINs, TB 9–1300–385, and malfunctions.

(2) Includes reports that provide analysis tools for suspensions.

(3) Contains malfunction process for both AMCOM (Guided Missile Malfunction) and JMC (Malfunction Investigation File).

c. *Ammunition Stockpile Reliability Program module*

(1) Create ammunition stockpile assessments including propellant stability data.

(2) Report ammunition stockpile assessments including propellant stability data.

(3) Retrieve ammunition stockpile assessments including propellant stability data.

d. Defense Ammunition Center applications module.

(1) Contains processes that are controlled by DA Civilian.

(2) Includes ammunition multimedia encyclopedia, Conventional Ammunition Packaging and Unit Data Index, Joint Hazard Classification System, Explosives Safety Mishap Analysis Module, and Interim Hazard Classification System.

B–4. Munitions History Program modules

In addition to the ammunition business processes, MHP provides a variety of reports that are useful for information, research, reporting and workload management.

a. *Inspection reports.*

(1) *Serial history report* Displays inspection history of specific SN.

(2) *Date of next inspection report.* Displays items due for inspection according to the next inspection date.

(3) *Department of Defense activity address code inspection get well plans.* An Excel based report that informs inspectors which items require immediate inspection, future inspection, or are past due.

(4) *Condition code comparison report.* Allows ammunition managers to compare items according to "Before and After CC as entered on the inspection during a specified time period.

(5) *Logistics Modernization Program work loaded.* A report used to determine if a particular inspection lot or batch number has been work loaded into MHP from LMP.

(6) *Logistics Modernization Program inspection tracker:* This report provides a history of inspection lots transmitted between LMP to MHP.

(7) *Defect report.* Generates a report with all defect codes for specified items

(8) *Next storage monitoring inspection report.* Shows items that have an SMI date within the specified range

(9) *Lot report.* This report lists the date and type of next inspection for specified DODAAC and/or unit identification code (UIC).

b. *Management reports.* Inspection due charts:

(1) Indicates PI inspections that are due and/or overdue by UIC and/or DODAAC.

(2) Indicates PI, SIS, and SMI inspections that are due and/or overdue by UIC and/or DODAAC.

(3) Displays the number of reclassifications by DODIC.

(4) On hand specific suspensions (CC discrepancies): Compares the CC for the lot or SN in WARS with the TB.

c. *Suspension reports*. On record and/or TB compares what is on record (in WARS) at your location to the TB transaction history and/or TB comparison report. Compares munitions (from WARS) with certain transaction codes to what is suspended in the TB.

B–5. Munitions History Program help

MHP has extensive help files that provide information on all the above features including the reports listed above. In addition, MHP provides a forum that allows discussions among users.

Appendix C

Ammunition Condition Codes

C–1. General

Ammunition CCs are single letters that classify munitions material. Each ammunition CC identifies degree of serviceability, condition, and completeness (ready for issue and use), as well as actions underway to change the status of the material.

C–2. Application

This appendix defines ammunition CCs.

Table C–1
Ammunition condition codes Continued

Supply condition codes		
Code	Title	Explanation
A	Serviceable (issuable without qualification)	New, used, repaired, or reconditioned materiel that is serviceable and issuable to all customers without limitation or restriction. Includes materiel with more than 6 months' shelf life remaining (*for Army, level of preservation and packaging is not a restriction for issue.)
B	Serviceable (issuable with qualification)	New, used, repaired, or reconditioned materiel that is serviceable and issuable for its intended purpose; however, it is restricted from issue to specific units, activities, or geographical areas by reason of its limited usefulness or short service life expectancy. Includes materiel with 3 through 6 months' shelf life remaining. (*For Army, the manager will not include the level of preservation and packaging as part of the restriction for issue. The item manager will preserve the limits of usefulness or criteria for determining short shelf life. This will be by specific commodity or by item for inclusion within this code.)
C	Serviceable (priority issue)	Items that are serviceable and issuable to selected customers; but they must be issued before supply CC A and CC B materiel to avoid loss as a usable asset. Includes materiel with less than 3 months' shelf life remaining. (*For Army, this includes those items showing deterioration that are suitable for issue as directed by the LCMC).
D	Serviceable (test and/or modification)	Serviceable materiel that requires test, alteration, modification, technical data marking, conversion, or disassembly. This does not include items that must be inspected or tested immediately prior to issue. (*For Army, this includes items that require surveillance, laboratory analysis, functional testing, and technical evaluation by higher authority to verify serviceability.)
E	Unserviceable (limited restoration)	Items that involve only limited expense or efforts to restore to serviceable condition. It is done in the storage activity. (Limited expense or effort is that which is allowable for expenditure by the care and preservation activity under current policies.) May be issued to support ammunition requisitions coded to indicate acceptability of useable condition E stock.
F	Unserviceable (reparable)	Economically reparable items that require repair, reconditioning, or overhaul. (Includes reparable items that. are radioactively contaminated.) Excludes reparable assets which are covered under contract warranty.
G	Unserviceable (incomplete)	Materiel requiring additional parts or components to complete the end item prior to issue.
H	Unserviceable (condemned)	Materiel that has been determined to be unserviceable and does not meet repair criteria; condemned items which are radioactively contaminated; Type I shelf-life materiel that has passed the expiration date; and Type II shelf-life materiel that has passed expiration date and cannot be extended. Refer to paragraph C–39 for serviceability time frames associated with shelf-life items. (*For Army, the item must not contain any components or assemblies to be reclaimed. This includes ammunition, except serviceable surplus or obsolete ammunition authorized for DEMIL.) (Classify obsolete and excess materiel to its proper condition before consigning to the DRMO. Do not classify materiel in supply CC H unless it is truly unserviceable and does not meet repair criteria.)
I	Not assigned	Reserved for future assignment by DOD.
J	Suspended (in stock)	Items in stock that have been suspended from issue pending condition classification or analysis, when the true condition is not known. Includes shelf-life Type II materiel that has reached the expiration date pending inspection, test, or restoration. Refer to paragraph C–39 for serviceability time frames associated with shelf-life items. Also included are items that have been suspended from issue and use pending LCMC investigation or determination of serviceability and munitions items that are being subjected to a malfunction investigation due to an unsafe or other defective condition. Unclassified CC K returns are excluded.
K	Suspended (returns)	Items returned from customers and users suspended from issue pending inspection and condition classification. (includes items that have been identified by stock number and name, but not examined for condition.) These stocks will be inspected and properly classified as to condition according to allowable time standards in chapter 2. When more time is needed because of receipts in large quantities, lack of facilities, lack of personnel, or other circumstances, the accountable supply distribution activity may grant an extension.
L	Suspended (litigation)	Materiel held pending litigation or negotiation with contractors or common carrier. (*For Army, this includes shipments with overages, defects, or other conditions that require negotiations or litigation

Table C–1
Ammunition condition codes—Continued

		with procurement sources or common carrier to determine responsibility or liability for correction. Assets held pending the results of a report of survey are also included. This code should not be used with misdirected shipments.)
M	Suspended (in work)	Items on inventory control record but that have been delivered to and accepted by an Army or DOD maintenance facility or a contractor's plant for processing.
N	Suspended (ammunition suitable for emergency combat use only)	Ammunition stocks suspended from issue except for emergency combat use.
O	Not assigned	Reserved for DOD assignment.
P	Unserviceable (reclamation)	Items that are unserviceable, uneconomically reparable because of physical inspection, tear down, or engineering decision. Item contains serviceable components or assemblies that may be reclaimed.
Q	Suspended	This code is for intra-Air Force use only.
R	Suspended (reclaimed items, awaiting condition determination).	Assets turned in by reclamation activities which do not have the capability (for example, skills, manpower, or test equipment) to determine the materiel condition. Actual condition will be determined prior to induction into maintenance activities for repair and/or modification.
S	Unserviceable (scrap)	Items that have no value except for its basic materiel content. No stock will be recorded as on hand in CC S. This code is used only on transactions that involve shipments to DRMOs. Items will not be transferred to CC S before turn-in to the DRMOs if they are recorded in CC A through CC H at the time they are determined excess. Items identified by NSN will not be identified by this CC.
T/U	Remain unassigned	
V	Unserviceable waste military munitions	Ammunition can be declared to be Waste Military Munitions only under the authority of a designated DOD or Service-Designated Disposition Authority (DDA)
W	Unserviceable (warranted reparable)	Materiel under contract warranty that requires repair, overhaul, reconditioning, or replacement. Includes reparable items that are radioactively contaminated.
X/Y/Z	Not assigned	Reserved for future assignment.

Note: The information that appears after the asterisk (in parentheses) applies to the Army only and should not be misconstrued as part of the DOD standard definition

Appendix D

Instructions for Specific Items

D–1. List of specific items

SB 742–1 provided item descriptions, unique safety precautions, testing and equipment requirements, inspection category, sampling plan, and specific inspection points for a variety of munitions. The information in these appendixes has been moved to the MHP (specific inspection criteria) and as such is considered to be an extension of and to be used in conjunction with this pamphlet.

D–2. Ammunition identification codes

Ammunition lots marked with the AIC in lieu of NSN and DODIC (and otherwise acceptable) will be considered suitable for issue, training or inter-depot shipment without remarking the outer pack or palletized load. Annotation of NSN and DODIC is required only on shipping documents, DD Form 1650, and DA Form 3022–SG. Ammunition lots marked with AIC in lieu of the NSN and DODIC will not be issued for PREPO or combat load. For information pertaining to the correct NSN and/or DODIC for a lot marked only with an AIC, contact JMC (AMSJM–QAS).

D–3. Outdated markings

a. Correct PSNs will normally be on accessible exterior packages prior to shipment. When it can be determined by the shipper that the marking was correct at some previous time, the materiel need not be remarked. Shipping documents will be annotated with the correct PSN.

b. Weapon model designations on boxes and containers need not be corrected to comply with current drawings.

c. Items containing dual nomenclature markings within a lot (for example, “cartridge” on boxes and fiber containers and “shell” on the round) are acceptable.

d. Current markings will be applied whenever items or packaging are marked for other reasons.

D–4. Ammunition manufactured for special purposes

a. Certain lots of conventional ammunition are manufactured for special purposes and are identified as such, through the lot numbering process, in accordance with MIL–STD–1168.

b. For older conventional ammunition not manufactured with the 13 digit lot numbering system, special purpose lots were formerly identified by the use of “PG,” “SR,” “SP,” “A,” “E,” “P” lot interfix, and/or word “PILOT” in the lot number.

c. Ammunition manufactured for special purposes generally is not intended for actual firing as service or training ammunition. Such issues must be specifically authorized by JMC.

D–5. Black banding

New Army ammunition production is required to be palletized with galvanized banding. If any is received with black banding, prepare and submit a SF 368.

D–6. Conventional ammunition in the demilitarization (B5A) account

Note. Following guidance does not apply to guided missiles and rockets (where lot and/or SN accountability is required), Category I and II conventional munitions, separate loading propelling charges, and bulk propellant.

a. Unserviceable conventional ammunition in DEMIL accounts may be assigned to aggregate lots providing the following criteria are met:

(1) The number of lots per aggregate lot number is limited to 25.

(2) All lots are of the same DODIC and/or NSN.

(3) All lots are in the same CC.

(4) No lots are suspended from issue, movement and use Suspended from Issue Movement and Use (SIMU).

(5) No ‘Unknown’ or ‘None’ lots are contained within any aggregate lot.

b. Where this procedure is applied, all lot numbers that constitute an aggregate lot will be listed on the applicable DA Form 3022–SG for the aggregate lot. Aggregate lots will be assigned lot number “MIXED–XXX” where “XXX” is a sequential number. Local procedures will be developed to limit the quantity of individual lots consistent with safe and efficient operations. When this is done, lots making up an aggregate lot may be stacked together in storage, and SIS inspection may be based on sample taken from one of the constituent lots.

D–7. Items belonging to other Services or non-Department of Defense activities

a. Most conventional ammunition items belonging to other services and stored at CONUS installations by the Army will be inspected and tested in accordance with DOD 5160.65–M. JMC (AMSJM–QAS) is the focal point for QA matters concerning SMCA field service stocks.

b. Munitions stored for other government agencies not covered by SMCA or private contractors are subject (as a minimum) to a RI and SIS.

c. Additional inspection procedures and their frequencies will be specific in the appropriate support agreement or memorandum with the owner. This includes, but is not necessarily limited to, foreign, experimental, and test ammunition.

D–8. Items that have not been hazard classified

a. Items that have not received a hazard classification in accordance with TB 700–2 must be considered Hazard Class/Division 1.1 Compatibility Group L for storage.

b. These items cannot be cleared for shipment except that captured military ammunition of unknown characteristics can be shipped by military air from one military airfield to another military airfield.

c. Item hazard classification must be requested from Director, U.S. Army Technical Center for Explosives Safety in accordance with the procedures of TB 700–2.

d. The primary source for determination of item hazard classification data is the Joint Hazard Classification System available in MHP.

D–9. Permanent suspension of material in single manager for conventional ammunition accounts

a. Permanent suspension action pertains only to assets of the service issuing the suspension. This appendix pertains only to assets suspended by the issuing service that are in or are transferred into the SMCA (Army) DEMIL accounts (B5A or local accounts).

b. Non-SMCA ammunition, for example, Navy torpedoes, Air Force missiles, will be conditioned coded in accordance with permanent suspension actions of the developing service, regardless of owner account.

c. For all other SMCA-managed items, when required, JMC, Surveillance Division will issue a NAR indicating the disposition of stocks in Army accounts for each permanent suspension action issued by other services.

D–10. Identification of ammunition stored in Southwest Asia during Desert Storm and/or Desert Shield

a. Material that was on the ground in SWA during Desert Storm and/or Desert Shield is identified by the lot type designator code "Y". The use of this "Y" identifier does not apply to ammunition materiel used during Enduring Freedom and/or Iraq Freedom.

b. In accordance with MIL–STD–1168C, the lot type identifier code is to be found in the tenth position of the lot number. For example, ammunition lot LOW89C003–002 becomes ammunition lot LOW89C003Y002. The "Y" will replace any previous lot type identifier. For example, lot number LC–85D002L004 becomes lot number LC–85D002Y004. It is imperative to include a remark in the DA Form 3022–SG and DD Form 1650 that identifies the previous type of lot identifier code that the "Y" replaced. See TB 9–1300–385 introduction for additional information. Navy and/or Marine Corps AIN 030–2001 will apply to single-managed items owned and used exclusively by the Navy or Marine Corps.

c. For older type lot numbers, the "Y" should be added at the end of the lot number preceded by a dash to allow for a lot suffix. For example, lot LS–23–5 becomes lot LS–23–5–Y: a suffixed lot: lot number LOP–1–2A becomes lot number LOP–1–2AY.

d. For new format propellant lot numbers with the 0 (zero) in the 8th position: "Y" will be placed in the 8th position. For example, IND88A–070804 becomes IND88A–Y70804. For new propellant lot numbers with alpha character in the 8th position" "Y" will replace any previous lot identifier. For example, IND88A–G70804 becomes IND88A–Y70804. It is imperative to include a remark in the DA Form 3022–SG and DD Form 1650 that identifies the previous type of lot identifier code that the "Y" replaced. For old format propellant lot numbers: "Y" should be added at the end of the lot number preceded by a dash to allow for a lot suffix. For example, RAD–65268 becomes RAD–65268–Y; IND–BR–66007 would become IND–BR–66007–Y; a suffixed lot: lot number RAD–65268A becomes RAD–65268AY.

e. DD Forms 1650 with the "Y" indicator need not be established solely to reflect the SWA status. DD Forms 1650 will be established when a SWA lot undergoes rework that requires a lot suffix. Two separate DD Forms 1650 will be initiated if part of the lot was in SWA and part was not. The "Y" identifier will be applied only to that portion of the lot that was in SWA during Desert Storm and/or Desert Shield. The two lot segments should be run and palletized separately to assure that the segments do not become mixed.

f. Prior to any rework which formally establishes the "Y" ammunition lot number, administrative methods will be used to establish and maintain identification of SWA stocks. As a minimum, the "Y" will be added to unit loads. All stock

records, such as lot files, magazine data cards, and shipping documents will include the “Y” identifier. Separate DA Forms 3022–SG will be established for SWA lots. The “Y” will be added as subsequent lower levels of packs are exposed. For example, if a pallet is broken down, the individual outer packs will have the “Y” added; if an outer pack is opened, the inner pack will be marked. DA Forms 3022–SG will include a remark indicating what level of pack “Y” has been marked on the ammunition.

g. Energetic material removed from ammunition with a “Y” identifier must have the “Y” identifier added to lot number and outer packs. Physical application of the “Y” identifier will be in accordance with paragraph D–10*e*. Assure DA Forms 3022–SG for energetic lots state they were stored in SWA. The outer pack marking of the “Y” identifier is not required on energetics removed from end items prior to publication of AIN 99–98, 30 October 98. However, a placard board or some other positive means of identification must be used to maintain the SWA identity of this material. Special attention should be paid to subject energetics in DEMIL accounts and during SIS inspections.

Glossary

Section I

Abbreviations

AE
ammunition and explosives

AMC
U.S. Army Materiel Command

AMCOM
Aviation and Missile Command

AMRDEC
Army Aviation and Missile Research Development and Engineering Center

APE
ammunition peculiar equipment

ASP
ammunition supply point

ASRP
Ammunition Stockpile Reliability Program

ATP
ammunition transfer point

BOE
Bureau of Explosives

BTR
ballistic test report

CAD
cartridge actuated devices

CAR
corrective action request

CC
condition code

CFR
Code of Federal Regulations

CMA
Chemical Materials Agency

CONUS
continental United States

CORA
Certificate of Risk Acceptance

DA
Department of the Army

DA Pam
Department of the Army Pamphlet

DD
Department of Defense

DEMIL
demilitarization

DMWR
depot maintenance work requirement

DOD
Department of Defense

DODAAC
Department of Defense activity address code

DODAC
Department of Defense ammunition code

DODI
Department of Defense instruction

DODIC
Department of Defense identification code

DOT
Department of Transportation

DRMO
Defense Reutilization and Marketing Office

EPA
Environmental Protection Agency

FMS
foreign military sales

FSC
federal supply classification

FY
fiscal year

HE
high explosives

HEAT
high explosives antitank

JMC
Joint Munitions Command

LCMC
life cycle management command

LMP
Logistics Modernization Program

LOI
letter of instruction

MHP
Munitions History Program

MOS
military occupational specialty

MRO
material release order

MSN
missile supplemental notices

MWO
modification work order

NICP
national inventory control point

NRT
near real time

NSN
national stock number

OCONUS
outside the continental United States

PAD
propellant actuated device

PG
proving ground

PM
program manager

PQDR
product quality deficiency report

PREPO
pre-positioned material

PSN
proper shipping name

QASAS
Quality Assurance Specialist (Ammunition Surveillance)

RCRA
Resource Conservation and Recovery Act

RDD
required delivery date

RDECOM
U.S. Army Research and Development Engineering Command

REPSHIP
report of shipment

SAP
Security Assistance Program

SB
supply bulletin

SMCA
single manager for conventional ammunition

SN
serial number

SOP
standard operating procedure

SOUM
safety of use message

SPI
special packaging instruction

SRP
Stockpile Reliability Program

SWA
Southwest Asia

TB
technical bulletin

TM
technical manual

UIC
unit identification code

USC
United States Code

VSL
vapor screening level

WARS
Worldwide Ammunition Report System

WMM
waste military munitions

Section II

Terms

Military munitions
Military munitions means all ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the DOD, the Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants; explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives and chemical warfare agents; chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, and demolition charges; and devices and components of any item thereof. The term does not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components, other than nonnuclear components of nuclear devices that are managed under the nuclear weapons program of the Department of Energy after all required sanitization operations under (see 10 USC 101)(e)(4)).

Military munitions rule
A rule published by the EPA on 12 February 1997 that identifies when conventional and chemical military munitions become hazardous waste subject to the Resource Conservation and Recovery Act and provides for the safe storage and transportation of such waste.

Mils
A unit of angular measure used in artillery and equal to 1/6400 of 360 degrees.

Misfire
Failure of the primer or the propelling charge of a round to function, wholly or in part.

Munitions
Ammunition, guided missiles, and rockets.

Nonstandard munitions
AE (munitions) that have not completed safety-type classification, do not have a NSN or DODIC, and are not available for procurement through DOD's Military Munitions Supply System. Such munitions include, but may not be limited to foreign munitions, commercial munitions, and munitions modified or that are prototypes developed for test and evaluation purposes.

Precision guided munitions
These munitions (smart weapon, smart munitions, and guided bomb unit) is a guided munition intended to precisely hit a specific target, and to minimize damage to things other than the target.

Standard ammunition and explosives
AE (DOD military munitions) that have a safety-type classification, assigned a NSN or DODIC, and are available for procurement through DOD's Military Munitions Supply System.

Section III

Special Abbreviations and Terms

AI
acceptance inspection

AIC
ammunition identification code

AIN
ammunition information notice

APF
Air Force Afloat Pre-positioned Fleet

ASC
U.S. Army Sustainment Command

ASTP
ammunition stockpile test procedures

DCT
deterioration check test

DIT
damage in transit

GRA
grant aid

IRI
initial receipt inspection

ISPM
International Standards for Phytosanitary Measures

LMQAP

MACS
modular artillery charge system

MIL–SPEC
military specification

MIN
missile information notice

MPS
maritime prepositioning ships

NAR
notice of ammunition reclassification

PCS
post, camp or station

PI
periodic inspection

PII
pre-issue inspection

PRP
Propellant Reassessment Program

PSP
propellant stability program

QAE
Quality Engineering Division

QP
quality process

RDT&E
research, development, test and evaluation

RES
remaining effective stabilizer

RI
receipt inspection

SC
systems contractor

SFT
Shipping and firing tubes

SIS
safety-in-storage

SMI
storage monitoring inspection

SPP
Stockpile Propellant Program

TCM
toxic chemical munitions

VL
verification level

PIN: 200958-000