DEPARTMENT OF THE ARMY SUPPLY BULLETIN

STORAGE SERVICEABILITY STANDARDS FOR ARRCOM MATERIEL TOXIC AGENT FILLING/ HANDLING APPARATUS AND CBR HAZARD CALCULATORS/ PREDICTORS

HEADQUARTERS, DEPARTMENT OF THE ARMY

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Storage Serviceability Standards For AMCCOM Materiel
TOXIC AGENT FILLING/HANDLING APPARATUS AND
CBR HAZARD CALCULATORS/PREDICTORS

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DEPARTMENT OF THE ARMY
WASHINGTON, DC, *27April 1983*

Storage Serviceability Standards for ARRCOM Materiel
TOXIC AGENT FILLING/HANDLING APPARATUS AND
CBR HAZARD CALCULATORS/PREDICTORS

This bulletin supersedes SB 740-94-12, 30 November 1979.

SECTION I
INTRODUCTION

1-1. Purpose. This supply bulletin provides the basic information and detailed inspection procedures required to determine the serviceability status of Toxic Agent Filling/Handling Apparatus and CBR Hazard Calculators/Predictors.

1-2. Scope. The provisions of this bulletin are mandatory for use in conducting all types of surveillance inspection, as identified in this bulletin. The provisions only apply to Department of the Army depots and to depot activities.

1-3. Definitions. *a. Commonly Used Quality Assurance Terms*. Refer to MIL-STD-109 for definitions of these terms.

b. Specialized Terms. The following definitions are in alphabetical order by major heading. They apply to specialized terms used in this bulletin.

(1) *Codes.* Numbers and letters used for brevity.

(a) *Inspection Frequency Code (IFC).* A numeric code to tell how often to perform inspection of materiel in storage. The numeric codes and definitions are listed in paragraph 2-6e.

(b) *Quality Defect Code (QUAL DEF CODE).* A numeric code assigned to indicate the category of a given defect and to identify, by explanation, that particular defect. The coding system and definitions are enumerated in paragraph 2-6a.

(c) *Shelf-Life Code (SLC).* A code assigned to a shelf-life item. The code identifies a period of time that starts with the date of manufacture or assembly and ends when the item must be used or be subjected to inspection, test, restoration, or to disposal action (AR 700-89). The codes and associated times are listed in paragraph 2-6d.

(d) *Test Required Code (TRC).* A three-digit numeric-alpha code that is used in appendix A to indicate that only a simple examination is required (QUAL DEF CODES) or to cross-reference additional inspection requirements. The code meanings are in paragraphs 2-6a and 2-6f.

(2) *Corrosion, Metals*. See paragraph 2-6a(3)(j).

Stage I (Defect Code 90). Discoloration or staining with no direct visual evidence of pitting, etching, or other surface damage.

Stage II (Defect Code 91). Red, brown, green, black, or white corrosion product accompanied by minor etching or minor surface pitting. No scale or tight rust.

Stage III (Defect Code 92). Red, brown, green, black, or white corrosion product with or without etching, pitting, or more extensive surface deterioration resulting in a loose or granular condition.

Stage IV (Defect Code 93). Red, brown, green, black, or white corrosion progressed to the point where fit, wear, function, or life of the item has been affected. Powdered or scaly condition with pits or irregular areas of material removed from the surface of the item.

(3) *Defect number*. A number associated with a particular defect. It identifies the defect and the se verity of the defect. The numbers are used in particular classification of defects tables. The defect designated by a number is not permanent such as in Quality Defect Codes [(1)(b)) above] but is redefined in each table where the number is used, although often the definition will closely parallel a Quality Defect Code definition. Sequential numbers starting with 0 are Critical defects; sequential numbers starting with 101 (1XX) are Major defects; and sequential numbers starting with 201 (2XX) are Minor defects.

(4) *Deterioration.* A change in an item's characteristics caused by an environment that adversely affects its ability to function as intended. See paragraph 2-6a(3)(j).

(a) *Deterioration, polymeric plastic items*. Molded organic compounds: celluloid, bakelite, lucite, vinyl, rubber, etc.

Stage I (Defect Code 94A). Fungus damage, color change, or distortion.

Stage II (Defect Code 94B). Sticky surface, craze cracks, dissolved paint, or small cracks.

Stage III (Defect Code 94C). Liquified material, large cracks, crumbled (brittle), or fractured (broken) to an extent where fit, function, or life has been affected.

(b) *Deterioration, polymeric non-plastic items.* Non-molded organic components: cloth, leather, hair, fur, felt, paper, cork, cardboard, wood, etc.

Stage I (Defect Code 95A). Mold, fungus damage, or color change.

Stage II (Defect Code 95B). Shredding, warping, shrinkage, distortion, embrittlement, small separations (cracks or tears), or slight swelling.

Stage III (Defect Code 95C). Gross swelling, soggy, large cracks, rot, insect infestation, brittle disintegration, or large or complete separations to an ex

tent where fit, function, or life has been affected.

(c) *Deterioration, inorganic vitreous items.* Glass, ceramic, solid carbon, etc.

Stage I (Defect Code 96A). Small cracks or crazed (crackled surface).

Stage II (Defect Code 96B). Spalling (chipped) or fractured (broken, major cracks, or splits) to an extent where fit, function, or life has been affected.

(5) Inspections (Types of).

(a) *Cyclical inspection (CI).* Surveillance of material in storage performed on a regular basis. In this bulletin, the cycle is established in appendix A by the Inspection Frequency Code (IFC--see paragraph 2-6e). The purpose is to determine the serviceability status of items at the end of each cycle.

(b) *Initial receipt inspection (IR).* An inspection performed on newly manufactured materiel received directly from a vendor, manufacturer, or government activity. The purpose is to determine if the items, the packing, or the preservation have been damaged in transit and whether the packaging, packing, marking, and preservation are correct. This inspection is not intended as an acceptance-type inspection.

(c) *Pre-issue inspection (PII).* The inspections and tests on materiel immediately preceding issue.

(d) *Prestorage inspection (PI).* An inspection performed on materiel received from other depots, posts, camps, stations, or overseas returns received within CONUS. The purpose is to determine receipt condition and the current degree of serviceability of the items when serviceability status is unknown.

(e) *Special inspection (SPI).* An inspection performed at the direction of higher headquarters or as deemed necessary to satisfy local installation requirements.

(f) *Unit basis inspection (UBI).* An inspection where each unit in the lot is inspected for the defect characteristic under consideration. The unit basis method is also used for serially-numbered major end items that are considered separately for surveillance purposes.

(6) *Lots.*

(a) *Depot lot.* A combination of lots, irrespective of manufacturer or age, of the same kind and type of materiel grouped into one large single lot for the purpose of economy in surveillance.

(b) *Grand lot*. All lots of the same kind and type of materiel from one manufacturer or reconditioning agency grouped into one large lot for the purpose of economy in surveillance.

(c) *Manufacturer's lot.* A quantity of one item of materiel manufactured or assembled in one plant, from raw materials or components of the same physical characteristics, under uniform conditions designed to effect homogeneity, and meeting definite physical and chemical requirements of established specifications and drawings (this includes renovated, reworked, and reconditioned lots).

(d) *Miscellaneous lot.* A combination of a single manufacturer's small lots or lot fragments possessing the same technical history.

(e) *Mixed lot*. A combination of the same kind and type of materiel for which identification of the manufacturer, the lot number, or the time of manufacture is incomplete.

(7) *Occurrence basis*. An inspection, without a predetermined time frame, that is performed as the need occurs, e.g., initial receipt inspection (IRI) is performed when the shipment arrives.

(8) *Serviceable.* The condition of an item that has been determined by inspection to be satisfactory and safe for its intended use.

(9) *Shelf-life item.* An item of supply possessing deteriorative or unstable characteristics to the degree that a storage time period must be assigned to assure that it will perform satisfactorily in service. There are two types of shelf-life items, defined by AR 700-89 as:

(a) Type I shelf-life item. An item of supply that is determined, through an evaluation of technical test data or actual experience, to be an item with a definite non-extendable shelf life.

(b) Type II shelf-life item. An item of supply having an assigned shelf life, where the shelf life may be extended after the completion of a prescribed inspection, a test, or a restorative action.

(10) *Storage Serviceability Standards (SSS).* Technical documents containing inspection instructions and criteria essential to determine serviceability of materiel in storage.

(11) *Unserviceable.* The condition of an item that has been determined by inspection to be unsatisfactory or unsafe for its intended use.

1-4. Errors or Omissions. Forward comments regarding errors or omissions in this bulletin on DA Form 2028, Recommended Changes to Publications and Blank Forms, to the Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-QAE, Rock Island, IL 61299; and send an information copy to the Commander, US Army Armament Research and Development Command, ATTN: DRDAR-QAC-R, Aberdeen Proving Ground, MD 21010.

SECTION II

STORAGE AND SPECIAL INSTRUCTIONS

2-1. References. The following publications form a part of this bulletin to the extent specified.

AR 380-5	Information Security Program Regulation
AR700-89	Identification, Control, and Utilization of Shelf-Life Items
AR 702-7	Reporting of Quality Deficiency Data
AR 708-1	Cataloging and Supply Management Data
AR725-60	Requisitioning, Receipt, and Issue System
AR 740-1	Storage and Supply Activity Operations
AR 740-3	Care of Supplies in Storage (COSIS)
AR 750-25	Army Metrology and Calibration System
MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-109	Quality Assurance Terms and Definitions
TM 38-750	The Army Maintenance Management System (TAMMS)
TM 743-200-1	Storage and Materials Handling

NOTE

Additional references peculiar to a given group of Toxic Agent Filling/Handling Apparatus and CBR Hazard Calculators/Predictors will be cited in the appendix for the group of items.

2-2. Safety. During surveillance and normal handling (TM 743-200-1) of Toxic Agent Filling/Handling Apparatus and CBR Hazard Calculators/Predictors inspection personnel shall observe the safety precautions prescribed for operations personnel, the Standard Operating Procedures (SOPs), the safety requirements cited in applicable regulations, the safety guidance in applicable technical manuals, and the special safety precautions cited in the applicable appendix of this bulletin.

2-3. Lotting. *a. Type of Lotting Permitted*. The applicable appendix of this bulletin specifies the type of lotting permitted when conducting surveillance of the Toxic Agent Filling/Handling Apparatus and CBR Hazard Calculators/Predictors.

b. Depot Lot. A depot lot is formed by combining lots regardless of manufacturer or age into a large single lot. Actual formation is a paper transaction; regrouping and marking of the materiel is not required. A depot lot, as such, cannot be declared unserviceable. When, through surveillance, a lot within the depot lot appears unserviceable, withdraw the lot concerned and take additional samples utilizing the sampling plan provided in this bulletin. If the suspect lot is found serviceable, it remains a part of the depot lot. If the suspect lot is found unserviceable, the lot is eligible for rework or disposal in accordance with existing regulations. When 20 percent of the lots within the depot lot have become unserviceable, the depot lot shall be dissolved and the individual lots therein tested on a lot-by-lot basis. A depot lot must meet criteria as follows:

(1) *Kind, type, and model.* All items must be the same kind, type, and model.

(2) *Storage.* All items must be stored under similar conditions at the same depot.

(3) *Serviceability status.* All lots must possess the same serviceability status, i.e., serviceability known (based upon prior surveillance) or serviceability unknown. However, when new procurement is involved, base serviceability on acceptance inspection, not on surveillance.

c. Grand Lot. A grand lot is formed by combining all lots from one manufacturer into a large single lot. Actual formation is a paper transaction, regrouping and marking of the materiel is not required. A grand lot, as such, cannot be declared unserviceable. When, through surveillance, a lot within the grand lot apt pears unserviceable, withdraw the lot concerned and take additional samples by the sampling plan provided in this bulletin. If the suspect lot is found serviceable, it remains a part of the grand lot. If the suspect lot is found unserviceable, the lot is eligible for rework or disposal in accordance with existing regulations. When 20 percent of the lots within the grand lot have become unserviceable, the grand lot shall be dissolved and the individual lots therein tested on a lot-by-lot basis. A grand lot must meet criteria as follows:

(1) *Kind, type, and model*. All lots must be the same kind, type, and model.

(2) *Manufacture*. All lots must be the product of the same manufacturer or reconditioning agency.

(3) *Packaging, packing, and preservation*. All lots must have the same type packaging, packing, marking, and preservation.

(4) *Storage*. All lots must be stored under similar conditions at the same depot.

(5) *Serviceability status.* All lots must possess the same serviceability status, i.e., serviceability known (based upon prior surveillance) or serviceability unknown. However, when new procurement is involved, base serviceability on acceptance inspection not on surveillance.

d. Manufacturer's Lot. A manufacturer's lot consists of those items manufactured or assembled by one manufacturer or reconditioning activity and bearing the same manufacturer's or reconditioning agency's lot identification number. The manufacturer's lot must meet criteria as follows:

(1) *Packaging, packing, and preservation*. All items must have the same type packaging, packing, marking, and preservation.

(2) *Storage*. All items must be stored under similar conditions at the same depot.

(3) *Serviceability status.* All items must possess the same serviceability status, i.e., serviceability known (based upon prior surveillance) or serviceability unknown. However, when new procurement is involved, base serviceability on acceptance inspection not on surveillance.

e. Miscellaneous Lot. A miscellaneous lot is formed by combining a single-manufacturer's lots or lot fragments into one lot. The size of miscellaneous lots is restricted by the applicable appendix of this bulletin. Actual formation of the lot is a paper transaction, regrouping and marking of the materiel is not required. A miscellaneous lot may be declared unserviceable as a whole. The miscellaneous lot must meet criteria as follows:

(1) *Kind, type, and model*. All items must be of the same kind, type, and model.

(2) *Manufacturer.* Each small lot or lot fragment must be the product of the same manufacturer or reconditioning agency.

(3) *Packaging, packing, and preservation*. All items must have the same type packaging, packing, marking, and preservation.

(4) *Storage*. All items must be stored under similar conditions at the same depot.

(5) *Serviceability status*. All items must possess the same serviceability status, i.e., serviceability known (based upon prior surveillance) or serviceability unknown. However, when new procurement is involved, base serviceability on acceptance inspection not on surveillance.

f. Mixed Lot. A mixed lot is formed by combining those items with incomplete identification into one lot. The size of the mixed lot is restricted by the applicable appendix of this bulletin. Actual formation of the lot is a paper transaction, regrouping and marking of the materiel is not required. A mixed lot may be declared unserviceable as a whole. The mixed lot must meet criteria as follows:

(1) *Kind, type, and model.* All items must be of the same kind, type, and model.

(2) *Packaging, packing, and preservation*. All items must have the same type packaging, packing, and preservation.

(3) *Storage.* All items must be stored under similar conditions at the same depot.

2-4. Sampling. Perform sampling for Toxic Agent Filling/Handling Apparatus and CBR Hazard Calculators/Predictors by the instructions in this paragraph and in the applicable appendixes of this bulletin. The sampling instructions that follow are designed to fit the peculiarities of this group of items. In some instances, because of configuration, short shelf life, or past quality history, special sampling may be designed for an item within a group.

a. Initial Receipt Inspection (IRI). Sampling shall be conducted by this paragraph and MIL-STD-105, Inspection Level S-2, and AQL of 4.0 percent for Major Defectives, and an AQL of 10.0 percent for Minor Defectives.

b. Prestorage Inspection (PI). Sampling shall be conducted by this paragraph and MIL-STD-105, Inspection Level S-2, and AQL of 4.0 percent for Major Defectives, and an AQL of 10.0 percent for Minor Defectives.

c. Cyclical Inspection (CI). Sampling shall be conducted by this paragraph and MIL-STD- 105 using the Inspection Level and AQL specified in appendix A or the sampling instructions provided in the applicable appendix (TRC) of this bulletin for the item being sampled.

d. Pre-Issue Inspection (PII). Sampling, if required, [see pare 2-5d(2)] shall be conducted by paragraph c above.

e. Selection of Samples.

(1) All portions of the lot must be located for sampling.

(2) Every reasonable effort must be made to obtain a random sample. When conditions make a proper random sampling impossible, record this fact and a brief description of the condition that prevents random sampling under the remarks section Part I, Block 20, of the DA Form 984, 1 Jun 80, Munitions Surveillance Report. See paragraph 2-9a(1), Part I (t), of this bulletin.

(3) In selecting samples from depot lots, grand lots, or miscellaneous lots, choose the items to represent all material. For example, if a manufacturer's lot is one-third of the total lot, then select one-third of the lot sample at random from that manufacturer's lot.

f. Sample Disposition.

(1) In the inspection records, identify as reinspected

all samples that have been inspected and then packed and resealed in barrier material.

(2) Reseal barrier material by the instructions furnished with the material, printed on the material, or furnished with the sealing iron.

(3) Return serviceable samples to storage with the parent lot.

(4) Segregate samples with critical or major defects or samples that cannot be returned to the original package configuration and report such in the remarks section, Part II, Block 13, of DA Form 984, 1 Jun 80, Munitions Surveillance Report. See paragraph 2-9a(1), Part II(h) of this bulletin.

2-5. Inspection. Conduct all inspections and tests under the control of a qualified inspector. The inspections and tests normally will be conducted at the surveillance inspection area; however, when authorized, examinations or tests may be performed at the storage site or elsewhere, but must be within the limitations of all safety and security requirements.

a. Initial Receipt Inspection (IRI).

(1) *Frequency.* Perform this inspection on an occurrence basis [see pare 1-3b(7)].

(2) *Classification of defects*. Use Table I to evaluate the incoming materiel.

(3) *Reporting.* Use DA Form 984 and the instructions in paragraph 2-9. In addition, report failure data and discrepancies encountered on SF 368, Quality Deficiency Report, per AR 702-7. See paragraph 2-9a(3) of this bulletin.

b. Prestorage Inspection (PA.

(1) *Frequency.* Perform this inspection on an occurrence basis.

(2) *Examination and test*. When the serviceability status is unknown, perform the examination and test of the item by appendix A instructions, including any applicable appendix (TRC) of this bulletin. Examine all lots for receipt condition using Table I.

(3) *Reporting.* Use DA Form 984 and the instructions in paragraph 2-9.

c. Cyclical Inspection (CV.

(1) *Frequency.* Perform this inspection at the frequency indicated in appendix A by the IFC (see pare 2-6e).

(2) *Examination and test.* Perform the examinations and tests of the item by appendix A instructions including any applicable appendix (TRC) of this bulletin.

(3) *Evaluation and reporting.* Make evaluations and reports per instructions in paragraph 2-7 and 2-9.

d. Pre-Issue Inspection (PIN.

(1) *Frequency.* Perform this inspection just before OCONUS shipment of the item.

(2) *Examination and test.* When one-half or less of the cyclical period (defined by the IFC) remains, the cyclical period has been exceeded, or the date of the last surveillance inspection is unknown, perform a complete inspection of the item by appendix A instructions including any applicable appendix (TRC) of this bulletin. When more than one-half of the cyclical period remains, perform only a visual examination by appendix A and the applicable appendix (TRC) instructions

(3) *Evaluation and reporting.* Make evaluations and reports by paragraph 2-7 and 2-9 instructions.

e. Special Inspection (SI). Perform this inspection as directed by higher headquarters or instructions provided locally to satisfy local installation requirements. This inspection may also be performed to determine the economic advisability of conducting further inspection (screening) on unsegregated items, returns from overseas, or used items that have not been reconditioned. Reports prepared for local use are authorized. Reporting, as in paragraph 2-9, is not required for this inspection except as may be directed by higher headquarters.

Table I. Initial Receipt Inspection (IRI) or Prestorage Inspection (PI)

Category	Defect Number	Defect	Inspection Method
Critical:		None defined.	
Major:			
	101	Item damaged.	Visual
	102	Packaging, packing, or preservation damaged or deteriorated to the extent that adequate protection is no longer afforded to the item or handling and storing would be adversely affected.	Visual
	103	Item packaging or packing contaminated, wet, or mildewed as a result of adverse shipping conditions.	Visual
	104	Packaging, packing, marking, or preservation incorrect.	Visual
Minor:			
	201	Slight damage to packaging, packing, or preservation but not affecting the protection.	Visual

2-6. Coded Standards. The following is an explanation by heading of the codes used in appendix A.

a. Quality Defect Code (QUAL DEF CODE). The codes, based on the definitions given in APPENDIX B of AR 740-3, are given as three digit numbers. The first digit identifies the severity of the defect by category. The second digit identifies one of the named general groups. The third digit identifies the actual defect within one of the general groups. Example: Using the meanings and explanations given below, Code 113 indicates; 1-major, 1-packaging group, and 3-container damaged or deteriorated.

(1) *Severity (first digit).*

Quality Defect Code	*Category*
0	Critical
1	Major
2	Minor

(2) General groups (second digit).

Quality Defect Code	*Category*
0	Cleaning, preservation, painting, plating, or other processing.
1	Packaging.
2	Packing and loading.
3	Marking and labeling.
4	Materiel deficiencies.
5	Materiel deficiencies (continued).
6	Functional certification or performance test.
7	Document recording or routing deficiencies.
8	Storage deficiencies.
9	Miscellaneous.

(3) *General groups and defects (second and third digits).*

(a) *Group 0 (cleaning, preservation, painting, plating, or other processing).*

Quality Defect Code	*Category*
00	Appearance (paint runs, overspray, not uniform, or not up to standard).
01	Cleaning improper or inadequate.
02	Preservation improper or inadequate.
03	Wrapping improper or inadequate.
04	Protection afforded not compatible with mode of shipment, type of storage, destination, or other environment.
05	Inadequate coverage or improper thickness.
06	Improper and inadequate preparation.
07	Wrong type, method, or color.
08	Drying improper or inadequate.
09	Reserved for future use.

(b) *Group 1 (packaging).*

Quality Defect Code	*Category*
10	No packaging applied.
11	Sealing defective (bags or containers).
12	Failed pressure retention, leak, or other test.
13	Container damaged or deteriorated.
14	Protection not compatible with mode of shipment, type of shipment, destination, or other environment.
15	Wrong level applied.
16	Containers or other packaging materials do not meet specifications (e.g., size, type, class, or style).
17	Wrong quantity per unit package. (Chargeable as one defect per unit pack. Major defect, if shortage-minor defect, if overage.)
18	Reserved for future use.
19	Reserved for future use.

(c) *Group 2 (packing and loading).*

Quality Defect Code	*Category*
20	Improper loading, blocking, bracing, tiedown, etc.
21	Stapling, nailing, strapping, or banding improper or inadequate.
22	Excessive weight or cube for containers.
23	Containers, boxes, crates, or pallets damaged or deteriorated.
24	Intermediate or exterior container protection not compatible with mode of shipment, type of storage, destination, or other environment.
25	Wrong level applied.
26	Containers, boxes, crates, or pallets do not meet specifications.
27	Wrong quantity per intermediate or exterior container. (Chargeable as one defect per container. Major defect, if shortage-minor defect, if overage.)
28	Reserved for future use.
29	Reserved for future use.

(d) Group 3 (marking and labeling).

Quality Defect Code	*Category*
30	Preservation and packing (PIP) level markings omitted, illegible, or incorrect.
31	Labels omitted, illegible, or incorrect.
32	Special markings omitted, illegible, or incorrect.
33	Description or identification marking omitted, illegible, or incorrect (e.g., stock number, quantity, unit of issue, contract data, or condition code).
34	Address marking omitted, illegible, or incorrect.
35	Markings improperly located or wrong method of marking used.
36	Reserved for future use.
37	Reserved for future use.
38	Reserved for future use.
39	Reserved for future use.

(e) Group 4 (materiel deficiencies).

Quality Defect Code	*Category*
40	Parts, components, or controls loose, improperly installed or assembled, out of adjustment, do not fit, or fail to function properly.
41	Damaged or defective item or parts (bent, broken, scratched, chipped, marred, cracked, warped, torn, stripped, crimped, burned, twisted, burned out, perforated, or pitted).
42	Does not meet specified tolerances or requirements (dimensional, finish, strength, torque, output, volume, color, stretch, size, illumination, or weight).

Quality Defect Code	Category
43	Parts or components missing.
44	Wrong part or component found installed on end item or other assembly, or used to make up set or kit.
45	Leak (liquid): gasoline, diesel, oil, water, etc.
46	Leak (vapor): air or gas (nitrogen, oxygen, hydrogen, etc.).
47	Modification work order incomplete, improperly applied, or missing.
48	Soldering, welding, brazing, metallizing, or bonding defect.
49	Reserved for future use.

(f) Group 6 (materiel deficiencies).

Quality Defect Code	Category
50	Contamination (contains dirt, sludge, moisture, or other foreign matter).
51	Excessive moisture, fungus, mildew, rot, infestation, or weather cracks.
52	Item improperly classified.
53	Test or research required to determine true condition classification (assign code J or code K, per AR 726-60). (Chargeable as one minor defect per line item.)
54	Materiel marking missing or incorrect (e.g., serial number, data plate, piece mark, or cure date). (Chargeable as a minor defect if the correct item was shipped and a major defect if the wrong item was shipped.)
55	Shelf-life date exceeded.
56	Wrong item received or selected for shipment.
57	Lubrication improper or incomplete.
58	Improper identification.
59	Other.

(g) Group 6 (functional, certification, or performance test).

Quality Defect Code	Category
60	Required test not accomplished.
61	Failed test requirements (hydraulic).
62	Failed test requirements (electrical or electronic).
63	Failed test requirements (environmental).
64	Failed test requirements (mechanical).
65	Failed test requirements (pressure).
66	Failed certification or laboratory test.
67	Excessive heat or noise during operational test.
68	Parts or components damaged (caused by functional failure during end item or component test).
69	Reserved for future use.

(h) Group 7 (document, recording, or routing deficiencies).

Quality Defect Code	Category
70	Wrong count (shortage). (Chargeable as one major defect per line item if value of quantity short is $200 or more and one minor defect if less than $200.)
71	Wrong count (overage). (Chargeable as one major defect per line item if value of quantity over is $200 or more and one minor defect if less than $200.)
72	Improper routing or process planning. (Chargeable as one minor defect per line item.)
73	Mixed materiel (two or more stock numbers recorded under the same stock number). (Chargeable as one minor defect per line item.)
74	Historical records, including The Army Maintenance Management System, TM 38-760, missing, incorrect, or incomplete.
75	Contract, specifications, receiving reports, or other required documents incorrect, incomplete, not available, or changes not With the contract. (Chargeable as one minor defect per line item.)
76	Contract specifications or other required document inadequate for inspection or acceptance purposes. (Chargeable as one minor defect per line item.)
77	Materiel not segregated (serviceable and unserviceable items intermingled). (Chargeable as one major defect per line item.)
78	Stock selection deficiency [first-in/first out (FI/FO)]. (Chargeable as one minor defect per line item.)
79	Reserved for future use.

(i) Group 8 (storage deficiencies).

Quality Defect Code	Category
80	Improper or inadequate stacking or storing. (Chargeable as one minor defect per line item.)
81	Facility deficiencies: roof leaking, grid markings incorrect, equipment deficiencies, etc. (Chargeable as one minor defect per line item.)
82	Improper pallet count or quantities in location-inventory defects. (Chargeable as one minor defect per line item.)
83	Improper marking or placarding. (Chargeable as one minor defect per line item.)
84	Materiel mislocated. (Chargeable as one major defect per line item.)
85	Handling deficiencies (storage). (Chargeable as One minor defect per line item.)
86	Improper storage space. (Chargeable as one major defect per line item.)
87	Reserved for future use.
88	Reserved for future use.
89	Reserved for future use.

(j) Group 9 (miscellaneous).

Quality Defect Code	Category
	[see paras 1-3b(2) and (4)]
90	Corrosion, metals, stage I.
91	Corrosion, metals, stage II.
92	Corrosion, metals, stage m.
93	Corrosion, metals, stage IV.
*94	Deterioration, polymeric plastic items (celluloid, bake-life, lucite, vinyl, rubber, etc.)
*94A	Deterioration, stage.
*94B	Deterioration, stage ll.
*94C	Deterioration, stage III.
*95	Deterioration, polymeric non-plastic items (cloth, leather, hair, fur, felt, paper, cork, cardboard, wood, etc.).

Note

These defect codes relate to the deterioration defined in para. graph 1-3b(4) (Definitions) and are required for evaluation of ARRCOM materiel using this supply bulletin. Since the codes are not included in AR 740-3, they need not be used for reporting under ADP systems, i.e., SPEEDEX.

Quality Defect Code	Category
*95A	Deterioration, stage I.
*95B	Deterioration, stage II.
*95C	Deterioration, stage III.
*96	Deterioration, inorganic vitreous items (glass, ceramic, solid carbon, etc.).
*96A	Deterioration, stage I.
*96B	Deterioration, stage II.
97	Reserved for future use.
98	Reserved for future use.
99	Reserved for future use.

b. Inspection Level (IL). Inspection levels have been selected from MIL-STD-105 to provide the smallest possible sample size consistent with quality requirements. Inspection level codes are as follows:

General Levels	Special Levels
G1 (I in MIL-STD-105)	S1
G2 (II in MIL-STD-105)	S2
G3 (III in MIL-STD-105)	S3
.....	S4

c. Acceptable Quality Level (AQL). Acceptable quality levels have been selected from MIL-STD-105 to give that level of sampling protection required to provide serviceable equipment to users. Separate AQL's are provided for major and minor defects.

d. Shelf-Life Codes (SLC). The codes shown in appendix A were assigned by the developers of the item. The codes may not have been incorporated into the Army Master Data File (AMDF). Shelf-life codes for Type I and Type II shelf-life items are defined in paragraph 1-3.b.(9).

Shelf life	Type I	Type II
Non-deteriorative	0	0
1 month	A	-
2 months.....	B	-
3 months.....	C	1
4 months.....	D	-
5 months.....	E	-
6 months.....	F	2
9 months.....	G	3
12 months.....	H	4
15 months.....	J	-
18 months.....	K	5
21 months.....	L	-
24 months.....	M	6
27 months.....	N	-
30 months.....	P	-
36 months.....	Q	7
48 months.....	R	8
60 months.....	S	9

NOTE

Assign code x shelf life to military essential and medical items with a shelf life of greater than 60 months (5 years).

e. Inspection Frequency Codes (IFC). The following codes are used in appendix A to tell how often to perform inspection of materiel in storage.

Note. These defect codes relate to the deterioration defined in paragraph 1-3b(4) (Definitions) and are required for evaluation of ARRCOM materiel using this supply bulletin. Since the codes are not included in AR 740-3, they need not be used for reporting under ADP systems, i.e., SPEEDEX.

Code	Frequency (months)
1	6
2	12
3	24
4	30
5	60

f. Test Required Codes (TRC).

(1) Except for the letter codes given below, the first character (numeric) will be 4 indicating a chemical related TRC. The second and third characters (alpha) will identify a specific inspection requirement. [See paragraph 2-10 for cross-referencing instructions.]

(2) Some uncomplicated items require only a simple examination. To cover those items not requiring more detailed examination, the following codes apply:

Inspection	TIC Code
Dimensional	OOD
Functional	OOF
Hardness	OOH
Laboratory	OOL
Nondestructive	OON
Pressure	OOP
Tensile	OOT
Visual	OOV
Weight	OOW

g. Packing Codes (PC). An alpha code that represents the minimum level of protection required based on the prescribed storage conditions. The codes are as follows:

Code	Level of Protection
A	Maximum military
B	Intermediate military
C	Minimum Military
X	Industrial/Commercial

h. Type Storage Codes (TSC). An alpha code assigned to an item to indicate the recommended type of storage. These codes are defined by AR 708-1, 1 April 1981.

Code	Explanation
A	Heated warehouse space (general purpose).
B	Unheated warehouse space (general purpose).
C	Controlled humidity warehouse space.
E	Chill space.
F	Freeze space.
G	Shed, nonwarehouse space.
Q	Hazardous commodity space (non-Class V items, e.g., acids, compressed gasses, or radioactive).
U	Open space (materiel may be stored in open storage).
Y	Storage space for ammunition items (Class V) covered by specific regulations elsewhere.
Z	A storage environment identified by one of the codes is not necessary. See AR 740-1, chapter 6, section III, for guidance.

2-7. Evaluation. *a. Serviceability Based on Sampling Inspection. A lot shall be classified as serviceable provided no* critical defect is observed and the number of major, minor, or test defects does not exceed the number allowed in the sampling plan for the item.

b. Serviceability on Unit Basis Inspection. An item inspected on a unit basis, or subjected to 100 percent inspection, is serviceable if the following criteria are met:

(1) No defects are observed.

(2) All requirements for test or analysis are met.

(3) All units have been modified to existing Modification Work Orders (MWO's).

c. Special Instructions. In addition to criteria for evaluation contained in this paragraph, special criteria for certain items or groups of items are provided, when necessary, in the applicable appendixes of this bulletin.

d. Procedure for Rounding Off. Numerical requirements, when stated, indicate the number of significant digits to be retained, i.e., the last figure or decimal place to be reported. The procedure given below is to be used in rounding off observed or calculated values for the purpose of evaluation.

(1) When the first digit dropped is less than 5, the preceding digit is not changed. When the first digit dropped is greater than 5, or 5 and some succeeding digit is not zero, the preceding digit is increased by 1. When the first digit dropped is 5, and there are no succeeding digits or all succeeding digits are zero, add 1 to the preceding digit if it is odd and leave it unchanged if it is even.

(2) Examples when rounding to two decimal places:

2.3142 = 2.31 The first digit dropped is less than
2.3249 = 2.32 5-leave preceding digit unchanged regardless of any succeeding digits.
2.3150 = 2.32 The first digit dropped is exactly 5,
2.3250 = 2.32 or 5 followed by zeroes-add 1 to the preceding digit if it is odd and leave it unchanged if it is even.
2.3152 = 2.32 The first digit dropped is 5 followed
2.3252 = 2.33 by other than zeroes-add 1 to the preceding digit.
2.3160 = 2.32 The first digit dropped is greater
2.3260 = 2.33 than 5-add 1 to the preceding digit regardless of any succeeding digits.

e. Condition Coding. Based on evaluation, lots or items shall be assigned appropriate condition codes as explained in AR 725-50. Enter the condition codes in Part I, Block 21b and 21c, of DA Form 984, 1 June 1980. See paragraph 2-9a(1), Part I (v) and (w) of this bulletin.

2-8. Surveillance Test and Measuring Equipment. *a. Availability and Adequacy.* Determine the availability and adequacy of all test and measuring equipment required to perform the examinations and tests required by this bulletin. If test or measuring equipment is unavailable or inadequate, report such within 30 days to the Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-QAF, Rock Island, IL 61299.

b. Calibration. Calibrate the test and measuring equipment as established by the applicable technical bulletin, technical manual, or instruction manual. In the event that adequate calibration procedures are not included in these documents, ask for the proper calibration procedure from the organization responsible for design or supply of the test equipment. Establish a calibration system for the calibration of inspection measuring gages and test equipment to the requirements of AR 750-25. The records and reports required in calibration of army equipment are described in TM 38-750.

2-9. Reports and Reporting. Report inspections and tests made using this bulletin to the commands designated in the following subparagraphs. Report on the designated forms.

a. Forms.

(1) *Munitions Surveillance Report (DA Form 984, 1 Jun 80).* Use this form to record the results of all examinations and tests when conducting prestorage inspection, initial receipt inspection, cyclical inspection, or pre-issue inspection.

NOTE

This form may also be used for special inspection when so directed by higher headquarters.

• *Form Instructions* •

Part I: *Descriptive Data of Ammunition Represented By Sample.*

(a) *Block 1.* Enter the actual storage location, which may not necessarily be the depot or storage activity having accountability.

(b) *Block 2.* Enter the local report number.

(c) *Block 3.* Enter the date of the report.

(d) *Block 4.* Enter the complete standard nomenclature and model number of the item.

(e) *Block 5.* Record the complete manufacturer's lot number. When surveillance is authorized on the basis of a depot lot, miscellaneous lot, or grand lot, enter the lot number applicable to the type of lot, and complete DA Form 985 (Data Sheet for Grand Lots, Miscellaneous Lots, or Depot Lots) using the instructions in paragraph 2-9a(2).

(f) *Block 6.* Describe the packing of the items in narrative form.

(g) *Block 7.* Enter the National Stock Number (NSN) of the item.

(h) *Block 8.* Enter the current and past type of storage, e.g., heated warehouse, unheated warehouse, shed, or open.

(i) *Block 9.* Enter the number of samples selected for examination and test.

(j) *Block 10*. Record the number of items (minus the sample size if the samples cannot be returned to the lot) remaining in the lot at the depot.

(k) *Block 11*. Self-explanatory.

(l) *Block 12*. Self-explanatory.

(m) *Block 13*. Enter the type and date of the last inspection, e.g., Prestorage, 10 July 1981.

(n) *Block 14.* Enter the type of inspection and the date that this current inspection is performed, e.g., Cyclical, 1 July 1982.

(o) *Block 15.* Record the manufacturer or reconditioning agency and the date of manufacture. When more than one manufacturer is represented because of the nature of the lot enter N.A.

(p) *Block 16*. Self-explanatory.

(q) *Block 17.* Self-explanatory.

(r) *Block 18*. Record the condition of the packaging, packing, marking, and preservation.

(s) *Block 19*. State whether the lot passed or failed the visual examination requirements of this supply bulletin. Record by Quality Defect Code, Category, Defect Number, and number of Defects or Defectives, all applicable visual defects or detectives. (Quality Defect Codes shall be as given in appendix A. Categories and Defect Numbers shall be as given for a defect listed in the various classification paragraphs of the applicable appendix.) Reference this bulletin, appendix A, the applicable appendix, and the table number for the item.

Example:
SB 740-94-12

APPENDIX X, TABLE X-X

Defect	*Number of Defects*
113	1
131	1
141	1
291	1

NOTE

Do not list the same defect twice. When a defect is in the appendix for an item and it is in appendix A, record the number of defects under the classification and Defect Number of the appendix for the item rather than record them under appendix A, e.g., if "Broken badly distorted, or cracked piping", is listed as a 103 defect in appendix C, record such defects under appendix C, but do not list them again as code 141 defects under appendix A.

(t) Block 20. Note any observation relevant to the condition of an item or to the actual inspection in this block. Examples of such observations are: different storage conditions of lot segments, unlisted defects, inspection equipment not available or calibration interval exceeded, and severity of defects listed in block 19. Include a brief lot history when possible.

(u) Block 21a. Self-explanatory.

(v) Block 21b. Based on the results of visual examinations (Part I, Block 19) enter the condition code (see pare 2-7e).

(w) Block 21c. Based on the test results (Part II, Block 13) enter the condition code (see pare 2-7e).

(x) Block 22. Self-explanatory.

Part II: *Results of Surveillance Test.*

(a) Block 1. Self-explanatory.

(b) Blocks 2, 2a, and 2b. Enter this supply bulletin number (SB 740-94-12), revision, or change, and the date of this supply bulletin, revision, or change. When applicable, enter the letter of authority or direct five for any performed special surveillance not in accord with this SB.

(c) Blocks 3, 4, 5, and 6. Enter the meteorological conditions at the test area if they are relevant to the test. Otherwise enter N.A.

(d) Blocks 7 and 8. Consecutively number the outer packages from which the samples were selected, and the individual samples, starting with "1". Record these numbers in blocks 7 and 8.

(e) Blocks 9a and 9b. Enter the type and model of the component or item in the heading of each column and enter the lot number of each sample on the appropriate line.

(f) Block 10. In the heading of each column, describe the test characteristic to be tabulated. Indicate attribute deficiencies with "x" at the intersection of the individual sample number and the test characteristic, or enter the actual test result.

(g) Blocks 1I and 12. In the space above blocks 11 and 12 indicate whether the evaluation is based on "defects" or "detectives" by crossing out the one that does not apply. Enter an "x" at the intersection of the applicable defective column sample number when deficiencies have been noted in block 10 and emulation is based on detectives. Enter the total number of defects observed for each sample in the appropriate columns when the evaluation is based on defects.

(h) Block 13. State whether the lot passed or failed the test requirements established in the applicable appendix. Enter any additional information that might have had an affect on test results. Enter any recommendations on lot disposal, e.g., screen or renovate.

(i) Block 14. Self-explanatory.

(j) Block 15. Not applicable.

(2) Data sheet for Grand Lots, Miscellaneous Lots, or Depot Lots, (DA Form 986, 1 Jul 53). This form shall be used by the depot or storage activity to record the formation of these lots.

• *Form Instructions* •

(a) *Block 1.* Enter the complete standard nomenclature and model number of the item. Enter the National Stock Number (NSN).

(b) *Block 2.* Enter the depot or storage activity

where the items that make up the lot are stored.

(c) *Block 3.* Enter the type of storage.

(d) *Block 4.* State the previous serviceability of each lot composing the grand lot, miscellaneous lot, or depot lot.

(e) *Block 5.* Enter the method of packing and preservation.

(f) *Block 6*. Not applicable.

(g) *Column a.* Enter the manufacturer or manufacturers of the individual lots forming the grand lot, miscellaneous lot, or depot lot.

(h) *Column b.* Enter the manufacturer's lot number for each of the individual lots.

(i) *Column c.* Enter the date of manufacture of each lot.

(j) *Column d*. Enter the lot size for the individual lots listed in column b. Total the column values and enter the sum in the total block at the foot of the column.

(k) *Column e.* Record the number of samples selected for test from each lot listed in column b. Total the column values and enter the sum in the total block at the foot of the column.

(l) *Column f.* Record the number of samples selected for visual examination from each lot listed in column b. Total the column values and enter the sum in the total block at the foot of the column.

(m) *Columns g, h, and i.* Not applicable.

(n) *Remarks.* Enter any pertinent information regarding formation of the lot or sampling procedure.

(o) *Supplementing serviceability report number.* Enter the same report number here that is on DA Form 984.

(p) *Other blocks.* Self-explanatory.

(3) *Quality Deficiency Report (QDR) (SF 368).* Submit this form when initial receipt inspection reveals unsatisfactory new materiel from a manufacturer or unsatisfactorily renovated, repaired, or modified materiel from a contractor. Prepare and distribute SF 368 as specified in AR 702- 7.

(4) *Critical defects report.* When a critical defect is found, report it immediately to the Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-QAF, Rock Island, IL 61299. Report the incident via teletype or telephone and follow the initial report with a DA Form 984 giving complete ins formation concerning the extent of, and the circumstances pertaining to, the critical defect.

b. Errors in Reports.

(1) Only errors that affect the serviceability status of the materiel evaluated need be corrected. Make corrections by replacing those specific pages affected by the error with "Corrected Copies."

(2) The inspection activity that initiated the erroneous report shall prepare and distribute the corrected pages required by (1) above. Each such page shall be marked "Corrected Copy." Denote the corrected entries by encircling them.

c. Classified Data. Unless specifically authorized by the US Army Armament Research and Development Command, Security Office, place no classified information on the materiel serviceability reports. Use special codes as much as possible in preparing the documents when materiel or information is classified. If classified information is required place it on a separate sheet, not the materiel serviceability report form. Properly mark this sheet and transmit it by authorized means according to its degree of classification. Attention is directed to AR 380-5 which states that unnecessary classification or higher than necessary classification is to be avoided.

d. Submission of reports. With the exception of reports used for "Special Inspection", submit an original and two copies of all reports required by this bulletin to the Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-QAF and DRSAR-LEA-C, Rock Island, IL 61299.

2-10. TRC Cross-Referencing. For any TRC other than those defined in paragraph 2-6f, find the TRC code in appendix A for item to be inspected. Refer to the table of contents of this bulletin. In the column headed TRC, locate the TRC and then the corresponding appendix. Go to that appendix and perform the additional inspection as required for the item. The TRC is also given in the heading of each appendix and near the SB number on each page of the appendix.

APPENDIX A

CODED STANDARDS

NATIONAL STOCK NUMBER	ITEM NAME	QUALITY DEFECT CODE	IL	AQL MAJ	AQL MIN	SLC	IFC	TRC	PC	TSC
1040-00-368-6170	Appar, Filling Mine M2	200 102 111 113 123 131 133 141 143 291 192 193	S2	4.0	10.0	0	4	4JA	A	B
1730-00-368-6195	Beam Hoist Gas Tank, M1	200 102 111 113 123 131 133 141 143 291 192 193	S2	4.0	10.0	0	4	OOV	A	B
4730-00-368-6188	Adapter, Line Fill M1	200 102 111 113 123 131 133 141 143 291 192 193	S2	4.0	10.0	0	4	4JB	A	B
4940-00-368-6190	Mech, Valve-Repl, M1	200 102 111 113 123 131 133 141 143 291 192 193	S2	4.0	10.0	0	4	OOV	A	B
5120-00-368-6191	Wrench, Valve-Rem, M1	200 102 111 113 123 131 133 141 143 291 192 193	S2	4.0	10.0	0	4	OOV	A	B
6665-00-106-9595	Area Pred Radl Fallour M5A2	102 111 113 123 133 140 141 143 294A 194B 194C	S2	4.0	10.0	0	4	OOV	A	B
6665-00-130-3616	Calculator Set, Radiac ABC-M28A1	102 111 113 123 133 140 141 143 291 192 294A	S2	4.0	10.0	0	4	OOV	A	B
6665-00-893-0985	Calculator, ABC-M3	102 111 113 123 133 140 141 143 291 192 294A	S2	4.0	10.0	0	4	OOV	A	B
6665-00-893-0986	Calculator, ABC-M2	102 111 113 123 133 140 141 143 291 192 294A 193 194 194C 194B	S2	4.0	10.0	0	4	OOV	A	B
5120-00-368-6192	Wrench, M2	200 102 111 113 123 131 133 141 143 291 192 193	S2	4.0	10.0	0	4	OOV	A	B

APPENDIX B
QUALITY ASSURANCE INSPECTION INSTRUCTION
STORAGE SERVICEABILITY STANDARD ADDENDUM
APPARATUS, FILLING, FIELD, LAND MINE, M2

B-1. Purpose. This Quality Assurance Inspection Instruction provides peculiar instructions and inspection requirements in addition to those coded inspection requirements contained within appendix A of this supply bulletin for the item listed below:

NSN	NOMENCLATURE
1040-00-368-6107	Apparatus, Filling, Field, Land Mine, M2

B-2. Policy. The inspection requirements cited herein form an integral portion of the coded inspection requirements contained within appendix A of this bulletin when referenced in the Test Required Code (TRC) column for the related line item. These requirements will be used in conjunction with the coded requirements to provide an effective surveillance inspection plan. This inspection plan identifies the minimum inspection efforts that need to be expended to determine materiel serviceability with an acceptable confidence level. The user will not deviate from these requirements without prior permission from Commander, US Army Armament, Munitions and Chemical Command, ATTN: AMSMC-QAK, Rock Island, IL 61299-6000. Copies of correspondence will be provided to the Commander, US Army Armament, Munitions and Chemical Command, ATTN: AMSMC-QAE (A), Aberdeen Proving Ground, MD 21010-5423.

B-3. Instructions. *a. References.*

TM 3-1040-222-15	Operator, Organizational, Direct Support, General Support, and Depot Maintenance Manual: Apparatus, Filling, Field, Land Mine, M2 (1040-00-368-6170).
TM 3-1040-222-24P	Organizational, Direct Support, and General Support, Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools): Apparatus, Filling, Field, Land Mine, M2 (1040-00-368-6170).

b. Basis of Surveillance. Surveillance for the item listed in paragraph B-1 will be conducted on the basis of manufacturer's, grand, depot, miscellaneous, or mixed lots. Miscellaneous or mixed lot size shall not exceed 200 items.

c. Sampling. Sampling of lots shall be conducted in accordance with paragraph 2-4 of this bulletin and as follows:

(1) For *visual examination*. Sampling for visual examination of the M2 mine filling apparatus shall be conducted in accordance with MIL-STD-105, Single Sampling Plan, Inspection Level S-2, AQL of 4.0 percent for Major Defectives and 10.0 percent for Minor Defectives.

NOTE

It is permissible to select samples for end item visual examination from the sample obtained for visual examination for packaging, packing, marking, and preservation.

(2) *For tests*. Sampling for testing of the M2 mine filling apparatus shall be conducted in accordance with MIL-STD-105, Single Sampling Plan, Inspection Level S-2, AQL of 4.0 percent for Major Defectives. The sample quantity shall be randomly selected from the sample obtained in (1) above. If the sample is of equal size as that required for testing, the entire sample shall be subjected to test. Should the sample of visually acceptable items be smaller than that required for testing, additional samples shall be selected from the lot.

B-4. Inspection Procedure. The lot sample of the item listed in paragraph B-1 shall be visually inspected for packaging, packing, marking, and preservation defects as identified in the classification of defects, table B-1. The end item and components thereof shall be visually inspected for defects identified in classification of defects table B-2. The required sample for test, of visually acceptable items, shall be subjected to the test described in paragraph B-4c. Table B-2, in addition to providing classification of visual defects, provides classification of test failures. The classification of test failures is provided to differentiate between the test failures to be considered as critical, wherein one item failing the test would be cause for immediately suspending the lot from issue and use and the test failures to be considered as major, wherein acceptance or rejection of the lot would be based on the acceptance number of the sampling plan.

a. Classification of Defects for Packaging, Packing, Marking and Preservation.

**Table B-1. Packaging, Packing, Marking and Preservation
M2 Mine Filling Apparatus**

Category	Defect Number	Defect	Inspection Method
Critical:		None defined.	
Major:			
	101	Outer container damaged, weathered or dry rot to the extent contents cannot be adequately protected and requires replacement or damage to the extent contents cannot be readily removed.	Visual/Manual
	Other	Refer to "Quality Defect Codes" column of Appendix A.	Visual
Minor:			
	201	Inner containers and/or individual package damaged, wet, moldy or mildew.	Visual
	202	Cushioning filler materiel inadequate to insure tight pack.	Visual/Manual
	203	Contents loose to the extent items cannot be adequately protected in transit.	Visual/Manual

b. Classification of Defects for the M2 Mine Filling Apparatus. The following inspection shall be conducted after completion of the inspection cited in paragraph B-4a, and after uncrating per TM 3-1040-222-15.

Table B-2. Inspection of Filling Apparatus, Mine, M2

Category	Defect Number	Defect	Inspection Method
Critical:		None defined.	
Major:			
	101	Pipette. valve or fitting leak.	Test B-4.c
	102	Plug valves inoperative.	Visual/Manual
	103	Pipette support assembly damaged.	Visual
	104	Pedestal inoperative.	Visual/Manual
	Other	Refer to "Quality Defect Codes" column in Appendix A.	Visual
Minor:			
	201	Pipette and/or vent pipe damaged (minor dents or distortion).	Visual
	202	Drip cup does not return to stop when moved.	Visual/Manual
	Other	Refer to "Quality Defect Codes" column in Appendix A.	Visual

c. Test.

(1) *Requirements*. There shall be no leakage of P-7 preservative oil at the pipette, valves, and fittings when the pipette of the assembled M2 filling apparatus is filled to 1 gallon capacity at normal temperature, and observed for a period of 10-12 minutes.

(2) *Equipment required.* 55-gallon drum of Type P-7 preservative.

(3) *Procedure.* Assemble the M2 mine filling apparatus to a vented 55-gallon drum of P-7 preservative oil per TM 3-1040-222-15. Fill the pipette with the required amount of P-7 oil at normal temperature, and observe for leakage for the required period of time. Drain excess oil from apparatus following the test.

APPENDIX C

QUALITY ASSURANCE INSPECTION INSTRUCTION
STORAGE SERVICEABILITY STANDARD ADDENDUM
ADAPTER, LINE FILLING, ONE-TON CONTAINER, M1

C-1. Purpose. This Quality Assurance Inspection Instruction provides peculiar instructions and inspection requirements in addition to those coded inspection requirements contained within appendix A of this supply bulletin for the item listed below:

NSN	NOMENCLATURE
4730-00-368-6188	Adapter, Line Filling, One Ton Container, M1

C-2. Policy. The inspection requirements cited herein form an integral portion of the coded inspection requirements contained within appendix A of this bulletin when referenced in the Test Required Code (TRC) column for the related line item. These requirements will be used in conjunction with the coded requirements to provide an effective surveillance inspection plan. This inspection plan identifies the minimum inspection efforts that need be expended to determine materiel serviceability with an acceptable confidence level. The user will not deviate from these requirements without prior permission from Commander, US Army Armament, Munitions and Chemical Command, ATTN: AMSMC-QAK, Rock Island, IL 61299-6000. Copies of correspondence will be provided to the Commander, US Army Armament, Munitions and Chemical Command, ATTN: AMSMC-QAE (A), Aberdeen Proving Ground, MD 21010-5423.

C-3. Instructions. *a. References.*

TM 3-4730-200-15	Operator; Organizational, Direct Support, General Support, and Depot, Maintenance Manual: Adapter, Line filling, one-ton container, M1 (4730-00-368-6188).

b. Basis of Surveillance. Surveillance for the item listed in paragraph C-1 will be conducted on the basis of manufacturer's, grand, depot, miscellaneous, or mixed lots. Miscellaneous or mixed lot size shall not exceed 200 items.

c. Sampling. Sampling of lots shall be conducted in accordance with paragraph 2-4 of this bulletin and as follows:

(1) *For visual examination*. Sampling for visual examination of the adapter, line fill, M1 shall be conducted in accordance with MIL-STD-105, Single Sampling Plan, Inspection Level S-2, AQL of 4.0 percent for Major Defectives and 10.0 percent for Minor Defectives.

NOTE

It is permissible to select samples for end item visual examination from the sample obtained for visual examination for packaging, packing, marking, and preservation.

(2) *For tests*. Sampling for testing of the adapter, line fill, M1 shall be conducted in accordance with MIL-STD-105, Single Sampling Plan, Inspection Level S-2, AQL of 4.0 percent for Major Defectives. The sample quantity shall be randomly selected from the sample obtained in (1) above. If the sample is of equal size as that required for testing, the entire sample shall be subjected to test. Should the sample of visually acceptable items be smaller than that required for testing, additional samples shall be selected from the lot.

C-4. Inspection Procedure. The lot sample of the item listed in paragraph C-l shall be visually inspected for packaging, packing, marking, and preservation defects as identified in the classification of defects, table C-1. The end item and components thereof shall be visually inspected for defects identified in the classification of defects table C-2. The required sample for test, of visually acceptable items, shall be subjected to the tests described in paragraph C-4c. Table C-2, in addition to providing classification of visual defects, provides classification of test failures. The classification of test failures is provided to differentiate between the test failures to be considered as critical, wherein one item failing the test would be cause for immediately suspending the lot from issue and use and the test failures to be considered as major, wherein acceptance or rejection of the lot would be based on the acceptance number of the sampling plan.

a. Classification of Defects for Packaging, Packing, Marking and Preservation.

Table C-1. Packaging, Packing, Marking and Preservation
M1 Line Filling Apparatus

Category	Defect Number	Defect	Inspection Method
Critical:		None defined.	
Major:			
	101	Inner container or shipping container damaged, weathered or dry rot to the extent contents cannot be adequately protected and requires replacement or damaged to the extent contents cannot be readily removed.	Visual/Manual
	102	Hardware, packing component or banding missing, broken or ineffective.	Visual/Manual
	Other	Refer to "Quality Defect Codes" column in Appendix A.	Visual
Minor:			
	Other	Refer to "Quality Defect Codes" Column in Appendix A.	Visual

b. Classification of Defects for the Adapter, Line Fill, M1. The following inspection shall be conducted after completion of the inspection cited in paragraph C-4a.

Table C-2. Inspection of Adapter, Line Fill M1

Category	Defect Number	Defect	Inspection Method
Critical:		None defined.	
Major:			
	101	Filling assembly or venting assembly leakage.	Test C-4c
	102	Valve packing not resilient. (Packing, compressed to the point where resiliency is absent or indicative of unserviceable packing).	Visual/Manual
	103	Broken, badly distorted, or cracked piping.	Visual
	104	Threads stripped, crossed, or badly burred.	Visual/Manual
	Other	Refer to "Quality Defect Codes" column in Appendix A.	Visual
Minor:			
	201	Fittings and valves not securely in place.	Visual/Manual
	202	Valve core and cap not in place.	Visual
	Other	Refer to "Quality Defect Codes" column in Appendix A.	Visual

c. Test.

(1) *Requirements.* The filling line adapter, composed of the filling assembly and the venting assembly, will not leak within 1 to 11/z minutes as evidenced by emission of bubbles when completely submerged under ambient temperature water, 5 ± 1 inch from the surface, and subjected to air pressure of 75 ± 5 pounds per square inch gage (psig).

(2) *Equipment required.*

(a) Compressed dry air source capable of being controlled to 75 ± 5 psig.

(b) Suitable water tank for submerging filling line adapter.

(c) Thermometer.

(3) *Procedure.* Conduct the test as follows: Seal the filling and venting assemblies by inserting a luted plug into the open end of the valve in the venting assembly. Seal the valve adapters with fittings equipped with air valves to permit air under pressure to be pumped into the assembly. Introduce air at a controlled pressure of 75 ± 5 psig into the assembly. Submerge the assembly under 4 to 6 inches of water at a temperature of 70 degrees + 10 degrees fahrenheit and containing a wetting agent in sufficient concentration to prevent air bubbles from clinging to the surfaces. Observe the assembly for emission of bubbles for a period of 1 to 11/2 minutes. Each filling and venting assembly will be tested with valves closed tightly and with valves full open.

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By Order of the Secretary of the Army:

E. C. MEYER
General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Major General, United States Army
The Adjutant General

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PREVIOUS EDITIONS ARE OBSOLETE.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

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