APPENDIX 4

DEMILITARIZATION REQUIREMENTS

FOR *MUNITIONS LIST ITEMS*

GENERAL INSTRUCTIONS FOR USING THIS APPENDIX:

1. This Appendix is designed to both assist ICA personnel in the assignment of demilitarization codes and to provide instructions regarding the method and degree of that process. Each Category in the Appendix corresponds to the same (and in some cases additional) Category in the U.S. Munitions List. Each Category is further delineated, by paragraph, as follows:

PARAGRAPH A: Items which are identified on the USML as SME and require total destruction (Demilitarization Code "D").

PARAGRAPH B: Items which are identified on the USML as SME and require key point destruction (Demilitarization Code "C").

PARAGRAPH C: Items which are identified on the USML, but are not SME, that have been identified as critical or sensitive to DoD and/or the U.S. Government and require either total or key point destruction (Demilitarization Code "E").

PARAGRAPH D: All other items identified on the USML that require onlyTSCs at time of disposition.

PARAGRAPH E: Method and degree of demilitarization required.

2. Additional basic principles to be applied when assigning or making determinations on demilitarization codes:

a. Classification as an MLI takes precedence over any other classification. After an item has been determined not to meet the criteria of an MLI, it must then be reviewed to determine if it is an SLI (Demilitarization Code "Q").

b. An item is considered to be applicable to the USML when it has been specifically designed, modified or configured for military use, has a military capability or utility and either has or contributes to the offensive or defensive capability of a weapons system/sub-system (see Chapter II, paragraph B, this manual). Items which are identical in design, structure, composition and utility to an equivalent item in the commercial market, and do not meet the criteria for an SLI, will be coded Demilitarization Code "A." (Note: The application of "Army green" or Navy gray" paint does not qualify an item as MLI.)

c. All "common hardware" (e.g.,: nuts, bolts, screws, brackets, etc.) and all wiring, regardless of design or configuration, will be coded Demilitarization Code "A."

d. MLIs that are not designated as SME or identified in paragraph C in each category will normally be assigned Demilitarization Code "B."

3. Assistance in the use of this Appendix or in coding determination is available from the DRMS Demilitarization Office (see Chapter I, Attachment 1, this manual).

CATEGORY I. SMALL ARMS WEAPONS, PARTS, AND ACCESSORIES

(CATEGORY *I and IV* - *U.S.* MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

All nonautomatic, semiautomatic, and automatic guns and other weapons up to and including 50 caliber ***and all metallic components and parts therefor except as listed in subparagraph D, below.***

Shotguns ***and all metallic components and parts therefor except as listed in subparagraph D, below.***

Shoulder fired grenade launchers ***and all components and parts therefor except as listed in subparagraph D, below.***

Man portable rocket launchers ***and all components and parts therefor except as listed in subparagraph D, below.***

Individually operated weapons which are portable and/or can be fired without special mounts or firing devices and which have potential use in civil disturbances and are vulnerable to theft ***and all metallic components and parts therefor except as listed in subparagraph D, below.***

Pyrotechnic pistols and other ground signal projectors ***and all metallic components and parts therefor except as listed in subparagraph D, below.***

Rifle grenade launchers ***and all components and parts therefor except as listed in subparagraph D, below.***

Insurgency-counterinsurgency type firearms or other weapons having a special military application (e.g., close assault weapons systems), regardless of caliber, and all ***metallic*** component and parts therefor ***except as listed in subparagraph D, below.***

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A and B.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

Gunmounts (including bipods and tripods). ***Key points are all attachment points/fittings and moveable joints.***

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical/sensitive nature that requires total or key point destruction worldwide or as indicated. These items and their key points are normally assigned a Demilitarization Code "E."

Silencers, ***suppressors*** and mufflers ***(total destruction).***

Riflescopes and all types of telescopic and optical sights including those designed for night sighting and viewing ***(key point destruction). Key points are attachment points/fittings, lenses, infrared source and as otherwise indicated by the ICA.***

Magazines with a capacity of 10 of more rounds.

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Magazines and ammunition clips with a capacity of less than 10 rounds for items in this category.

All other technical data and defense services directly related to any defense article enumerated in this category.

Parts and components not meeting the definition of a Defense Article (Chapter II, subparagraph B1) will be coded Demilitarization Code "A."

E. Method and degree of demilitarization.

1. FOR ITEMS LISTED IN PARAGRAPH A, ABOVE, the preferred method of demilitarization under local expanded demilitarization procedures is by torch cutting utilizing a cutting tip that displaces at least 1/2 inch of metal. All cuts will completely sever the item and be made in accordance with instructions applicable to the items being demilitarized as depicted in appropriate figures contained in Appendix 7 ***and the DoD Demilitarization Bulletin Board.*** Shearing, crushing, deep water dumping or melting may be utilized when such methods of demilitarization are deemed more cost effective and/or practicable and are authorized by appropriate authority.

2. MACHINE GUNS will be demilitarized by torch cutting utilizing a cutting tip that displaces at least 1/2 inch of metal or shearing the receiver in a minimum of two places or by crushing in a hydraulic or similar type press. The barrel will be torch cut, sheared or crushed in the chamber area and in two or more places to the extent necessary to prevent ***restoration***. If the shearing or crushing method is used, the trunnion block and side frame must be completely cut through, broken or distorted to preclude ***restoration to a usable condition.***

3. RECEIVERS will be demilitarized by torch cutting in a minimum of two places utilizing a cutting tip that displaces at least 1/2 inch of metal or crushed to the extent necessary to preclude restoration to a usable condition.

4. BOLTS AND BARRELS will be demilitarized by torch cutting utilizing a cutting tip that displaces at least 1/2 inch of metal or crushed to the extent necessary to preclude restoration to a usable condition.

5. ***ACCESSORIES***, i.e.,; silencers and mufflers, rifle grenade launchers, riflescopes and all types of telescopic and optical sights including those designed for night sighting and viewing, and gunmounts (including bipods and tripods) will be demilitarized by breaking, crushing or cutting in a manner which precludes restoration to a usable condition in accordance with instructions applicable to the items being demilitarized as depicted in appropriate figures contained in Appendix 7 ***and the DoD Demilitarization Bulletin Board.***

6. ***OTHER METALLIC PARTS***, including M2 conversion kits (fig. 68), will be ***demilitarized*** by ***cutting***, crushing or melting.

7. ***TECHNICAL DATA will be demilitarized by burning, shredding or pulping.***

CATEGORY II. ARTILLERY AND PROJECTORS

(CATEGORY II - *U.S.* MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

*P*ylons, launchers and ejector/release racks *for aircraft mounted artillery and projectors.*

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A and B.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

Key points to be demilitarized: Tubes and gun barrels, launching rails, receivers, breechblocks, breech chambers, breech couplings, breechrings, breech housings, breechyokes, breechplugs, trunnion blocks, firing mechanisms, release mechanisms, equilibrators, recoil mechanisms, torpedo tube muzzle and breechdoors, turret rings,and flame thrower operating mechanisms, gun mounts and carriages (see paragraph E, below).

Guns over caliber .50.

*H*owitzers.

*C*annons.

*M*ortars.

*T*ank destroyers.

*G*renade and rocket launchers, other than man portable types.

*R*ecoilless rifles.

*M*ilitary flame throwers and projectors.

*S*hipboard rocket launchers.

*T*orpedo tubes.

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

Armor plate associated with items in this category (total destruction).

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

All other components, parts, accessories and attachments not enumerated elsewhere in this category.

All other technical data and defense services directly related to any defense article enumerated this category.

E. Method and degree of demilitarization:

NOTE: The figures mentioned below are illustrated in Appendix 7.

1. ***BREECHRINGS, BREECH CHAMBERS, BREECH COUPLINGS, BREECHBLOCKS, BREECH HOUSINGS, BREECHYOKES, BREECHPLUGS AND FIRING MECHANISMS*** will be cut through with the breechblock in the closed position (figure 1) and through the firing mechanism (figure 2). Equivalent cutting of the breechring, breech chambers (figure 3), breechblock, and firing mechanism as separate items is acceptable.

2. ***20MM GUNS*** will be demilitarized by torch cutting utilizing a cutting tip that displaces at least 1/2 inch of metal in accordance with figures 38, 39, and 40, to include, as applicable:

a. One cut through body of the receiver to the rear of the cradle with bolt assembly remaining in the weapon if furnished with the assembly.

b. One cut through the heavy portion of the barrel, the gas operating system and recoil spring.

c. Torch the chamber opening in the barrel and forward portion of the bolt, if assembled in weapons, sufficiently to create a metal puddle.

d. 20MM feeder will be demilitarized by cutting, shearing or crushing.

e. Weapon accountability will be dropped on a unit basis after demilitarization has been completed.

3. ***RECEIVERS (30MM guns)*** will be cut into three sections by cutting through the barrel support section, with a second cut through the slideways.

4. ***ROCKET LAUNCHERS AND GRENADE LAUNCHERS:*** Extruded and cast aluminum construction lend themselves to destruction by crushing. Crushing will be accomplished by hydraulic or similar press or by placing on a hard surface and flattened by a steel track crawler type vehicle.

5. ***RECEIVERS (CASING) (40MM GUN)*** (fig. 4) will be cut completely through the casing body assembly near the rammer tray.

6. ***BARRELS (GUNS AND HOWITZER)*** will be cut into two pieces, the cut being made as near the point of origin of the rifling as possible but not more than one-third of the barrel length from the breech face of the tube (figure 5). Combat vehicle artillery will be cut just in front of the mantelet or shield (figure 17).

7. TRUNNIONS, TRUNNION BEARINGS, AND TRUNNION BEARING CAPS (not disassembled) will be cut completely through diagonally.

8. MORTARS will be cut by torch or crushed (figure 6).

a. When cutting method is used, the tube will be cut into two pieces, the cut being made one-third of the length of the tube from the cap end. The cap will be cut into three pieces, the cut being made diagonally through the cap.

b. When the crushing method is used, the mortar tube will be crushed (inner surfaces of the tube touching) for a distance of 8 inches, extending from base cap end toward muzzle end of tube. The base cap will be crushed until the largest diameter of cap is out of round by a minimum of 1 inch.

9. ROCKET LAUNCHERS, including rails, will be cut, crushed, or broken to render them ***inoperable and beyond restoration.***

10. MILITARY FLAME THROWER MECHANISMS will be cut, crushed or broken.

11. HYDROPNEUMATIC RECOIL AND EQUILIBRATOR MECHANISMS. WARNING: Demilitarization of recoil mechanisms and equilibrators must be accomplished by qualified personnel only.

a. Prior to release of hydropneumatic recoil or equilibrator mechanisms (which in a broad sense includes counter-recoil (recuperator) mechanisms) to a DRMO, reserve oil will be drained and nitrogen pressure released by technically qualified personnel in accordance with instructions in the pertinent technical manuals.

WARNING: Oil and nitrogen release valves and drain plugs will be left open during cutting operations.

(1) If the nitrogen pressure cannot be released due to a faulty valve, a one-eighth inch hole will be drilled by technically qualified personnel in the wall of the nitrogen cylinder 6 inches from the nitrogen end (figure 8) to release the pressure.

WARNING: Extreme caution should be exercised while drilling the hole in the nitrogen cylinder wall. A suitable safety shield should be used to protect personnel from the drill shavings that are expelled from the hole when drill enters the nitrogen cylinder. Protection should also be provided for eyes, face, arms, and hands of personnel performing the operation.

(2) To prevent a possible internal buildup of oxygen and acetylene in the nitrogen cylinder during cutting operations, a one-half inch hole will be drilled 6 inches from the end of the nitrogen cylinder (figure 8). To perform this operation on the 155MM, 175MM and 8-inch howitzer mechanisms, a section of the cover or housing must be cut away. (Note: If a one-eighth inch hole has been drilled (1_. above), enlarge this hole to one-half inch.)

b. Enlarge the one-half inch hole with a gas-cutting torch by removing a section of at least 2 square inches from the nitrogen or recuperator cylinder as shown in figures 8 and 9.

NOTE: If qualified explosive personnel are available, a satisfactory hole can be made by the use of shaped charge instead of drilling and cutting with a torch.

c. The recoil rod and counter-recoil rod, if present, will be cut completely through and flush with the recoil and counter-recoil cylinder (figure 10). Hydropneumatic equilibrators such as those on the 155MM and 175MM guns and 8-inch howitzers will be cut as shown in figure 11.

12. HYDROSPRING RECOIL AND EQUILIBRATOR CYLINDER.

a. Drain off oil from hydrospring recoil cylinders. On hydrospring cylinders, cut through cylinder lengthwise, the cut to be 4 inches or more in length and of sufficient depth to cut through at least two coils of the spring (figure 12). Concentric-type recoil mechanisms will be cut through the cradle in the most accessible area, the cut to be of sufficient length and depth to cut at least two coils of the spring (figures 13 and 14).

WARNING: Hydrospring recoil and equilibrator mechanisms contain springs under high pressure; therefore, extreme caution must be exercised. Demilitarization must be performed by technically qualified personnel only. No attempt should be made to cut the cylinder in two pieces without prior release of spring tension.

b. In the case of the 40MM automatic gun, proceed as in 1 through 4 below:

(1) Remove the two drain plugs near the front of the recoil cylinder(s) and drain the recoil oil.

(2) At a point just behind the recoil cylinder attaching bracket, cut completely through tube of casing body assembly, recoil cylinder(s), and barrel assembly(s) (if barrel is installed on gun).

(3) Open top cover(s) and cut longitudinally through top portion of breechring(s) and breechblock(s).

(4) At a point between the front and rear loader guides, cut completely through breech casing body(s) and tray(s) (figure 7).

c. In the case of the 37MM automatic gun, cut completely through the gun tube and counter-recoil (recuperator) mechanism and cut completely through the middle of the trunnion bearing, trunnion, and trunnion bearing cap at a 45 degree angle.

13. SPRING-TYPE EQUILIBRATORS such as the type used on the 105MM howitzers of the M2-series will be cut through both inner and outer spring shown in figure 12.

14. TORPEDO TUBES.

a. If the ship is to be scrapped in the United States:

(1) The breechring will be removed by cutting or sawing from the torpedo tube barrel. The point of cut in the barrel will be approximately 6 to 12 inches forward from face of breechring.

(2) All muzzle and breechdoors will be cut into two pieces of approximately equal sizes.

b. If the ship is to be scrapped outside the United States:

(1) Remove the breechdoor and cut in half.

(2) Remove the rotating breechlocking ring and cut in half.

(3) Cut the breech end of the tube approximately 6 to 12 inches from the breechface.

(4) Secure the muzzle door operating shaft against movement by pinning it in place.

15. GRENADE PROJECTOR MOUNTS, GRENADE MOUNTS, as used in M551 armored reconnaissance airborne vehicle will be demilitarized by cutting to destroy the firing solenoid (figures 15 and 16).

16. NAVY GUN MOUNTS, NAVY GUN TURRETS AND OTHER ARMORED ITEMS. Cut armor into at least four approximately equal sized pieces to destroy integrity. Cut turret rings in two places.

17. TOP CARRIAGES AND BOTTOM CARRIAGES, MOUNTS, AND OUTRIGGERS will be cut through below the trunnion bearings.

18. PYLONS AND EJECTOR/RELEASE RACKS will be demilitarized as shown in figures 52 and 53.

19. TECHNICAL DATA will be demilitarized by burning, shredding or pulping.

F. As an alternative method of demilitarization, any complete weapons, repair parts and key points included in this ***Category***, which are small enough to fit in the furnace at Rock Island Arsenal (RIA) without cutting, may be demilitarized by melting as outlined in Chapter *IV*, in the same manner as weapons and parts included in ***Category I*** above. Exception is made to equilibrators and recoil mechanisms which will not be demilitarized by melting. The dimensions of the furnace firebox at RIA are: 4 feet 6 inches in diameter by 4 feet deep.

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40X

CATEGORY III. AMMUNITION

(CATEGORY III - *U.S.* MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D." For items in this category which are considered live AEDA, Demilitarization Code "G" will be assigned.

Ammunition manufacturing and loading machines (except hand loading).

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A and B.

B. The following items are designated as SME and require key point demilitarization. They are normally assigned a Demilitarization Code "C," however for items in this category which are considered live AEDA, Demilitarization Code "G" will be assigned (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

Key points to be demilitarized: Explosives, pyrotechnics, propellants, propellant fillers, cartridges, toxic material, rotating bands, incendiary or smoke content, other military design features, and features determined hazardous to the general public.

Ammunition *for the arms listed in Categories I and II of the USML.*

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E," however for items in this category which are considered live AEDA, Demilitarization Code "G" will be assigned.

Primers, and components therefore *(total destruction).*

Ammunition belting and linking machines.

Incendiary *ammunition* agents (except those having dual military and commercial use) *(total destruction).*

Detonating devices for ammunition *(total destruction).*

Ammunition belting and linking machines (key point destruction). Key points are specifically designed dies, blocks, jigs and special tooling.

All compounds specifically formulated for items in this category (except those having dual military and commercial use) *(total destruction or neutralization).*

Expended cartridge/shell cases, caliber .60 and under, require demilitarization *overseas or* prior to export from the United States only.

NOTE: Expended cartridge and shell casings over 30MM will be mutilated in the United States, Puerto Rico, the Virgin Islands, American Samoa, Guam, and the TTPI only if they are known to be defective.

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Ammunition components, ***including but not limited to powder bags, bullets, jackets, cores and shells (except shotgun shells).***

All other components, parts, accessories and attachments not enumerated elsewhere in this category.

All other technical data and defense services directly related to any defense article enumerated in this category.

E. Method and degree of demilitarization: As economically as practicable in accordance with existing environmental standards, safety, and operational regulations, to the point of assuring freedom from explosives, pyrotechnics, propellants, propellant fillers, toxic or incendiary materials, smoke content or design hazard.

1. FOR AMMUNITION PROCURED BY THE DEPARTMENT OF THE ARMY, technical instructions relating to ballistic missiles, large rockets, and ground handling equipment, as published in the MICOM Series 43 Technical Manuals, will be furnished by the Commander, U.S. Army Missile Command, ATTN: AMSMI-LC-ME-PP, Redstone Arsenal, AL 35898-5239.

2. FOR CONVENTIONAL, CHEMICAL, AND ALL OTHER TYPES OF AMMUNITION AND AMMUNITION PECULIAR EQUIPMENT (APE), EXCLUDING LETHAL CHEMICAL AGENTS AND MATERIAL, technical instructions will be provided by the U.S. Army Armament, Munitions and Chemical Command, ATTN: AMSMC-DSM, Rock Island, IL 61299-6000.

3. FOR AMMUNITION PROCURED BY THE DEPARTMENT OF THE NAVY, technical instructions will be issued by the Commander, Naval Sea Systems Command or by the Commander, Naval Air Systems Command, Department of the Navy, Washington, DC, whichever has technical control of the item.

4. FOR AMMUNITION PROCURED BY THE DEPARTMENT OF THE AIR FORCE, technical instructions will be issued by the Engineering and Reliability Branch (MMWR), Ogden Air Logistics Center, Ogden, UT 84056-5609.

NOTE: The figures mentioned below are illustrated in Appendix 7.

5. ARTILLERY/MORTAR AMMUNITION COMPONENTS AND SIMILAR ITEMS OF All TYPES (fig 55 through 58) including but not limited to high explosive, practice, inert loaded, incendiary, and smoke fillers. Remove explosive filler from projectile (wash out, burn out, etc.). Remove rotating band or score or deform bourrelet or gas check band or deform fuze cavity threads. Burn propellant unless otherwise instructed to retain for sale or other purposes. Deform fin assembly threads or fin blades. Cartridge cases (not returned to ICA designated contractors) will be deformed by off-center punch-out of primer or split case neck or puncture the lower sidewall with a minimum of 3/4 inch hole or deform lower sidewall, which will prevent chambering, or crush or press. Burn out smoke mixture or detonate smoke canister.

6. OTHER NONEXPLOSIVE FILLED ITEMS which perform a major function essential to the basic mission of the end item. Cut, crush, or process through a deactivation furnace. Burn or cut cartridge case lines and propelling charge bags. Cut, crush burn, or crush aircraft and ground signal cases. Crush or detonate piezoelectric (lucky) elements.

7. INERT LOADED AMMUNITION, PROJECTILES, AND SIMILAR ITEMS OF ALL TYPES loaded with inert filler to simulate service item. Remove rotating band from artillery projectiles and open the closure of the projectile body to expose the inert filler. On items without rotating bands, open the body closure to expose the inert filler and damage the closure surface to prevent reloading or resealing.

NOTE: For inert loaded ***items*** (concrete, sand, plaster) a potential explosive safety hazard exists when the internal filler is not exposed or unconfined during burning, melting or cutting. Heat generated from a demilitarization process can cause the filler, moisture and air to expand and burst sealed casings. For this reason, DRMOs will not accept inert loaded ***items*** unless the internal filler is exposed and unconfined. The internal filler may be exposed by removal of the fuze well from the cavity, removal of base plates, or by puncturing/drilling holes in the bomb casing.

8. TECHNICAL DATA will be demilitarized by burning, shredding or pulping.

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CATEGORY IV. LAUNCH VEHICLES, GUIDED MISSILES, BALLISTIC MISSILES, ROCKETS, TORPEDOES, AND COMPONENTS

(CATEGORY IV - *U.S.* MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D." For items in this category which are considered live AEDA, Demilitarization Code "G" will be assigned.

Ablative materials *fabricated or semifabricated from advanced composites (e.g., silica, graphite, carbon, carbon-carbon, and boron filaments) that are derived directly from or specifically developed or modified for items in this category.*

Nonnuclear warheads.

Missile and space vehicle powerplants.

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A and B.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C," however for items in this category which are considered live AEDA, Demilitarization Code "G" will be assigned (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

Key points to be demilitarized: Explosives, propellants, propellant fillers, toxic material, rotating bands, incendiary or smoke content, other military design features, features determined hazardous to the general public and as indicated under paragraph E, below.

Launch vehicles and missile and antimissile systems including but not limited to guided, tactical and strategic missiles, launchers and systems.

Rockets (including but not limited to meteorological and other sounding rockets) as well as launchers for such defense articles.

Torpedoes and depth charges.

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E," however for items in this category which are considered live AEDA, Demilitarization Code "G" will be assigned.

NOTE: For electronic items listed in Categories XI and XII of this Appendix which apply to items in this Category (e.g. fire control), the coding guidance in paragraphs A and B of Categories XI and XII take precedence over coding guidance found in this paragraph.

Apparatus, devices and materials for the control, activation, detection, protection, discharge or detonation of launch vehicles, guided missiles, ballistic missiles, rockets, and rocket torpedoes ***(total destruction).***

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Specifically designed key components, parts and accessories, attachments and associated equipment ***not otherwise enumerated above.***

All other technical data and defense services directly related to any defense article enumerated this category.

E. Method and degree of demilitarization: As economically as practicable in accordance with existing environmental standards, safety and operational regulations, to the point of assuring freedom from explosives, toxic or incendiary materials, smoke content or design hazard.

1. FOR ITEMS PROCURED BY THE DEPARTMENT OF THE ARMY, technical instructions relating to demilitarization of guided and ballistic missiles, warheads, large rockets, and associated equipment will be furnished by the U.S. Army Missile Command, Redstone Arsenal, Alabama.

2. FOR ALL OTHER TYPES OF EXPLOSIVES EXCEPT LETHAL CHEMICAL AGENTS AND MATERIEL, technical instructions will be furnished by the Commander, U.S. Army Materiel Readiness Command, Rock Island, IL 61299.

3. FOR LETHAL CHEMICAL AGENTS INCLUDING VESICANTS AND NERVE AGENTS AND THEIR CARRIERS, technical instructions will be furnished by the U.S. Army Armament Material Readiness Command Program Manager for the Demilitarization of Chemical Materiel; Edgewood Arsenal, Aberdeen Proving Ground, MD 21010.

4. FOR ITEMS PROCURED BY THE DEPARTMENT OF THE NAVY, technical instructions will be issued by the Commander, Naval Sea Systems Command or by the Commander, Naval Air Systems Command, Department of the Navy, Washington, DC, whichever has technical control of the item.

5. FOR ITEMS PROCURED BY THE DEPARTMENT OF THE AIR FORCE, technical instruction will be issued by the Engineering and Reliability Branch (MMWR), Ogden Air Logistics Center, Ogden, UT 84056.

6. MISSILES.

a. Remove and dispose of all classified equipment as directed for ***Category IX.*** Remove and dispose of explosive charges as directed for ***Category IV.***

b. Destroy the airframe to airframe section (stage) attaching fittings, leveling and aligning fittings, engine mounts (where applicable), ground handling and launching fittings. Destruction may be accomplished in such a manner as to preserve the utility of the fuel tanks to the extent possible. The tail and forward skirt assemblies, transition assemblies, between tank structure and tail fairing assembly (engine mount section) will be completely mutilated to prevent restoration and assembly. Completely destroy the gyros, accelerometers, and other peculiar electronic equipment in the guidance system and all target selection programming data. Completely destroy the ablative shell, impact detectors, and wire or printed circuitry in the missile and re-entry vehicle. Destruction may be accomplished by cutting with a torch, shearing, crushing, or melting.

CAUTION: All tanks, lines and fittings will be thoroughly decontaminated by technically qualified personnel before proceeding with demilitarization of the airframe.

7. TECHNICAL DATA will be demilitarized by burning, shredding or pulping.

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48x

CATEGORY V. MILITARY EXPLOSIVES, SOLID AND LIQUID PROPELLANTS, *BOMBS, MINES,* INCENDIARY AGENTS *AND THEIR CONSTITUENTS*

(CATEGORIES IV AND V - *U.S.* MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D." For items in this category which are considered live AEDA, Demilitarization Code "G" will be assigned.

All hand *and rifle* grenades and similar items of all types, including but not limited to high explosive (figure 65), practice, inert, incendiary, smoke, tear gas, other chemical, and sectional grenades.

Demolition blocks and blasting caps.

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A and B.

B. The following items are designated as SME and require key point demilitarization. They are normally assigned a Demilitarization Code "C," however for items in this category which are considered live AEDA, Demilitarization Code "G" will be assigned (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

Key points to be demilitarized: Explosives, pyrotechnics, propellants, propellant fillers, cartridges, toxic material, rotating bands, incendiary or smoke content, other military design features, and features determined hazardous to the general public.

Military explosives.

Military fuel thickeners.

Bombs.

Land and Naval mines.

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E," however for items in this category which are considered live AEDA, Demilitarization Code "G" will be assigned.

Boosters, and components therefore *(total destruction).*

Primers, and components therefore *(total destruction).*

*I*ncendiary agents (except those having dual military and commercial use) **(total destruction).**

*F*uzes and components therefore ***(total destruction).***

*P*yrotechnics (except those having dual military and commercial use) ***(total destruction).***

*M*issile propellants ***(total destruction or neutralization).***

*A*ll compounds specifically formulated for items in this category (except those having dual military and commercial use) ***(total destruction or neutralization).***

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

*M*issile ground handling equipment designed to transport solid or liquid propellants (fuels and oxidizers).

All other components, parts, accessories and attachments not enumerated elsewhere in this category.

All other technical data and defense services directly related to any defense article enumerated in this category.

E. Method and degree of demilitarization: As economically as practicable in accordance with existing environmental standards, safety, and operational regulations, to the point of assuring freedom from explosives, pyrotechnics, propellants, propellant fillers, toxic or incendiary materials, smoke content or design hazard.

1. FOR ITEMS PROCURED BY THE DEPARTMENT OF THE ARMY, technical instructions relating to ballistic missiles, large rockets, and ground handling equipment, as published in the MICOM Series 43 Technical Manuals, will be furnished by the Commander, U.S. Army Missile Command, ATTN: AMSMI-LC-ME-PP, Redstone Arsenal, AL 35898-5239.

2. FOR CONVENTIONAL, CHEMICAL, AND ALL OTHER TYPES OF ITEMS, EXCLUDING LETHAL CHEMICAL AGENTS AND MATERIAL, technical instructions will be provided by the U.S. Army Armament, Munitions and Chemical Command, ATTN: AMSMC-DSM, Rock Island, IL 61299-6000.

3. FOR CHEMICAL AGENTS AND MATERIALS INCLUDING VESICANTS, AND NERVE AGENTS AND THEIR CARRIERS, technical instructions will be provided by the U.S. Army Program Manager for Chemical Demilitarization, ATTN: SAIL-PM, Edgewood Arsenal, Aberdeen Proving Ground, MD 21010-5401.

4. FOR ITEMS PROCURED BY THE DEPARTMENT OF THE NAVY, technical instructions will be issued by the Commander, Naval Sea Systems Command or by the Commander, Naval Air Systems Command, Department of the Navy, Washington, DC, whichever has technical control of the item.

5. ***FOR ITEMS PROCURED BY THE DEPARTMENT OF THE AIR FORCE,*** technical instructions will be issued by the Engineering and Reliability Branch (MMWR), Ogden Air Logistics Center, Ogden, UT 84056-5609.

NOTE: The figures mentioned below are illustrated in Appendix 7.

6. ***ARTILLERY/MORTAR COMPONENTS AND SIMILAR ITEMS OF All TYPES*** (figures 55 through 58) including but not limited to high explosive, practice, inert loaded, incendiary, and smoke fillers. Remove explosive filler from projectile (wash out, burn out, etc.). Remove rotating band or score or deform bourrelet or gas check band or deform fuze cavity threads. Burn propellant unless otherwise instructed to retain for sale or other purposes. Deform fin assembly threads or fin blades. Cartridge cases (not returned to ICA designated contractors) will be deformed by off-center punch-out of primer or split case neck or puncture the lower sidewall with a minimum of 3/4 inch hole or deform lower sidewall, which will prevent chambering, or crush or press. Burn out smoke mixture or detonate smoke canister.

7. ***BOMBS AND SIMILAR ITEMS OF ALL TYPES,*** including but not limited to high explosive, practice, inert loaded, incendiary and photoflash fillers, military explosive excavating devices, demolition blocks and grenades. Demilitarization can be accomplished by removal of explosive filler in an approved manner; e.g., wash-out, burn-out, etc. Deform fuze cavity threads or remove base plate by other than normal disassembly (such as sawing) or detonate.

8. ***SMALL EXPLOSIVE ITEMS,*** including but not limited to fuzes (figures 59 and 60), boosters, primers, detonators, firing devices (figure 61), ignition cartridges, blasting caps, grenade cartridges, tracer assemblies and similar components. Demilitarization can be accomplished by processing through a deactivation furnace at settings of 1150 degrees at burner end and 450 to 500 degrees at stack end or by mutilation. Incendiary projectiles will normally be decored to expose and assist in the complete burning of the incendiary composition. Where decoring of projectile is not necessary, processing through the deactivation furnace is adequate. Burn out 20MM HE projectiles by processing through the deactivation furnace or detonate. Processing complete small arms ammunition cartridges, all calibers, through the deactivation furnace at controlled temperatures will result in adequate demilitarization. Fuzes and boosters can be disposed of by disassembly and cutting, drilling, or punching to deform metal parts. Explosive components generated through disassembly are to be burned or detonated. Fuzes may also be processed through a deactivation furnace as a complete item when disassembly is not feasible. For grenades demilitarization may be accomplished by removal of explosive components by crushing, cutting, breaking, melting, burning, or otherwise to fully preclude their rehabilitation or further use as grenade components. Demilitarization may also be accomplished by detonation or burning as appropriate for the particular item involved or by deep water dumping at sea.

9. ***OTHER NONEXPLOSIVE FILLED ITEMS*** which perform a major function essential to the basic mission of the end item. Cut, crush, or process through a deactivation furnace. Burn or cut cartridge case lines and propelling charge bags. Cut, crush burn, or crush aircraft and ground signal cases. Crush or detonate piezoelectric (lucky) elements. Crush, cut or deform threads as appropriate on stabilizer tube or fin of grenade adapters; rifle grenade fin assemblies; stabilizer tube-fin assembly, rifle grenade; rifle grenade ogive; rocket launchers (figure 63), mine arming plugs, shape charge stand-offs and similar items.

10. ROCKET MOTORS, WARHEADS, COMPONENTS AND SIMILAR ITEMS OF ALL TYPES, including high explosive, inert loaded, practice and smoke. Wash out or burn out rocket warhead filler and mutilate casing by crushing or cutting by torch or deforming threaded area. Disassemble and remove or burn out rocket motor propellant and cut, crush case, or deform threaded area of cases. Rocket motors and warheads may also be detonated.

11. MINES, ANTI-PERSONNEL/ANTI-TANK (figure 64), EXPLOSIVE COMPONENTS AND SIMILAR ITEMS OF ALL TYPES including high explosive, practice, inert loaded and associated explosive components. Wash out or burn out filler and mutilate casing by crushing, cutting by torch, deforming threaded area or detonate. Process mine fuzes, activators, and firing devices through a deactivation furnace, burn in a cage or detonate. Mine firing devices such as the M56 or M61 types should be crushed, cut, or burned.

12. INERT LOADED PROJECTILES, WARHEADS AND SIMILAR ITEMS OF ALL TYPES loaded with inert filler to simulate service item. Remove rotating band from artillery projectiles and open the closure of the projectile body to expose the inert filler. On items without rotating bands, open the body closure to expose the inert filler and damage the closure surface to prevent reloading or resealing.

NOTE: For inert loaded bombs (concrete, sand, plaster) a potential explosive safety hazard exists when the internal filler is not exposed or unconfined during burning, melting or cutting. Heat generated from a demilitarization process can cause the filler, moisture and air to expand and burst sealed casings. For this reason, DRMOs will not accept inert loaded bombs unless the internal filler is exposed and unconfined. The internal filler may be exposed by removal of the fuze well from the cavity, removal of base plates, or by puncturing/drilling holes in the bomb casing.

13. TECHNICAL DATA will be demilitarized by burning, shredding or pulping.

CATEGORY VI. VESSELS OF WAR AND SPECIAL NAVAL EQUIPMENT

(CATEGORY VI - *U.S.* MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

Protective systems.

Catapults.

Arresting gear.

Submarine storage batteries.

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A and B.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

Key points to be demilitarized: Armament, hulls (warships only), applicable items designated in other Categories in this appendix, and other items designated by the Naval Systems Commands or other procuring Military Services/Defense Agencies and as indicated under paragraph E, below.

Warships, including any ship originally built as a warship but later modified to a different configuration *and any vessel specifically designed or modified for military purposes.*

Amphibious warfare vessels.

Mine warfare vessels.

Landing craft.

Patrol vessels.

Auxiliary vessels.

Service craft.

Experimental types of naval vessels.

NOTE: A list of these types of ships is included under the heading "Vessels of War and Special Naval Equipment" in Appendix II, this manual.

*T*urrets and gun mounts ***(see Category II for key points).***

*M*issile systems ***(see Categories III and IV for key points).***

*S*pecial weapon systems ***(see Categories III, IV, XI, and XII for key points).***

Naval nuclear propulsion plants, their land prototypes, and special facilities for their construction, support and maintenance. This includes any machinery, device, component, or equipment specifically developed, designed or modified for use in such plants or facilities.

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined they be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

RESERVED

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

*M*inesweeping equipment and components, parts, attachments and accessories specifically designed ***or modified*** therefor.

Harbor entrance detection devices, (magnetic, pressure, and acoustic) and controls and components therefor.

*S*pecifically designed ***or modified*** key components, parts and accessories, attachments and associated equipment ***not otherwise enumerated above.***

All other technical data and defense services directly related to any defense article enumerated this category.

E. Method and degree of demilitarization:

1. WARSHIPS: Armament will be demilitarized as prescribed for ***Categories I*** and ***II*** above. Hulls will be demilitarized by scrapping, except, with respect to destroyers and destroyer escorts, the portion of the hull to which the power plant is attached need not be cut.

2. OTHER COMBATANT SHIPS, including but not limited to, amphibious warfare ships, landing craft, ***tracked*** landing vehicles, mine warfare vessels, ***etc., will be demilitarized the*** same as warships, except hulls do not have to be demilitarized.

3. TECHNICAL DATA will be demilitarized by burning, shredding or pulping.

4. OTHER ITEMS designated in this appendix will be demilitarized as prescribed by the appropriate Naval Systems Commands or other procuring Military Services/Defense Agencies.

CATEGORY VII. TANKS AND MILITARY VEHICLES

(CATEGORY VII - *U.S.* MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

Tanks of all types.

*M*ilitary recovery vehicles.

*G*un carriers.

*O*ther military type armed or armored vehicles.

*B*ridge launching vehicles.

*H*alf-tracks.

*A*mphibious vehicles.

*E*ngines specifically designed, modified ***or configured*** for the vehicles in paragraphs A and B.

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A and B.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

Key points to be demilitarized: Arms, armor, applicable items designated in other Categories in this appendix, and other items designated by the procuring Military Services/Defense Agency and as indicated under paragraph E, below.

*V*ehicles specifically designed or modified to accommodate mountings for arms or other specialized military equipment or fitted ***for*** such items ***(key points are all armor, mountings, and fittings).***

Engines specifically designed, modified or configured for the vehicles in paragraphs A and B.

*S*elf-propelled guns, ***mortars*** and howitzers ***(key points are all armor, engines specifically designed, modified or configured for the item, and as prescribed in Category II above).***

*M*ilitary railway trains ***(key points are all armor, weapons and weapons fittings/mounts).***

Combat engineer vehicles *(key points are all armor, weapons and weapons fittings/mounts).*

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

Tank track and track components including, but not limited to road wheels, idler arms, sprockets, final drives, etc. (Rubber track pads are not included.) These items require total destruction overseas or prior to export from the United States only.

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Rubber track pads.

Specifically designed *or modified* components, parts, accessories, attachments and associated equipment *not otherwise enumerated above including but not limited to military bridging equipment and deep water fording kits.*

All other technical data and defense services directly related to any defense article enumerated this category.

E. Method and degree of demilitarization:

NOTE: The figures mentioned below are illustrated in Appendix 7.

1. ARMAMENT will be demilitarized as prescribed for *Categories I* and *II*, above. Demilitarization of main armament (such as gun, howitzer, mortar or rocket launcher) on combat vehicles may be accomplished on the vehicles (figure 17) or after removal from the vehicles.

2. ALL HINGE-MOUNTED ITEMS (such as doors, ramps or hatches) will be removed from the vehicle prior to cutting the hull.

3. TURRETS AND/OR CUPOLAS will be cut into two sections as shown in figure 17 and removed prior to cutting the hull.

4. HULL:

a. The top section of the hull on all vehicles will be cut into four sections without affecting the suspension, as shown in figures 17, 18, and 19. To accomplish the hull cuts, a complete circumferential cut will be made at or just above the track or wheel level and cuts will be made across the top of the hull from the front center to the rear center (longitudinal) and from the left side center to the right side center (transverse).

b. A rectangular section of the hull front armor plate, starting at the circumferential cut and extending to the floor line, will be removed. The width of the section will be determined by making the widest cut possible without affecting the suspension.

5. TECHNICAL DATA will be demilitarized by burning, shredding or pulping.

CATEGORY VIII. MILITARY AIRCRAFT (COMBAT, TACTICAL AIR VEHICLES), SPACECRAFT AND ASSOCIATED EQUIPMENT

(CATEGORY VIII - *U.S.* MUNITIONS LIST)

NOTE: For electronic items associated with items in this Category (e.g., fire control, countermeasures, avionics, etc.), coding guidance in paragraphs A and B of Categories XI and XII apply.

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

Military aircraft engines, except reciprocating engines, and spacecraft engines specifically designed or modified for the aircraft and spacecraft in paragraphs A and B of this category.

Manned and unmanned **spacecraft.**

Active and passive satellites.

Cartridge-actuated devices utilized in emergency escape of personnel.

(NOTE: For items which are considered live AEDA, Demilitarization Code "G" will be assigned.)

Airborne refueling equipment specifically designed for use with military aircraft, spacecraft and missiles.

Radomes.

Inertial navigation systems, ***aided or hybrid inertial navigation systems, Inertial Measurement Units (IMUs) specifically designed, modified, or configured for military use and all specifically designed components, parts, and accessories. For other inertial reference systems and related components refer to Category XI.***

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A and B.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

Key points to be demilitarized: Aircraft fuselage, tail assembly, wing spar, armor, radomes, armament and armament provisions, explosives (includes explosive bolts and squibs), classified items, missile ablative shell, impact detectors and circuitry, missile guidance systems, and target selection programming data, other items designated elsewhere in this Appendix and as indicated under paragraph E, below.

Aircraft, including but not limited to helicopters, non-expansive balloons, drones, and lighter-than-air aircraft, which are specifically designed, modified, or equipped for military purposes. This includes but is not limited to the following military purposes: gunnery, bombing, rocket or missile launching, electronic and other surveillance, reconnaissance, refueling, aerial mapping, military liaison, cargo carrying or dropping, personnel dropping, airborne warning and control, and military training.

Developmental *and experimental* aircraft and components thereof which have a significant military applicability, *excluding such aircraft and components that have been certified by the Federal Aviation Administration and determined through the commodity jurisdiction procedure, to be subject to the export control jurisdiction of the Department of Commerce.*

Military aircraft engines, except reciprocating engines, and spacecraft engines specifically designed or modified for the aircraft and spacecraft in paragraphs A and B of this category. *(Key points are engine turbine wheel and shaft assembly of turbojet, turboprop, and turbofan engines ignition system, fuel system including the variable area nozzles or fuel spray systems, as applicable, and engine mounting fittings of ram-jet and pulse-jet engines, thrust chamber, turbine pump, balanced material orifices, gas generator (when used) and engine mounting fittings of rocket engines).*

Ground effect machines (GEMS) specifically designed or modified for military use including but not limited to surface effect machines and other air cushion vehicles. *(Key points are* all components, parts, and accessories, attachments, and associated equipment specifically designed or modified for use with such machines).

Associated armament, equipment and subsystems including but not limited to gun barrels, launcher barrels, tub tubes or pods, receivers, firing mechanisms (except nonmetallic parts which may be disposed of without demilitarization) (figures 42, 43, 44, 45 and 47), rotor assemblies, delinking feeders, electric drive assemblies and mounts (figures 44, 46 and 48), ammunition containers, crossover assemblies, magazines and chute assemblies, controllers, intervalometers, electric components assemblies, gunner control panel, pilot wing control panels and reflex sights.

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

RESERVED

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Launching and recovery equipment, other than that covered by Category VI above, for the articles in paragraphs A and B of this category, if the equipment is specifically designed or modified for military use or for use with spacecraft. Fixed land-based arresting gear is not included in this category.

Power supplies and energy sources specially designed or modified for spacecraft.

All other components, parts, accessories, attachments, and associated equipment (including ground support equipment) specifically designed or modified for the articles in paragraphs A through B of this category, excluding aircraft tires and propellers used with reciprocating engines.

Nonmilitary aircraft inertial navigation systems, except those systems or components that are standard equipment in civil aircraft, including spare parts and spare units to be used exclusively for the maintenance of inertial navigation equipment incorporated in civil aircraft and are certified by the Federal Aviation Administration (FAA) as being an integral part of such aircraft.

Technical data for the design, development, production, or manufacture of inertial navigation equipment or its related parts, components or subsystems which are standard equipment in civil aircraft and which are certified by the Federal Aviation Administration as being an integral part of such aircraft. FAA certified inertial navigation systems and all other technical data associated with such systems is under the licensing jurisdiction of the Department of Commerce.

All other technical data and defense services directly related to any defense article enumerated this category.

E. Method and degree of demilitarization:

1. MILITARY AIRCRAFT.

a. Fixed wing single and multiple engine aircraft. The area where the wing attaches and becomes a part of the fuselage structure will be mutilated in a manner to completely sever the wing spar to make it unfit for flight. The empennage (tail assembly) will be destroyed by mutilating the horizontal and vertical stabilizer attaching fittings area in such a manner as to make it unfit for flight. The fuselage will be destroyed by severing an area (normally at the production break) between the wing and empennage. (See figures 49 and 50, Appendix 7).

b. Attack helicopters. Helicopters designed specifically for attack purposes will be demilitarized by mutilating the *entire airframe (see figure 51) ensuring that the transmission mounts and supporting structural beams, engine deck in area of mounts, wing attaching mounts and support beam structure, fuselage to tail boom attaching mounts and tail rotor gear box mounts have been destroyed by cutting, chopping, tearing, shredding, crushing, or smelting to the degree that the aircraft will be unfit for repair or flight.*

NOTE *(For Army managed assets): Certification as specified in U.S. Army TM 1-1500-328-23, Paragraph 9-3, F, will be complied with. Aircraft data plates will be removed prior to the physical delivery of the former aircraft to the local DRMO. After the turn-in of the scrap, the data plate, historical forms and records, certificates of demilitarization, and all required DA Forms 2410 will be processed and forwarded to ATCOM per DA Pamphlet 738-751 and TM 1-150-328-23.*

c. Destruction, as specified above, will be accomplished by cutting, chipping, chopping, tearing, shredding, crushing, smelting, or bailing in a manner to preclude restoration to its original condition.

2. ARMAMENT will be destroyed as specified for *Categories I, II and IV above.*

3. EXPLOSIVES, including explosive bolts and squibs, will be disposed of as specified for *Category III.*

4. CLASSIFIED items will be disposed of as prescribed for *Category IX.*

5. SPACECRAFT. As indicated by the procuring military service.

6. ENGINES.

a. Turbojet, turboprop *and turbofan* engines. Remove the turbine wheel and shaft assembly from the engine and cut a segment (two or more "fir trees") from turbine wheel bucket splines. Sever the shaft at the wheel end bearing point. When multistage turbines are involved, only the shaft and last stage turbine wheel need be demilitarized. In cases where it is not economically practicable or feasible to remove the turbine wheel and shaft assembly from the engine, gain access to them by entering through shroud either by removal or cutting hole in shroud.

b. Ram-jet and pulse-jet engines. Completely destroy key points listed in subparagraph *B* above.

c. Rocket engines. Completely destroy key points listed in subparagraph *B* above.

7. NONEXPANSIVE BALLOONS. Specific instructions and technical guidance for demilitarization will be furnished by the Commander, Naval Air Systems command, Department of the Navy, Washington, DC, upon request.

8. TECHNICAL DATA will be demilitarized by burning, shredding, or pulping.

CATEGORY IX. MILITARY TRAINING EQUIPMENT

(CATEGORY IX - *U.S.* MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

RESERVED

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

RESERVED

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

RESERVED

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Military training equipment including but not limited to attack trainers, radar target trainers, radar target generators, gunnery training devices, antisubmarine warfare trainers, target equipment, armament training units, operational flight trainers, ***air combat training systems, radar trainers,*** navigation trainers, and simulation devices related to defense articles.

Components, parts, accessories, attachments, and associated equipment specifically designed or modified for the articles in this category.

Technical data and defense services directly related to the defense articles enumerated above.

CATEGORY X. PROTECTIVE PERSONNEL EQUIPMENT

(CATEGORY X - *U.S.* MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

RESERVED

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

RESERVED

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

Body armor specifically designed, modified or equipped for military use and articles designed, modified or equipped to protect against or reduce detection by radar, infrared (IR) or other sensors. (Total destruction.)

Flak-suits (front, back, groin and apron). *(Total destruction.)*

Bullet-proof vests. *(Total destruction.)*

Equipment designated in appropriate *DoD Component* publications and similar items of personal body armor which may be worn or concealed under clothing. *(Total destruction.)*

Toxicological, biological and radiological masks *and filters.* *(Key point* - canister/filter element, face piece.)

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Anti-G suits.

Antiexposure suits.

Radiological control clothing.

Military helmets equipped with communications hardware, optical sights, slewing devices or mechanisms to protect against thermal flash or lasers, excluding standard military helmets. NOTE: This applies only to the helmet itself. Demilitarization of attached hardware/devices may be required and will be in accordance with other Categories of this Appendix, as applicable.

Partial pressure suits and liquid oxygen converters used in aircraft in Category VIII.

Protective apparel and equipment specifically designed or modified for use with the articles in Category XIV.

Components, parts, accessories, attachments, and associated equipment specifically designed or modified for use with the articles in this Category.

Technical data and defense services directly related to the defense articles enumerated above.

E. Method and degree of demilitarization:

1. CANISTERS AND FILTERS will be demilitarized as economically as practicable in accordance with existing environmental standards, safety and operational regulations, to the point of assuring freedom from toxic and other environmental hazards.

2. PROTECTIVE MASKS will have mouth plug remove from face piece and destroyed or face piece may be slashed.

3. ALL OTHER ITEMS require complete destruction beyond possible use, repair or restoration. This will be accomplished by cutting, burning or crushing.

CATEGORY XI. MILITARY AND SPACE ELECTRONICS

(CATEGORY XI - *U.S.* MUNITIONS LIST)

This category applies to electronic equipment not included in Category XII of the Munitions List which is assigned a military designation *(e.g.,: AN/ALQ-65)* or is specifically designed, modified or configured for military application. This *equipment* includes but is not limited to *the items listed in paragraphs A, B, C, and D.*

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

Underwater sound equipment *to include active and passive detection, identification, tracking, and weapons control equipment.*

Underwater acoustic active and passive countermeasures and counter-countermeasures.

All types of *CHAFF (see subparagraph E.2. below).*

Radomes.

Gyroscopes.

Electronic systems or equipment designed or modified to counteract electronic surveillance or monitoring. *A system meeting this definition is controlled under the U.S. Munitions List even in instances where any individual pieces of equipment constituting the system may be subject to the controls of another U.S. Government agency. Such systems or equipment described above include, but are not limited to those:*

Designed or modified to use cryptographic techniques to generate the spreading code for spread spectrum or hopping code for frequency agility. This does not include fixed code techniques for spread spectrum.

Designed or modified for using burst techniques (e.g., time compression techniques) for intelligence, security, or military purposes.

Designed or modified for the purpose of information security to suppress *the compromising emanations of information bearing signals. This covers TEMPEST suppression technology and equipment meeting or designed to meet government TEMPEST standards. This definition is not intended to include equipment designed to meet Federal Communication Commission (FCC) commercial electromagnetic interference standards or equipment designed for health or safety.*

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A and B.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

Key points to be demilitarized: Transmitters, receivers, amplifiers, accelerometers, processors, collimators, microprocessors, indicators, RF heads and cavities, logic circuits, traveling wave tubes, cathode ray tubes, klystrons, oscillators, noise generators, magnetron tubes or solid state devices, modulators and modulation circuits, frequency sensitive RF components, antennae, radomes, waveguides, intervalometers, frequency generators, tuning coils, printed circuit boards/cards, memory circuits, delay lines, synchronizers, encoders and decoders, computers, antenna horns, performance data plates, identification plates or decals that reveal any military offensive or defensive advantage and other items designated elsewhere in this Appendix and as indicated under paragraph E, below.

Radar systems, with capabilities such as search, acquisition, tracking, moving target indication, imaging radar systems,

All other IFF (Identification Friend or Foe) receivers, transmitters and associated equipment.

Electronic warfare (EW) equipment, such as active and passive countermeasures, active and passive counter-countermeasures, and radios (including transceivers) specifically designed or modified to interfere with other communication devices or transmissions.

Command, control and communication systems to include radios (transceivers), navigation, and identification equipment.

Electronic systems or equipment specifically designed, modified, configured for ***intelligence, security, or military purposes for*** use in search, reconnaissance, collection, monitoring, direction-finding, display, **and** analysis and production of information from the electromagnetic spectrum.

All other targeting and missile control receiving and transmitting equipment.

Electronic equipment specifically designed or modified for spacecraft and spaceflight.

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

Any experimental or developmental electronic equipment specifically designed or modified for military application or specifically designed or modified for use with a military system. (Total destruction.)

Emergency radio receiver-transmitter equipment and beacons designed to operate on peculiar military, interagency or international distress signal frequency (8364 KCS, 500 KCS, 121.5 MC, 282.8 MC and 243.0 MC), e.g., survival radios, AN/URC-4, AN/URC-10, AN/URC-11, AN/URC-64, AN/PRC-90, AN/PRC-103, AN/PRC-106 comprising types RT159A/URC-4, RT159B/URC-4, RT285/URC-11, RT285A/URC-11, and radio beacons AN/URT-21, 27, 33, AN/CRT 3, etc.. **(Key point** - Remove and dispose of separately the following crystals: Types CR-24/u and CR-56/u capable of transmitting on 500 KC, 8634 KC, 121.5 MC, 243.0 MC and 282.8 MC and other types of crystals designed specifically to operate on distress signal frequencies.**)**

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Any ground air traffic control radar which is specifically designed or modified for military application.

Computers specifically designed for military application and any computer specifically modified for use with any category of the U.S. Munitions List.

Power supplies (nonmissile related).

Electronic equipment specifically designed or modified for use with nonmilitary communications satellites.

Components, parts, accessories, attachments, and associated equipment specifically designed or modified for use or currently used with the equipment in ***this Category***, except for such items as are in normal commercial use.

Technical data and defense services directly related to the defense articles enumerated above.

E. Method and degree of demilitarization:

1. **EMERGENCY RADIO RECEIVER TRANSMITTERS AND BEACONS.**: Remove and destroy crystals from receiver-transmitter. Condition tags and turn-in documents must show that crystals are to be removed prior to donation or disposal to the public. Radio beacons will be crushed or otherwise mutilated to preclude further use of the item for its intended purpose.

2. **ELECTRONIC COUNTERMEASURES - CHAFF.**

a. Nonexplosive chaff: The preferred method is by melting or briquetting. When melting or briquetting is not economical or practical, items will be completely neutralized by cutting into small segments, or crushing (as with a tracked vehicle) so as to break the packing, wrapping, or sleeve from the chaff and cause complete derangement of the dipole sequence. ***Chaff reactivity characteristics are identified as a characteristically reactive material. Therefor it is recommended that prior to disposal of demilitarized chaff via landfill, that an acidic solution with a pH of 3-4 be used to soak the chaff as part of the demilitarization procedure in accordance with the Code of Federal Regulations, 40 CFR, Part 261.23(a)(3) and Part 268.42.***

b. Explosive chaff: Remove and dispose of the explosive charge as directed for ***Category V***, this Appendix, and neutralize the dipole sequence of the chaff as prescribed for nonexplosive chaff ***or d***etonate ***(t***echnical instructions will be furnished as prescribed for ***Category V***, this Appendix***)***.

WARNING: STORAGE, HANDLING AND DISPOSAL OF CHAFF:

Chaff may produce a flammable and explosive gas (hydrogen) if brought into contact with water and high heat/thermal temperatures. Sunlight accelerates the chaff/water reaction to produce hydrogen at a faster rate. Store all unopened chaff bundles (with intact barrier bags and within weight specifications) indoors until final destination is arranged. For further information regarding storage, handling and disposition of chaff, see NAVAIR 16-1-539 or contact the U.S. Naval Warfare Center, Aircraft Division, Code DP702N/MS44, Indianapolis, IN, DSN 369-2917, Commercial (317) 322-2917.

3. ITEMS WHICH INCORPORATE TEMPEST TECHNOLOGY.

a. If the TEMPEST application is to an item which is specifically designed for military use - complete destruction to preclude restoration as an item for its original function (this includes both entire end items and individual components, as applicable).

b. If the TEMPEST application is to a commercially available item, e.g., IBM-XT or AT personal computer, the generating activity will sanitize the equipment of all classified/sensitive data and software prior to turn-in to the DRMO. The turn-in document will be annotated that item has TEMPEST application and has been sanitized prior to turn-in. These items will then be considered Strategic List Items and incorporate all appropriate controls.

4. TECHNICAL DATA will be demilitarized by burning, shredding, or pulping.

5. ALL OTHER ITEMS. Complete destruction of key points to preclude restoration or remanufacture as an item for its original function.

WARNING: Cathode ray tubes will be broken only in accordance with procedures approved by local safety personnel.

CATEGORY XII. FIRE CONTROL, RANGE FINDER, OPTICAL, AND GUIDANCE AND CONTROL EQUIPMENT

(CATEGORY XII - U.S. MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

Gun range, position, height finders, spotting instruments and laying equipment.

Aiming devices (electronic, optic, and acoustic).

Bomb sights.

Periscopes.

Gyroscopes.

Radomes.

Astro compasses and star trackers.

Military and nonmilitary accelerometers and gyros.

Lasers specifically designed, modified or configured for military application including those used in military communication devices, target designators and range finders, target detection systems, and directed energy systems.

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A. and B.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

Key points to be demilitarized: Optical elements, tubes and detectors, optical filters, weapon mounts, transmitters, receivers, processors, microprocessors, indicators, RF heads and cavities, logic circuits, memory circuits, accelerometers, collimators, amplifiers, intervalometers, traveling wave tubes, cathode ray tubes, klystrons, oscillators, noise generators, magnetron tubes or solid state devices, modulators and modulation circuits, frequency sensitive RF components, antennae, radomes, waveguides, frequency generators, tuning coils, printed circuit boards/cards, delay lines, synchronizers, encoders and decoders, computers, antenna horns, performance data plates, identification plates or decals that reveal any military offensive or defensive advantage and other items designated elsewhere in this Appendix and as indicated under paragraph E, below.

Fire control systems.

Inertial *platforms and sensors for weapons or weapons systems. For aircraft inertial reference systems and related components refer to Category VIII.*

Guidance, control *and stabilization* systems *except for those systems covered in Category VII.*

Gun and missile tracking and guidance systems.

Bombing computers.

Military television sighting and viewing units.

Infrared focal plane array detectors.

Infrared, visible, and ultraviolet devices.

Image intensification and other night sighting equipment or systems.

Second generation and above military image intensification tubes (defined below).

NOTE: Special Definition. Second and third generation image intensification tubes are defined as having a peak response within the 0.4 to 1.05 micron wavelength range and incorporating a microchannel plate for electron image amplification having a hole pitch (center-to-center spacing) of less than 25 microns and having either: an S-20, S-25 or multialkali photocathode; or a semiconductor photocathode.

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

RESERVED

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Nonmilitary second generation and above image intensification tubes, nonmilitary infrared focal plane arrays, and image intensification tubes identified in paragraph C of this section when part of a commercial system (i.e., those systems originally designed for commercial use). This does not include military systems comprised of non-military specification components.

Power supplies (nonmissile related).

Components, parts, accessories, attachments, and associated equipment specifically designed or modified for the articles in this Category, except for such items as are in normal commercial use *and not exceptioned above.*

Technical data and defense services directly related to the defense articles enumerated above.

E. Method and degree of demilitarization:

1. **INFRARED NIGHTSIGHTING AND VIEWING EQUIPMENT.** Cutting, crushing, breaking or melting to the degree required to preclude repair or restoration to original intended use.

WARNING: Personnel engaged in demilitarization of this material should be aware of possible presence of self-luminous radioactive sights and coatings on certain optics. Demilitarization will be performed only in accordance with procedures approved by local safety personnel.

*2. **TECHNICAL DATA will be demilitarized by burning, shredding, or pulping.***

3. **ALL OTHER ITEMS.**

a. Electronic Components. As directed in ***Category XI.***

b. Nonelectric Items. Destroy the item to the degree required to preclude repair or restoration; make sure that all lens or other optical components are completely destroyed.

CATEGORY XIII. AUXILIARY MILITARY EQUIPMENT

(CATEGORY XIII - *U.S.* MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

Hardware and equipment that is associated with the measurement or modification of system signatures for detection of defense articles. This includes but is not limited to signature measurement equipment, prediction techniques and codes, signature materials and treatments, and signature control design methodology.

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A and B.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

RESERVED

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

Armor, armor plate and structural materials (including but not limited to plate, rolled and extruded shapes, bars and forgings, castings, welding consumables, carbon/carbon metal matrix composites). (Total destruction to prevent restoration to a usable condition.)

Information Security Systems and equipment, cryptographic devices, software, and components specifically designed or modified therefor (total destruction), including:

Cryptographic (including key management) systems, equipment, assemblies, modules, integrated circuits, components or software with the capability of maintaining secrecy or confidentiality of information or information systems, <u>except</u> cryptographic equipment and software as designated Category XIII, this Appendix. (Total destruction.)

Cryptographic (including key management) systems, equipment, assemblies, modules, integrated circuits, components or software which have the capability of generating spreading or hopping codes for spread spectrum systems or equipment. (Total destruction.)

Cryptanalytic systems, equipment, assemblies, modules, integrated circuits, components or software. (Total destruction.)

Systems, equipment, assemblies, modules integrated circuits, components or software providing certified or certifiable multi-level security or user isolation exceeding class B2 of the Trusted Computer System Evaluation Criteria (TCSEC) and software to certify such systems, equipment or software. (Total destruction.)

Ancillary equipment specifically designed or modified for the items listed above. (Total destruction.)

Devices embodying particle beam and electromagnetic pulse technology *and associated components and subassemblies (e.g., ion beam current ejectors, particle accelerators for neutral or charged particles, beam handling and projection equipment, beam steering, fire control, and pointing equipment, test and diagnostic instruments, and targets) which are specifically designed or modified for directed energy weapon applications. (Total destruction.)*

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Cameras *including* space cameras and specialized processing equipment therefor; photointerpretation, stereoscopic plotting, and photogrammetry equipment *which are specifically designed or modified for military purposes,* and components specifically designed or modified therefor.

Self-contained diving and underwater breathing apparatus *including closed and semi-closed circuits (rebreathing) apparatus, specially designed components for use in the conversion of open-circuit apparatus to military use, and articles exclusively designed for military use with self-contained diving and underwater swimming apparatus.*

Carbon/carbon billets and preforms which are reinforced with continuous unidirectional tows, tapes, or woven cloths in three or more dimensional planes (i.e., 3D, 4D, etc.). This is exclusive of carbon/carbon billets and preforms where reinforcement in the third dimension is limited to interlocking of adjacent layers only, and carbon/carbon 3D, 4D, etc. , end items which have not been specifically designed or modified for defense articles (e.g., brakes for commercial aircraft or high speed trains). Armor (e.g., organic, ceramic, metallic), and reactive armor which has been specifically designed or modified for defense articles. Structural materials including carbon/carbon and metal matrix composites, plate, forgings, castings, welding consumables and rolled and extruded shapes which have been specifically designed or modified for defense articles.

Concealment and deception equipment, including but not limited to special paints, decoys, and simulators and components, parts and accessories specifically designed or modified therefor.

Energy conversion devices for producing electrical energy from nuclear, thermal, or solar energy, or from chemical reaction which are specifically designed or modified for military application.

Chemiluminescent compounds and solid state devices specifically designed or modified for military application.

Metal embrittling agents.

Components, parts, accessories, attachments, and associated equipment specifically designed or modified for the articles in this Category, except for such items as are in normal commercial use.

Technical data and defense services directly related to the defense articles enumerated above.

E. Method and degree of demilitarization: Items will be destroyed by cutting, burning, breaking, crushing, etc., as appropriate, to preclude restoration for further use as an item or for identification and association of related parts.

1. **ITEMS** will be destroyed by cutting, burning, breaking, crushing, etc., as appropriate, to preclude restoration for further use as an item or for identification and association of related parts.

2. TECHNICAL DATA will be demilitarized by burning, shredding or pulping.

CATEGORY XIV. TOXICOLOGICAL *AGENTS AND EQUIPMENT* AND RADIOLOGICAL EQUIPMENT

(CATEGORY XIV - *U.S.* MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

Chemical agents, including but not limited to lung irritants, vesicants, lachrymators, tear gases (except tear gas formulations containing 1 percent or less CN or CS), sternutators and irritant smoke, and nerve gases and incapacitating agents ***(see Appendix II, Definitions and Interpretations). These items will be assigned Demilitarization Code "G."***

Biological agents ***(see Appendix II, Definitions and Interpretations). These items will be assigned Demilitarization Code "G."***

Nuclear radiation detection and measuring devices, manufactured to military specification.

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A and B.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

Equipment for dissemination, detection, and identification of, and defense against, the items in paragraphs A of this Category, ***including but not limited to*** vehicular mounted and fixed collective protection equipment and field shelter ventilating systems, including gas/gas particulate filters and canisters, air filtering respirators and air respirator cartridges. ***Key points*** - Filtration systems: canister/filter and entire filter unit. ***All other items as designated by the managing DoD Component.***

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

RESERVED

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Components, parts, accessories, attachments, and associated equipment specifically designed or modified for the articles in this Category, except for such items as are in normal commercial use.

Technical data and defense services directly related to the defense articles enumerated above.

E. Method and degree of demilitarization:

1. ITEMS will be demilitarized in accordance with existing environmental, safety and operations regulations prescribed by the inventory control point to the point of assuring freedom from hazard. Technical instructions for toxicological and biological agents and equipment will be furnished as prescribed for Item 4 above. Technical instructions for radiological agents and equipment will be furnished by the following persons or organizations within the Military Services having overall knowledge and responsibility for disposal of radioactive material within their respective services.

a. Army - Commander, U.S. Army Armament, Munitions and Chemical Command, ATTN: AMSMC-DSM, Rock Island, IL 61299-6000.

b. Navy - Primary Support Bureau, Command or Office.

c. Air Force - San Antonio Air Logistics Center, ATTN: MMIA, Kelly Air Force Base, TX 78241-5000.

d. Marine Corps - Commandant of the Marine Corps (Code LMA-3), Washington, DC 20380-0001

e. Defense Logistics Agency (DLA) - Appropriate ***ICA managing the item.***

2. TECHNICAL DATA will be demilitarized by burning, shredding, or pulping.

CATEGORY XV - SPACECRAFT SYSTEMS AND ASSOCIATED EQUIPMENT

(CATEGORY XV - U.S. MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

Spacecraft and associated hardware including ground support equipment, specifically designed or modified for military use.

Radomes.

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A and B.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

RESERVED

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

Global Positioning Systems (GPS) receiving equipment designed for encryption or decryption (e.g., Y-Code) of GPS precise positioning service (PPS) signals that is specifically designed, modified or configured for military use. (Total destruction.)

Communications satellites specifically designed, modified or configured for military use with antijam capability antennas and/or antenna systems with the ability to respond to incoming interference; that employ any of the cryptographic items controlled under Category XIII; or that employ radiation-hardened devices controlled elsewhere in this Appendix. (Total destruction.)

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Communications satellites as specified in Category XV of the USML and not enumerated in paragraph C, above.

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Global Positioning Systems (GPS) receiving equipment specifically designed, modified or configured for military use; or GPS receiving equipment as specified in Category XV of the USML and not enumerated in paragraph C, above.

Components, parts, accessories, attachments, and associated equipment (including ground support equipment) specifically designed, modified or configured for the articles in this Category, as well as for any satellites under the export licensing jurisdiction of the Department of Commerce except as noted in the USML, Category XV, Explanatory Note.

Technical data and defense services directly related to the defense articles enumerated above. In addition, detailed design, development, production or manufacturing data for all spacecraft systems and specifically designed or modified components thereof, regardless of which U.S. Government agency has jurisdiction for export of the hardware. This restriction does not include that level of technical data (including marketing data) necessary for a purchaser to have assurance that a U.S.-built item intended to operate in space has been designed, manufactured and tested in conformance with specific contract requirements (e.g., operational performance, reliability, lifetime, product quality, or delivery expectations) and data necessary to evaluate in-orbit anomalies and to operate and maintain associated ground equipment.

E. Method and degree of demilitarization:

1. ITEMS will be destroyed by cutting, burning, breaking, crushing, etc., as appropriate, to preclude restoration for further use as an item or for identification and association of related parts.

2. TECHNICAL DATA will be demilitarized by burning, shredding, or pulping.

CATEGORY XVI - NUCLEAR WEAPONS DESIGN AND TEST EQUIPMENT

(CATEGORY XVI - U.S. MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

Any article, material, equipment, or device which is specifically designed or modified for use in the design, development, or fabrication of nuclear weapons or nuclear explosive devices.

Any article, material, equipment, or device which is specifically designed or modified for use in the devising, carrying out, or evaluating of nuclear weapons tests or any other nuclear explosions, except such items as are in commercial use for other purposes.

Cold cathode tubes such as krytrons and sprytrons.

Technical data and defense services directly related to the defense articles enumerated above.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc. listed below as a "key point" would themselves be assigned Demilitarization Code "D").

RESERVED

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

RESERVED

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

RESERVED

E. Method and degree of demilitarization:

1. Specific instructions and technical guidance will be furnished by the procuring Military Service/Defense Agency upon request.

2. TECHNICAL DATA will be demilitarized by burning, shredding, or pulping.

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CATEGORY XVII - CLASSIFIED ARTICLES

(CATEGORY XVII - U.S. MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "P."

All articles, technical data ***and defense services*** relating thereto which are classified in the interest of national security and which are not otherwise enumerated in this ***Appendix***.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

RESERVED

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

RESERVED

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

RESERVED

E. Method and degree of demilitarization: In accordance with owning Military Service directives for safeguarding and/or disposal of classified material.

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CATEGORY XVIII - RESERVED

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CATEGORY XIX - RESERVED

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CATEGORY XX. SUBMERSIBLE VESSELS, OCEANOGRAPHIC AND ASSOCIATED EQUIPMENT

(CATEGORY XX - *U.S.* MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

Radomes.

Technical data related to the manufacture or production of any defense article enumerated in subparagraphs A and B.

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

Key points to be demilitarized: As designated by the procuring ***DoD Component.***

Submersible vessels, manned and unmanned, ***tethered and untethered*** designed or modified for military purposes or powered by nuclear propulsion plants.

Swimmer delivery systems designed or modified for military purposes.

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

RESERVED

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Components, parts, accessories, attachments, and associated equipment specifically designed or modified for the articles in this Category, except for such items as are in normal commercial use.

Technical data and defense services directly related to the defense articles enumerated above.

E. Method and degree of demilitarization:

1. As indicated by the procuring Military Service/Defense Agency.

2. ***TECHNICAL DATA will be demilitarized by burning, shredding, or pulping.***

CATEGORY XXI. MISCELLANEOUS ARTICLES

(CATEGORY XXI - *U.S.* MUNITIONS LIST)

A. The following items are designated as SME and require total destruction worldwide. They are normally assigned a Demilitarization Code "D."

RESERVED

B. The following items are designated as SME and require key point demilitarization worldwide. They are normally assigned a Demilitarization Code "C" (NOTE: Components, parts, etc., listed below as a "key point" would themselves be assigned Demilitarization Code "D").

RESERVED

C. The following items are designated as MLI and the DoD Demilitarization Program Office has determined them to be of a critical and/or sensitive nature that requires total or key point destruction. These items and their key points are normally assigned a Demilitarization Code "E."

Research and development material. (***Key points*** - such points as required to protect security, design features, and proprietary rights and public health, safety, and welfare.)

Partially complete material including but not limited to forgings, castings, extrusions, and machined bodies, which have reached a stage in manufacture where they are clearly identifiable, and which are a key point or incorporate a key point. (***Key points*** - As indicated for the completed item.)

Special tooling, dies, jigs, etc., used in the production and/or manufacture of any of the items listed in paragraphs A and B in Categories I through XXI above.

D. The following items are designated as MLI and do not require demilitarization. They are normally assigned a Demilitarization Code "B."

Any article not specifically enumerated in other Categories of the U.S. Munitions List which has substantial military applicability and which has been specifically designed or modified for military purposes. The decision on whether any article may be included in this category shall be made by the Director of the Office of Defense Trade Controls, U.S. Department of State.

Technical data and defense services directly related to the defense articles enumerated above.

E. Method and degree of demilitarization:

1. **RESEARCH AND DEVELOPMENT MATERIAL:** Completely destroy the end assembly if applicable and mutilate components as required to comply with ***the*** above. Destruction of assembly or components will be performed as specified for similar items listed in this Appendix by cutting, torching, breaking, shearing, etc., to destroy the identity of the item or component.

2. **PARTIALLY COMPLETE MATERIAL:** As indicated for the entire item.