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DEPARTMENT OF DEFENSE ● OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE ● (PRODUCTIONS & LOGISTICS)

DEFENSE DEMILITARIZATION MANUAL

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-8000

PRODUCTION AND
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FOREWORD

This manual is issued under the authority of DoD Directive 4160.21, "DoD Personal Property Utilization and Disposal Program," 5 December 1980, and DoD Instruction 4160.27, "Demilitarization of Materiel," 14 December 1988. Its purpose is to set forth DoD demilitarization policy, prescribe uniform procedures for assigning demilitarization codes to DoD property, and direct methods for completing demilitarization. The manual is effective immediately and is mandatory for use by all DoD Components.

The provisions of this manual have been completely revised to reflect the policy set forth by the International Traffic in Arms Regulations (ITAR), 22 Code of Federal Regulations, Subchapter M, November 1989. Significant changes include a major shift of materials from overseas demilitarization only (appendix 5) to worldwide demilitarization (appendix 4), the identification of Significant Military Equipment, expanded scope of the property affected (U.S. Origin), definitive coding guidance, additional commodities included as Strategic List Items and identification of strategic commodities (appendix 6).

Recommended revisions to this manual should be submitted through DoD Component channels to:

Director
Defense Logistics Agency
ATTN: DLA-SMP
Cameron Station
Alexandria, Virginia 22304-6100

DoD Components may obtain copies of this manual through their publication channels. Other Federal agencies and the public may obtain copies from HQ Defense Logistics Agency, ATTN: DLA-XPD, Cameron Station, Alexandria, Virginia, 22304-6100.

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This manual supersedes DoD 4160.21-M-1, October 1981.

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CHAPTER I - GENERAL AND ADMINISTRATIVE

A. GENERAL. This manual implements the policy and procedures of DoD relating to the demilitarization of military items, defense articles and defense services and which are owned or procured by or under the control of the Military Services/Defense Agencies (United States Origin). This includes all property sold under the Foreign Military Sales (FMS) Program.

B. APPLICABILITY AND SCOPE

1. The provisions of this manual are applicable to all elements of the DoD. The term "DoD Components", as used herein, refers to the Military Departments and Defense Agencies.

2. This manual specifies the items to be demilitarized, designates the key points to be destroyed and prescribes methods for accomplishment of demilitarization.

3. Request for exceptions or additions to the demilitarization requirements contained in this manual will be forwarded through appropriate Military Service/Defense Agency channels to the Assistant Secretary of Defense (Production and Logistics) (ASD PL) on a case-by-case basis. Full justification will accompany each request.

4. Unless otherwise stated, this manual is not applicable to:

a. The disposition of nuclear ordinance pursuant to Section 81 of the Atomic Energy Act of 1954 (42 United States Code (U.S.C.) 2111).

b. Items under management control of the Defense Nuclear Agency in Federal Supply Group (FSG) 11, also all Department of Energy (DoE) special design and quality controlled items and all DoD items designed specifically for use on or with nuclear weapons (identified by manufacturers' codes 57991, 67991, 77991, and 87991 in the Defense Logistics Services Center (DLSC) Total Item Record (TIR) will be processed in accordance with Technical Publications, Supply Management of Nuclear Weapons Material, DoE-DNA TP 100-1, Navy SWOP 100-1, Army TM 39-100-1 and Air Force T.O. 11N-100-1.

c. Cryptologic Material. This material will be processed in accordance with NACSI 2001 (FOUO) and NSA Circular 60-5(C).

C. POLICY

1. It is DoD policy to identify and apply appropriate controls, worldwide, over materiel to prevent its unauthorized use. Materiel designated by OSD to require demilitarization, or is related to articles on the U.S. Munitions List under Part 121 of 22 CFR or the Commodity Control List under Part 799 of 15 CFR and determined by DoD Components to have, directly or indirectly, a significant military utility or capacity, shall be controlled and/or demilitarized to the extent necessary to eliminate its functional or military capabilities. Controls shall be consistent with applicable DoD directives cited above.

2. Surplus and foreign excess personal property designated as arms, ammunition and implements of war and other military type items will be demilitarized to the extent necessary to preclude their unauthorized use; destroy the military advantages inherent in certain types of property; render innocuous that property which is dangerous; protect the national interest; and preclude the compromise of security requirements.

3. Utilization and specialized sales will always precede demilitarization. Utilization and specialized sales include the application of assets against:

a. All DoD requirements.
b. Other Federal Agency requirements.
c. Authorized donee requirements.
d. Specifically authorized foreign and domestic sales (e.g., foreign military sales to approved foreign countries, domestic sales to law enforcement and fire fighting agencies, and sales of explosives to licensed manufacturers and dealers). The loss, theft, unlawful disposition and/or recovery of any items of a sensitive nature will be reported by the person becoming aware of such acts to the appropriate authority in accordance with applicable departmental/agency regulations.

4. Defense Reutilization and Marketing Offices (DRMOs) on an individual basis, can determine, in coordination with generating activities, the most appropriate and economical means for the disposal organization to properly demilitarize Munitions List Items. Demilitarization should be accomplished by

the most cost-effective method consistent with adequate security and surveillance by one of the following methods: (a) by a contractor, as a condition of sale, (b) by the DRMO, (c) by the generating or designated Military Service, or (d) under a service contract. Generating organizations and activities normally will demilitarize Ammunition, Explosives and Dangerous Articles (AEDA) items; however, AEDA items may be demilitarized by disposal contractors where in-house demilitarization is not possible. Unless otherwise authorized, surplus and foreign excess personal property prescribed to be demilitarized by this manual must be demilitarized prior to transfer of title to a purchaser.

D. RESPONSIBILITY

1. Export and Import of United States Munitions List Items: Pursuant to the provisions of Section 414 of the Arms Export Control Act of 30 Jun 76, as amended (22 U.S.C. 2778), the President of the United States is authorized to control, in furtherance of world peace and the security and foreign policy of the United States, the export and import of arms, ammunition and implements of war, including technical data relating thereto, other than by a United States Government Agency. Executive Order No. 11958 delegates the function of controlling exports of United States Munitions List Items to the Department of State. Imports are controlled by the Department of Treasury under authority delegated by Executive Order No. 11432.

2. DoD is responsible for: The disposition of its surplus and foreign excess property, including articles covered by the United States Munitions List, which are owned or procured by, or under control of DoD to include FMS property; determining whether such items will be sold with or without being demilitarized; and the extent and adequacy of required demilitarization.

3. The Director, Defense Logistics Agency (DLA) will:

a. Serve as the DoD program manager for the DoD Demilitarization Program. The duties of the DoD program manager shall include liaison with the Department of State (DoS) for Munitions List Items (MLI) and the Department of Commerce (DoC) for Strategic List Items (SLI).

b. In coordination with the Military Services, develop and maintain the Defense Demilitarization Manual in a current status to reflect the policy guidance prescribed by ASD PL.

c. Develop and maintain, in coordination with the DoD Components, a data base describing cost-effective and efficient demilitarization processes.

d. Develop and maintain an appropriate demilitarization training program for all DoD Components.

e. Refer DoD component nonconcurrences in changes which cannot be resolved to the ASD P&L.

f. Assure compliance by subordinate DLA activities with the provisions of this manual and other guidance and direction for accomplishment of the demilitarization program which are in conformance with the basic policies of this manual.

4. The Defense Reutilization and Marketing Service (DRMS) will:

a. Assure that items including Contractor Inventory, Military Assistance Property (MAP), and excess FMS property, requiring demilitarization, have been so identified and that all required demilitarization has been accomplished.

b. Be responsible for compliance review and surveillance to ensure proper demilitarization prior to title transfer when the sales contract provides for demilitarization by the purchaser.

c. Develop and maintain an appropriate demilitarization training program for its subordinant activities to include certification of individuals responsible for performing demilitarization.

d. Notify the Military Service/Defense Agency concerned for prompt remedial action when demilitarization specifications appear to be inadequate.

e. Administer and maintain the Demilitarization Code Challenge Program and, in coordination with the Military Service/Defense Agency Inventory Control Points (ICPs), effect appropriate Demilitarization Code changes to items in the inventory.

f. Negotiate with the Military Service/Defense Agency concerned to obtain technical expertise when essential for compliance with subparagraph b above.

5. The Military Services will:

a. Provide technical assistance to the Director, DLA, in developing and maintaining the Defense Demilitarization Manual.

b. Assure compliance by subordinate activities with the provisions of this manual and other Military Service/Defense Agency direction for accomplishment of the demilitarization program consistent with the basic policies of this manual.

c. Assure that a demilitarization code is assigned to every item for which each has management responsibility and record that code in the Federal Catalog System.

d. Assure that the DoD program manager is provided with timely and complete information (including photographs, drawings, schematics, detailed instructions) regarding cost-effective and efficient demilitarization processes for all new and, as requested, existing items in the Federal Catalog System. Specific guidance and requirements for the submission of these data may be obtained from the Property Reutilization and Marketing Policies Branch (DLA-SMP).

e. As required and authorized by DoD, establish and maintain Special Defense Property Disposal Accounts (SDPDA) and maintain accountability for AEDA, classified, inert material, small arms weapons or any items which required demilitarization/declassification or reclamation prior to physical and accountability transfer to a DRMO. Accomplish required demilitarization after completion of required utilization and donation screening of all items in the special accounts. Transfer accountability of all other items requiring demilitarization action. Ensure that turn-in documents for all materials, including nonstandard stock numbered items, contain the appropriate demilitarization codes.

f. Assure the AEDA are properly rendered inert prior to turn-in to the DRMO and that a certification is signed by a technically qualified individual.

g. Assure that turn-in documents for all material, including nonstandard stock numbered items, contain the appropriate demilitarization code in card column 70 of DD Form 1348-1, DoD Single Line Item Release/Receipt Document.

6. Inventory/Technical Managers will:

a. Review each item assigned a National Stock Number (NSN) and/or nonstandard Stock Number to determine whether or not it appears on the U.S. Munitions List (appendix 1) or the Strategic List (see Definitions, appendix 2) and whether demilitarization is required in accordance with appendices 4 or 5, or whether Security Trade Controls are necessary because the item is Munitions List Item, no demilitarization required (Demilitarization Code B), or a Strategic List Item (Demilitarization Code Q).

b. Assign a demilitarization code to each item following guides provided in appendix 3. Resolve differences if demilitarization codes assigned are challenged.

NOTE: A demilitarization required code must not be assigned to an item merely to preclude the use, reuse or reprocurement of defective, unserviceable, finite life, product quality deficient material or items determined to be unsafe for use.

c. Input data to DLSC TIR to record the demilitarization code assigned to each NSN and submit changes resulting from challenges, item review, or changes in demilitarization policy.

CHAPTER II - DEMILITARIZATION OF SURPLUS AND FOREIGN EXCESS MILITARY ITEMS

A. GENERAL

1. Surplus personal property and Foreign Excess Personal Property (FEPP), set forth in this chapter, is required to be demilitarized to the extent prescribed herein. Foreign excess property will be demilitarized not less than prescribed in appendix 4. In addition, the Munitions List Items and other military type property, set forth in appendix 5, will be demilitarized in the manner and degree prescribed when located outside the United States, Puerto Rico, American Samoa, Guam, the Trust Territories of the Pacific Islands (TTPI), and the Virgin Islands. All captured, confiscated or abandoned enemy materiel meeting the criteria of this manual will be demilitarized in accordance with appendices 4 and 5. The generating activity authorized to dispose of property will accomplish demilitarization of classified material and ammunition prior to transfer of residue to DRMO and will identify other property requiring demilitarization at the time it is transferred to a DRMO. Spares and components required by the Military Services/Defense Agencies will be reclaimed under approved reclamation programs, prior to demilitarization of the end assembly. The generating activity will annotate each turn-in document with the Demilitarization Code in accordance with the applicable code in appendix 3. DRMOs will not accept any property unless the turn-in document contains the Demilitarization Code (cc 70) or clear text statement of the demilitarization required. For supply systems items, DRMOs will not accept accountability if the appropriate demilitarization codes are not shown on the turn-in documents. The fact that the cognizant Inventory Control Point or Inventory/Technical Manager may not have disseminated the demilitarization codes to generating activities is not a valid reason for accepting property for which the turn-in documents do not contain the appropriate *demilitarization codes from the Inventory Control* Point or Inventory/ Technical Manager (or via their normal supply channels) and enter the codes on the turn-in documents for supply systems items. For other than supply system items (e.g., scrap, contractor inventory, etc.) and/or for local stock numbered items, if the appropriate Demilitarization Codes for the items cannot be determined, generating activities will enter on the turn-in documents an appropriate clear text statement such as "Non-MLI, no demilitarization required", "MLI, no demilitarization required", "MLI, demilitarization required", or "SLI". When turn-in documents are annotated "MLI, *demilitarization required*", the generating activity will provide written demilitarization procedures with the turn-in document.

2. When a specific part or component of an item is designated a key point in appendices 4 or 5, then all surplus spare/repair parts or components of that key point, will be demilitarized in the manner prescribed for the end item (refer to appendix 2 for definition).

3. Disposable AEDA normally will be demilitarized at the installation where generated; however, when local demilitarization capability does not exist or when the use of local demilitarization is not feasible, demilitarization may be performed by qualified and licensed contractors at their facilities, provided adequate security is *provided and demilitarization surveillance is performed* by qualified DoD personnel. Activities that do not have the capability to demilitarize AEDA will request disposal instructions from the owning service ICP. (Navy activities worldwide will direct all such requests to the Naval Sea Systems Command, ATTN: SEA-66412, Washington, DC 20362-5101.) The inherently dangerous characteristics of AEDA dictate that special precaution be taken to ensure that demilitarization is performed only by properly trained and qualified personnel. AEDA materials which can be demilitarized by deep water dumping (DWP) at sea will be processed in accordance with paragraph G, this chapter.

4. Classified material will be declassified and processed as described in appendix 4, item 9, at the military installation by Government personnel prior to the transfer of residue, if any, to the DRMO. Certification of declassification and instructions for any additional demilitarization will be annotated on the turn-in document.

5. Demilitarization of small arms weapons, repair parts and accessories will be accomplished as prescribed in chapter III and appendix 4.

6. Other items normally will be demilitarized at a military installation. Demilitarization performed by a purchaser will be subject to appropriate special conditions. Surplus property to be donated, and requiring demilitarization, will be demilitarized to the extent as authorized in paragraph B below. The title to combatant ships and other property, as specifically authorized by the head of the owning DoD component, may be transferred to a purchaser upon receipt of full payment and presentation of adequate bond ensuring that demilitarization will be accomplished in accordance with the terms of a sales contract. Sales contracts for combatant ships will specify that hulls must be reduced to scrap and scrapping accomplished within the United States whenever practical.

7. A certificate substantially as quoted below will be signed and dated by a technically qualified Government representative who actually witnessed the demilitarization of the material whether performed by Government or contractor personnel. In cases where the witnessing of demilitarization would unnecessarily subject the witness to hazardous conditions or when the demilitarized material can be laid out to clearly display the residue from each item demilitarized, demilitarization may be certified through inspection of the residue. The certificate will be executed for all items demilitarized and will read as follows:

"I certify that (identify items) were demilitarized in accordance with (cite specific instructions (appendix and item number) that were complied with in the DoD 4160.21-M-1 and other applicable regulations)."

This certificate must be countersigned by a technically qualified U.S. Government representative (American citizen), designated by the responsible commander, who actually witnessed the demilitarization of the material or inspected the residue as provided above. The individual who countersigns should be at least in the next higher management level to the initial certifying individual. In the case of MAP Grant Aid property, a member of the Office of Defense Cooperation or the Defense Attache Office may countersign to the completed demilitarization. The DRMO, in compliance with his responsibility as outlined in DoD 4160.21-M, will at the time of receipt, place the demilitarization certificate in the applicable source document file for a period of 2 years, except small arms weapons demilitarization certificates which will be retained indefinitely in a permanent file. Demilitarization certificates for demilitarization of all small arms weapons/receivers which require control under the DoD Small Arms Serialization Program (SASP) will be retained indefinitely in a permanent record file by the DoD activity responsible for the demilitarization of the small arms weapons and receivers. The countersignature for AEDA may be accomplished by a responsible U.S. citizen as designated by the local commander. A signed certificate will be furnished to the DRMO for audit purposes.

WARNING: SIGNING A FALSE CERTIFICATE CONSTITUTES A FELONY AND MAY SUBJECT THE INDIVIDUAL TO CRIMINAL PROSECUTION.

B. EXCEPTIONS TO DEMILITARIZATION

1. The demilitarization of items including foreign excess and other military type items does not apply when transfer is effected within DoD or to other agencies of the U.S. Government for utilization purposes. When transfer is made to another Federal Agency for use by that Agency, an agreement will be made to the effect that demilitarization requirements will be complied with prior to transfer of title to a purchaser.

NOTE: Federal Drug Administration (FDA) exempted lasers will not be transferred outside of DoD or donated or sold without prior approval of the ASD (FM&P) or his designee.

2. Disposition without demilitarization of other than classified materiel is also authorized under the conditions cited in subparagraphs a through n below:

a. By sale or transfer to friendly foreign governments, via FMS or MAP, including agencies and controlled companies thereof, under existing laws and DoD policy. Negotiated sales will not be made to commercial firms for resale to foreign governments.

NOTE: DoD Demilitarization policy must be followed when items of U.S. Origin are no longer required for their originally intended purpose.

b. By sales of military explosives, in accordance with applicable safety regulations, but only to technically qualified purchasers having a known capability for use, manufacture, processing or resale. The purchaser will be required to execute

the following certificate as a condition of purchase in the United States.

"It is hereby certified that the purchaser will comply with all applicable Federal, state, and local laws, ordinances, and regulations, with respect to the care, handling, storage and shipment, resale, export, and other use of the materials herein purchased and that he is a user, manufacturer, or processor of or dealer in said materials capable of complying with all applicable Federal, state, and local laws. This certification is made in accordance with and subject to the penalties of Title 18, Section 1001, the United States Code, Crimes and Criminal Procedures."

c. By sale of surplus small arms weapons and ammunition to state and local law enforcement and fire fighting agencies in the 50 United States, pursuant to 10 U.S.C. 2576. The types of items authorized for sale and the sale procedures are set forth in DoD 4160.21-M, chapter VIII, paragraphs B35 and B98.

d. By sale to a United States national or commercial concern when the item will be utilized in experimental research and/or development work in the national interest, or the support of such work, and the Director, DLA, or the Secretary of the Military Department concerned or his designee so determines, provided that a special condition of sale will prohibit subsequent disposition of the items without prior approval by DLA or the Military Department concerned.

e. By donation or loan of condemned or obsolete combat materiel to municipal corporations, posts of recognized war veterans' organizations, etc., as authorized by 10 U.S.C. 2572, 10 U.S.C. 7546, or other similar statutes. However, except as hereinafter provided, modified demilitarization of such items will be accomplished as prescribed in chapter IV, to render them unserviceable in the interest of public health or safety. Demilitarization will be performed in a manner so as to preserve the historical or display value of the property.

f. By donation to special interest activities which have been determined by the Secretary of Defense to be educational activities of special interest to the armed services; provided that the head of the school certifies in writing that the property requested is usable and necessary for the promotion of educational programs at the school and agrees that the property will not be disposed of without prior approval of, and in accordance with instructions issued by, DLA or the Military Service/Defense Agency concerned. Donations to special interest activities require the prior approval of GSA.

g. Except where otherwise identified, by donation to a public agency or an eligible nonprofit institution or organization acting by and through a State Agency for Surplus Property. Donations require the approval of GSA.

h. As otherwise authorized by law; e.g., sale of small arms (other than those subject to the National Firearms Act) and ammunition by the Army pursuant to 10 U.S.C. 4308, and issue of blank ammunition by the Army to veterans' organizations for ceremonial purposes as authorized by 10 U.S.C. 4683.

i. By sale of foreign excess property demilitarization coded H, J, K, or M to United States nationals or United States entities for import into the United States. Property requiring demilitarization sold to foreign nationals must be demilitarized. Resale of this property by foreign nationals to United States nationals or United States entities for import into the United States is not authorized unless the property is demilitarized as required. The sale of foreign excess property demilitarization coded H, J, K, M, or Q to United States nationals or United States entities for import into the United States not demilitarized or without a demilitarization requirement is subject to the following restrictions:

(1) Property sold for import into the United States will be stored in a Government approved bonded area or retained in U.S. Government possession pending actual shipment.

(2) Department of the Treasury permit for import of such property into the United States has been received by the purchaser and proof thereof furnished prior to removal.

(3) The Import Certificate/Delivery Verification (IC/DV) System will apply or the property will be shipped on a commercial shipping document showing the U.S. Government as the shipper to a consignee and destination consistent with the import permit. The procedures for these controls are set forth in chapter XVI of the Defense Reutilization and Marketing Manual, DoD 4160.21-M and the Export Administration Regulation, 15 CFR.

j. By sale through negotiation of surplus ammunition to State agencies in support of bona fide avalanche control programs. Amounts and types of ammunition to be sold, recipient states, and priorities of sales will be determined and communi-

cated to the U.S. Army Armament, Munitions and Chemical Command, Rock Island, IL 61299-6000, and the Naval Sea Systems Command, ATTN: SEA-66412, Washington, DC 20362-5101.

3. All donations will be made subject to a condition which prohibits further disposition (including redonation or barter) of the items without prior approval of DLA.

4. As a condition to approving subsequent disposition to the general public by the purchaser or donee under subparagraph 2 above, DLA or the Military Services concerned will require demilitarization of the property in the same manner as prescribed in this chapter.

C. CONTROL OF SMALL ARMS AND OTHER WEAPONS

Pursuant to the disposal by transfer or sale of small arms or other weapons coming within the purview of the National Firearms Act (Chapter 53, Title 26, U.S.C.), the Director, Bureau of Alcohol, Tobacco and Firearms, Department of the Treasury, will be notified of any transfer to another Federal Agency or disposition to any state or political subdivision thereof or the District of Columbia. The Director also will be notified of any donation of such small arms or other weapons to museums and veterans' organizations even though the item may have been made unserviceable, including a description of the method used to render the item unserviceable. Notification will be effected by submission of a U.S. Treasury Department Form 5, Internal Revenue Service (Firearms). This form is used in reporting tax free dispositions under the Act. Copies of the form are obtainable upon request from any District Director of Internal Revenue. Among those firearms subject to the provisions of the National Firearms Act are the following: firearms which are capable of firing more than one shot with a single pull of the trigger; e.g., machine guns, submachine guns, M2 and M3 carbines, M14 and M16 series rifles; shotguns with a barrel or barrels less than 18 inches in length; rifles with barrels less than 16 inches in length; combination rifles and shotguns with folding or detachable shoulder stocks, such as M4 and M6 survival weapons; and pistols which are either fully automatic or equipped with shoulder stock attachments; mufflers or silencers for any firearms whether or not such firearms are included in the above definition.

D. INERT MATERIAL

1. All material generated from the firing and/or demilitarization of AEDA will be rendered inert before being turned in to a DRMO. To prevent dangerous material from being turned in to a DRMO, all inert ammunition items including dummy rounds, containers and items such as ammunition pouches and bandoliers and inert material generated from demilitarized AEDA will be inspected by a technically trained and qualified individual who will submit a certificate as part of the turn-in document, as follows:

"I certify that the item or items listed hereon have been inspected by me and, to the best of my knowledge and belief, contain no items of a dangerous or hazardous nature."

2. Each generating activity will provide a listing of individuals qualified to inspect and certify property as being inert. It is the responsibility of the turn-in activity to keep the list current, with updates being provided as personnel changes dictate. DRMOs will ensure that the person who signs the certificate is included on the qualified individual list prior to accepting accountability for AEDA.

3. Material generated from AEDA, even though properly inspected and rendered inert, will not be mingled with other types of material including scrap when transferred to the DRMO. Emphasis will be placed on the separation of inert projectiles, dummy rounds of ammunition, and other inert ammunition items from other types of material.

E. POLICY FOR DISPOSITION OF MUNITIONS LIST AND STRATEGIC LIST ITEMS

1. It is the policy of DoD to cooperate with the U.S. State Department and Commerce Department in controlling the disposition of surplus and foreign excess Munitions List and Strategic List Items located outside the United States, Puerto Rico, American Samoa, Guam, the TTPI, and the Virgin Islands. Demilitarization of Munitions List Items over and above that required by DoD but necessary to conform to U.S. State Department or foreign government requirements is authorized.

2. In some cases, demilitarization may not be necessary, while in other cases, limited demilitarization may be necessary only for certain parts of components having military characteristics. Technical

instructions issued by the Defense Agency or Military Service having procurement responsibility for the item involved, will determine the method of demilitarization and the degree to which additional demilitarization is necessary to meet the requirements in their respective areas.

F. SAFETY PRECAUTIONS IN DEMILITARIZATION BY TORCH CUTTING

1. Demilitarization by torch cutting is inherently hazardous. High order and low order explosions may occur in torch cutting closed chambers such as tanks, accumulators, recoil mechanism components, aircraft struts, hollow rods or hollow valve stems, even though the components are not under pressure or have had small holes drilled in them.

2. An explosive condition may result from the heat of the torch vaporizing oil, paint or components inside the component. In addition, gases from the cutting torch may enter the hollow space, either adding to or creating a highly explosive condition.

3. In torch cutting it must be realized that components under spring pressure may become dangerous upon sudden release of the spring holding construction.

4. Safety precautions are also necessary where flammable materials or materials such as sodium and magnesium are involved in the torch cutting operation.

5. Precautions against the hazards of torch cutting should include isolation of the working area, a technical knowledge of the construction of the component to be torch cut, and remote control of the cutting operation, when required.

G. DEMILITARIZATION BY DEEP WATER DUMPING (DWD) AT SEA

1. DWD at sea is an alternate method of demilitarization of Munitions List Items which may be considered when it is not possible to recycle or sell the material, or if it would be unsafe to utilize other methods of disposal.

2. In accordance with the Marine Protection and Sanctuaries Act of 1972, Title 1, Section 101(c), disposal in the ocean of items collected ashore or from ships in port and transported from any U.S. or foreign port for DWD is prohibited, except as may be specifically authorized on a case-by-case basis. DWD must be supported by an Environmental Impact Statement (EIS), clearly showing that no other alternative disposal actions are feasible, and be independently reviewed and approved, before an Environmental Protection Agency (EPA) permit authorizing the DWD can be obtained.

3. When a determination is made that demilitarization by DWD is desired, a request for DWD, including complete identification of the items and their ingredients, together with an EIS, should be submitted to the Naval Sea Systems Command, ATTN: SEA-66412, Washington, DC 20362-5101. In most cases, at least 6 months must be allowed for processing the EIS and obtaining an EPA permit.

4. When an EPA permit is obtained, the Naval Sea Systems Command will initiate action to accomplish the approved DWD and will provide cognizant commands, activities or agencies direction relative to packaging, handling and transporting material to the DWD loading site, in addition to coordinating actions through completion of the DWD.

5. Certification of demilitarization by DWD will accomplished in accordance with paragraph A7, this chapter. A copy of the certification will be provided to each activity, command or agency generating material included in the DWD.

CHAPTER III - DEMILITARIZATION OF SURPLUS AND FOREIGN EXCESS SMALL ARMS WEAPONS AND PARTS

A. GENERAL. The instructions herein pertain to small arms weapons and parts (except recoilless rifles, mortars, rocket launchers, and similar items) in CONUS, and surplus and foreign excess small arms weapons, parts and accessories located in overseas areas including Alaska, Hawaii, Puerto Rico, American Samoa, Guam, the TTPI, and the Virgin Islands. Specific installations designated by the Military Services and DRMOs with approved local expanded demilitarization authority are excepted from these instructions and may effect local demilitarization in accordance with appendix 4, item 1, paragraphs b and c, and approved local expanded demilitarization procedures. Serial number visibility for small arms will be maintained in accordance with the Small Arms Serialization Program (SASP), as implemented by the Military Services/Defense Agencies throughout the disposal/demilitarization cycle. A technically qualified/responsible person will conduct an inspection of all complete small arms weapons and small arms barrel and receiver groups prior to turn-in to the DRMO and will enter on the turn-in document (DD Form 1348-1) the following certificate: "I certify that the item or items listed hereon have been inspected by me and to the best of my knowledge and belief contain no items of dangerous material." The certification on the turn-in document will be signed and dated by the individual making the inspection. In addition, the DRMO shall assure that a reinspection of all complete small arms weapons and barrel and receiver groups is accomplished by a technically qualified/responsible person who shall sign and date the DD Form 1149, Requisition and Invoice/Shipping Document .

B. DEMILITARIZATION IN CONUS

1. Demilitarization by Melting.

a. Demilitarization by melting will be accomplished at Rock Island Arsenal (RIA). Correspondence should be addressed to:

Commander, Rock Island Arsenal
Directorate of Logistics
ATTN: SMCRI-DLD-TM
Rock Island Arsenal
Rock Island, IL 61299

b. Items for which demilitarization by melting is not prescribed will not be shipped to RIA for melting. Such items will be disposed of locally in accordance with appendix 4. NOTE: DUE TO THE POTENTIAL DANGER OF MAGNESIUM FIRES, ITEMS CONTAINING MAGNESIUM WILL NOT BE SHIPPED TO ROCK ISLAND, BUT WILL BE DEMILITARIZED LOCALLY.

c. Preparation for shipment.

(1) All nonmetallic parts and nonferrous accessories (slings, oilers, cleaning rods and brushes, cleaning thongs, holster thongs, holsters, scabbards, carrying cases and bags, wooden and plastic stocks, hand guards, and other extraneous items) WILL BE REMOVED from the material to be demilitarized before shipment, and will be disposed of locally in accordance with appendices 3 and 4, item 1, paragraph b.

(2) Prior to shipment, authority to ship will be obtained from the Commander, Rock Island Arsenal, Directorate of Logistics, ATTN: SMCRI-DLD-TM, Rock Island Arsenal, Rock Island, IL 61299. When depots request disposition instructions for small arms parts and or weapons, a point of contact, telephone number, weight (in pounds), NSNs nomenclature, quantity, Demilitarization Code, condition code, acquisition value and serial numbers of the weapons should be provided with the request. In the interest of economy, care will be exercised to assure that sufficient quantities of surplus weapons and/or parts are accumulated prior to shipment to minimize transportation costs. Use of MILVAN containers is the preferred means of shipping.

(3) The item count of weapons shipped must agree with count furnished in the advance notice. RIA will be notified when weapons are withdrawn subsequent to furnishing advance notice.

d. Shipping Instructions

(1) The minimum Transportation Protective Measures (TPM) as prescribed in DoD 5100.76-M, Physical Security of Sensitive Conventional Arms, Ammunition and Explosives, chapter 6, as implemented in chapter 226 of the Military Traffic Management Regulation (AR 55-355, NAVSUPINST 4600.70, AFM 75-2, MCO P4600.14A, DLAR 4500.3) will be applied when commercial carriers are utilized to transport these shipments.

(2) When MILVAN containers are used, the gross weight will not exceed 10,500 pounds. Items may be placed loose in the MILVAN container and need not be individually packed. A minimum of internal dunnage is necessary when filling MILVAN containers. Dunnage at the sides will be needed only when cargo cannot fit. To prevent jamming of the door, steel banding may be used between the vertical face of the cargo, and the inside panels of doors. If this is not sufficient, strips of dunnage may be placed vertically or horizontally to fill the intervening space. After the MILVAN has been completely filled, the doors will be securely closed so as to engage the latch as well as the top and bottom bolts. The latch handle will then be sealed in the closed position with a serially numbered seal. The number of the seal will be recorded on all appropriate transportation and shipping documents to protect the "shippers' load and count". Additional protection will be provided by application of stout wire "0" to "5" gauge, tightly twisted, and snubbed off closely so as to prevent the movement of the latch handle.

(a) One full MILVAN container is considered the minimum that should be sent to RIA.

(b) MILVAN containers should be requested by contacting the Commanding Officer, MTMCEA, ATTN: JCCO, Bayonne, NJ 07002.

(3) When MILVAN containers are not used, shipments to RIA will be packed in sealed, numbered containers not to exceed 2,000 pounds per container. When shipped by rail, containers will be blocked to prevent shifting and the boxcars will be sealed.

(4) Items described in subparagraph (6) below must be identified and will be placed in containers separate from miscellaneous components and parts. Other miscellaneous components and parts will be shipped to RIA in separate containers and identified to RIA as miscellaneous weapons parts by weight and inventory value.

(5) Shipping documents will specify number of containers and total weight of material not otherwise identified by name (NOIBN) and will be signed by the shipper. Original and two copies of the shipping documents will be forwarded to the Commander, Rock Island Arsenal, Directorate of Logistics, ATTN: SMCRI-DLD-TM, Rock Island Arsenal, Rock Island, IL 61299.

(6) In those cases where complete weapons, receivers (or assemblies including receivers) stripped of nonmetallic parts, silencers, mufflers, and bayonets are included in the shipment, RIA or other consignee will be advised in advance of the shipment, specifying shipping document number, identification number of each container, type of weapons, and the exact quantity and inventory value of each type weapon in the container. Telephone may be used in an emergency, provided confirmation of report of shipment is made promptly by teletype, datafax or letter.

(7) Government Bills of Lading (GBLs) will reflect:

(a) Rail Shipments. Description will be shown as firearms or parts NOIBN in barrels or boxes. Rail classification UFC Item Number 38340.

(b) Truck Shipments. Description will be shown as firearms or parts NOI in barrels or boxes. Motor classification NMFC Item Number 69300.

(8) Government railroad cars and Government vehicles and drivers will be used when authorized and determined to be both economical and in the best interest of the Government.

(9) If the shipping activity, e.g., DRMO, does not receive acknowledgment of receipt from Rock Island Arsenal by the thirtieth day subsequent to the date of shipment, followup action will be taken by the shipping activity to obtain the required receipt acknowledgment documentation. The shipping activity's "clearance to ship letter" contains the applicable point of contact and Defense System Network (DSN) number to be utilized in following up on delinquent receipt documentation. Problems in followup actions which cannot be resolved by the DRMO will be referred to the Defense Reutilization and Marketing Region (DRMR) for resolution.

e. Commander, Rock Island Arsenal, Directorate of Logistics, Rock Island, IL 61299 will:

(1) Issue shipping instructions.

(2) Coordinate shipments with the holding (marketing) activities.

(3) Schedule incoming shipments.

(4) Receive material with documentation.

(5) Verify total weight, number of containers, and number of each type item described in subparagraph d(6) above, by count.

(6) Resolve discrepancies in shipments with shipment originator and/or carrier. Report unresolved discrepancies in shipments to Security Officer, Headquarters USAAMCCOM through the Rock Island Arsenal Security Office.

(7) Furnish, within 30 days of the date shipped, receipt to the shipping activity for each type item received by total weight and actual count for items described in subparagraph d(6) above.

(8) Require the material to be melted and ensure the appropriate certificate of demilitarization is accomplished. Retain certificate for 2 years.

(9) Transfer the melted scrap to the servicing DRMO for sale purposes.

(10) Adjust accountable records to compensate for dunnage and melting losses.

2. Expanded Local Demilitarization of small arms weapons and parts at selected installations.

a. Specific installations designated by the Military Services and DRMOs designated by DLA are authorized to perform expanded local demilitarization in the manner indicated on those items listed in subparagraph d below.

b. Activities authorized to perform local expanded demilitarization under constant quality assurance inspection. DRMS will establish DRMO expanded local demilitarization procedures in consonance with this requirement.

c. All activities with either crushing or shearing facilities will provide shielding safeguards to prevent injury to operating personnel from possible flying objects.

d. Those specific activities designated by subparagraph a above will demilitarize locally all quantities of the following small arms items in the manner specified:

(1) Receivers will be demilitarized by cutting (shear or torch) in a minimum of two places as depicted in appendix 7, or crushing in a hydraulic or similar type press to the extent to prevent reconstitution. Torch cutting for demilitarization purposes will be performed utilizing a cutting tip that displaces at least one-half inch of metal and cuts will be made completely through the receiver.

(2) Barrels will be crushed, sheared or cut with a torch utilizing a cutting tip that displaces at least one-half inch of metal in the chamber area and in two or more additional places to prevent reconstitution. Cuts will be made completely through the barrel.

(3) Machine guns will be cut in accordance with subparagraphs (1) and (2) above or, if crushing method is used, the trunnion block and side frame must be broken or distorted to preclude reconstitution.

(4) Magazines will be demilitarized by cutting, shearing, or crushing. Clips for the M1 rifle do not require demilitarization.

(5) Bolts will be demilitarized by cutting (shear or torch) in a minimum of two places, one of which will coincide with cuts illustrated in appendix 7. A torch cutting tip that displaces at least one-half inch of metal will be used.

(6) All other small arms components not listed above and not already authorized for local demilitarization will be shipped to Rock Island Arsenal for melting as outlined in subparagraph 1 above, or in accordance with appendix 4, item 1.

e. The demilitarization certificate required will be accomplished as prescribed in chapter II, paragraph A7, and will be executed by the activity performing the demilitarization and forwarded to the DRMO.

3. Demilitarization by DWD at sea. See chapter II, paragraph G.

C. DEMILITARIZATION OUTSIDE CONUS

1. Because of prohibitive transportation costs, etc., surplus small arms weapons and parts in Hawaii, Alaska, Puerto Rico, American Samoa, Guam, the TTPI, and the Virgin Islands will be demilitarized in the same manner as prescribed for foreign excess by one of the following methods:

a. Complete demilitarization by melting.

b. Complete demilitarization by cutting, crushing, shearing, or breaking.

c. Deep water dumping at sea in accordance with chapter II, paragraph G.

2. Theater commanders, in coordination with DRMS/DRMR, will determine the method to be used and the degree to which additional demilitarization is necessary to meet the requirements in these areas.

3. Demilitarization will be accomplished in the most cost-effective manner by the generating agency, the DRMO, as a condition of sale, or by a service contract.

D. FORECAST OF TONNAGE OF SMALL ARMS WEAPONS AND REPAIR PARTS TO BE DEMILITARIZED BY SMELTING

Each Military Service/Defense Agency will furnish a forecast of tonnage of small arms weapons and

repair parts expected to be shipped to Rock Island Arsenal for smelting. The forecast will be by fiscal year and will be due on 15 September preceding the fiscal year, and will be forwarded to the Commander, Rock Island Arsenal, Directorate of Logistics, ATTN: SMCRI-DLD-TM, Rock Island Arsenal, Rock Island, IL 61299. DRMR/DRMO activities will provide a copy of the forecast of tonnage to DRMS, ATTN: DRMS-O, 74 N. Washington Ave., Battle Creek, MI 49017-3092.

CHAPTER IV - DEMILITARIZATION PRIOR TO DISPOSITION BY DONATION

A. DISPOSITION BY DONATION

1. As authorized by 10 U.S.C. 2572, 10 U.S.C. 7545, or other similar statutes, specific condemned or obsolete combat material (e.g., combat aircraft, vessels, guns, projectiles, tanks, etc.) may be donated in the manner prescribed in DoD 4160.21-M, Chapter X, to municipal corporations, posts of recognized war veterans associations for use or display and to accredited museums for display. Minimum demilitarization of such items will be accomplished to render the items unserviceable in the interest of public safety. This limited or minimum demilitarization will be performed in accordance with the instructions provided by DLA. These instructions will preserve the intrinsic, historical or display value of the property.

2. All such donations under the authority outlined above will be made subject to a special condition which prohibits further disposition (including redonation) of the items without prior approval of DLA and/or Military Service effecting the original donation.

3. Detailed instructions will be provided on a case-by-case basis by DLA. Requests should be sent to: Defense Logistics Agency, ATTN: DLA-SMP, Cameron Station, Alexandria, VA 22304-6100. These procedures may not constitute complete demilitarization as required by the instructions in appendix 4. Complete demilitarization, as described in appendix 4, must always be accomplished on partially demilitarized and modified items prior to final disposition.

B. DEMILITARIZATION COSTS FOR DONATED ITEMS

Costs of demilitarization will be borne by the authorized donee. Charges will be assessed by the donating Military Service based on actual demilitarization cost at the time of donation.

APPENDIX 1

Subchapter M - International Traffic in Arms Regulation

UNITED STATES MUNITIONS LIST

(Articles designated as Arms, Ammunitions, Implements of War (22 CFR 121).) (A boldfaced bullet precedes certain articles that are deemed to be Significant Military Equipment (SME) as defined in appendix 2.)

CATEGORY I - FIREARMS

•A. Nonautomatic, semiautomatic and fully automatic firearms to caliber .50 inclusive, and all components and parts for such firearms.

B. Riflescopes manufactured to military specifications, and specifically designed or modified components therefor; firearm silencers and suppressors, including flash suppressors.

•C. Insurgency-counterinsurgency type firearms or other weapons having a special military application (e.g., close assault weapons systems) regardless of caliber and all components and parts therefor.

CATEGORY II - ARTILLERY AND PROJECTORS

•A. Guns over caliber .50, howitzers, mortars, and recoilless rifles.

•B. Military flamethrowers and projectors.

C. Components, parts, accessories and attachments for the articles in paragraphs A and B of this category. Including, but not limited to, mounts and carriages for these articles.

CATEGORY III - AMMUNITION

•A. Ammunition for the arms in categories I and II of this section.

B. Components, parts, accessories and attachments for articles in paragraph A of this category, including but not limited to cartridge cases, powder bags, bullets, jackets, cores, shells (excluding shotgun shells), projectiles, boosters, fuzes and components therefor, primers, and other detonating devices for such ammunition.

C. Ammunition belting and linking machines.

•D. Ammunition manufacturing machines and ammunition loading machines (except handloading ones).

CATEGORY IV - LAUNCH VEHICLES, GUIDED MISSILES, BALLISTIC MISSILES, ROCKETS, TORPEDOES, BOMBS AND MINES

•A. Rockets (including, but not limited to, meteorological and other sounding rockets), bombs, grenades, torpedoes, depth charges, land and naval mines, as well as launchers for such defense articles, and demolition blocks and blasting caps.

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

C. Apparatus, devices and materials for the handling, control, activation, monitoring, detection, protection, discharge, or detonation of the articles in paragraphs A and B of this category.

•D. Missile and space vehicle power plants.

•E. Military explosive excavating devices.

•F. Ablative materials fabricated or semifabricated from advanced composites (e.g., silica, graphite, carbon, carbon/carbon, and boron filaments) for the articles in this category that are derived directly from or specifically developed or modified for defense articles.

•G. Nonnuclear warheads for rockets and guided missiles.

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

CATEGORY V - EXPLOSIVES, PROPELLANTS, AND INCENDIARY AGENTS

•A. Military explosives.

•B. Military fuel thickeners.

C. Propellants for the articles in categories III and IV of this section.

D. Military pyrotechnics, except pyrotechnic materials having dual military and commercial use.

E. All compounds specifically formulated for the articles in this category.

CATEGORY VI - VESSELS OF WAR AND SPECIAL NAVAL EQUIPMENT

•A. Warships, amphibious warfare vessels, landing craft, mine warfare vessels, patrol vessels, auxiliary vessels and service craft, experimental types of naval ships and any vessels specifically designed or modified for military purposes.

•B. Turrets and gun mounts, arresting gear, special weapons systems, protective systems, submarine storage batteries, catapults and other components, parts, attachments, and accessories specifically designed or modified for combatant vessels.

C. Mine sweeping equipment, components, parts, attachments and accessories specifically designed or modified therefor.

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

•E. 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.

CATEGORY VII - TANKS AND MILITARY VEHICLES

•A. Military type armed or armored vehicles, military railway trains, and vehicles specifically designed or modified to accommodate mounting for arms or other specialized military equipment or fitted with such items.

•B. Military tanks, combat engineer vehicles, bridge launching vehicles, half-tracks and gun carriers.

•C. Self-propelled guns and howitzers.

D. Military trucks, trailers, hoists and skids specifically designed, modified or equipped to mount or carry weapons of categories I, II, and IV or for carrying and handling the articles in paragraph A of categories III and IV.

•E. Military recovery vehicles.

•F. Amphibious vehicles.

•G. Engines specifically designed or modified for the vehicles in paragraphs A, B, C, and D of this category.

H. All specifically designed or modified components, parts, accessories, attachments and associated equipment for the articles in this category, including, but not limited to, military bridging and deep water fording kits.

CATEGORY VIII - AIRCRAFT, SPACECRAFT, AND ASSOCIATED EQUIPMENT

•A. Aircraft, including, but not limited to, helicopters, nonexpansive 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.

B. Spacecraft including:

• 1. Manned and unmanned, active and passive satellites (except those listed in category VIIIB2).

2. Nonmilitary communication satellites (excluding ground stations and associated equipment not enumerated elsewhere in appendix 1).

•C. 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.

•D. Cartridge-actuated devices utilized in emergency escapes of personnel and airborne equipment (including, but not limited to, airborne refueling equipment) specifically designed or modified for use with the aircraft, spacecraft and engines of the types in paragraphs A, B, and C of this category.

E. Launching and recovery equipment 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.

F. Power supplies and energy sources specifically designed or modified for spacecraft.

•G. Inertial navigation systems and components designed specifically for such systems. Systems or components which 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 which are certified by the Federal Aviation Administration as being an integral part of such aircraft are subject to export regulation by the Office of Munitions Control only if the export is intended for a controlled country.

•H. Developmental 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.

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

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

CATEGORY IX - MILITARY TRAINING EQUIPMENT

A. 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, navigation trainers, and simulation devices related to defense articles.

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

CATEGORY X - PROTECTIVE PERSONNEL EQUIPMENT

A. Body armor specifically designed, modified or equipped for military use; articles, including but not limited to clothing, designed, modified or equipped to protect against or reduce detection by radar, infrared (IR) or other sensors; military helmets equipped with communications hardware, optical sights, slewing devices or mechanisms to protect against thermal flash or lasers, excluding standard military helmets.

B. Partial pressure suits and liquid oxygen converters used in aircraft in category VIII, paragraph A.

C. Protective apparel and equipment specifically designed or modified for use with the articles in paragraphs A through D in category XIV.

D. Components, parts, accessories, attachments, and associated equipment specifically designed or modified for use with the articles in paragraphs A through C of this category.

CATEGORY XI - MILITARY AND SPACE ELECTRONICS

A. Electronic equipment not included in category XII of the Munitions List which is assigned a military designation or is specifically designed, modified or configured for military application. This includes, but is not limited to, the following:

• 1. Underwater sound equipment, including, but not limited to, towed arrays, electronic beam forming sonar, target classification equipment, and spectrographic displays; search, acquisition, tracking, moving target indication and imaging radar systems; active and passive countermeasures and counter-countermeasures equipment; electronic fuses; identification systems; command, control and communications systems; and, regardless of designation, any experimental or developmental electronic equipment specifically designed or modified for military application, or for use with a military system.

2. Sonic depth finders; underwater telephones; electro-mechanical beam forming sonars and elementary sonobuoys; radios (including transceivers; weather, navigation, and air traffic control radar systems; navigation, guidance, object-locating equipment; displays; and telemetering equipment).

3. Armored coaxial cable capable of Radio Frequency (RF), optical, or high voltage power transmission.

B. Space electronics:

• 1. Electronic equipment specifically designed or modified for spacecraft and spaceflight.

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

•C. Electronic systems or equipment specifically designed, modified, configured, used or intended for use in search, reconnaissance, collection, monitoring, direction-finding, display, analysis and production of information from the electromagnetic spectrum for intelligence or security purposes and electronic systems or equipment designed or modified to counteract such surveillance and monitoring.

D. Very High Speed Integrated Circuit (VHSIC) semiconductor devices that are specifically designed for military applications and which have a high-speed signal and image processing capability with an operational parameter (gate-time-clock-frequency) or greater than 10" gates X hertz for an individual semiconductor device.

E. Components, parts, accessories, attachments, and associated equipment specifically designed or modified for use or currently used with the equipment in paragraphs A through C of this category, except for such items as are in normal commercial use.

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

•A. Fire control systems; gun and missile tracking and guidance systems; military infrared, image intensifier and other night sighting and night viewing equipment; military masers and lasers; gun laying equipment; range, position and height finders and spotting instruments; aiming devices (electronic, gyroscopic, optic, and acoustic); bomb sights, bombing computers, military television sighting and viewing units, inertial platforms, and periscopes for the articles of this section.

•B. Inertial and other weapons or space vehicle guidance and control systems; spacecraft guidance, control and stabilization systems; astro compasses; and star trackers.

C. Components, parts, accessories, attachments, and associated equipment specifically designed or modified for the articles in paragraphs A and B of this category, except for such items as are in normal commercial use.

CATEGORY XIII - AUXILIARY MILITARY EQUIPMENT

A. Aerial cameras, space cameras, special purpose military cameras, and specialized processing equipment therefor; military photointerpretation, stereoscopic plotting, and photogrammetry equipment, and components specifically designed or modified therefor.

B. Speech scramblers, privacy devices, cryptographic devices and software (encoding and decoding), and components specifically designed or modified therefor, ancillary equipment, and protective apparatus specifically designed or modified for such devices, components and equipment.

C. Self-contained diving and underwater breathing apparatus specifically designed or modified for a military purpose and components specifically designed or modified therefor.

D. Armor plate and structural materials (including, but not limited to, plate, rolled and extruded shapes, bars and forgings, castings, welding consumables, carbon/carbon and metal matrix composites) specifically designed or modified for defense articles.

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

F. 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.

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

H. Devices embodying particle beam and electromagnetic pulse technology.

I. Metal embrittling agents.

CATEGORY XIV - TOXICOLOGICAL AGENTS AND EQUIPMENT AND RADIOLOGICAL EQUIPMENT

•A. 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.

•B. Biological agents.

•C. Equipment for dissemination, detection, and identification of, and defense against, the articles in paragraphs A and B of this category.

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

E. Components, parts, accessories, attachments, and associated equipment specifically designed or modified for the articles in paragraphs C and D of this category.

CATEGORY XV - (RESERVED)

CATEGORY XVI - NUCLEAR WEAPONS DESIGN AND TEST EQUIPMENT

•A. 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. (See Department of Commerce Export Regulations, 15 CFR Part 378.)

•B. 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.

CATEGORY XVII - CLASSIFIED ARTICLES NOT OTHERWISE ENUMERATED

•All articles and technical data relating thereto which are classified in the interest of national security and which are not otherwise enumerated in the U.S. Munitions List.

CATEGORY XVIII - TECHNICAL DATA

Technical data relating to the defense articles listed in the other categories of the U.S. Munitions List.

CATEGORY XIX - DEFENSE SERVICES

Defense services related to the defense articles listed in the other categories of the U.S. Munitions List.

CATEGORY XX - SUBMERSIBLE VESSELS, OCEANOGRAPHIC AND ASSOCIATED EQUIPMENT

•A. Submersible vessels, manned and unmanned, designed or modified for military purposes or having independent capability to maneuver vertically or horizontally at depths below 1,000 feet or powered by nuclear propulsion plants.

•B. Submersible vessels, manned or unmanned, designed or modified in whole or in part from technology developed by or for the U.S. Armed Forces.

C. Any of the articles in categories VI, IX, XI, XIII, and elsewhere in the appendix specifically designed or modified for use with submersible vessels, and oceanographic or associated equipment assigned a military designation.

D. Equipment, components, parts, accessories, and attachments specifically designed or modified for any of the articles in paragraphs A and B of this category.

CATEGORY XXI - MISCELLANEOUS ARTICLES

Any article not specifically enumerated in the 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 Munitions Control.

APPENDIX 2

DEFINITIONS AND INTERPRETATIONS

A. GENERAL. Definitions and interpretations contained in this manual are used in the areas of reutilization and disposal of excess, surplus and foreign excess property.

B. DEFINITIONS. For the purpose of this manual, the following definitions apply:

1. Accessory. See subparagraph 32.

2. Aircraft and Related Articles. In appendix 1, category VIII, "aircraft" means aircraft designed, modified or equipped for a military purpose, including aircraft described as "demilitarized." All aircraft bearing a military designation are included in category VIII. However, the following aircraft are not included so long as they have not been specifically equipped, re-equipped or modified for military operations:

a. Cargo aircraft bearing "C" designations and numbered C-45 through C-118 inclusive, C-121 through C-125 inclusive, and C-131, using reciprocating engines only.

b. Trainer aircraft bearing "T" designations and using reciprocating engines or turboprop engines with less than 600 horsepower (shaft horsepower (s.h.p.)).

c. Utility aircraft bearing "U" designations and using reciprocating engines only.

d. All liaison aircraft bearing an "L" designation.

e. All observation aircraft bearing "O" designations and using reciprocating engines.

3. Ammunition, Explosives and Dangerous Articles (AEDA). Any substance that by its composition and chemical characteristics, alone or when combined with another substance, is or becomes an explosive or propellant or is hazardous or dangerous to personnel, animal or plant life, structures, equipment or the environment as a result of blast, fire, fragment, radiological or toxic effects. It includes, but is not limited to, ammunition and explosives as defined in DoD 5154.4S, DoD Ammunition and Explosive Safety Standards. AEDA is not a criterion for demilitarization. Only items of AEDA which are included on the Munitions List have been assigned a demilitarization code other than "A."

4. Ammunition (conventional). For the purpose of this manual, the term consists of all items in Federal Supply Group 13, with the exception of a portion of classes 1336, 1337, 1338 and 1340 and classes 1350, 1351, 1355, 1356, 1360, 1361, 1385 and 1386. Further, the term also includes a portion of Federal Supply Group 14, classes 1410 and 1425.

5. Amphibious Vehicles. An "amphibious vehicle" in appendix 1, category VII, paragraph F, is an automotive vehicle or chassis which embodies all-wheel drive, is equipped to meet special military requirements and which has sealed electrical systems or adaptation features for water fording.

6. Antique Firearm. Any firearm with a matchlock, flintlock, percussion cap, (or similar type of ignition system) manufactured in or before 1898; and any replica of any firearm described above, if such replica is not designed or redesigned for using rimfire or conventional centerfire fixed ammunition, or uses rimfire or conventional centerfire fixed ammunition which is no longer manufactured in the United States and which is not readily available in the normal channels of commercial trade.

7. Apparatus and Devices (Under appendix 1, category IV, paragraph C). Category IV includes, but is not limited to, the following: Fuzes and components for the items listed in that category, bomb racks and shackles, bomb shackle release units, bomb ejectors, torpedo tubes, torpedo and guided missile boosters, guidance system equipment and parts, launching racks and projectors, pistols (exploders), igniters, fuze arming devices, intervalometers, guided missile launchers and specialized handling equipment and hardened missile launching facilities.

8. Attachment. See subparagraph 32.

9. Authorized Service Educational Activities (SEA) Donee Representative. An individual of each school, club or council specifically designated by a Service Educational Activity and authorized to request donation of surplus property to the SEA.

10. Carbine. See subparagraph 36.

11. Cartridge and Shell Casings. Cartridge and shell casings are included in appendix 1, category

III, unless, prior to export, they have been rendered useless beyond possibility of restoration for use as a cartridge or shell casing by means of heating, flame treatment, mangling, crushing, cutting or popping. Scrap cartridge and shell casings will be handled as Demilitarization Code "J."

12. Chemical Agents. A chemical agent in appendix 1, category XIV, paragraph A, is a substance having military application which by its ordinary and direct chemical action produces a powerful physiological effect. The term "chemical agent" includes, but is not limited to, the following compounds:

a. Lung irritants:
(1) Diphenylcyanoarsine (DC).
(2) Fluorine (but not fluorene).
(3) Trichloronitro methane (chloropicrin PS).
b. Vesicants:
(1) B-Chlorovinyldichloroarsine (Lewisite, L).
(2) Bis(dichloroethyl) sulfide (Mustard Gas, HD or H).
(3) Ethyldichloroarsine. (ED).
(4) Methyldichloroarsine (MD).
c. Lachrymators:
(1) A-Bromobenzyl cyanide (BBC).
(2) Chloroacetophenone (CN).
(3) Dibromodimethyl ether.
(4) Dichlorodimethyl ether (ClCi).
(5) Ethyldibromoarsine.
(6) Phenylcarbylamine chloride.
(7) Tear gas solutions (CNB and CNS).
(8) Tear gas orthochlorobenzal-malononitrile (CS).
d. Sternutators and irritant smokes:
(1) Diphenylamine chloroarsine (Adamsite, DM).
(2) Diphenylchloroarsine (DA).
(3) Liquid pepper.
e. Nerve agents, gases and aerosols. These are toxic compounds which effect the nervous system, such as:
(1) Dimethylaminoethoxycyanophosphine oxide (GA).
(2) Methylisopropoxyfluorophosphine oxide (GB).
(3) Methylpinacolyloxyfluoriphosphine oxide (GD).
f. Antiplant chemicals, such as butyl 2-chloro-4-fluorophenoxyacetate (LNF).
g. Asphyxiating agents:
(1) Carbonyl chloride (CG-phosgene).
(2) Trichloromethychloroformate (DP-phosgene).
h. Blood agents:
(1) Hydrogen cyanide (AC).
(2) Cyanogen chloride (CK).
(3) Arsine (SA).

13. Combat Material. Consists of items of property designated as arms, ammunition and implements of war listed in the U.S. Munitions List (USML). (See appendix 1.)

14. Commercial-Type Property. Property generally considered not to be unique and peculiar to DoD and possessing commercial marketability.

15. Commodity Control List (CCL). A list of dual-use items under the export control jurisdiction of the Bureau of Export Administration, U.S. Department of Commerce.

16. Component. See subparagraph 32.

17. Controlled Item Inventory Code (CIIC). A one character alphabetic or numeric code in the Defense Logistics Information System (DLIS) which indicates the security classification and/or security risk or pilferage controls for storage and transportation of DoD assets. (Formally the Physical Security (PS) Code.)

18. CONUS. United States territory, including the adjacent territorial waters, located within the North American continent between Canada and Mexico. (Comprising 48 states and the District of Columbia.)

19. Decontamination. The process of making any person, object or area safe, for use or handling by unprotected personnel and harmless to all properties and surroundings, by absorbing, destroying, neutralizing, making harmless or removing explosive, chemical, biological or radiological agents clinging to or around it.

20. Defense Article. Any item designated in this manual. The term includes models, mock-ups and other such items which reveal technical data directly relating to items designated in this manual.

21. Defense Reutilization and Marketing Office (DRMO). The DLA organizational entity having responsibility for and control over disposable property.

22. Defense Reutilization and Marketing Region (DRMR). An office having command over and exercising management and control of assigned DRMOs.

23. Defense Reutilization and Marketing Service (DRMS). The organization vested with operational command and administration of the Defense Reutilization and Marketing Program.

24. Defense Service

a. The furnishing of assistance, including training, to foreign persons in the design, engineering, development, production, processing, manufacture, use, operation, overhaul, repair, maintenance, modification or reconstruction of defense articles, whether in the United States or abroad.

b. The furnishing to foreign persons of any technical data, whether in the United States or abroad.

25. Demilitarization (DEMIL). The act of destroying the military offensive or defensive advantages inherent in certain types of equipment or material. The term comprehends mutilation, dumping at sea, cutting, crushing, scrapping, melting, burning or alteration designed to prevent the further use of this equipment and material for its originally intended military or lethal purpose and applies equally to material in unserviceable or serviceable condition, that has been screened through the Inventory Control Point (ICP) and declared surplus or foreign excess.

26. Demilitarization Certification. A certificate signed by a technically qualified U.S. Government representative and countersigned by a technically qualified U.S. Government representative (American citizen) who actually witnessed the demilitarization of the material and/or inspected the residue.

27. Demilitarization Code. A single character alpha code assigned by the Item Manager identifying the degree of demilitarization necessary prior to accomplishing final disposition of the item.

28. Denied Areas. Those countries which the Department of State or Commerce have determined to be prohibited destinations for the sale or resale of Munitions and Strategic List Items unless an exception or exemption has been specifically granted by either Department.

29. Disposal. The process of redistributing, transferring, donating, selling, abandoning, destroying or other disposition of DoD personal property.

30. Diversion. An unauthorized conveyance (resale, export, shipment, etc.) of material to a denied area or other prohibited locale designated by the Department of State or Commerce.

31. Dual-use. Items which have both military and commercial applications.

32. End-Items, Components, Accessories, Attachments, Parts, Firmware, Software and Systems

a. An **"end-item"** is an assembled article ready for its intended use. Only ammunition, fuel or other energy source is required to place it in an operating state.

b. A **"component"** is an item which is useful only when used in conjunction with an end-item. A major component includes any assembled element which forms a portion of an end-item without which the end-item is inoperable, e.g., airframes, tail sections, transmissions, tank treads, hulls, etc. A minor component includes any assembled element of a major component.

c. **"Accessories"** and **"attachments"** are associated equipment for any component, end-item or system, and which are not necessary for their operation, but which enhance their usefulness or effectiveness, e.g., riflescopes, special paints, etc.

d. A **"part"** is any single unassembled element of a major or minor component, accessory or attachment which is not normally subject to disassembly without the destruction or the impairment of the design use, e.g., rivets, wire, bolts, etc.

e. **"Firmware"** and any related unique support tools (such as computers, linkers, editors, test case generators, diagnostic checkers, library of functions and system test diagnostics) specifically designed for equipment or systems covered under any category of the USML are considered as part of the end-item or component. "Firmware" also includes, but is not limited to, circuits into which software has been programmed.

f. **"Software"** includes, but is not limited to, the system functional design, logic flow, algorithms, application programs, operating systems and support software for design, implementation, test, operation, diagnosis and repair.

g. A **"system"** is a combination of end-items, components, parts, accessories, attachments, firmware and software, specifically designed, modified or adapted to operate together to perform a specialized military function.

33. **Excess Personal Property.** The following terms and definitions are provided for clarity and use throughout this manual:

a. Excess is defined based on point in time as follows:

(1) Military Service/Defense Agency Excess is that quantity of an item of Military Service/Defense Agency-owned property that is not required for its needs and the discharge of its responsibilities as determined by the head thereof. (This property will require further screening by a DoD activity for DoD utilization.)

(2) DoD Excess is that quantity of an item that has completed screening within DoD and is not required for the needs and the discharge of the responsibilities of any DoD activity. (This screening may have been accomplished by DRMS/SDPDAs/Defense Industrial Plant Equipment Center (DIPEC)/Defense Automation Resources Information Center (DARIC) and other designated DoD agencies. This property is subject to Federal civil agency screening by GSA.)

b. Excess is defined based on location as follows:

(1) Domestic Excess. Both the terms Military Service/Defense Agency excess and DoD excess relate to domestic excess; that is, property located in U.S., American Samoa, Guam and the TTPI. When all utilization screening is completed on domestic excess property, it becomes surplus and eligible for donation and sale.

(2) Foreign Excess Personal Property. Any excess personal property located outside the United States, American Samoa, Guam and the TTPI. (This property is subject to screening and sale as indicated in DoD 4160.21-M, chapters XV and XVI.)

34. **Export Administration Regulation.** Regulations set forth in parts 768 through 799, inclusive, of Title 15 of the Code of Federal Regulations in implementation of the Export Control Act of 1979, effective 1 October 1979.

35. **Export Commodity Control Number (ECCN).** The commodity classification numbers used in Supplement No. 1 to Part 799.1 of the Export Administration Regulations. The ECCN consists of a four digit number followed by a code letter. The four digit number corresponds to the international export control structure format. The code letter is the key to documentation requirements and indicates the country group level of control for CCL entries.

36. **Firearms.** The term "firearms" means:

a. Any weapon (including a starter gun) which will or is designed to or may readily be converted to expel a projectile by the action of an explosive.

b. The frame or receiver of any such weapon.

c. Appendix 1, category I, includes revolvers, pistols, rifles, carbines, fully automatic rifles, submachine guns, machine pistols and machine guns to caliber .50, inclusive. It includes combat shotguns. It excludes other shotguns with barrels 18 inches or longer, BB, pellet and muzzle loading (black powder) firearms.

d. A **"rifle"** is a shoulder firearm which can discharge a bullet through a rifled barrel 16 inches or longer.

e. A **"carbine"** is a lightweight shoulder firearm with a barrel under 16 inches in length.

f. A **"pistol"** is a hand-operated firearm having a chamber integral with or permanently aligned with the bore.

g. A **"revolver"** is a hand-operated firearm with a revolving cylinder containing chambers for individual cartridges.

h. A **"submachine gun,"** "machine pistol" or "machine gun" is a firearm originally designed to fire, or capable of being fired, fully automatically by a single pull of the trigger.

37. **Firmware.** See subparagraph 32.

38. **Foreign Military Sale (FMS).** That portion of U.S. security assistance authorized by the Foreign Assistance Act of 1961, as amended. The recipient provides reimbursement for defense articles and services transferred. FMS includes DoD cash sales from stocks (inventories, services, training); DoD guarantees covering financing by private or Federal Financing Bank sources for credit sales of defense articles and services; sales financed by appropriated direct credits; and sales funded by grants under the Military Assistance Program (MAP).

39. **Forgings, Castings and Machined Bodies.** Includes articles in a partially completed state which have reached a stage in manufacture where they are clearly identifiable as defense articles. If the end-item is an article on the USML (including components, accessories, attachments and parts), then the particular forging, casting, extrusion, machined body, etc., is considered a defense article subject to the controls of this manual, except for such items as are in normal commercial use.

40. International Traffic in Arms Regulation (ITAR). Regulations implementing the authority granted the President to control the export and import of defense articles and defense services. These regulations are primarily administered by the Director of the Office of Munitions Control, U.S. Department of State.

41. Inventory Control Point/Manager. An organizational unit or activity within a DoD supply system which is assigned the primary responsibility for the material management of a group of items, either for a particular Service or for the DoD as a whole. Material inventory management includes: cataloging direction, requirements computation, procurement direction, distribution management, disposal direction; and generally, rebuild direction.

42. Key Points (for Demilitarization). The parts, components, alignment points, attachment fittings or areas which, when demilitarized, cannot feasibly be repaired, restored, replaced, improvised or commercially procured and which are necessary factors in restoring the next higher assembly to design capability.

43. Lethal Material. Material, which because of its design, intended use, or composition, is capable of causing injury, death or destruction. Lethal material consists of, but is not limited to, arms, ammunition, bombs, grenades, explosive rockets, squibs, solid fuels (JATO), poisonous and caustic acids, whether gaseous, liquid or solid, toxic biological agents, spring-loaded devices such as recoil mechanisms and equilibrators, etc. For example; all small arms spare parts except stocks, slings and common hardware items are designated as lethal. Aircraft, shipboard and vehicular parts associated primarily with flyability and mobility are not designated as lethal.

44. Machine Gun. See paragraph 36.

45. Machine Pistol. See paragraph 36.

46. Military Demolition Blocks and Blasting Caps. Military demolition blocks and blasting caps referred to in appendix 1, category IV, paragraph A, do not include the following articles:

a. Electric squibs.

b. No. 6 and No. 8 blasting caps, including electric ones.

c. Delay electric blasting caps (including No. 6 and No. 8 millisecond ones).

d. Seismograph electric blasting caps (including SSS, Static-Master, Vibrocap SR, and SEISMO SR).

e. Oil well perforating devices.

47. Military Explosives. Military explosives in appendix 1, category V, include, but are not limited to, the following:

a. Ammonium picrate.

b. Black powder made with potassium nitrate or sodium nitrate.

c. Cyclotetramethylenetetranitramine (HMX).

d. Cyclotrimethylenetrinitramine (RDX, Cyclonite, Hexogen or T4).

e. Dinitronaphthalene.

f. Ethylenedinitramine.

g. Hexanitrodiphenylamine.

h. Nitroglycerin.

i. Nitrostarch.

j. Pentaerythritol tetranitrate (penthrite, pentrite or PETN).

k. Tetranitronaphthalene.

l. Trinitroanisol.

m. Trinitronaphthalene.

n. Trinitrophenol (picric acid).

o. Trinitrophenylmethyinitramine (Tetryl).

p. Trinitrotoluene (TNT).

q. Trinitroxylene.

r. Ammonium perchlorate nitrocellulose (military grade).

s. Aluminum powder (spherical) with an average particle size of 100 micrometer diameter or less and a purity of 97 percent or greater.

t. Any combination of the above.

48. Military Fuel Thickeners. Military fuel thickeners in appendix 1, category V, include compounds (e.g., octal) or mixtures of such compounds (e.g., napalm) specifically formulated for the purpose of producing materials which, when added to petroleum products, provide a gel-type incendiary material for use in bombs, projectiles, flame throwers or other defense articles.

49. Military Item. An item of equipment designed primarily for military offensive or defensive operations.

50. Military-Type Property. Personal property of the types which are unique and peculiar to DoD and which have limited commercial application.

51. Munitions List Item (MLI). Any item contained in the USML, 22 CFR 121.

52. Mutilation. The act of making material unfit for its intended purposed by cutting, tearing, scratching, crushing, breaking, punching, shearing, burning, neutralizing, etc.

53. Nuclear Ordnance Items. Definitions, terms and abbreviations are contained in Technical Manual, Glossary of Nuclear Weapons Material and Related Terms DoE-DNA TP 4-1, Army TM 39-4-1, Navy SWOP 4-1, Air Force T.O. 11N4-1.

54. Office of Munitions Control (OMC). "Office of Munitions Control" means the Office of Munitions Control, Bureau of Politico-Military Affairs, Department of State, Washington, DC 20520.

55. Overseas Area. Geographical areas not in the United States, Puerto Rico, American Samoa, Guam, the TTPI or the Virgin Islands.

56. Part. See subparagraph 32.

57. Personal Property. Property of any kind, or any interest therein, except real property and records of the Federal Government.

58. Pistol. See subparagraph 36.

59. Propellants. Propellants in appendix 1, category V, include, but are not limited to, the following:

a. Propellent powders, including smokeless shotgun powder.

b. Hydrazine (including Monomethyl hydrazine and symmetrical dimethyl hydrazine, but excluding hydrazine hydrate).

c. Unsymmetrical dimethyl hydrazine.

d. Hydrogen peroxide of over 85 percent concentration.

e. Nitroguanidine or picrate.

f. Nitrocellulose with nitrogen content of over 12.20 percent.

g. Nitrogen tetroxide (nitrogen dioxide, dinitrogen tetroxide).

h. Other solid propellant compositions, including but not limited to, the following:

(1) Single base (nitrocellulose).

(2) Double base (nitrocellulose, nitroglycerin).

(3) Triple base (nitrocellulose, nitroglycerin, nitroguanidine).

(4) Composite of nitroglycerin, ammonium perchlorate, potassium perchlorate, nitronium perchlorate, guanidine (guanidinium) perchlorate, nitrogen tetroxide, ammonium nitrate or nitrocellulose with plastics, metal fuels or rubbers added; and compounds composed only of fluorine and halogens, oxygen or nitrogen.

(5) Special purpose high energy solid military fuels with a chemical base.

i. Other liquid propellant compositions, including but limited to, the following:

(1) Monopropellants (hydrazine, hydrazine nitrate and water).

(2) Bipropellants (hydrazine, fuming nitric acid HNO3).

(3) Special purpose chemical base high energy liquid military fuels and oxidizers.

60. Property Disposal Officer (Chief of the DRMO). The individual which is charged with responsibility for disposable property and who controls its receipt, care, handling and disposition. (See also SAPDO, subparagraph 71.)

61. Radioactive Material. Any material or combination of materials which spontaneously emits ionizing radiation.

62. Revolver. See subparagraph 36.

63. Rifle. See subparagraph 36.

64. Sales Contracting Officer (SCO). An individual who has been duly appointed and granted the authority conferred by law and DoD 4160.21-M, Defense Reutilization and Marketing Manual, to sell surplus and foreign excess personal property by any of the authorized prescribed methods of sale.

65. Sales Office. An activity designated to conduct consolidated sales of surplus and foreign excess personal property for DRMOs within its assigned geographical area.

66. Security Trade Controls Control procedures designed to preclude the sale or shipment of Munitions List or Strategic List property to any entity whose interests are inimical to those of the United States. These controls are also applicable to such other selected entities as may be designated by the Deputy Undersecretary of Defense (Trade Security Policy).

67. Service Educational Activity (SEA). Any educational activity designated by the Assistant Secretary of Defense (Production and Logistics) as being of special interest to the armed services, such as the Maritime

Academies or Military, Naval, Air Force or Coast Guard preparatory schools or civilian youth organizations which are national in scope and have been chartered by Congress.

68. Significant Military Equipment (SME). Those articles for which special export controls are warranted because of their capacity for substantial military utility or capability. Items listed in appendix 1, this manual, which are preceded by an asterisk are significant military equipment. Section 47(6) of the Arms Export Control Act (22 U.S.C. 2794(6) note) provides a definition of "major defense equipment" and refers to certain significant combat equipment on the USML. The terms "significant military equipment" and "significant combat equipment" are considered to be equivalent for purposes of that section of the Arms Export Control Act and this manual. Items designated as SME require worldwide demilitarization as prescribed in appendix 4.

69. Small Arms. Hand guns; shoulder fired weapons; light automatic weapons up to and including 50 caliber machine guns; recoilless rifles up to and including 106MM; mortars up to and including 81MM; rocket launchers, man portable; grenade launchers, rifle and shoulder fired; and individually operated weapons which are portable and/or can be fixed without special mounts or firing devices and which have potential use in civil disturbances and are vulnerable to theft.

(**NOTE:** This includes all weapons meeting this criteria regardless of origin, including foreign, commercial and nonappropriated funds weapons as well as antique firearms and weapons seized by DoD law enforcement or investigative organizations and forfeited under the provisions of 10 U.S.C. 924, regardless of whether or not the weapons have an NSN. This does not include air guns.)

70. Software. See subparagraph 32.

71. Special Accounts Property Disposal Officer (SAPDO). An individual within the Military Service who is charged with responsibility for property on an SDPDA.

72. Special Defense Property Disposal Account (SDPDA). An authorized Military Service disposal account established to accomplish limited disposal functions on specific types of property, such as AEDA, classified material, small arms, aircraft, ships, aircraft engines and major ordinance items.

73. Surplus Personal Property. Personal property located in the U.S., American Samoa, Guam, Puerto Rico, the Virgin Islands and the TTPI which has been determined not to be required for the needs and the discharge of responsibilities of any Federal Agency.

74. Strategic List Items (SLI). Items assigned a code letter "A" or "B" following the ECCN on the CCL, Section 799.1 of the Export Administration Regulations, Department of Commerce.

75. Submachine Gun. See subparagraph 36.

76. System. See subparagraph 32.

77. Technical Data. "Technical data" means, for the purpose of this manual:

a. Classified information relating to defense articles and defense services.

b. Information covered by an invention secrecy order.

c. Information which is directly related to the design, engineering, development, production, processing, manufacture, use, operation, overhaul, repair, maintenance, modification or reconstruction of defense articles. This includes, for example, information in the form of blueprints, drawings, photographs, plans, instructions, computer software and documentation. This also includes information which advances the state of the art of articles on the USML. This does not include information concerning general scientific, mathematical or engineering principles.

78. Trust Territories of the Pacific Islands (TTPI). For the purpose of distinguishing between domestic and foreign excess property in this manual, TTPI is defined as Palau and the following former TTPI areas: The Commonwealth of the Northern Mariana Islands, the Marshall Islands and the Federated States of Micronesia.

79. United States. The 50 states and the District of Columbia.

80. U.S. Criminal Statutes. For purposes of this manual, the phrase "U.S. criminal statutes" means:

a. Section 38 of the Arms Export Control Act (22 U.S.C. 2778).

b. Section 11 of the Export Administration Act of 1979 (50 U.S.C. App. 2410).

c. Sections 793, 794, or 798 of Title 18, United States Code (relating to espionage involving defense or classified information).

d. Section 16 of the Trading with the Enemy Act (50 U.S.C. App. 16).

e. Section 206 of the International Emergency Economic Powers Act (relating to foreign assets controls; 50 U.S.C. App. 1705).

f. Section 30A of the Securities Exchange Act of 1934 (15 U.S.C. 78dd-1) or section 104 of the Foreign Corrupt Practices Act (15 U.S.C. 78dd-2).

g. Chapter 105 of Title 18, United States Code (relating to sabotage).

h. Section 4(b) of the Internal Security Act of 1950 (relating to communication of classified information; 50 U.S.C. 783(b).

i. Sections 57, 92, 101, 104, 222, 224, 225, or 226 of the Atomic Energy Act of 1954 (42 U.S.C. 2077, 2122, 2131, 2134, 2272, 2275, and 2276).

j. Section 601 of the National Security Act of 1947 (relating to intelligence identities protection; 50 U.S.C. 421).

k. Section 603(b) or (c) or the Comprehensive Anti-Apartheid Act of 1986 (22 U.S.C. 5113(b) and (c)).

l. Section 371 of Title 18, United States Code (when it involves conspiracy to violate any of the above statutes).

81. Vessels of War and Special Naval Equipment. Vessels of war in appendix 1, category VI, include, but are not limited to, the following:

a. Combatant vessels:

(1) Warships (including nuclear-powered versions):

(a) Aircraft carriers (CV, CVN).

(b) Battleships (BB).

(c) Cruisers (CA, CG, CGN).

(d) Destroyers (DD, DDG).

(e) Frigates (FF, FFG).

(f) Submarines (SS, SSN, SSBN, SSG, SSAG).

(2) Other Combatant Classifications:

(a) Patrol Combatants (PG, PHM).

(b) Amphibious Helicopter/Landing Craft Carriers (LHA, LPD, LPH).

(c) Amphibious Landing Craft Carriers (LKA, LPA, LSD, LST).

(d) Amphibious Command ships (LCC).

(e) Mine Warfare Ships (MSO).

b. Auxiliaries:

(1) Mobile Logistics Support:

(a) Under Way Replenishment (AD, AF, AFS, AO, AOE, AOR).

(b) Material Support (AD, AR, AS).

(2) Support Ships:

(a) Fleet Support Ships (ARS, ASR, ATA, ATF, ATS).

(b) Other Auxiliaries (AG, AGDS, AGF, AGM, AGOR, AGOS, AGS, AH, AK, AKR, AOG, AOT, AP, APB, ARC, ARL, AVM, AVT).

c. Combatant Craft:

(1) Patrol Craft:

(a) Coastal Patrol Combatants (FB, PCF, PCH, PTF).

(b) River, Roadstead Craft (ATC, PBR).

(2) Amphibious Warfare Craft:

(a) Landing Craft (AALC, LCAC, LCM, LCPL, LCPR, LCU, LWT, SLWT).

(b) Special Warfare Craft (LSSC, MSSC, SDV, SWCL, SWCM).

(3) Mine Warfare Craft: Mine Countermeasures Craft (MSB, MSD, MSI, MSM, MSR).

d. Support and Service Craft:

(1) Tugs (YTB, YTL, YTM).

(2) Tankers (YO, YOG, YW).

(3) Lighters (YC, YCF, YCV, YF, YFN, YFNB, YFNX, YFR, YFRN, YFU, YG, YGN, YOGN, YON, YOS, YSR, YWN).

(4) Floating Dry Docks (AFDB, AFDL, AFDM, ARD, ARDM, YFD).

(5) Miscellaneous (APL, DSRV, DSV, IX, NR, YAG, YD, YDT, YFB, UFND, YEP, YFRT, YHLC, YM, YNG, YP, YPD, YR, YRB, YRBN, YRDH, YRDM, YRR, YRST, YSD).

e. Coast Guard Patrol and Service Vessels and Craft:

(1) Coast Guard Cutters (CGC, WHEC, WMEC).

(2) Patrol Craft (WPB).

(3) Icebreakers (WAGB).

(4) Oceanography Vessels (WAGO).

(5) Special Vessels (WIX).

(6) Buoy Tenders (WLB, WLM, WLI, WLR, WLIC).

(7) Tugs (WYTM, WYTL).

(8) Light Ships (WLV).

APPENDIX 3

DEMILITARIZATION CODES TO BE ASSIGNED TO FEDERAL SUPPLY ITEMS AND CODING GUIDANCE

DEMILITARIZATION CODES

CODE	EXPLANATION
A	**Non-MLI** -- Demilitarization not required.
B	**MLI** -- Demilitarization not required.
C	**MLI** -- Remove and/or demilitarize installed key point(s), as prescribed in this manual, or lethal parts, components and accessories.
D	**MLI** -- Demilitarize by mutilation (total destruction of item and components) by melting, cutting, tearing, scratching, crushing, breaking, punching, neutralizing, etc. (As an alternate, burial or deep water dumping may be used when authorized.)
E	**MLI** -- Demilitarize by burning, shredding or pulping.
F	**MLI** -- Demilitarization instructions to be furnished by the Item/Technical Manager.
G	**MLI** -- Demilitarization required - AEDA. Demilitarization, and if required, declassification and/or removal of sensitive markings or information, will be accomplished prior to physical transfer to a DRMO. This code will be used for all AEDA items, including those which also require declassification and/or removal of sensitive markings or information.
H	**MLI** -- Remove and/or demilitarize installed key point(s) as prescribed in this manual, or lethal parts, components and accessories overseas only. Demilitarization not required in the United States, Puerto Rico, American Samoa, Guam, TTPI and the Virgin Islands. Demilitarization may be waived if purchaser elects to ship items to the United States under controls stipulated in the terms and conditions of sale.
J	**MLI** -- Demilitarization by mutilation (total destruction of item and components) by melting, cutting, tearing, scratching, crushing, breaking, punching, neutralizing, etc., overseas only. Demilitarization not required in the United States, Puerto Rico, American Samoa, Guam, TTPI and the Virgin Islands. Demilitarization may be waived if purchaser elects to ship items to the United States under controls stipulated in the terms and conditions of sale.
K	**MLI** -- Demilitarization by burning, shredding or pulping overseas only. Demilitarization not required in the United States, Puerto Rico, American Samoa, Guam, TTPI and the Virgin Islands. Demilitarization may be waived if purchaser elects to ship items to the United States under controls stipulated in the terms and conditions of sale.
L	**MLI** -- Demilitarize by mutilation (total destruction of item and components) by melting, cutting, tearing, scratching, crushing, breaking, punching, neutralizing, etc. (As an alternate, burial or deep water dumping may be used when authorized.) This code will be applied only to items identified as being a component of a key point on a major end item.

M **MLI** -- Demilitarize by mutilation (total destruction of item and components) by melting, cutting, tearing, scratching, crushing, breaking, punching, neutralizing, etc., overseas only. (As an alternate, burial or deep water dumping may be used when authorized.) This code will be applied only to items identified as being a component of a key point on a major end item. Demilitarization not required in the United States, Puerto Rico, American Samoa, Guam, the TTPI and the Virgin Islands. Demilitarization may be waived if purchaser elects to ship items to the Unites States under controls stipulated in the terms and conditions of sale.

N **MLI or Non-MLI with sensitive markings** -- Demilitarize by removing and destroying all name plates, label plates, meter face plates, tags, stickers, documents or markings which relate the item to a weapons system or sensitive end item application. Demilitarization will be performed by the generating activity prior to physical transfer to the DRMO. This code will not be assigned to AEDA or security classified items. NOTE: This code will not be used for Army and Air Force managed items.

P **MLI** -- Security Classified Item -- Declassification, any additional demilitarization and removal of any sensitive markings or information will be accomplished prior to accountability or physical transfer to a DRMO. This code will not be assigned to AEDA items.

Q **SLI** -- Strategic List Item -- Demilitarization not required. SLI are non-MLI and are identified and licensed by the Department of Commerce through the Export Administration Regulations (EAR) and indicated on the CCL. Each CCL entry is preceded by a four-digit ECCN and those ECCNs ending in the letter "A" or "B" are defined as Strategic List Items. These items are subject to Import Certification and Delivery Verification (IC/DV) control and other Security Trade Controls.

ASSIGNMENT OF DEMILITARIZATION CODES TO ITEMS IN THE FEDERAL INVENTORY

A. GENERAL DECISION PROCESS FOR ASSIGNMENT OF DEMILITARIZATION CODES: The following is a decision processing tool, using questions and answers to assist in the assignment of demilitarization codes to supply items. This tool is not intended to be all inclusive, but rather a general guide to code assignment. While general in nature, most supply system items can be properly coded using this tool. Questions regarding the assignment of demilitarization codes should be forwarded to DRMS, ATTN: DRMS-OD, 74 N. Washington Ave., Battle Creek, MI 49017-3092, (DSN)932-7032/7387.

1. Is the item commercially available and not been modified for military use?

a. If **YES**: Does item appear on the CCL with an ECCN ending in A or B?

(1) If **YES** - ASSIGN DEMIL CODE "**Q.**"

(2) If **NO** - ASSIGN DEMIL CODE "**A.**"

b. If **NO**: Continue to subparagraph 2.

2. Is the item on the USML, appendix 1, or; is the item a part, repair part, component, subassembly, key point, etc., of an item appearing on the USML or; does the item have an offensive or defensive capability or contribute to that capability?

a. If **YES**:

(1) Is the item classified? If **YES** - ASSIGN DEMIL CODE "**P.**" **NOTE**: If a Navy managed item related to nuclear propulsion plant equipment - ASSIGN DEMIL CODE "**N.**"

(2) Does item fit the definition of AEDA? If YES - ASSIGN DEMIL CODE "**G.**"

(3) If item does not meet criteria of subparagraphs (1) and (2) above, continue to subparagraph 3.

b. If **NO**: Return to subparagraph 1 above or call DRMS for additional assistance.

3. Is the item mentioned in the corresponding section of appendix 4?

a. If **YES**: Review "Method and Degree of Demilitarization" and "Key Points to Be Demilitarized" sections of the corresponding section.

(1) If item requires DEMIL by other than DRMO personnel as outlined in chapter II or because of the nature of the property or because of other service directive - ASSIGN DEMIL CODE "**F**" and prepare specific instructions for DEMIL accomplishment.

(2) If entire item requires destruction - ASSIGN DEMIL CODE "**D.**"

(3) If the item requires only certain key points to be destroyed (as specified in appendix 4) - ASSIGN DEMIL CODE "**C.**"

(4) If the item is a component of a key point - ASSIGN DEMIL CODE "**L.**"

b. If NO: Continue to subparagraph 4.

4. Is the item mentioned in the corresponding section of appendix 5, this manual?

a. If **YES**: Review "Method and Degree of Demilitarization" and "Key Points to Be Demilitarized" sections of the corresponding section.

(1) If item requires DEMIL by other than DRMO personnel as outlined in chapter II or because of the nature of the property or because of other service directive - ASSIGN DEMIL CODE "**F**" and prepare specific instructions for DEMIL accomplishment, overseas only.

(2) If entire item requires destruction - ASSIGN DEMIL CODE "**J.**"

(3) If the item requires only certain key points to be destroyed (as specified in appendix 4) - ASSIGN DEMIL CODE "**H.**"

(4) If the item is a component of a key point - ASSIGN DEMIL CODE "**M.**"

b. If NO: ASSIGN DEMIL CODE "**B.**"

B. CODING GUIDANCE FOR SMALL ARMS WEAPONS, PARTS AND ACCESSORIES (item 1, appendix 4)

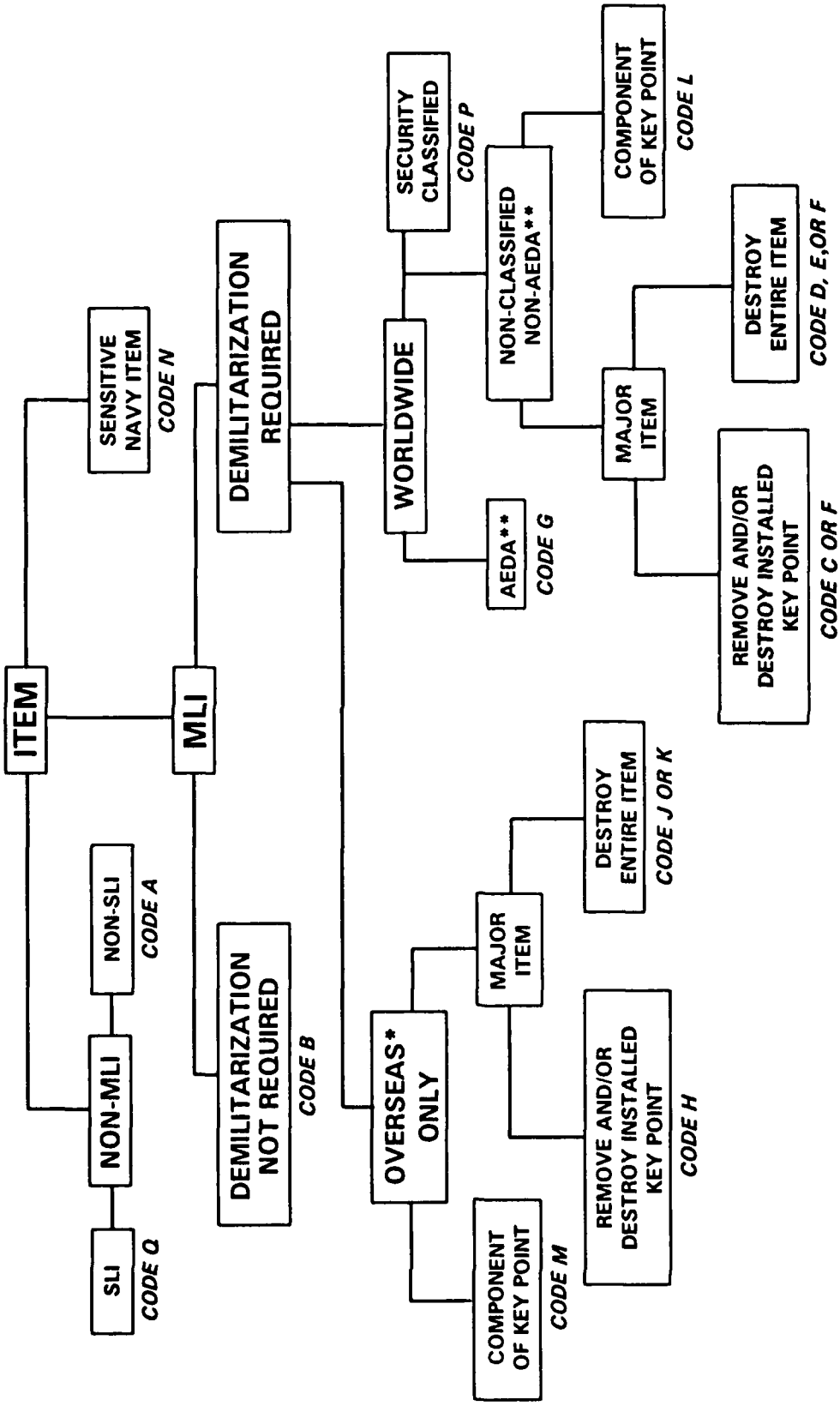
Assign DEMIL Codes D, L, or B as follows:

1. **DEMIL Code D.** All complete firearms, pyrotechnic pistols, ground signal projectors, and receivers for these weapons.

2. **DEMIL Code L.** All weapons parts such as barrels, bolts, triggers, firing pins, etc., and accessories such as tripods, grenade launchers, optical sights, bayonets, silencers, and component parts for these items.

3. **DEMIL Code B.** Nonferrous metallic parts such as cleaning rods, oilers and brushes, and nonmetallic parts such as slings and stocks.

DECISION TABLE FOR ASSIGNING DEMILITARIZATION CODES



*OUTSIDE OF THE U.S., PUERTO RICO, AMERICAN SAMOA, GUAM, THE TTPI AND THE VIRGIN ISLANDS
**AMMUNITION, EXPLOSIVES AND DANGEROUS ARTICLES

APPENDIX 4

DEMILITARIZATION REQUIREMENTS FOR ITEMS LOCATED WORLDWIDE

ITEM 1. SMALL ARMS WEAPONS, PARTS, AND ACCESSORIES (CATEGORY 1 - MUNITIONS LIST)

a. All nonautomatic, semiautomatic, and automatic guns and other weapons up to and including 50 caliber; shotguns; shoulder fired grenade launchers; rocket launchers, man portable; 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; pyrotechnic pistols and other ground signal projectors; component parts for the aforementioned items; 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, bayonets and gunmounts (including bipods and tripods); insurgency-counterinsurgency type firearms or other weapons having a special military application (e.g., close assault weapons systems) regardless of caliber and all components and parts, therefor.

b. **Key points to be demilitarized:** Entire items and parts thereto (except wooden stocks, leather products and nonmetallic material which may be disposed of without demilitarization).

c. **Method and degree of demilitarization**

(1) **FOR ITEMS LISTED IN PARAGRAPH a ABOVE (except accessories),** the preferred (normal) method of demilitarization under local expanded demilitarization procedures is by torch cutting utilizing a cutting tip that displaces at least one-half 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. 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.

(a) **RECEIVERS** will be demilitarized by torch cutting in a minimum of two places utilizing a cutting tip that displaces at least one-half inch of metal or crushed to the extent necessary to preclude restoration to a usable condition.

(b) **BOLTS AND BARRELS** will be demilitarized by torch cutting utilizing a cutting tip that displaces at least one-half inch of metal or crushed to the extent necessary to preclude restoration to a usable condition.

(c) **OTHER METALLIC PARTS,** including M2 conversion kits (figure 68), will be mutilated by crushing, cutting or melting.

(2) **MACHINE GUNS** will be demilitarized by torch cutting utilizing a cutting tip that displaces at least one-half 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 reconstitution. If the shearing or crushing method is used, the trunnion block and side frame must be completely cut through, broken or distorted to preclude reconstitution.

(3) **MAGAZINES** will be demilitarized by cutting, shearing or crushing. Clips for M1 rifle do not require demilitarization.

(4) **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, bayonets 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.

d. As an alternative method of demilitarization, any complete weapons, repair parts and key points included in this item 1 which are small enough to fit in the furnace at RIA without cutting, may be demilitarized by melting as outlined in chapter III, in the same manner as weapons and parts included in item 1 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.

ITEM 2. ARTILLERY AND PROJECTORS (CATEGORY II - MUNITIONS LIST)

a. Guns over caliber .50; howitzers; cannons; mortars; tank destroyers; grenade and rocket launchers other than man portable types, recoilless rifles; torpedo tubes; aircraft external stores; pylons; launchers and ejector/release racks; Navy gun mounts, Navy gun turrets, and shipboard rocket launchers; mounts and carriages for guns over caliber .50, howitzers, mortars, recoilless rifles; and military flame throwers and projectors.

b. **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, armor plate, flame thrower operating mechanisms, gun mounts and carriages.

c. **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** (of guns and howitzers) 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) **ALL 20MM GUNS** will be demilitarized by torch cutting utilizing a cutting tip that displaces at least one-half 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) The 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)** (figure 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 nonreclaimable.

(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 (subparagraph (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 subparagraphs (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) **AIRCRAFT EXTERNAL STORES** will be punctured to create a hole no smaller than 12 inches in diameter and connecting points (to the wing/fuselage) will be completely mutilated.

(19) **PYLONS AND EJECTOR/RELEASE RACKS** will be demilitarized as shown in figures 52 and 53.

ITEM 3. AMMUNITION, MILITARY EXPLOSIVES, SOLID AND LIQUID PROPELLANTS, AND INCENDIARY AGENTS, (CATEGORIES III, IV, AND V - MUNITIONS LIST)

a. Military explosives; pyrotechnics (except those having dual military and commercial use); all compounds specifically formulated for items in this category; ammunition; ammunition components; military fuel thickeners and missile propellants. Includes missile ground handling equipment designed to transport solid or liquid propellants (fuels and oxidizers). Boosters, primers, incendiary agents, fuzes and components therefore; detonating devices for ammunition; ammunition manufacturing and loading machines (except hand loading); all hand 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.

NOTE: Expended cartridge/shell cases over 30MM will be demilitarized in accordance with subparagraph c(1) below in the United States, Puerto Rico, the Virgin Islands, American Samoa, Guam, and the TTPI only if they are known to be defective. Expended cartridge and shell casings, caliber .50 and under, require demilitarization prior to export from the U.S. only.

b. **Key points to be demilitarized:** Explosives, pyrotechnics, propellants, propellant fillers, cartridges, cartridge and shell cases and casings. Toxic material, rotating bands, incendiary or smoke content, other military design features, and features determined hazardous to the general public. For grenades and ammunition manufacturing and loading machines - entire item.

c. **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. 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; for conventional, chemical, and all other types of ammunition and Ammunition Peculiar Equipment (APE), excluding lethal chemical agents and material, by the U.S. Army Armament, Munitions and Chemical Command, ATTN: AMSMC-DSM, Rock Island, IL 61299-6000; for chemical agents and materials including vesicants, and nerve agents and their carriers, by the U.S. Army Program Manager for Chemical Demilitarization, ATTN: SAIL-PM, Edgewood Arsenal, Aberdeen Proving Ground, MD 21010-5401. 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. 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.

(1) **ARTILLERY/MORTAR AMMUNITION 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 (washout, burnout, 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 ICP 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 three-fourths of an inch hole or deform lower sidewall, which will prevent chambering, or crush or press. Burnout smoke mixture or detonate smoke canister.

(2) **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., washout, burnout, etc. Deform fuze cavity threads or remove base plate by other than normal disassembly (such as sawing) or detonate.

(3) **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. Burnout 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.

(4) **UNUSED LINKS (figure 62) AND 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.

(5) **ROCKET MOTORS, WARHEADS, COMPONENTS AND SIMILAR ITEMS OF ALL TYPES,** including high explosive, inert loaded, practice and smoke. Washout or burnout 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.

(6) **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. Washout or burnout 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.

(7) **INERT LOADED AMMUNITION, 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, DPMOs 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.

ITEM 4. LAUNCH VEHICLES, GUIDED MISSILES, BALLISTIC MISSILES, ROCKETS, TORPEDOES, AND COMPONENTS (CATEGORY IV - MUNITIONS LIST)

a. 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); torpedoes and depth charges, as well as launchers for such defense articles; missile and space vehicle powerplants; apparatus, devices and materials for the control, activation, detection, protection, discharge or detonation of launch vehicles, guided missiles, ballistic missiles, rockets, and rocket torpedoes; ablative materials; nonnuclear warheads; specifically designed key components, parts and accessories, attachments and associated equipment for the above.

b. Key points to be demilitarized: For components, parts, accessories, attachments and associated equipment for the above - entire item. Otherwise as indicated below.

c. 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. 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, AL 35898-5239; for all other types of ammunition except lethal chemical agents and materiel by the Commander, U.S. Army Materiel Readiness Command, Rock Island, IL 61299; for lethal chemical agents including vesicants and nerve agents and their carriers by the U.S. Army Armament Material Readiness Command Program Manager for the Demilitarization of Chemical Materiel; Edgewood Arsenal, Aberdeen Proving Ground, MD 21010. 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. 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.

MISSILES

(a) Remove and dispose of all classified equipment as directed for item 9. Remove and dispose of explosive charges as directed for item 4.

(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 reentry 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.

ITEM 5. VESSELS OF WAR AND SPECIAL NAVAL EQUIPMENT (CATEGORY VI - MUNITIONS LIST)

a. Warships, including nuclear powered versions, and including any ship originally built as a warship but later modified to a different configuration (warships include, but are not limited to, aircraft carriers, cruisers, battleships, destroyers,

destroyer escorts, submarines, and various configurations of such ships. A list of these types of ships is included under the heading "Warships" in the Defense Reutilization and Marketing Manual, DoD 4160.21-M, chapter VIII, attachment 9); amphibious warfare vessels; mine warfare vessels; experimental types of naval vessels; turrets and gun mounts; missile systems; arresting gear; special weapon systems; protective systems; catapults; other components, parts attachments and accessories specifically designed for the following types of combatant vessels: battleships, command ships, guided missile ships, cruisers, aircraft carriers, destroyers, frigates, escorts, minesweepers, and submarines; minesweeping equipment and components, parts, attachments and accessories specifically designed therefor; 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.

b. **Key points to be demilitarized:** Armament, hulls, plane arresting cables, applicable items designated in this attachment, and other items designated by the Naval Systems Commands or other procuring Military Services/Defense Agencies.

c. **Method and degree of demilitarization**

(1) **WARSHIPS:** Armament will be demilitarized as prescribed for items 1 and 2, 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, landing vehicle, tracked, mine warfare vessels, same as warships, except hulls do not have to be demilitarized by scrapping.

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

ITEM 6. TANKS AND MILITARY VEHICLES (CATEGORY VII - MUNITIONS LIST)

a. Tanks of all types; military recovery vehicles; gun carriers; other military type armed or armored vehicles; military railway trains; vehicles specifically designed or modified to accommodate mountings for arms or other specialized military equipment or fitted with such items; combat engineer vehicles; bridge launching vehicles; half-tracks; self-propelled guns and howitzers; amphibious vehicles, engines specifically designed or modified for the vehicles above.

b. **Key point to be demilitarized:** Armament and armor on all vehicles; for engines, entire item.

c. **Method and degree of demilitarization**

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

(1) Armament will be demilitarized as prescribed for items 1 and 2, 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) For vehicles with turrets and/or cupolas, the turret and/or cupola will be cut into two sections as shown in figure 17 and removed prior to cutting the hull.

(4) 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).

(5) 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.

ITEM 7. MILITARY AIRCRAFT (COMBAT, TACTICAL AIR VEHICLES), SPACECRAFT AND ASSOCIATED EQUIPMENT (CATEGORY VIII - MUNITIONS LIST)

a. Aircraft which are designed for offensive or defensive military operations, e.g., gunnery, bombing, rockets and missile launching; designated training aircraft; experimental and developmental aircraft and drones; spacecraft, including manned and unmanned; active and passive satellites; military aircraft and spacecraft engines specifically designed or modified and designated by the procuring military service; cartridge-actuated devices utilized in emergency escape of personnel; and airborne equipment (including, but not limited to, airborne refueling equipment specifically designed for use with military aircraft, spacecraft and missiles); inertial navigation systems and components designed specifically for such systems; ground effect machines (GEMS) specifically designed or modified for military use including, but not limited to, surface effect machines and other air cushion vehicles, and all components, parts, and accessories, attachments, and associated equipment specifically designed or modified for use with such machines; nonexpansive balloons in excess of 3,000 cubic feet capacity, except such types as are in normal sporting use; and associated armament and aircraft subsystems consisting of guns, turrets, grenades, external store pylons, all launchers, ejectors/release racks, (figures 52 and 53, appendix 7), fire control and related equipment.

NOTE: The term aircraft does not include aircraft designed and used only for cargo and personnel carrying or dropping, observation, trainers as designated, and commercial type helicopters and other aircraft suitable for commercial or nonmilitary purposes either "as is" or after removal of military characteristics. The inventory control point will designate aircraft which are to be demilitarized prior to disposition, and those aircraft which may be sold after removal of military design characteristics.

b. **Key points to be demilitarized**

(1) **AIRCRAFT** fuselage, tail assembly, wing spar, armor, 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, and missile ground handling equipment.

(2) **SPACECRAFT.** (See subparagraph c(2).)

(3) **ENGINE TURBINE WHEEL AND SHAFT ASSEMBLY OF TURBOJET AND TURBOPROP ENGINES.** Excepted are the turbine wheel and shaft assembly of turboprop and turboshaft engines, and components and accessories in common with aircraft authorized for sale and commercial use, 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.

(4) **CARTRIDGE-ACTUATED DEVICES**, entire item.

(5) **INERTIAL NAVIGATION SYSTEMS.** (See subparagraph c(4).)

(6) **GROUND EFFECT MACHINES.** (See subparagraph c(4).)

(7) **NONEXPANSIVE BALLOONS.** (See subparagraph c(5).)

(8) **ASSOCIATED ARMAMENT, EQUIPMENT AND SUBSYSTEMS** will be demilitarized by cutting, breaking, crushing, melting or dumping at sea or as covered elsewhere in this appendix.

c. **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 empenage (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 transmission deck in area of mounts, engine deck in area of mounts, landing gear fittings, attaching structure wing to fuselage fittings, fuselage section to fuselage section, and tail rotor gear box mounting structure. (See figure 51.)

NOTE: Airframe (fuselage) will be mutilated by destroying attaching structure by cutting, chopping,

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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; protective and toxicological, biological and radiological masks.

b. Key points to be demilitarized

(1) Filtration systems - canister/filter and entire filter unit.

(2) Protective masks - canister/filter element, face piece.

(3) All other items listed - entire item.

c. 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.

ITEM 11. MILITARY AND SPACE ELECTRONICS (CATEGORY XI - MUNITIONS LIST)

a. Electronic equipment assigned a military designation including radar, radar gunsighting and bombsighting equipment, target and missile control receiving and transmitting equipment (including ground control and interception equipment, antijammers and test equipment peculiar thereto); 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.; IFF (Identification Friend or Foe) receiver transmitters and associated equipment; items which incorporate TEMPEST technology; electronic warfare systems (active and passive); countermeasures surveillance and counter-countermeasures equipment; underwater sound, doppler equipment and communications-electronic equipment; electronic equipment specifically designed or modified for spacecraft or spaceflight or for use with military systems; and key components, parts, accessories, attachments and associated equipment specifically designed for use or currently used with the item, to include equipment which incorporates TEMPEST technology, except such items as are in normal commercial use; all types of chaff Electronic Countermeasure (ECM) and associated equipment.

b. Key points to be demilitarized

(1) **EMERGENCY RADIO RECEIVER TRANSMITTERS AND BEACONS:** 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.

(2) **IFF RECEIVER TRANSMITTERS AND ASSOCIATED EQUIPMENT:** Frequency generators (magnetrons, klystrons), oscillators, tuning coils, radio frequency heads and cavities, printed circuit boards, delay lines and performance data plates.

(3) **ELECTRONIC WARFARE SYSTEMS:** Transmitters, receivers, and associated circuitry; processors, microprocessors, indicators, RF heads, cavities and logic circuits traveling wave tubes, cathode ray tubes, klystrons, oscillators, noise generators, and magnetron tubes or solid state devices; modulation circuits, frequency sensitive RF components, antennae, waveguides, and identification plates or decals that reveal any military offensive or defensive advantage; for chaff - entire item.

(4) **ALL OTHER MILITARY AND SPACE ELECTRONICS:** Frequency generators (magnetrons, klytrons), oscillators or indicators, wave guides, modulators, synchronizers, receiver-transmitters, encoders and decoders, radio frequency heads, computers, cavities, antenna horns, identification and performance data plates or decals.

c. 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.

(b) Explosive chaff

(1) Remove and dispose of the explosive charge as directed for item 4, and neutralize the dipole sequence of the chaff as prescribed for nonexplosive chaff.

(2) Detonate. Technical instructions will be furnished as prescribed for item 4.

(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) **ALL OTHER ITEMS**: Complete destruction of key points to preclude restoration or remanufacture as an item for its original function. Demilitarization will be accomplished by cutting, crushing or breaking.

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

ITEM 12. FIRE CONTROL, RANGE FINDER, OPTICAL AND GUIDANCE AND CONTROL EQUIPMENT (CATEGORY XII - MUNITIONS LIST)

a. Fire control systems; gun and missile tracking and guidance systems; range, position and height finders and spotting instruments; aiming devices (electronic, gyroscopic, optic and acoustic); bomb sights and bombing computers; military television sighting units; inertial platforms; periscopes; inertial guidance systems; astro compasses; star trackers; gun-laying equipment; infrared night sighting and viewing equipment, including but not limited to, image intensifiers, laser and other electro-optical night sighting and viewing equipment (includes sniperscopes, weapon sights, binoculars, etc.), military masers and lasers, and FDA exempted lasers; key components, parts and accessories for articles in this category, except items as are in normal commercial use.

b. **Key points to be demilitarized**

(1) **INFRARED NIGHT SIGHTING AND VIEWING EQUIPMENT**: Optical elements, tubes and detectors, optical filters and housing and weapon mounting brackets.

(2) **ALL OTHER ITEMS**

(a) Electronic components. As designated by the procuring service.

(b) Nonelectric items. Entire item.

c. **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) **ALL OTHER ITEMS**

(a) Electronic components. As directed in item 11, paragraph c above.

(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.

ITEM 13. AUXILIARY MILITARY EQUIPMENT (CATEGORY XIII - MUNITIONS LIST)

a. Cryptographic devices and software (encoding and decoding) and components specifically designed therefor, ancillary equipment and protec-

tive apparatus specifically designed or modified for such devices, components and equipment; 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) specifically designed or modified for defense articles; devices embodying particle beam and electromagnetic pulse technology; metal embrittling agents.

b. **Key points to be demilitarized:** Entire item.

c. **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.

ITEM 14. TOXICOLOGICAL, BIOLOGICAL, AND RADIOLOGICAL AGENTS AND EQUIPMENT (CATEGORY XIV - MUNITIONS LIST)

a. Toxicological, biological, and radiological agents which are determined to be hazardous and which have no value in industry or the civilian economy and which are adapted for use in war to produce death or disablement in human beings or animals or to damage crops; and equipment for the dissemination, detection, decontamination and identification of and defense against those agents; to include individual/collective protection equipment; nuclear radiation detection and measuring devices, manufactured to military specifications. Toxicological agents will be considered to include chemical agents such as lung irritants, vesicants, lacrimators, sternutators and irritant smoke and nerve gases.

b. **Key points to be demilitarized:** Entire item.

c. **Method and degree of demilitarization:** 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.

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

(2) Navy - Primary Support Bureau, Command or Office.

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

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

(5) Defense Logistics Agency (DLA) - Appropriate Defense Supply Center initiating the procurement contract.

ITEM 15. NUCLEAR WEAPONS DESIGN AND TEST EQUIPMENT (CATEGORY XVI(a), (b) and (c) - MUNITIONS LIST)

a. Any article, material, equipment, device, specifically designed or modified for use in the design, development or fabrication of nuclear weapons or explosive devices or the devising, carrying out, or evaluating of nuclear weapons tests or other nuclear explosions, except such items as are in normal commercial use for other purposes; cold cathode tubes such as krytrons and sprytrons.

b. **Key points to be demilitarized:** See the following subparagraph c.

c. **Method and degree of demilitarization:** Specific instructions and technical guidance will be furnished by the procuring Military Service/Defense Agency upon request.

ITEM 16. SUBMERSIBLE VESSELS, OCEANOGRAPHIC AND ASSOCIATED EQUIPMENT (CATEGORY XX - MUNITIONS LIST)

a. Submersible vessels, manned and unmanned, designed or modified for military purposes or having independent capability to maneuver vertically or horizontally at depths below 1,000 feet or powered by nuclear propulsion plants; submersible vessels, manned or unmanned, designed or modified in whole or in part from technology developed by or for the U.S. Armed Forces.

b. **Key points to be demilitarized:** As designated by the procuring Military Service/Defense Agency.

c. **Method and degree of demilitarization**: As indicated by the procuring Military Service/Defense Agency.

ITEM 17. MISCELLANEOUS ARTICLES (CATEGORY XXI - MUNITIONS LIST)

a. Research and development material; 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.

b. **Key points to be demilitarized**

(1) **RESEARCH AND DEVELOPMENT MATERIAL**: Such points as required to protect security, design features, and proprietary rights and public health, safety, and welfare.

(2) **PARTIALLY COMPLETE MATERIAL**: As indicated for the completed item.

c. **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 subparagraph a, 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.

APPENDIX 5

ADDITIONAL REQUIREMENTS FOR DEMILITARIZATION OF ITEMS LOCATED OUTSIDE THE UNITED STATES, PUERTO RICO, AMERICAN SAMOA, GUAM, THE TRUST TERRITORY OF THE PACIFIC ISLANDS AND THE VIRGIN ISLANDS

ITEM 1. SMALL ARMS WEAPONS AND PARTS (CATEGORY I - MUNITIONS LIST)

Demilitarization instructions are the same as those found in appendix 4, item 1.

ITEM 2. ARTILLERY AND PROJECTOR COMPONENTS (CATEGORY IIA - MUNITIONS LIST)

a. Components, parts, repair parts, accessories, attachments, firmware and software not included in appendix 4, item 2.

b. **Key points to be demilitarized**: Entire item.

c. **Method and degree of demilitarization**: Complete destruction beyond possible repair or restoration to preclude use for intended purpose. This will be accomplished by cutting, burning, melting, mutilation, dumping at sea, crushing or shredding.

ITEM 3. COMPONENTS OF AMMUNITION, MILITARY EXPLOSIVES, SOLID AND LIQUID PROPELLANTS, AND INCENDIARY AGENTS (CATEGORIES III, IV AND V - MUNITIONS LIST)

a. Cartridge cases; expended cartridge and shell cases (except expended .22 caliber, 20MM, 25MM, and 30MM); powder bags; bullets; jackets; cores and components therefore; ammunition belting and linking machines.

b. **Key point to be demilitarized:** Entire item.

c. **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 and design hazard. Completeness of demilitarization of small arms ammunition cases can be determined by spot checks for hardness readings taken in the extractor groove, or not more than one-eighth inch from groove. Readings of 64 or less on Rockwell T15 scale indicates adequate demilitarization; ammunition belting and linking machines as designated by the procuring Military Service/Defense Agency.

NOTE: Dummy small arms ammunition does not require demilitarization.

ITEM 4. LAUNCH VEHICLES, GUIDED MISSILES, BALLISTIC MISSILES AND ROCKETS (CATEGORY IV - MUNITIONS LIST)

a. Apparatus, devices, and materials for handling and all other components, parts, repair parts, accessories, attachments, firmware and software not included in appendix 4, item 4.

b. **Key points to be demilitarized**: Entire item.

c. **Method and degree of demilitarization**: Complete destruction to preclude restoration, rehabilitation, rehabilitation or remanufacture as an item usable for its original function.

ITEM 5. VESSELS OF WAR AND SPECIAL NAVAL EQUIPMENT (CATEGORY VI - MUNITIONS LIST)

a. Landing craft, patrol vessels, auxiliary vessels and service craft; submarine storage batteries, marine and torpedo nets, harbor entrance magnetic, pressure and acoustic detection devices, controls and components thereof; and all components, parts, repair parts, accessories, attachments, firmware and software for the above and for those not included in appendix 4, item 5.

b. **Key points to be demilitarized**: As determined by the owning Military Service on a case-by-case basis.

c. **Method and degree of demilitarization**: Specific instructions and technical guidance for demilitarization of vessels and equipment will be furnished by the command within the Department of the Navy or the Department of the Army having procurement authority for the particular item involved.

ITEM 6. TANKS AND MILITARY VEHICLES (CATEGORY VII - MUNITIONS LIST)

a. Military trucks, trailers, hoists and skids specifically designed for carrying and handling ammunition, launch vehicles, guided missiles, ballistic missiles, rockets, torpedoes, bombs, mines, propellants, explosives and incendiary agents; military mobile repair shops specifically designed to service military equipment; and all specifically designed key components, accessories and attachments, including military bridging and deep water fording kits, tank track and tread and associated components for items in appendix 1, category VII of the Munitions List.

b. **Key points to be demilitarized**: Armament, armor, tank track and all track components on tanks, tracked combat vehicles and ordnance vehicles; on other items, as designated by procuring service.

c. **Method and degree of demilitarization**: Tanks of all types, military type tank recovery vehicles, gun carriers, armored cars and armored tracked vehicles will be demilitarized as outlined in appendix 4, item 6. For tank track and associated components - entire item. Additional demilitarization will be accomplished in the manner and degree prescribed by the procuring service.

ITEM 7. AIRCRAFT, SPACECRAFT, AND ASSOCIATED EQUIPMENT (CATEGORY VIII - MUNITIONS LIST)

a. Military aircraft and spacecraft engines as designated by the procuring service; spacecraft and missiles, equipment for launching, arresting and recovery 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 specifically designed for spacecraft.

b. **Key points to be demilitarized**

(1) **TURBINE WHEEL AND SHAFT ASSEMBLY, TURBOJET AND TURBOPROP ENGINES**: Excepted are the turbine wheel and shaft assembly of turboprop and turboshaft engines, components and accessories in common with aircraft authorized for commercial use.

(2) **RAM-JET AND PULSE-JET ENGINES**: Ignition system, fuel system including the variable area nozzles or fuel spray system, as applicable, and engine mounting fittings.

(3) **ROCKET ENGINES**: Thrust chamber, turbine pump, balanced material orifices, gas generator (when used) and engine mounting fittings.

(4) **LAUNCHING, ARRESTING AND RECOVERY EQUIPMENT**: See subparagraph c(4), below.

(5) **SPACECRAFT POWER SUPPLIES AND ENERGY SOURCES**: See subparagraph c(5), below.

c. **Method and degree of demilitarization**

(1) **TURBOJET AND TURBOPROP 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 and shaft assembly from the engine, gain access to them by entering through shroud either by removal or cutting hole in shroud.

(2) **RAM-JET AND PULSE-JET ENGINES**: Completely destroy key points listed in subparagraph b(2) above.

(3) **ROCKET ENGINES**: Completely destroy key points listed in subparagraph b(3) above.

(4) **LAUNCHING, ARRESTING AND RECOVERY EQUIPMENT**: Specific instructions and technical guidance for aircraft launching equipment will be furnished by Commander, Naval Air Systems Command, Department of the Navy, Washington, DC 20361-4120, upon request. Specific instructions and technical guidance for other equipment will be furnished by the procuring Military Service.

(5) **SPACECRAFT POWER SUPPLIES AND ENERGY SOURCES**: Specific instructions and technical guidance will be furnished by the procuring Military Service/Defense Agency upon request.

ITEM 8. MILITARY TRAINING EQUIPMENT (CATEGORY IX - MUNITIONS LIST)

a. All simulation devices for items covered under the Munitions List and other components, parts, repair parts, accessories, attachments, firmware and software not included in appendix 4, item 8.

b. **Key points to be demilitarized**: Entire item.

c. **Method and degree of demilitarization**: Complete destruction beyond possible repair or restora-

tion to preclude use for intended purpose. This will be accomplished by cutting, burning, melting, mutilation, dumping at sea, crushing or shredding.

ITEM 9. CLASSIFIED MATERIAL (CATEGORY XVII - MUNITIONS LIST)

Demilitarization instructions are the same as those found at appendix 4, item 9.

ITEM 10. PROTECTIVE PERSONNEL EQUIPMENT (CATEGORY X - MUNITIONS LIST)

a. Military helmets; military crash helmets; partial pressure suits; pressurized breathing equipment; protective clothing for handling guided missile fuel; liquid oxygen converters used for aircraft and missiles; protective apparel and equipment specifically designed for use with the articles in appendix 1, subparagraphs A through D, category X, Munitions List; key components, parts and accessories, attachment and associated equipment specifically designed for use with the aforementioned articles.

b. **Key points to be demilitarized**: Entire item.

c. **Method and degree of demilitarization**: Complete destruction beyond possible repair or restoration. This will be accomplished by cutting, burning and crushing.

ITEM 11. MILITARY AND SPACE ELECTRONICS (CATEGORY XI - MUNITIONS LIST)

a. Electronic equipment not included in appendix 4, item 11, which is assigned a military designation or is specifically designed, modified or configured for military application. This includes, but is not limited to, the following: Sonic depth finders; underwater telephones; electromechanical beam forming sonars and elementary sonobuoys; navigation and air traffic control radar systems; guidance and object-locating equipment; armored coaxial cable capable of RF, optical, or high voltage power transmission; VHSIC semiconductor devices that are specifically designed for military applications and which have a high-speed signal and image processing capability with an operational parameter (gate-time-clock-frequency) of greater than 10-inch gates X hertz for an individual semiconductor device; 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.

b. **Key points to be demilitarized:** Entire item.

c. **Method and degree of demilitarization**: Completely destroy the equipment beyond repair or restoration for original intended use.

ITEM 12. FIRE CONTROL, RANGE FINDER, OPTICAL AND GUIDANCE CONTROL EQUIPMENT (CATEGORY XII - MUNITIONS LIST)

a. Components, parts, repair parts, accessories, attachments, firmware and software not included in appendix 4, item 12.

b. **Key points to be demilitarized**: Entire item.

c. **Method and degree of demilitarization**: Complete destruction beyond possible repair or restoration to preclude use for intended purpose. This will be accomplished by cutting, burning, melting, mutilation, dumping at sea, crushing or shredding.

ITEM 13. AUXILIARY MILITARY EQUIPMENT (CATEGORY XIII(a) and (c) through (g) MUNITIONS LIST)

a. Aerial and space cameras and special purpose military cameras and specialized processing equipment therefor; military photointerpretation, stereoscopic plotting and photogrammetry equipment; speech scramblers; privacy devices; self-contained diving and underwater breathing apparatus specifically designed or modified for a military purpose and components specifically designed or modified therefore; concealment and deception equipment, including, but not limited to, special paints, decoys, and simulators and components, parts and accessories specifically designed or modified therefore; 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.

b. **Key points to be demilitarized**: Entire item.

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

tearing, shredding, crushing or smelting to the degree that aircraft will be unfit for repair or flight.

(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. Armament will be destroyed as specified for items 1 and 2 above. Explosives, including explosive bolts and squibs, will be disposed of as specified for item 4. Classified items will be disposed of as prescribed for item 9.

(2) **SPACECRAFT:** As indicated by the procuring military service.

(3) **ENGINES**

(a) Turbojet and turboprop 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(3) above.

(c) Rocket engines. Completely destroy key points listed in subparagraph b(3) above.

(4) **INERTIAL NAVIGATION SYSTEMS AND GROUND EFFECT MACHINES:** Specific instructions and technical guidance will be furnished by the procuring Military Service/Defense Agency upon request.

(5) **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 20361-4120, upon request.

(6) **ASSOCIATED ARMAMENT, EQUIPMENT AND SUBSYSTEMS**

(a) 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).

(b) Rotor assemblies, delinking feeders, electric drive assemblies and mounts (figures 44, 46, and 48).

(c) Ammunition containers, crossover assemblies, magazines and chute assemblies.

(d) Controllers, intervalometers, electric components assemblies, gunner control panel, pilot wing control panels and reflex sights.

ITEM 8. MILITARY TRAINING EQUIPMENT (CATEGORY IX - MUNITIONS LIST)

a. Military training equipment includes but is not limited to attack trainers, radar target trainers, radar target generators, gunnery training devices, antisubmarine warfare trainers, target equipment, armament trainers, pilotless aircraft trainers, mobile training units, military type link trainers, operational flight trainers, flight simulators, radar trainers, instrument flight trainers and navigation trainers.

b. Components, parts, accessories, attachments and associated equipment specifically designed or modified for the articles in subparagraph a.

c. **Key points to be demilitarized**

(1) All classified material as outlined in item 9.

(2) All other military operating equipment incorporated in military training equipment is to be demilitarized in accordance with the methods and degree of demilitarization shown in items 1 through 17, as applicable.

ITEM 9. CLASSIFIED MATERIAL (CATEGORY XVII - MUNITIONS LIST)

a. All classified material.

b. **Key points to be demilitarized:** Those parts and components specified by the cognizant engineering or technical Military Service as being classified for security reasons. Small arms will be demilitarized as prescribed in item 1.

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

ITEM 10. PROTECTIVE PERSONNEL EQUIPMENT (CATEGORY X - MUNITIONS LIST)

a. Flak-suits (front, back, groin and apron); bullet-proof vests; anti-G suits; anti-exposure suits; radiological control clothing; and equipment designated in appropriate Military Service/Defense Agency publications and similar items of personal body armor which may be worn or concealed under clothing. This does not apply to steel helmets and flak curtains. Safety and rescue filter units;

ITEM 14. TOXICOLOGICAL, BIOLOGICAL AND RADIOLOGICAL AGENTS AND EQUIPMENT (CATEGORY XIV - MUNITIONS LIST)

a. Components, parts, repair parts, accessories, attachments, firmware and software not included in appendix 4, item 13.

b. **Key points to be demilitarized:** Entire item.

c. **Method and degree of demilitarization:** Complete destruction beyond possible repair or restoration to preclude use for intended purpose. This will be accomplished by cutting, burning, melting, mutilation, dumping at sea, crushing or shredding.

ITEM 15. NUCLEAR WEAPONS DESIGN AND TEST EQUIPMENT (CATEGORY XVI - MUNITIONS LIST)

Demilitarization instructions are the same as those found in appendix 4, item 14.

ITEM 16. SUBMERSIBLE VESSELS, OCEANOGRAPHIC AND ASSOCIATED EQUIPMENT (CATEGORY XX - MUNITIONS LIST)

a. Components, parts, repair parts, accessories, attachments, firmware and software not included in appendix 4, item 15.

b. **Key points to be demilitarized:** Entire item.

c. **Method and degree of demilitarization:** Complete destruction beyond possible repair or restoration to preclude use for intended purpose. This will be accomplished by cutting, burning, melting, mutilation, dumping at sea, crushing or shredding.

ITEM 17. MISCELLANEOUS ARTICLES (CATEGORY XXI - MUNITIONS LIST)

a. Production equipment and special tooling designed specifically for the manufacture or test of key points of lethal items listed in this attachment and having no commercial or industrial application and not commercially available.

b. **Key points to be demilitarized:** Die blocks, jigs, fixtures, and other appurtenances or portions of the principal item specifically designed for the production of key points.

c. **Method and degree of demilitarization:** Key points will be broken or otherwise mutilated to the degree required to preclude repair or restoration for original intended use. Demilitarization of die blocks is required, any form of crushing or cutting (i.e., torch) is acceptable (in lieu of melting) if such action precludes repair or restoration for original intended use.

ITEM 18. TECHNICAL DATA (CATEGORY XVIII - MUNITIONS LIST)

a. Technical data relating to the items listed in this and appendices 1 and 4.

b. **Key points to be demilitarized:** Entire item.

c. **Method and degree of demilitarization:** Items will be shredded, pulped or burned to preclude further use as data.

APPENDIX 6

STRATEGIC LIST MATERIALS

A. GENERAL. Strategic List Items (SLIs) are dual-use (commercial and military) items under the export control jurisdiction of the Bureau of Export Administration (BXA), Department of Commerce, which have been assigned a code letter "A" or "B" following the ECCN on the CCL, Section 799.1, of the EAR, 15 CFR. These commodities are controlled for reasons of national security, foreign policy concerns, nuclear nonproliferation, short supply (resource assessment) and crime control (foreign policy). DoD item/technical managers will assign a demilitarization code of "Q" to these items if they fall outside of the criteria of an MLI. Items which fall outside of the criteria for both Munitions and SLI will be assigned a demilitarization code of "A."

B. COMMODITY CONTROL LIST. The following is the CCL, excerpted from the EARs. This list is included for general guidance in identifying commodities which are considered SLIs for the purposes of this manual. Final determination must be based on a review of the specific commodity interpretation in 15 CFR, Part 799.1, and a commodity listed in this section must not be construed as all inclusive (e.g., Absorbers, electromagnetic wave, ECCN 1561A, include only those which have frequencies exceeding 2×10^8 Hz and less than 3×10^{12} Hz, with three exceptions).

COMMODITY DESCRIPTION	ECCN
Absorbers, electromagnetic wave	1561A
Accelerators, particle (specified)	4261B
Accelerometers (specified) and production equipment specially designed therefor	1485A
Acoustic wave devices, bulk volume	1586A
Acoustic wave devices, surface	1586A
Aero-engines and parts, not elsewhere specified (n.e.s.)	1460A
Aircraft/helicopters/engines, nonmilitary (specified)	1460A
Aircraft, other nonmilitary, fixed-wing	1460A
Aluminides of titanium (specified)	1672A
Ammonia (specified)	4778B
Ammunition parts and components	2603A
Analog computers (specified) and parts/accessories therefor	1565A
Analog-to-digital and reverse converters	1568A
Analog-to-digital converters	4564B
Analog-to-digital converters; electrical input type	4568A
Anti-friction bearings (specified)	1371A
Artificial graphite (specified)	1673A
Automatic pilots (non-aircraft) and production equipment specially designed therefor	1485A
Aviation gasoline	4782B
Bacteria/fungi/protozoa	4998B
Beryllium metal/compounds/alloys (specified)	3609A
Beryllium oxide ceramic/refractory products	3709A
Boilers, marine (specified)	2409A
Boron metal/compounds/mixtures	1715A
C.A.D. equipment/programs for semiconductor/microcircuit manufacturing	1355A
Cable, coaxial communications	1526A
Cable, communications/other coaxial	1526A

COMMODITY DESCRIPTION	ECCN
Cable, submarine	1526A
Calcium, high purity	4638B
Camera shutters (specified)	1585A
Cameras (specified)	1585A
Cameras, streak and components for (specified)	1585A
Capacitors, storage, high energy	1560A
Carbon dioxide	4778B
Carbon monoxide	4778B
Catalysts, specially designed	3712A
Cedar, western red	4996B
Centrifugal balancing machines (specified)	4360B
Ceramics, composites, powders and precursors	1733A
Chambers, environmental (specified)	2319A
Chemical agents including tear gas, fingerprint materials	4799B
Chemicals, inorganic (specified)	4778B
Chlorine trifluoride	3711A
Communication equipment, airborne	1501A
Communication equipment, airborne, using frequency synthesizers and parts/accessories therefor	1531A
Communications/detection/tracking equipment, u-v/i-r/ultrasonic	1502A
Communications intercepting devices and parts for	4517B
Compasses/gyroscopes/accelerometers (specified) and production equipment specially designed therefor	1485A
Compasses, gyro/gyro-astro (specified) and production equipment specially designed therefor	1485A
Composites (specified)	1757A
Compounds/materials (specified)	1757A
Compressors/blowers for hydrogen sulfide	4337B
Computing equipment, electronic and parts/accessories therefor	1565A
Construction equipment (to military specifications)	2317A
Containers for liquid fluorine	1145A
Crime detection/ analysis equipment	5597B
Crime-science laboratories, mobile, nonmilitary	5480B
Cryogenic equipment/materials (specified)	2120A
Cryptographic and ancillary equipment	1527A
Crystal pullers/furnaces/gas systems	1355A
Crystalline silicon (specified)	1757A
Cylindrical disks (specified)	4677B
Data communication equipment	1519A
Deep submergence vehicles and equipment/components/materials, specified, therefor	1418A
Detection/tracking equipment, infrared/ultraviolet	1502A
Devices for chemical/solar/nuclear to electric energy conversion	1205A
Diesel engines, nonmagnetic military	2409A
Diesel engines, submarine	2409A
Digital computer peripherals and parts/accessories therefor	1565A
Digital computers/differential analyzers and parts/accessories therefor	1565A
Digital instruments incorporating computing facilities and parts/accessories therefor	1529A
Digital test/measuring/counting apparatus and parts/accessories therefor	1529A
Dimensional inspection systems/components/software	1099A

COMMODITY DESCRIPTION	ECCN
Direct numerical control systems	1091A
Display peripherals and parts/accessories therefor	1565A
Electric/electronic equipment (high technology, specified)	1568A
Electro-optical devices (specified)	1568A
Electrolytic cells for fluorine production	3363A
Electron tube manufacturing equipment (specified)	1355A
Electron video tubes/specialized components (specified)	1555A
Electronic assemblies and integrated circuits	1564A
Electronic device manufacturing equipment (specified)	1355A
Electronic devices, circuits and systems, specially designed	1574A
Electronic equipment for testing/measuring/developing microprocessors and microcomputers	4529A
Electronic vacuum tubes (valves) (specified)	1558A
Engines, marine gas turbine	1431A
Equipment and materials, miscellaneous (specified)	2317A
Equipment/components/software, specialized, for 1388A	1388A
Equipment, electronic, specially designed to service computers (n.e.s.)	6594A
Equipment for incorporating lasers (specified)	1522A
Equipment for maintaining super-low temperatures	2120A
Equipment for manufacture/test of high technology memory/switching devices	1358A
Equipment for measuring pressures (specified)	4592B
Equipment for production of explosives/propellants	2118A
Explosives/propellants/fuels (listed)	2708A
Extrusion machinery for fluorocarbon materials	1352A
Fibrous/filamentary materials (specified)	1763A
Film, aerial camera (specified)	4585B
Film, instrumentation/recording (specified)	4585A
Fingerprint equipment/analyzers	5597B
Flatbed microdensitometers (specified)	1534A
Fluids and lubricating materials	1710A
Fluorocarbon compounds/manufacturers (specified)	1754A
Frequency-standard generators, high-precision and parts/accessories therefor	1529A
Frequency synthesizers and equipment containing same (specified) and parts/accessories therefor	1531A
Fuel cells (specified)	1205A
Gallium compounds, monocrystalline	1757A
Gas liquefying equipment (specified)	1110A
Gas, turbine blade/vane-making equipment	1080A
Gas, manufactured	4784B
Gear making/finishing machines	1088A
Gilding metal-clad steel/munitions materials	2616A
Gravity meters and components	1595A
Ground/marine navigation/d-f equipment	1501A
Gun honing machines	2018A
Guns/devices for crowd control	5998B
Guns, immobilization, and projectiles for	5998B
Gyrostabilizers (specified) and production equipment specially designed therefor	1485A
Hafnium metal/compounds/alloys (specified)	3608A

COMMODITY DESCRIPTION	ECCN
Helicopters (specified)	1460A
Helium (and mixtures containing)	4778B
Helium, enriched in isotope	3 4721B
Helmets and shields, police	5999B
Horses (for export by sea)	4999B
Hydrogen	4778B
Indium compounds, monocrystalline	1757A
Induction, hardening machines (for tank turret components)	2018A
Instruments for direct recording of sinusoid waves (specified)	1572A
Integrated circuits, monolithic (specified)	1564A
Inverters/converters/frequency changers/generators (specified)	4569B
Laser measuring devices	1522A
Lasers and components/parts, specified, therefor	1522A
Lasers/laser systems and components/parts, specified, therefor	1522A
Lead azide (and composites containing)	1701A
Liquid fluorine production equipment	1110A
Liquid hydrogen production equipment	1110A
Lithium metal/compounds/alloys (specified)	3607A
LSI masks/substrates/mask-making and related equipment	1355A
Lubricants/dielectrics (made of 1754A (a))	1754A
Machinery for aircraft manufacture (specified) and parts/accessories, specified therefor	1081A
Machinery for making communication cable	1353A
Machinery for military equipment manufacturing/testing, specialized	2018A
Machines for manufacture of jet/gas turbine engines	1086A
Machines for turning optical-quality surfaces	1370A
Magnesium, high purity	4654B
Magnetic metals (specified)	4654B
Magnetic/pressure/acoustical underwater detection devices	2409A
Magnetometers (specified)	2409A
Mandrels and bellows forming dies	4094B
Manned submersible vessels	2418A
Manufacturing/inspection machines, numerically controlled	1091A
Measuring/calibrating/testing equipment, electronic and parts/accessories therefor	1529A
Measuring equipment, electronic	1529A
Measuring equipment, electronic and parts/accessories therefor	1529A
Metal alloys, powders and materials	1610A
Microcircuit assembly equipment	1355A
Microcircuits (specified)	1564A
Microcircuits, film type (specified)	1564A
Microwave assemblies/subassemblies (specified)	1537A
Microwave equipment (specified)	1537A
Military equipment	2901A
Military helmets	2913A
Military nuclear reactor-related power generating/propulsion equipment	3362A
Military training equipment	2414A
Military training equipment	2460A
Mixers, batch, specially designed for mixing solid propellants	4118A
Motors, submarine-propulsion electric	2409A

COMMODITY DESCRIPTION	ECCN
Naphtha	4782B
Natural gas liquids (in Supplement 2 to Part 777)	4783A
Naval equipment (specified)	2409A
Navigation/direction-finding equipment	1501A
Neutron generator systems (specified)	3261A
Nickel powder/porous metal	3605A
Nozzles, specially designed for producing materials from precursor gases	4302B
Nuclear reactor/nuclear power plant-related equipment	4363B
Numerical control equipment (specified)	1091A
Oils, distillate fuel	4782B
Optical/optical tube elements	1556A
Packings of phosphor bronze mesh, specialized	4674B
Panoramic/digitally-controlled radio receivers	1516A
Petroleum coke	4782B
Petroleum commodities (in Supplement 2 to Part 777)	4781B
Petroleum products, other (in Supplement 2 to Part 777)	4782B
Photo-voltaic cells	1205A
Photographic equipment (specified)	1585A
Photographic equipment (specified)	4585B
Photographic film/plates (specified)	1585A
Photosensitive components (specified)	1548A
Pipe/valves/heat exchangers, stainless steel/corrosion resistant	4128B
Polygraphs/psychological testing machines	5597B
Polymeric substances/manufactures (specified)	1746A
Potentiometers, induction/precision (specified)	1568A
Power sources, radioactive materials-based	1205A
Preforms for fabrication optical transmission fibers	1767A
Presses and specialized controls/accessories	1312A
Pressure refueling equipment	2410A
Protection/restraint equipment for personnel, n.e.s.	5999B
Protective/restraint equipment, nonmilitary	5680B
Pumps (specified, not in 1129A)	1131A
Quartz crystals/assemblies for electronic use	4587B
Radar and related equipment	1501A
Radio receivers (specified)	1516A
Radio receivers, digitally controlled (specified) and parts/accessories therefor	1531A
Radio-relay equipment (specified)	1520A
Radio spectrum analyzers (specified) and parts/components therefor	1533A
Radio transmitters/transmitter-amplifiers (specified) and components/accessories/ subassemblies therefor	1517A
Radioisotopes (specified)	4720B
Recording/reproducing equipment (specified) and its recording media	1572A
Residual fuel oils	4782B
Rings/single-convolution bellows (specified)	4676B
Robots, controllers and robot end-effectors and components	1391A
Sapphire substrates, single-crystal	1757A
Searchlights (designed for military use)	2317A

COMMODITY DESCRIPTION	ECCN
Semiconductor device manufacturing equipment	1355A
Semiconductor Hall fuel probes	1568A
Semiconductor/microcircuit device test equipment	1355A
Sensing equipment, corrosion-resistant (specified)	4678B
Shock batons	5998B
Shotguns (specified)	5998B
Straight jackets	5999B
Stored program controlled communication switching equipment/systems/ technology and specially designed components	1567A
Submersible systems (specified)	1417A
Substances, monomeric and polymeric (specified)	1754A
Super-conductor electromagnetics and solenoids	1573A
Super-conductor materials of all types and processed conductors (specified)	1675A
Super-conductor metals/alloys/compounds/composites	2120A
Superconducting electromagnets/wire/cable	2120A
Synchronous motors (specified)	1568A
Synchros/resolvers	1568A
Syntactic foam for underwater use	1759A
Telemetering/telecontrol equipment (specified)	4518B
Telephone switching systems (specified)	1567A
Tire casings (specified)	2406A
Transmission equipment, single-/multi-channel (specified)	1519A
Tubes/pipe/fittings, pressure (specified)	4635B
Tubes, photomultiplier (specified)	1549A
Tubes, television camera (specified)	1555A
Tubing, cylindrical (specified)	4675B
Underwater breathing apparatus (specified)	2317A
Underwater detection/locating equipment	1510A
Uranium hexafluoride mass spectrometers (specified)	4530B
Uranium hexafluoride production plants	3336A
Uranium, depleted (specified)	4698B
Valves (specified)	3131A
Valves, pipe (specified)	4127B
Vehicles designed for military use	2406A
Vessels (specified, including hydrofoils) and parts/accessories, specified therefor	1416A
Vibration testing equipment (specified)	1362A
Viruses/viroids	4997B
Voice print analysis/identification equipment	4597B
Water tunnel equipment specially designed for development of vessels	1363A
Waveguides and components for (specified)	1537A
Wind tunnels (specified)	1361A
Wire/cable, coated for 1754A	1754A
X-ray systems, flash discharge (specified)	1553A
Zirconium metal/alloys (specified)	3604A

APPENDIX 7

ILLUSTRATIONS

A. GENERAL. Methods of demilitarization for general supply items are breaking, deforming, crushing, cutting or smelting. Examples of specific methods are illustrated in the figures in this manual. Conventional ammunition is normally demilitarized by burnout, washout, detonation or dumping at sea. Of the possible cutting methods, the cutting torch is the most thorough but it is the most time consuming. If a power shear is used, it should be of adequate size and power to preclude equipment breakdown. The use of precision cutting torch fixtures, precision cutting saws or precision tools of any kind to minimize mutilation is forbidden. Crushing to the extent that an item is flattened and completely destroyed is the preferred method of mutilation.

WARNING: If a power shear is used, adequate safety precautions should be taken to prevent any flying fragments from injuring personnel. A holding fixture should be installed on the shear so that guns or other items need not be held by hand during cutting.

B. ILLUSTRATIONS. The figures illustrated correspond to the figures mentioned in appendices 4 and 5.

C. ADDITIONAL ASSISTANCE. This appendix contains only a small sampling of the data available. For instructions, drawings, photographs, schematics, etc., of items not found in this appendix, contact the Defense Logistics Agency, DLA-SMP, (DSN) 284-6763/64, or through the DoD Demilitarization Bulletin Board System (via modem), (DSN) 284-4216 or commercial (703) 274-4216.

FIGURE 1. DEMILITARIZATION OF BREECHRING AND SLIDING BREECHBLOCK

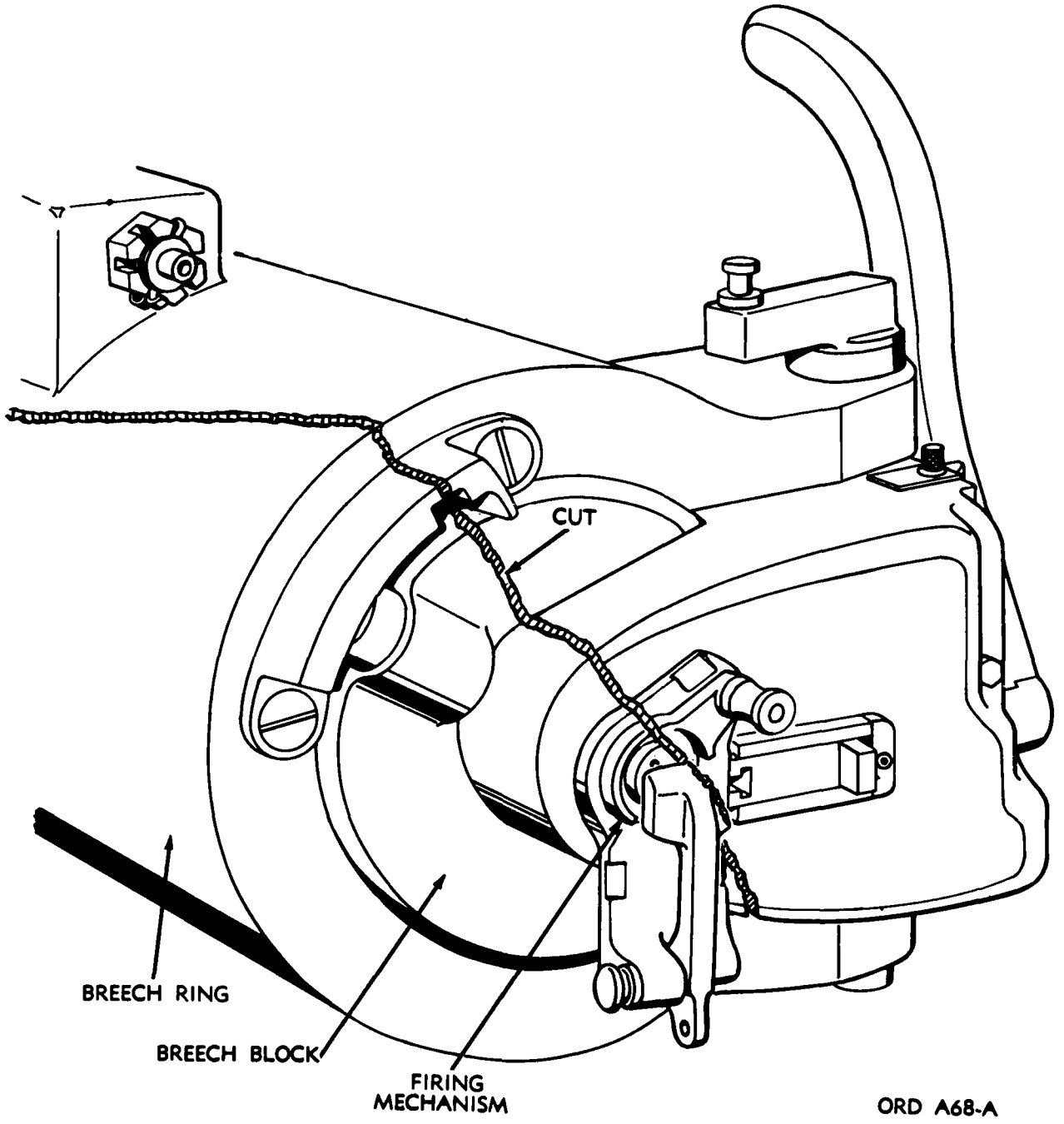

FIGURE 2. DEMILITARIZATION OF INTERRUPTED THREAD BREECHBLOCK

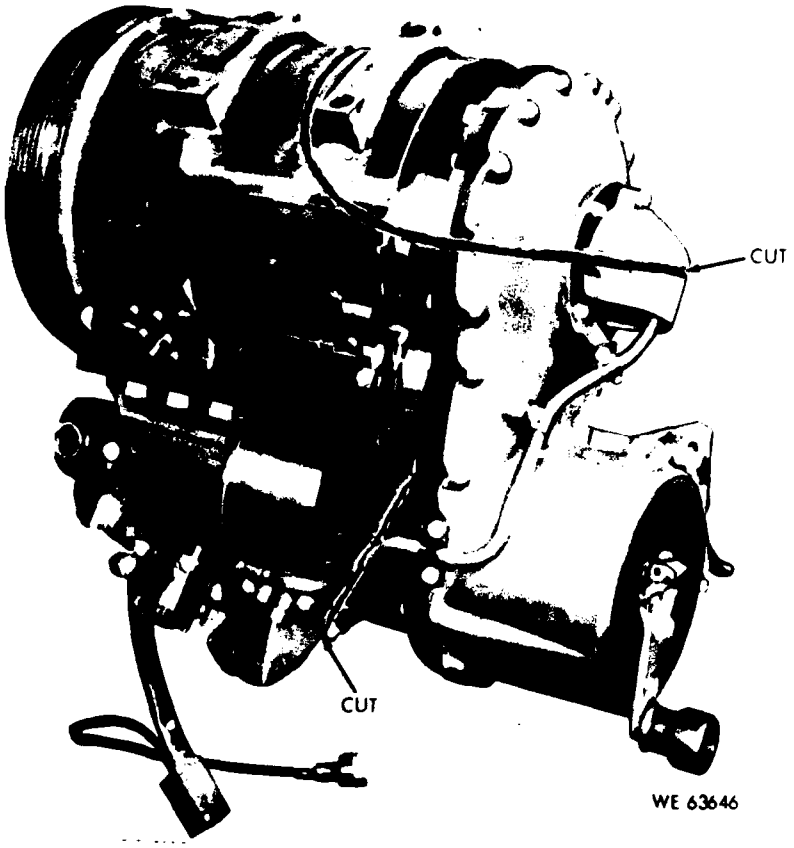

FIGURE 3. DEMILITARIZATION OF LINEAR MOVING TYPE INTERRUPTED THREAD BREECHBLOCK CHAMBER

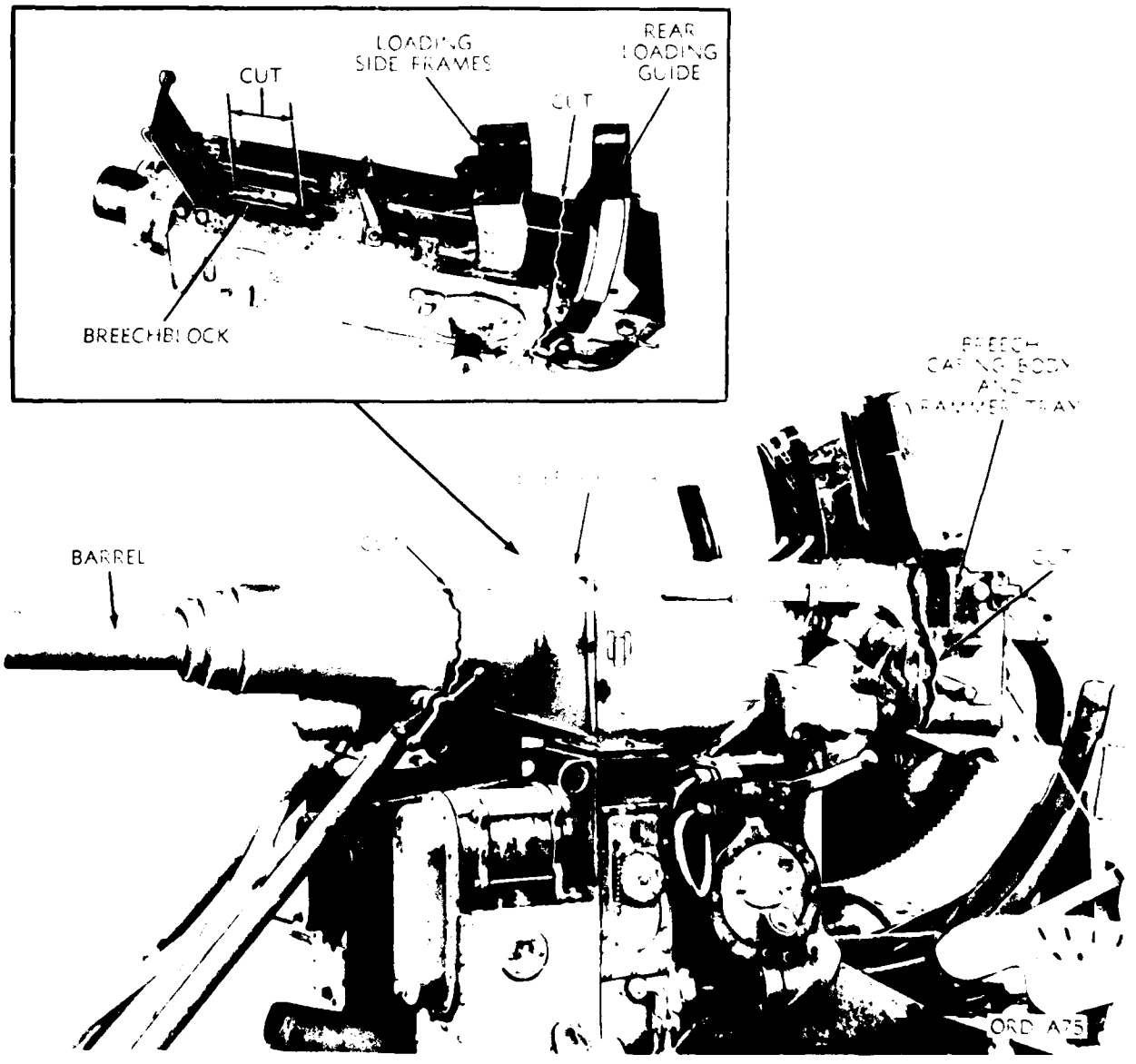

FIGURE 4. DEMILITARIZATION OF 40MM AUTOMATIC GUN

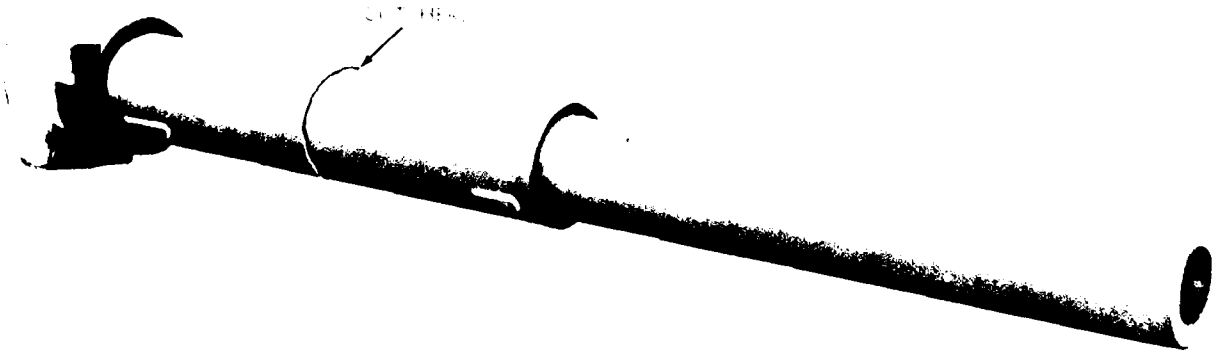

FIGURE 5. LOCATION OF CUT ON ARTILLERY TUBE

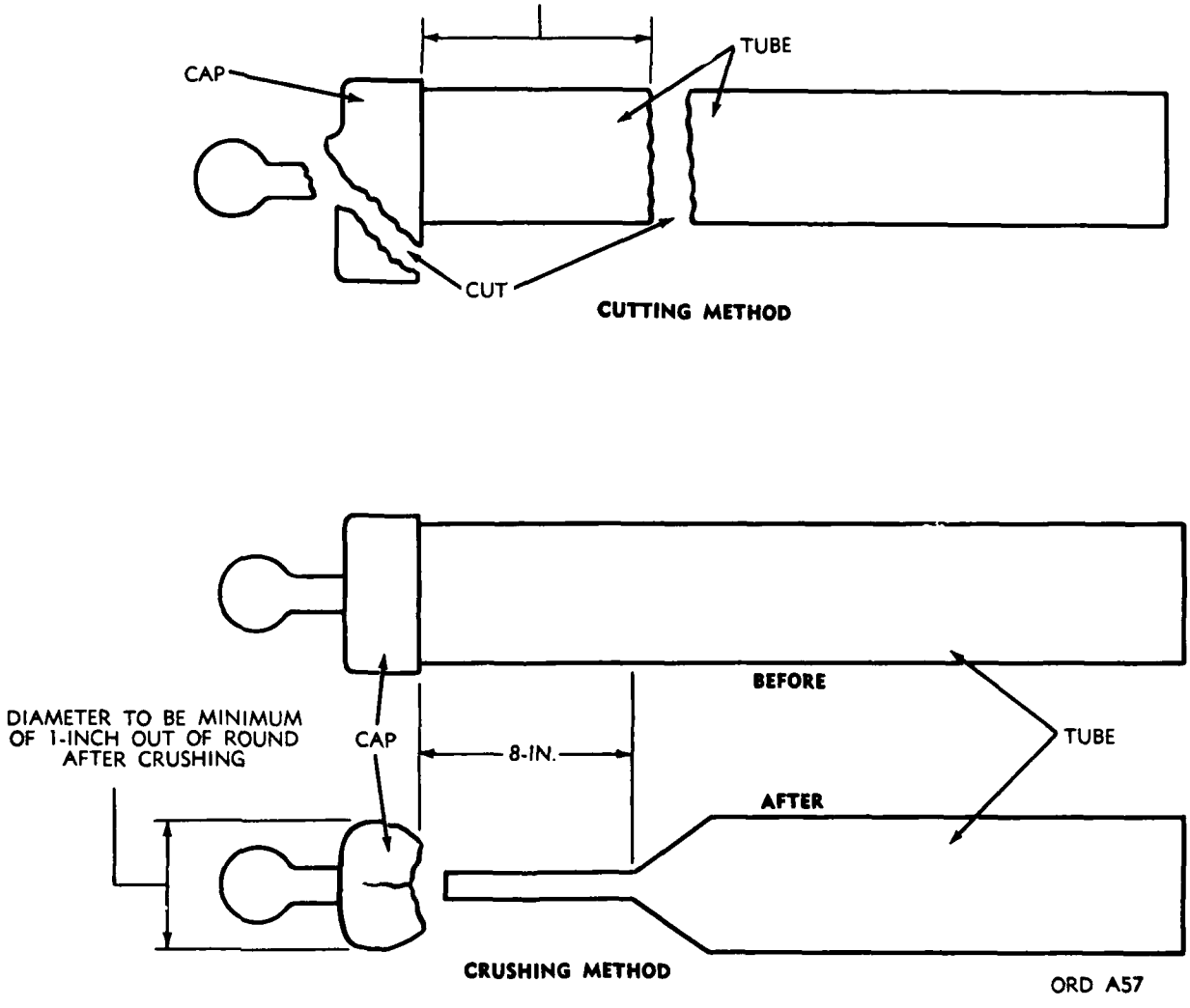

FIGURE 6. DEMILITARIZATION OF MORTAR TUBE BY CUTTING OR CRUSHING

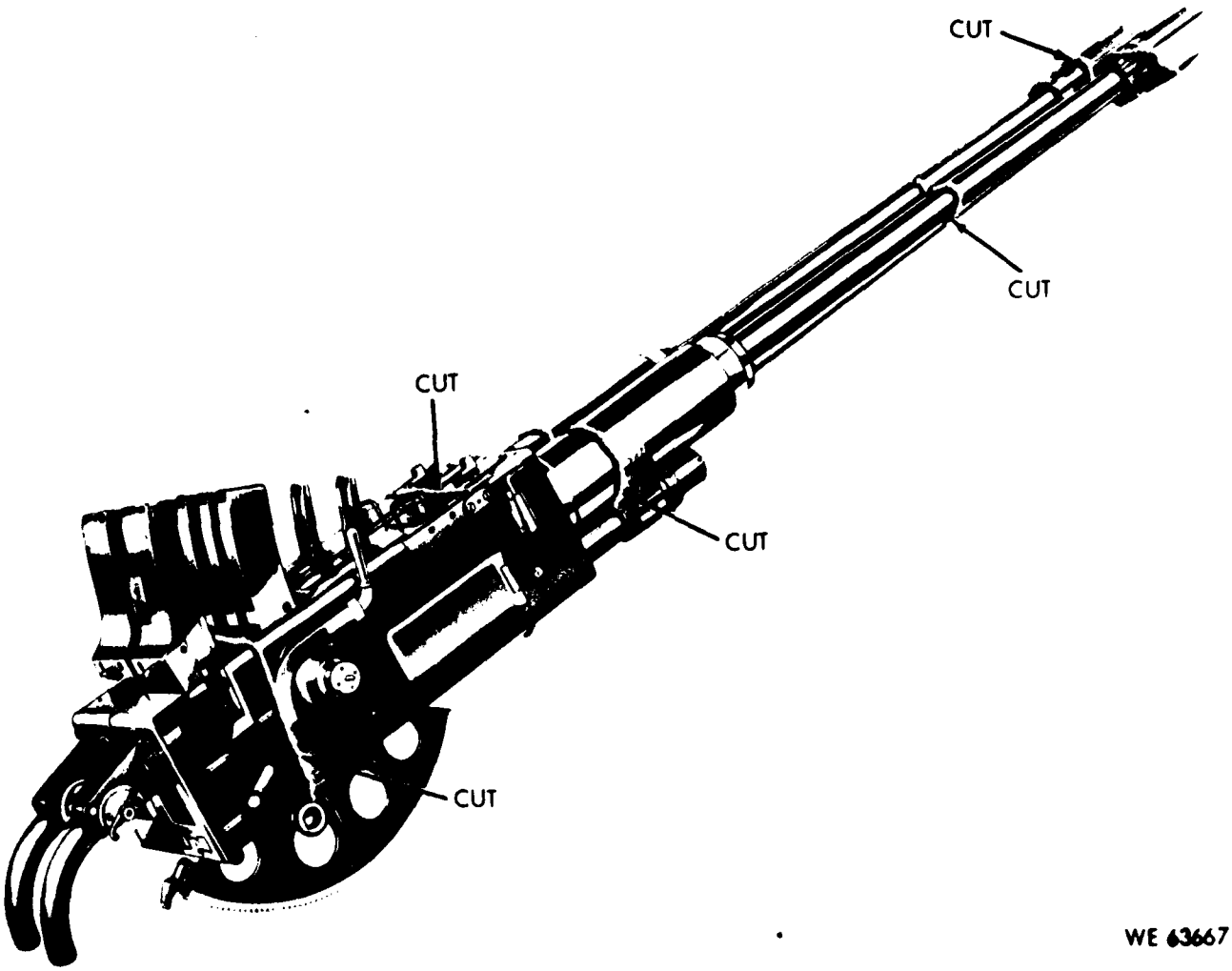

FIGURE 7. DEMILITARIZATION OF TWIN 40MM M42A1 GUN

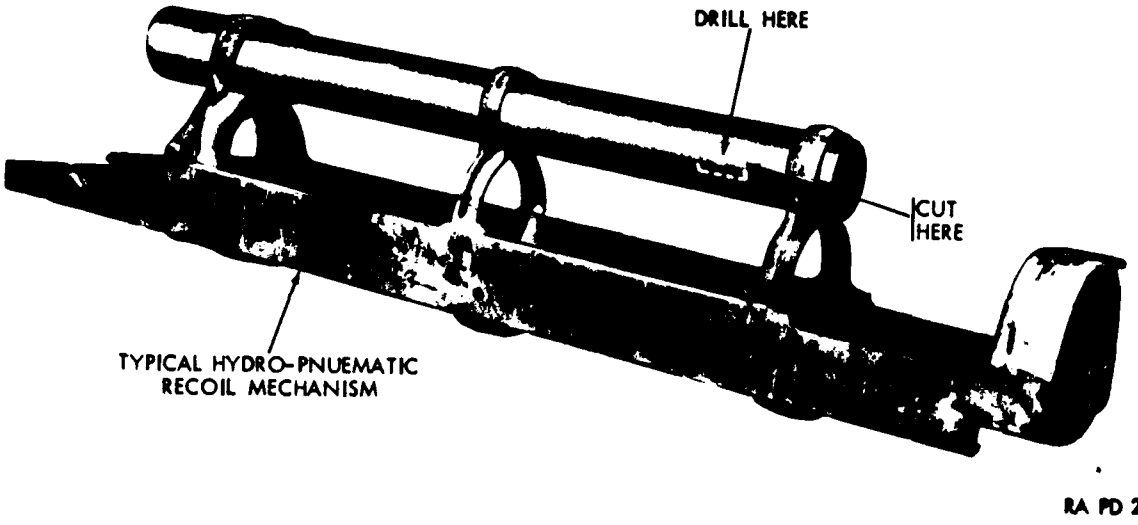

FIGURE 8. LOCATION OF HOLES IN HYDROPNEUMATIC RECOIL MECHANISM

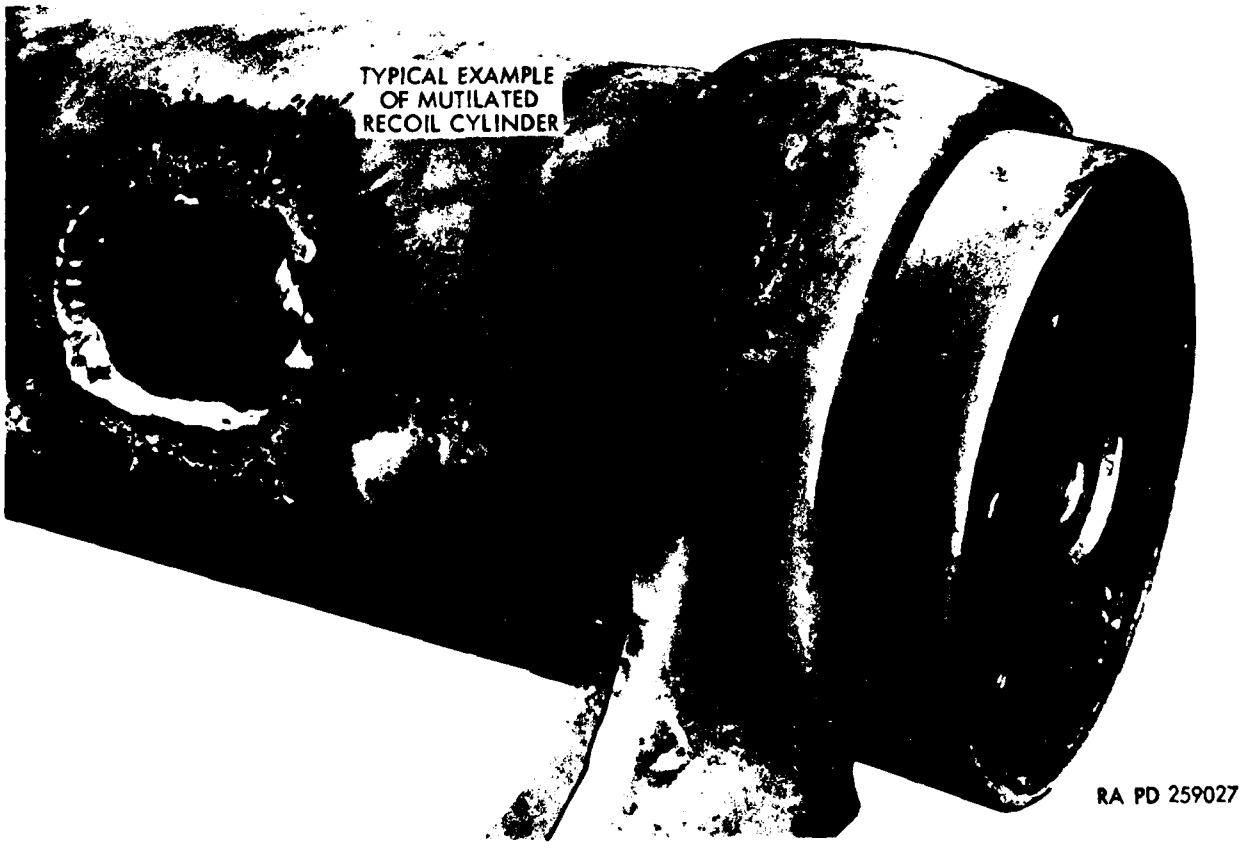

FIGURE 9. A TWO-SQUARE-INCH HOLE CUT BY TORCH IN NITROGEN CYLINDER

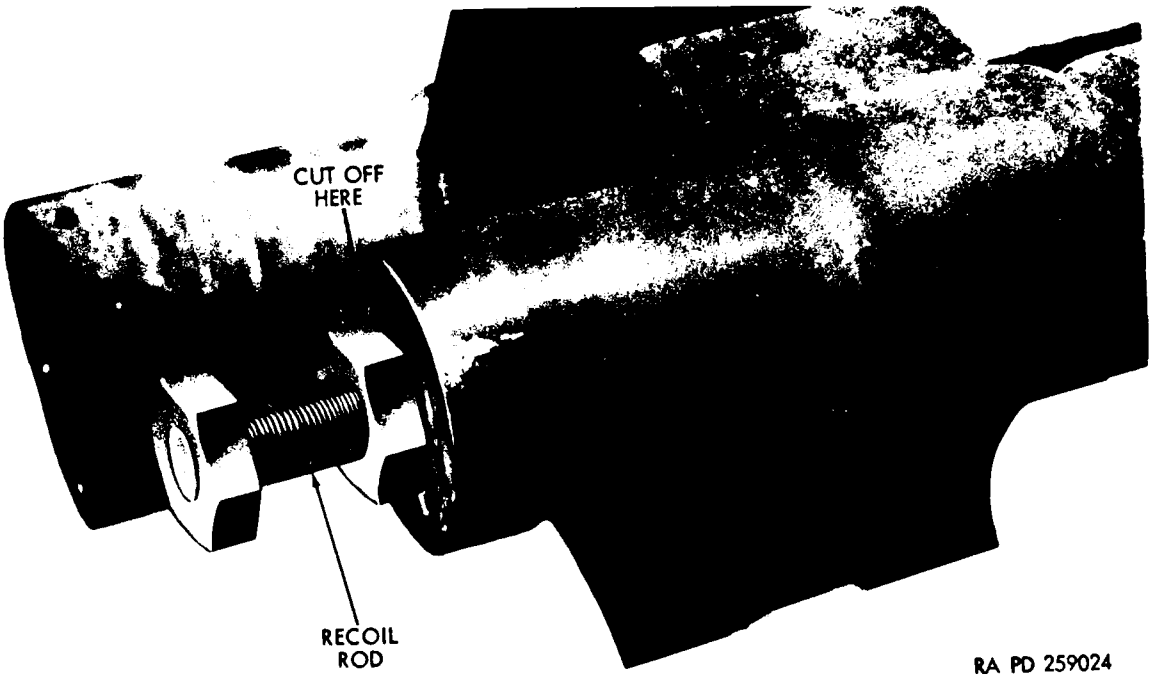

FIGURE 10. DEMILITARIZATION OF RECOIL ROD

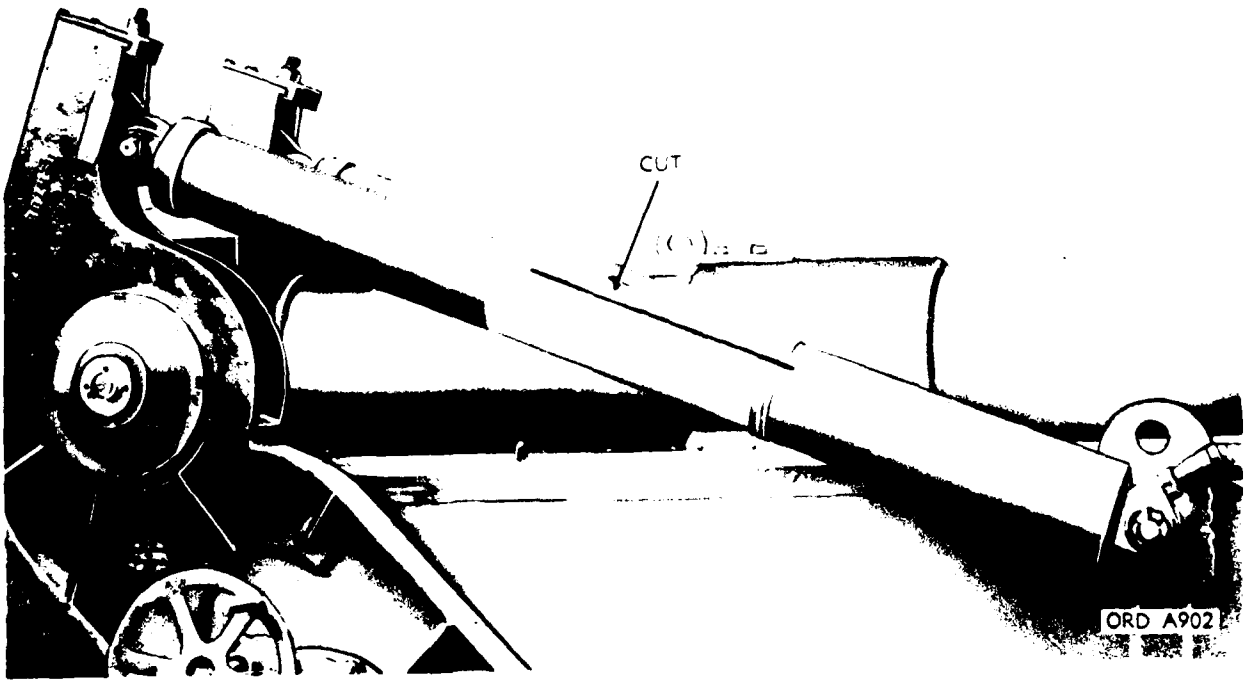

FIGURE 11. DEMILITARIZATION OF HYDROPNEUMATIC EQUILIBRATOR

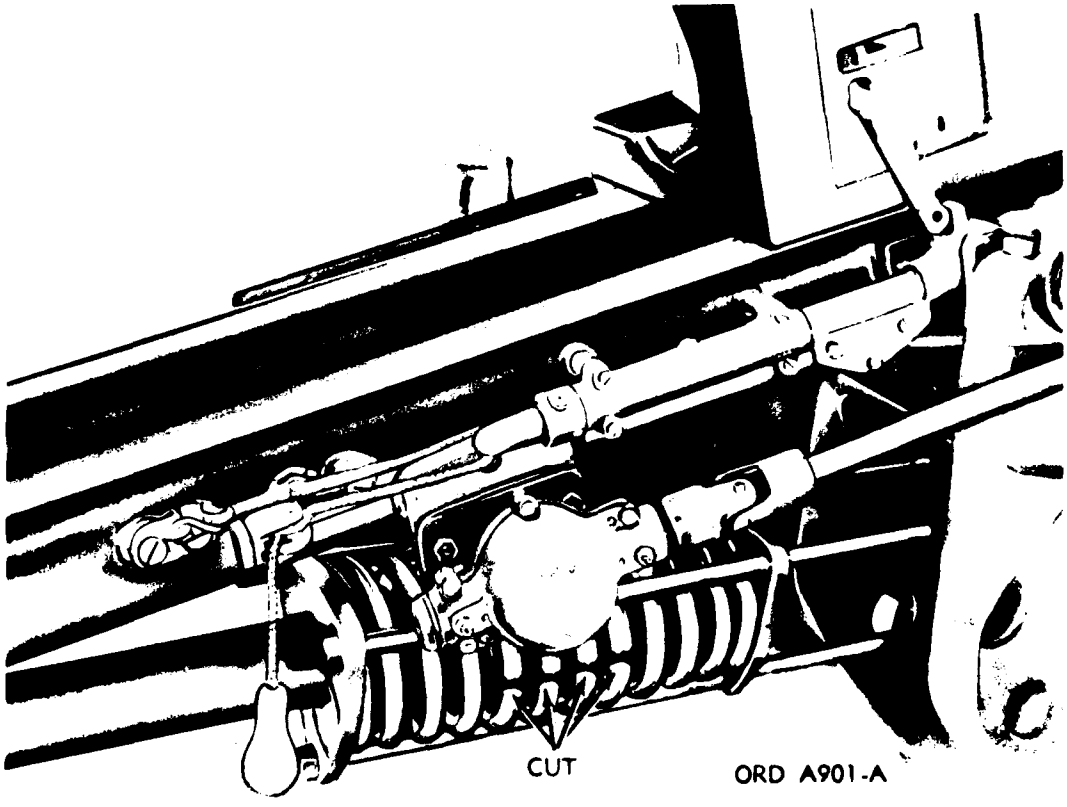

FIGURE 12. DEMILITARIZATION OF SPRING-TYPE EQUILIBRATOR ON 105MM HOWITZER M2 SERIES

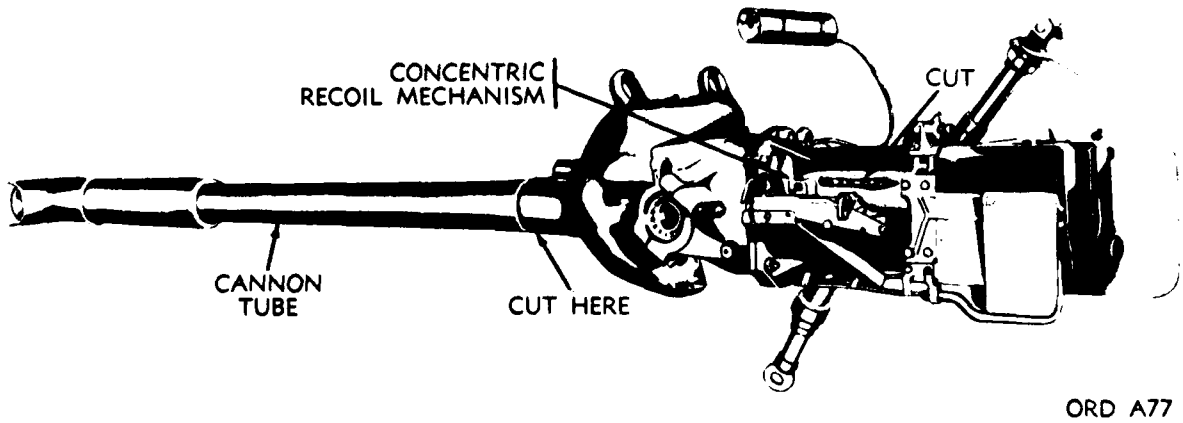

FIGURE 13. DEMILITARIZATION OF CONCENTRIC RECOIL MECHANISM-TYPE CANNON

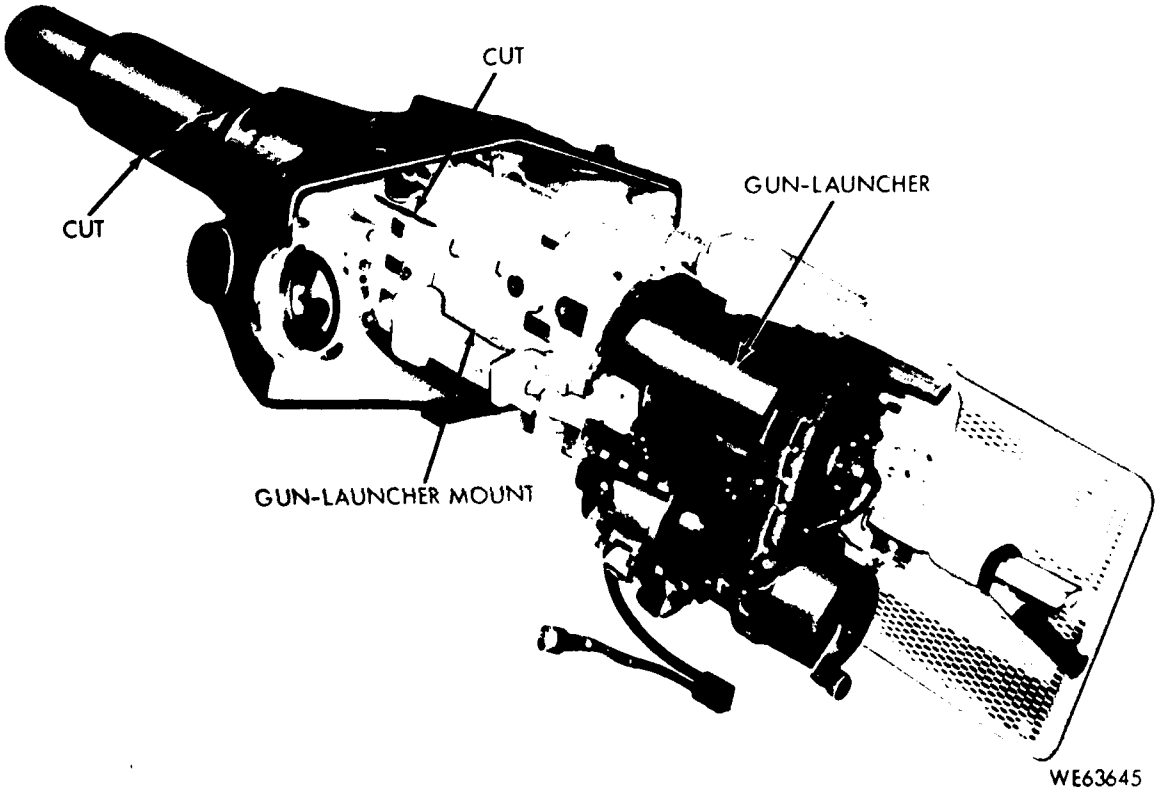

FIGURE 14. DEMILITARIZATION OF CONCENTRIC RECOIL MECHANISM-TYPE GUN LAUNCHER

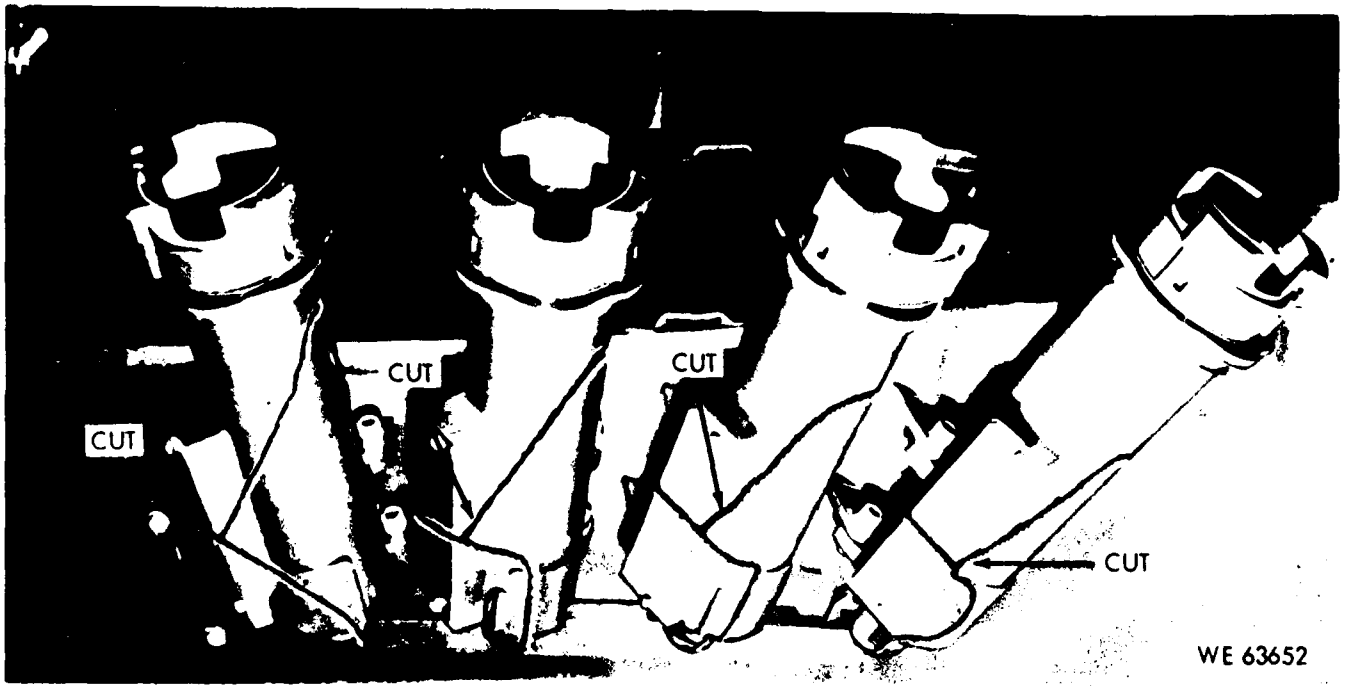

FIGURE 15. DEMILITARIZATION OF GRENADE PROJECTOR MOUNTS

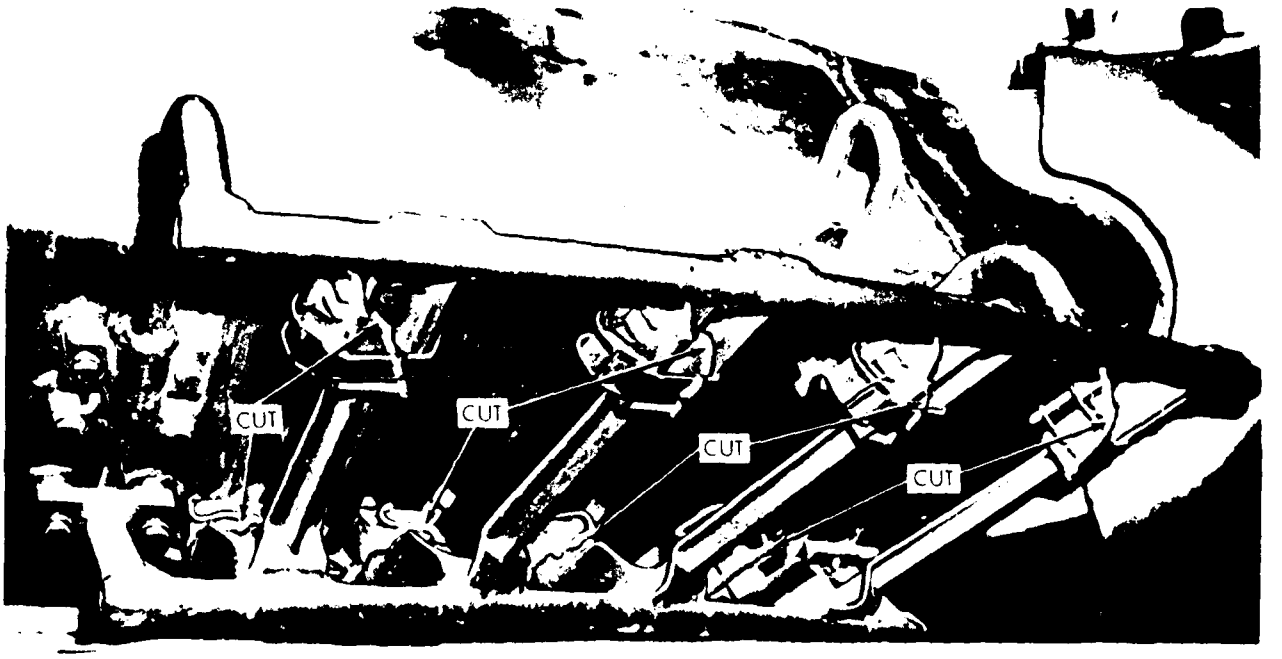

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FIGURE 16. DEMILITARIZATION OF GRENADE PROJECTOR MOUNTS

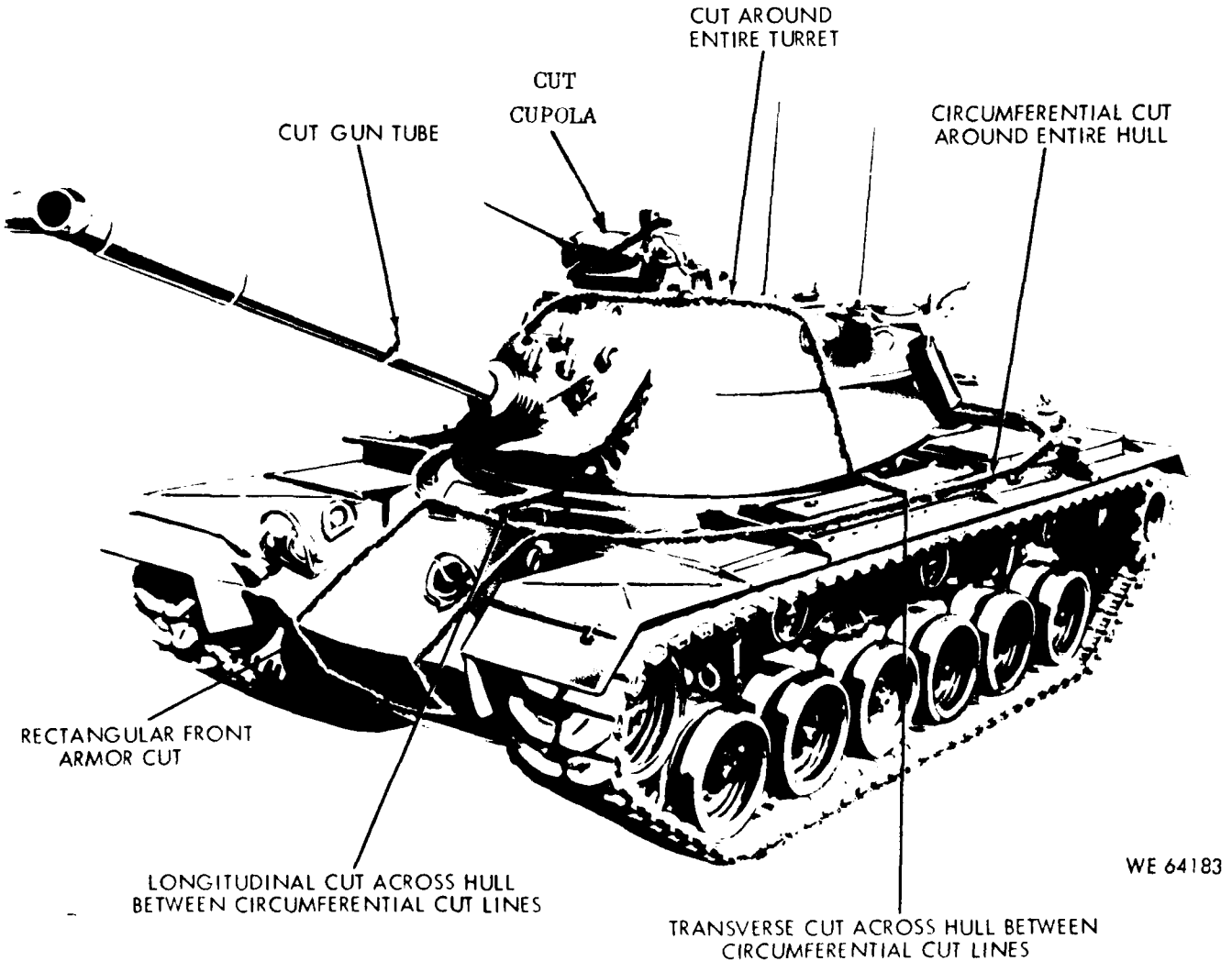

FIGURE 17. DEMILITARIZATION OF TANKS BY CUTTING

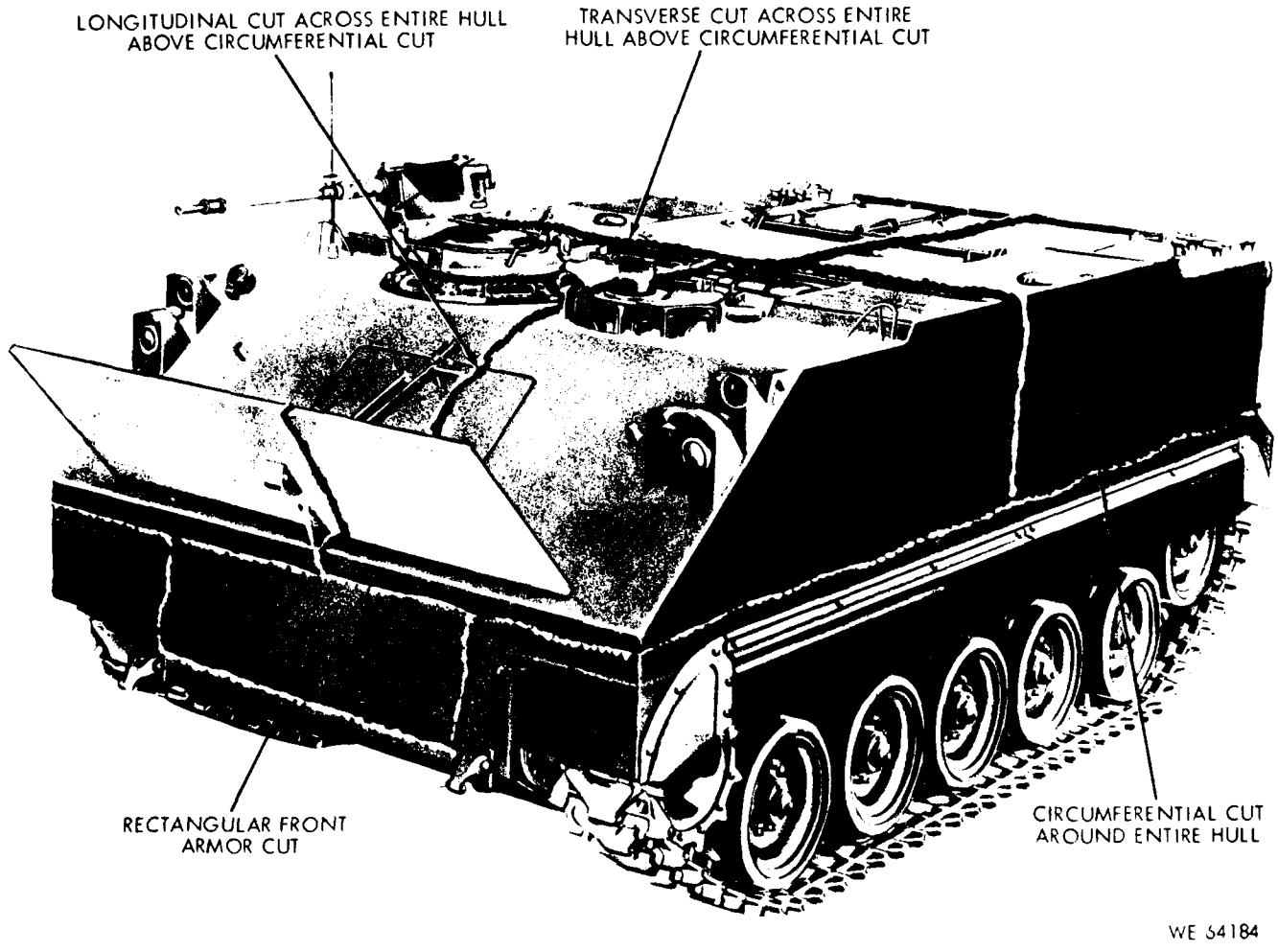

FIGURE 18. DEMILITARIZATION OF PERSONNEL CARRIERS BY CUTTING

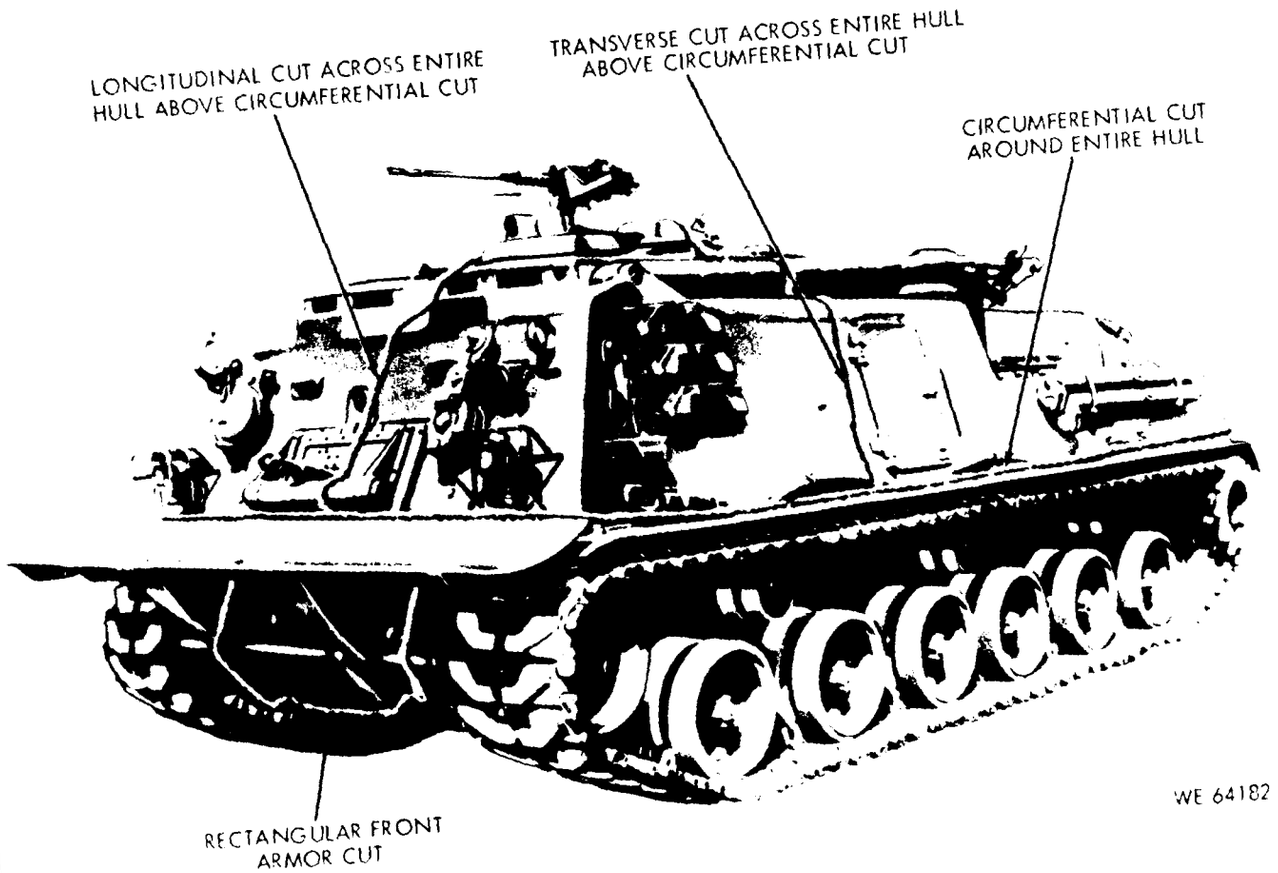

FIGURE 19. DEMILITARIZATION OF TANK RECOVERY VEHICLES BY CUTTING

FIGURE 20. DEMILITARIZATION OF A REVOLVER

Demilitarization of revolvers will be accomplished by three or four different cuts depending on the length of the barrel. With the revolver laying on its right side, the cylinder in a closed position and the grips removed, the following cuts will be made. Each cut must displace at least one-half inch of metal if demilitarization is accomplished by torch cutting:

1. The first cut must begin behind the hammer extension, cutting toward the left at a 45 degree angle through the lower cylinder and the front portion of the trigger guard.

2. The second cut must begin in front of where the barrel screws into the revolver frame, cutting toward the right at a 45 degree angle through the cylinder and the handle. Ensure that the hammer back spring is cut.

3. The third cut must begin at the same point as the second cut continuing to the left at a 45 degree angle through the barrel and cylinder shaft.

NOTE: Revolvers with 4 inch or longer barrels will require one additional cut to accomplish required demilitarization. The cut will be in the center of the barrel at a 45 degree angle to the left.

FIGURE 21. DEMILITARIZATION OF .45 CALIBER AUTOMATIC PISTOL AND SIMILAR WEAPONS

Demilitarization of the .45 caliber automatic pistol and similar weapons will be accomplished by three different cuts. The grips will be removed from the weapon before the demilitarization begins. With the slide in the closed position and the weapon laying on its left side, the following cuts will be made. Each cut must displace one-half inch of metal if demilitarization is accomplished by torch cutting:

1. The first cut will begin 2 inches from the butt of the pistol (not including the hammer), cutting downward to the left through the grip safety.

2. The second cut will begin at the chamber, cutting downward to the left through the trigger and the magazine receiver.

3. The third cut will begin 2 inches from the tip of the barrel, cutting at a 45 degree angle to the right through the barrel and the frame.

FIGURE 22. DEMILITARIZATION OF .30 CALIBER M1 CARBINE

Demilitarization of the .30 caliber M1 carbine will be accomplished by four different cuts. The stock and handguard will be removed before demilitarization begins. With the weapon laying on its left side, the bolt closed, the following cuts will be made. Each cut must displace at least one-half inch of metal if demilitarization is accomplished by torch cutting:

1. The first cut will be made through the rear sight, receiver and the rear of the trigger guard.

2. The second cut will be made halfway between the rear sight mount and the barrel chamber, cutting downward to the left through the trigger guard, ensuring that the bolt and both sides of the frame are completely severed (cut apart).

3. The third cut will begin 1 inch back from the front of the receiver, cutting downward to the right through the barrel chamber, operating slide, guide, and spring.

4. The fourth cut will begin toward the front of the barrel, cutting through the barrel and center of the bayonet lug.

FIGURE 23. DEMILITARIZATION OF THE .30 CALIBER M1 RIFLE

Demilitarization of the .30 caliber M1 rifle will be accomplished by five different cuts. The stock and handguard will be removed before demilitarization begins. With the weapon laying on its left side, the bolt closed, and the trigger group inserted, the following cuts will be made. Each cut must displace at least one-half inch of metal if demilitarization is accomplished by torch cutting:

1. The first cut will be made downward through the rear sight, receiver and center of the trigger guard.

2. The second cut will be made 1 inch back from the front of the receiver, cutting downward to the left at a 45 degree angle through the bolt and the front of the trigger guard.

3. The third cut will begin 1 inch back from the front of the receiver, cutting downward to the right at a 45 degree angle through the barrel chamber.

4. The fourth cut will be made 5 inches in front of the lower, front handguard band, cutting through the barrel and operating rod.

5. The fifth cut will be made toward the front of the barrel, cutting downward through the barrel and center of the gas cylinder.

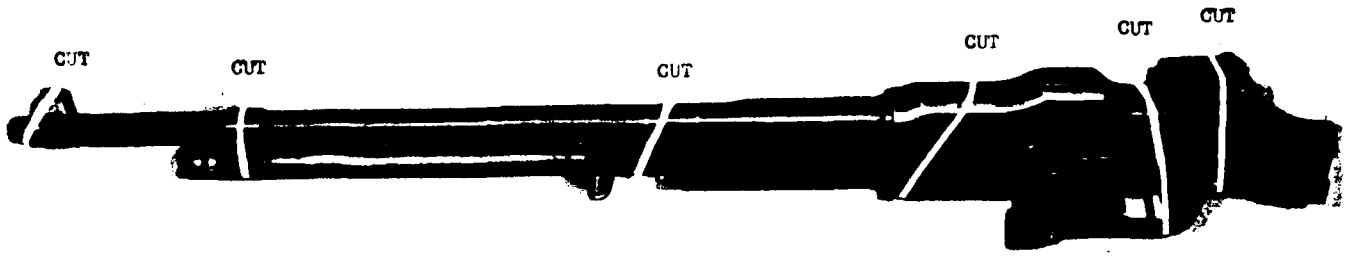

FIGURE 24. DEMILITARIZATION OF THE .30 CALIBER BROWNING AUTOMATIC RIFLE, M1918A2

Demilitarization of the .30 caliber Browning Automatic Rifle (BAR), M1918A2, will be accomplished by six different cuts. The stock assembly and fore end will be removed before demilitarization begins. With the weapon laying on its right side, the bolt closed, the following cuts will be made. Each cut must displace at least one-half inch of metal if demilitarization is accomplished by torch cutting:

1. The first cut will begin in the middle of the rear sight, cutting downward through the rear of the trigger guard.

2. The second cut will begin in front of the rear sight, cutting downward through the bolt and the middle of the trigger guard.

3. The third cut will begin 2 inches back from the front of the receiver, cutting downward to the left at a 45 degree angle through the barrel chamber and the rear of the gas cylinder.

4. The fourth cut will begin 8 inches to the front of the receiver, cutting downward to the left at a 45 degree angle through the barrel, gas cylinder, and piston assembly.

5. The fifth cut will begin at the front barrel bracket, cutting downward through the barrel bracket and gas cylinder piston assembly.

6. The sixth cut will be at a 45 degree angle to the left, beginning at the rear of the front sight through the sight mount and barrel.

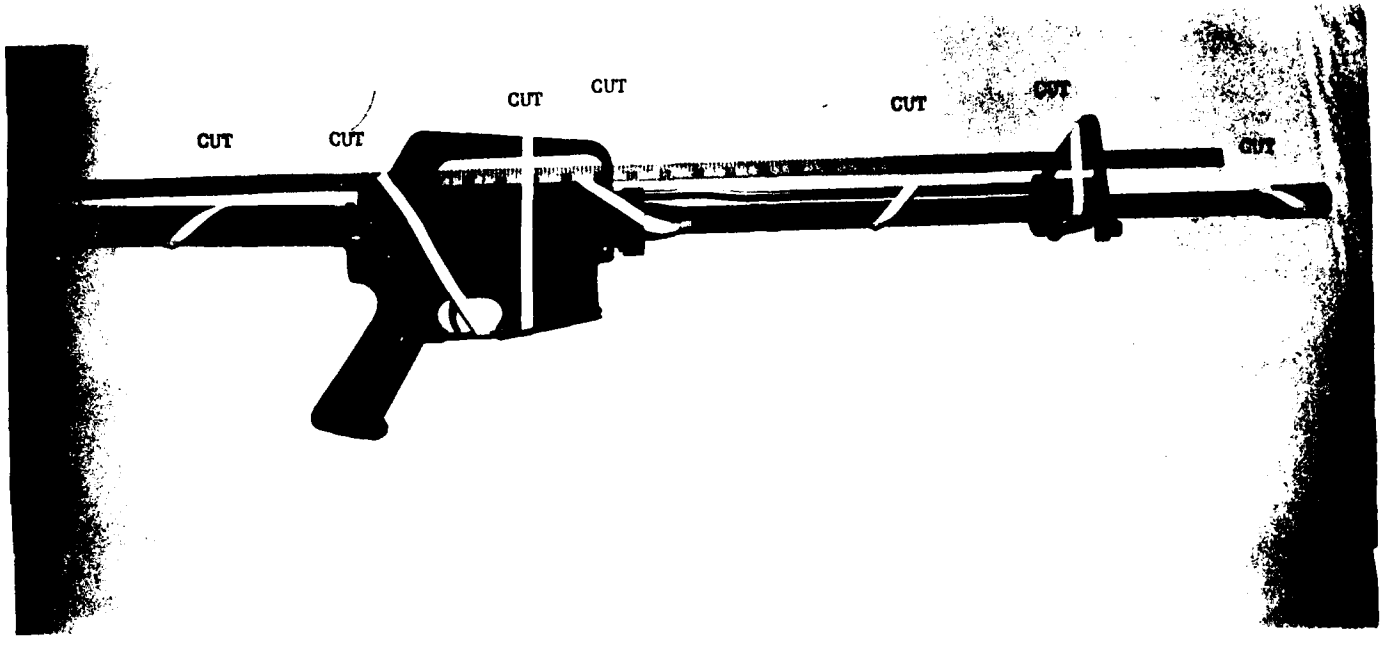

FIGURE 25. DEMILITARIZATION OF THE M16 RIFLE

Demilitarization of the M16 rifle will be accomplished by seven different cuts. The stock and handguards (forearm) will be removed before demilitarization begins. With the weapon laying on its left side, the bolt closed and the lower receiver inserted, the following cuts will be made. Each cut must displace at least one-half inch of metal if demilitarization is accomplished by torch cutting:

1. The first cut will begin 5 inches from the left end of the weapon through the recoil cylinder and recoil spring. This cut will be at a 45 degree angle to the left.

2. The second cut will begin at the rear base of the handle of the upper receiver continuing downward through the front of the trigger guard.

3. The third cut will be made straight from the center of the handle of the upper receiver, down through the lower receiver and the point one-half inch from the rear of the magazine retainer in the lower receiver.

4. The fourth cut will begin one-half inch from front of handle of the upper receiver through the chamber, the barrel retainer nut and the area where the chamber swell returns to the normal size of the barrel.

5. The fifth cut will be made halfway between the receiver and the sight holding device. The cut will be made through the barrel and the gas check tube. This cut is to be at a 45 degree angle to the left.

6. The sixth cut will be made straight through from top to bottom of the sight holder including gas check tube.

7. The seventh cut will begin at the tip of the barrel cutting upward to the left at a 45 degree angle.

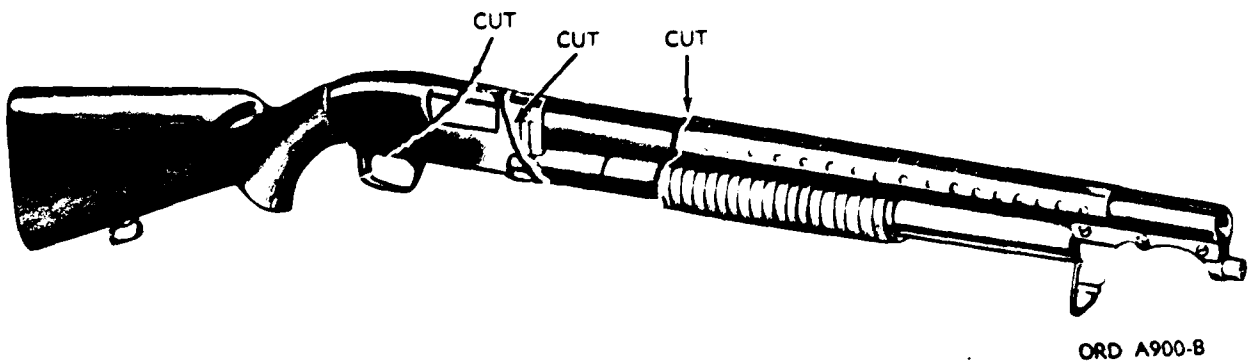

FIGURE 26. DEMILITARIZATION OF 12 GAGE RIOT TYPE SHOTGUNS

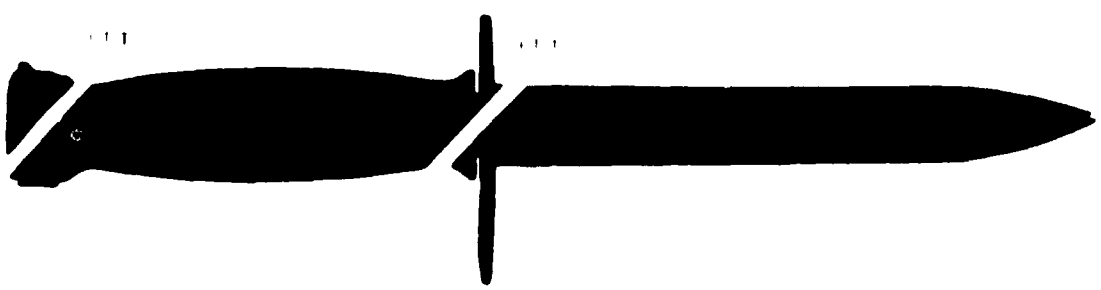

FIGURE 27. DEMILITARIZATION OF BAYONET KNIFE

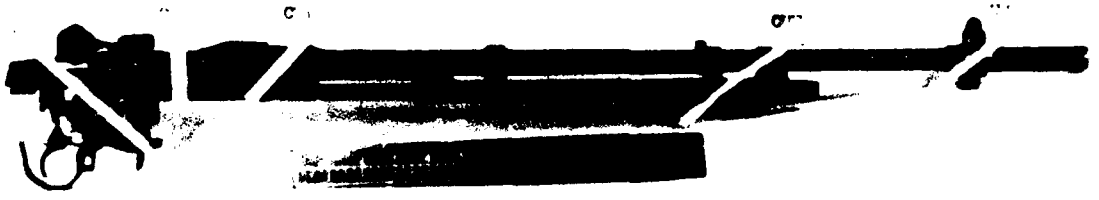

FIGURE 28. DEMILITARIZATION OF THE M14 RIFLE

The demilitarization of the M14 rifle will be accomplished by five different cuts. The stock and forearm will be removed before demilitarization begins. With the weapon laying on its left side, the bolt closed, and the trigger group inserted, the following cuts will be made. Each cut must displace at least one-half inch of metal if demilitarization is accomplished by torch cutting:

1. The first cut will begin just in front of the serial number, cutting downward to the right through the right tip end of the trigger group.

2. The second cut will be made halfway between the rear-sight mount and chamber ensuring that the bolt and both sides of the frame are completely severed (cut apart).

3. The third cut will begin on the barrel 1-1/2 inches in front of the chamber, cutting to the left through the chamber and the rear of the gas spring rod pin.

4. The fourth cut will begin toward the front of the barrel where the gas check rod clamps to the barrel, cutting to the left through the gas check rod and the bottom of the rear clamp.

5. The fifth cut will be at a 45 degree angle to the left, beginning in front of the front sight cutting through the entire sight mount.

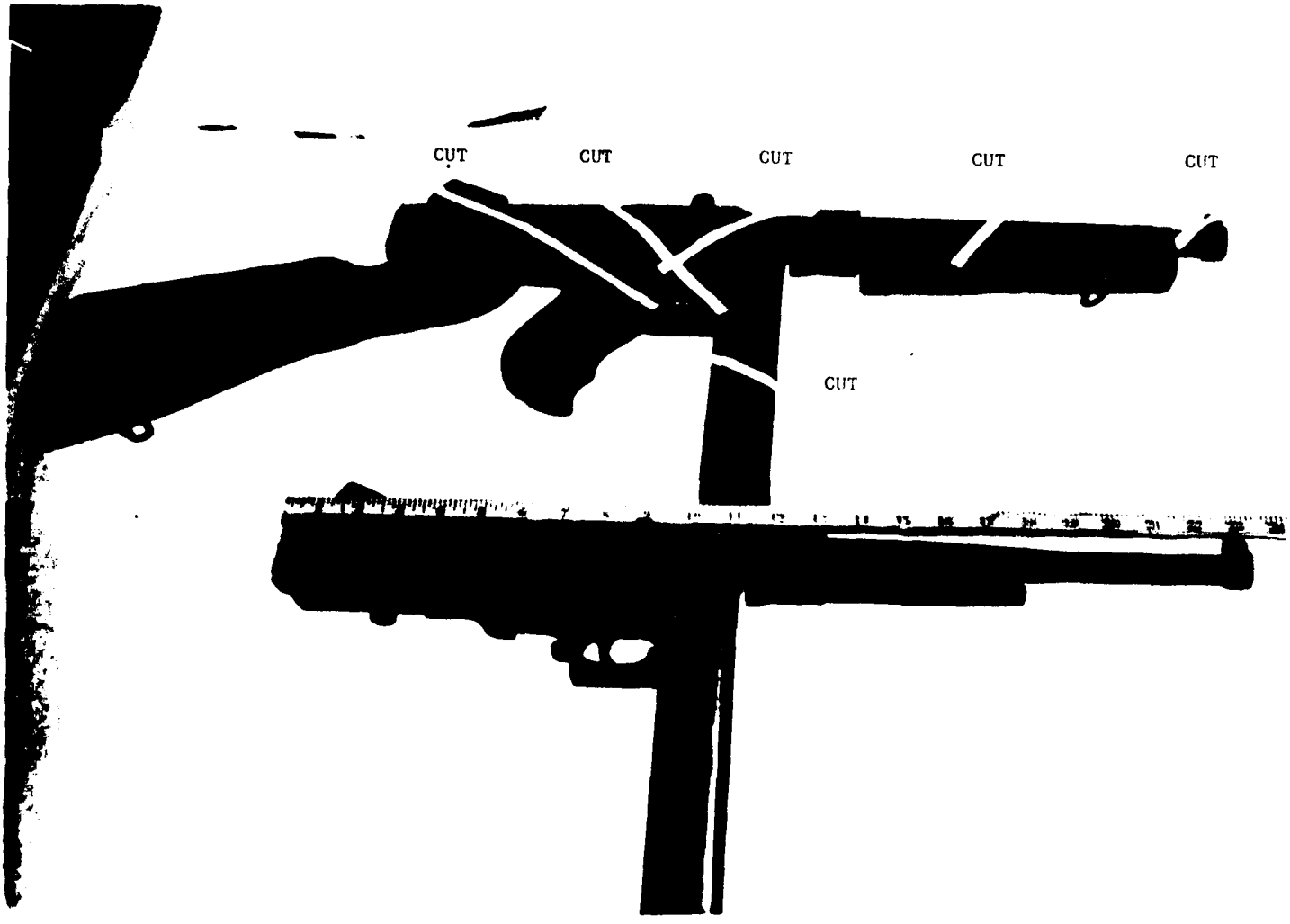

FIGURE 29. DEMILITARIZATION OF THOMPSON SUBMACHINE GUN

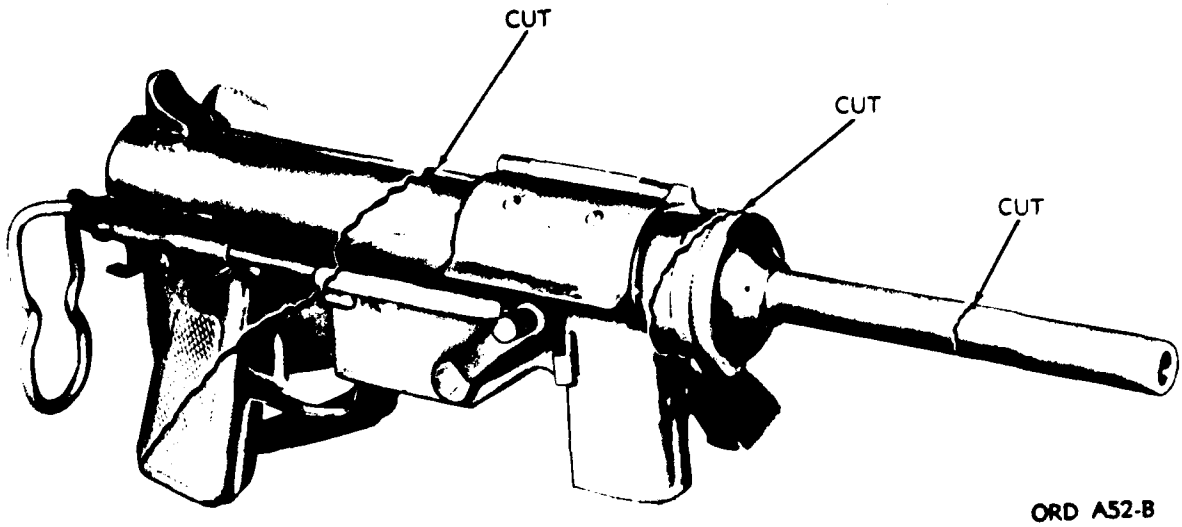

FIGURE 30. DEMILITARIZATION OF CAL. .45 M3 SERIES SUBMACHINE GUN

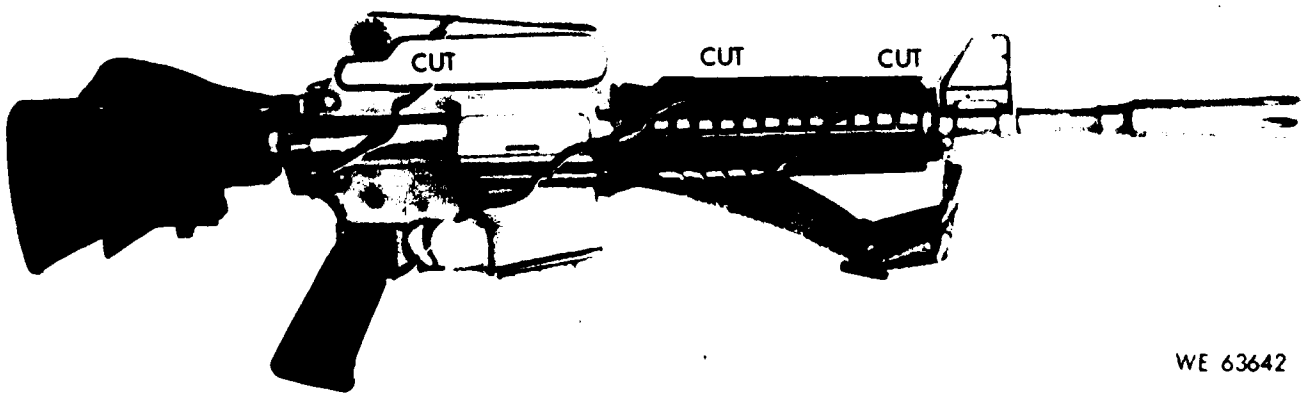

FIGURE 31. DEMILITARIZATION OF 5.56MM SUBMACHINE GUN, XM77E2

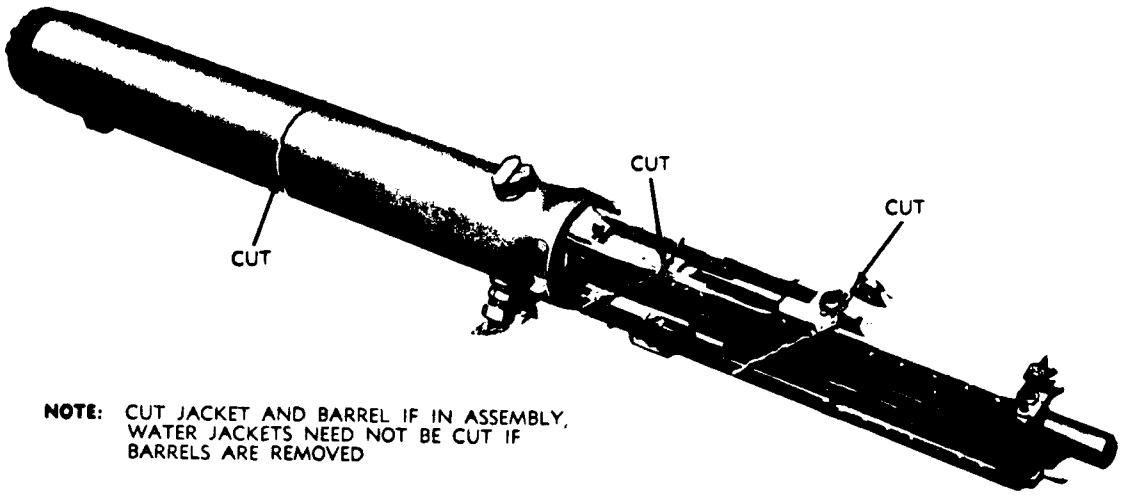

FIGURE 32. DEMILITARIZATION OF CAL. .30/.50 BROWNING WATERCOOLED MACHINE GUN

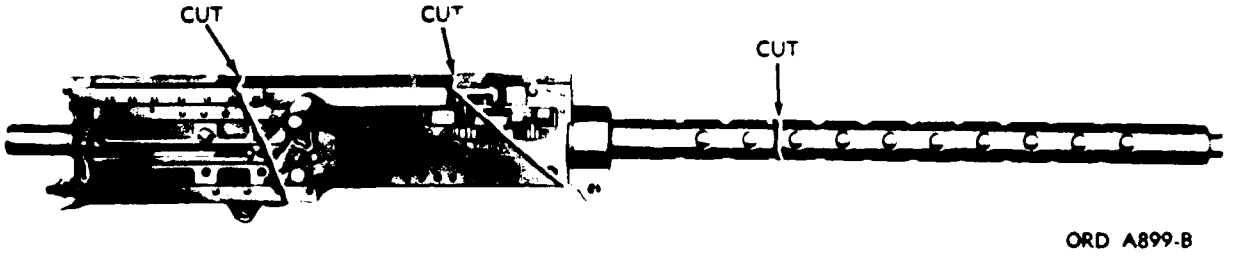

FIGURE 33. DEMILITARIZATION OF CAL. .30 BROWNING MACHINE GUN (ALL SERIES)

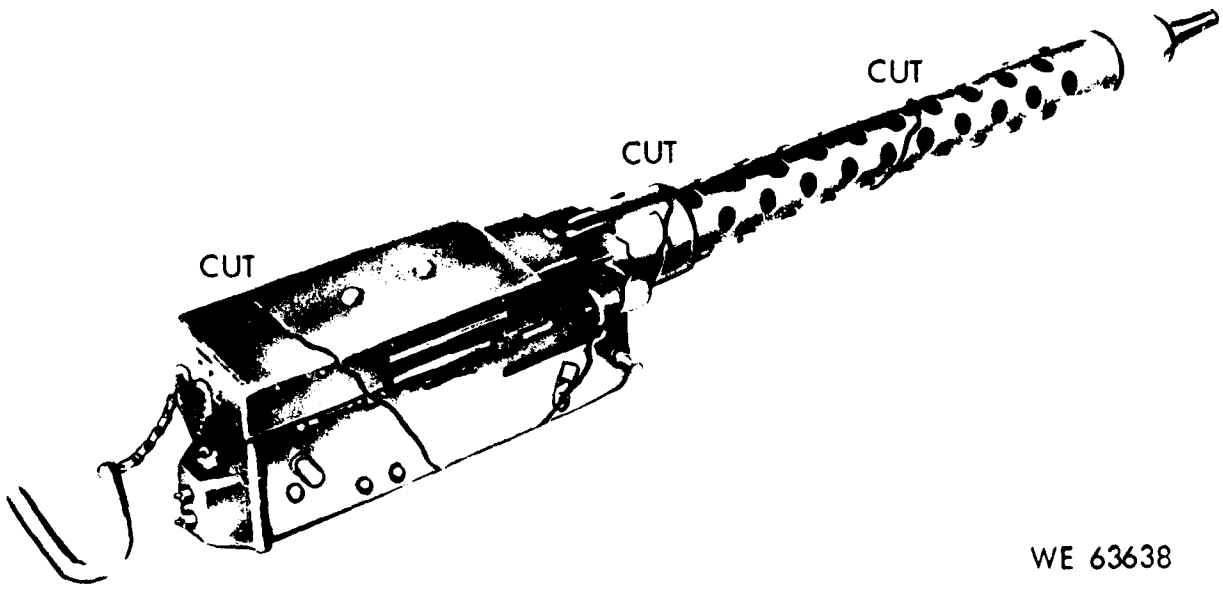

FIGURE 34. DEMILITARIZATION OF 7.62MM, M73, AND M73E1 MACHINE GUNS

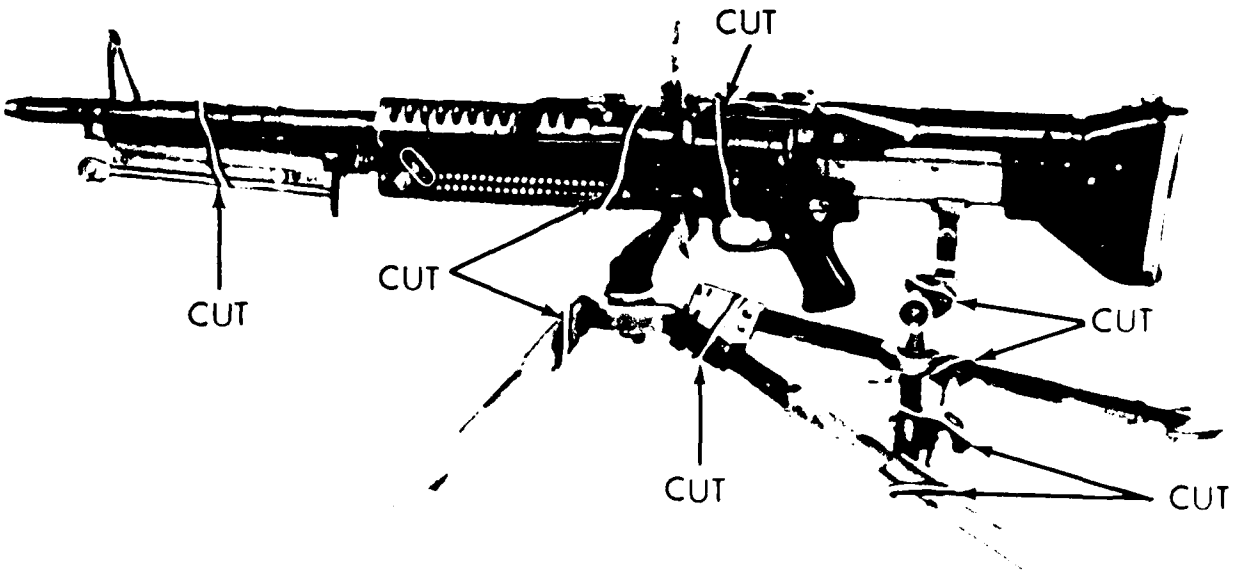

FIGURE 35. DEMILITARIZATION OF 7.62MM M60 SERIES MACHINE GUNS

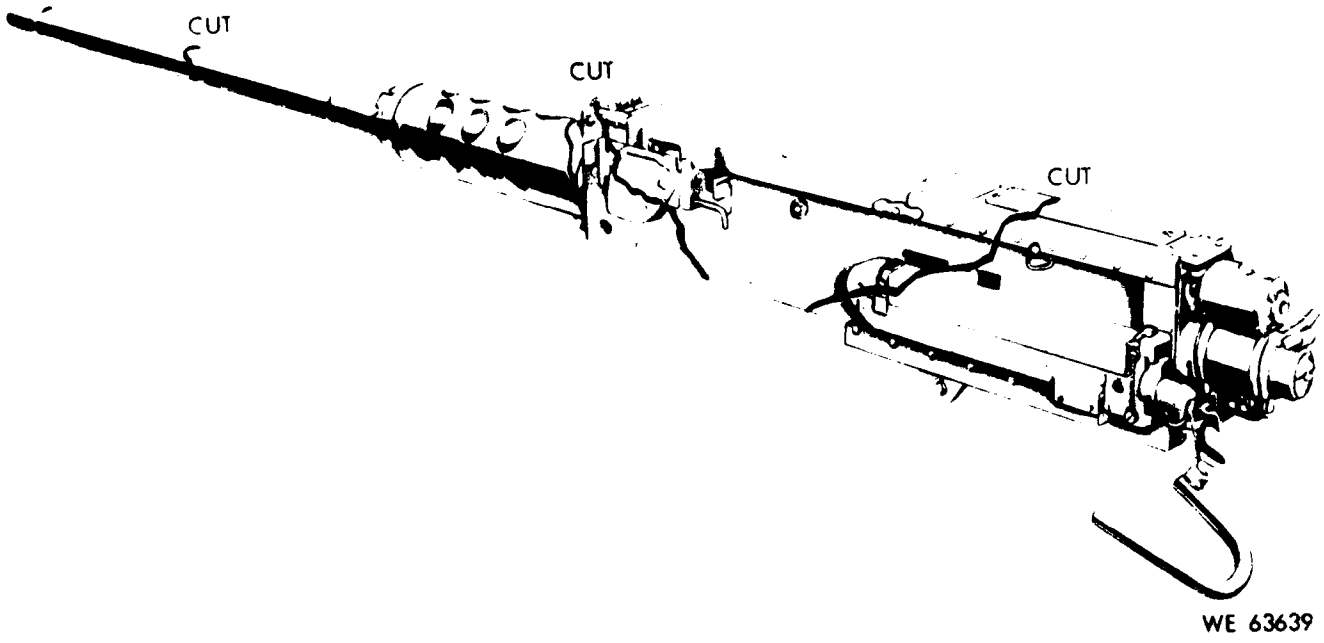

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FIGURE 36. DEMILITARIZATION OF CAL. .50 M2 MACHINE GUN

FIGURE 37. DEMILITARIZATION OF CAL. .50 M85 MACHINE GUN

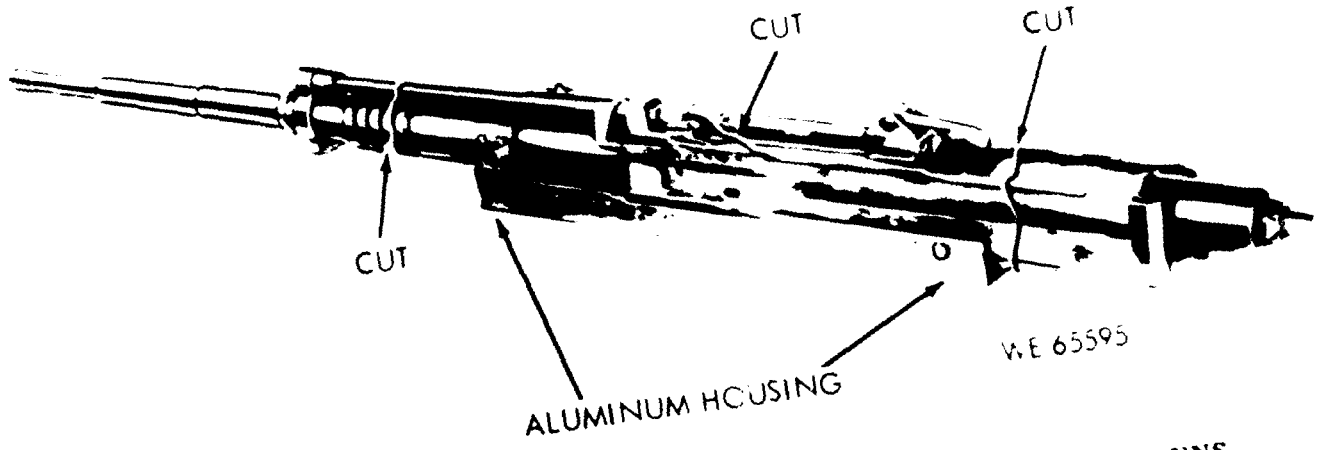


FIGURE 38. DEMILITARIZATION OF 20MM M3 AND M24 SERIES GUNS

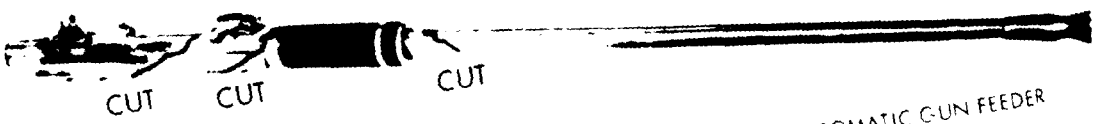


FIGURE 1-4. 20-MILLIMETER AUTOMATIC GUN, M139 WITHOUT AUTOMATIC GUN FEEDER AND RECOIL ADAPTER - RIGHT FRONT VIEW.

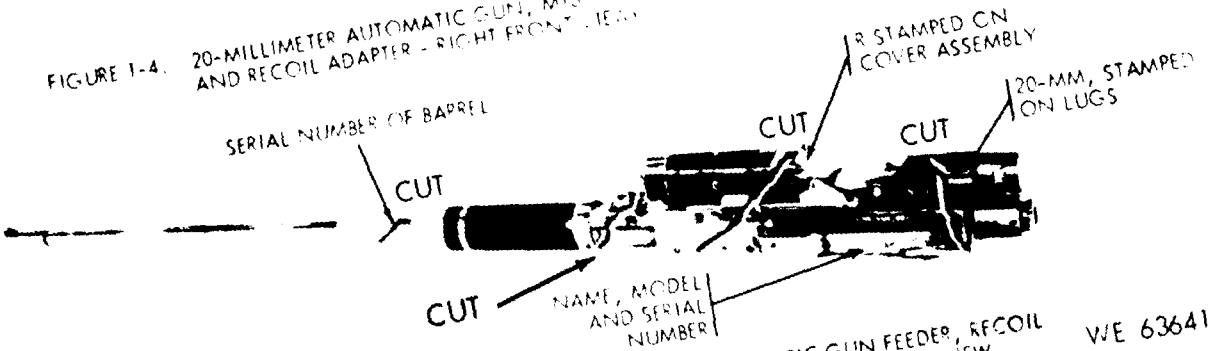


FIGURE 1-5. 20-MILLIMETER AUTOMATIC GUN M139 WITH AUTOMATIC GUN FEEDER, RECOIL ADAPTER, CONTROLS AND IDENTIFICATION MARKINGS - LEFT REAR VIEW.

FIGURE 39. DEMILITARIZATION OF 20MM M139 GUN

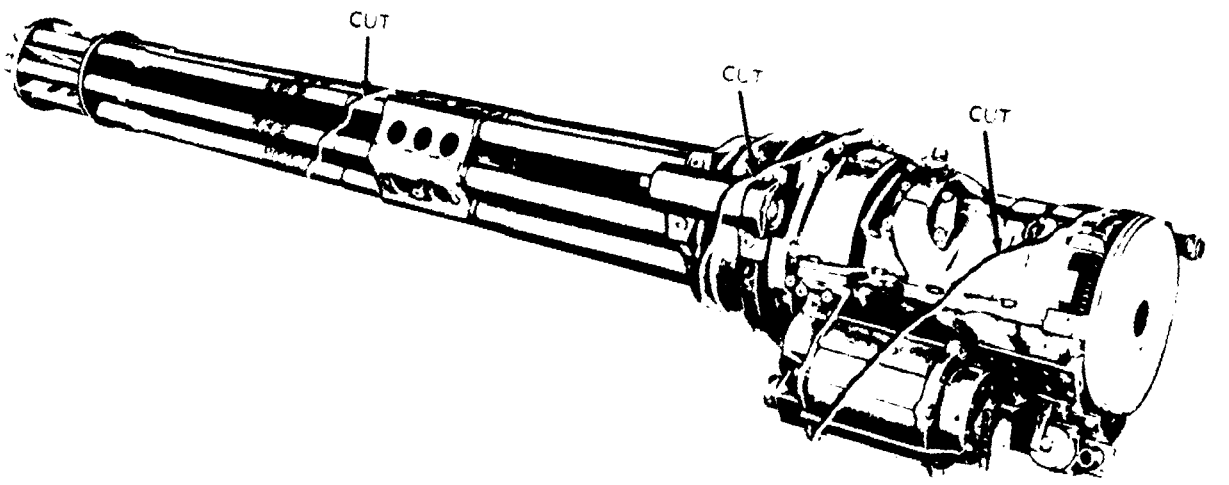


FIGURE 40. DEMILITARIZATION OF 20MM, M61, AND XM168 GUNS

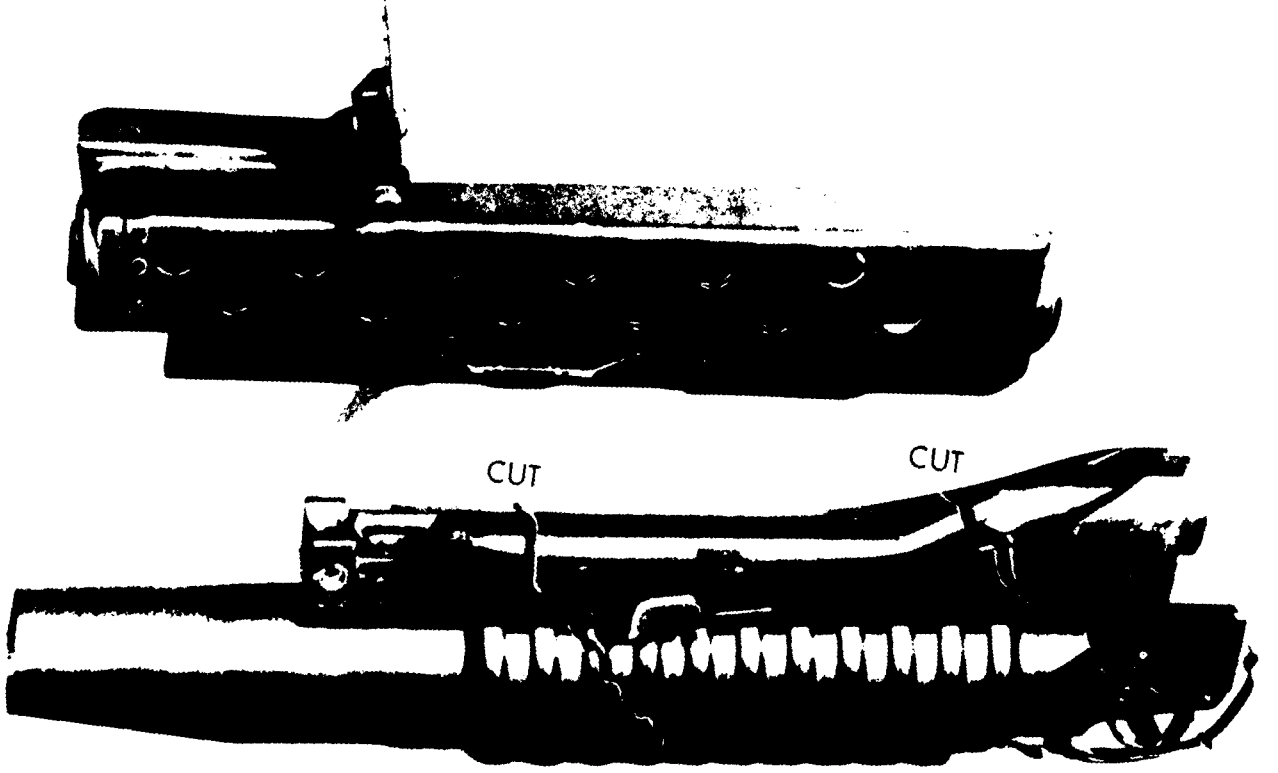
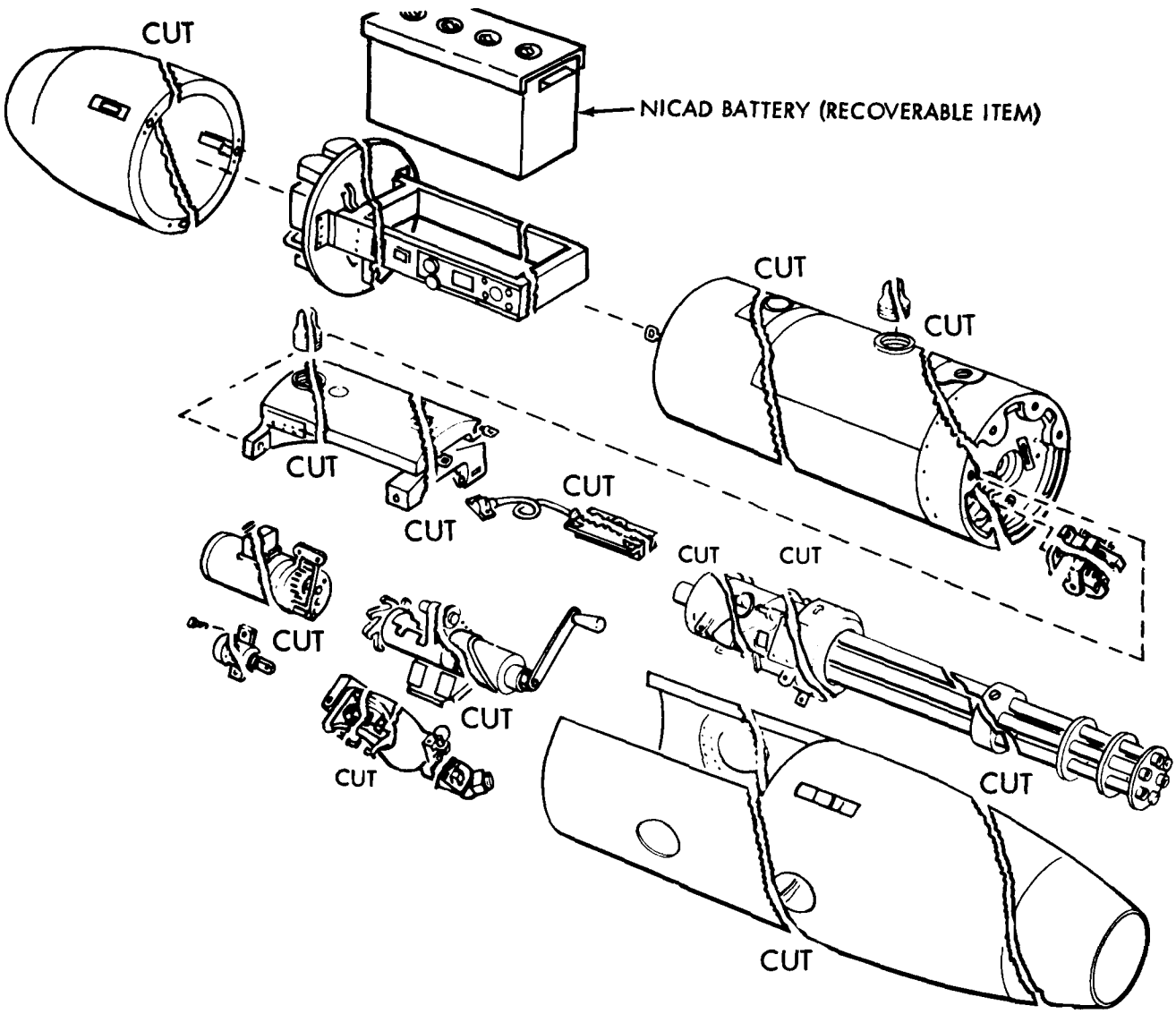


FIGURE 41. LAUNCHER, GRENADE 40MM, XM203

WE 63643



DEMILITARIZATION OF M18/18E1 SUBSYSTEM.

AR 900041

FIGURE 42. DEMILITARIZATION OF M18/M18E1 7.62MM MACHINE GUN AIRCRAFT ARMAMENT POD

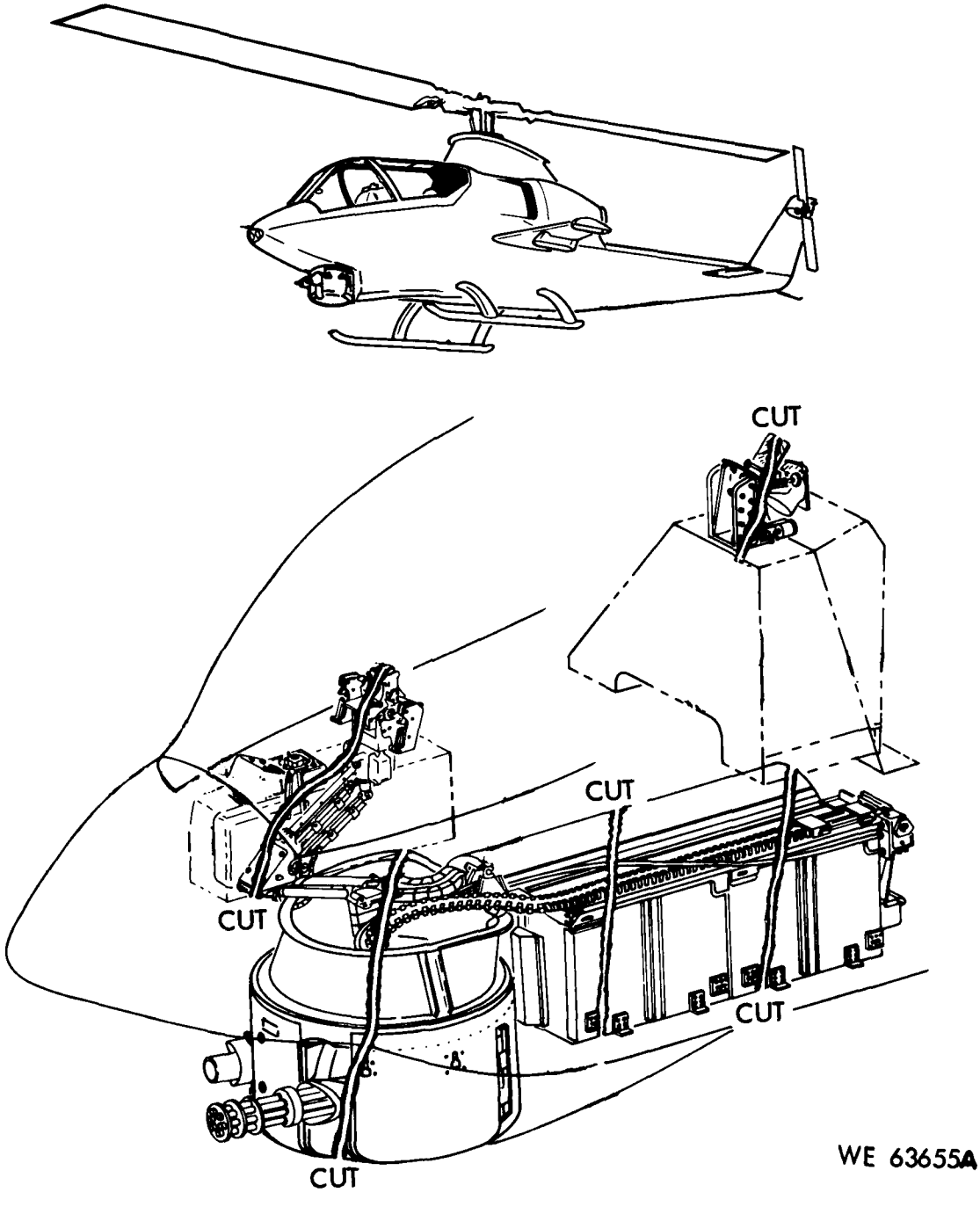
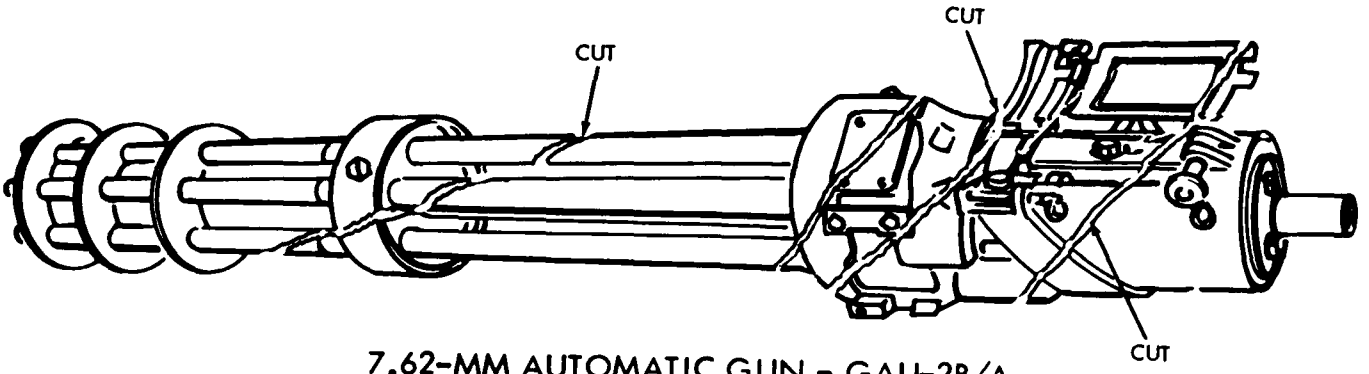
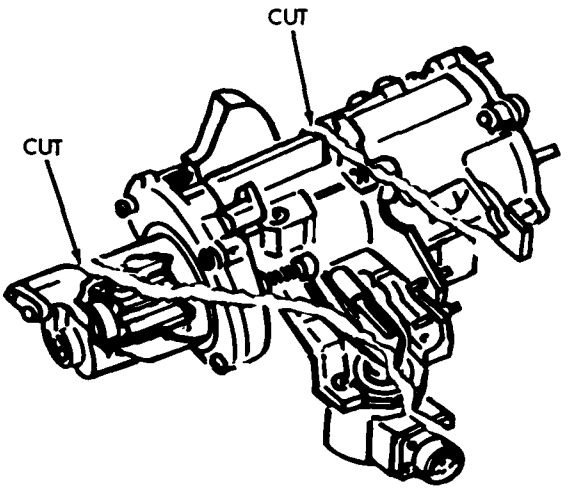


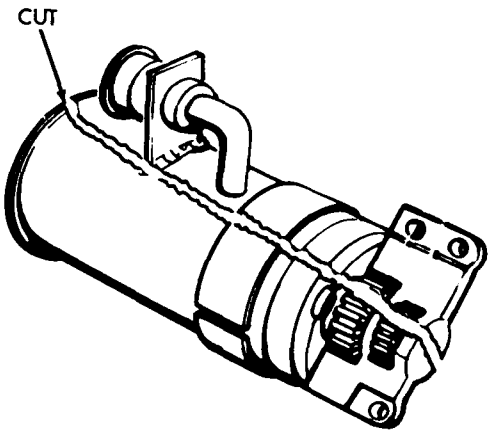
FIGURE 43. DEMILITARIZATION OF XM28 7.62MM MACHINE GUN — 40MM GRENADE LAUNCHER HELICOPTER ARMAMENT SUBSYSTEM



7.62-MM AUTOMATIC GUN - GAU-2B/A



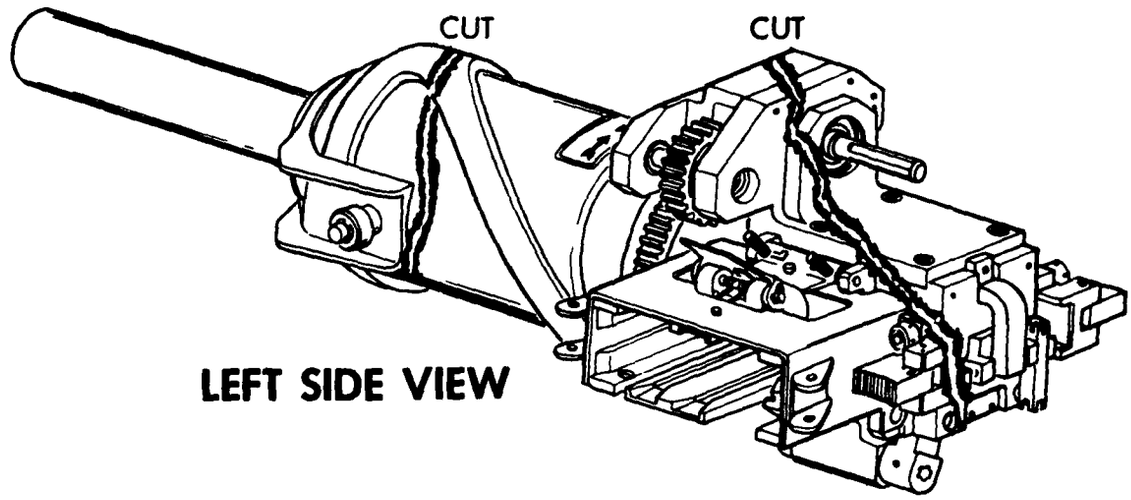
DELINKING FEEDER



ELECTRIC DRIVE ASSEMBLY

WE 63665

FIGURE 44. DEMILITARIZATION OF M134 (GAU-2B/A) 7.62MM MACHINE GUN



LAUNCHER, GRENADE-40MM, XM 129

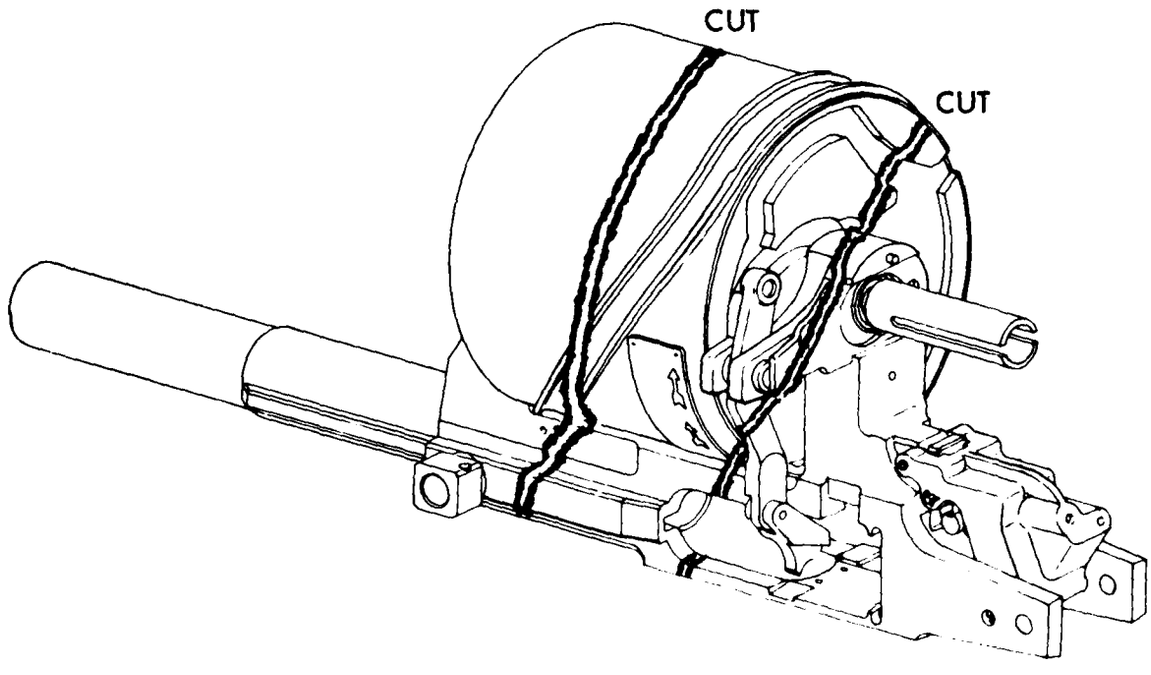


FIGURE 45. DEMILITARIZATION OF GRENADE LAUNCHERS

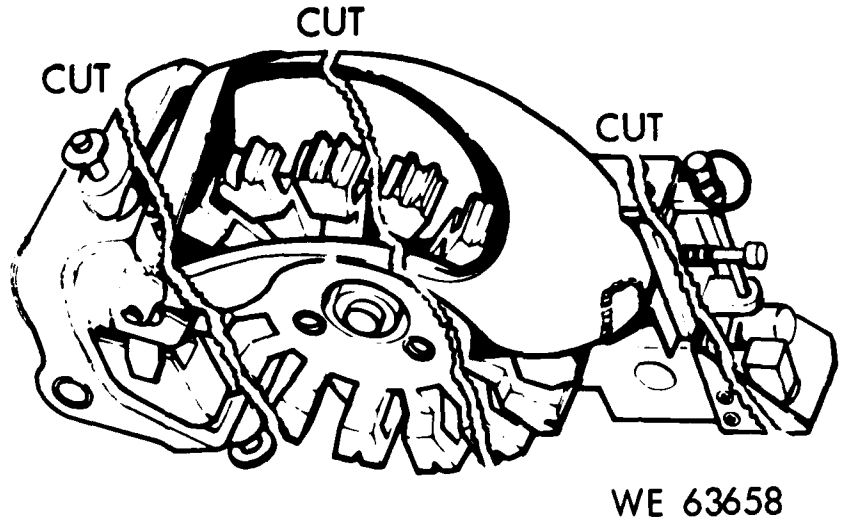


FIGURE 46. DEMILITARIZATION OF AUTOMATIC GUN FEEDER MAU-57A/A

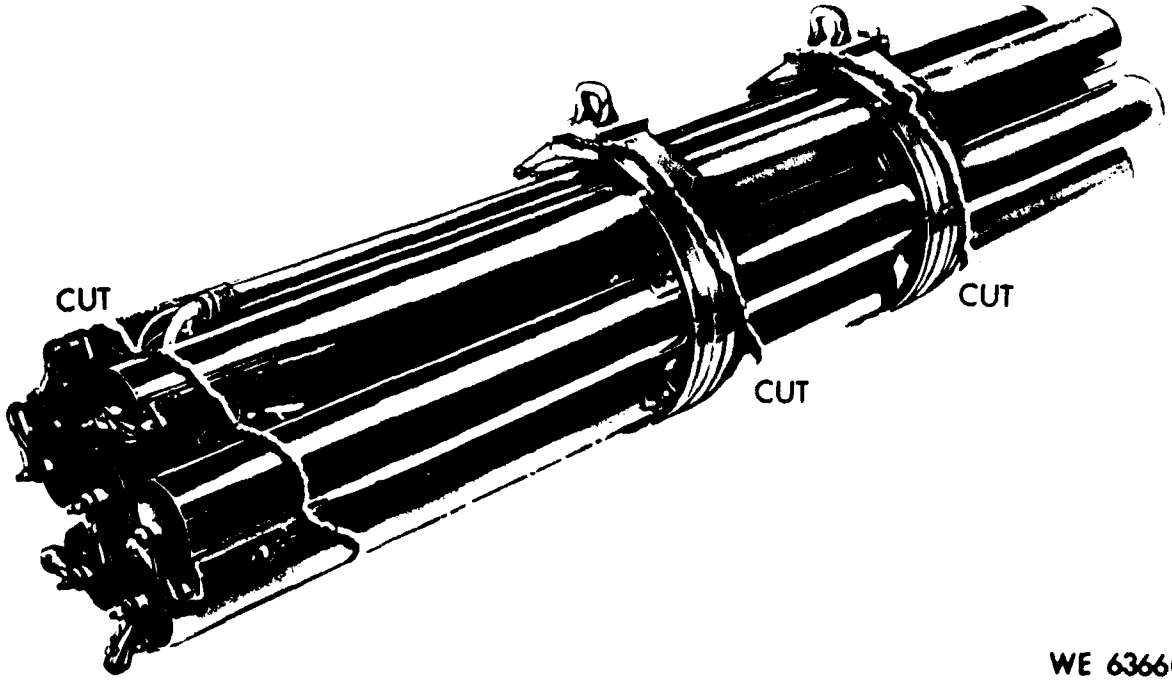


FIGURE 47. DEMILITARIZATION OF XM158 2.75-INCH AIRCRAFT ROCKET LAUNCHER

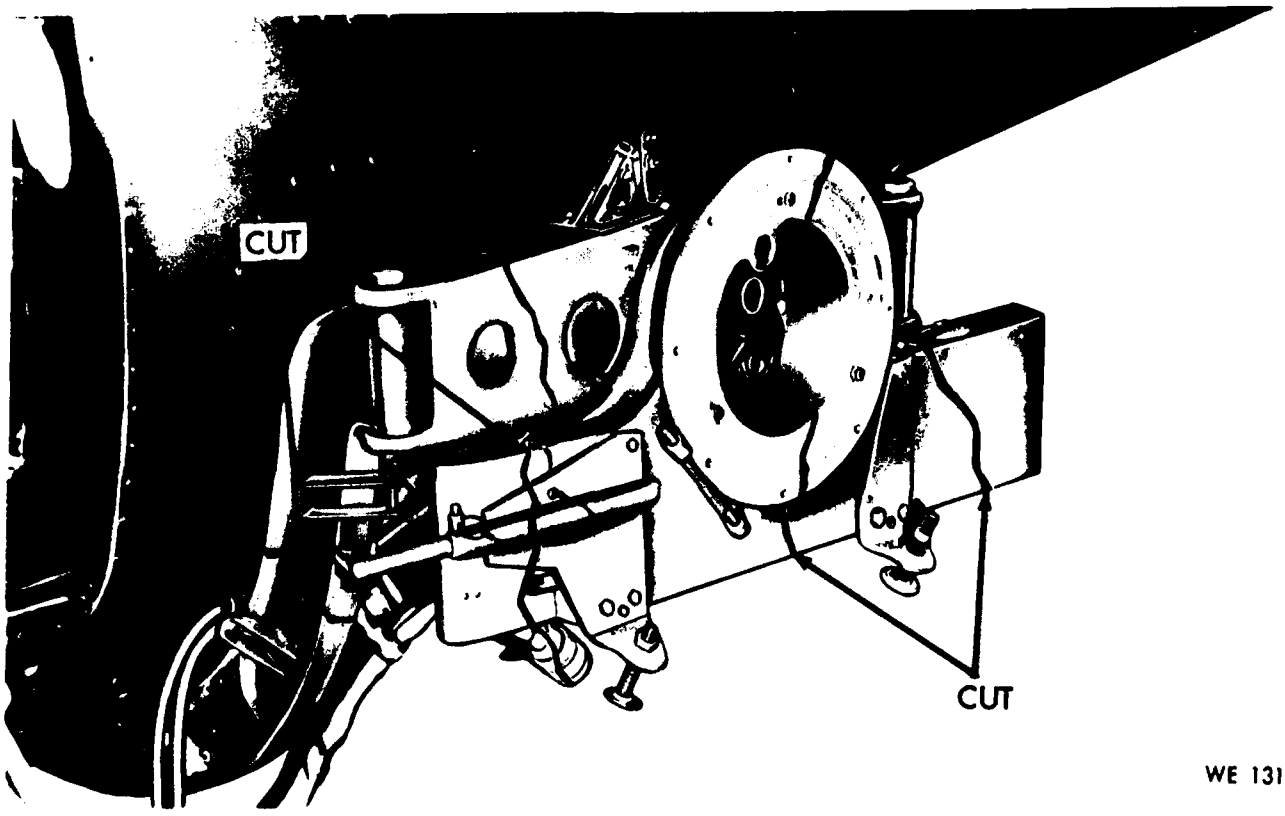


FIGURE 48. DEMILITARIZATION OF XM156 HELICOPTER MULTIARMAMENT MOUNT

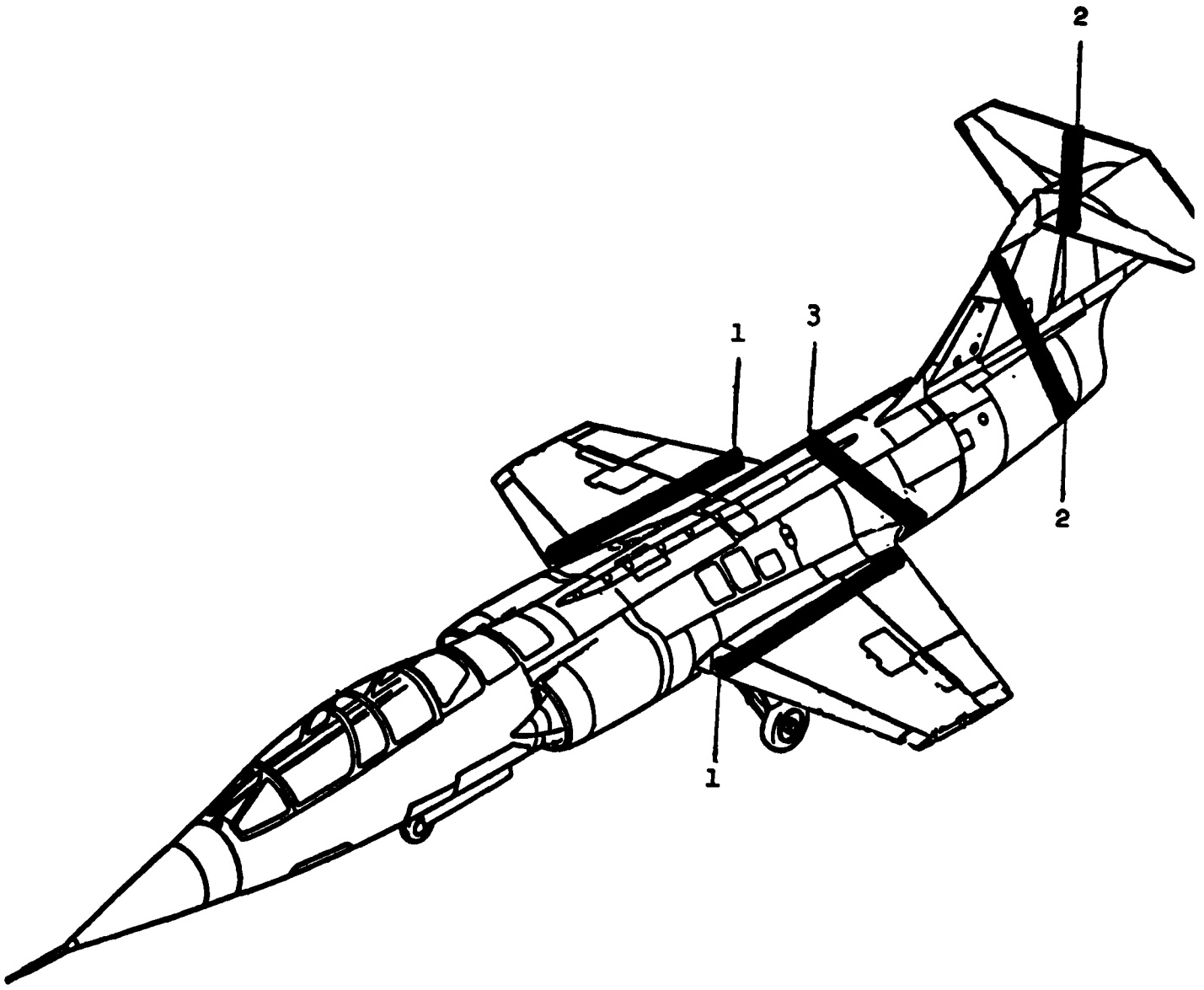


FIGURE 49. DEMILITARIZATION OF SINGLE ENGINE AIRCRAFT

1. Completely sever the wing spar where the wing attaches and becomes a part of the fuselage.
2. Mutilate the attaching fittings of the horizontal and vertical stabilizer.
3. Completely sever the fuselage at the most critical point between the wing and tail assembly.

40MM GRENADE LAUNCHER - M75

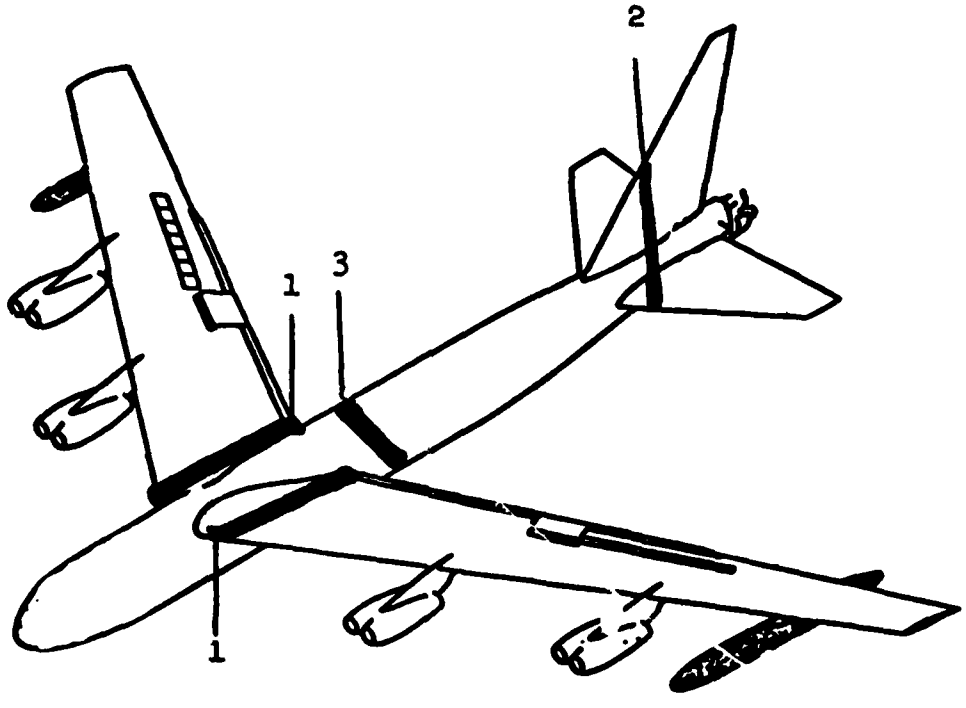
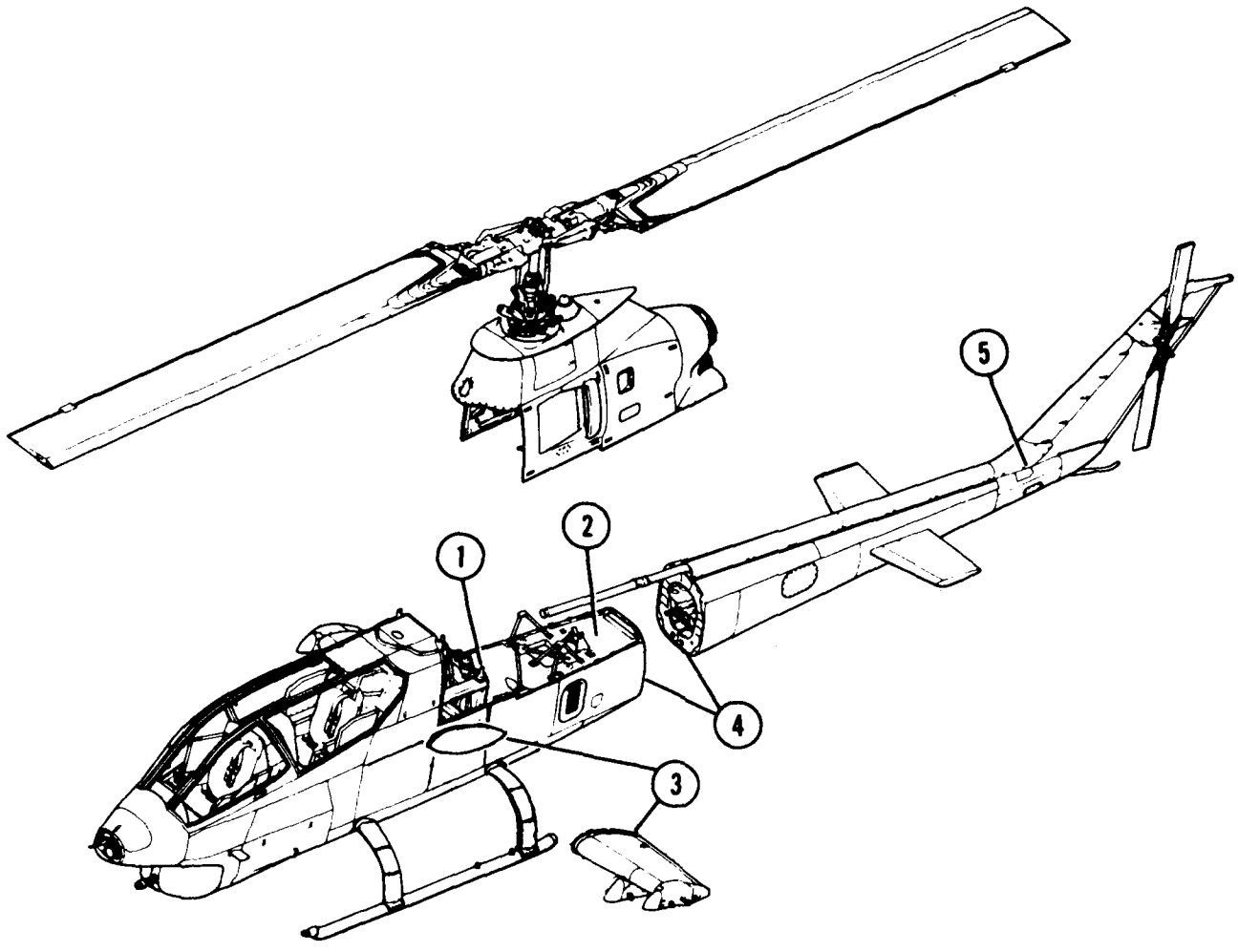


FIGURE 50. DEMILITARIZATION OF MULTIENGINE AIRCRAFT

1. Completely sever the wing spar where the wing attaches and becomes a part of the fuselage.
2. Mutilate the attaching fittings of the horizontal and vertical stabilizer.
3. Completely sever the fuselage at the most critical point between the wing and tail assembly.

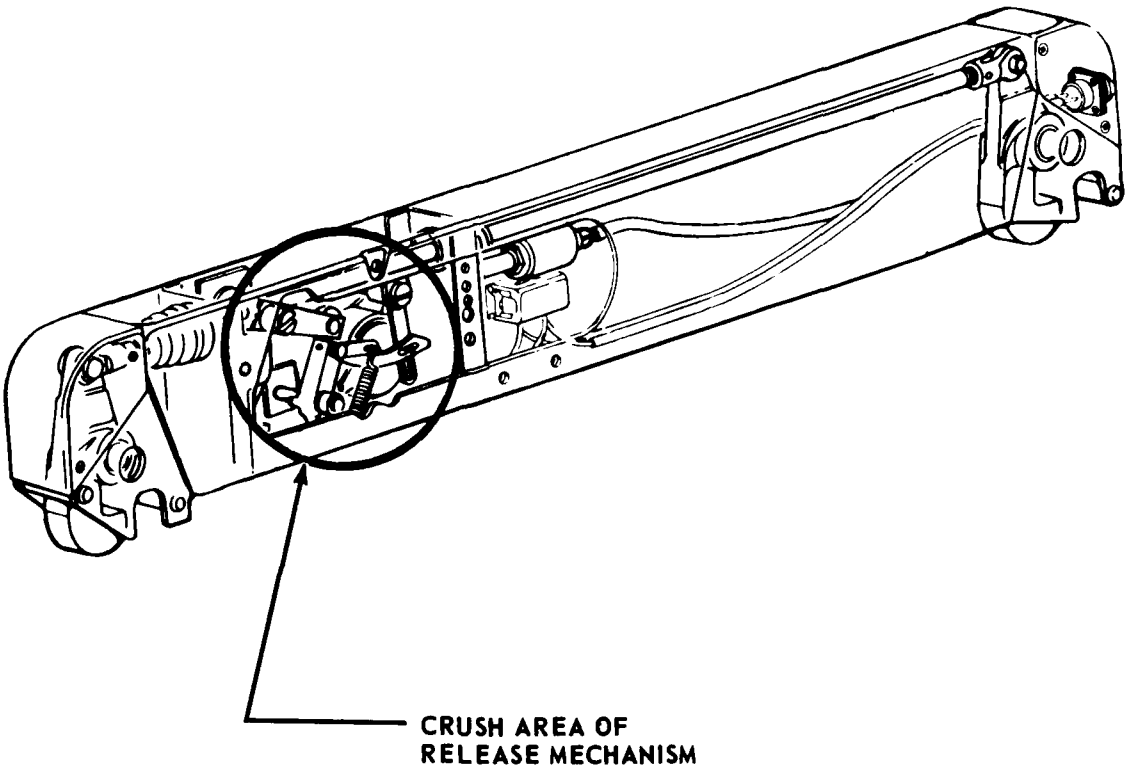


AIRCRAFT (FUSELAGE) ATTACHING FITTING WHICH REQUIRE DEMILITARIZATION

1. TRANSMISSION DECK IN AREA OF MOUNTS.
2. ENGINE DECK IN AREA OF MOUNTS.
3. WING TO FUSELAGE FITTINGS.
4. FUSELAGE SECTION TO FUSELAGE SECTION.
5. TAIL ROTOR GEAR BOX MOUNTING STRUCTURE.

NOTE: AIRFRAME (FUSELAGE) WILL BE MUTILATED BY DESTROYING ATTACHING STRUCTURE BY CUTTING, CHOPPING, TEARING, SHREDDING, CRUSHING, OR SMELTING TO THE DEGREE THAT AIRCRAFT WILL BE UNFIT FOR REPAIR OR FLIGHT.

FIGURE 51. DEMILITARIZATION OF ATTACK HELICOPTER



DEMILITARIZATION OF ELECTRICALLY-
OPERATED AIRCRAFT BOMB RACK
(F–100 SHOWN)

FIGURE 52. DEMILITARIZATION OF BOMB RACK ELECTRICALLY OPERATED

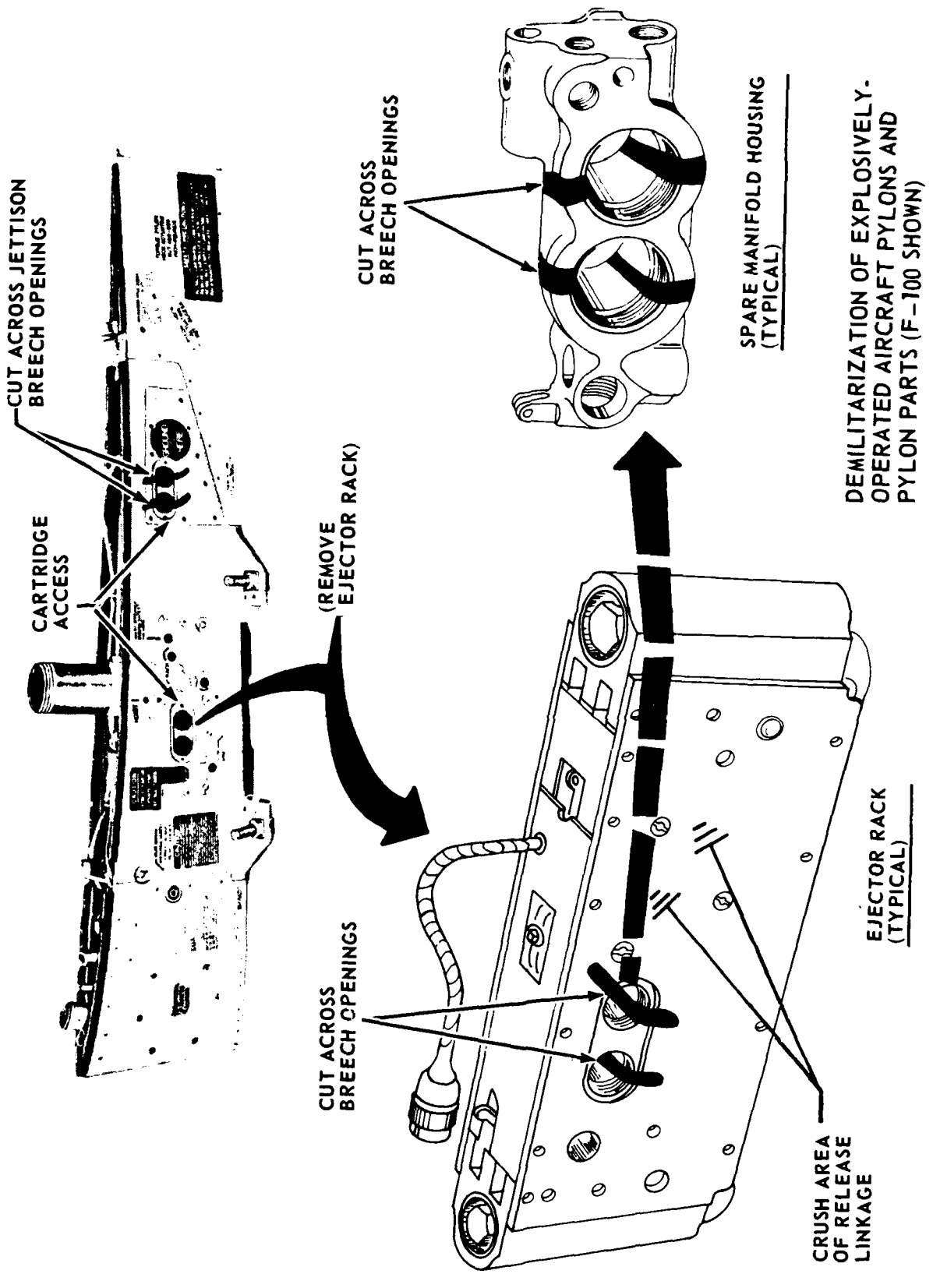


FIGURE 53. DEMILITARIZATION OF AIRCRAFT PYLONS AND PYLON PARTS

FIGURE 54. DEMILITARIZATION OF MACHINE GUN TRIPOD MOUNT M1917A1

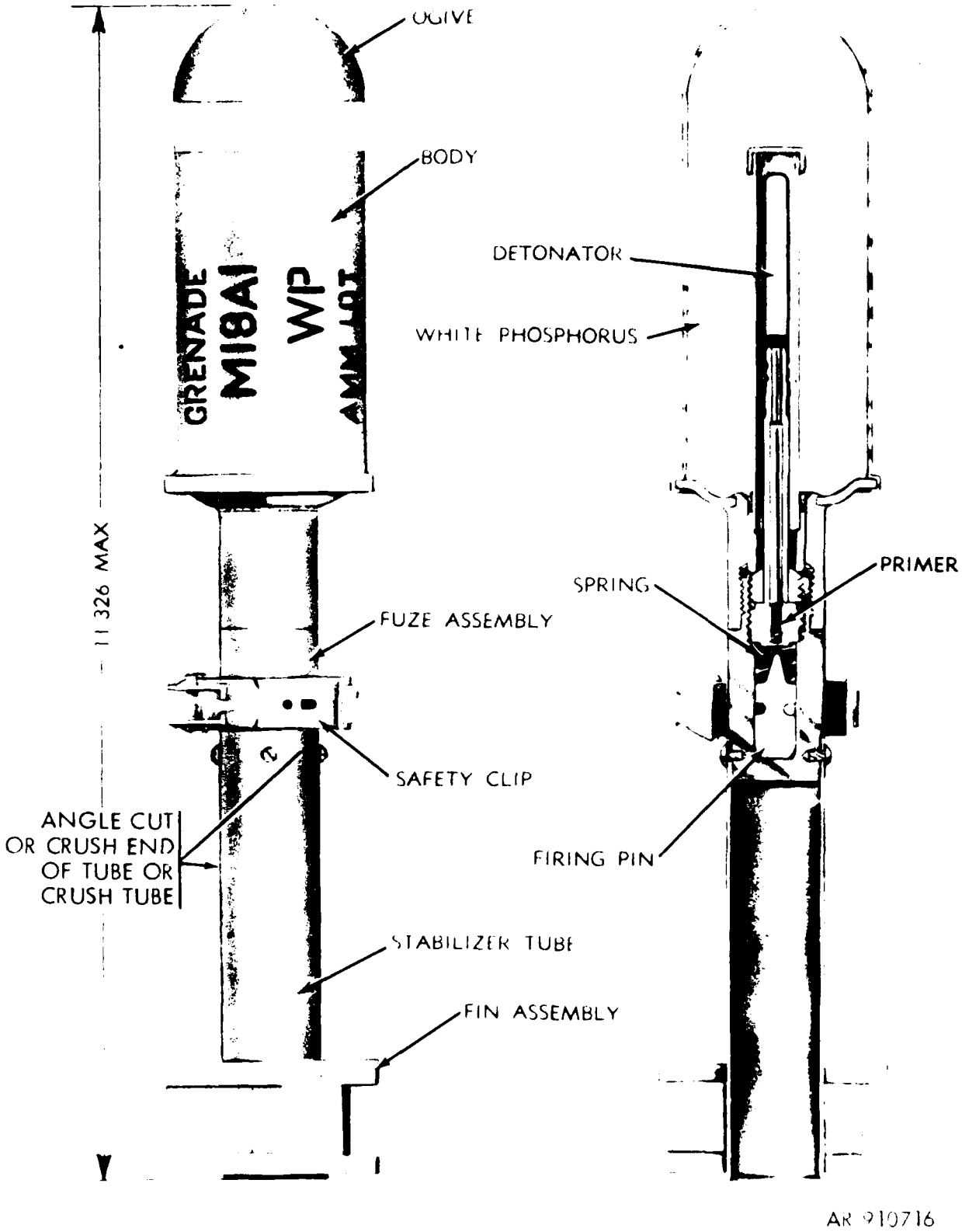


FIGURE 55. DEMILITARIZATION OF GRENADE, RIFLE

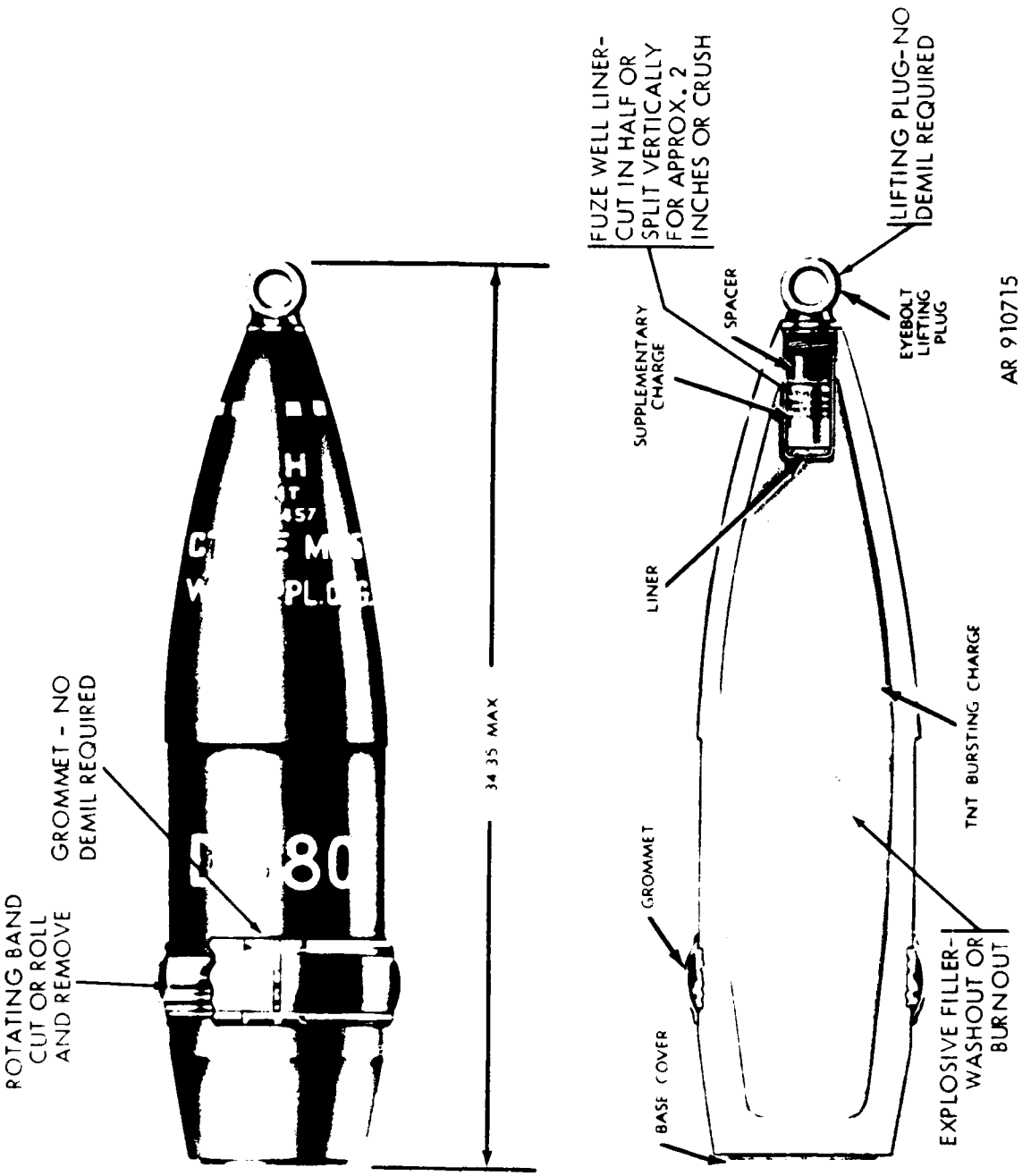


FIGURE 56. DEMILITARIZATION OF ARTILLERY PROJECTILE

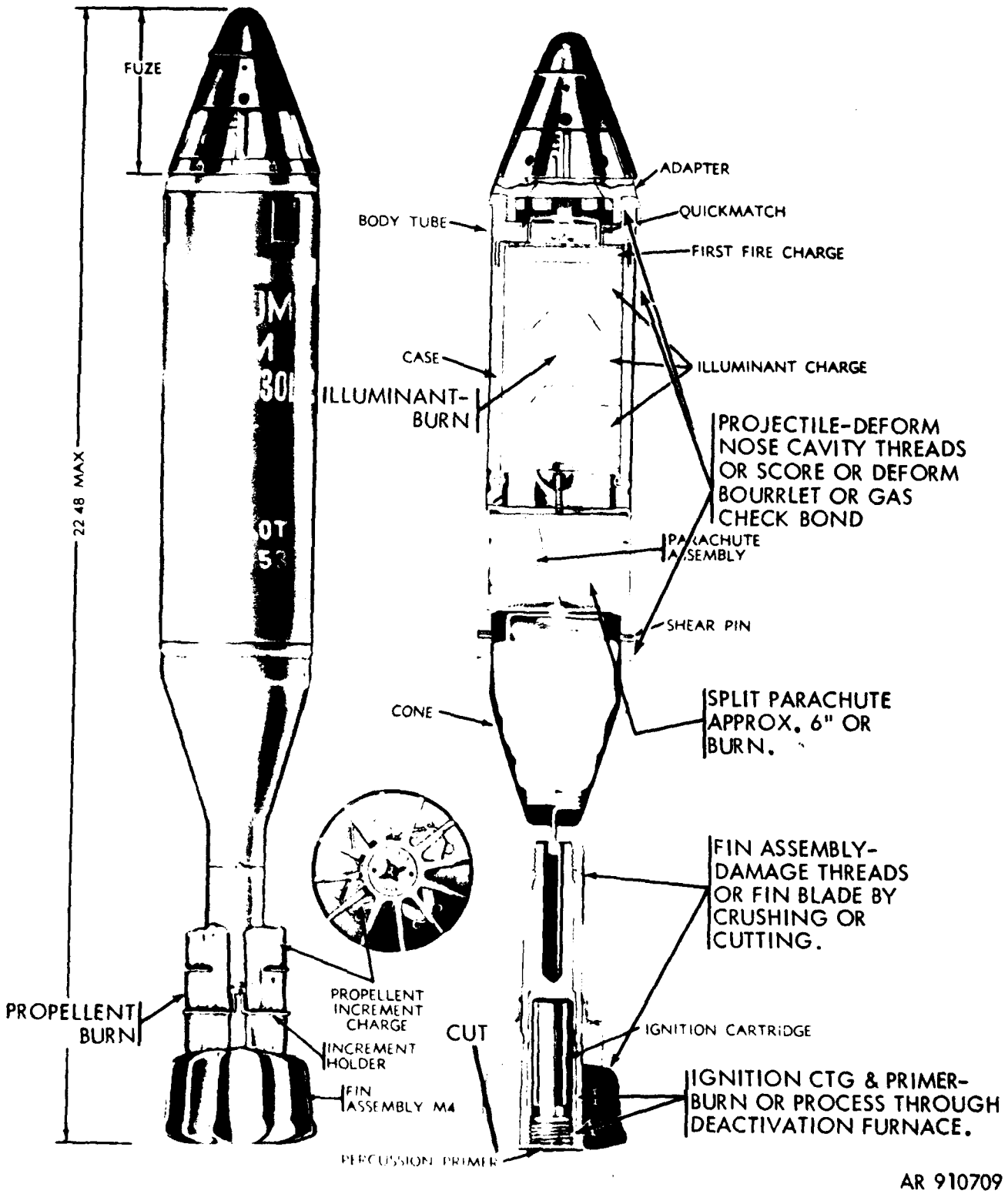


FIGURE 57. DEMILITARIZATION OF MORTAR AMMUNITION

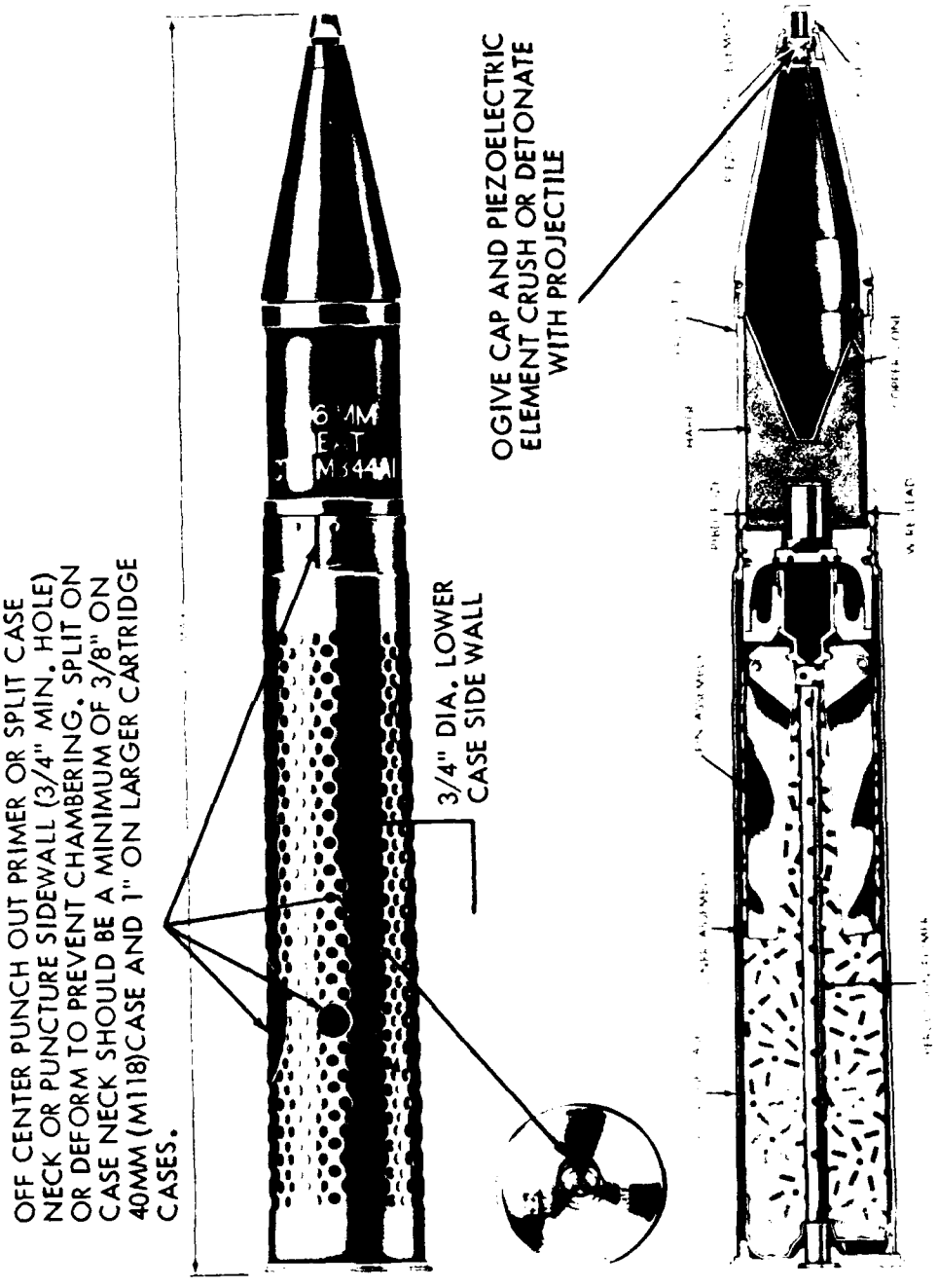


FIGURE 58. DEMILITARIZATION OF ARTILLERY AMMUNITION

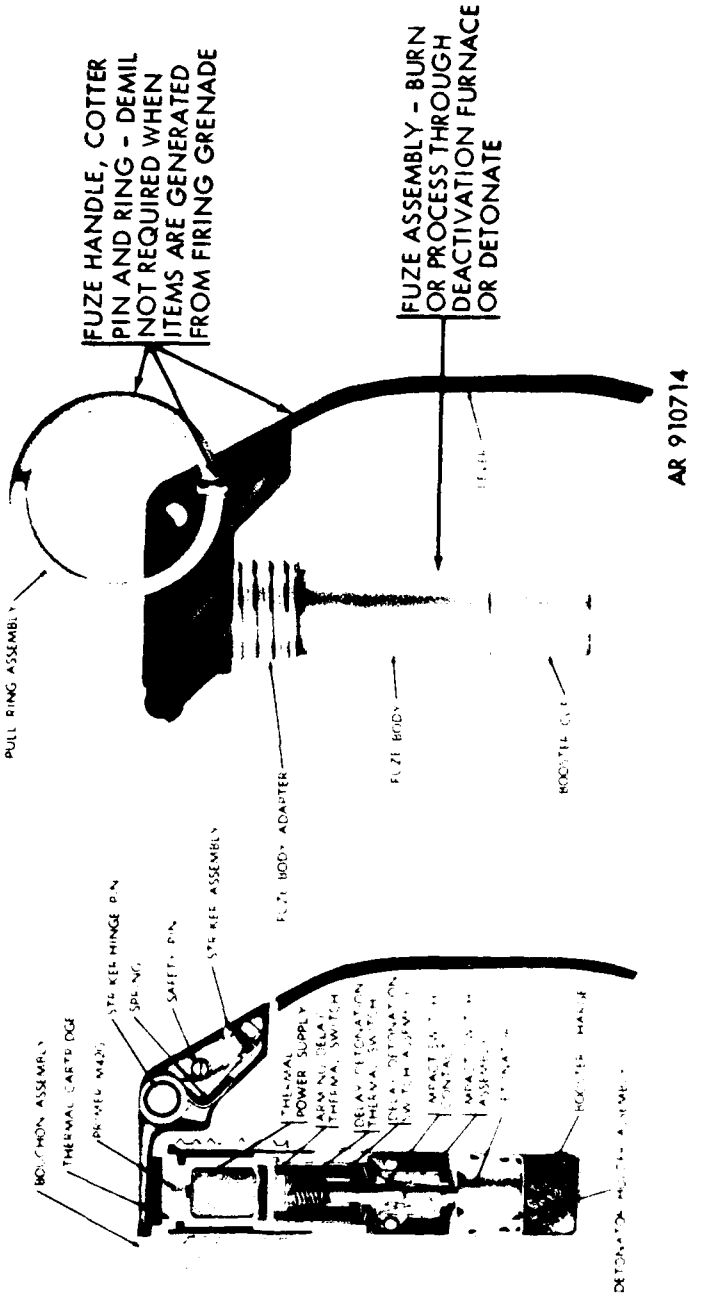


FIGURE 59. DEMILITARIZATION OF FUZE, HAND GRENADE

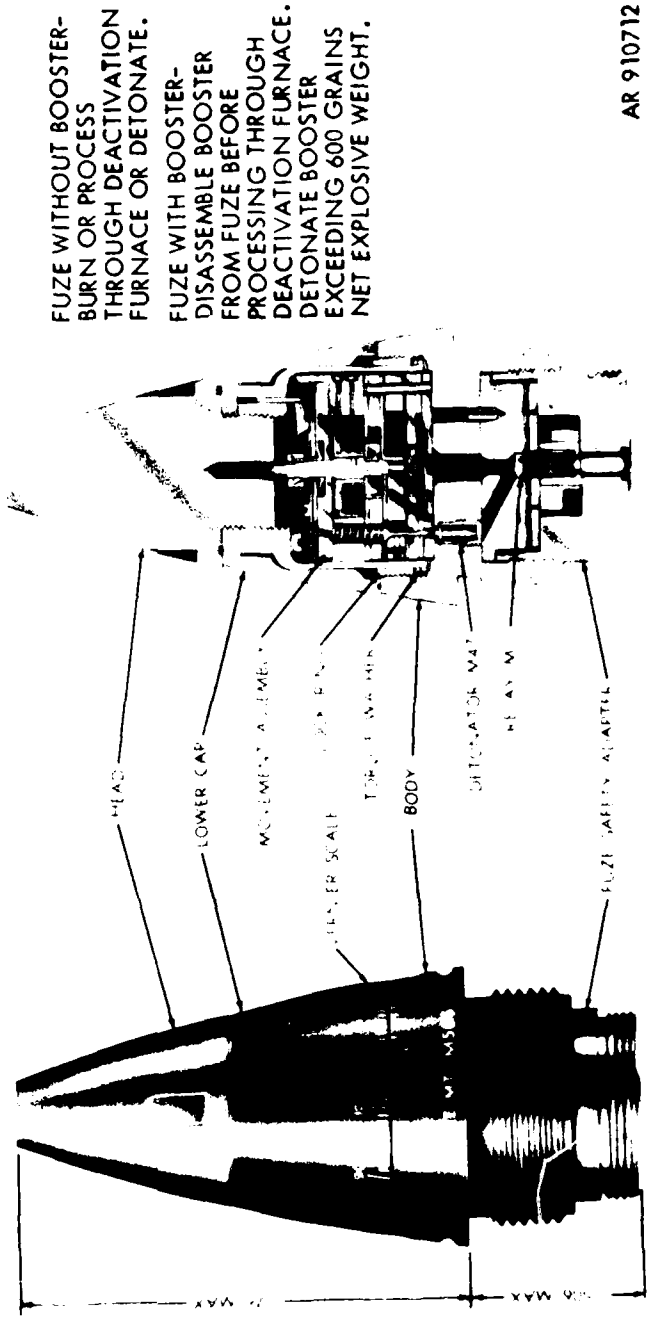


FIGURE 60. DEMILITARIZATION OF FUZE FOR ARTILLERY AMMUNITION

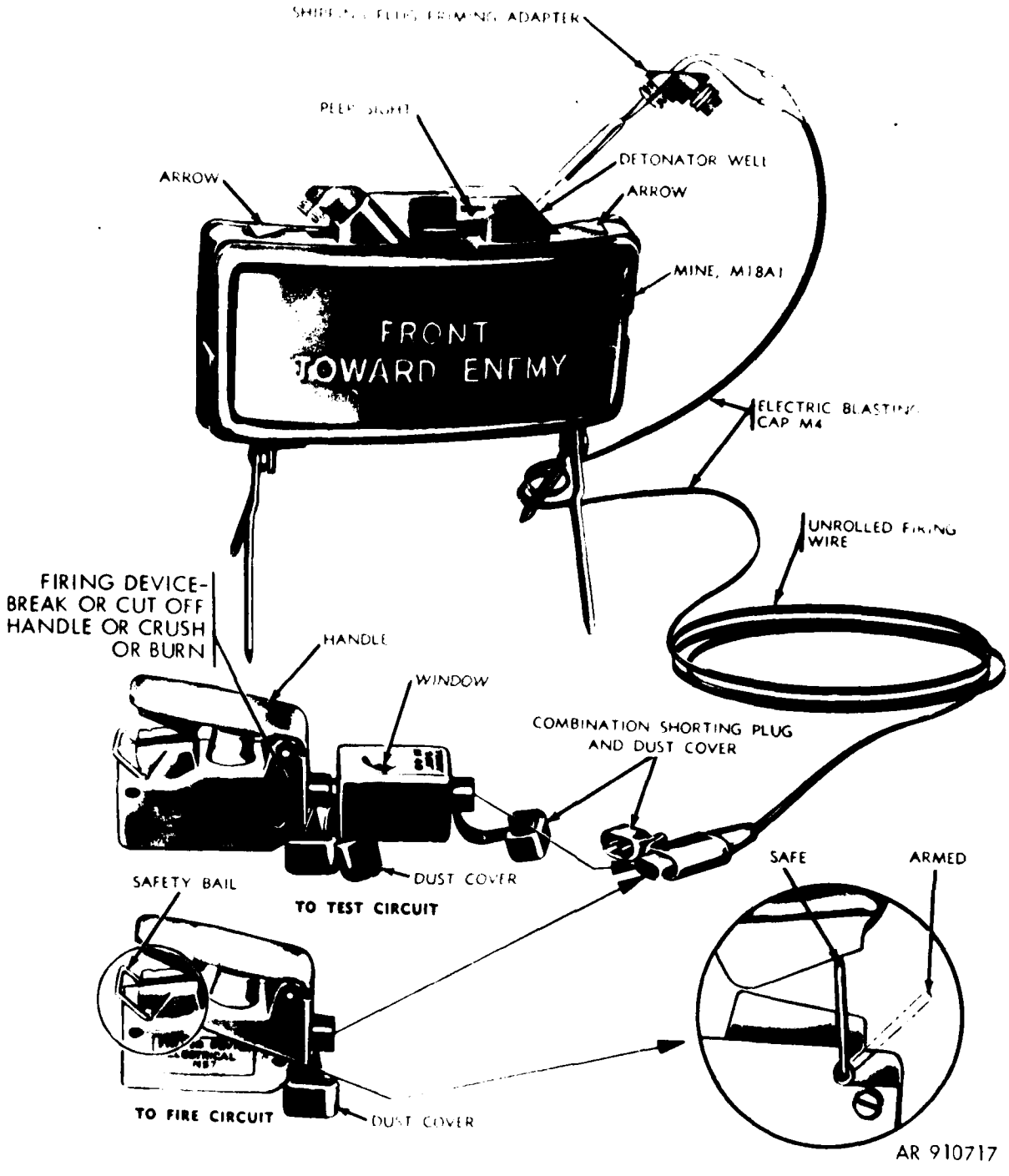
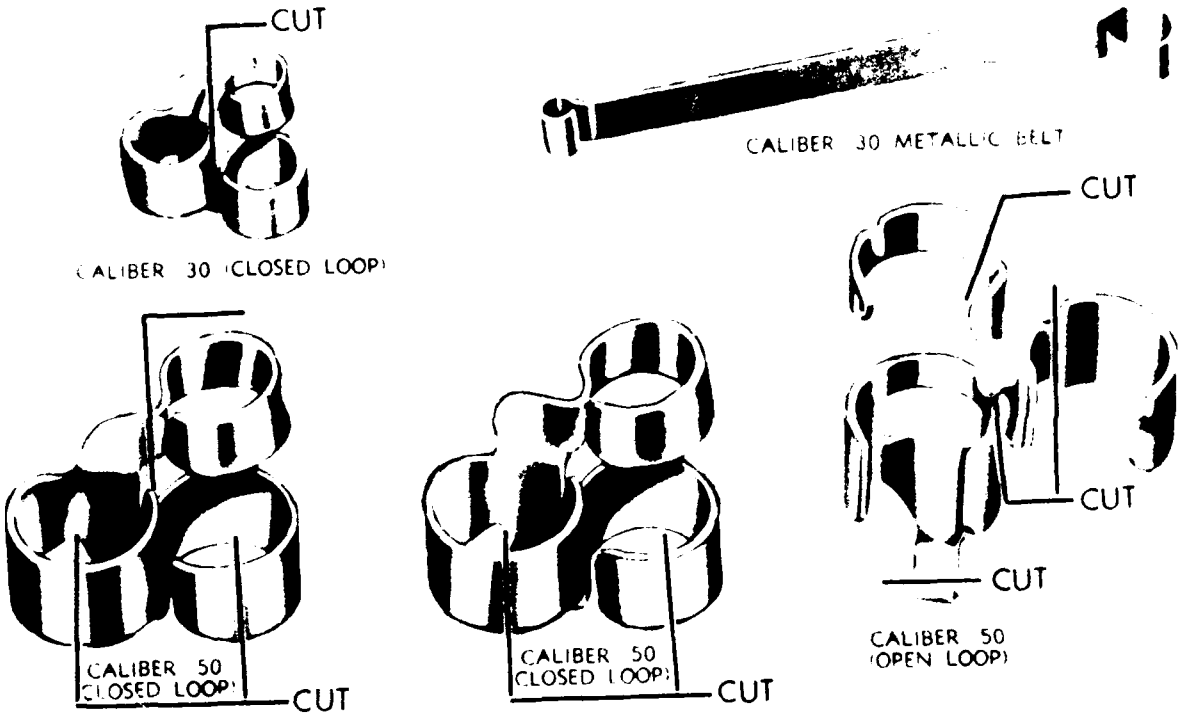


FIGURE 61. DEMILITARIZATION OF FIRING DEVICE FOR ANTI PERSONNEL MINE



NEW/UNUSED LINKS:

CUT IN ANY ONE AREA OR CRUSH ANY ONE LOOP TO PREVENT A ROUND OF AMMUNITION FROM BEING INSERTED IN A NORMAL MANNER. USED (FIRED OR DISTORTED/BENT NEW LINKS) DO NOT REQUIRE DEMILITARIZATION.

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FIGURE 62. DEMILITARIZATION OF LINKS FOR SMALL ARMS AMMUNITION

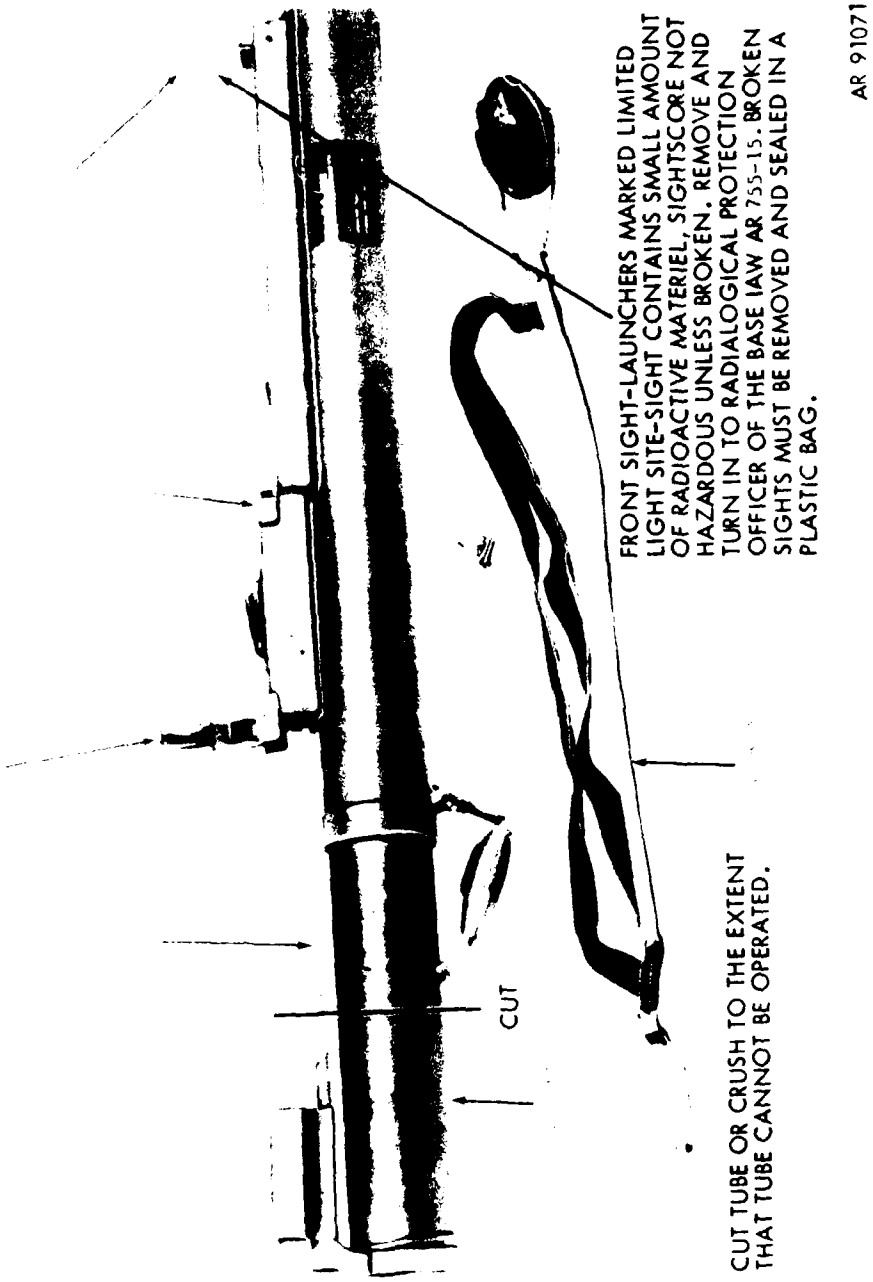


FIGURE 63. DEMILITARIZATION OF LAUNCHER, ROCKET, 66MM, M72 SERIES

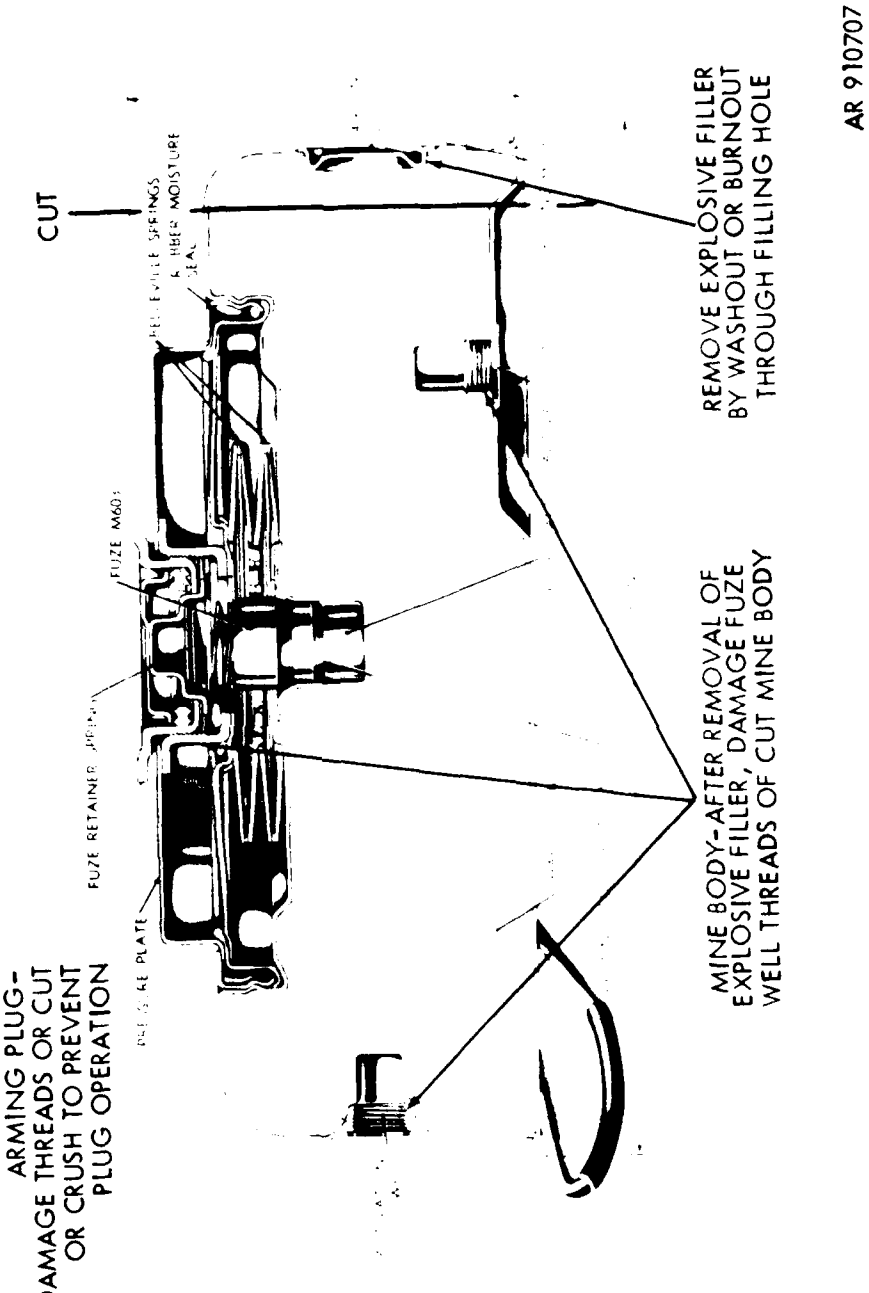


FIGURE 64. DEMILITARIZATION OF MINE, ANTI-TANK

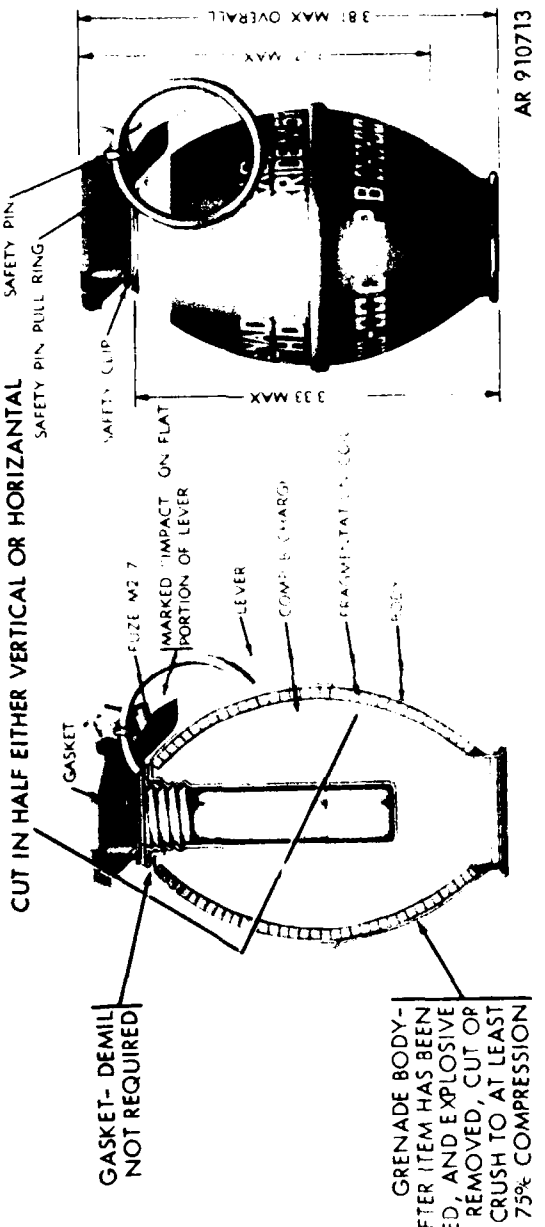


FIGURE 65. DEMILITARIZATION OF GRENADE, HAND, FRAGMENTATION

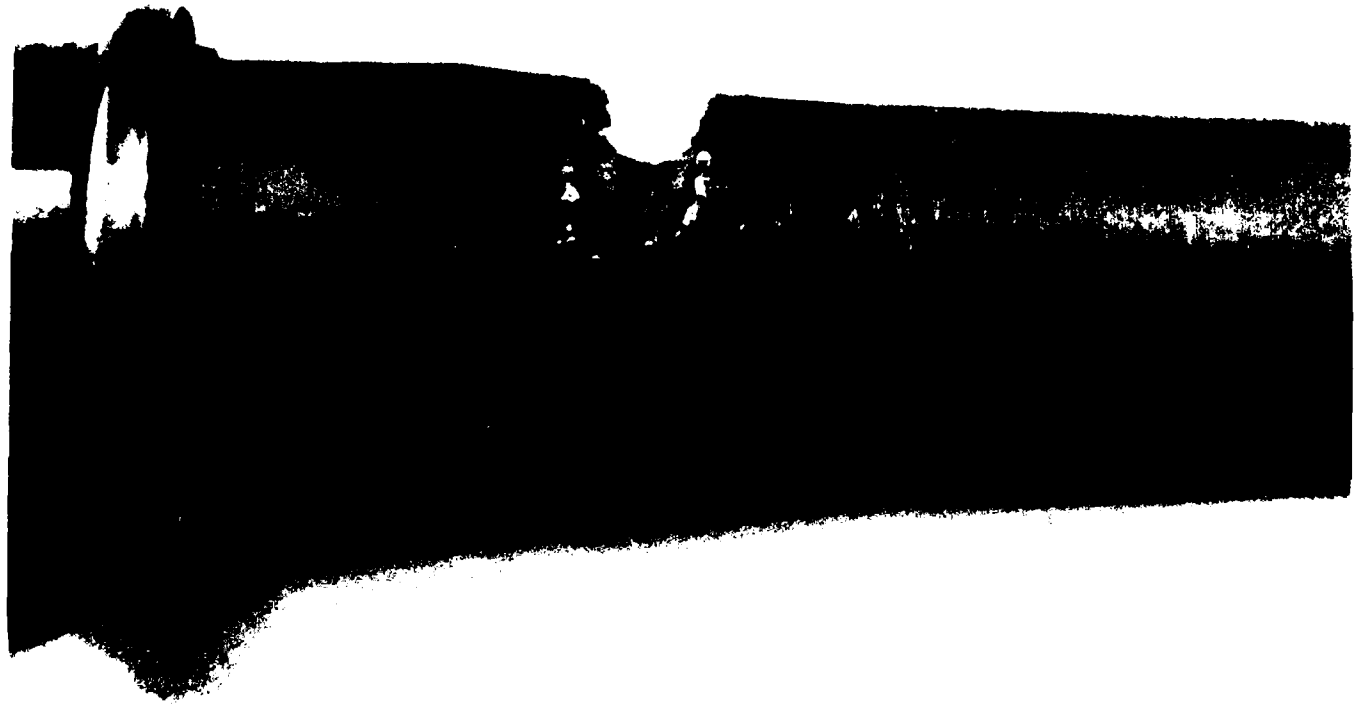


FIGURE 66. DEMILITARIZATION OF BARREL FOR M1903 DRILL RIFLE

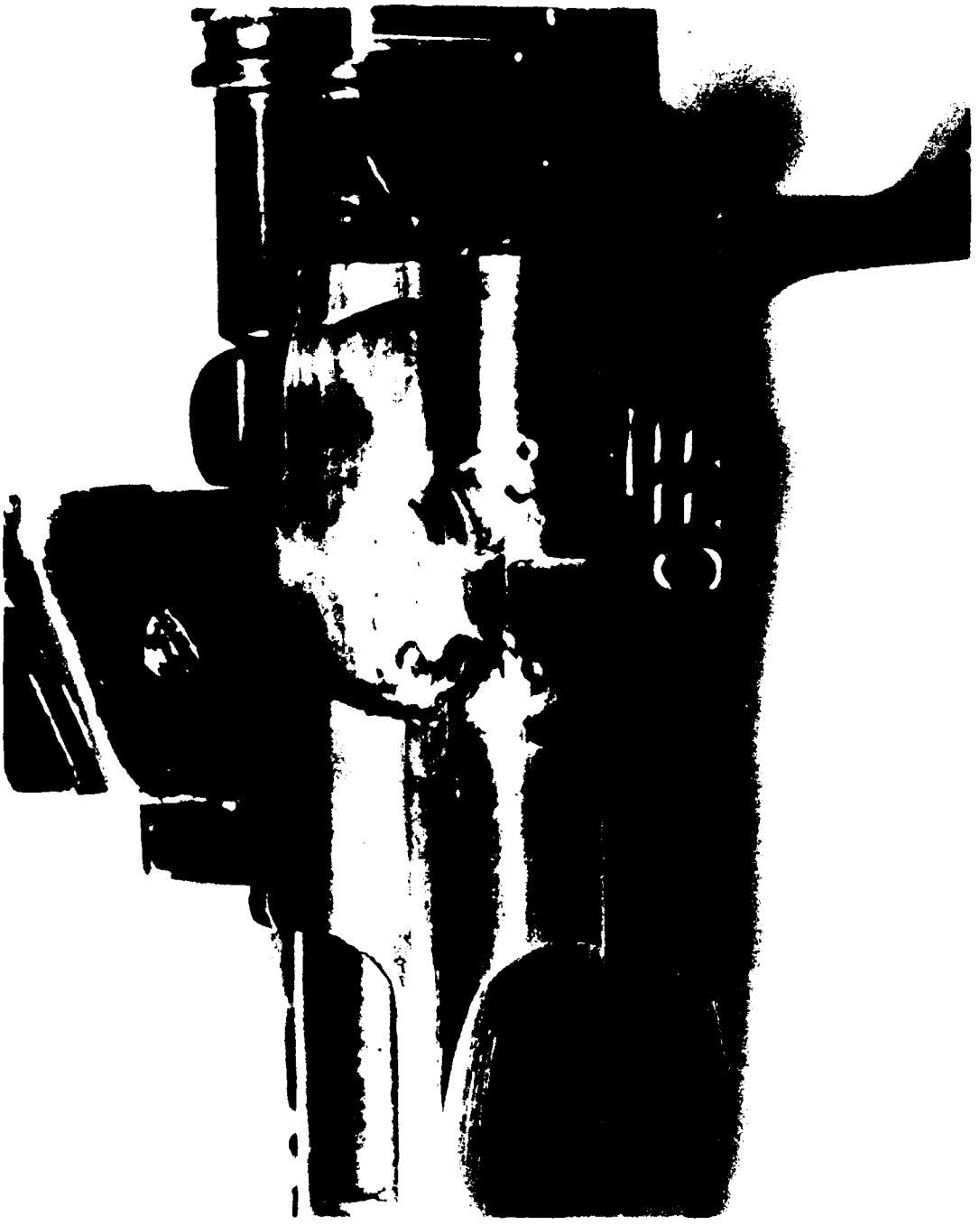


FIGURE 67. DEMILITARIZATION OF CUTOFF FOR M1903 DRILL RIFLE

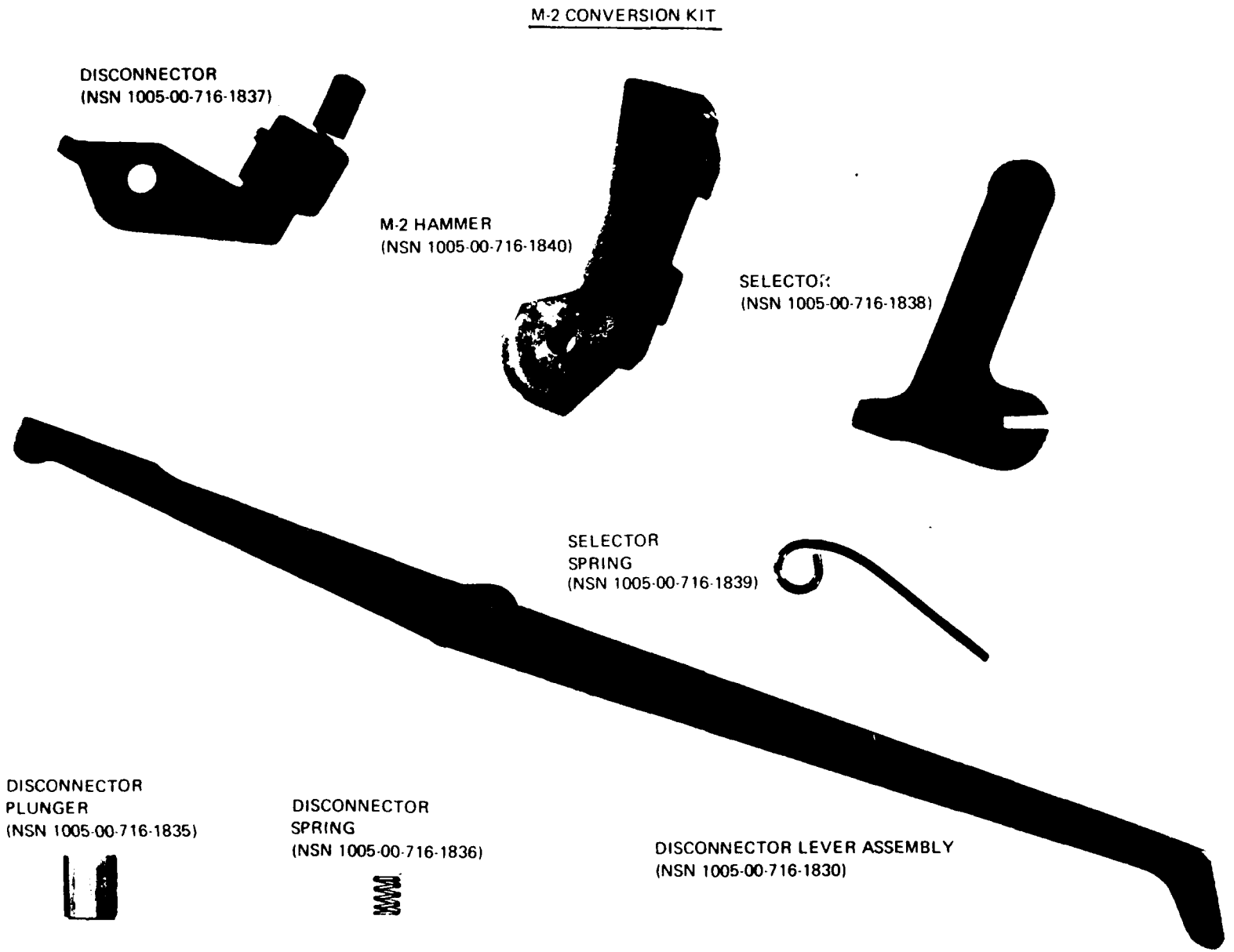
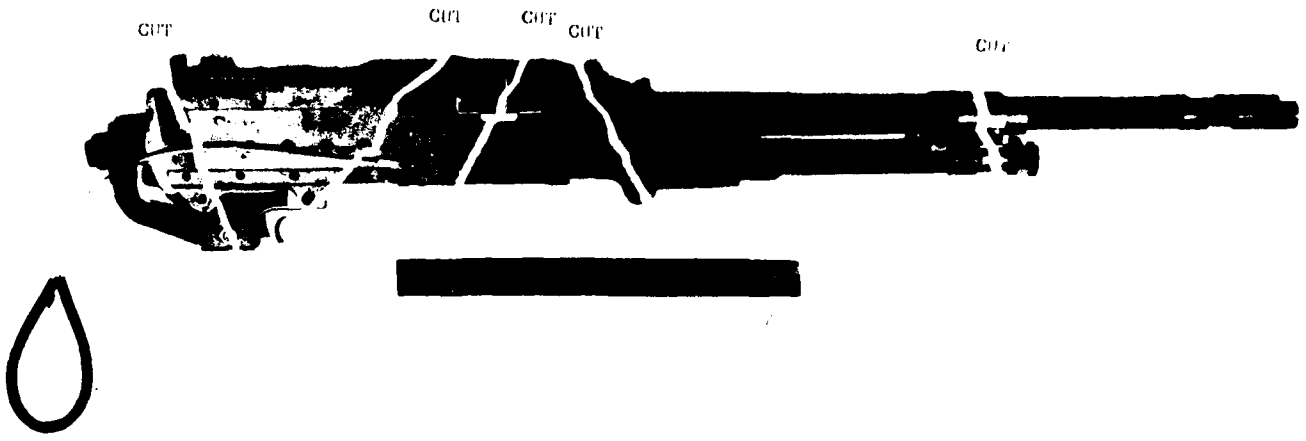

M-2 CONVERSION KIT
DISCONNECTOR
(NSN 1005-00-716-1837)
M-2 HAMMER
(NSN 1005-00-716-1840)
SELECTOR
(NSN 1005-00-716-1838)
SELECTOR
SPRING
(NSN 1005-00-716-1839)
DISCONNECTOR
PLUNGER
(NSN 1005-00-716-1835)
DISCONNECTOR
SPRING
(NSN 1005-00-716-1836)
DISCONNECTOR LEVER ASSEMBLY
(NSN 1005-00-716-1830)

FIGURE 68.



7.62MM, M240 CO-AX MACHINE GUN

FIGURE 69. DEMILITARIZATION OF THE 7.62MM, M240 CO-AX MACHINE GUN

Demilitarization of the 7.62MM, M240 CO-AX machine gun will be accomplished by five different cuts. With the weapon laying on its left side, bolt closed, the following cuts will be made. Each cut must displace at least one-half inch of metal if demilitarization is accomplished by torch cutting:

1. The first cut will be made through the back of the rear sight mount, receiver, trigger housing assembly, and charger guide connector.

2. The second cut will be made in the middle of the receiver, cutting downward at a 45 degree angle to the left, through the receiver and the front end of the trigger housing.

3. The third cut will begin 5 inches back from the front of the receiver, cutting downward at a 45 degree angle to the left, through the rear portion of the bolt and receiver.

4. The fourth cut will begin 1 inch from the front of the receiver, cutting downward at a 60 degree angle to the right, through the bolt, barrel chamber, and the front receiver mounting hole.

5. The fifth cut will be down through the barrel and gas port bushing.

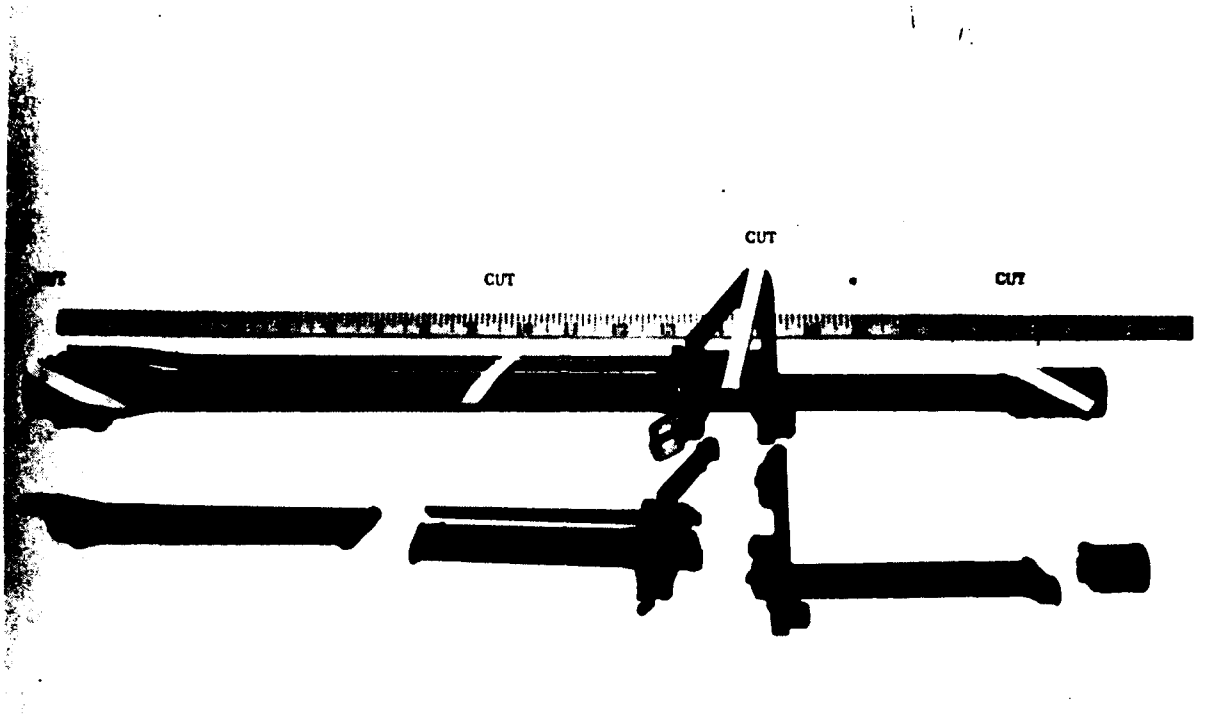


FIGURE 70. DEMILITARIZATION OF M16 RIFLE BARRELS

Demilitarization of M16 barrels will be accomplished by four different cuts. With the barrel laying on its left side, the following cuts will be made. Each cut must displace at least one-half inch of metal if demilitarization is accomplished by torch cutting:

1. The first cut will begin in the chamber, cutting to the right through the locking nut, ending where the swell of the chamber returns to the normal size of the barrel.

2. The second cut will be made 9 inches from the tip of the chamber. This cut will be at a 45 degree angle to the right.

3. The third cut will be straight through the sight mount.

4. The fourth cut will begin at the tip of the barrel cutting upward to the left at a 45 degree angle.

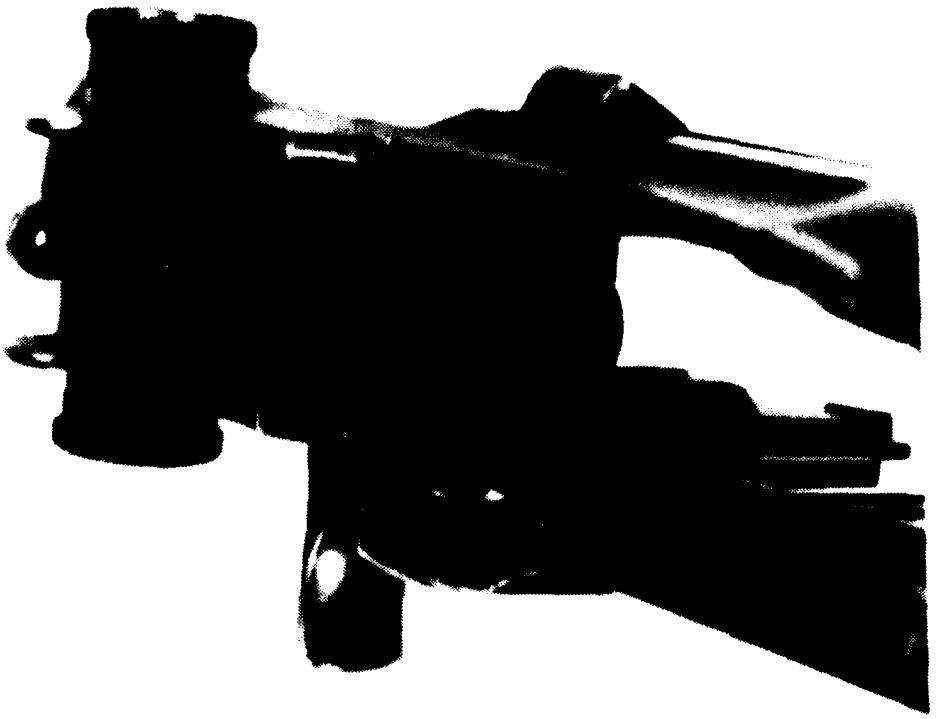


FIGURE 71. *MODIFICATION* OF M1 RIFLE, BOLT ASSEMBLY WELDING

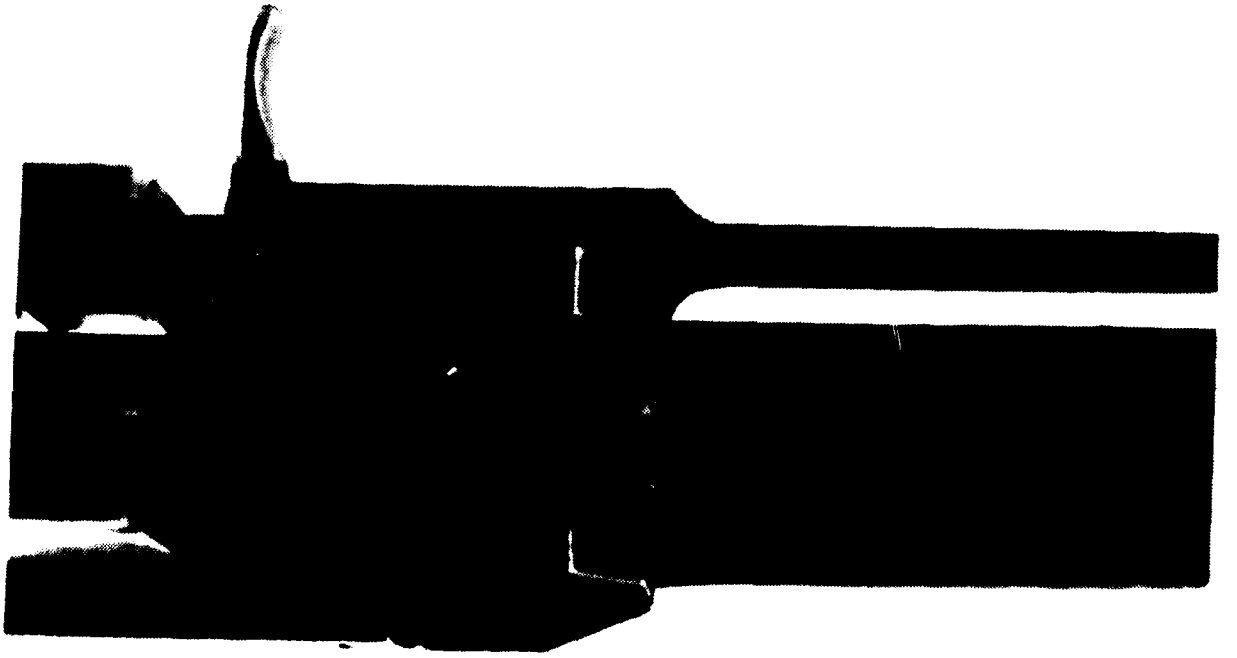


FIGURE 72. *MODIFICATION* OF M1 RIFLE, BARREL AND RECEIVER WELDING

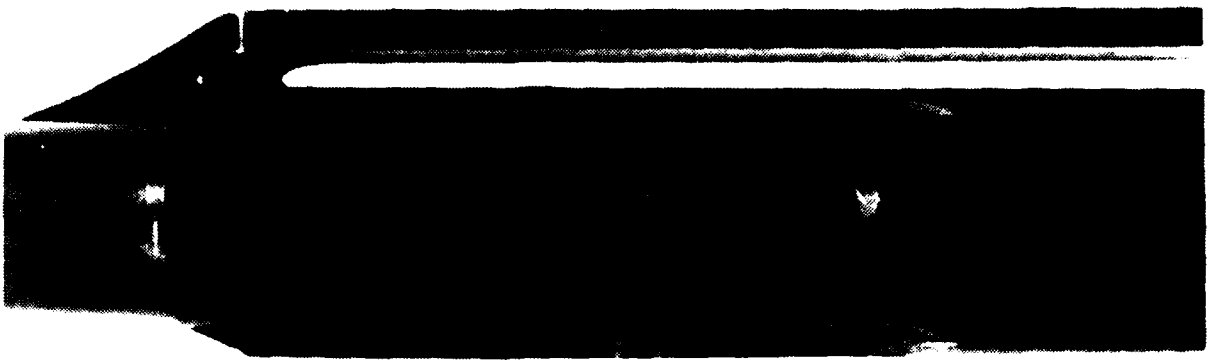


FIGURE 73. *MODIFICATION* OF M1 RIFLE, GRINDING AND WELDING DRILL ROD INTO CHAMBER AND BARREL

FIGURE 74. *MODIFICATION* OF M1 RIFLE, GRINDING AND WELDING OF GAS CYLINDER COMPONENTS

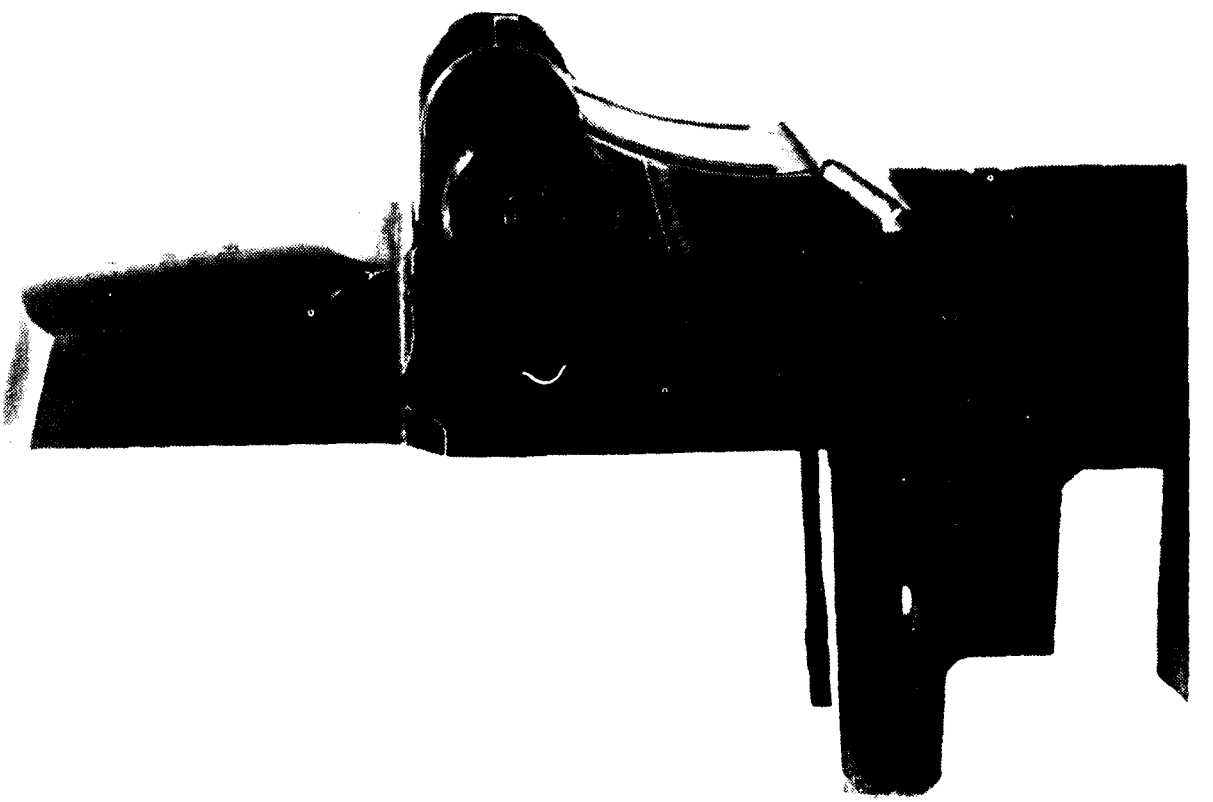


FIGURE 75. *MODIFICATION* OF M1 RIFLE, WELDING AND END MILLING OF OPERATING ROD DISASSEMBLY NOTCH ON RIGHT SIDE OF RECEIVER RAIL