

TECHNICAL MANUAL

UNIT MAINTENANCE MANUAL

**CARTRIDGES,
CARTRIDGE ACTUATED DEVICES,
AND
PROPELLANT ACTUATED DEVICES**

HEADQUARTERS, DEPARTMENT OF THE ARMY

September 1993

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 CARTRIDGE ACTUATED DEVICES
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REPORTING OF ERRORS

You can help improve this manual. If you find any mistakes or know of a way to improve the procedures, please let us know. Mail your DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to Commander, U.S. Army Armament Research, Development and Engineering Center, ATTN: SMCAR-LSB, Picatinny Arsenal, NJ 07806-5000. A reply will be furnished to you.

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*This manual supersedes TM 9-1377-200-20&P dated 28 November 1985, including all changes.

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CHAPTER 1 INTRODUCTION

1-1. Scope

a. TM 9-1377-200-20 is intended to inform Department of the Army personnel of the procedures for the proper identification, handling, storage and use of Federal Supply Class (FSC) 1377 Cartridges/Cartridge Actuated Devices (CADs) and Propellant Actuated Devices (PADs). Throughout this manual, the term CAD shall be synonymous with and collectively represent FSC 1377 cartridges, cartridge actuated devices, and explosive detonating cord systems used in aircraft/helicopter emergency escape systems, fire extinguisher systems, and equipment/stores jettison and separation systems. The term PAD shall be synonymous with and collectively represent FSC 1377 rocket catapults and rocket motors used in aircraft escape systems.

b. The Naval Ordnance Station, Indian Head, MD 20640 (Code 51) has been designated as the Cognizant Field Activity (CFA) for FSC 1377 CADs and PADs. Any questions concerning the CADs/PADs described in this publication should be directed to this station, Code 51.

1-2. Forms, Records, and Reports

a. Authorized Forms. Forms required by organizational maintenance personnel are listed in Appendix A and in DA PAM 25-30. Information on applicability and instructions for completing forms are published in DA PAM 738-750.

b. Field Report of Accidents. Accidents involving injury to personnel or damage to material will be reported on DA Form 285 in accordance with AR 385-40. Malfunctions will be reported in accordance with AR 75-1.

c. Report of Damaged or Improper Shipment. Material received in damaged or otherwise unsatisfactory condition because of deficiencies in preservation, packaging, marking, loading, storage, or handling will be reported on Standard Form 364 in accordance with AR 735-11-2. Reports of improper shipment or damage caused by transportation discrepancies will be reported on SF 361 in accordance with AR 55-38.

d. Reporting Malfunctions, and Accidents. All malfunctions, and accidents involving DISC 1377 CADs/PADs shall be reported by the most expeditious means available to AMCCOM, Rock Island, IL 61299 (ATTN: AMSMC-QAS) in accordance with AR 75-1.

e. Reporting of Product Quality Deficiencies. Deficiencies encountered with newly manufactured material must be reported in accordance with AR 702-7 on SF 368, Quality Deficiency Report (QDR). This may also be applied to defective products which were government inspected at source and subsequently presented to the government for acceptance at destination.

f. Reporting Discrepancies for Disposition Instructions. All deficiencies noted during inspection should be reported on Ammunition Condition Report (ACR) DA 2415 in accordance with DA PAM 738-750. Items with expired shelf life should be reported by letter in accordance with DA PAM 738-750.

1-3. Destruction of Ammunition to Prevent Enemy Use

Destruction of munitions when subject to capture or abandonment will be undertaken by the user only when, in judgment of the unit commander concerned, such action is necessary in accordance with orders of, or policy established by, the Army Commander, (refer to TM 750-2445-1).

1-4. Safety

a. Observe all safety regulations, local standing operating procedures, and precautions generally applicable to ammunition.

b. CADs/PADs used in aircraft/helicopter escape systems and emergency life support systems must function perfectly the first time. Malfunction of a CAD/PAD designed for a lifesaving application or failure to fire when needed, usually results in severe injury to or death of the person(s) involved. Malfunction of a CAD designed for stores separation/jettison equipment will result in equipment damage or destruction with possible serious injury to or death of the person(s) involved.

c. CADs/PADs are carefully designed and manufactured and a sample of each lot is tested prior to acceptance for service use. Since individual CADs/PADs cannot be functionally or operationally tested, the responsibility for proper functioning is in the hands of the person(s) handling and maintaining these devices. Correct performance can only be ensured when the CADs/PADs have been properly handled and maintained. Utmost care shall be applied to maintain both CADs/PADs and the systems.

d. All persons engaged in operations involving munitions or other hazardous material shall be thoroughly trained in explosive safety (AR 385-10 and AR 385-64). All personnel handling and maintaining CADs/PADs shall be capable of instantly recognizing hazardous explosive exposures. The safety provisions cited in the AR 385 Series publications and in TM 9-1300206 shall be thoroughly understood and strictly adhered to. All persons required to inspect, handle, maintain, or operate any munitions or explosive equipment including CADs/PADs shall be frequently instructed in the safety precautions applicable to the devices with which they may be involved.

e. Persons supervising or performing work in connection with the handling, installations removal, or inspection of CADs/PADs shall observe the following restrictions:

(1) Ensure all applicable maintenance procedures and regulations governing ammunition safety are thoroughly understood and rigidly observed by subordinate persons.

(2) Carefully supervise the activities of subordinate persons.

(3) Ensure no person performs maintenance or inspections of CADs/PADs, or related systems without the immediate presence of another person capable of rendering aid.

(4) Inform all persons of the need for using the utmost care in the performance of their work.

(5) Ensure all persons involved in the handling, preparation, installation, inspection, or removal of CADs/PADs are qualified to perform the tasks involved. Inexperienced personnel shall not be allowed to work with CADs/PADs.

f. Smoking is prohibited on or near any aircraft or vehicle handling, loading, or unloading explosives. Smoking areas may be designated upon approval by competent authority provided such areas are located a safe distance (TM 91300-206) from the vehicle or aircraft. "NO SMOKING" warning signs shall be posted during operations involving handling, loading or unloading explosive cargo. At least one such "NO SMOKING" sign shall be located a reasonable distance from the vehicle or aircraft when handling, loading or unloading is taking place.

g. Naked lights, matches, lighters and other spark and flame, or heat producing devices shall never be taken into or stowed in magazines or other areas containing explosives or munitions. Only approved lighters shall be used in explosive areas and then only in the designated smoking areas.

1-2 h. Individual CADs/PADs shall not be installed in any equipment for which they have not been qualified and authorized. Some CADs/PADs have the same external dimensions and can be physically interchanged. Utmost care must be taken to identify each CAD/PAD. Ensure the proper CAD/PAD is used only in the equipment for which it was designed. A CAD/PAD that does not freely and fully enter the chamber for which it was designed shall not be used. Such an occurrence shall be reported in accordance with DA PAM 738-750. Such a CAD/PAD should be held for 30 days pending a request for the item for engineering investigation. If a request for return of the CAD/PAD for engineering investigation has not been received within 30 days, the item should then be disposed of in accordance with TM 9-1300206.

i. Upon receipt, CADs/PADs shall be inspected for the following: (1) All CAD/PAD containers shall be properly identified and the marking shall be in agreement with the documents accompanying the containers.

(2) The packaging shall show no evidence of rough handling.

(3) The hermetical seals on the inner containers shall not have been broken.

j. If inlet and outlet ports are present on a CAD/PAD, they shall be covered with a protective plastic cap when the device is not installed. If a protective plastic cap is not available, a shipping cap may be used.

k. Safety pins/devices shall be kept in good conditions and used only for the CAD/PAD for which they were designed. When a loaded CAD/PAD is not in use, its safety pin/device shall be installed.

l. CADs/PADs are designed to safely accept only the exact shape, diameter, and strength of safety pin provided for each specific application (e.g., shipping, maintenance, installed). Improvised materials (e.g., cotter pins, nails, rods, wires) shall not be used.

m. CADs/PADs removed from ejection seats/parachutes/survival equipment/stores separation systems during maintenance shall be stored in containers with adequate separation, support, and cushioning to prevent damage during handling and storage. Authorized safety pins/devices shall be installed at all times to prevent accidental firing. Plastic protective caps/plugs shall be installed to prevent contamination by moisture or foreign matter.