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DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

**CLUSTER, GENERATOR, INCAPACITATING
BZ, 175-LB., M44**

Refs: AR 385-40, AR 700-58; TM 3-250

**Headquarters, Department of the Army, Washington 25, D.C.
5 December 1962**

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SECTION I

INTRODUCTION

1. Scope. This technical bulletin contains a description of the M44 175-lb. incapacitating BZ generator cluster and information on its use, functioning, shipment, storage, and demolition.

2. Use. The M44 generator cluster is used for aerial delivery of M16 50-lb. incapacitating BZ generators on selected targets. The cluster is mounted externally on wing racks and dropped as a cluster, or it may be disassembled and the M16 generators dropped singly. Also, a single M16 generator may be used as a ground emplacement.

3. Reports. The office in charge of the unit using the M44 175-lb. incapacitating BZ generator cluster is responsible for the submission of all reports.

a. Damaged or Improper Shipment. Damaged or improper shipment will be reported on DD Form 6 in accordance with AR 700-58.

b. Accidents. Accidents involving injury to personnel or damage to materiel will be reported in accordance with AR 385-40.

SECTION II

DESCRIPTION AND DATA

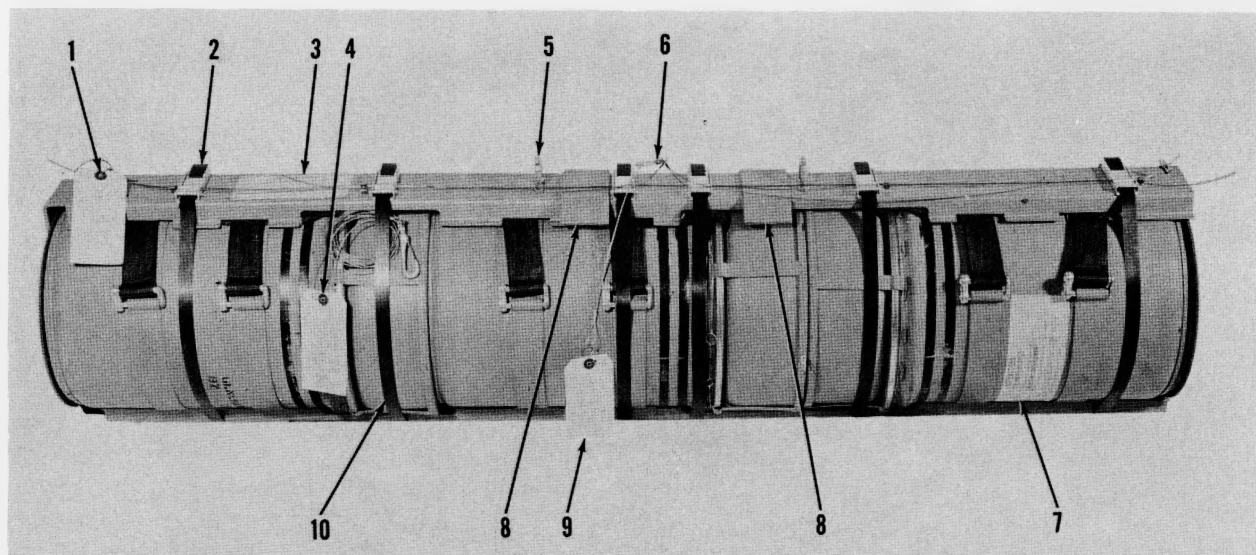
4. M44 175-lb. Incapacitating BZ Generator Cluster. The M44 175-lb. incapacitating BZ generator cluster (fig.1) consists of three M16 50-lb. incapacitating generators (fig. 2) clustered in an M39 generator cluster adapter. When the cluster is dropped from wing racks of L19 and L20 aircraft, an M92 arming wire assembly is used. When dropped from airplanes of the Mohawk series, a 10-inch extension cable is used with the M92 arming wire. Each cluster is tagged to simplify the instructions contained on instruction decals for cluster airdrop (3) or individual generator airdrop on ground emplacement (7). Five tags are attached to each cluster. Tag No. 1 (1) is attached to and identifies the cluster safety wire. Tag No. 2 (4) is attached to and identifies the lanyard and spring clip retaining wire. Three No. 2 tags are used with each cluster since each M16 50-lb. incapacitating BZ generator has a lanyard attached to its spring clip retaining wire. Tag No. 3 (9) is attached to and identifies a 10-inch extension cable which is attached to the M92 arming wire (6).

5. M16 50-lb. Incapacitating BZ Generator. The M16 generator (fig. 2) consists of 42 M6 incapacitating BZ canisters packaged in a pail (1) and fuze with an M220 fuze. An M9

parachute-and-container assembly (2) is affixed to the top of the M16 generator.

a. M6 Canister. The M6 canister is a cylindrical sheet-metal container approximately 2½ inches in diameter and 4½ inches high. The canister is filled with incapacitating BZ mixture. A central cylindrical hole in the mixture is coated with a starter mixture.

b. Pail. The steel pail, approximately 12 inches in diameter and 15 inches high, contains 3 tiers of 14 incapacitating BZ canisters. Two alinement plates are used to aline the center holes in the canisters between each tier and the top and bottom of the pail. Both the top and bottom of the pail have 14 holes which aline with the holes in the canisters in each tier and the alinement plates between the tiers. The top alinement plate has an igniter pad with 14 holes which aline with the holes in the alinement plates, the canisters, and the top and bottom of the pail. The top of the pail is provided with a central fuze well for an M220 fuze (*c* below). Four attachment loops (5) are secured to the side of the pail by two steel bands (6). A handle is affixed to the top of the pail by means of two steel straps. Each hole in the top and bottom of the pail is closed by a plastic plug which is blown free when the generator functions.



- | | |
|---------------------|---------------------|
| 1 Tag No. 1 | 6 M92 arming wire |
| 2 Buckle | 7 Instruction decal |
| 3 Instruction decal | 8 Sway brace pad |
| 4 Tag No. 2 | 9 Tag No. 3 |
| 5 Suspension lug | 10 Steel strapping |

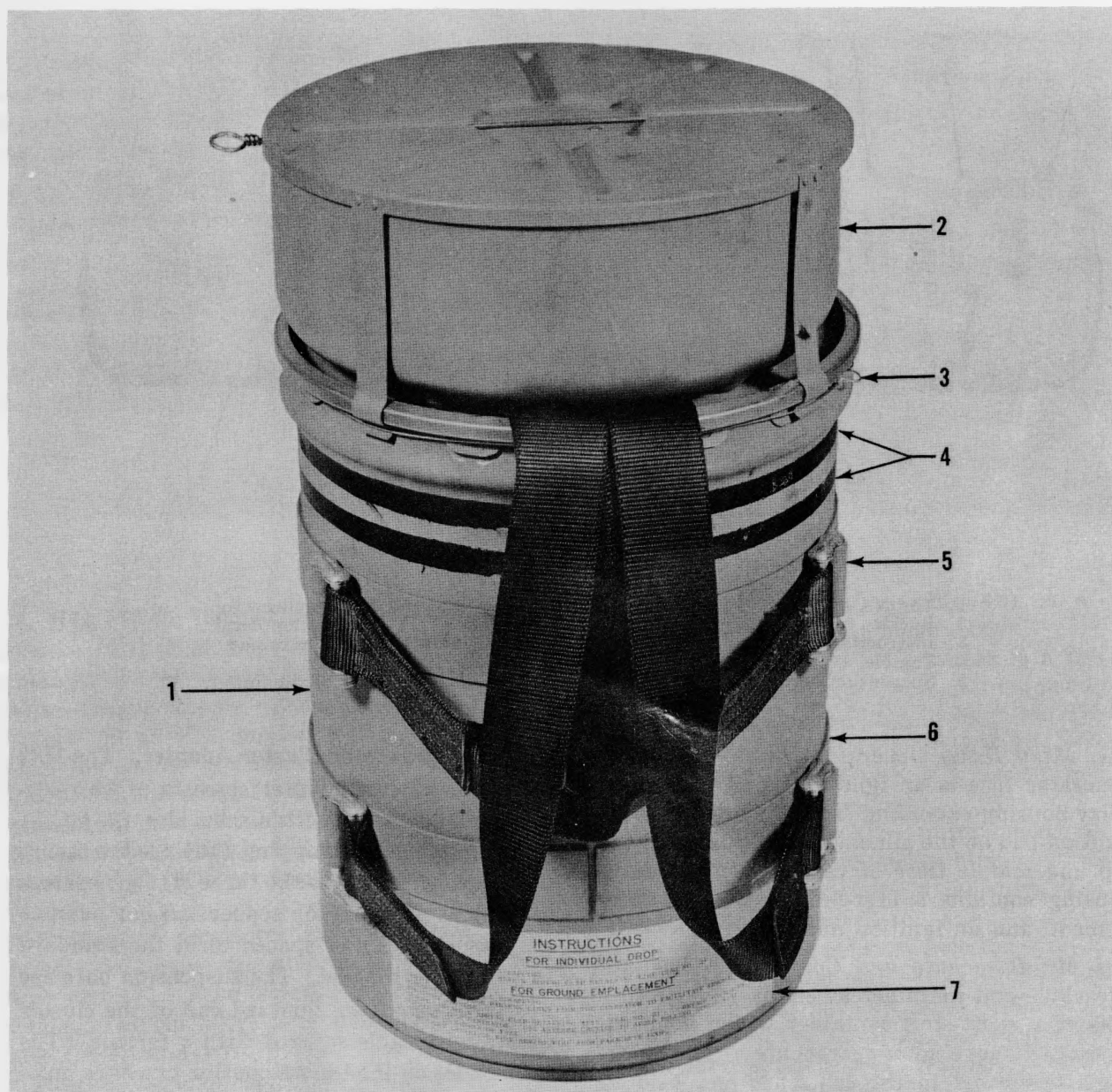
Figure 1. M44 175-lb. incapacitating BZ generator cluster.

c. *M220 Delay Generator Fuze.* The M220 generator fuze is an ignition-type fuze with a delay housing extending from the primer to the ignition pad on the alinement plate between the top and middle tiers of canisters. The delay housing contains a first-fire mixture, a delay element, and an ignition mixture.

d. *M9 Parachute and Container.* The M9 parachute-and-container assembly (fig. 3) consists of a sheet-steel container which holds an 11-foot, 12-gore glide parachute. The parachute is stowed in the container and held in place by a spring. A safety wire (1) holds the spring under tension until the safety wire is pulled. The parachute and container are secured to the pail by spring tabs (2), which are riveted to the top of the parachute container and overlap the clamp on the pail. The spring tabs are secured to the clamp on the pail by the arming wire (3, fig. 2). Two harness assemblies (3, fig. 3), made of four keepers (4) and nylon web strapping, are attached to the parachute. The keepers are secured to the four loops (5, fig. 2) on the pail.

6. *M39 Generator Cluster Adapter.* The M39 generator cluster adapter consists of two suspension bars fitted with six buckles (2, fig. 1) which retain steel strapping (10) used to secure the suspension bars to the three M16 generators in the cluster. The top suspension bar has two suspension lugs (5) spaced to fit the standard 14-inch wing shackle. The suspension bars are tied together at the forward end of the cluster with a wire cable secured with a ferrule. The six buckles on the top suspension bar have holes through which the cluster safety wire (1) passes and holds the buckles in the closed position. Each buckle has additional holes which are used for the M92 arming wire (6).

7. *M92 Arming Wire.* The M92 arming wire (6, fig. 1) is a two-branch swivel-type brass arming wire. Each branch consists of two wires secured by a ferrule. Each wire is provided with a safety clip. A 10-inch extension cable (Tag No. 3) is provided for use with high-performance aircraft.



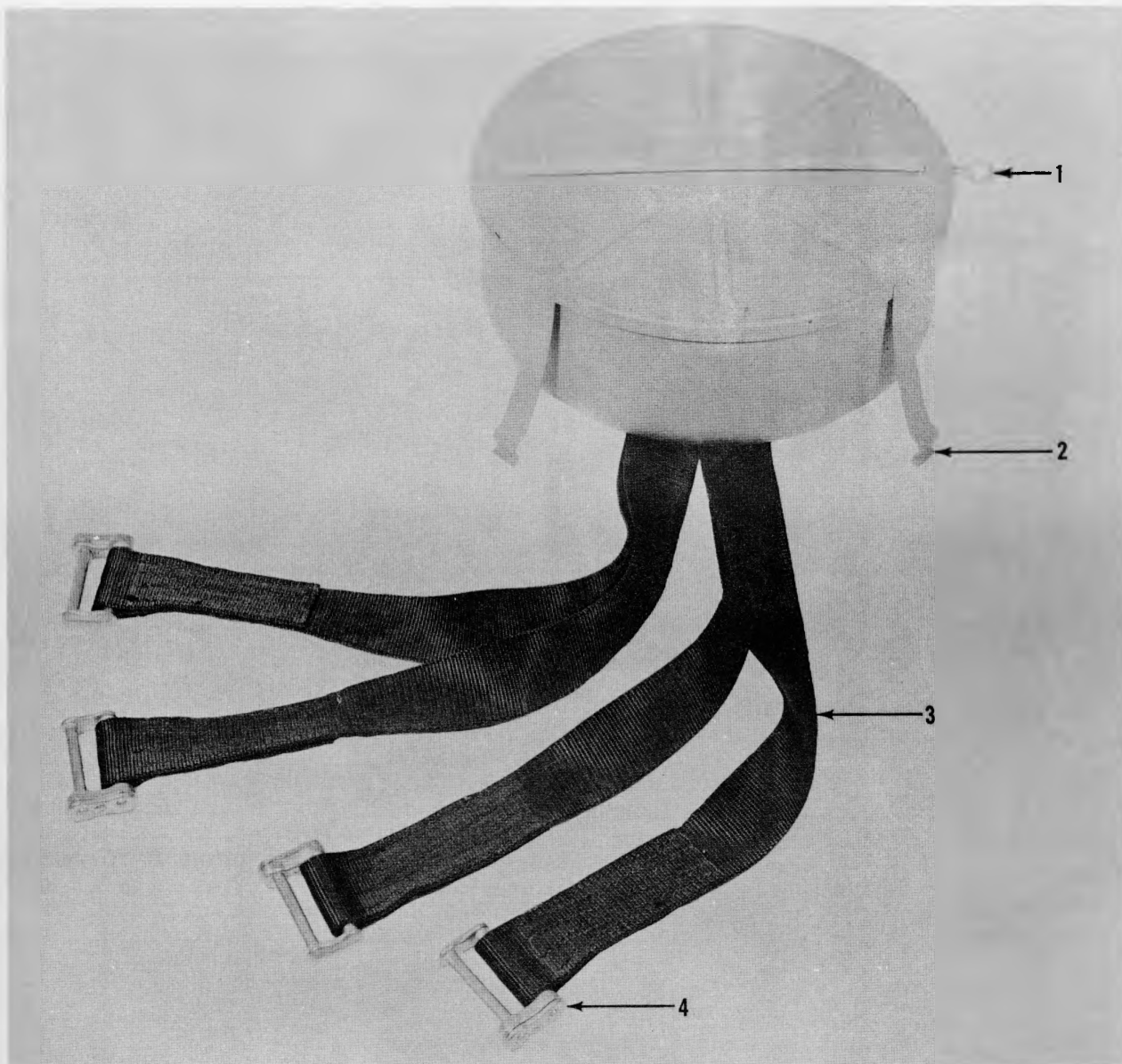
- 1 Pail
- 2 Parachute-and-container assembly
- 3 Arming wire
- 4 Two red bands

- 5 Loop
- 6 Steel band
- 7 Instruction decal

Figure 2. M16 50-lb. incapacitating BZ generator.

8. Packaging. The M44 incapacitating BZ generator cluster is mounted on a skid and secured to the skid by steel strapping. A plywood cover is secured to the skid by square-head lag screws.

9. Identification. a. *M16 Incapacitating BZ Generator.* Each M16 generator is painted a basic grey with two red bands (4, fig. 2) around the pail. The nomenclature is stenciled below the two red bands. Instructions for indi-



- 1 Safety wire
- 2 Spring tab

- 3 Harness assembly
- 4 Keeper

Figure 3. M9 parachute-and-container assembly.

vidual airdrop or ground emplacement are contained on a decal (7) affixed to each M16 generator.

b. Shipping Container. The M44 175-lb. incapacitating BZ generator cluster is shipped in a plywood shipping container (fig. 4). The nomenclature, shipping data, and manufacturer's name and address are stenciled on the

side of the container. Two red bands on a gay background are painted on one end of the container to identify the cluster filling as a persistent-effect irritant agent. The end of the shipping container (fig. 5) is stenciled with the nomenclature and shipping data. The upper right hand corner is painted cobalt blue to indicate a chemical item of supply.

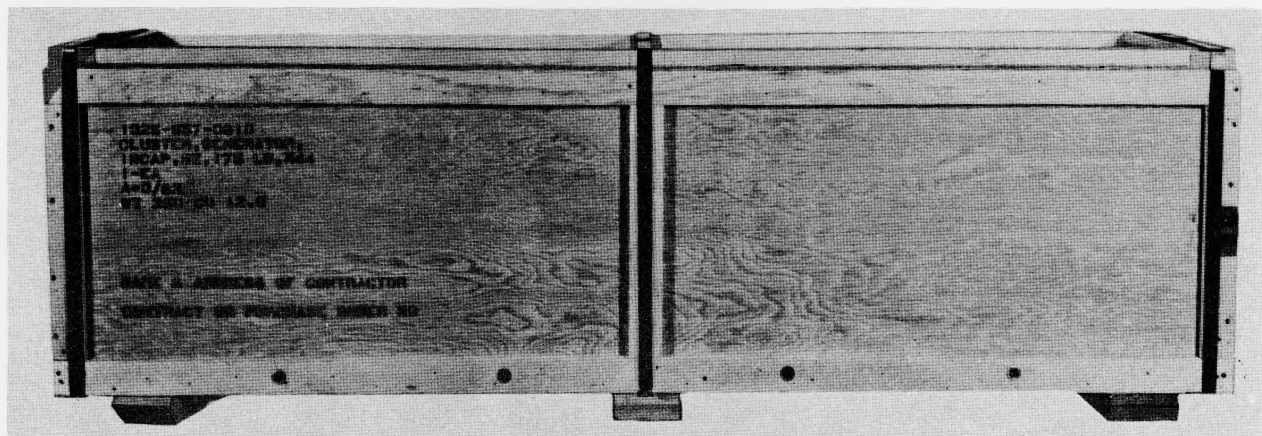


Figure 4. Wood shipping container, side view.

10. Tabulated Data. M44 175-lb. Incapacitating BZ Generator Cluster.

Weight:

Packaged250 lb.
Unpackaged175 lb.

Length:

Packaged5.5 ft.
Unpackaged5 ft.

Height:

Packaged1.5 ft.
Unpackaged15 in.

Width:

Packaged1.5 ft.
Unpackaged15 in.

b. M16 50-lb. Incapacitating B ZGenerator.

Weight50 lb.
Height15 in.
Diameter12 in.

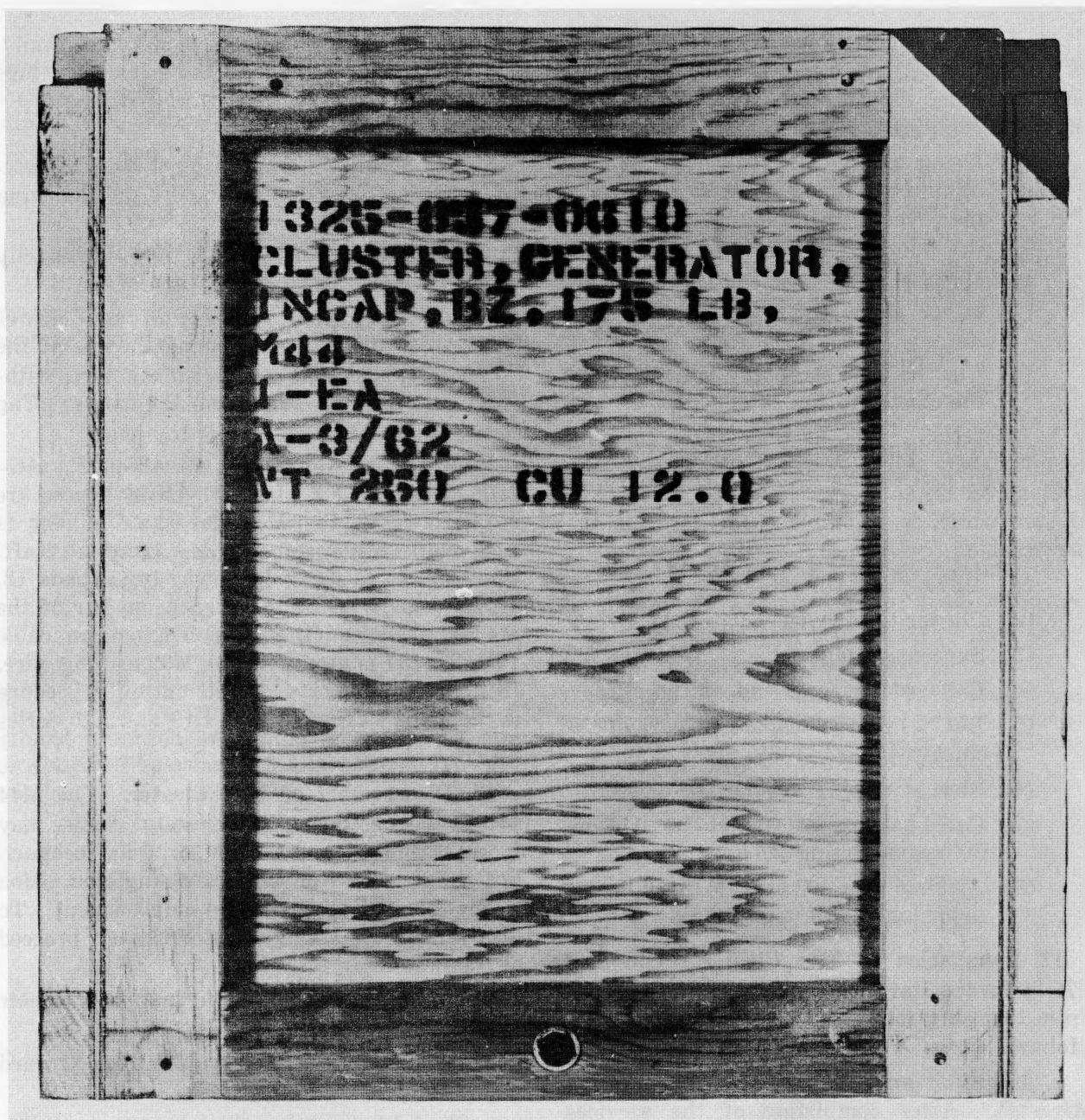


Figure 5. Wood shipping container, end view.

SECTION III

OPERATING INSTRUCTIONS

11. Service Upon Receipt of Equipment.

a. Unpackaging. To remove the M44 175-lb. incapacitating BZ generator cluster from the shipping container, proceed as follows:

- (1) Using a square-drive speed wrench, remove the 16 lag screws which secure the cover of the shipping container to the skid.
- (2) Raise the cover of the shipping container above the cluster and remove it.
- (3) Cut the steel strapping which secures the cluster to the skid.

b. Inspection. Inspect the cluster to make certain that the following components are present, secure and serviceable. Do not use any cluster which is incomplete, insecure, or un-serviceable.

- (1) M92 arming wire.
- (2) Cluster safety wire.
- (3) Suspension lugs.
- (4) Cable at forward end of the cluster.
- (5) Buckles on the suspension bars of the cluster.
- (6) Steel strapping around the cluster.
- (7) Cable harness on each of the M16 50-lb. incapacitating BZ generators.
- (8) Arming wire on each M16 50-lb. incapacitating BZ generator.

12. Installation of M44 Cluster. The M44 175-lb. incapacitating BZ cluster can be dropped from the wing racks of an L19, L20, or AO-1 Mohawk series Army aircraft.

a. Mounting on L19 and L20 Series Army Aircraft. After completion of the services (par. 11), proceed as follows:

- (1) Remove the 10-inch extension cable from the arming wire (Tag No. 3).

Note. The 10-inch extension cable on the arming wire is used only with Army aircraft of the Mohawk series.

- (2) Make sure that the safety wire (1, fig. 3) has been removed from each M9 parachute-and-container assembly.

- (3) Raise the cluster into place and simultaneously engage the suspension lugs in the shackles on the wing rack.
- (4) Lock the shackles.
- (5) Secure the swivel loop of the M92 arming wire to the fixture on the wing rack.
- (6) Remove the lanyard and spring clip wire (Tag No. 2).
- (7) Straighten the end of the cluster safety wire, and using the eye at the opposite end of the safety wire, withdraw the wire from the cluster (Tag No. 1).

b. Mounting on Mohawk (AO-1AF, AO-1BF, or AO-1CF) Aircraft. Sway braces are required when the M44 generator cluster is used with high-performance Army aircraft. The braces are secured to sway brace pads (8, fig. 1) affixed to the top suspension bar of the M44 cluster, and the 10-inch extension cable (Tag No. 3) is used with the M92 arming wire. In all other respects, the mounting procedure is the same as that for the L19 and L20 series aircraft.

13. Disassembly of M44 Cluster. The M44 175-lb. incapacitating BZ generator cluster may be disassembled and each M16 50-lb. incapacitating BZ generator used as a single munition either for airdrop or ground emplacement. To disassemble the M44 generator cluster, proceed as follows:

a. Unpackage the M44 generator cluster (par. 11).

b. Remove the wire rope cable at the forward end of the cluster.

c. Straighten and withdraw the cluster safety wire which passes through the buckles on the top suspension bar.

d. Remove the M92 arming wire.

e. Release the six buckles and remove the wire strapping and suspension bars from the cluster.

f. Carefully remove each M16 50-lb. incapacitating BZ generator from the cluster adapter.

14. Airdrop of M16 Generator. The M16 50-lb. incapacitating BZ generator can be dropped individually from the Army cargo helicopters.

a. Inspection. After disassembly of the M44 cluster (par. 13), inspect each M16 generator. Do not remove the lanyard or spring clip retaining wire (Tag No. 2).

- (1) Inspect the harness attachment to the loops on the pail.
- (2) Inspect the arming wire attachment to the harness.

b. Preparation for Airdrop. Each M16 generator to be dropped from Army cargo helicopters must be prepared as follows:

- (1) Inspect each generator (*a* above).
- (2) Load generators on aircraft in a position so that the lanyard on each generator may be attached readily to a static line.
- (3) Attach the lanyards to the static line.
- (4) At an altitude not greater than 600 feet or less than 400 feet over the drop area, drop each M16 generator individually through the cargo hatch.

15. Ground Emplacement of M16 Generator. The M16 50-lb. generator may be used as a ground munition and emplaced so that it can be activated by a lanyard or tripwire. To pre-

pare the M16 generator for ground emplacement, proceed as follows:

a. Remove the arming wire which secures the spring tabs to the pail.

b. Detach the harness assembly from the parachute.

c. Remove the lanyard wire and spring clip (Tag No. 2).

d. Carefully remove the parachute and container from the pail making certain that the cable attached to the swivel on the fuze cover does not pull the fuze cover from the fuze.

e. Insert a .032-diameter wire through the holes provided in the fuze.

f. Detach the cable attached to the swivel on the fuze cover from the parachute cable harness.

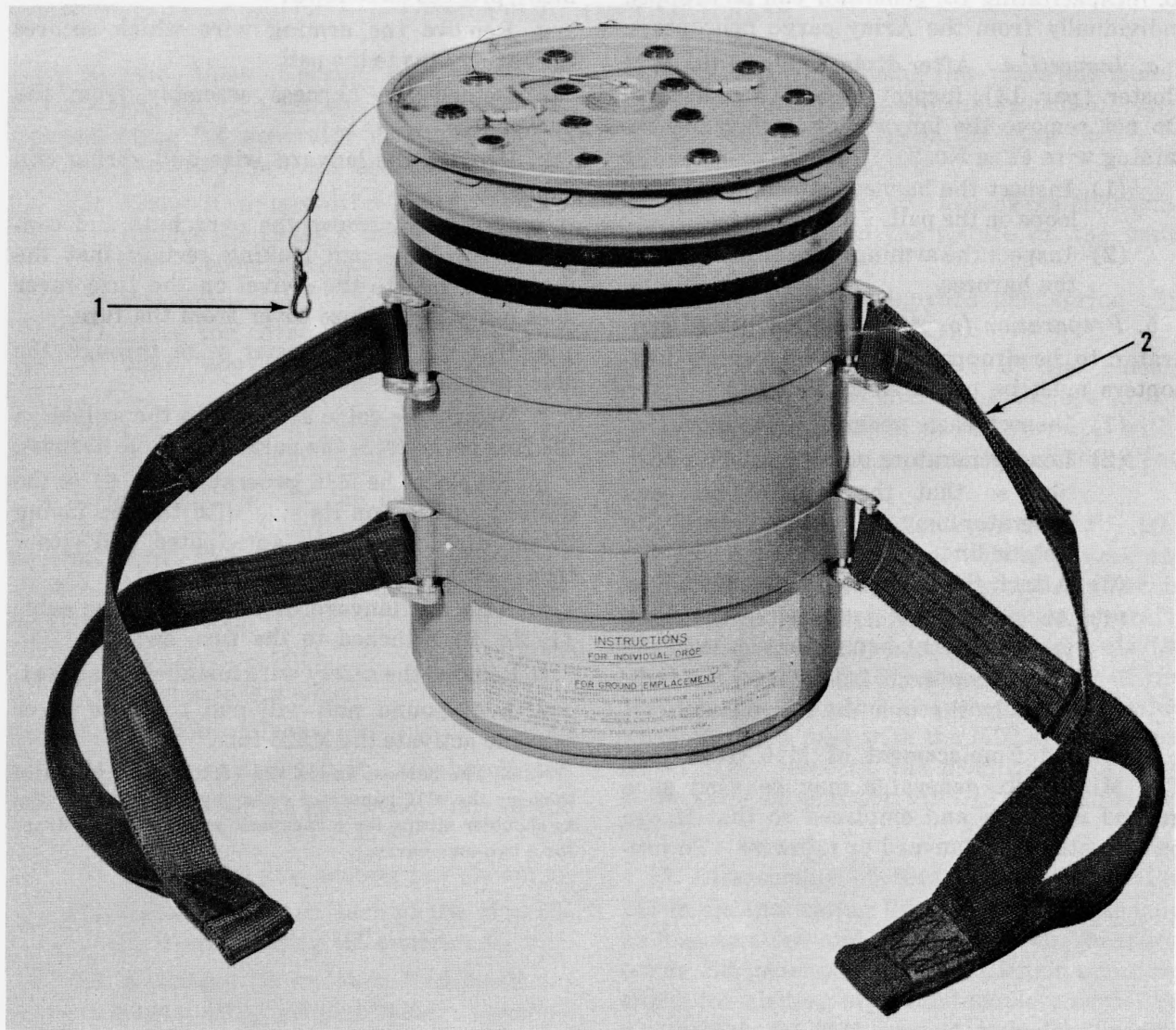
g. Emplace the M16 generator (fig. 6) in the desired position on its side with the top facing in the direction of the anticipated pull either from a lanyard or tripwire.

h. Attach a lanyard or tripwire to the cable (1, fig. 6) attached to the fuze swivel.

i. Remove the safety wire installed (*e* above).

j. A 40-pound pull will pull the fuze cover free and activate the M220 fuze.

Note. The harness assemblies (2, fig. 6) may be used to carry the M16 generator either by using the harness as shoulder straps for a backpack or as carrying straps for a two-man carry.



1 Cable

2 Harness assembly

Figure 6. M16 50-lb. incapacitating BZ generator prepared for ground emplacement.

SECTION IV FUNCTIONING

16. M44 175-lb. Incapacitating BZ Generator Cluster. When the M44 generator cluster is released from the wing racks of the aircraft, the M92 arming wire is retained by the fixture on the wing rack causing the branches of the arming wire to pull out of the buckles on the cluster adapter. The steel strapping separates and the M16 incapacitating BZ generators fall

from the cluster. As the M16 generators fall, the arming wire on the generator pulls free and the parachute separates from the generator. As the parachute opens, the cover of the M220 fuze is pulled from the fuze body permitting the striker pin to strike the primer which ignites the first-fire and delay pellets in the delay hous-

ing. The delay elements burn for 12 ± 2 seconds; then ignition of the generator is caused by the ignition mixture igniting the igniter pads.

17. M16 50-lb. Incapacitating BZ Generator. The initiating source for activating the fuze is a 40-pound pull on a lanyard or tripwire which causes the sequence described in paragraph 16.

SECTION V

SHIPMENT AND STORAGE

18. Shipment. For shipping purposes the M44 175-lb. incapacitating BZ generator cluster falls into ICC Class C hazard classification for chemical ammunition. All regulations covering Class C chemical ammunition must be observed (TM 3-250).

19. Storage. For storage purposes the M44 175-lb. incapacitating BZ generator cluster is in Storage Group B and must be stored in accordance with instructions contained in TM 3-250.

SECTION VI

EVACUATION, DESTRUCTION, OR DISPOSAL TO PREVENT ENEMY USE

20. General. Clusters containing incapacitating BZ agent which are in danger of being captured by the enemy will be evacuated, destroyed, or disposed of. The authority to evacuate, destroy, or dispose of chemical munitions must be obtained from the responsible commander.

21. Evacuation. Evacuation of the M44 175-lb. incapacitating BZ generator cluster will be made through normal supply channels.

22. Destruction. Destruction of the M44 generator cluster may be accomplished by ex-

plosives or by burning. In either case clouds of incapacitating BZ agent will be generated. For this reason, destruction should not be performed unless specifically authorized by the responsible commander. Trained chemical disposal personnel should supervise the destruction.

23. Disposal. Disposal should be accomplished by burying in the ground or submersion in deep water when authorized by the responsible commander.

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For explanation of abbreviations used, see AR 320-50.

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