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I REPORT NUMBER: DOD POP HM TR/AYD 89-004

II TITLE: Performance Oriented Packaging Testing of Cap, Blasting  
Non-Electric M7, Packed 10 per M19A1 Metal Ammunition  
Box, 4 per Wirebound Box

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19. ABSTRACT (Continue on reverse if necessary and identify by block number)			
<p>This report contains the testing and test results performed on the Cap, Blasting Non-Electric M7 packed 10 per M19A1 metal ammunition container, four M19A1 metal containers per wirebound box for Performance Oriented Packaging Certification. The packed, wirebound boxes were dropped once each from 2.1 meters (7 feet) in lieu of UN requirements of 1.2 meters (4 feet). The wirebound boxes were dropped on a solid steel plate in 6 different orientations. (Six (6) total wirebound boxes were tested.) The orientations were as follows: Top, Bottom, Side, Side 90° off previous, Top Edge and Bottom Edge. This exceeds the UN requirement which is 5 containers dropped once each in 5 orientations (top, bottom, long side, short side and corner) at 4 feet and ambient temperature. A test was conducted on wirebound boxes with steel ammunition containers inside (a supporting load) at Rochester Institute of Technology (Report No. DOD POP 4m/JWG/TR 87005) in which steel ammunition containers similar to the M19A1 packed in wirebound boxes were dropped and were compression loaded in excess of 1,000 lbs., which exceeded 3 meter high stacking test. No</p>			
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19. Abstract (continued)

damage was observed to the boxes after each of the tests were completed. By analogy, the above-mentioned tests exceed the requirements specified in "United Nations Transport of Dangerous Goods".

1. DATA SHEET:

Container:

Type: Box

UN Code: 4C1  
Specification Number: PPP-B-585  
Material: Wood and wire  
Capacity: 1834.5 CU. IN  
Dimensions: I.D. Inches - 15-7/8 x 11-1/8 x 7-1/4  
Tolerance: + 1/8  
Closure (Method/Type): Bent wire  
Tare Weight: 3.4 lbs.

Product:

Name: Cap, Blasting Non-Electric M7  
Drawing Number: 8830948  
United Nations Number: 0455  
United Nations Packing Group: II  
Physical State: Solid  
Amount Per Container: 10

Accession Top	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution /	
Availability Codes	
Dist	Availability for Special
A-1	

2. BACKGROUND:

This report contains the testing and test results performed on Cap, Blasting Non-Electric M7, packed ten (10) per M19A1 metal ammunition container, four (4) M19A1's per wirebound box in accordance with drawing 12913871 for Performance Oriented Packaging Certification. Tests were performed in accordance with Performance Oriented Packaging test regulations.

3. TEST:

3a) Containers were dropped once each from 2.1 meters (7 feet) in lieu of UN requirements of 1.2 meters (4 feet). The containers were dropped on a 3-inch, solid-steel plate reinforced by 18 inches of crushed rock in 6 different orientations. The tests were conducted at 3 temperatures (6 total containers were tested). The orientations were as follows:

Top  
Bottom  
Side  
Side 90° off previous  
Top Edge  
Bottom Edge

The three temperatures were 71°C (160° F), 24°C (75°F) and -51°C (-60°F). Note: this exceeds the UN requirement which is 5 containers dropped once each in 5 orientations (top, bottom, long side, short side, and corner) of four feet and ambient temperature.

3b) Stacking tests were done on similar wood boxes with no damage observed. These results could be found in test report DOD POP HM/JWG/TR 87005, entitled: "Performance Oriented Packaging Testing on Wirebound Box".

#### 4. RESULTS:

The container passed all tests cited in 3a. None of the contents was lost due to spillage or detonation. They are considered safe for international transportation and in accordance with Performance Oriented Packaging regulations.

#### REFERENCE MATERIAL:

- a. United Nations "Transport of Dangerous Goods", Third Edition.
- b. Report Number: DOD POP HM/JWG/TR 87005, Title: "Performance Oriented Packaging Testing of Wirebound Box", D. Goodwin, Rochester Institute of Technology.