

# AD-A270 632

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SECURITY



## NOTATION PAGE

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OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION Unclassified		1b. RESTRICTIVE MARKINGS <b>D</b>	
2a. SECURITY CLASSIFICATION AUTHORITY OCT 14 1993		3. DISTRIBUTION / AVAILABILITY STATEMENT Availability of Report has been approved for public release and sale; its distribution is unlimited.	
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE <b>A</b>		4. PERFORMING ORGANIZATION REPORT NUMBER(S) DOD POP HMTR/AYD 93-020	
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6b. OFFICE SYMBOL (If applicable) SMCAR-AEP		7a. NAME OF MONITORING ORGANIZATION	
6c. ADDRESS (City, State, and ZIP Code) Picatinny Arsenal, New Jersey 07806-5000		7b. ADDRESS (City, State, and ZIP Code)	
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FIELD	GROUP	SUB-GROUP	
19. ABSTRACT (Continue on reverse if necessary and identify by block number)  This POP report is for the Flexible Linear Shaped Charge packaged in a wood box.			
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT <input type="checkbox"/> UNCLASSIFIED/UNLIMITED <input checked="" type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS		21. ABSTRACT SECURITY CLASSIFICATION Unclassified	
22a. NAME OF RESPONSIBLE INDIVIDUAL Frank M. Sniezek		22b. TELEPHONE (Include Area Code) 201-724-2156	
		22c. OFFICE SYMBOL SMCAR-AEP	

### 93-23864





**DEPARTMENT OF THE ARMY**  
**U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER**  
**PICATINNY ARSENAL, NJ 07806-5000**



REPLY TO  
ATTENTION OF

SMCAR-AEP (1mm)

MEMORANDUM FOR Commander, Defense Technical Information Center,  
 Building 5, Cameron Station, Alexandria, VA  
 22304-6145

SUBJECT: Release of Performance Oriented Packaging Compliance  
 Report for Flexible Linear Shaped Charges

1. The enclosed report (DOD POP HMTR/AYD 93-020) is hereby submitted to the Defense Technical Information Center for formal release. Notification of the formal release should be made to the letterhead address. This report supersedes the report (DOD POP HMTR/AYD 89-002) dated 1 April 89.
2. If there are any problems, questions, or comments regarding this report, contact Mr. Frank Sniezek at 201-724-2156 (DSN 880-2156).

ROBERT J. KUPER  
 Chief, Packaging Division

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**DTIC QUALITY INSPECTED 8**

I. REPORT NUMBER: DOD POP HMTR/AYD 93-020

II. TITLE: Performance Oriented Packaging Testing of Flexible  
Linear Shaped Charges in Wood Box

AUTHOR: Frank M. Sniezek

PERFORMING ACTIVITY: ARDEC

ADDRESS: Department of the Army  
Armament Research, Development and Engineering Center  
HQ., U.S. Armament, Munitions and Chemical Command  
Picatinny Arsenal, New Jersey 07806-5000

DATE: 15 Sep 93

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

1. DATA SHEET

CONTAINER

Type: Box  
UN Code: 4C1  
Nomenclature: Package, Shipping and Storage (For  
Charge, Shaped, Linear, Flexible)  
Specification Number: N/A  
Drawing Number: 9332432  
Material: Natural Wood  
Outside Dimensions: 50.25 x 5.50 x 2.06  
Max Gross Weight: 20.06 lbs.

PRODUCT:

Name: Flexible Linear Shaped Charge  
Drawing Number: See Table Below.  
United Nations Number: 0288  
United Nations Packing Group: II  
Physical State: Solid  
Amount Per Container: See Table Below.

<u>DRAWING NUMBER</u>	<u>AMOUNT PER CONTAINER</u>
5206212-1	6
5206212-2	6
5206212-3	6
5206212-4	6
5206212-5	6
5206213-1	6
5206213-2	3
5206213-3	3
5206213-4	3
5206213-5	3
5206213-6	3

## 2. BACKGROUND:

This report contains the results of the POP testing performed on the Flexible Linear Shaped Charge packaged in a wood box. The testing was performed using inert charges (5206213-3) weighted up to the heaviest charge (5206213-6) packaged IAW 9332432 for Performance Oriented Packaging Certification. The gross weight of the tested box was 22 lb. Tests were performed in accordance with Performance Oriented Packaging test regulations specified in 49 CFR, October 1, 1992 Edition.

## 3. TEST:

3.a. The containers were dropped once each from 7 feet (2.1 meters) in lieu of UN requirements of 4 feet (1.2 meters). 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). The orientations and temperatures were as follows:

TOP:	+160 deg. F
BOTTOM:	-65 deg. F
SIDE:	Ambient
RIGHT END:	Ambient
45 ON RIGHT END:	+160 deg. F
LEFT END:	-65 deg. F

Note: This exceeds the UN requirement which is 5 containers dropped once in 5 orientations (flat on bottom, flat on top, flat on long side, flat on short side, and a corner) at ambient temperature.

3.b. A stacking test was performed on 3 containers by adding a 2100 lb. weight which is equivalent to a 16' stack height for 48 hours at 23 deg. C (75 deg. F) in lieu of a 1282 lb weight which is equivalent to a 10.0 foot stack height at 24 hours.

3.c. A loose cargo test was performed IAW the 49 CFR on 3 containers at a vibration table frequency such that the bottom of the packages were raised a minimum of 1/16 inch.

## 4. RESULTS:

The containers passed all tests. None of the contents of the containers were discharged or spilled meeting the requirements of the 49 CFR.