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Performance Oriented Packaging Testing of Container, Shipping and Storage, CNU-536/E for Packing Group II Solid Hazardous Materials

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13. ABSTRACT (Maximum 200 words)

This Performance Oriented Packaging (POP) test was conducted to ascertain whether the CNU-536/E Shipping and Storage Container meets the Packing Group II requirements specified by the Code of Federal Regulations, Title 49 CFR, Parts 107 through 178, dated 31 December 1991. The packaged commodity used for the test was two Tactical Air Launched Decoy (TALD) shapes weighing 363 kg (800 pounds). This represents the current maximum commodity weight. To compensate for future growth variations in commodity and/or packaging, 37 kg (80 pounds) were added. Gross weight of the loaded container was 654 kg (1,440 pounds). The test results indicate that the container has conformed to the POP requirements.

14. SUBJECT TERMS
POP Test of CNU-536/E Shipping and Storage Container

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PERFORMANCE ORIENTED PACKAGING TESTING
OF
CONTAINER, SHIPPING AND STORAGE, CNU-536/E
FOR PACKING GROUP II SOLID HAZARDOUS MATERIALS

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Performing Activity:
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January 1993

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Naval Air Systems Command
(Code PMA-263)
Department of the Navy
Washington, DC 20361-8050

c. Flat on long side.

d. Flat on short side.

e. One corner.

PASS/FAIL

1. Base Level Vibration Test

The criteria for passing the base level vibration test is outlined in Title 49 CFR, Sec. 178.608(c): No test sample should show any deterioration which could adversely affect transportation safety or any distortion liable to reduce packaging strength.

2. Stacking Test

The criteria for passing the stacking test is outlined in Title 49 CFR, Sec. 178.606(d): No test sample may show any deterioration which could adversely affect transportation safety or any distortion likely to reduce its strength, cause instability in stacks of packages, or cause damage to inner packagings likely to reduce safety in transportation.

3. Drop Test

The criteria for passing the drop test is outlined in Title 49 CFR, Sec. 178.603(f): A package is considered to successfully pass the drop tests if for each sample tested, no rupture occurs which would permit spillage of loose explosive substances or articles from the outer packaging.

TEST RESULTS

1. Base Level Vibration Test

Satisfactory.

2. Stacking Test

Satisfactory.

3. Drop Test

Satisfactory.

DISCUSSION

1. Base Level Vibration Test

The input vibration frequency was 3.8 Hz. Immediately after the vibration test was completed, the container was removed from the platform, turned on its side and inspected. No unfavorable distortion or deterioration was observed.

2. Stacking Test

The container was inspected after the 24-hour period was over. No unfavorable distortion or deterioration was observed.

3. Drop Test

After each drop, the container was inspected. The two TALD shapes were completely retained by the container.

REFERENCE MATERIAL

A. Code of Federal Regulations, Title 49 CFR, Parts 107-178.

B. Bureau of Explosives Tariff No. BOE 6000K Hazardous Materials Regulations of the Department of Transportation by Air, Rail, Highway, Water including Specifications for Shipping Containers.

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Richmond, VA 23297-5000

Commander
Naval Surface Warfare Center
ATTN: Crane Division (Code 4053)
Crane, IN 47522-5000

TEST DATA SHEET

POP MARKING:

UN 4B1/Y654/S/**/USA/DOD/NAD

**YEAR LAST PACKED OR MANUFACTURED

Nomenclature: CNU-536/E Shipping and Storage Container	
Type: 4B1	**NSN:** TBD
Drawing Number or P/N: 30003-3287AS100	**Outer Packaging Material:** Aluminum
Dimensions: 111.00" L x 35.00" W x 25.68" H	**Gross Weight:** 654 kg (1,440 pounds)
Closure (Method/Type): Latches	**Tare Weight:** 254 kg (560 pounds)
Additional Description:	

PACKAGED COMMODITY:

Name: See table 1	**NSN(s):** See table 1
United Nations Number: See table 1	
United Nations Packing Group: II	
Physical State (Solid, Liquid, or Gas): Solid	
Vapor Pressure (Liquids Only): N/A **At 50 °C:** N/A **At 55 °C:** N/A	
Consistency/Viscosity: N/A	**Density/Specific Gravity:** N/A
Amount Per Package: See table 1	**Flash Point:** N/A
Net Weight: See table 1	

PACKAGED COMMODITY USED FOR TEST:

Name: Two (2) TALD shapes	**Physical State:** Solid
Consistency: N/A	**Density/Specific Gravity:** N/A
Test Pressure (Liquids Only): N/A	**Net Weight:** 400 kg (880 pounds)
Additional Description: The net weight includes the current maximum commodity weight plus an additional 37 kg (80 pounds).	

N/A = Not Applicable

TABLE 1
Commodities Approved for Shipping in the CNU-536/E Shipping and Storage Container

NALC/ DODIC	NSN	Commodity Nomenclature	Packing Drawing Number	Haz Class/Div	UN Number	Units/ Package	Total Net Weight (lb)	Total Gross Weight (lb)
3W78	1410-01-248-4995	TALD, ADM-141	43-28100	1.4C	0276	2	800	1,360

TALD = Tactical Air Launched Decoy