

DATA ITEM DESCRIPTION			Form Approved OMB No. 0704-0188	
2. TITLE HIGH-IMPACT SHOCK TEST PROCEDURES		1. IDENTIFICATION NUMBER DI-ENVR-80709		
3. DESCRIPTION/PURPOSE 3.1 High-impact shock test procedures outline the steps that the contractor proposes to demonstrate the resistance of the system being tested to high-impact mechanical shock.				
4. APPROVAL DATE (YYMMDD) 881121	5. OFFICE OF PRIMARY RESPONSIBILITY (OPR) SH	6a. DTIC APPLICABLE	6b. GIDEP APPLICABLE	
7. APPLICATION/INTERRELATIONSHIP 7.1 This data item description (DID) contains the format and content preparation instructions for the High-Impact Shock Test Procedures resulting from the work task described by 3.1.1.2, 3.1.8, 3.1.9, and 3.1.10.1 of MIL-S-901 (NAVY). 7.2 This request applies whenever equipment or systems are to be shock qualified by high-impact shock testing in accordance with the requirements of MIL-S-901 (NAVY). 7.3 This data item description supersedes UDI-T-23755, UDI-T-23757A, and UDI-T-23759A				
8. APPROVAL LIMITATION		9a. APPLICABLE FORMS		9b. AMSC NUMBER N4575
10. PREPARATION INSTRUCTIONS 10.1 <u>Reference Documents</u> . The applicable issue of the documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as specified in the contract. 10.2 <u>Content requirements</u> . The test procedure shall contain the following information: 10.2.1 <u>Equipment identification</u> . The request shall include the following identification information. a. Item. (1) Name (2) Type (3) Nomenclature (4) Rating (5) Service (6) Military specification and technical manual numbers b. Manufacturer (name and address). c. Model number and serial number. d. Size or capacity (if applicable). e. Plan numbers (sectional assembly and outline; revision and date). f. Approximate overall size of equipment. (1) Length (2) Height (3) Width (4) Diameter <p style="text-align: right;">(Continued on Page 2)</p>				
11. DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.				

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- g. Weight (wet, dry, and total weight including test fixture, wet and dry).
- h. Height of center-of-gravity above base of equipment.
- i. Contract or purchase order number.
- j. Requirements of MIL-S-901 (NAVY).
 - (1) Test category
 - (2) Grade
 - (3) Equipment class
 - (4) Shock test type
 - (5) Mounting location
- k. Mounting aboard ship represented during shock test.
 - (1) Plane
 - (2) Orientation
- l. Hold-down fasteners or locating devices used for attachment of items to their foundation or test fixture during shock tests.
 - (1) Grade
 - (2) Size
 - (3) Material
 - (4) Specifications
- m. Hold-down bolt torque.
- n. Description of resilient mounts if used.
 - (1) Size
 - (2) Type
 - (3) Location
 - (4) Specification
- o. Major components and attached items in test (name, identification, manufacturer).
- p. Test laboratory and address.
- q. Test instrumentation and monitoring equipment, if any.

10.2.2 Test procedures.

- a. Purpose and objectives of tests to be conducted.
- b. The activity whose representative(s) will witness both the shock test and the post-shock test inspection and functional testing (see 4.4 of MIL-S-901 (NAVY)).
- c. Alternative representative(s) (e.g., DCASMA, SUPSHIP, NAVPRO, AFPRO, project engineer) who may witness tests in b. above in the event the specified witness cannot schedule attendance.
- d. Step-by-step test procedures and limits.
- e. Test sequence.
- f. Simulation of items during shock test.
- g. Test item operational requirements.
- h. Fixture drawings for the test fixture required for conducting heavyweight shock tests and the justification for the fixture meeting the requirements of MIL-S-901 (NAVY).
- i. Requirements, if any, for on-site evaluation of test instrumentation results. All test instrumentation data evaluations needed to show compliance with acceptance criteria (including criteria, if any, regarding momentary malfunctions) shall be identified for on-site performance to ensure recognition of discrepant conditions before proceeding with additional shock blows or shots.

10.2.3 Detailed post-shock functional testing procedures. Include the following in separate sections for each component:

- a. Functional tests to include:
 - (1) Input-output of component or equipment
 - (2) Operating temperatures (bearing and coil winding)
 - (3) Cyclic operations to determine compliance with design specifications

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- b. Hydrostatic tests to include:
 - (1) Hydraulic, pneumatic, and fluid systems equipment
 - (2) Demonstration of strength
 - (3) Leakage
- c. Electrical tests to include:
 - (1) Insulation breakdown (shorts)
 - (2) Electrical continuity

10.2.4 Comparison with operational requirements. Define the procedures for reporting the results of the comparison of the specified test item operational requirements contained in 10.2.2.g with the results of the post-shock functional testing.

10.2.5 Detailed post-shock inspection procedures and criteria. Include the inspection procedures in separate sections for each component to determine:

- a. Breakage.
- b. Deformation.
- c. Yielding.
- d. Misalignment.
- e. Unbalance.
- f. Cracks (dye penetrant, radiographic, or magnetic particle).
- g. Separation.
- h. Critical tolerance clearances.
- i. Bolting torques.

10.2.6 Pre-shock test vs. post-shock test configuration comparison. Define the procedures for reporting the results of the comparison between pre-shock tested component configuration and post-shock tested component configuration.

10.2.7 Shock test acceptance criteria. Include grade A shock test acceptance criteria if such is not specified by applicable acquisition documents. Include the following:

- a. Minimum acceptable performance parameters.
 - (1) Alignment
 - (2) Dielectric strength
 - (3) Pressure-tight integrity
 - (4) Deformation
 - (5) Clearances
- b. Extent of momentary malfunction, if permitted.
- c. Degree of permanent functional impairment allowed.

10.3 Format requirements. The procedures shall be prepared in the contractor's format on B 1/2" X 11" sheets (metric size A4).