

INCH POUND

MIL-STD-1289B
05 NOVEMBER 1990
SUPERSEDING
MIL-STD-1289A
11 NOVEMBER 1976

MILITARY STANDARD

AIRBORNE STORES GROUND FIT AND
COMPATIBILITY, REQUIREMENTS FOR



AMSC N/A

FSC GDRQ

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

MIL-STD-1289B

FOREWORD

1. This Military Standard is approved for use by all Departments and Agencies of the Department of Defense.
2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document shall be addressed to U.S. Army Aviation System Command, ATTN: AMSAV-EDS, St. Louis, Missouri 63120-1798 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.
3. The information contained herein constitutes a standardization of procedures and criteria for testing ground fit and compatibility of munitions and stores with aircraft and armament weapons support equipment. This document is applicable to all persons in the Aircraft/Stores Compatibility area. It is intended to serve as a means of informing, guiding, and providing instructions in the fundamentals and principles involved in the determination of physical, electrical, and operational compatibility of an airborne store with its associated suspension equipment, support equipment, and with the carriage aircraft. The physical clearances included herein are recommended to prevent any major interference or damage from developing. If deviations or waivers are necessary they must be justified, documented, and approved by the cognizant authority responsible for the aircraft.
4. Technical questions may be addressed to the following offices:

Commander
U.S. Army Aviation Systems Command
ATTN: AMSAV-ES
4300 Goodfellow Blvd
St. Louis, MO 63120-1798
Telephone: Commercial (314) 263-1631, DSN 693-1631

Office for Aircraft Compatibility
3246 TESTW/TY
Eglin AFB, FL 32542-5000
Telephone: Commercial (904) 882-5646/8941, DSN 872-5646/8941

Naval Air Development Center
Code 6013
Warminster, PA 18974
Telephone: Commercial (215) 441-3939, DSN 441-3939

MIL-STD-1289B

TABLE OF CONTENTS

<u>PARAGRAPH</u>		<u>PAGE NO.</u>
1.0	SCOPE	1
1.1	PURPOSE	1
1.2	APPLICATION	1
1.3	EXCLUSIONS	1
2.0	APPLICABLE DOCUMENTS	2
3.0	DEFINITIONS	2
3.1	AIRCRAFT	2
3.2	STORE	2
4.0	REQUIREMENTS	2
4.1	STORE FIT AND COMPATIBILITY TEST CONFIGURATION	2
4.2	STORE INSTALLATION REQUIREMENTS	2
4.2.1	LOADING PROCEDURES	3
4.2.2	ALIGNMENT	3
4.3	CLEARANCE	3
4.3.1	LOADING CLEARANCE	3
4.3.2	EXTERNAL STORE CLEARANCE	3
4.3.2.1	STORE TO AIRCRAFT CLEARANCE	3
4.3.2.2	STORE TO STORE CLEARANCE	3
4.3.2.3	STORE TO PYLON CLEARANCE	4
4.3.2.4	RAIL LAUNCHED STORES CLEARANCE	4
4.3.2.5	EJECTION LAUNCHED STORES CLEARANCE	4
4.3.2.6	INTAKE DUCT CLEARANCE	4
4.3.2.7	STORE ARMING CONTROL SYSTEM CLEARANCE	4
4.3.2.8	PROPELLER AND ROTOR DISK CLEARANCE	4
4.3.3	INTERNAL STORE CLEARANCE	4
4.3.4	FUZE CLEARANCE	5
4.3.5	MINIMUM GROUND CLEARANCE	5
4.3.6	LANDING GEAR CLEARANCE	5
4.3.7	ENGINE HEAT, JET, AND MUNITIONS BLAST CLEARANCE	5
4.3.8	RAM AIR TURBINE CLEARANCE	5
4.3.9	CATAPULT BRIDLE CLEARANCE	6
4.4	ACCESSIBILITY	6
4.4.1	MAINTENANCE ACCESS	6
4.4.2	ACCESS FOR STORE ADJUSTMENT	6
4.5	SWAY BRACING	6
4.6	EJECTION MECHANISM	6
4.7	RELEASE SYSTEM ELECTRICAL DEVICES AND WIRING	6
4.8	ARMAMENT WEAPONS SUPPORT EQUIPMENT (AWSE) COMPATIBILITY	6
4.8.1	SPECIAL TOOLS	6
4.8.2	STORE CRADLING OR HANDLING AREA	6
4.9	SAFETY	6
4.9.1	GROUND SAFETY DEVICE	7

MIL-STD-1289B

TABLE OF CONTENTS

<u>PARAGRAPH</u>		<u>PAGE NO.</u>
4.9.2	ERRONEOUS SWITCH SELECTION AND SINGLE COMPONENT FAILURE	7
4.9.3	SAFETYING	7
5.0	TEST PROCEDURES	7
5.1	GENERAL	7
5.2	TEST STORES	7
5.3	INSTALLATION TEST METHODS	7
5.3.1	STORE LOADING	7
5.3.2	LOADING PROCEDURE TEST	8
5.3.3	CLEARANCE TESTS	8
5.3.4	ACCESSIBILITY TESTS	8
5.3.5	STORE REINFORCED AREA TEST	8
5.3.6	ELECTRICAL FUNCTION TEST	9
5.3.6.1	ELECTRICAL INTERFACE	9
5.3.6.2	STORE FUNCTIONAL CHECK	9
5.3.6.3	ARMAMENT CONTROL SYSTEM CHECK	9
5.3.7	ARMAMENT WEAPONS SUPPORT EQUIPMENT (AWSE) COMPATIBILITY TEST	9
5.3.7.1	TEST CONDITIONS	9
5.4	DOCUMENTATION OF OBSERVATIONS	9
5.5	SAFETY STANDARDS	10
6.0	NOTES	10
6.1	INTENDED USE	10
6.2	TYPES OF TESTS	10
6.3	CONFLICTING REQUIREMENTS	10

MIL-STD-1289B

1.0 SCOPE.

1.1 Purpose. This standard establishes the requirements and testing procedures for installation of all munitions and stores carried on an aircraft. It includes testing of all stores defined in paragraph 3.2.

1.2 Application. The compatibility qualities of every airborne store undergoing test will be demonstrated in accordance with the provisions of this standard, unless specific deviations are authorized by appropriate service authority or unless special requirements are specified by the development agency.

1.3 Exclusions. The requirement for aircraft electrical circuits which are a part of the arming, safing, and monitoring systems for nuclear bombs or missiles with nuclear warheads are excluded from this document. To assure electrical compatibility of nuclear weapons in those areas, coordination with appropriate nuclear design agencies must be accomplished.

2.0 APPLICABLE DOCUMENTS. The following documents, of the issue in effect on date of invitation for bids, form a part of this standard to the extent specified herein.

STANDARDSMILITARY

MIL-HDBK-300	Technical Information File of Support Equipment
MIL-STD-1385	Preclusion of Ordnance Hazards in Electro-magnetic Fields; General Requirements for

SPECIFICATIONSMILITARY

MIL-W-5088	Wiring, Aerospace Vehicle
MIL-E-6051	Electromagnetic Compatibility Requirements, Systems
MIL-S-8512	Support Equipment, Aeronautical, Special, General Specification for the Design of
MIL-A-8591	Airborne Stores, Suspension Equipment and Aircraft-Store Interface (Carriage Phase); General Design Criteria for
MIL-I-8671	Installation of Droppable Stores and Associated Release Systems

MIL-STD-1289B

MIL-M-9977 Manuals, Technical, and Checklists: Munitions
Loading Procedures Non-nuclear and Nuclear (Acft)

PUBLICATIONSNAVY

SD-24 General Specification for Design and Construction
of Aircraft Weapons System

ARMY

AMCP 706-202 Engineering Design Handbook, Helicopter
Engineering Detail Design

Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.

3.0 DEFINITIONS.

3.1 Aircraft. Any vehicle designed to be supported by air, being borne up either by the dynamic action of the air upon the surfaces of the vehicle, or by its own buoyancy. The term includes fixed and movable wing airplanes, helicopters, gliders, and airships, but excludes air-launched missiles, target drones, and flying bombs.

3.2 Store. Any device intended for internal or external carriage and mounted on aircraft suspension and release equipment, whether or not the item is intended to be released in flight from the aircraft. Stores include missiles, rockets, bombs, nuclear weapons, mines, torpedoes, pyrotechnic devices, detachable fuel and spray tanks, line-source disseminators, dispensers, pods (refueling, thrust augmentation, gun, electronic countermeasures, etc.), targets, and cargo-drop containers.

4.0 REQUIREMENTS.

4.1 Store Fit and Compatibility Configurations. The store shall undergo fit and compatibility testing on each aircraft specified by the requesting agency as specified by an approved test method. It is essential to ensure that compatibility demonstrations are not unique to test aircraft alone, but are applicable also to all models and series of operational aircraft. If this cannot be accomplished, deviations will be recorded and reported. Approved modifications will be required to authorize carriage of all nonstandard stores on test aircraft.

4.2 Store Installation Requirements. The installation requirements specified in this standard are general in nature and include most of the desired aircraft store criteria. They shall be used unless determined to be not applicable for the store undergoing testing.

MIL-STD-1289B

4.2.1 Loading Procedures. Store preparation, loading, and handling shall be accomplished in accordance with approved service armament and munitions checklists or an approved munition checklist. These instructions shall include efficient and safe handling procedures, adjustments, and controlling procedures for the store under all loading and operating conditions expected to be encountered. Verification of the efficiency and correctness of the procedures shall be made in accordance with the Loading Procedure Test (para 5.3.2). Additional information can be obtained in MIL-M-9977.

4.2.2 Alignment of Stores. Stores shall be capable of being installed with their longitudinal axis parallel to the stores alignment line specified for the aircraft. Except where specified otherwise by the aircraft detail specification, the aircraft stores suspension equipment shall be installed such that the longitudinal axes of stores are aligned in the pitch plane parallel to the flight path of the aircraft for the average cruise condition or to minimize drag caused by carrying the stores. When boresighting provisions are included in the aircraft or store, the adequacy and efficiency of the provisions shall be tested in accordance with the Installation Tests (para 5.3). Stores shall be installed such that removal of components or parts for boresighting is possible without removing the store from the aircraft.

4.3 Clearances. Minimum clearances specified below (measured during static ground fit tests) are intended to ensure adequate clearance during worst-case dynamic in-flight maneuvers.

4.3.1 Loading Clearance. Sufficient clearance shall be provided to enable movement of the store into position when the aircraft is fully serviced and is in its normal attitude on a normal landing or servicing surface. It is desirable that sufficient clearance be provided to allow loading/unloading at maximum aircraft gross weight with tires flat and struts fully compressed. For the purpose of determining this clearance, use of common armament weapons support equipment shall be assumed unless peculiar armament weapons support equipment is designated for use with the store or aircraft. Additional information can be obtained in MIL-I-8671.

4.3.2 External Store Clearances.

4.3.2.1 Store to Aircraft Clearance. A minimum clearance of 25.4 mm (one inch) shall be provided between all required stores and aircraft (including flight control surfaces and hoisting equipment of aircraft such as flaps, dive brakes, ailerons, elevators, rescue hoists, etc.) with the surface deflected to the point of the closest proximity to the store. For aircraft with variable wing geometry, the worst case wing sweep angle shall be used to determine minimum clearance.

4.3.2.2 Store to Store Clearance. A minimum clearance of 25.4 mm (one inch) shall be provided between adjacent stores noting that additional clearance may be required for fuze clearance (para 4.3.4) with stores mounted on the aircraft stores suspension equipment. For stores configured in tandem, this distance shall be measured from the plane tangent to the rear most surface of the forward store to the closest surface of the aft store or fuze to ensure clearance during separation (see para 4.3.2.4 and 4.3.2.5). The clearance shall be maintained with any movable surface or component of the store that is normally free or controlled to move while the store is in its installed position, or deflected to the point of closest proximity to the adjacent store.

MIL-STD-1289B

4.3.2.3 Store to Pylon Clearance. A minimum clearance of 12.7 mm (one-half inch) shall be provided between any component along the length of the store and pylon on which it is suspended. Suspension lugs, store sensing switches, sway bracing, and bomb charging well electrical power generator components may be excepted provided that careful review/analysis is performed to ensure sufficient clearance.

4.3.2.4 Rail Launched Stores Clearance. A minimum of 25.4 mm (one inch) clearance shall be provided between any movable surface or component of a rail launched store that is free or controlled to move during launch with the surface deflected to the point of closest proximity to any other store, launcher, pylon, or aircraft surface.

4.3.2.5 Ejection Launched Stores Clearance. A minimum of 25.4 mm (one inch) clearance shall be provided for any movable surface or component of an ejected store during ejection to the point of closest proximity to any other store, launcher, pylon, or aircraft surface.

4.3.2.6 Intake Duct Clearance. An assessment shall be made to determine whether or not the store installation could cause engine compressor stall or flameout as a result of exhaust, shock, gasses or pressure wave interference. The degree of probability of ingestion of fahnstock clips, wire, spent cartridge brass, or other debris in the airstream from store separation shall be noted.

4.3.2.7 Store Arming Control System Clearance. Adequate clearance must be provided to ensure correct operation of the arming control system during separation. The store arming control system (such as arming loops, swages, or connectors) shall not become jammed or caught on the aircraft, pylon, launcher, or ejector rack to prevent inadvertent initiation of the store arming sequence.

4.3.2.8 Propeller and Rotor Disk Clearance. On propeller and rotor equipped aircraft, a minimum clearance of 152.4 mm (six inches) between the propeller/rotor disk or any part of the aircraft and the bullet trajectory (bullet trajectory should be the worst case considering gun dispersion) shall be provided. The clearance during launch for guided and unguided rockets and missiles shall be a five degree half angle cone measured from the trajectory of the outermost surface of the ordnance to the worst case rotor plane or aircraft structure. Clearance shall be sufficient to preclude induced damage from spent cases or any loose items under a worst case release condition. (The worst case rotor plane cannot always be located accurately in a static condition and should also be measured in a dynamic situation.)

4.3.3 Internal Store Clearances. Except for the closed bomb bay doors and side rails, no part of the aircraft nor any other obstructions (except required sway braces, displacing gear, etc., which are automatically removed from their obstructive positions as each store is released) shall lie within the clearance space envelope bounded by the imaginary plane surfaces defined as follows:

a. The plane tangent to the uppermost extremity of the store parallel to the armament datum line and parallel to the pitch axis of the aircraft.

MIL-STD-1289B

b. Four planes tangent to the foremost, rearmost, right, and left extremities of the store and at an angle 10° away from the vertical and out from the bomb bay. Minimum clearance between stores shall be 63.5 mm (2.5 inches) to prevent contact between stores.

4.3.4 Fuze Clearance. For stores that ordinarily are made safe by removal of fuzes, adequate clearance shall be provided to remove or install fuzes on the loaded store without removing the stores from their loaded positions.

4.3.5 Minimum Ground Clearance. The minimum clearance required between the ground and the maximum composite envelope of all stores carried externally differs for each of the three services, as does the method of establishing the aircraft configuration prior to measurement. Weapon designers should strive for a maximum degree of interoperability between services when developing new weapons, and the service clearance criteria which provides the most critical case should be used whenever possible. Specific requirements for each service are as follows:

a. General Army clearance design guidelines are given in AMCP 706-202. The Army requires a 152.4 mm (six inch) ground clearance in the worst case condition of flat tire(s) and depressed strut(s), with the aircraft in either a static, takeoff, or landing attitude at maximum allowable gross weight.

b. The Navy requires a six inch ground clearance with tires flat and depressed struts with aircraft in either a static, takeoff, or landing attitude. For aircraft operated from carriers, Navy Publication SD-24 shall define worst case conditions for measuring 152.4 mm (six inch) clearance between aircraft/stores and landing area.

c. The Air Force requires that minimum ground clearance should not be less than 76.8 mm (three inches) (152.4 mm (six inches) for aircraft designed to operate on rough terrain) in the worst condition of flat tire(s) and completely depressed strut(s), with the aircraft in either a static, takeoff, or landing attitude. (For example, centerline stores mounted aft of the main landing gear require both main landing gear tires flat and struts compressed to simulate the worst case ground clearance.)

4.3.6 Landing Gear Clearance. A minimum clearance of 25.4 mm (one inch) shall be provided between all stores and any portion of the aircraft landing gear. This clearance shall apply both to the landing gear down and locked position as well as throughout the entire retraction and extension cycle.

4.3.7 Engine Heat, Jet, and Munitions Blast Clearance. Adequate insulation shall be provided to stores from engine heat. Permissible store temperatures shall be those of the ordnance specification. Sufficient clearance for exit cone blast or muzzle blast shall be provided to protect adjacent stores from either blast or corrosive damage.

4.3.8 RAM Air Turbine Clearance. A minimum clearance of 25.4 mm (one inch) shall be provided to prevent contact between stores and deployed or extended RAM Air Turbines. An assessment shall be made as to the possibility of the store adversely affecting the performance of the RAM air turbine.

MIL-STD-1289B

4.3.9 Catapult Bridle Clearance. Aircraft provided with catapult fittings shall have a minimum clearance of 25.4 mm (one inch) between the stores and the catapult bridle fittings during the catapult launch of the aircraft.

4.4 Accessibility. Access shall be provided to enable safe and efficient loading of stores and to adjust, maintain, and safe the suspension and release equipment and loaded stores.

4.4.1 Maintenance Access. Convenient access shall be provided for performing maintenance which is allowed with the store in place.

4.4.2 Access for Store Adjustment. Access shall be provided to enable operation of the necessary hand tools required to make proper adjustments on store and rack fittings, fuzes, arming wires, etc., when the store(s) are mounted on the suspension and release equipment.

4.5 Sway Bracing. Sway bracing or other means shall be provided to restrain the store against impact with the aircraft and against relative motion with respect to the aircraft. The contact area of the sway braces bearing on the store shall be sufficiently large so as to prevent damage to the store. Additional sway brace requirements are defined in MIL-A-8591.

4.6 Ejection Mechanism. Where a displacing or ejection mechanism is used for store separation, it shall make contact with the store at the appropriate reinforced or hardback points as defined in MIL-A-8591.

4.7 Release System Electrical Devices and Wiring. Electrical equipment - adequate for control, operation, and release - shall be included to provide for the proper release of the store. Electrical connections/connectors and wiring shall be in accordance with MIL-W-5088 and MIL-E-6051. Special attention shall be given to ensure the electrical connections are adequately protected from damage or short circuits resulting from movement in the airstream, moisture, or from mechanical interference with moving parts of the store.

4.8 Armament Weapons Support Equipment (AWSE) Compatibility. AWSE required during store loading shall fulfill intended purposes with respect to mechanical and functional characteristics without restrictions to mobility, impairment of usefulness, or durability imposed by peculiarities of the test item.

4.8.1 Special Tools. Store design shall permit installation, disassembly, reassembly, and service maintenance with tools and maintenance equipment normally available as commercial standards. Special tools and commercial standard tools are defined in MIL-S-8512.

4.8.2 Store Cradling or Handling Area. A common area on the store shall be provided to ensure transporting, handling, and hoisting compatibility with various trucks, cradles, skids, and hoists. The strength and size of this area is defined in MIL-A-8591.

4.9 Safety. Store installations shall provide maximum protection against inadvertent release as a result of either human error, carelessness, or the material failure of components of the suspension and release system.

MIL-STD-1289B

4.9.1 Ground Safety Device. The store release system shall be equipped with a positive safety device or devices to preclude functioning, dropping, launching, or ejecting of suspended stores or activation of ejector devices when the aircraft is on the ground, even if the release or actuation system is energized.

4.9.2 Erroneous Switch Selection and Single Component Failure. The control or store stations shall be such that no single operation on the part of any crew member will result in the inadvertent release or function of a store. No single component failure in the function or release control system shall result in the inadvertent function or release of a store.

4.9.3 Safetying. Parts which may cause a hazardous condition by working loose in service shall be safetyed or shall have other approved locking means applied.

5.0 TEST PROCEDURES.

5.1 General. For each specific store, applicable portions of the requirements for assuring proper fit and operation shall be selected for verification of compliance based on a review of the general and detailed specifications for that store. Dependent on their specific functional and operational characteristics, suitable performance tests shall be included for particular items and components. All applicable test procedures shall be performed unless reference can be made to an identical or more critical store installation which has been satisfactorily demonstrated. No explosive ordnance will be used for the test described herein. During all testing, suitability of safety provisions shall be verified and unsafe conditions reported.

5.2 Test Stores. The store shall be examined to confirm adherence to the detail requirements of the store specifications including adherence to dimensional and weight provisions, workmanship, safety, and maintenance and human engineering provisions. Inert stores - functionally and operationally complete with all accessories including suspension parts, electrical fittings, vent fittings, and other external protuberant fins, fuzes, and arming wires which are necessary to make a complete installation on the applicable aircraft and pylon - shall be installed with the aircraft in its normal ground attitude. The aircraft shall be fully serviced and the gear strut extension within the allowable limits for the aircraft. For bombs, dispensers, and launcher-types stores, simulated stores may be used if the actual inert test items are not available. These stores shall have all exterior dimensions and configurations equivalent to the actual store and shall be dummy fuzed and equipped with arming wires if applicable. The total weight and general weight distribution of the test store shall also be equivalent to the actual store.

5.3 Installation Test Methods.

5.3.1 Store Loading. The stores shall be prepared, handled, and loaded in accordance with established loading procedures. Only tools and equipment generally available to aircraft and armament personnel should be required for the loading; however, it is not intended to preclude the use of special tools or equipment which are to be an integral part of the store associated equipment.

MIL-STD-1289B

The most practical means of loading the store (such as bomb hoists and powered and non-powered weapons loaders) will be used. The store should be capable of being positioned beneath the suspension equipment on a cradle, skid, munitions transporter, munitions trailer, or dolly without the necessity of jacking or lifting the aircraft or resorting to loading pits or other special provisions.

5.3.2 Loading Procedure Test. Determination of the most efficient procedures for loading the aircraft shall be made by testing the complete loading procedure. The test shall begin with the store(s) on AWSE outside the circular area which encompasses the extremities of the aircraft. The store(s) shall be moved into position, hoisted, and loaded properly on the appropriate release equipment. The procedures test shall include proper alignment and simulated operational checks including systems capable of adjustable firing angles. Data shall be recorded to define the most efficient procedures and the time required for each major action in loading the stores in the required configurations. The loading procedures tests shall be conducted during the original fit test and during subsequent loadings, if required. Where installation conversion (aircraft reconfiguration) is required due to peculiarities of the store being installed, conversion time will be recorded. In computing installation conversion time, reconfigurations shall be performed by a single crew without special tools or equipment other than items which will be available to operational crews performing similar functions.

5.3.3 Clearance Tests. The store installation shall be visually inspected and verified to the clearance requirements of para 4.3. Satisfactory operation of all external movable equipment (such as flaps, slats, speed brakes, or armament systems capable of adjustable firing angles) shall be demonstrated to their limits. In cases of marginal ground clearances, further investigation and study shall be given to the effect of emergencies or unnatural conditions such as deflated struts and flat tires, on runway clearances of suspended stores. Whenever marginal clearance between the external store and the aircraft landing gear system (including the envelope described by parts of the landing gear during retraction/extension) is suspected, the aircraft will be placed on jacks and a landing gear retraction/extension test performed to determine actual clearances.

5.3.4 Accessibility Tests. Accessibility requirements will be verified by performance of all operations required for checking, filling or loading, and removing safety pins, and adjusting the stores. The operations will be performed with the aircraft in its normal ground attitude and in the sequence determined by the loading procedure test, para 5.3.2. The appropriate hand tools will be used to make adjustment on the store fittings, fuze installations, arming wire attachments, and any other equipment maintenance. Hand and tool space shall be evaluated for ability to perform operations, adjustments, etc., considering protective clothing worn by operational loading personnel.

5.3.5 Store Reinforced Area Test. The store shall be checked for proper alignment between the ejection mechanism and the store reinforced area. Applicable preloads shall be introduced to the store through the sway braces. The store structure shall be inspected to verify support of the installation loads without permanent set in any portion of the store structure exceeding that outlined in MIL-A-8591.

5.3.6 Electrical Function Test. Functional tests or calibrations to demonstrate proper operations of the equipment being tested shall be performed.

5.3.6.1 Electrical Interface. All electrical connections between the store and the pylon/aircraft structure shall be checked for possible sources of mechanical and electrical failure caused by improper routing of cables making them susceptible to strains or short circuits resulting from movement by airstream forces and for compliance with the electromagnetic interference and hazardous radiation specifications MIL-E-6051 and MIL-STD-1385. Electrical connectors shall be checked to ensure that they cannot be mated to the wrong pylon or rack plug and that suitable provisions exist to secure and protect unused cables and connectors.

5.3.6.2 Store Functional Check. Functional checks shall be conducted to ensure proper continuity of all electrical circuits and proper operation of all electrical/electronic equipment. The actual or simulated operation evaluations may be made using special test equipment.

5.3.6.3 Armament Control System Check. Functional checks on each installation of the control and monitor circuits shall be made. Where possible, it shall include functioning of power sources, functioning of all circuits up to release or firing mechanisms, functioning of all safety devices, and checking of all armament indicator lights. Armament systems which are capable of adjustable firing angles (elevation, depressed, azimuth) shall be checked to ensure positive stops and clearances to prevent damage from projectiles to the aircraft structure or rotor disk.

5.3.7 Armament Weapons Support Equipment (AWSE) Compatibility Test. AWSE compatibility shall be verified by performance of all operations required during transporting, filling, and loading/down-loading the stores and other weapon components, containers, etc., intended for use in the weapon logistic system.

5.3.7.1 Test Conditions. Compatibility with AWSE shall be determined under normal field operating conditions existing at the test site. Consideration shall be given to any limitations due to adverse weather conditions. Standard military or Government equipment shall be used wherever feasible. Equipment types, capacities, and sizes established as standard for military departments are listed in MIL-HDBK-300.

5.4 Documentation of Observations. A report documenting the conduct and the results of the ground fit and compatibility effort shall be prepared for the certification agency. The report written shall contain the test objectives, test plan, a detailed description of the test articles and test aircraft including electrical wiring interface, facilities, other required equipment, conditions, procedures and sequences used, test results, observations, photographs documenting the overall test configurations and all necessary separation/clearances or anomalies, data accuracy, and, if requested by the certification agency, conclusions about the utility of the data. Test articles and equipment shall be identified by model and serial numbers, with any deficiencies clearly identified, as necessary to repeat the test at a latter date. The specific size and type of AWSE auxiliary equipment used in preparation, handling, loading, and removing shall be recorded. A preliminary store or store/container and support equipment

MIL-STD-1289B

flow chart shall be prepared and shall show store/container flow through each storage and handling phase of the installation test. The specific functional operations performed on the store and all equipment, tools, and other devices required to accommodate the store to determine unusual strains, overloads, and wear occurring during handling shall be recorded. Similarly, all replacements, alterations, modifications, or adjustments other than those considered normal for the equipment or store shall be recorded.

5.5 Safety Standards. The following safety standards shall be considered in the evaluation of the store and its installation procedure.

- a. There shall be positive measures to prevent inadvertent or accidental arming, launching, firing, actuating, or releasing.
- b. Components and circuitry shall be provided which will "fail safe" in the event of failure or malfunction.
- c. Every possible safety precaution shall be provided to make installation of the store a safe operation.
- d. The store installation shall provide positive safety lock and latching mechanisms which can readily be checked for secure and proper installation by direct visual and mechanical means on the ground.
- e. Administrative controls such as safety rules and directives issued by competent authority shall be provided.

6.0 NOTES.

6.1 Intended Use. This standard is intended to present important required and desired characteristics of store installations which are achievable in the majority of store and auxiliary equipment designs and to preclude serious aircraft installation discrepancies. Since this presents a general procedure, it cannot properly account for the various special problems which appear in new store and nuclear weapon designs. Therefore, review must be given to the requirements of this standard and the applicable documents to determine the specific requirements of each store based on the detail specification for that store.

6.2 Types of Tests. The inspections and testing requirements may further be altered by the type of test being conducted, i.e., feasibility, development, advanced development, etc. In all cases, however, the fit and compatibility test shall be adequate to show the installation is satisfactory and shall demonstrate adequately that the system will perform in a manner commensurate with the requirements of the entire test program.

6.3 Conflicting Requirements. If requirements of this standard are at variance with those of the aircraft/store detail specification, the requirements of the detail specification shall apply. However, documentation and approval of deviations or waivers from this standard is required by the cognizant authority responsible for the aircraft.

MIL-STD-1289B

Custodians:

Army-AV
Navy-AS
Air Force-18

Review Activities:

Army-MI

Preparing Activity:

Army-AV

Project No. GDRQ-0103

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-STD-1289B

2. DOCUMENT DATE (YYMMDD)

3. DOCUMENT TITLE

AIRBORNE STORES GROUND FIT AND COMPATIBILITY, REQUIREMENTS FOR

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)

7. DATE SUBMITTED
(YYMMDD)

(1) Commercial
(2) AUTOVON
(If applicable)

B. PREPARING ACTIVITY

a. NAME

Commander
U.S. Army Aviation Systems Command

b. TELEPHONE (Include Area Code)

(1) Commercial
(314) 263-1613

(2) AUTOVON
693-1613

c. ADDRESS (Include Zip Code)

ATTN: AMSAV-EDS
4300 Goodfellow Blvd.
St. Louis, MO 63120-1798

IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:
Defense Quality and Standardization Office
5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466
Telephone (703) 756-2340 AUTOVON 289-2340