

NOTICE OF CHANGE

INCH-POUND

MIL-STD-2088A
NOTICE 1
05 May 1997

DEPARTMENT OF DEFENSE
DESIGN CRITERIA STANDARD

BOMB RACK UNIT (BRU), AIRCRAFT, GENERAL DESIGN CRITERIA FOR
TO ALL HOLDERS OF MIL-STD-2088A

1. The following pages of MIL-STD-2088A have been revised and supersede the pages listed:

NEW PAGE	DATE	SUPERSEDED PAGE	DATE
5	05 May 1997	5	20 May 1994
6	05 May 1997	6	20 May 1994
15	20 May 1994	15	Reprinted without change
16	05 May 1997	16	20 May 1994
17	05 May 1997	17	20 May 1994
18	20 May 1994	18	Reprinted without change

2. Retain the Notice and insert before Table of Contents.

3. Holders of MIL-STD-2088A will verify that page changes and additions indicated above have been entered. This issuance, together with appended pages, is a separate publication. Each notice is to be retained by stocking points until the standard is completely revised or canceled.

Custodians:
Army - AV
Navy - AS
Air Force - 11

Preparing activity:
Navy - AS
(Project 1095-0300)

AMSC N/A

FSC 1095

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

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HANDBOOKS

MILITARY

MIL-HDBK-5	Metallic Materials and Elements for Aerospace Vehicle Volumes 1 and 2 Structures
MIL-HDBK-235-1	Electromagnetic (Radiated) Environment Considerations for Design and Procurement of Electrical and Electronic Equipment, Subsystems and Systems

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this standard to the extent specified herein.

DRAWINGS

NAVAL SEA SYSTEMS COMMAND (CAGE Code 10001)

2263759	Latch, Spring Assembly
422872	Arming Wire, Single, MK 1 MOD 0, Arming Wire, Double, MK 2 MOD 0

(Unless otherwise indicated, copies of Naval Sea Systems Command drawings are available from the Naval Ordnance Station (Code 802), Louisville, KY 40214-5001.)

NAVAL AIR WARFARE CENTER

(30003) 1380547	Body assembly, bomb (500 lb)
2841466	Body assembly, bomb (1000 lb)
923AS101	Body assembly, bomb (2000 lb)

(Copies are available from Commander, Naval Air Warfare Center Weapons Division (Code 332200E, Attn: Data Management), 550 Stinson Avenue, Building 248, Room 230, Camarillo, CA 93010.)

PUBLICATIONS

MILITARY

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MIL-BUL-147 Specifications and Standards of Non-Government Organizations Released for
Flight Vehicle Design and Construction

(Unless otherwise indicated, copies of military bulletins are available from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

NAVAL AIR SYSTEMS COMMAND

AR-43 Electromagnetic Compatibility Advisory Board; Requirement for

SD-24 General Specification for Design and Construction of Aircraft Weapon Systems

WS-2081 Switch, Arming Safety, Mark 122 Mod 0

(Copies of AR-43, SD-24, and WS-2081 are available from the Naval Air Systems Command, Standardization Section (AIR-4.1C), 1421 Jefferson Davis Highway, Arlington, VA 22243-5110.)

NORTH ATLANTIC TREATY ORGANIZATION (NATO)

STANAG 3575 Ed.5 Aircraft Stores Ejector Racks

AIR STANDARDIZATION COORDINATING COMMITTEE (ASCC)

AIR STD 20/10 Ejector Release Units for Aircraft Stores

AIR STD 20/16 Electromagnetic Compatibility of Aircraft Electroexplosive Subsystems

AIR STD 20/17 Mechanical Connectors Between Stores and Suspension Equipment for Arming
and Associated Functions of Stores

AIR STD 20/18 Laboratory Tests for Stores Suspension Equipment

(Unless otherwise indicated, copies of STANAGs and AIR STDs are available from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

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requirements of MIL-STD-100 shall govern the part numbers and changes thereto.

4.5 Identification and marking. Identification and marking shall be in accordance with MIL-STD-130. Nameplates for equipment identification shall be in accordance with MIL-P-15024, Size 3, Type A (c) or H, Style III and MIL-N-18307. All parts shall be marked with part numbers and, if applicable, lot numbers. Specifications on engineering drawings shall provide for part marking and shall indicate location of marking for accessibility.

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5. DETAILED REQUIREMENTS

5.1 Loading (see 3.3) of stores. The BRU/store interface shall be designed with adequate space provisions to allow safe, rapid loading and off-loading of all applicable stores with a minimum of personnel, no peculiar equipment or tools required. This interface shall provide good visibility and easy access to all controls, connections, switches and devices that relate to store loading/off-loading operations and positive visual determination of status of store installation. Consideration shall be given to store handling equipment installation (including manual loading equipment) and hook-lug entry angle during loading/off-loading operations. BRU geometry shall provide for the proper application of existing non-permanent hoisting adapters, hoisting devices including manual loading equipment, and loading carts or trucks as specified herein. All loading and off-loading or related equipment attachment or installation points shall be clearly marked and identified as to proper usage. For Navy aircraft applications, any BRU loading attachments or hoisting components shall be capable of withstanding a vertical limit loading of 2.67 g and carrier roll rates of $\pm 20^\circ$ with a 17 second period and pitch of $\pm 3^\circ$ with an 8 second period. BRU/store interface shall be compatible with the controls, load application range, and operational requirements of current applicable U.S. inventory support equipment including Single Hoist Ordnance Loading System (SHOLS) (see MIL-I-8671). In addition, the interface shall provide compatibility with manual loading equipment such that stores up to and including the 1,000 pound class can be loaded rapidly and safely with a minimum of personnel and without special tools or equipment. All connections or disconnections; ie, arming wire installation, cartridge installation, fuzing connections, and safety interlock function required during this sequence of events, shall be accomplished after the store is structurally attached to the BRU without releasing the store attachment (AIR STD 20/17).

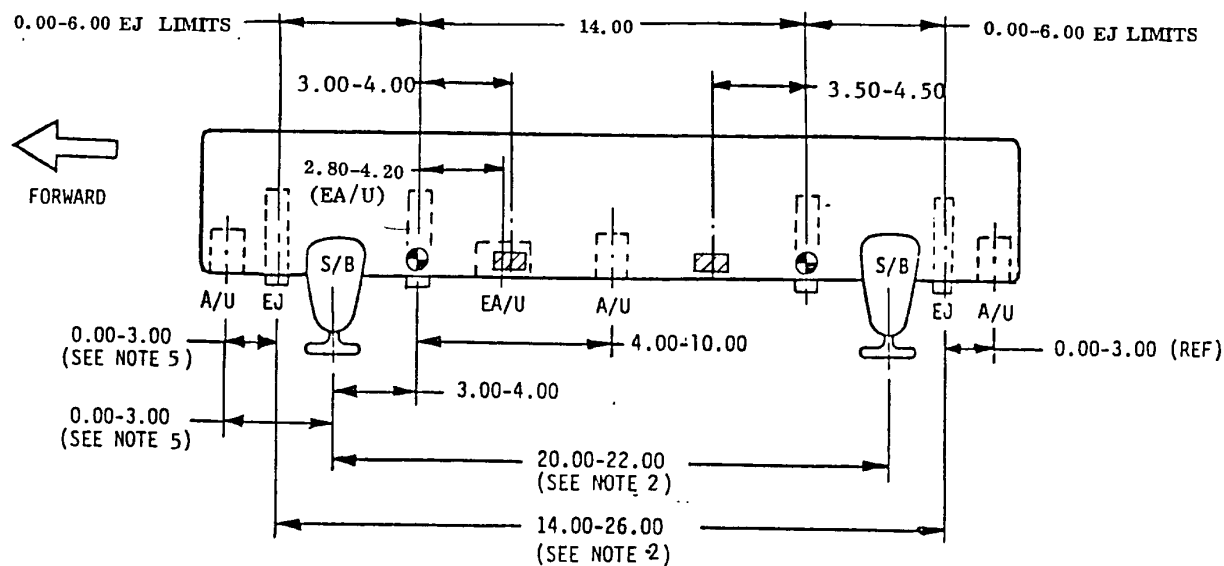
5.1.1 Support Equipment (SE). The BRU shall be designed to be capable of being installed, tested, serviced and maintained using standard SE and hand tools. Use of common hand tools shall be maximized. All SE shall be identified and grouped by maintenance level (Organizational and Intermediate).

5.1.2 Engagement, latching, and vertical support (see 3.7). The activation of the BRU vertical support latches (see 3.2) shall be automatic upon engagement of the store, independent of each other, and their position shall be visually discernible on both sides without requiring power. Overcenter latching devices, such as toggles and cams, if used, shall be designed and installed in such a way as to provide positive latching and unlatching and shall be insensitive enough to preclude inadvertent unlatching due to vibrations, tolerance build up, wear or structural deflections under load. Latching devices shall have a minimum travel of 15° from the latched to overcenter position. The vertical supports shall be designed such that they are either latched or unlatched with no in-between position. The vertical support system shall consist of two hooks to support 14-inch or 30-inch suspension store or four symmetrically positioned hooks for systems requiring

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14 and 30-inch suspension. BRU lower surface to store upper surface clearance shall be as specified in MIL-A-8591 (STANAG 3575 Ed.5 and AIR STD 20/10). After a store has been released, the latching system shall engage and latch the next loaded store without additional actions of the loading crew. The vertical latching force required to engage the store shall not exceed 25 pounds per hook for Type I BRUs and 50 pounds per hook for Type II BRUs. The vertical support shall be located as shown in Figure 1 and Figure 2. Ejector feet shall not impact the weld areas as defined in NAVAIR bomb assembly drawings (30003) 923AS101, 2841466 and 1380547.



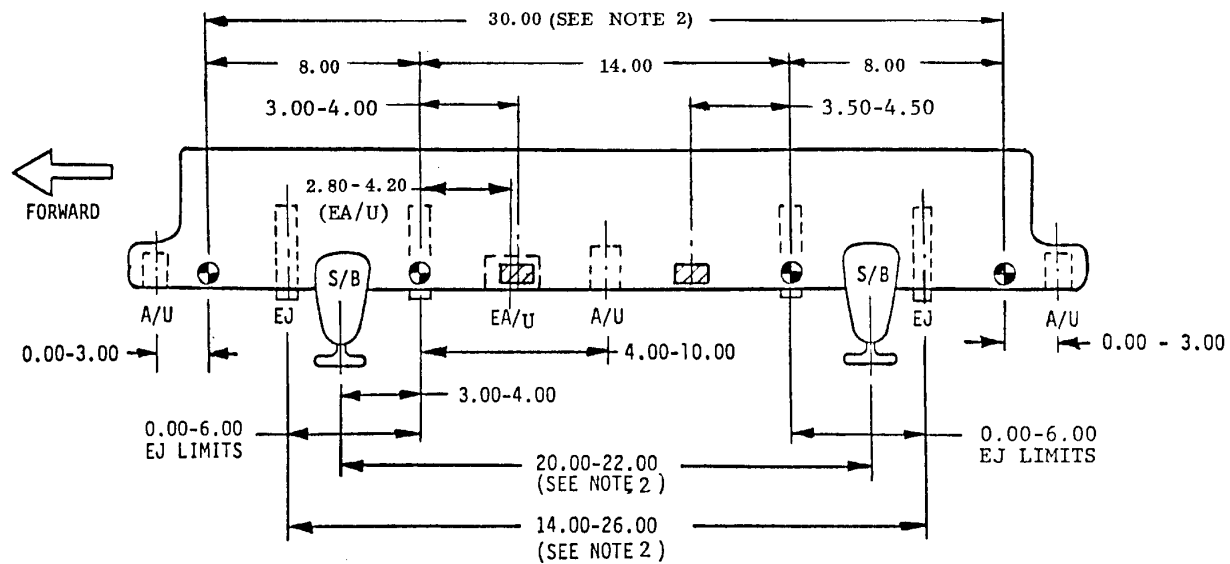
Notes:

1. Dimensions are in inches.
2. Dimensions are symmetrical about the midpoint of the 14-inch hook spacing.
3. Legend:
 - S/B = Sway brace
 - A/U = Mechanical fuze arming unit
 - EA/U = Electrical fuze arming unit (MK 39 receptacle)
 - EJ = Ejector
 - ⊗ = Store suspension hook
 - ▨ = Positive arming attachment
4. All dimensional limit lines are located at \perp of feature
5. Fore and aft A/Us shall be located 0.00-3.00 inches outboard of the outer most interface feature (sway brace or ejector piston).

FIGURE 1. 14-inch hook spacing, Type I, bomb rack unit (BRU)
geometric relationships.



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Notes:

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 EJ = Ejector
 = Store suspension hook
 = Positive arming attachment

4. All dimensional limit lines are located at \perp of feature

FIGURE 2. 14/30-inch hook spacing, Type II, bomb rack unit (BRU)
geometric relationships.

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