MILITARY SPECIFICATION

RACK, BOMB EJECTOR, AIRCRAFT
BRU-32/A

This specification is approved for use within the Naval Air Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification establishes the requirements for the manufacture, testing, and acceptance of the BRU-32A bomb rack capable of carrying, releasing, and ejecting stores having suspension lugs spaced 14 inches and 30 inches apart. The BRU-32A bomb rack shall be utilized for carrying and forced ejection release of storesm weighing from 500 pounds to 2,600 pounds. The test units in this specification define minimum acceptable requirements.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer, Naval Air Engineering Center, Systems Engineering and Standardization Department (SESD) Code 93, Lakehurst, NJ 08733-5100, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 1095

2. APPLICABLE DOCUMENTS

2.1 Government Documents

2.1.1 Specifications and Standards. The following specifications and standards form a part of his specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

Military

MIL-W-5088	Wiring, Aerospace Vehicle
MIL-T-7743	Testing, Store Suspension, and Release Equipment, General Specification for
MIL-C-81842	Connector Assemblies for Bomb Rack Electric Fuzing Provisions
MIL-H-85042	Hooks , Bomb Rack, General Specification for
MIL-A-85046	Actuator, Linear, Electromechanical 1
MIL-A-85836	Arming Unit, Zero Retention Force

STANDARDS

Military

DOD-STD-100	Engineering Drawing Practices
MIL-STD-129	Marking for Shipment and Storage
MIL-STD-130	Identification Marking of U.S. Military Property
MIL-STD-143	Standards and Specifications, Order of Precedence for the Selection of
MIL-STD-461	Electromagnetic Emission and Susceptibility Requirements for the Control of Electromagnetic Interference
MIL-STD-704	Aircraft Electric Power Characteristics
MIL-STD-794	Parts and Equipment, Procedures for Packaging of

MIL-STD-831	Test Reports, Preparation of
MS-3314	Lug, Suspension, (1,000 lb. Class) Airborne Equipment
MIL-B-5087	Bonding, Electrical, and Lightning Protection, for Military Aircraft

2.1.2 Drawings. The following drawing forms a part of this the issue shall be that in effect on the date of the solicitation.

Naval Air Systems Command

1380540 Lug, Suspension, MK-3 Mod 0

(copies of specifications, standards, and drawings required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified in the contract or purchase order, a sample(s) shall be subjected to first articles inspection (see 4.3 and 6.3.1)

3.2 Selection of specifications and standards. Specifications and standards for necessary commodities and services not specified herein shall be selected in accordance with the requirements of MIL-STD-143.

3.3 Interchangeability. All parts having the same part number shall be directly and completely interchangeable with each other with respect to installation and performance.

3.4 Identification and marking. All parts shall be marked as specified on the drawings for the bomb rack (see 3.5.1) or in accordance with MIL-STD-130, if not specified on the drawings. The item identification and part number requirements of DOD-STD-100 shall govern the part number and changes thereto.

3.5 Bomb Rack.

3.5.1 Construction. The construction of the bomb rack shall be in accordance with the drawings listed in the data list for the bomb rack being procured and as specified in the contract.

3.5.2 Performance. The bomb rack shall meet the performance requirements when subjected to the following test in the order specified in Tables I and II.

a. Bomb rack inspection (see 4.6.1)

b. Functional (see 4.6.2)

c. Arming unit (see 4.6.3)

d. Electric fuze arming (see 4.6.4)

e. Manual operation (see 4.6.5.1)

f. Electrical characteristics (see 4.6.5.2)

g. Electromagnetic compatibility (see 4.6.5.3)

h. Lag time determination (see 4.6.5.4)

i. Icing (see 4.6.5.5)

j. Shock (see 4.6.5.6)

k. Vibration (see 4.6.5.7)

l. Sand (see 4.. 6.5.8)

m. Temperature shock (see 4.6.5.9)

n. High-g (see 4.6.5.10)

o. Life (see 4. 6.5.11)

p. Stress corrosion (see 4.6.5.12)

q. Humidity (see 4.6.5.13)

r. Fungus (see 4.6.5.14)

s. Lock shut firing (see 4.6.5.15)

t. Static test (see 4.6.5.16)

u. Salt spray/altitude (see 4.6.5.17)

3.6 Requirements for parts.

3.6.1 Hooks. The construction and inspection of the hooks shall be in accordance with MIL-H-85042. Prior to installation into bomb racks, the hooks shall have met all of the first article and sampling requirements of MIL-H-85042.

3.6.2 Linear Actuator. The linear actuator shall be in accordance with MIL-A-85046.

3.6.3 Mechanical Fuze Arming Unit. Two mechanical fuze arming units shall be in accordance with MIL-A-85836.

3.6.4 Electrical Fuze Arming Unit. Electrical fusing shall be in accordance with MIL-C-81841.

3.6.5 Wiring. All electrical wiring shall be in accordance with MIL-W-5088.

3.7 Electrical Bonding. The bomb rack shall meet the design requirements of MIL-B-5087.

3.8 Workmanship. The workmanship displayed in fabrication and assembly of the bomb racks shall be such as to assure, within design limitations, the ability of the bomb racks to meet their performance requirements under all applicable environmental conditions specified herein. The standards of workmanship exhibited in the approved first article sample, subject to any qualification stated in the government's notice of approval, shall determine the requirements of the contract relative to workmanship (see 4.6.1).

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facility suitable for the performanance of the inspection requirements specified herein, unless disapproved by the government. The-government reserves the right to perform any of the inspection set forth in this specification, where such tests are deemed necessary to assure that the supplies and services conform to prescribed requirements.

4.101 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor’s overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply wit all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Classification of inspections The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.3)

b. Quality conformance inspection (see 4.4)

4.3 First article inspection. First article inspection shall consist of all the tests listed in Table 1. First article inspection report format shall be in accordance with MIL-STD-831 (see 6.2.2).

4.3.1 Sampling for first article inspection. First article samples shall consist of the first two bomb racks manufactured on the contract. These samples shall be permanently labeled A and B for ease of identification. Failure of the bomb rack to pass any of the first article inspection shall be cause for rejection (see 6.3.1).

4.4 Quality conformance Inspection. Quality conformance inspection shall consist of the following:

a. Individual tests (see 4.4.1)

b. Sampling tests (see 4.4.2)

Quality conformance inspection report format shall be in accordance with MIL-STD-831 (see 6.3).

4.4.1 Individual tests. Individual tests are those conducted on each bomb rack. Individual tests for the bomb rack are specified in Table II, Group I. Failure to pass any of these tests shall be cause for rejection of the bomb rack.

4.4.2 Sampling tests. A random sampling of the bomb racks shall be selected by the government representative from each production lot in accordance with Table III and shall be subjected to the tests listed in Table II, Group 1 and Group 2. These samples shall be identified as A, B, C, D. Group 1 tests shall be conducted prior to Group 2 tests. Failure to pass any of these test shall be cause for rejection of the entire lot (see 6.2.lC and 6.3).

4.5 Test conditions. Unless otherwise specified herein, all tests shall be performed under the following conditions:

a. Room temperature. Room ambient of 77±18°F.

b. Test temperature. All parts of the test item shall be stabilized at the specified temperature ±5°F indicated prior to conducting any tests. Unless otherwise specified herein, temperature stabilization will have been attained when the indicated temperature of the surface of the largest mass of the test item does not change by more than ±5°F in a period of one hour.

Swaybraces. When tests require stores to be mounted to the bomb rack, swaybraces shall be used. Swaybraces shall be in the fully retracted “normal” position during testing.

d. Test stores. The stores, as referenced herein by weight, shall conform to the following parameters. The store suspension lugs shall be in accordance with MS3314 and Drawing 1380540.

(l). The 500 pound store shall utilize applicable suspension lugs, spaced 14 inches apart. Its diameter and center of gravity shall be based on the MK82 L.D.G.P. bomb.

(2). The 1,m000 pound store shall utilized applicable suspension lugs, spaced 14 inches apart. Its diameter and center of gravity shall be based on the MK83 L.D.G.P. bomb.

(3). The 2,000 pound store shall utilize applicable suspension lugs, spaced 30 inches apart. Its diameter and center of gravity shall be based on the MK84 L.D.G.P. bomb.

(4). The 2,600 pound store shall utilize applicable suspension lugs, spaced 30 inches apart. Its swaybrace contact points and center of gravity shall be based on a BRU-33/A loaded with two MK83 L.D.G.P. bombs.

e. Input power requirements. The bomb rack shall perform satisfactorily under all applicable conditions specified herein from a 28 VDC rated voltage power source with characteristics and limits as defined in MIL-STD-704 except that the bomb rack shall operate over a range of 20 to 30 VDC measured at the bomb rack's input connectors(s).

4.6 Inspection

4.6.1 Bomb rack inspection. Each bomb rack shall be inspected to ensure that it has been properly assembled, adjusted, electrical connections are secure, in accordance with appropriate drawings, and that the workmanship is as specified herein (see 3.8).

4.6.1.1 Qualification by analysis, inspection and demonstration. All requirements forthe bomb rack not qualified by testing shall be qualified by analysis, inspection or demonstration acceptable to the procuring activity.

4.6.1.2 Packaging inspection. The packaging for each bomb rack shall be examined to ensure that the preparation for delivbery conforms to this specification (see section 5).

4.6.2 Functional test. Each bomb rack mounted in a horizontal position shall pass the following tests:

a. Place the safety selector handle in the unlocked position. Close all the hooks, and then place the safety selector handle in the locked position. Verify that the indicator on the bomb rack side shows “locked” and that the two cam position indicators are aligned in the latched position. Apply a 380 ±20 inch-pound torque to the manual release bolt. The release mechanism shall not actuate.

b. With both sets of hooks closed, place the safety selector handle in the unlocked position. Verify that the indicator on the bomb rack side shows “unlocked”. Rotate the manual release bolt to open the hooks. The release meachanism shall operate smoothly. The torque required to rotate the manual release bolt shall be not greater than 360 inch-pounds. Verify that the two cam position indicators ahve rotated approximately 90 degrees from their aligned position.

c. Place the safety selector handle in the unlocked position. Close all the hooks, and then lock the bomb rack by operating the In-Flight operable Bomb Rack Lock (IFOBRL) electrically. Verify that the IFOBRL operates smoothly. Verify that the indicator on the bomb rack side shows “locked”, and that the two cam position Indicators are aligned in the latched position. Apply a 380 ±20 inch-pound torque to the manual release bolt. The release mechanism shall not actuate.

d. With both sets of hooks closed, unlock the bomb rack by operating the IFOBRL electrically. Verify that the IFOBRL operates smoothly. Verify that the indicator on the bomb rack side shows “unlocked". Rotate the manual release bolt to open the hooks. The release mechanism shall operate smoothly. The torque required to rotate the manual release bolt shall be not greater than 360 inch pounds. Verify that the two cam position indicators have rotated approximately 90 degrees from their aligned position.

e. With both sets of hooks closed, lock the bomb rack by operating the IFOBRL electrically. Unlock the bomb rack by operating the override electrically. Verify that the override linkage operates smoothly. Verify that the indicator on the bomb rack side shows “unlocked”. Rotate the manual release bolt to open the hooks. The release mechanism shall operate smoothly. The torque required to rotate the manual release bolt shall not exceed 360 inch-pounds. Reset override mechanism by rotating safety selector handle counterclockwise towards the locked position .125 inches until override detent is released.

f. With all hooks open, verify that swaybraces can be moved into the swaybrace housings with a force not to exceed 30 pounds. close one set of hooks at a time. Verify that with either set of hooks closed the swaybrace assemblies can be lifted into the swaybrace housings with a force not to exceed 30 pounds. With both sets of hooks closed, verify that the swaybrace assemblies cannot be lifted more than .25 inch into the swaybrace housings.

g. With the hooks closed, and the safety selector handle in the unlocked position, apply a 20,000 pound vertical down static load on the 14-inch hooks using standard bomb lugs. The load shall be concentrated midway between the hooks. The hooks shall hold the load.

h. Repeat (g) with a 72,000 pound vertical down static load on the 30-inch hooks. This test requires that the bomb rack is mounted with six mounting bolts.

i. Load a 2,000 pound test store (see 4.5.d). Place the safety selector handle in the locked postion. Verify swaybraces cannot be moved into the swaybrace housings. Place the safety selector handle in the unlocked position. Rotate the manual release bolt to release the store. The release mechanism shall operate smoothly. The torque required to rotate the manual release bolt shall be not greater than 360 inch-pounds.

WARNING

The bomb rack shall not be fired without a reactive store load imposed on the ejector piston.

j. Place the safety selector handle in the unlocked position. Suspend a 500 pound store from the 14 inch hooks. Place the safety selector handle in the locked position. Install two CCU-45/B cartridges in the breech chambers. Install the cartridge chambers in the breech and tighten until bottomed. Verify the swaybraces cannot be moved into the swaybrace housing and then place the safety selector handle In the unlocked position. Apply 28 VDC (+) to pins J and H and 28 VDC (-) to pins K and G of connector J1. The impulse cartridges shall ignite and the store shall be ejected. Clean and inspect the breech and ejector assemblies and surrounding areas of the bomb rack. There shall be no damage to the bomb rack.

k. Repeat (j) with a 2,000 pound store suspended from the 30-inch hooks and two CCU-45/B cartridges Installed in the ejector assembly.

l. Place the safety selector handle in the unlocked position. suspend a 2,000 pound store from the 30-inch hooks. Place the safety selector handle in the locked position. Install one MK-19 MOD 0 cartridge in the auxiliary breech. Install the breech plug in the auxiliary release and tighten until bottomed. Check the swaybraces as in (h) and then place the safety selector handle in the unlocked position. Apply 28 VDC (+) to pin F, and 20 VDC (-) to pin E of connector J1. The impulse cartridge shall ignite and open the hooks, allowing gravity release of the store. Clean and inspect the auxiliary breech and surrounding areas of the bomb rack. There shall be no damage to the bomb rack.

4.6.3. Arming units. With bomb rack hooks closed and the arming units unenergized, an arming wire loop shall be inserted in the tail and nose arming units. With each arming unit unenergized, each arming unit shall retain the arming wire loop to loads up to 300 lbs. The arming unit shall then be energized and the hooks manually opened. The arming unit shall retain the arming wire loop to loads up to 300 lbs. The hooks shall be closed and the arming unit unenergized. The hooks shall then be manually opened and the arming wire loop shall not be retained by the arming unit.

4.6.4 Electrice fuze arming. The 0° and 15°F pull out force for the electric fuze connector shall be in accordance with MIL-C-81842. Three successive measurements shall be performed. In addition, the interlock

switch shall be verified to be open when the bomb rack is latched and closed when the bomb rack is released.

4.6.5 Additional tests. The bomb rack shall successfully pass the following test of MIL-T-7743 as specified except as modified herein. The arming units shall meet the requirements of 4.6.3 when they are required to be tested and they shall be tested in the vertical downward direction only. Whenever ejections are performed, the lag time requirements shall not exceed .050 seconds. For all climatic tests (icing, sand, humidity, fungus, salt spray, altitude), the bomb rack shall be unlocked.

4.6.5.1 Manual operation. This test shall be conducted in accordance with 4.6.2.c, 4.6.2.d, and 4.6.2.e.

4.6.5.2 Electrical characteristics. The bomb rack shall be tested to demonstrate all electrical equipment on the bomb rack operates when 20 VDC is applied to the input connectors. High voltage tests will not be performed on components with sensitive solid state electronics (arming units, relays).

4.6.5.3 Electromagnetic compatibility. The bomb rack shall meet the requirements of MIL-STD-561.

4.6.5.4 Lag time determination. This test shall be conducted in accordance with the lag or time of release determination test for horizontal bombing items.

4.6.5.5 Icing. This test shall be conducted in accordance with the Navy and Air Force icing test as specified in MIL-T-7743. The bomb rack shall meet the requirements during and after the environmental exposure.

4.6.5.6 Shock. The light load tests shall be conducted with the bomb rack locked a 500 pound store for 14 inch hooks. Yield load tests shall be conducted with a 2,600 pound store for the 30 inch suspension hooks. Applied shock amplitudes shall be as specified In Table IV. The shock test for arrested landing load shall be conducted with the bomb rack locked.

4.6.5.7 Vibration. This test shall be conducted in accordance with Procedure II of the vibration test. The Bomb Rack lock shall be cycled during this test. The test store used shall be 500 pounds for the 14 inch hooks and 2,000 pounds for the 30 inch hooks (see 4.5.d).

4.6.5.8 Sand. The bomb rack shall meet the requirements during and after exposure to this environmental condition.

4.6.5.9 Temperature. shock. The bomb rack shall meet the operating requirements during and after exposure.

4.6.5.10 High-g. This test shall be conducted with the following conditions,

14 inch suspension - perform 12 ejections with the applied load based on a 1,000 pound store.

b. 30 inch suspension - perform 13 ejections with the applied load based on a 2,600 pound store.

4.6.5.11 Life. This test shall be conducted in accordance with the life test for explosive items. A 500 pound store shall be used with 14-inch hooks and a 2,600 pound store shall be used with the 30-inch hooks.

4.6.5.12 Stress corrosion. This test shall be conducted on the 30-inch spaced hooks.

6.5.13. Humidity. The bomb rack shall meet the requirements of this specification during and after exposures to this enviromental condition.

4.6.5.14 Fungus. The bomb rack shall be tested with the hooks in the open position. The bomb rack shall meet the requirements of this specification during and after exposure to the fungus growth test.

4.6.5.15 Lock shut firing. The bomb rack shall retain the store after the following test. There shall be no damage to the bomb rack.

a. Suspend a 2,600 pound store from the 30-inch hooks.

b. Place the safety selector handle in the-locked position or lock the IFOBRL electrically.

c. Install two CCU-45/B cartridges in the breech chambers. Install the cartridge chambers in the breech and tighten until bottomed.

d. Ignite the impulse cartridges by applying 28 VDC (+) to pins J and H, and 28 VDC (-) to pins K and G of connector J1.

4.6.5.16 Static test. This test shall be conducted with the following conditions. Yield load shall be 1.15 times and ultimate loads 1.5 times the limit load given in Table V. The combined loads and moments shall be applied to a rigid simulated store of negligible weight in accordance with Table V such that they act at the store center of gravity.

4.6.5.17 Salt spray/altitude. The bomb rack shall meet the requirements of This specification during the altitude test and after exposure to the salt spray.

5. PACKAGING

5.1 Bomb rack preservation and packaging. Preservation and packaging shall be in accordance with level A, B or C as specified in MIL-STD-794, as specified in the contract, without the use of preservation compound.

5.2 Shipping. Shipping containers shall contain one each packaged bomb rack. The container shall be suitable for level A, B or C as specified in MIL-STD-794.

5.3 Unitized loading. Unitized loading for the bomb rack is authorized as specified in MIL-STD-794.

5.4 Marking. All shipping containers shall be marked in accordance with the requirements of MIL-STD-129 with the following information:

RACK, BOMB EJECTOR, AIRCRAFT; BRU-32/A

MILITARY SPECIFICATION NO. MIL-R-85895

PRESERVED (DATE)

DOMESTIC OR EXPORT PACKED (AS APPLICABLE)

GOVERNMENT ORDER NO. (OR CONTRACT NO.)

NAME OF SUPPLIER (AND NAME OF MANUFACTURER)

MANUFACTURER'S CODE IDENTIFICATION NUMBER

6. NOTES

6.1 Intended use. The bomb rack covered by this specification is a single carriage ejector bomb rack for carriage of 14-inch and 30-inch suspension stores, multiple carriage bomb racks, and external fuel tanks. The bomb rack is mounted externally in an aircraft wing pylon or fuselage and will accommodate stores ranging in diameter from 10 inches to 28 inches and weighing up to 2,600 pounds. The bomb rack is intended to be used on the F/A-18/TF-18 aircraft.

6.2 Ordering data.

6.2.1 Acquisition requirements. Acquisition documents shall specify the following:

a. Title, number and date of this specification.

b. Selection of applicable levels of preservation, packaging and packaging required (see 5.1 and 5.2).

c. Samples subjected to sampling inspection shall not be considered or accepted as part of the contract (see 4.4.2).

d. Sampling inspection selection (see 4.4.2).

e. Number of samples and inspection sequence for production lots in excess of 300 units (see Table III).

f. Inspection sequence for hooks (see 3.6.1).

g. Drawing package for the bomb rack (see 3.5.1).

h. Applicable maintenance manuals for the bomb rack.

i. Name and location of government representative responsible for random selection of test samples (see 4.4.2).

j. Name and location of government approved test laboratory.

k. Number and designation of impulse cartridges required for testing (see 4.6.2 and 4.6.5).

l. Name and location of government activity responsible for supplying arming wire assemblies (see 4.6.3).

6.2.2 Data requirements. When this specification is used in a procurement which incorporates DD Form 1423 and invokes the provisions of DOD FAR Supplement, Part 27, Sub-Part 27.410-6, the data requirements identified below will be developed as specified by an approved data Item Description (DD Form 1664)and delivered in accordance with the approved Contract Data Requirements List (CDRL). When the provisions of the DOD FAR Supplement, Part 27, Sub-Part 27.410-6 are not involved, the data specified below will be delivered by the contractor in accordance with the contract requirements. Deliverable data required by this specification is cited in the following paragraphs:

Paragraph No.	Data Requirement Title	Applicable DID No. Option
4.3	Inspection and Test Reports	DI-T-5329
4.4	Inspection and Test Reports	DI-T-5329

6.3 Contract provision. The contract shall specify the following provision for first article inspection.

6.3.1 First article. When a first article inspection is required for testing and approval (See 3.1, 4.3, 6.2 and 6.3), the contract should specify the following provision for first article inspection. When a contractor is in continuous production of bomb racks from contract to contract, consideration should be given to waive the first article inspection. If testing is required, indicate:

If first article inspection is conducted at the contractor's plant or a government approved laboratory an inspection report should be forwarded to the procuring activity for verification.

b. That the approval of first article samples or the waiving of the first article test shall not relieve the contractor of his obligation to fulfill all other requirements of the specification and contract.

6.4 International Standardization Agreement. Certain provisions (see 3.5.1) of this specification are the subject of international standardization agreements STANAG 3575, AIR STD 20/10 and AIR STD 20/17. When amendment, revision or cancellation of this specification is proposed which will affect or violate the international agreement concerned, the preparing activity will take appropriate reconciliation action through international standardization channels including departmental standardization offices, if required.

6.5 Subject term (keyword) listing.

Rack, Bomb Ejector, Aircraft, BRU-32A
Bomb Rack, single carriage, 14 and 30 inch suspension stores
Bomb Rack, multiple carriage
Fuel Tanks, multiple carriage
Stores, 500 to 2,600 pounds

Preparing Activity
Navy-AS
(Project 1095-N242)

TABLE I - First Article Inspections - SCHEDULE AND SEQUENCE 1/

TESTS	TEST PARAGRAPH	SAMPLE A	SAMPLE B
Bomb Rack Inspection	4.6.1	1	1
Functional Test	4.6.2	2	2
Arming Unit	4.6.3	3	3
Electrical Fuzing Arming	4.6.4	4	4
Manual Operation	4.6.5.1	5	x
Electrical Characteristics	4.6.5.2	6	5
Electromagnetic Compatibility	4.6.5.3	7	x
Lag Time Determination	4.6.5.4	8	x
Icing	4.6.5.5	9	x
Shock	4.6.5.6	10	v
Vibration	4.6.5.7	x	6
Sand	4.6.5.8	11	x
Temperature Shock	4.6.5.9	x	7
High-g	4.6.5.10	12	x
Life	4.6.5.11	13	x
Stress Corrosion	4.6.5.12	14	x
Humidity	4.6.5.13	x	8
Fungus	4.6.5.14	x	9
Lock Shut Firing	4.6.5.15	15	x
Static Test	4.6.5.16	x	10
Salt Spray/Altitude	4.6.5.17	x	11

1/ Inspection sequence is denoted by the numbers in the sample columns. An x denotes test not required.

TABLE II - Quality Conformance Inspection - SCHEDULE AND SEQUENCE 1/

TESTS	TEST PARAGRAPH	SAMPLE			
Group 1		ALL SAMPLES			
Bomb Rack Inspection	4.6.1	1			
Functional	4.6.2	2			
Arming Unit	4.6.3	3			
Electric Fuze Arming	4.6.4	4			
Group 2		A	B	C	D
Manual Operation	4.6.5.1	1	X	1	X
Electrical Characteristics	4.6.5.2	2	1	2	1
Electromagnetic Compatibility	4.6.5.3	3	x	3	x
Lag Time Determination	4.6.5.4	4	x	x	2
Icing	4.6.5.5	5	X	X	X
Shock	4.6.5.6	X	2	X	X
Vibration	4.6.5.7	X	3	X	X
Sand	4.6.5.8	6	X	X	X
Temperature Shock	4.6.5.9	x	4	x	x
High-g	4.6.5.10	7	x	4	x
Life	4.6.5.11	8	X	X	3
Stress Corrosion	4.6.5.12	9	X	X	X
Humidity	4.6.5.13	X	5	X	X
Fungus	4.6.5.14	x	6	X	X
Lock Shut Firing	4.6.5.15	10	x	5	x
Static Test	4.6.5.16	x	7	x	4
Salt Spray/Altitude	4.6.5.17	x	8	X	5

1/ Inspection sequence is denoted by the numbers in the sample columns. An X denotes test not required.

TABLE III - Lot and Sample Size

ITEM	PRODUCTION LOT SIZE	NUMBER OF SAMPLES
Bomb Racks	100 Or less	2
	101 - 200	3
	201 - 300	4
	301 or more	1/

1/ The procuring activity shall specify the number of samples and the sequence of tests each unit shall be subjected to for lots greater than 300 racks (see 6.2.1 e)

TABLE IV - APPLIED SHOCK LOADS

DIRECTION	APPLIED SHOCK LIGHT LOAD (g's) FOR 250 lb STORE	APPLIED SHOCK YIELD LOAD (g's) FOR 2600 lb STORE
Vertical Down	25	12
Vertical Up	25	6.5
Longitudinal Forward	25	9
Longitudinal Aft	25	9
Transverse Port	25	7.5
Transverse Starboard	25	7.5

TABLE V - Static Test Limit Loads

SIMULATED STORE CHARACTERISTICS

Store	Luq Center	Longitudinal Dimension Aft of Fwd Lug[1]	Vertical Dimension From Top of Store[1]
A	30 in.	15.0 in.	1.0 in.
B	30 in.	15.0 in.	16.125 in.
c	30 in.	11.93 in.	10.35 in.

COMBINED LIMIT LOADS AND MOMENTS ABOUT REFERENCE POINTS (STORE C.G.)[2]

Con-dition	Store	Pz Vert-ical	Py Side	Px Longi-tudinal	Mzz Yaw Moment	Myy Pitch Moment	Mxx Roll Moment
1	A	-23100	17300	2750	66000	57200	267200
2	B	-20727	17272	-20727	-31622	114525	18630
3	C	-20070	17250	-31050	-43578	181575	2835

SIGN CONVENTION

+Px = Longitudinal Aft
+Py = Side to Port
+Pz = Vertical Up
+Mxx = Roll Clockwise Looking Forward
+Myy = Pitch Nose Up
+Mzz = Yaw Nose to Port

Note: 1. The centroid of the loads shall act at a point in accordance with these dimensions.

2. Dimensions are in inch-pounds.

INSTRUCTIONS: In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge *(DO NOT STAPLE)*, and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

NOTE: This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification 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.

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Naval Air Engineering Center
Systems Engineering and Standardization Department
(SESD), Code 93
Lakehurst, NJ 08733-5100

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions – Reverse Side)

1. DOCUMENT NUMBER	2. DOCUMENT TITLE
MIL-R-85895 (AS)	RACK, BOMB EJECTOR, AIRCRAFT BRU-32/A

3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION *(Mark one)*
	☐ VENDOR
	☐ USER
b. ADDRESS *(Street, City, State, ZIP Code)*	☐ MANUFACTURER
	☐ OTHER *(Specify)*: _____

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER *(Last, First, MI)* – Optional	b. WORK TELEPHONE NUMBER *(Include Area Code)* – Optional
c. MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional	8. DATE OF SUBMISSION *(YYMMDD)*

DD FORM 82 MAR 1426

PREVIOUS EDITION IS OBSOLETE.

MILITARY SPECIFICATION

RACK, BOMB EJECTOR, AIRCRAFT
BRU-32/A

This amendment forms a part of MIL-R-85895(AS), dated 28 March 1988, and is approved for use by the Naval Air Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

PAGE 1

In beneficial comments, fifth line, delete "93" and substitute "53."

PAGE 2

2.1.1, In "Specification and standards," last line, after "solicitation," add "(see 6.2.1)."

2.1.1, under "SPECIFICATIONS,"
add "MIL-B-5087 Bonding, Electrical, and Lightning Protection, for Aerospace Systems"

delete "MIL-A-85836 Arming Unit, Zero Retention Force"

2.1.1, under "STANDARDS," delete "MIL-STD-143" and substitute "MIL-STD-970" and delete "MIL-STD-794" and its title and substitute
"MIL-STD-2073-1 DOD Materiel Procedures for Development and Application of Packaging Requirements"

PAGE 3

2.1.1, under "STANDARDS,"
delete "MS-3314" and substitute "MS3314" and delete "MIL-B-5087" and its title.

2.1.1. below "MS3314" add "(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Ave, Philadelphia, PA 19111-5094.)"

Delete "2.1.2 Drawings" and its sentence and substitute
"2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation."

2.1.2, above "Naval Air Systems Command," add "DRAWINGS."

2.1.2, under "Naval Air Systems Command", add:
"1534AS251 Filter Assembly, Low Pass-EMI

1534AS462 Arming Unit, Zero Retention Force"

FSC 1095
AMSC N/A

2.1.2, below “1534AS462" delete in its entirety “(copies of specifications, standards, and drawings in connection ---------- activity.)” and substitute “(Copies are available from the Naval Air Technical Services Facility (NATSF) (Code 312), 700 Robbins Avenue, Philadelphia, PA 19111-5097.)”

3.1, delete its sentence in its entirety and substitute "When specified (see 6.2.1), a sample shall be subjected to first article inspection (see 6.3.1) in accordance with 4.3.”

3.2, last line, delete “MIL-STD-143” and substitute “MIL-STD-970.”

PAGE 5

3.6.3, second line, delete “MIL-A-85836” and substitute “NAVAIR Drawing 1534AS462.”

4.1, third line, after “requirements,” add “(examinations and test).”

4.1, fifth line, delete “facility” and substitute “facilities.”

4.1, eighth line, delete “tests” and substitute “Inspections.”

4.1, ninth line, delete “assure “ and substitute “ensure.”

4.1.1, first line, delete “must” and substitute “shall. ”

4.1.1, sixth line, delete “assuring” and substitute “ensuring.”

4.1.1, eighth line, delete “Sampling in quality conformance” and substitute “Sampllng inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this.”

PAGE 6

4.4, last line, delete “(see 6.3)” and substitute “(see 6.2.2).”

4.4.2, fourth and fifth lines, delete second sentence, “These samples shall be identified as A, B, C, D.”

PAGE 7

4.5d(4), first line, delete “2,600” and substitute “2,400.”

PAGE 9

4.6.2k, first line, delete “2,000” and substitute “2,400.”

4.6.2l, second line, delete “2,000” and substitute “2,400.”

4.6.3, fourth and sixth lines, delete “300” and substitute “600.”

PAGE 10

4.6.5.3, second line, after “MIL-STD-461, ” add “as modified by NAVAIR Drawing 1534AS251.”

4.6.5.6, third line, delete “2$600” and substitute “2,400.”

4.6.5.7, second line, before “Procedure II” add “MIL-T-7743.”

PAGE 11

4.6.5.10b, second line, delete “2,600” and substitute “2,400.”

4.6.5.11, last line, delete “2,600” and substitute “2,400.”

4.6.5.15a, first line, delete “2,600” and substitute “2,400.”

PAGE 12

5.1, second line, delete “MIL-STD-794” and substitute “MIL-STD-2073-1. ”

5.2 and 5.3, last line, delete “MIL-STD-794” and substitute “MIL-STD-2073-1.”

Under “.6. NOTES” add
“(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)”

PAGE 13

6.2.1, under “1” add
“m. When first article is required (see 3.1 and 6.3.1).
n Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1 .1).”

Delete 6.2.2 in its entirety and substitute
“6.2.2 Consideration of data requirements. The following data requirements should be considered when this specification is applied on a contract. The applicable Data Item Descriptions (DID’s)- should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/provided and that the DID’s are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DOD FAR Supplement 27,475-1 exempts the requirement for a DO Form 1423.

Reference Paragraph	DID Number	DID Title	Suggested Tailoring
4.3, 4.4	DI-T-2072	Reports, test	---

The above DID’s were those cleared as of the date of this specification. The current issue of DOD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DID’s are cited on the DD Form 1423.”

6.3.1, second line, delete “6.2” and substitute “6.2.1. ”

PAGE 14

Delete existing 6.5 in its entirety and substitute
"6.5 Subject term (key word) listing.

Fuel tanks, multiple carriage
Multiple carriage
Single carriage, 14 and 30 Inch suspension stores
Stores, 500 to 2,600 pounds"

PAGE 15

Delete existing table I in its entirety and substitute as shown

"TABLE I. First article Inspections - schedule and sequence. 1/

Tests	Test paragraph	Sample A	Sample B
Bomb rack InspectIon	4.6.1	1	1
Functional test	4.6.2	2	2
Arming unit	4.6.3	3	3
Electric fuze arming	4.6.4	4	4
Manual operation	4.6.5.1	5	x
Electrical characteristics	4.6.5.2	6	5
Electromagnetic compatibility	4.6.5.3	7	x
Lag time determination	4.6.5.4	8	x
Icing	4.6.5.5	9	x
Shock	4.6.5.6	x	6
Vibration	4.6.5.7	x	7
Sand	4.6.5.8	10	x
Temperature shock	4.6.5.9	x	8
High-g	4.6.5.10	11	x
Life	4.6.5.11	12	x
Stress corrosion	4.6.5.12	13	x
Humidity	4.6.5.13	x	9
Fungus	4.6.5.14	x	10
Lock shut firing	4.6.5.15	14	x
Static test	4.6.5.16	x	11
Salt spray/altitude	4.6.5.17	x	12

1/ Inspection sequence Is denoted by the numbers in the sample columns. An X denotes test is not required."

Delete existlng table V in its entirety and substitute table V as shown

"TABLE V. Static test limit loads.

Simulated store characteristics

Store	Lug center	Longitudinal dimension aft of lug 1/	Vertical dimension from top of store 1/
A	30 inch	15.0 inch	1.0 inch
B	30 inch	15.0 inch	16.125 inch
C	30 inch	11.93 inch	10.35 inch

Combined limit loads and moments about reference points (store c.g.) 2/

Condition	Store	Pz vert-ical	Py side	Px longi-tudinal	Mzz yaw moment	Myy pitch moment	Mxx roll moment
1	A	-15,400	11,533	1,833	4,400	38,133	178,133
2	B	-13,818	11,515	-13,818	-21,081	76,350	12,420
3	C	-13,380	11,500	-20,700	-29,052	121,050	1,890

Sign convention

+Px = Longitudinal aft
+Py = Side to port
+Pz = Vertical up
+Mxx = Roll clockwise looking forward
+Myy = Pitch nose up
+Mzz = Yaw nose to port

1/ The centrold of the loads shall act at a point In accordance with these dimensions.

2/ All loads are in pounds. All moments are In inch-pounds."

Preparing activity:
Navy - AS
(Project 1095-N257)