

MIL-C-28872(EC)  
 17 March 1983  
~~SUPERSEDING~~  
 MIL-C-24056C(SHIPS)  
 6 November 1970  
 MIL-C-28794(EC)  
 18 June 1973

MILITARY SPECIFICATION  
 CABINET, ELECTRONIC EQUIPMENT  
 CY-4516C/S ( )

This specification is approved for use by the Naval Electronic 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 covers the basic requirements applicable to the design and construction of a single bay environmental cabinet to house electronic equipment in a shipboard environment.

2. APPLICABLE DOCUMENTS.

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. Unless otherwise specified, the following specifications, standards, and handbooks of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation form a part of this specification to the extent specified herein.

SPECIFICATIONS

MILITARY

MIL-S-901	Shock Test, H.I. (High-Impact); Shipboard Machinery, Equipment and Systems, Requirements For
MIL-L-3661/21	Lampholder, Lenses, Indicator Light, Style LC21
MIL-L-3661/38	Lampholder, Housing, Indicator Light, Style LH80
MIL-P-15024	Plates, Tags, and Bands for Identification of Equipment
MIL-E-16400	Electronic, Interior Communication and Navigation Equipment, Naval Ship And Shore; General Specification For
MIL-F-16552	Filter, Air Environmental Control System, Cleanable, Impingement (High Velocity Type)
MIL-W-16878/4	Wire, Electrical, Polytetrafluoroethylene (PTFE) Insulated, 200 Degrees C, 600 Volts, Extruded Insulation
MIL-F-19207/20	Fuseholders, Extractor Post Type, Nonindicating, Types FHN31G1 And FHN31G2
MIL-B-23071	Blowers, Miniature, For Cooling Electronic Equipment (10 to 500 CFM), General Specification For
MIL-T-55164/3	Terminal Board, Molded, Barrier, Screw Type, Class 39TB

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Naval Electronic Systems Command, ATTN: ELEX 8111, Washington, DC 20363, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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## STANDARDS

## FEDERAL

FED-STD-151 Metal, Test Methods

## MILITARY

MIL-STD-105 Sampling Procedures And Tables For Inspection By Attributes  
 MIL-STD-108 Definition Of And Basic Requirement For Enclosure For Electric And Electronic Equipment  
 MIL-STD-109 Quality Assurance Terms And Definitions  
 MIL-STD-167 Mechanical Vibrations Of Shipboard Equipment (Type I - Environmental And Type II - Internally Excited)  
 MIL-STD-454 Standard General Requirements For Electronic Equipment  
 MIL-STD-740 Airborne And Structureborne Noise Measurements And Acceptance Criteria Of Shipboard Equipment  
 MS24525 Switch, Toggle, Four Pole, Environmentally Sealed

(Copies of specifications, standards, handbooks, drawings, and publications required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.1.2 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. The issues of the documents which are indicated as DoD adopted shall be the issue listed in the current DoDISS and the supplement thereto, if applicable.

## AIR MOVEMENT AND CONTROL ASSOCIATION, INC.

Standard Test Code for Air Moving Devices, Bulletin 210-67

(Application for copies should be addressed to the Air Moving and Conditioning Association, Inc, 30 West University Drive, Arlington Heights, IL 60004.)

## AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

Fluid Meters, Part II, Interim Supplement 19.5, Instruments and Apparatus, 1972.

(Application for copies should be addressed to the American Society of Mechanical Engineers, Order Dept, United Engineering Center, 345 E. 47th St, New York, NY 10017.)

## ELECTRONIC INDUSTRIES ASSOCIATION (EIA)

EIA RS-310-C-7 - Racks, Panels, and Associated Equipment

(Application for copies should be addressed to EIA, 2001 Eye Street, N.W., Washington, DC 20006.)

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

## 3. REQUIREMENTS

3.1 First article sample. When specified, a sample shall be subjected to first article inspection (see 4.3 and 6.2).

3.2 General requirements. The cabinet shall be designed in accordance with the requirements of MIL-E-16400 to the extent specified herein.

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3.2.1 Material. Unless otherwise specified, the materials used in the construction of the cabinets and the methods of application shall be in accordance with the Materials paragraph and the Magnetic characteristics paragraph of MIL-E-16400 (see 6.1.1).

### 3.3 Design and construction.

3.3.1 Design. The contractor is encouraged to use the simplest lightweight design consistent with meeting the specified functional and environmental requirements.

3.3.2 Cabinet assembly. The complete cabinet assembly shall consist of a basic cabinet, blower compartment (with components specified in 3.3.8), and a steel foundation (see 3.3.9). A complete list of the contents shall be included in each shipping container.

3.3.3 Cabinet dimensions. The cabinet shall be in accordance with the dimensions shown in FIGURE 1.

3.3.3.1 Vertical and horizontal distortion. Vertical and horizontal members and panels shall not exhibit bowness in excess of 0.125 inches (0.3174 cm) in any plane. Out-of-squareness shall not exceed 0.10 degree for the full internal height dimension of the cabinet. The diagonal measurement of the cabinet front, top, bottom, rear, or sides shall not differ more than 0.12 inches (0.3048 cm).

3.3.4 Weight. The maximum weight of the cabinet assembly, less foundation, shall be 425 pounds (192.8 Kg). The foundation shall have a maximum weight of 75 pounds (34.0 Kg). Total weight of a complete cabinet assembly, including foundation (see 3.3.2), shall not exceed 500 pounds (226.8 Kg).

3.3.5 Cabinet sidewalls. The cabinet sidewalls shall be fabricated of aluminum alloy and serve as primary structural members. Each wall shall provide four vertical plenums suitable for passing air from the blower compartment to the installed electronic equipment. The inside dimension of the plenums will be a minimum of 3.5 inches (8.89 cm) wide and will be located in the sidewalls in accordance with FIGURE 2. All plenums shall have the capability to be used for either intake or exhaust. This shall be accomplished by eight 3 inch by 3 inch (7.62 cm) holes cut in each plenum with 0.25 (0.64 cm) minimum radius in each corner. These holes shall be located in accordance with FIGURE 2. Discharge ports at the top of each plenum will permit air to flow into the removable chimneys (see 3.3.6). All holes will be provided with removable covers. The design of the plenums shall be such as to reduce airflow resistance to a minimum consistent with the structural requirements of the cabinet. Vertical support strips, 0.75 inches (1.905 cm) by 1.50 inches (3.81 cm), shall be provided within front edges of the cabinet walls to which the drawer slides, cabinet dividers, and mounting blocks for electronic equipment will be fastened. These strips shall have a length equivalent to the internal cabinet height. The cabinet shall be capable of accommodating standard 19-inch panels, and therefore, dimensioning of tapped mounting holes shall conform to EIA RS-310-C-77.

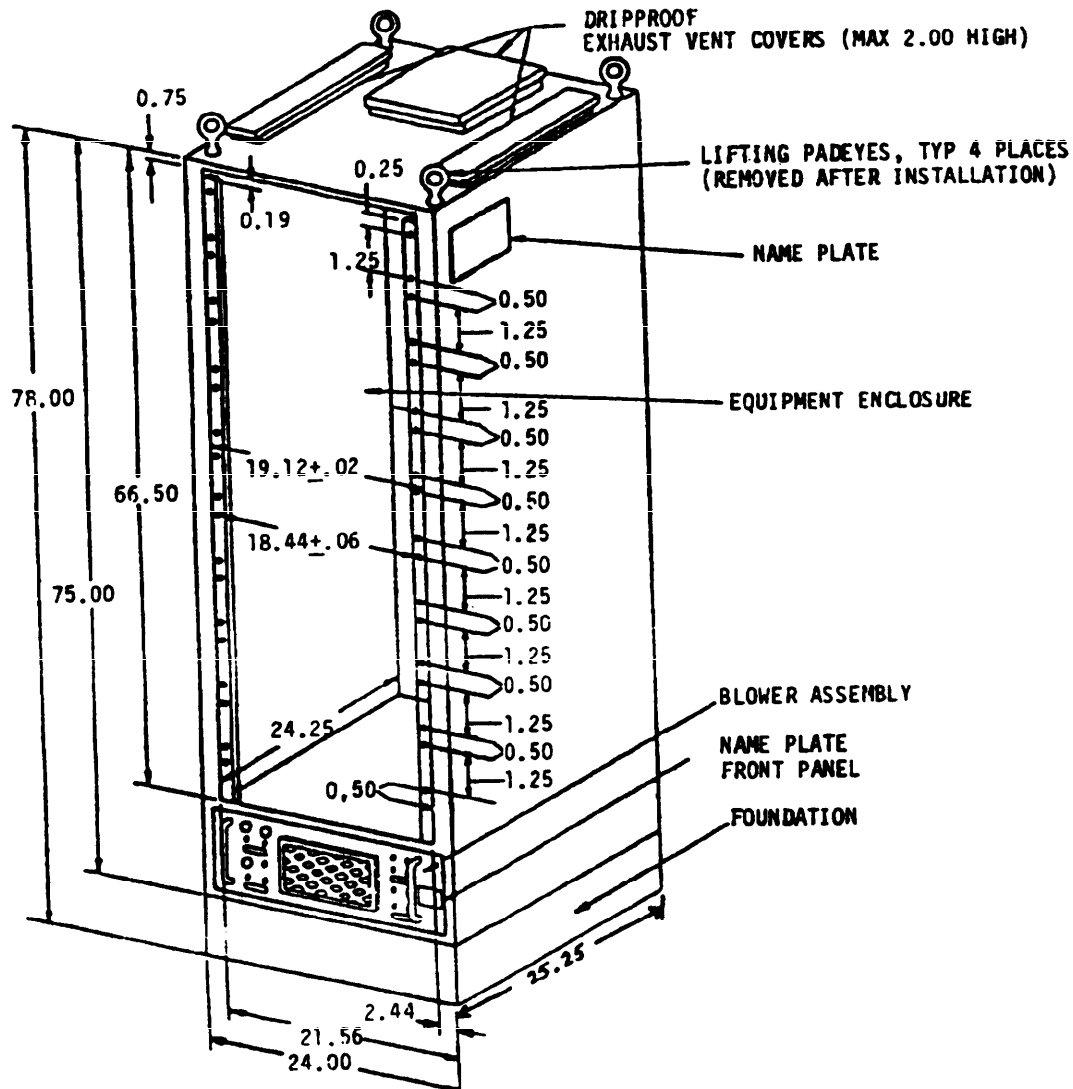
3.3.6 Cabinet top and chimneys. The cabinet top shall contain a removable chimney on each side to permit the escape of air from the plenums being used for exhaust. The construction of the chimneys shall be such that the net exhaust area for airflow is not less than the combined cross sectional area of the plenums in the sidewall. A third chimney, 10 inch by 10 inch (25.4 cm), shall be centered from side to side and 2 inches (5.08 cm) from the back of the cabinet to provide an additional means of interior cabinet ventilation. All chimneys will be a maximum of 2 inches (5.08 cm) in height. The cabinet top and chimneys shall meet the drip-proof requirements of MIL-STD-108 (see 4.5.6).

3.3.7 Cabinet back. The cabinet shall have a removable back panel to facilitate installation of equipment and cabling. The panel shall extend from the top to the base of the cabinet and shall not exceed 0.25 inches (0.64 cm) thickness.

3.3.8 Blower compartment. The blower compartment shall be located at the base of the cabinet and designed to prevent the entrance of unfiltered air. The blower compartment shall contain a terminal board and blower chassis assembly including blower(s) (see 3.3.8.2). Four holes with removable covers will be located in each side of the compartment to permit the required airflow to enter the sidewall plenums (see 4.5.2.2).

3.3.8.1 Terminal board location. Location of the terminal board in the blower compartment shall permit easy access when the blower chassis assembly is removed. The terminal board and its marking strip, which shall be provided by the contractor, shall be 39TB10 in accordance with MIL-T-55164/3. The terminal board shall be adequately covered to prevent electric shock when the blower chassis assembly is open.

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## NOTES:

1. DIMENSIONS ARE IN INCHES.
2. METRIC EQUIVALENTS ARE GIVEN FOR GENERAL INFORMATION ONLY AND ARE BASED UPON 1 INCH = 2.54 CM.
3. WIDTH OF 24.00 INCLUDES SIDE PANELS.
4. DEPTH OF 24.25 DOES NOT INCLUDE FRONT AND REAR PANELS.
5. ALL DIMENSIONS  $\pm .0625$  (0.16 CM) UNLESS OTHERWISE SPECIFIED.
6. MTG. BRACKET CONTINUES TO .19 FROM BOTTOM OF CABINET WITH HOLE DIMENSIONS CONTINUING IN SAME SEQUENCE.
7. HOLES IN BRACKETS ARE DRILLED ON  $18.44 \pm .06$  CENTERS AND TAPPED FOR 10/32 SCREWS.

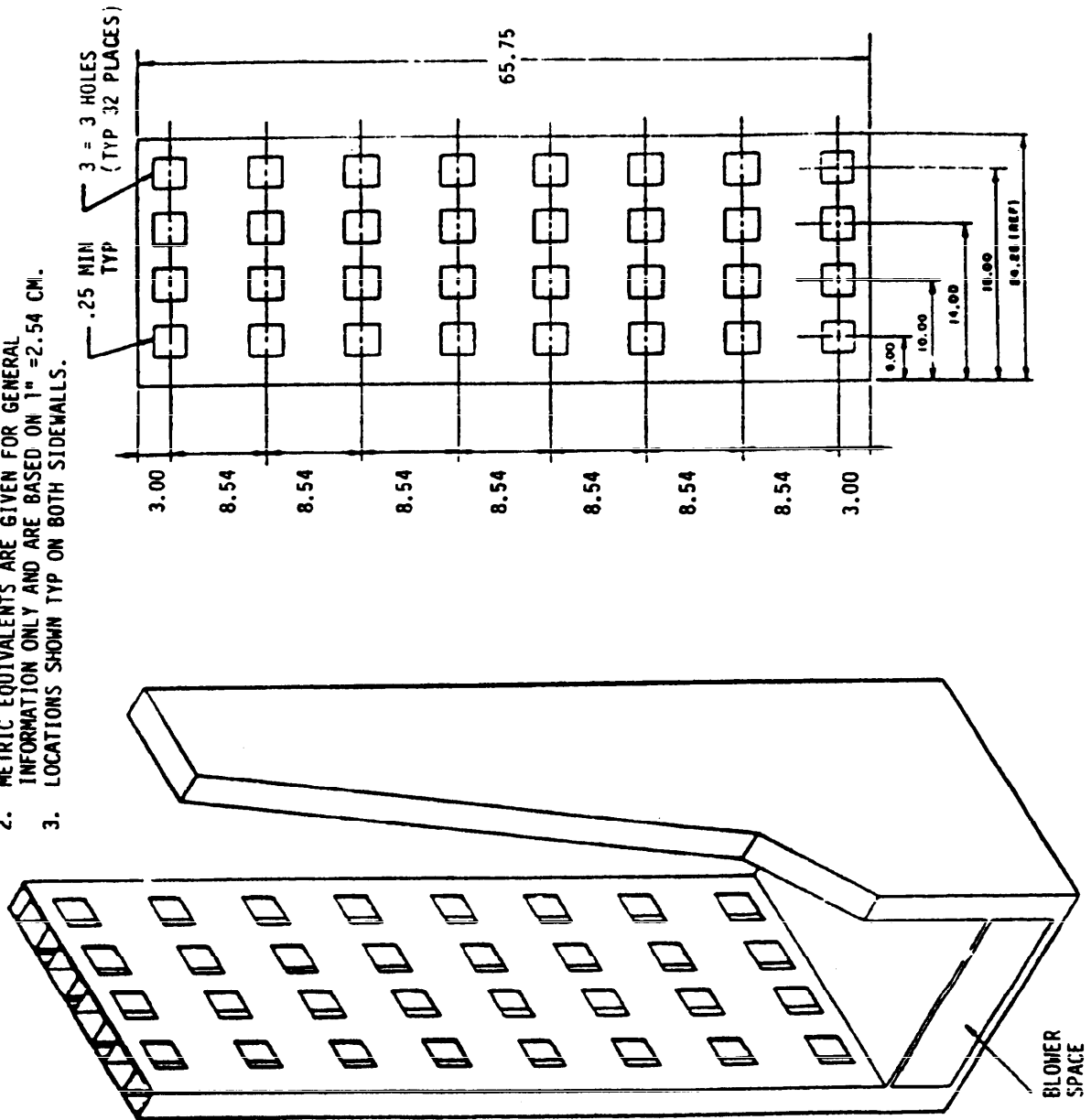
METRIC EQUIVALENT	
INCHES	CM
0.19	0.48
0.25	0.64
0.50	1.27
0.75	1.91
1.25	3.18
2.00	5.08
2.44	6.20
$18.44 \pm .06$	$46.84 \pm .15$
$19.12 \pm .02$	$48.57 \pm .05$
21.56	54.76
24.00	60.96
24.25	61.60
25.25	64.14
66.50	168.91
75.00	190.50
78.00	198.12

FIGURE 1. Cabinet dimensions.

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NOTES:

1. DIMENSIONS ARE IN INCHES.
2. METRIC EQUIVALENTS ARE GIVEN FOR GENERAL INFORMATION ONLY AND ARE BASED ON 1" = 2.54 CM.
3. LOCATIONS SHOWN TYP ON BOTH SIDEWALLS.



METRIC EQUIVALENT	
INCHES	CM
0.25	0.64
3.00	7.62
6.00	15.24
8.54	21.69
10.00	25.40
14.00	35.56
18.00	45.72
24.25	61.59
65.75	167.00

FIGURE 2. Cabinet sidewalls -- plenum mounting and hole location.

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**3.3.8.2 Blower chassis assembly.** The blower chassis assembly shall consist of the blower(s) mounted on the chassis deck and a front panel. The required blower quantity may vary from one to four as long as the minimum cabinet airflow requirements are met (see 4.5.2.2). The blower shall be designed for ease of removal/replacement on the chassis deck. Blowers shall operate from 115 volts  $\pm 10$  percent, 60 hertz (Hz)  $\pm 5$  percent, and shall have a minimum life expectancy of 20,000 hours. Unless otherwise specified (see 6.2.1), all blowers shall meet the requirements of MIL-B-23071. The blower chassis shall be designed to admit the air supply through an easily removable filter mounted in the front panel. The filter shall meet the same general construction as specified in MIL-F-16552.

Air volume rate will be a minimum of 800 standard cubic feet per minute (scfm) (22.65 cubic meters per minute) (see 4.5.2.2), and filter dimensions may be modified in the interest of ensuring that the required airflow is provided. The blower(s) shall be installed in a manner which will allow the capability of directing the airflow to the right-hand, or left-hand side of the cabinet, or any combination thereof.

**3.3.8.3 Front panel.** The front panel of the blower chassis assembly shall provide means for disconnecting blowers and equipment from the power sources. The front panel shall contain an air filter (see 3.3.8.2) and the following electrical devices:

- a. One power on-off, single-throw, four-pole toggle switch (Part number MS24525-24) for each installed blower in accordance with MS24525.
- b. One power on indicating light for each installed blower with red jewel, indicator light housing style LH80/1 in accordance with MIL-L-3661/38; lens style LC21RD3 in accordance with MIL-L-3661/21; and lamp Industry No. 6S6DC-125V, or equivalent.
- c. Two panel-mounted fuseholders type FHN31G1 or FHN31G2 for each installed blower in accordance with MIL-F-19207/20.

**3.3.9 Foundation.** Unless otherwise specified in the contract or order (see 6.2.1), a 3 inch (7.62 cm) high, welded, mild steel foundation shall be provided to support the weight of the cabinet plus 700 pounds (317.5 Kg) of equipment evenly distributed.

**3.3.10 Electrical.** All internal wiring shall be provided and connected between the control panel, terminal board, and the blowers. Wiring shall be type E14 in accordance with MIL-W-16878/4. Mating connectors shall be provided for all receptacles. Fuses shall not be provided.

**3.3.11 Hoisting.** The cabinet shall contain a removable lifting eye in each corner of the cabinet top. Diagonally opposed eyes shall be capable of lifting the complete cabinet (see 3.3.2), plus equipment. "LIFT HERE, USE ALL FOUR EYES" shall be marked adjacent to the lifting eyes.

**3.3.12 Threaded devices.** Threaded devices shall be in accordance with Requirement 12 of MIL-STD-454.

**3.3.13 Thread-locking devices.** Thread-locking devices shall be in accordance with Requirement 12 of MIL-STD-454.

**3.3.14 Welding.** Structural welding shall be in accordance with Requirement 13 of MIL-STD-454.

**3.3.15 Corrosion protection, corrosion resisting treatment and painting.** Corrosion protection and corrosion resisting treatments shall be in accordance with MIL-E-16400.

**3.3.16 Blower operation.** The ventilation blowers shall be energized and subjected to an operational test to ensure qualitatively the proper functioning of the blowers and all electrical devices, including adequate airflow and conformance with the safety requirements, as specified in 4.5.2.

**3.3.17 Shock, vibration, and inclination.**

**3.3.17.1 Shock.** The equipment shall be capable of withstanding the shock test for Grade A, Class I, medium weight, Type A equipment as specified in MIL-S-901.

**3.3.17.2 Vibration.** The equipment shall be capable of withstanding the Type I environmental vibration test of MIL-STD-167.



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3.3.17.3 Inclination. The equipment shall conform to the inclination requirements of MIL-E-16400.

3.3.18 Airborne noise. The equipment shall be capable of withstanding the airborne noise test for Grade A equipment as specified in MIL-STD-740.

3.3.19 Salt spray. The equipment shall be capable of withstanding the salt spray test, Method 811.1, as specified in FED-STD-151.

3.3.20 Dripproof. The equipment shall be capable of withstanding the dripproof test as specified in MIL-STD-108.

3.3.21 Power interruption. The equipment shall operate without any damage or permanent change in characteristics due to the power interruption test of MIL-E-16400.

3.4 Identification plates and markings. Unless otherwise specified, the cabinet shall carry identification plates and markings in accordance with MIL-P-15024 (see 6.2.1).

3.4.1 Cabinet marking. Each cabinet shall be identified by nomenclature, National Stock Number, and serial number with an identification plate located on the front of the cabinet sidewalls.

3.4.1.1 Blower chassis assembly marking. The blower chassis assembly shall be identified by nomenclature and serial number, with an identification plate located on the front panel of the blower chassis assembly. This identification plate shall be plainly visible when the blower chassis assembly is installed in the blower compartment of the equipment cabinet.

3.5 Workmanship. Workmanship of the cabinet, including all parts and assemblies, shall conform to Requirement 9 of MIL-STD-454.

#### 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 facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Government verification. All quality assurance operations performed by the contractor will be subject to Government verification at any time. Verification will consist of, but is not limited to, a) surveillance of the operations to determine that practices, methods, and procedures of the written quality program are being properly applied, b) Government product inspection to measure quality of the product to be offered for acceptance, and c) Government inspection of delivered products to assure compliance with all inspection requirements of this specification. Failure of the contractor to promptly correct deficiencies discovered by him or of which he is notified shall be cause for suspension of acceptance until corrective action has been taken or until conformance of the product to prescribed criteria has been demonstrated.

4.1.2 Quality assurance terms and definitions. Quality assurance terms used in this specification shall be as defined in MIL-STD-109.

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
  1. Production inspection (Group A) (see 4.4.1)
  2. Production control inspection (Group B) (see 4.4.2)
  3. Environmental inspection (Group C) (see 4.4.3)

4.3 First article inspection. Unless otherwise specified (see 6.2.1), one unit shall be required for first article inspection. First article inspection shall consist of all examinations and testing necessary to determine compliance with all applicable requirements of this specification, including the tests specified in TABLE I.

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TABLE I. Examinations and tests.

Examination or test	Requirement paragraph	Test paragraph	First article inspection	Quality conformance inspection		
				Group A	Group B	Group C
Surface examination	3.2.1	4.5.1	X	X		
Weight	3.3.4	4.5.1	X	X		
Size	3.3.3	4.5.1	X	X		
Parts and materials	3.2.1	4.5.1	X	X		
Finish	3.3.15	4.5.1	X	X		
Marking	3.4.1	4.5.1	X	X		
Workmanship	3.5	4.5.1	X	X		
Welds	3.3.14	4.5.1	X	X		
Painting	3.3.15.1	4.5.1	X	X		
Blowers	3.3.8.2	4.5.2.1	X		X	
Airflow	3.3.8.2	4.5.2.2	X		X	
Dripproof	3.3.20	4.5.6	X		X	
Power interruption	3.3.21	4.5.7	X		X	
Controls and control circuits	3.3.8.3	4.5.10	X		X	
Shock	3.3.17.1	4.5.3	X			X
Vibration	3.3.17.2	4.5.3	X			X
Inclination	3.3.17.3	4.5.1	X			X
Airborne noise	3.3.18	4.5.4	X			X
Salt spray	3.3.19	4.5.5	X			X

**4.4 Quality conformance inspection.**

**4.4.1 Production inspection (Group A).** Production inspection shall be conducted on every cabinet offered for delivery. The inspection shall be comprised of examinations and tests which will prove the workmanship and reveal the omissions and errors of the production process, such as functional testing of the ventilation blowers and examinations which detect deviation from design and hidden defects of material. Production inspection shall include the tests and examinations shown in Group A of TABLE I.

**4.4.2 Production control inspection (Group B).** Production control inspection shall be performed on equipment that has passed production inspection. Production control inspection shall be conducted on a sampling basis. Sampling shall be in accordance with MIL-STD-105, using inspection level S-3 with an acceptable quality level (AQL) of 6.5 percent for each attribute. Production control inspection shall include the examinations and tests shown in Group B of TABLE I.

**4.4.2.1 Rejected lots.** If an inspection lot is rejected, the contractor may withdraw the lot from further inspection. The contractor may also rework a rejected lot to correct the defective units and reinspect the lot using tightened inspection. Rejected lots shall be kept separate from new lots and shall not lose their identity.

**4.4.2.2 Reinspection of conforming production control test units.** Unless otherwise specified, (see 6.2.1) sample units which have been subjected to, and have passed production control inspections, may be accepted on the contract provided they are resubjected to, and pass production inspection specified in 4.4.1 after repair of all defects.

**4.4.3 Environmental inspection (Group C).** Environmental inspection shall be conducted on a sampling basis as specified in 4.4.3.1. These equipments must have passed production inspection. Environmental inspection shall consist of the tests specified in Group C in TABLE I.

**4.4.3.1 Sampling for environmental inspection.** One equipment shall be selected from each 100 successive pieces of equipment produced, or fraction thereof. The first sample equipment shall be selected from the first month's production.



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4.4.3.2 Nonconforming environmental sample units. If a sample unit fails the inspection specified in 4.4.3, the contractor shall immediately investigate the cause of failure, and shall report to the quality assurance representative the results thereof and details of the corrective action taken to correct units of product which were manufactured under the same conditions, with the same materials, processes, and so forth. If the quality assurance representative does not consider that the corrective action will enable the product to meet specified requirements, or if the contractor cannot determine the cause of failure, the matter shall be referred to the procurement contracting officer (see 6.2.1).

4.4.3.3 Reinspection of conforming environmental sample units. Unless otherwise specified in the contract, sample units which have been subjected to, and have passed environmental tests, may be accepted on the contract provided they are resubjected to, and pass production inspection specified in 4.4.1 after repair of all damage.

4.5 Test methods.

4.5.1 Test and examinations. When 4.5.1 is specified in TABLE I, the test method specified in MIL-E-16400 shall be applied.

4.5.2 Operational performance test.

4.5.2.1 Blower test. The blowers shall be tested as specified in the AMCA Bulletin 210.

4.5.2.2 Airflow test. The airflow resistance of the air plenums in the cabinet sidewalls shall be such that 200 scfm (5.66 cubic meters per minute) shall be delivered to each of any four selected plenum discharge ports. Cumulative airflow requirement for the cabinet shall be a minimum of 800 scfm (22.65 cubic meters per minute). Tests shall be performed at the low limit of the range of voltage and frequency specified in 3.3.8.2 to determine the delivery of required airflow. This shall be accomplished as follows:

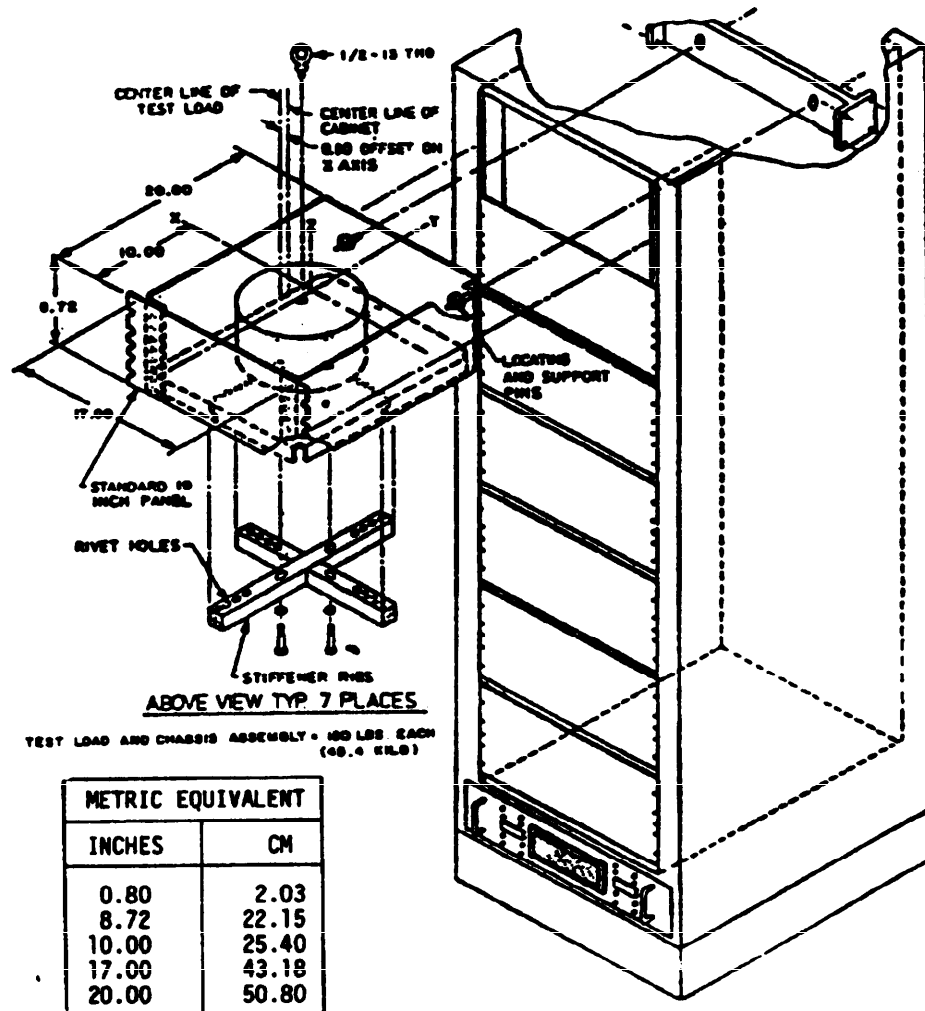
- a. Remove the covers from the four holes on the right-hand side of the blower compartment. (Ensure that the covers are in place on the left-hand side of the compartment.)
- b. Open all holes in the fourth and fifth horizontal rows in both sidewalls.
- c. Remove the covers from the top of the four plenums in the left sidewall. (Ensure that the covers are in place on the top of all plenums in the right sidewall.)
- d. Mask the center chimney at the cabinet top.
- e. Cover the front opening of the cabinet.
- f. Place blower(s) in operation and measure airflow at the four left-hand plenum discharge ports.

The test apparatus shall consist of a venturi-meter and calibrated test section which shall conform to the installation practices and methods recommended in "Fluid Meters, Part II, Interim Supplement 19.5, Instruments and Apparatus, ASME, 1972".

4.5.3 Shock and vibration test. The cabinet shall be tested in accordance with the requirements of Grade A, Class I, medium weight, Type A shock tests of MIL-S-901, and Type I environmental vibration test of MIL-STD-167, with the exception that the endurance test shall be performed at 25 Hz and a vibratory displacement of 0.035 +0.004 inches (.0089 +0.01 cm). The cabinet will be  

$$\begin{matrix} -0.000 & -0.0 \end{matrix}$$
dummy loaded with 700 pounds (317.5 Kg) of equally distributed weight during shock and vibration testing as shown in FIGURE 3. The dummy loads shall be mounted in seven identical chassis assemblies which are fastened to the front of the cabinet by high strength machine screws. Shear pins shall be used both in the front panel and at the back of the chassis assembly. The shear pins at the rear shall engage a horizontal tie bar which is secured to the sidewalls of the cabinet. Except at the connection points, the chassis assembly and load shall be 1 inch (2.54 cm) or greater from the cabinet sidewalls. See FIGURE 3 for design configuration of chassis assembly and dummy loads. The seven identical chassis assemblies shall be located in the cabinet as shown. The off-center location of the dummy weights in the chassis will introduce eccentric loading to the cabinet in the front-to-back and side-to-side axis to simulate shipboard conditions. The maximum transmissibility  $\frac{\text{vibration output}}{\text{vibration input}}$  of any portion of the cabinet assembly during the vibration test shall not exceed 3 through the frequency range from 4 to 25 Hz.

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1. DIMENSIONS ARE IN INCHES
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FIGURE 3. Typical chassis assembly and dummy load configuration.

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4.5.3.1 Vibration failure. The vibration test shall be performed, followed by the shock test, and then repeated to locate weld failures, cracks, bends, and so forth produced by the shock test.

The ventilation blowers shall be energized and in the operating condition during and after the shock and vibration tests.

4.5.4 Airborne noise test. Noise measurements shall be performed in accordance with Grade A of MIL-STD-740. With all cabinet blowers in operation, the airborne background noise effect on intelligible speech communications shall not exceed the Speech Interference Level (SIL) of 64 decibels (dB).

4.5.5 Salt spray test. The salt spray test shall be made in accordance with Method 811.1 of FED-STD-151. It shall be applied to the finishes and coatings on parts, and to the frame and enclosure structures as finally assembled for use. It shall not be applied to complete cabinets. Sample corner structures, and any other critical section, may be used for the test. The sample shall be assembled and treated in the same manner as the complete structure. Duration of the test shall be 200 hours for frame and enclosure structures, and 48 hours for individual parts.

4.5.6 Enclosure (dripproof) test. The dripproof test shall be in accordance with MIL-STD-108. The front opening of the cabinet must be covered for this test. The cabinet shall be oriented in five different positions during this test; normal position and inclined at the maximum angle (15 degrees or 45 degrees), forward, backward, and to each side. The minimum time in each position shall be 12 minutes, eight minutes operating, and four minutes OFF.

4.5.7 Power interruption test. With the ventilation blowers operating within the steady state tolerances of voltage and frequency, the external power supply shall be interrupted. After an interval between three and four seconds, the power supply, within the steady state tolerances, shall be reapplied. After the blowers have been operated to detect any major performance degradation, the power shall again be interrupted. After an interval between 29 and 30 seconds, the power shall be reapplied. These tests shall be repeated for a total of five times. During, and as a result of these tests, no damage to the blowers shall be incurred.

4.5.8 Inspection of packaging. Inspection shall be conducted to ensure compliance with the requirements of Section 5.

4.5.9 Weights and dimensions. Weight and dimensions of the cabinet shall be inspected in accordance with the inspection procedure of MIL-E-16400 to determine compliance with 3.3.3 and 3.3.4.

4.5.10 Controls and control circuits. Equipment shall be tested to determine the suitability of front panel controls and control circuits for satisfactory mechanical and electrical operation.

## 5. PACKAGING

(The preparation for delivery requirements specified herein apply only for direct Government procurements. Preparation for delivery requirements or referenced documents listed in Section 2 do not apply unless specifically stated in the contract. Preparation for delivery requirements for products procured by contractors shall be specified in the individual order.)

5.1 Preservation, packaging, packing, and marking. Preservation, packaging, packing, and marking shall be as specified in the contract or order (see 6.2.1).

## 6. NOTES

6.1 Intended use. The equipment is intended for high quality installation, protection, and ventilation to electronic equipment in a shipboard environment.

### 6.2 Ordering data.

6.2.1 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification
- b. Material, if other than specified (see 3.2.1 and 3.3.5)
- c. Blower installation, if other than specified (see 3.3.8.2)

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- d. Foundation, if other than specified (see 3.3.9)
- e. Identification plates, if other than specified (see 3.4)
- f. Laboratory evaluation, if required (see 4.1)
- g. Number of first article samples to be submitted, if other than specified in 4.3
- h. When reinspected production control sample units may not be accepted
- i. Marking, levels of preservation, packaging, and packing required (see 5.1)

**6.2.2 Data requirements.** When this specification is used in an acquisition which incorporate a DD Form 1423, Contract Data Requirements List (CDRL) the data requirements identified below shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved CDRL incorporated into the contract. When the provisions of DAR 7-104.9 (n) (2) are invoked and the DD Form 1423 is not used, the data specified below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification is cited in the following paragraphs.

Paragraph No.	Data requirements	Applicable DID	Option
a. 4.1.2	Quality program plan	DI-R-5297A	-----

**6.3 First article.** When a first article inspection is required, the item will be tested and approved under the appropriate provisions of 7-104.55 of the DAR. The first article should consist of one unit. The contracting officer should include specific instructions in all procurement instruments regarding arrangements for examinations, tests, and approval of the first article.

**6.4 Environmental inspection.** Approval to ship may be withheld at the discretion of the Government pending the decision from the contracting officer on the adequacy of corrective action.

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