

MILITARY SPECIFICATION

HEADSET, ELECTRICAL
AND
HEADSET-MICROPHONES

This specification is mandatory for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope This specification covers the requirements for one type of low impedance headset and two types of headset-microphones (see 6.1, 6.4, and figure 1).

1.2 Classification. The headset, electrical and headset-microphones covered by this specification shall be of the following types:

Headset, electrical H-113()/U
Headset-microphone H-62()/U
Headset-microphone H-63()/U

2 APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein

SPECIFICATIONS

FEDERAL

PPP-T-60 - Tape: Pressure-Sensitive Adhesive, Waterproofing, for Packaging.
PPP-T-76 - Tape, Pressure-Sensitive Adhesive Paper (For Carton Sealing).
PPP-B-636 - Box, Fiberboard.
QQ-S-571 - Solder; Tin Alloy; Lead-Tin Alloy; and Lead Alloy.

MILITARY

MIL-P-116 - Preservation, Method of.
MIL-T-152 - Treatment, Moisture and Fungus-Resistant, of Communications, Electronic, and Associated Electrical Equipment.
MIL-J-641 - Jacks, Telephone, General Specification For.
MIL-P-642 - Plugs, Telephone, and Accessory Screws; General Specification For.
MIL-M-5794 - Microphone Unit M-6A/UR and Microphone, Carbon M-51/UR (Carbon Noise Cancelling).
MIL-C-10392 - Cables, Special Purpose, Electrical (Miniature).
MIL-H-11190/1 - Headset, Electrical and Headset-Microphones, Headset-microphone Type H-62()/U.
MIL-H-11190/2 - Headset, Electrical and Headset-Microphones, Headset-microphone Type H-63()/U.
MIL-H-11190/3 - Headset, Electrical and Headset-Microphones, Headset-electrical Type H-113()/U.
MIL-F-14072 - Finishes for Ground Signal Equipment.
MIL-M-20693 - Molding Plastic, Polyamide (Nylon), Rigid.
MIL-C-45662 - Calibration System Requirements.

STANDARDS

FEDERAL

FED-STD-595 - Colors.

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-129 - Marking for Shipment and Storage.
MIL-STD-130 - Identification Marking of US Military Property.
MIL-STD-147 - Palletized and Containerized Unit Loads 40" x 48" Pallets Skids, Runners or Pallet-type Base.
MIL-STD-202 - Test Methods for Electronic and Electrical Component Parts.
MIL-STD-454 - Standard General Requirement for Electronic Equipment.
MIL-STD-810 - Environmental Test Methods

DRAWINGS

SHIP SYSTEMS COMMAND

SK-N-864 - Simulated Gun Blast Production Equipment

DEPARTMENT OF THE ARMY

SC-C-201977 - Microphone Arm Assembly.
SC-C-202030 - Arm Mounting Assembly.
SC-DL-53603 - Headset-Microphone H-62()/U.
SC-DL-84235 - Headset-Microphone H-63()/U.
SC-DL-105211 - Headset-Microphone H-113()/U.

(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.)

2.2 Other publications The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

USA STANDARDS INSTITUTE

Z24.9-1949 - Coupler Calibration of Earphones, Method for the.
S1.10-1966 - Calibration of Microphones, Method for the.

(Application for copies should be addressed to the USA Standards Institute, 10 East 40th Street, New York, New York 10016)

NATIONAL BUREAU OF STANDARDS

Handbook H28 - Screw-Thread Standards for Federal Services

(Application for copies should be addressed to the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.)

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

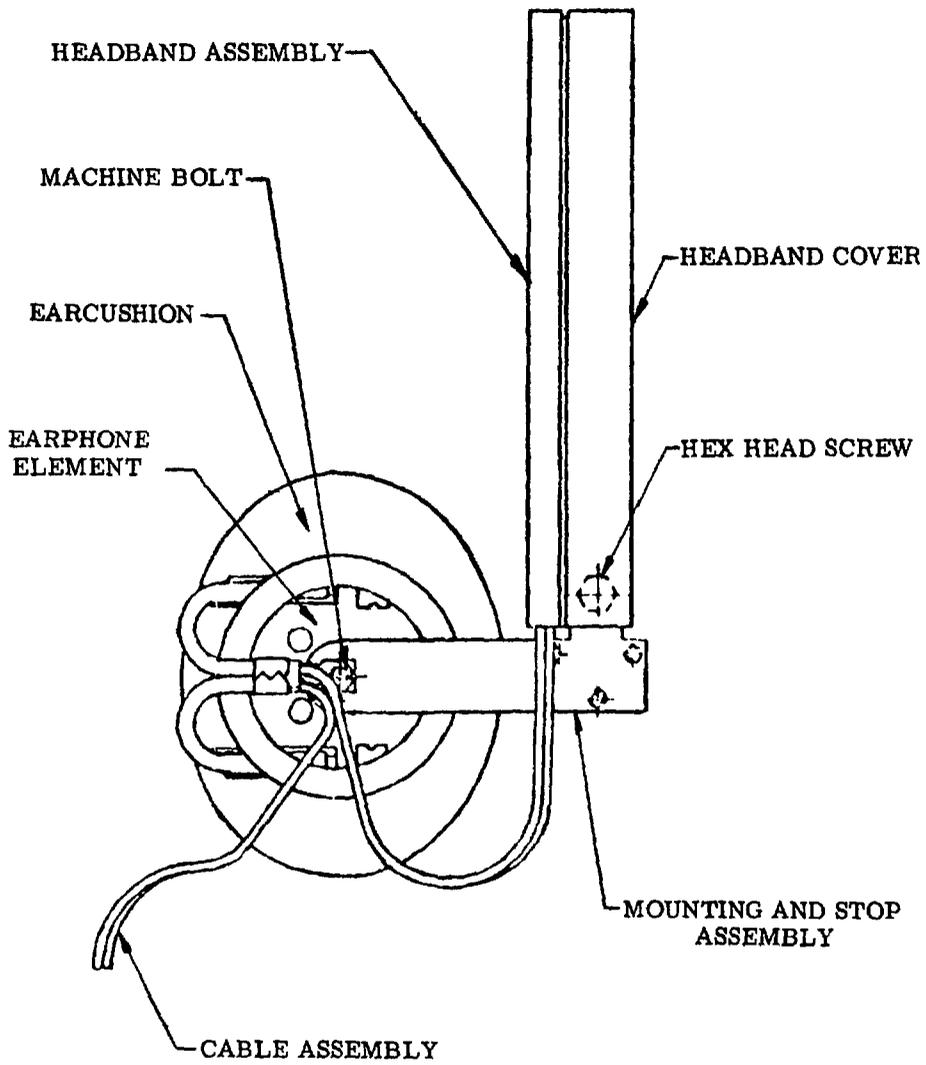


FIGURE 1. Headset Assembly.

3 REQUIREMENTS

3.1 Specification sheets The individual item requirements shall be as specified herein and in accordance with the applicable specification sheets. In the event of any conflict between this specification and the specification sheets, the latter shall govern (see 6.2).

3.2 First article. Headsets, electrical and headset-microphones furnished under this specification shall be products that have been tested and have passed the first article inspection specified in 4.4 and 6.3.

3.3 Materials. Materials shall be as specified herein. However, when a definite material is not specified, a material shall be used that will enable the headsets, electrical or headset-microphones to meet the performance requirements of this specification. Acceptance or approval of any constituent material shall not be construed as a guaranty of the acceptance of the finished product.

3.3.1 Metals. The metals used shall be of proper alloy and hardness necessary to provide the required strength and rigidity with the maximum strength to weight ratio. Metals shall be of corrosion-resistant types or shall be treated in accordance with MIL-F-14072.

3.3.2 Fungus-resistant materials. Headsets shall be made of fungus-resistant materials as specified in requirement 4 of MIL-STD-454, or shall be treated to resist fungus growth as specified in MIL-T-152, type II

3.3.3 Solder. Solder shall conform to composition Sn60 of QQ-S-571.

3.4 Design and construction

3.4.1 Earphone. The earphone shall meet the following requirements:

3.4.1.1 Design. The design and assembly shall be such that the earphone is inherently stable as to mechanical construction and acoustical characteristics. The earphone shall be of the low-impedance (300-ohm) magnetic type.

3.4.1.2 Magnetic circuit. Magnetization of the permanent magnet shall be accomplished by saturation, following which the magnet shall be stabilized by reducing the magnetization to that required by the particular design

3.4.2 Microphone. The microphone used in this equipment shall be type M-51()/UR and shall have been tested to and shall have met the first article and quality conformance requirements of MIL-M-5794.

3.4.3 Microphone arm assembly The microphone arm assembly shall be as specified in SC-C-201977.

3.4.4 Arm mounting assembly. The arm mounting assembly shall be as specified in SC-C-202030.

3.4.5 Cables. Cables used in this equipment shall be type WD-27A/U and shall have been tested to and shall have met the quality conformance requirements of MIL-C-10392.

3.4.6 Jacks. Jacks shall be a product that has passed the qualification tests in MIL-J-641. The type shall be as shown in configuration (see 3.1), except the jacks covered by SC-C-201989, SC-C-201998, and SC-C-201999, as defined in SC-DL-53603, SC-DL-84235, and SC-DL-105211.

3.4.7 Plugs. Plugs used in this equipment shall be products that have been tested and have passed the qualification tests specified in MIL-P-642. The plugs shall be as shown in configuration (see 3.1).

3.4.8 Threaded parts. All threaded parts shall be in accordance with handbook H28. Where practical all threads shall conform with the coarse-thread series. The fine-thread series shall be used only for applications that might, through their use, show a definite advantage. Where a special diameter-pitch combination is required, the thread shall be of American National Form and of any pitch between 16 and 36 that is used in the fine-thread series.

3.4.9 Wiring. Wiring shall conform to the applicable schematic diagram (see 3.1).

3.4.10 Ear cushion. The ear cushions used in this equipment shall be in accordance with Drawing and Data List SC-DL-84235.

3.4.11 Cover, microphone CW-292()/U. Cover, microphone CW-292()/U shall be fabricated in accordance with Drawing and Data List SC-DL-84235.

3.4.12 Finish. Final finish shall be in accordance with MIL-F-14072, type 1. Final color range shall be 34102 to 34079 (olive drab) in accordance with FED-STD-595

3.4.13 Strain relief end (microphone cord). Material shall be the same insulating and jacketing compound used for WD-27A/U cable.

3.5 Performance characteristics.

3.5.1 Acoustic quality (listening).

3.5.1.1 Earphone. When tested as specified in 4.7.2.1, the acoustic output shall be free from serious objectionable distortion, spurious sounds, buzzing, or rattling sounds over the audio frequency range from 200 to 4000 Hz.

3.5.1.2 Earphone and microphones. When tested as specified in 4.7.2.2, the microphones shall transmit speech free from spurious sounds, buzzing, or rattling sounds.

3.5.2 Frequency response. When tested in accordance with 4.7.3, the frequency response of each earphone shall be within the limits shown in figure 2. For any bandwidth indicated below for the various frequency ranges, the change in response from the lowest to the highest frequency in the band shall not exceed the limits shown.

<u>Frequency range</u>	<u>Band width</u>	<u>Change in response</u>	
Hz	Hz	dB	
300 - 1000	500	+2	-2
1000 - 2000	500	+2	-3
2000 - 3000	1000	+4	-4
3000 - 4000	1000	+1	-11

3.5.3 Impedance. The impedance of the earphone at 1000 Hz shall be between 270 and 350, (nominal impedance 300 ohms) when measured as specified in 4.7.4.

3.5.4 Dielectric strength and insulation resistance. The insulation between the case and terminals shall withstand the test specified in 4.7.5 without breakdown or decrease of the insulation resistance below one megohm between these points.

3.5.5 Distortion. The acoustic output of the earphone shall be free from any rattling or mechanical vibration over the audio frequency range of 200 to 500 Hz when held in close proximity to the ear, when tested as specified in 4.7.6.

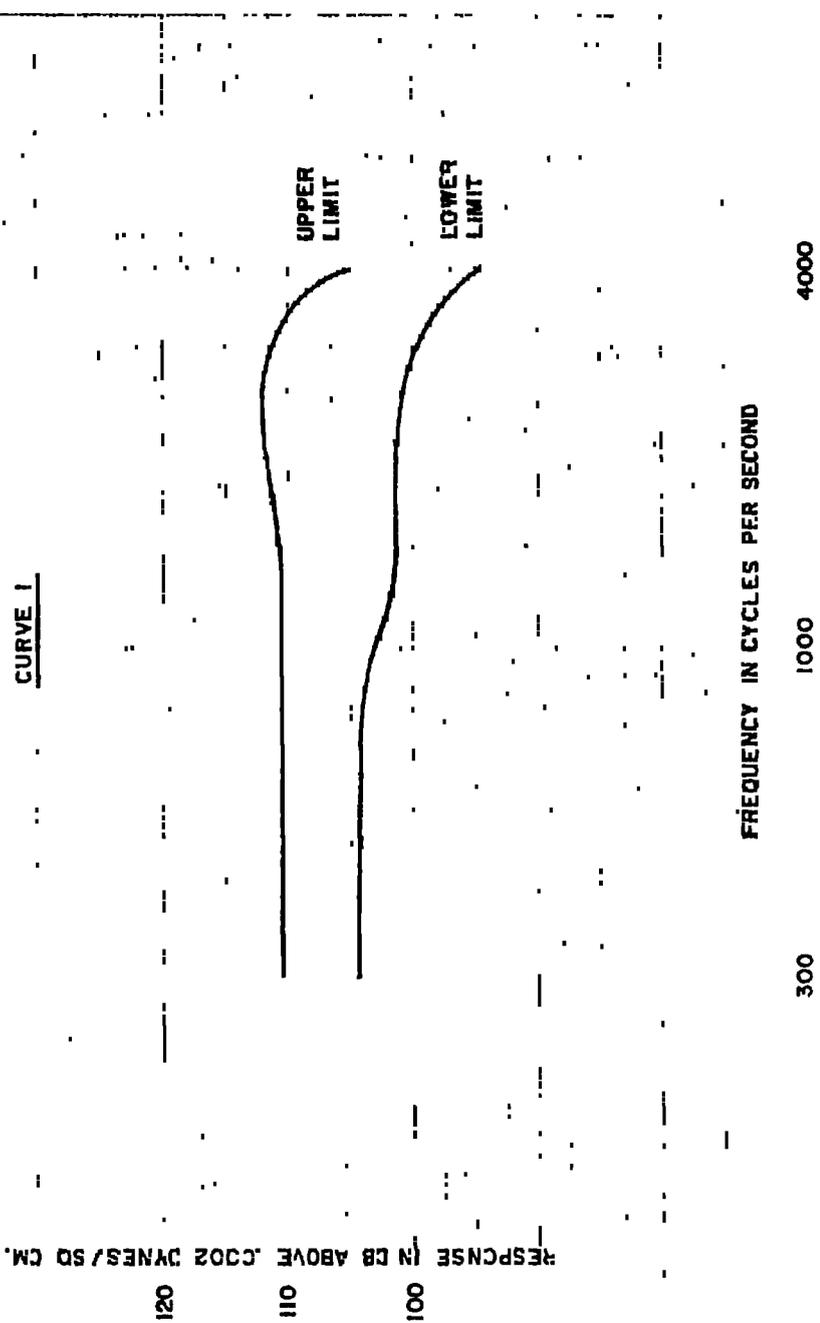


Figure 2.

3.5.6 Overvoltage. The degradation in response of the earphone shall not exceed 3 dB following the test specified in 4.7.7.

3.5.7 Vibration. When tested as specified in 4.7.8, there shall be no loose parts and the earphone shall meet the requirements of frequency response as specified in 3.5.2.

3.5.8 Bounce. When tested as specified in 4.7.9, there shall be no mechanical damage and the earphone shall meet the requirements of frequency response as specified in 3.5.2.

3.5.9 Drop. When tested as specified in 4.7.10, there shall be no mechanical failure, such as cracking or breaking of parts. Minor chipping of plastic parts shall not constitute a failure. The earphone shall meet the requirements of frequency response as specified in 3.5.2.

3.5.10 Humidity When tested as specified in 4.7.11, there shall be no evidence of warping or other damage or degradation. Corrosion, if present, shall not be sufficient to interfere with proper operation of the equipment. The earphone shall meet the requirements of frequency response as specified in 3.5.2.

3.5.11 Temperature cycling. When tested as specified in 4.7.12, there shall be no evidence of warping or mechanical damage. The earphone shall meet the requirements of frequency response as specified in 3.5.2.

3.5.12 Blast. When tested as specified in 4.7.13, there shall be no evidence of damage. The earphone shall meet the requirements of frequency response as specified in 3.5.2.

3.5.13 Salt spray. When tested as specified in 4.7.14, there shall be no evidence of harmful corrosive action or damage. The earphone shall meet the requirements of frequency response as specified in 3.5.2.

3.5.14 Elevation. When tested as specified in 4.7.15, there shall be no degradation of performance. The earphone shall meet the requirements of frequency response as specified in 3.5.2.

3.5.15 Fungus resistance. The manufacturer shall certify that all materials conform to requirement 4 of MIL-STD-454, or shall perform the test specified in 4.7.16. When headsets are tested as specified in 4.7.16, the earphone shall meet the requirements of 3.5.2.

3.6 Marking. Headsets, electrical and headset-microphones shall be marked in accordance with MIL-STD-130, with the type designation and the manufacturer's name or symbol. Marking shall remain legible for the life of the equipment.

3.7 Workmanship. Headsets, electrical and headset-microphones shall be manufactured and processed to be uniform in quality and shall be free from defects that will affect life, serviceability, or appearance. Headsets, electrical and headset-microphones shall provide satisfactory performance and shall not adversely affect the performance of the radio receiver or wire equipment in which the headset, electrical or headset-microphone is intended to be used, when interconnected with and operated as part of that equipment.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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 Test equipment and inspection facilities. Test and measuring equipment and inspection facilities of sufficient accuracy, quality and quantity to permit performance of the required inspection shall be established and maintained by the supplier. The establishment and maintenance of a calibration system to control the accuracy of the measuring and test equipment shall be in accordance with MIL-C-45662.

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

- (a) Components inspection (see 4.4).
- (b) First article inspection (see 4.5).
- (c) Quality conformance inspection (see 4.6).

4.3 Inspection conditions. Unless otherwise specified herein, all inspections shall be performed in accordance with the test conditions specified in the "GENERAL REQUIREMENTS" of MIL-STD-202.

4.4 Components inspection. Components inspection shall consist of certification supported by verifying inspection and test data that the components listed in table I, used in fabricating the headsets, electrical and headset-microphones, are in accordance with the applicable referenced specification or drawing.

TABLE I. Components inspection.

Component	Requirement paragraph	Applicable specification or drawing
Microphone, type M-51()/UR - - - -	3.4.2	MIL-M-5794
Microphone arm assembly - - - - -	3.4.3	SC-C-201977
Arm mounting assembly - - - - -	3.4.4	SC-C-202030
Cables, type WD-27A/U - - - - -	3.4.5	MIL-C-10392
Jacks - - - - -	3.4.6	MIL-J-641
Plugs - - - - -	3.4.7	MIL-P-642

4.5 First article inspection. First article inspection shall be performed by the supplier, after award of contract and prior to production, at a location acceptable to the Government. First article inspection shall be performed on sample units which have been produced with equipment and procedures normally used in production. First article approval is valid only on the contract or purchase order under which it is granted, unless extended by the Government to other contracts or purchase orders.

4.5.1 Sample size Six sample units, headsets, electrical, or headset-microphones shall be subjected to first article inspection.

4.5.2 Inspection routine. The sample shall be subjected to the inspections specified in table II, in the order shown. All sample units shall be subjected to the inspections of group I. The sample shall then be divided equally into two groups and subjected to the inspections for their particular group.

4.5.3 Failures. More than one failure in group I and any failure in group II or III shall be cause for refusal to grant first article approval.

TABLE II. First article inspection.

Examination or test	Requirement paragraph	Method paragraph
<u>Group I</u>		
Visual and mechanical - - - - -	3.1, 3.3 to 3.4.13 incl, 3.6 and 3.7	4.7.1
Acoustical quality - - - - -	3.5.1	4.7.2
Frequency response (earphone) - - - - -	3.5.2	4.7.3
Impedance - - - - -	3.5.3	4.7.4
Dielectric strength - - - - -	3.5.4	4.7.5
Distortion - - - - -	3.5.5	4.7.6
Overvoltage - - - - -	3.5.6	4.7.7
<u>Group II</u>		
Vibration - - - - -	3.5.7	4.7.8
Bounce - - - - -	3.5.8	4.7.9
Drop (shock) - - - - -	3.5.9	4.7.10
Humidity - - - - -	3.5.10	4.7.11
<u>Group III</u>		
Temperature cycling - - - - -	3.5.11	4.7.12
Blast - - - - -	3.5.12	4.7.13
Salt spray (corrosion) - - - - -	3.5.13	4.7.14
Elevation - - - - -	3.5.14	4.7.15
Fungus resistance ^{1/} - - - - -	3.5.15	4.7.16

^{1/} Certification of fungus resistance may be substituted for testing.

4.6 Quality conformance inspection.

4.6.1 Inspection of product for delivery. Inspection of product for delivery shall consist of components inspection (see table I) and groups A and B inspections.

4.6.1.1 Inspection lot. An inspection lot shall consist of all headsets, electrical and headset-microphones covered by a single specification sheet, produced under essentially the same conditions, and offered for inspection at one time.

4.6.1.2 Group A inspection. Group A inspection shall consist of the examinations and tests specified in table III, in the order shown.

TABLE III Group A inspection.

Examination or test	Requirement paragraph	Test method paragraph	AQL (percent defective)	
			Major	Minor
Visual and mechanical - - - - -	3.1, 3.3 to 3.4.12 incl, 3.6 and 3.7	4.7.1	1.0	4.0
Acoustic quality - - - - -	3.5.1	4.7.2	1.0	4.0

4.6.1.2.1 Sampling plan. Statistical sampling and inspection shall be in accordance with MIL-STD-105 for general inspection level II. The acceptable quality level (AQL) shall be as specified in table III. Major and minor defects shall be as defined in MIL-STD-105.

4.6.1.2.2 Rejected lots. If an inspection lot is rejected, the supplier may rework it to correct the defects, or screen out the defective units, and resubmit for reinspection. Resubmitted lots shall be inspected using tightened inspection. Such lots shall be separate from new lots, and shall be clearly identified as reinspected lots.

4.6.1.3 Group B inspection. Group B inspection shall consist of the test specified in table IV, and the sample units shall have been subjected to and passed group A inspection.

4.6.1.3.1 Sampling plan. The sampling plan shall be in accordance with MIL-STD-105 for special inspection level S-4. The sample size shall be based on the inspection lot size from which the sample was selected for group A inspection. The AQL shall be 6.5 percent defective.

TABLE IV. Group B inspection.

Test	Requirement paragraph	Test method paragraph
Frequency response	3.5.2	4.7.3

4.6.1.3.2 Rejected lots. If an inspection lot is rejected, the supplier may rework it to correct the defects, or screen out the defective units, and resubmit for reinspection. Resubmitted lots shall be inspected using tightened inspection. Such lots shall be separate from new lots, and shall be clearly identified as reinspected lots.

4.6.1.3.3 Disposition of sample units. Sample units which have passed all the group B inspection may be delivered on the contract or purchase order, if the lot is accepted and the sample units are still within specified electrical tolerances.

4.6.2 Periodic inspection. Periodic inspection shall consist of group C. Except where the results of these inspections show noncompliance with the applicable requirements (see 4.6.2.1.4), delivery of products which have passed groups A and B shall not be delayed pending the results of these inspections.

4.6.2.1 Group C inspection. Group C inspection shall consist of the tests specified in table V, in the order shown. Group C inspection shall be made on sample units selected from inspection lots which have passed groups A and B inspections.

4.6.2.1.1 Sampling plan. Group C inspection shall be performed once each month on nine sample units selected without regard to their quality from units produced during the period or each 1,000 units, whichever occurs first. The sample shall be divided equally into three groups and subjected to the tests of subgroups 1, 2, and 3 of table V.

4.6.2.1.2 Failures. If one or more sample units fail to pass group C inspection, the sample shall be considered to have failed.

4.6.2.1.3 Disposition of sample units. Sample units which have been subjected to group C inspection shall not be delivered on the contract or purchase order.

TABLE V. Group C inspection.

Test	Requirement paragraph	Method paragraph
<u>Subgroup 1 (3 sample units)</u>		
Vibration - - - - -	3.5.7	4.7.8
Bounce - - - - -	3.5.8	4.7.9
Drop - - - - -	3.5.9	4.7.10
<u>Subgroup 2 (3 sample units)</u>		
Humidity - - - - -	3.5.10	4.7.11
Temperature cycling - - - - -	3.5.11	4.7.12
Blast - - - - -	3.5.12	4.7.13
<u>Subgroup 3 (3 sample units)</u>		
Salt spray - - - - -	3.5.13	4.7.14
Elevation - - - - -	3.5.14	4.7.15
Fungus resistance - - - - -	3.5.15	4.7.16

4.6.2.1.4 Noncompliance. If a sample fails to pass group C inspection, the supplier shall take corrective action on the materials or processes, or both, as warranted, and on all units of product which can be corrected and which were manufactured under essentially the same conditions, with essentially the same materials, processes, etc., and which are considered subject to the same failure. Acceptance of the product shall be discontinued until corrective action, acceptable to the Government, has been taken. After the corrective action has been taken, group C inspection shall be repeated on additional sample units (all inspection, or the inspection which the original sample failed, at the option of the Government). Groups A and B inspections may be reinstated; however, final acceptance shall be withheld until the group C reinspection has shown that the corrective action was successful. In the event of failure after reinspection, information concerning the failure and corrective action taken shall be furnished to the cognizant inspection activity and the contracting officer.

4.6.3 Inspection of preparation for delivery. Sample packages and packs and the inspection of the preservation and packaging, packing and marking for shipment and storage shall be in accordance with the requirements of section 5 and the documents specified therein.

4.7 Methods of examination and test.

4.7.1 Visual and mechanical examination. Headsets, electrical and headset-microphones shall be examined to verify that the materials, design, construction, physical dimensions, finish, marking, and workmanship are in accordance with the applicable requirements (see 3.1, 3.3 to 3.4.13 inclusive, 3.6 and 3.7).

4.7.2 Acoustic quality.

4.7.2.1 Earphone. A constant voltage having a root mean square (rms) value of 2.5 ± 0.1 volts shall be applied to the earphones of the headset through the connector and the frequency varied continuously from 200 to 4,000 Hz and back to 200 Hz (see 3.5.1.1).

4.7.2.2 Microphone. The microphone shall be mounted in the microphone holder assembly with the cord and connector attached. The cord shall be connected to an audio amplifier. The audio amplifier shall have a response that is flat within ± 2 dB over a frequency response range of 100 to 15,000 Hz. The amplifier shall not incorporate automatic gain control or other circuits that will compensate for low microphone output. The output of the amplifier shall be connected to a headset having a minimum frequency response from 200 to 4,000 Hz. The sound pressure applied to the microphone shall be produced by a voice speaking at a normal level. The output of the microphone, through the amplifier, shall be monitored by the headset (see 3.5.1.2).

4.7.3 Frequency response (see 3.5.2).

4.7.3.1 Response. Available power response-frequency measurements shall be made starting at 300 Hz and extending through 4000 Hz in sufficient detail to establish definitely the shape of the curve. Response measurements shall be made in accordance with USA Standard Z24.9-1949 using a preferred source resistance of 300 ohms and a standard 6 cubic centimeter (cc) JRB coupler. A Western Electric Company 640AA condenser microphone, or its equivalent, shall be used for measuring sound pressure. The microphone shall be calibrated by the reciprocity method in accordance with USA Standard S1.10-1966.

4.7.3.2 Procedure. The earphone shall be connected to an electrical source of alternating current (ac) potential in series with a 300-ohm noninductive resistance. The earphone shall be centered on the coupler (standard 6 cc JRB), and a good seal shall be insured by placing a 1-kilogram nonmagnetic weight on the back of the receiver case. A voltage of 1.1 volts rms, at each test frequency, shall be maintained across the series combination of the earphone and the noninductive resistance.

4.7.4 Impedance. The impedance of the earphone shall be measured with 1 volt at 1000 Hz applied to the earphone terminals, either by measuring the voltage across and the current through the earphone; or with an impedance bridge, to determine compliance with 3.5.3.

4.7.5 Dielectric strength and insulation resistance. Five hundred volts rms, 60 Hz ac shall be applied between the case and the terminals of the earphone under test for a period of 5 seconds, to determine compliance with 3.5.4.

4.7.6 Distortion. A voltage of 2.5 volts shall be applied across the terminals of the earphone under test, in series with a 300-ohm resistor, to determine compliance with 3.5.5.

4.7.7 Overvoltage. Ten volts at 400 Hz shall be applied directly across the earphone terminals for 10 hours, to determine compliance with 3.5.6.

4.7.8 Vibration (see 3.5.7). The equipment shall be vibrated in a direction perpendicular to the plane of the earphone and microphone element diaphragm with a double amplitude of 1/16 inch for 5 hours at a frequency which varies between 10 and 55 Hz periodically every minute. The equipment shall be examined for damage and the frequency response shall be measured as specified in 4.7.3.

4.7.9 Bounce (see 3.5.8). The equipment shall be placed on the table of the package tester as made by L.A.B. Corp., Skaneateles, N.Y., or equal. The equipment may be loosely constrained by wood cleats. The package tester, shafts in phase, shall be run at a speed of 285 revolutions per minute (rpm) ± 1 percent for 3 hours. The equipment shall be examined for damage and the frequency response shall be measured as specified in 4.7.3.

4.7.10 Drop (see 3.5.9). The equipment shall be dropped six times at random from a height of 6 feet. Impact at the bottom shall be made onto a 3/16-inch horizontal sheet of Masonite, or equal (Brinell hardness No. 11 or No. 12), backed by concrete. The equipment shall be examined for damage and the frequency response shall be measured as specified in 4.7.3.

4.7.11 Humidity (steady state) (see 3.5.10). The equipment shall be tested in accordance with method 103 of MIL-STD-202. The following details shall apply:

- (a) Measurements after conditioning - The equipment shall be subjected to the frequency response test specified in 4.7.3.
- (b) Test condition letter - A.
- (c) Final measurements - After the drying period, the equipment shall be subjected to the frequency response test as specified in 4.7.3. At the conclusion of the test all components shall be disassembled and examined for damage.

4.7.12 Temperature cycling (see 3.5.11). The equipment shall be tested in accordance with method 102 of MIL-STD-202. The following details shall apply:

- (a) Test condition letter - D.
- (b) Measurement after cycling - The equipment shall be examined for damage and the frequency response shall be measured as specified in 4.7.3.

4.7.13 Blast (see 3.5.12). The earphone elements shall be mounted on the carriage of US Navy simulated gun blast equipment in accordance with SK-N-864. The earphone elements shall be supported so the plane of the earphone parts are at right angles to the plane of the shock wave. The earphone elements shall be subjected to 30 blasts, each producing a peak pressure of 9.5 pounds per square inch. The equipment shall be examined for damage and the frequency response shall be measured as specified in 4.7.3.

4.7.14 Salt spray (corrosion) (see 3.5.13). The equipment shall be tested in accordance with method 101 of MIL-STD-202. The following details shall apply:

- (a) Applicable salt solution - 5 percent.
- (b) Test condition letter - B.
- (c) Measurements after exposure - The equipment shall be examined for damage and the frequency response shall be measured as specified in 4.7.3.

4.7.15 Elevation (see 3.5.14). The equipment shall be placed in an altitude chamber at normal conditions of temperature, pressure, and humidity, and shall be tested to determine compliance with electrical requirements. The pressure shall then be reduced to 20 inches of mercury and stabilized for 2 hours. The equipment shall again be tested. The pressure shall then be lowered to 11 inches of mercury and the chamber maintained at this pressure for another 2-hour period. The pressure shall then be increased to 29.9 inches of mercury and tested again. There shall be no degradation of performance in the second and third measurements from those established in the first test. The equipment shall be examined for damage and the frequency response shall be measured as specified in 4.7.3.

4.7.16 Fungus resistance (when applicable, see 3.5.15). The equipment shall be tested in accordance with method 508 of MIL-STD-810. The following details shall apply:

- (a) Pretest data - Frequency response measurement values required by 3.5.2.
- (b) Test item shall not be operated during fungus test.
- (c) Following the test, the equipment shall be subjected to the frequency response test as specified in 4.7.3 and examined for damage.

5. PREPARATION FOR DELIVERY

NOTE: The preservation and packaging, packing and marking as specified herein applies only to direct purchases by or direct shipments to the Government and are not intended to apply to contracts or orders between the supplier and prime contractor.

5.1 Preservation and packaging. Preservation and packaging shall be level A or C, as specified (see 6.2).

5.1.1 Level A.

5.1.1.1 Cleaning Headset-microphones and headsets shall be cleaned in accordance with MIL-P-116, process C-1.

5.1.1.2 Drying. Headset-microphones and headsets shall be dried in accordance with MIL-P-116.

5.1.1.3 Preservative application. None required.

5.1.1.4 Unit packaging. Unless otherwise specified (see 6.2), headset-microphones and headsets shall be individually packaged in accordance with MIL-P-116, method III using containers conforming to PPP-B-636, class weather resistant. Closure shall be as specified in 5.2.1.

5.1.1.5 Intermediate packaging. Not required.

5.1.2 Level C. Cleaned and dried headset-microphones and headsets shall be individually packaged in a manner that will afford adequate protection against corrosion, deterioration, and physical damage during shipment from supply source to the first receiving activity. For Air Force procurement, packaging shall be as specified in 5.1.1.4 except that fiberboard containers shall be class domestic. Closure shall be in accordance with the box specification.

5.2 Packing. Packing shall be level A, B, or C, as specified (see 6.2).

5.2.1 Level A. The packaged headset-microphones and headsets shall be packed in fiberboard containers conforming to PPP-B-636, class weather resistant, style optional, special requirements. In lieu of the closure and waterproofing requirements in the appendix of PPP-B-636, closure and waterproofing shall be accomplished by sealing all seams, corners and manufacturer's joints with tape, two inches minimum width, conforming to PPP-T-60, class 1 or PPP-T-76. Banding (reinforcement requirements) shall be applied in accordance with the appendix to PPP-B-636 using non-metallic or tape banding only.

5.2.2 Level B. The packaged headset-microphones and headsets shall be packed in fiberboard containers conforming to PPP-B-636, class domestic, style optional, special requirements. Closures shall be in accordance with the appendix thereto. For Army procurement, fiberboard containers shall be class weather-resistant as specified in level A.

5.2.3 Level C. The packaged headset-microphones and headsets shall be packed in shipping containers in a manner that will afford adequate protection against damage during direct shipment from the supply source to the first receiving activity. These packs shall conform to the applicable carrier rules and regulations.

5.2.4 Unitized loads. Unitized loads, commensurate with the level of packing specified in the contract or order, shall be used whenever total quantities for shipment to one destination equal 40 cubic feet or more. Quantities less than 40 cubic feet need not be unitized. Unitized loads shall be uniform in size and quantities to the greatest extent practicable.

5.2.4.1 Level A. Headset-microphones and headsets, packed as specified in 5.2.1, shall be placed on pallets in conformance with MIL-STD-147, load type I, with a fiberboard cap (storage aid 4) positioned over the load.

5.2.4.2 Level B. Headset-microphones and headsets, packed as specified in 5.2.2, shall be palletized as specified in 5.2.4.1 except that the fiberboard caps shall be class domestic. For Army procurement, the caps shall be weather resistant as specified in level A.

5.2.4.3 Level C. Headset-microphones and headsets, packed as specified in 5.2.3, shall be unitized with pallets and caps of the type, size and kind commonly used for the purpose and shall conform to the applicable carrier rules and regulations.

5.3 Marking. In addition to any special marking required by the contract or order, each unit package, exterior container and unitized load shall be marked in accordance with MIL-STD-129.

5.4 General.

5.4.1 Exterior containers. Exterior containers (see 5.2.1, 5.2.2, and 5.2.3) shall be of a minimum tare and cube consistent with the protection required and shall contain equal quantities of identical stock numbered items to the greatest extent practicable.

5.4.2 Navy procurement. For Navy procurements, the use of polystyrene loose fill material (such as strips, strands and beads) is prohibited for packaging and packing applications.

6. NOTES

6.1 Intended use. Headsets, electrical and headset-microphones covered by this specification are for general purpose use with radio and wire equipment.

6.2 Ordering data Procurement documents should specify the following:

- (a) Title, number and date of this specification.
- (b) Title, number, and date of the applicable specification sheet and the applicable type number (see 1.2 and 3.1).
- (c) Levels or preservation, packaging, packing and the applicable marking (see 5).

6.3 First article inspection. Information pertaining to first article inspection of components covered by this specification should be obtained from the procuring activity for the specific contracts involved (see 3.2).

6.4 Nomenclature The parentheses in the nomenclature will be deleted or replaced by a letter identifying the particular design; for example: AN/PIQ-1W. The contractor should apply for nomenclature in accordance with the applicable clause in the contract (see 1.1).

6.5 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:
 Army - EL
 Navy - EC
 Air Force - 17

Review activities:
 Army - EL
 Navy - EC
 Air Force - 17, 70
 DSA - ES

Preparing activity:
 Army - EL

Agent:
 DSA - ES

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