

MIL-STD-2115

25 March 1982

MILITARY STANDARD

AUDIO DEVICES AND COMPONENTS, SELECTION AND USE OF



FSC 5965

MIL-STD-2115
25 March 1982

DEPARTMENT OF DEFENSE
Washington, D.C. 20301

Audio Devices and Components, Selection and Use of MIL-STD-2115.

1. This Military Standard is approved for use by all Departments and Agencies of the Department of Defense.

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Naval Electronic Systems Command, ATTN: ELEX-8111, Washington, D.C. 20360 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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FOREWORD

This standard provides selected standard audio devices and components for use in the design of military equipment.

The application information contained in this standard is offered for guidance only and is not to be considered as mandatory. Additional application information will be added when coordinated with the three military departments

Additional sections of this standard will be developed as the standard audio devices or components of a family are selected and coordinated with the three military departments

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CROSS REFERENCE
(Section Number to Specification Number)

<u>Section</u>		<u>Applicable specifications</u>
101	Loudspeaker, Permanent Magnet, Cone Type - - - - -	MIL-L-10911 MIL-L-12606 MIL-L-12632 MIL-L-17061 MIL-L-17080 MIL-A-20222 MIL-L-24296 Navy drawings RE49C724A RE49C764
102	Loudspeaker, Horn Type - - - - -	MIL-L-13941 MIL-L-25547
201	Microphones- - - - -	MIL-M-11101 MIL-M-23813 MIL-M-26542 MIL-M-49199 MIL-E-55119
301	Handsets - - - - -	MIL-H-11996 MIL-H-49078(EL) Navy drawing RE-51-128E
401	Headsets - - - - -	MIL-H-27467 MIL-E-55119 MIL-H-55353 MIL-H-83511
402	Headset Microphones - - - - -	MIL-H-49198 MIL-H-55460 MIL-H-83511
403	Headset Chest Sets - - - - -	MIL-T-15514

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1. SCOPE

1.1 Scope. This standard consists of the following

- a. Selected standard audio components chosen jointly by the Departments of the Army, the Navy, and the Air Force for use in the design and manufacture of military equipment under the jurisdiction of the Department of Defense
- b. Guides for the choice and application of audio components for use in military equipment.

Detailed requirements for audio components listed in this standard are covered in the applicable specification sheets or drawings (see 2.1). (The complete part number or type designation, and the number of the applicable specification sheet or drawings should be referenced in procurement documents for the audio components.)

1.2 Purpose of standard

- a. Provide the equipment designer with a selection of audio components that are considered to be the most flexible for military applications
- b. Control and minimize the variety of audio components used in military equipment in order to facilitate logistic support of the equipment in the field
- c. Establish criteria pertinent to the choice, application, and use of audio components in military equipment

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2. REFERENCED DOCUMENTS

2.1 Government documents The following documents form a part of this standard to the extent specified herein.

SPECIFICATIONS

MILITARY

- | | |
|--------------------|--|
| MIL-L-10911 | - Loudspeakers, Permanent Magnet, (Unencased, 5-,6-,8-,10-, and 12-Inch Diameter Cones), General Specification For |
| MIL-M-11101 | - Microphones, Dynamic |
| MIL-H-11996 | - Handsets, General Specification For. |
| MIL-L-12606 | - Loudspeaker, Permanent Magnet (Unencased, 3-Inch and 4-Inch Diameter Cone, 2-Watt, Fungus-, Gunblast-, and Immersion-Resistant), Type LS-445/U, M12606-01, and M12606-02). |
| MIL-L-12632 | - Loudspeakers, Permanent Magnet (Encased, 2-Watt, Fungus-, Gunblast-, and Immersion-Resistant), General Specification For. |
| MIL-L-13941 | - Loudspeakers, Permanent Magnet, (Dynamic, Horn Type), General Specification For |
| MIL-T-15514(NAVY) | - Telephone Equipment, Sound Powered Handsets, Headset-Chest Sets, and Headset-Microphones, Types H-200/U, H-201/U, H-202/U, H-203/U, and H-204/U |
| MIL-L-17061(SHIPS) | - Loudspeaker, Permanent Magnet, LS-474/U |
| MIL-L-17080 | - Loudspeakers, Permanent Magnet For Shipboard Entertainment Systems. |
| MIL-A-20222 | - Announcing-Equipment, Shipboard |
| MIL-M-23813(SHIPS) | - Microphones, Intercommunication and Announcing Systems, Naval Shipboard |
| MIL-L-24296(SHIPS) | - Loudspeaker, Pressure Proof, Type LS-405()/B |
| MIL-L-25547 | - Loudspeaker, Permanent Magnet LS-211/AIC-13 |
| MIL-M-26542 | - Microphones, General Specification For |
| MIL-H-27467(USAF) | - Headset, Electrical, H-154/AIC |
| MIL-H-49078(EL) | - Handset, H-250()/U |
| MIL-H-49198 | - Headset-Microphone Kit, MK-1564()/AIC |
| MIL-H-49199 | - Microphone, Linear, M-162/AIC |
| MIL-E-55119(EL) | - Electro-Acoustical Transducer Equipment. |
| MIL-H-55353 | - Headset, Electrical, H-216A/U |
| MIL-H-55460(EL) | - Headset-Microphone H-182()/PT |
| MIL-H-83511 | - Headset-Microphone and Headset-Electrical (Medium Noise Attenuation, Hearing Protective), General Specification For |

DRAWINGS

NAVY

- | | |
|------------|--|
| RE49C724 | - Loudspeaker, Permanent Magnet, LS-455/U |
| RE49C764 | - Loudspeaker, Permanent Magnet, NT-491814 |
| RE-51-128E | - Handset, H-169/U |

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

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3 DEFINITIONS

Not applicable

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4. GENERAL REQUIREMENTS

4.1 Choice of audio components. The equipment designer should consider the following characteristics and parameters in choosing the most suitable audio component

- a. Application (type of audio component (eg loudspeaker vs headset).
- b. Electrical data (frequency response, etc.)
- c. Environmental capabilities such as shock and vibration
- d. Mechanical data and safety features.

4.1.1 Procurement information. After a preliminary selection of the desired audio component has been made, reference should be made to the applicable specification. Procurement documents for audio components shall reference the applicable specification sheet or drawings and the complete part number, style, or type designation

4.2 Conflict of requirements After selection of a particular audio component from this document, the design engineer should refer to the applicable specification sheet or drawing for any technical conflicts. In the event of a conflict between the technical requirements described in this standard and those of the applicable specification sheet or drawing, the latter shall govern.

4.3 Criteria for inclusion in this standard. The criteria for the inclusion of audio components in this standard are as follows:

- a. The audio component shall be the best type available for general use in military equipment
- b. The audio components shall be reviewed and coordinated for acceptance as a standard item by the three military departments.
- c. Coordinated military specifications shall be available (see 2.1)

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5. DETAILED REQUIREMENTS

5.1 The detailed requirements for standard audio components are contained in the applicable specification and the applicable section of this standard

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6. SUPPLEMENTAL INFORMATION

6.1 Drawing notes. The following notes are applicable to each figure contained in this standard:

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are based upon
1.00 inch = 25.4 mm.

6.2 Drawing configurations. The drawings in this standard are typical and are not necessarily the exact configuration for each item.

Custodians.

Army - CR
Navy - EC
Air Force - 85

Preparing activity

Navy - EC

(Project 5965-0159)

Review activities:

Army - AR, MI
Navy -
Air Force - 11, 99
DLA - ES

User activities:

Army - CE
Navy - SH
Air Force -

Agent.

DLA - ES

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SECTION 100
LOUDSPEAKERS

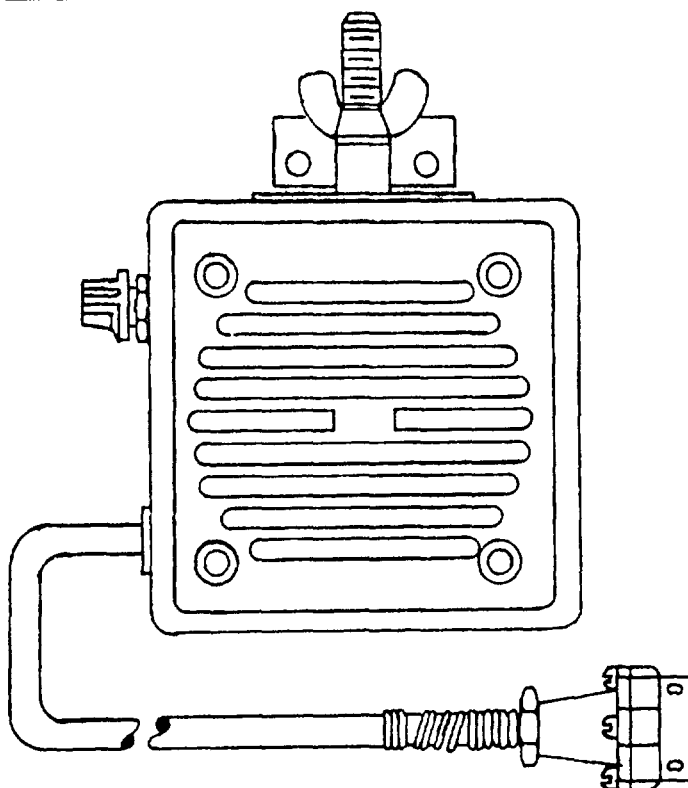
Section

- | | |
|-----|---|
| 101 | Loudspeaker, Permanent Magnet, Cone Type. |
| 102 | Loudspeaker, Horn Type |

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SECTION 101

LOUDSPEAKER, PERMANENT MAGNET, LS-100/U (APPLICABLE SPECIFICATION MIL-L-12032)



FUNCTIONAL DESCRIPTION

The LS-100/U is a four inch, direct radiator, dynamic type loudspeaker. It is housed in a metal inclosure and is resistant to weather, gunblast, immersion, humidity, temperature extremes, and bounce. The unit is intended for use with ground service tactical equipments where resistance to gun fire and immersion are requirements.

CONSISTS OF:

- 1 Permanent Magnet Loudspeaker LS-445/U
- 1 Cable CX-1576/U

RELATIONSHIP TO SIMILAR EQUIPMENT:

PHYSICAL DESCRIPTION

Cone Diameter	-----	4 inches (101.60 mm)
Mounting Dimensions	-----	Adjustable mounting bracket with two 9/32 inch diameter holes spaced 1-1/2 inch C to C
Plug	-----	U-77/U

Over-all Dimensions:

Length	-----	7.031 inches (178.59 mm)
Width	-----	5.656 inches (143.66 mm)
Depth	-----	3.312 inches (84.12 mm)

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ADDITIONAL PHYSICAL DATA:

Case Material Metal

TECHNICAL DESCRIPTION:

INPUT

Voice coil impedance 8 ohms
Power handling rating 2 watts (warble tones)
Frequency range 300 to 7,000 Hz

ADDITIONAL TECHNICAL DATA:

Transformer Data 600 ohms primary impedance

Environmental Data:

Operating Conditions:

Temperature From -65° to +160°F
Elevation 5,000 feet above sea level
Relative Humidity 95 percent

Nonoperating Conditions:

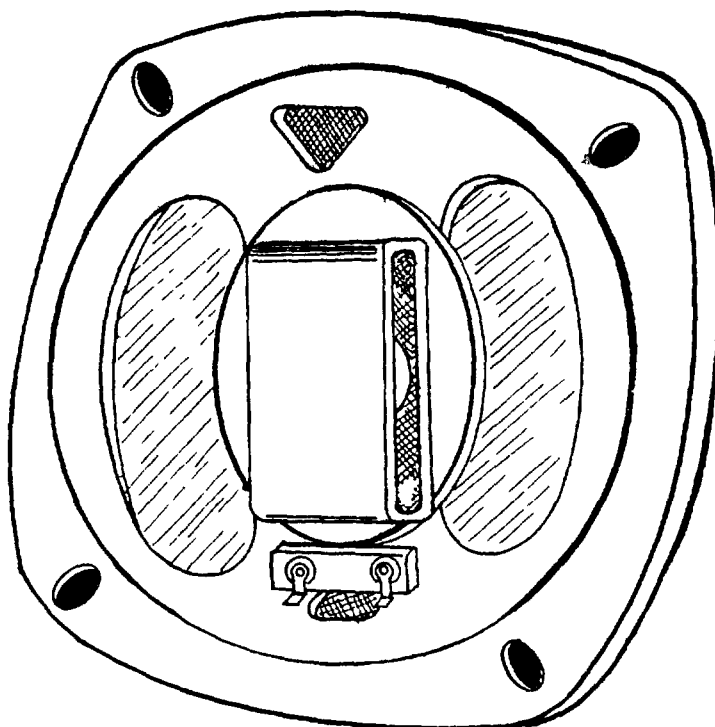
Temperature From -80° to +160°F for 72 hours
Elevation 50,000 feet above sea level
Relative Humidity 100 percent
Blast In accordance with MIL-L-12606
Immersion In accordance with MIL-L-12606
Bounce In accordance with MIL-L-12606

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058	LS-166/U
80063	LS-166/U
87771	LS-166/U
84792	LS-166/U
04848	6420-A1

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LOUDSPEAKER, PERMANENT MAGNET, LS-180/U
(APPLICABLE SPECIFICATION MIL-L-10911)



FUNCTIONAL DESCRIPTION:

This unit is a permanent magnet unencased loudspeaker. It is capable of withstanding extreme temperature changes. The unit is rugged and light, and is designed for general purpose use. This speaker is moisture, vibration, and shock resistant.

CONSISTS OF

1 Loudspeaker, Permanent Magnet LS-180/U

RELATIONSHIP TO SIMILAR EQUIPMENT

PHYSICAL DESCRIPTION

Diameter - - - - -	8 inches (203.20 mm)
Mounting dimensions - - - - -	Four 0.200 x 0.375 inch mounting slots spaced 90 degrees apart on 7.625 inch diameter.
Terminal/connector designation - - - -	Two solder lug type on terminal board

Overall dimensions

Diameter - - - - -	8.44 inches maximum (214.38 mm)
Depth - - - - -	5 inches maximum (127.00 mm)

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TECHNICAL DESCRIPTION:

INPUT

Voice coil impedance - - - - - 8 \pm 1 ohms
Power handling rating - - - - - 5 watts peak - 10 watts
Frequency range - - - - - 150 to 7,000 Hz

ADDITIONAL TECHNICAL DATA:

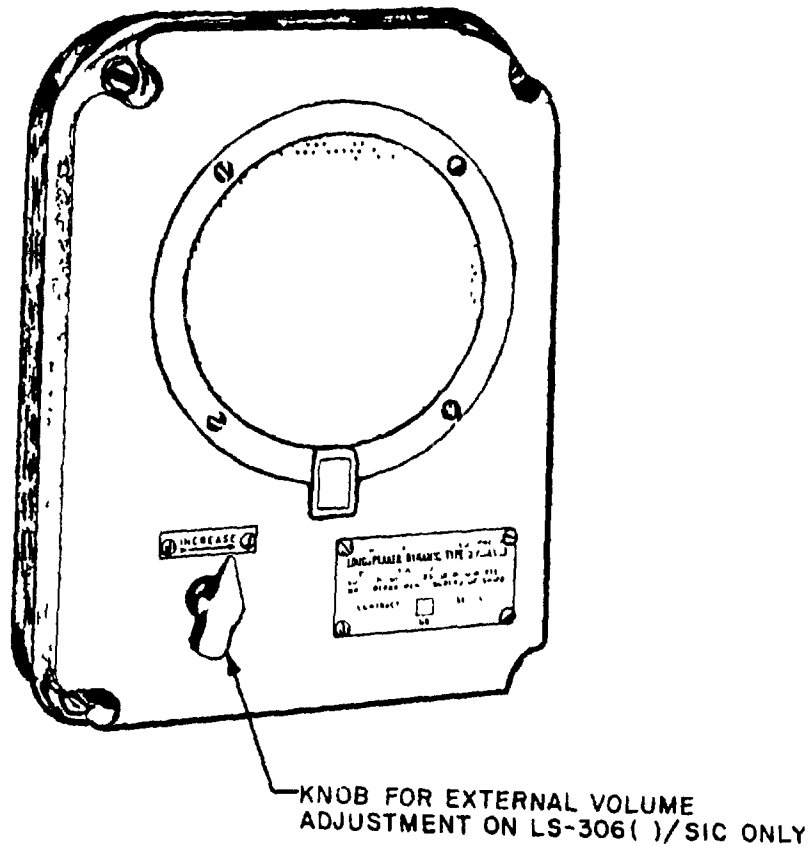
Temperature range (Nonoperating) - - - -65° to +160°F

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058	LS-180/U
81349	LS-180/U
04848	LS-180/U
84792	LS-180/U

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LOUDSPEAKER, PERMANENT MAGNET, LS-305/LS-306(SIC)
(APPLICABLE SPECIFICATION: MIL-A-20222)



FUNCTIONAL DESCRIPTION:

The LS-305()/SIC and LS-306()/SIC are low power loudspeakers intended for reproduction of speech and alarm signals in sheltered areas of ships, such as living spaces, in which the noise level is comparatively low.

CONSISTS OF:

- 1 Loudspeaker, Dynamic LS-305()/SIC or LS-306()/SIC

RELATIONSHIP TO SIMILAR EQUIPMENT

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PHYSICAL DESCRIPTION

Nominal Diameter - - - - - 11 inches (279.4 mm)

Over-all Dimensions

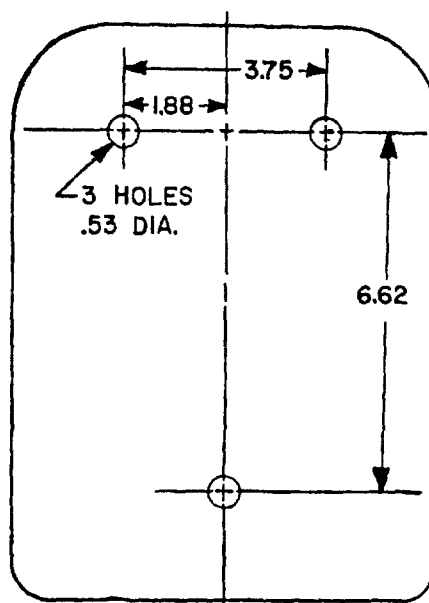
Length - - - - - 10.938 inches (277.83 mm)
Width - - - - - 8.25 inches (209.55 mm)
Depth - - - - - 4.438 inches (112.73 mm)

Mounting Dimensions

Refer to the following figure, arrangement of mounting holes:

Weight - - - - - 6 lbs. est.

ARRANGEMENT OF
MOUNTING HOLES: ►



ADDITIONAL PHYSICAL DATA

Case Material: Aluminum
Finish: Alkyd Resin Enamel, Light Navy Gray

TECHNICAL DESCRIPTION

INPUT

Voice coil impedance - - - - - 7 ohms
Power handling rating - - - - - Not rated
Frequency range - - - - - 200 to 8,000 Hz

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ADDITIONAL TECHNICAL DATA

Transformer Data

The liner transformer is tapped to allow use with either a 50 to 70 volt audio line
The input impedances available at the 70 volt tap at one kilocycle per second are
5200, 16,900, 41,900, 59,200, 71,000 ohms
The input impedances at the 50 volt tap at one kilocycle are 2600, 8200, 20,400,
29,200; 35,500 ohms.

REFERENCE DATA and LITERATURE

MANUFACTURER CODE	PART NUMBER
32001	LS-305()/SIC or LS-306()/SIC

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LOUDSPEAKER, PERMANENT MAGNET, LS-444/WIH
(APPLICABLE SPECIFICATION, MIL-L-17080)

No illustration available

FUNCTIONAL DESCRIPTION:

The LS-444/WIH is a direct radiator, permanent magnet type loudspeaker. The unit is furnished with a matching transformer and controls within an enclosure. The loudspeaker is intended for use with Naval motion picture and entertainment installations.

CONSISTS OF:

- 1 Permanent Magnet Loudspeaker LS-444/WIH
- Including:
 - 1 Channel Selector
 - 1 Volume Control
 - 1 Transformer

RELATIONSHIP TO SIMILAR EQUIPMENT:

Similar to LS-443/WIH

PHYSICAL DESCRIPTION:

Diameter - - - - - 8 inches (203.20 mm)
Mounting Dimensions - - - - - Three 1/2 inch (12.70 mm) diameter mounting
holes on isosceles triangle with 8-3/4 inch
(222.25 mm) base and 8 inch (203.2 mm) altitude.

Over-all Dimensions:

Length - - - - - 15 inches (381.00 mm)
Width - - - - - 9 inches (228.60 mm)
Height - - - - - 15 inches (381.00 mm)

ADDITIONAL PHYSICAL DATA:

Material of Enclosure - - - - - Metal or fibrous glass reinforced polyester plastic

TECHNICAL DESCRIPTION:

INPUT

Voice coil impedance - - - - - 8 ohms
Power handling rating - - - - - 5 watts (warble tones)
Frequency range - - - - - 120 to 7,000 Hz

ADDITIONAL TECHNICAL DATA:

Transformer Winding Data - - - - - Primary winding tapped at, 5 volt-amperes, 2.5 VA, 1.25 VA, .63 VA, .31 VA, .15 VA with a 8 ohm resistive load and a 70.7 volt line. Secondary winding tapped at, 5 VA, 1.25 VA, and .31 VA with an 8 ohm resistive load and 70.7 V applied to the 5 VA Primary winding

Channel Selector - - - - - 5 positions. It will be so connected that it will switch its two output leads to any one of 4 separate inputs. The unconnected position shall be at the CCW end and marked "OFF"

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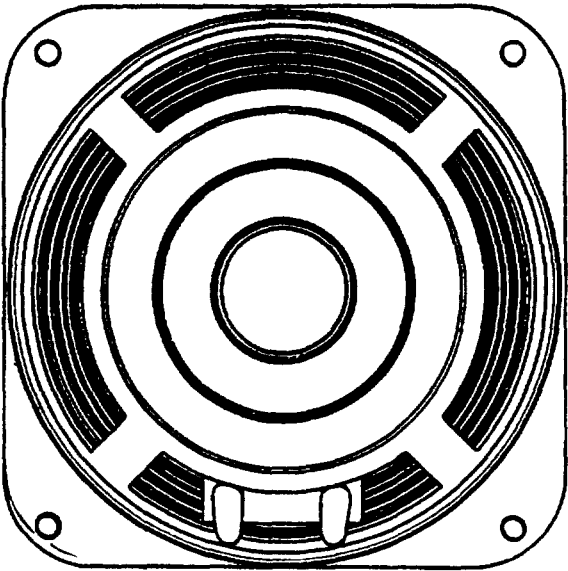
Volume Control _ _ _ _ _ 6 Positions. It will connect one lead from the channel selector to the various taps of the line-to-voice coil transformer.

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80064	LS-444/WIH
81349	LS-444/WIH

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LOUDSPEAKER, PERMANENT MAGNET, LS-445/U
(APPLICABLE SPECIFICATION. MIL-L-12606)



FUNCTIONAL DESCRIPTION.

Loudspeaker LS-445/U is an unencased, 2-watt, gunblast and immersion resistant permanent magnet type loudspeaker unit. It has a 4-inch diameter cone with a voice coil impedance of 8 ohms.

CONSISTS OF:

- 1 Permanent Magnet Loudspeaker LS-445/U

RELATIONSHIP TO SIMILAR EQUIPMENT.

This is the loudspeaker unit of LS-454/U, LS-166/U and LS-590 ()/U.

PHYSICAL DESCRIPTION:

Diameter - - - - - 4 inches (101.60 mm)

Mounting Dimensions:

Four number 10 - 24 thd tapped holes on 3-5/16 inch by 3-5/16 inch mounting centers.

Terminal/Connector Designation - - - - Two Solder Type terminals

Over-all Dimensions:

Length - - - - - 4 inches (101.60 mm)
Width - - - - - 4 inches (101.60 mm)
Depth - - - - - 2.375 inches (maximum) (60.33 mm)
Weight - - - - - 1/2 pounds

INPUT

Voice coil impedance	8 ± 1 ohms
Power handling rating	2 watts, normal
Frequency range	300 to 7,000 Hz

Environmental Service

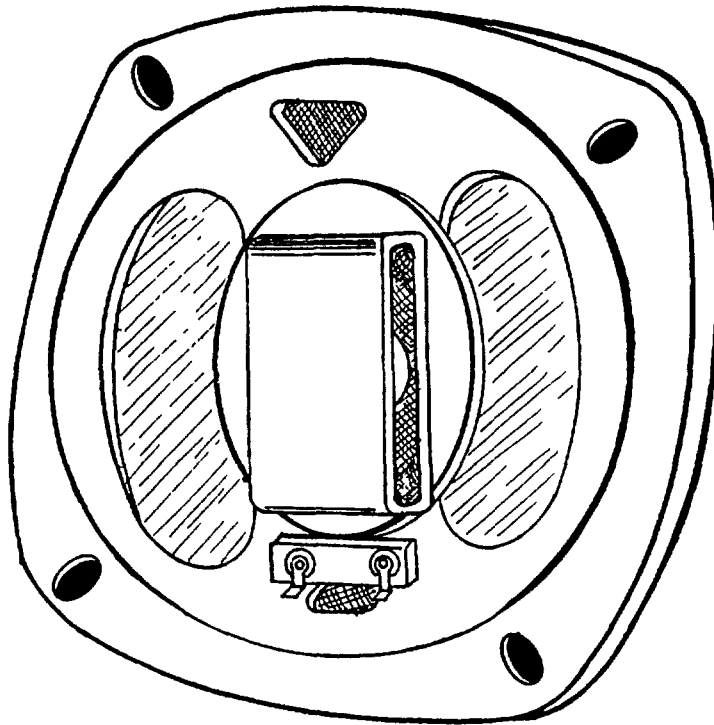
Temperature	- - - - -	-80° to +160°F
Moisture	- - - - -	Resistant
Immersion	- - - - -	3 feet of tap water for 24 hours
Bounce	- - - - -	In accordance with MIL-L-12606
Fungus	- - - - -	Treated for moisture and fungus resistance
Gunblast	- - - - -	In accordance with MIL-L-12606 and SK-N-864
Shock	- - - - -	In accordance with MIL-S-901
Endurance	- - - - -	100 Hrs

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80063	LS-445/U
32001	P4-SB-2
87771	LS-445/U
84792	H-400
04848	7604-A1

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LOUDSPEAKER, PERMANENT MAGNET, LS-446/U
(APPLICABLE SPECIFICATION MIL-L-10911/2)



FUNCTIONAL DESCRIPTION:

This unit is a permanent magnet unencased loudspeaker. It is capable of withstanding extreme temperature changes. The unit is rugged and light, and is designed for general purpose use. This speaker is moisture, vibration, and shock resistant.

CONSISTS OF:

1 Loudspeaker, Permanent Magnet LS-446/U

RELATIONSHIP TO SIMILAR EQUIPMENT:

PHYSICAL DESCRIPTION:

Diameter - - - - -	6 inches (152.4 mm)
Mounting dimensions - - - - -	Four 0.200 x 0.375 inch mounting slots spaced 90 degrees apart on 6.125 inch (155.58 mm) diameter.
Terminal/connector designation - - - - -	Two solder lug type on terminal board

Overall dimensions:

Diameter - - - - -	6.94 inches maximum (176.28 mm)
Depth - - - - -	3.38 inches maximum (85.85 mm)

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TECHNICAL DESCRIPTION:

INPUT

Voice coil impedance - - - - - 3 to 4.5 ohms (3.2 ohms nominal)
Power handling rating - - - - - 5 watts rms, peak - 8 watts rms.
Frequency range - - - - - 150 to 7,000 Hz

ADDITIONAL TECHNICAL DATA:

ENVIRONMENTAL SERVICE:

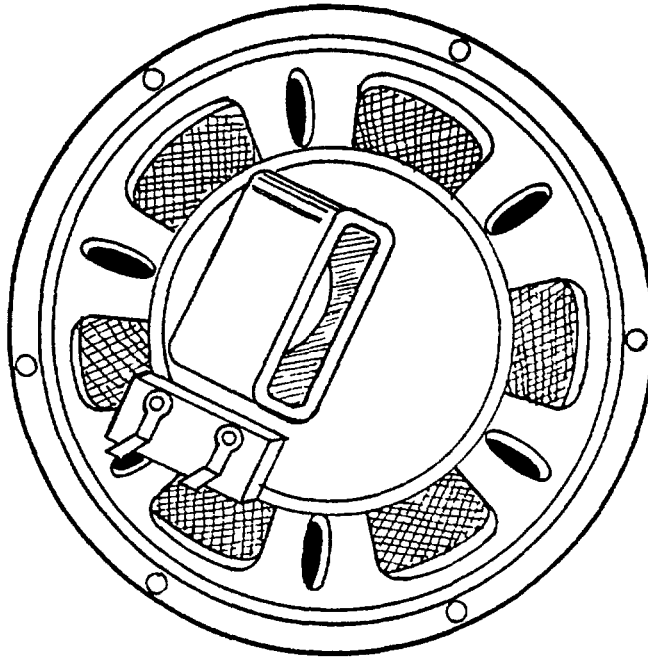
Temperature range (nonoperating) - - - - -65° to +160°F
Moisture resistance - - - - - In accordance with MIL-L-10911
Vibration - - - - - In accordance with MIL-L-10911
Endurance - - - - - In accordance with MIL-L-10911

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058	LS-446/U
81349	LS-446/U
04848	LS-446/U

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LOUDSPEAKER, PERMANENT MAGNET, LS-447/U
(APPLICABLE SPECIFICATION MIL-L-10911/4)



FUNCTIONAL DESCRIPTION:

This unit is a permanent magnet unencased loudspeaker. It is capable of withstanding extreme temperature changes. The unit is rugged and light, and is designed for general purpose use. This speaker is moisture, vibration, and shock resistant.

CONSISTS OF:

1 Loudspeaker, Permanent Magnet	LS-447/U
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RELATIONSHIP TO SIMILAR EQUIPMENT:

PHYSICAL DESCRIPTION:

Diameter - - - - -	10 inches (254.0 mm)
Mounting dimensions - - - - -	Eight 0.218 x 0.375 inch mounting slots spaced 45 degrees apart on 9.625 inches (244.48) diameter.
Terminal/connector designation - - - - -	Two solder lug type on terminal board

Overall dimensions:

Diameter - - - - -	10.25 inches maximum (260.35 mm)
Depth - - - - -	6 inches maximum (152.4 mm)

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TECHNICAL DESCRIPTION:

INPUT

Voice coil impedance - - - - - 3 to 4.5 ohms (3.20 ohms nominal)
Power handling rating - - - - - 10 watts rms; peak - 20 watts
Frequency range - - - - - 150 to 7,000 Hz

ADDITIONAL TECHNICAL DATA:

ENVIRONMENTAL SERVICE

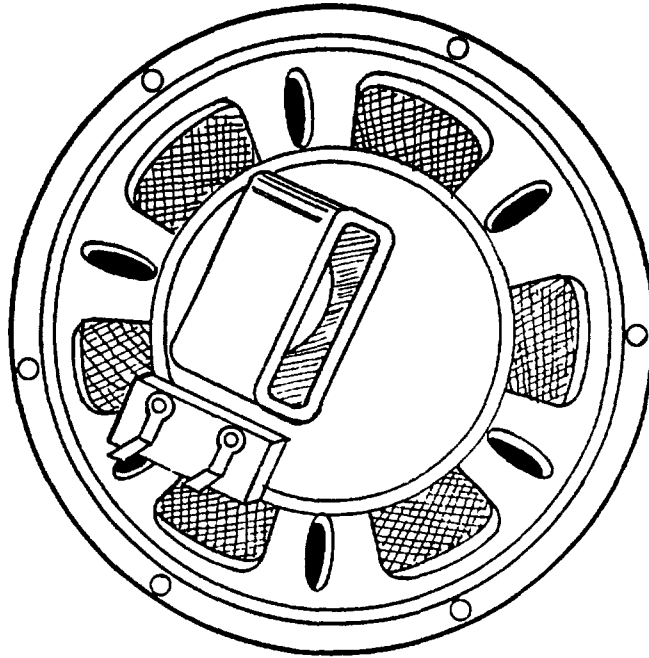
Temperature range (nonoperating) - - -65° to +160°F
Moisture resistance- - - - - In accordance with MIL-L-10911
Vibration- - - - - In accordance with MIL-L-10911
Endurance- - - - - In accordance with MIL-L-10911

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058	LS-447/U
81349	LS-447/U
04848	LS-447/U

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LOUDSPEAKER, PERMANENT MAGNET, LS-448/U
(APPLICABLE SPECIFICATION MIL-L-10911/5)



FUNCTIONAL DESCRIPTION:

This unit is a permanent magnet unencased loudspeaker. It is capable of withstanding extreme temperature changes. The unit is rugged and light, and is designed for general purpose use. The speaker is moisture, vibration, and shock resistant.

CONSISTS OF:

1 Loudspeaker, Permanent Magnet LS-448/U

RELATIONSHIP TO SIMILAR EQUIPMENT:

PHYSICAL DESCRIPTION:

Diameter - - - - -	12 inches (304.8 mm)
Mounting dimensions - - - - -	Eight 0.250 x 0.375 inch mounting slots spaced 45 degrees apart on 11.562-inch (293.67 mm) diameter
Terminal/connector designation - - - -	Two solder lug type on terminal board
<u>Overall dimensions:</u>	
Diameter - - - - -	12.25 inches maximum (311.15 mm)
Depth - - - - -	6.50 inches maximum (165.10 mm)

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TECHNICAL DESCRIPTION:

INPUT

Voice coil impedance - - - - - 7 to 9 ohms
Power handling rating - - - - - 14 watts rms; peak - 20 watts rms
Frequency range - - - - - 150 to 7,000 Hz

ADDITIONAL TECHNICAL DATA:

ENVIRONMENTAL SERVICE

Temperature range (nonoperating) - - -65° to +160°F
Moisture resistance - - - - - In accordance with MIL-L-10911
Vibration - - - - - In accordance with MIL-L-10911
Endurance - - - - - In accordance with MIL-L-10911

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058	LS-448/U
81349	LS-448/U
04848	LS-448/U

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LOUDSPEAKER, PERMANENT MAGNET, LS-450/B
(APPLICABLE SPECIFICATION: MIL-L-24296(SHIPS))

No illustration available

FUNCTIONAL DESCRIPTION:

The LS-450/B is a permanent magnet dynamic loudspeaker for speech communication between the interior of a submarine and the bridge or escape hatch. It may also be used as a microphone in two-way conversation. The unit will operate under pressure conditions from atmospheric pressure to high pressure present at submarine operating depths. The unit is protected against normal sea exposure and freezing spray conditions by encapsulating the moving voice coil assembly in silicone rubber.

CONSISTS OF:

- 1 Loudspeaker, Permanent Magnet, LS-450/B

RELATIONSHIP TO SIMILAR EQUIPMENT:

Electrically and dimensionally interchangeable with the IC/SHA-IR Loudspeaker (Per BuShips Dwg. 900-S 6502-73987 Rev. O). The output sound pressure level of the LS-450/B is about 8 dB lower than the IC-SHA-IR output level with the same input power.

PHYSICAL DESCRIPTION:

Diameter	6 inches (152.40 mm)
Mounting Dimensions	Four mounting holes 9/16 inch (14.29 mm) in diameter on 2-3/8 inch by 3-7/8 inch (60.33 by 98.43 mm) mounting centers
Terminal/Connector Designation	Two No. 8-32 binder head machine screws on terminal board.

Over-all Dimensions:

Diameter	6 inches (152.40 mm)
Depth	5 inches (127.00 mm)
Weight	14 pounds

ADDITIONAL PHYSICAL DATA:

TECHNICAL DESCRIPTION:

INPUT

Voice coil impedance	16 ohms
Power handling rating	5 watts (25 watts, max) (warble tones)
Frequency range	600 to 5,000 Hz

ADDITIONAL TECHNICAL DATA:

Output as a Microphone	.01 volts with 16 ohms load and 100 dB sound pressure level 775-1225 Hz.
------------------------	--

Environmental Data:

Pressure Proof
Freeze Proof
Submersible

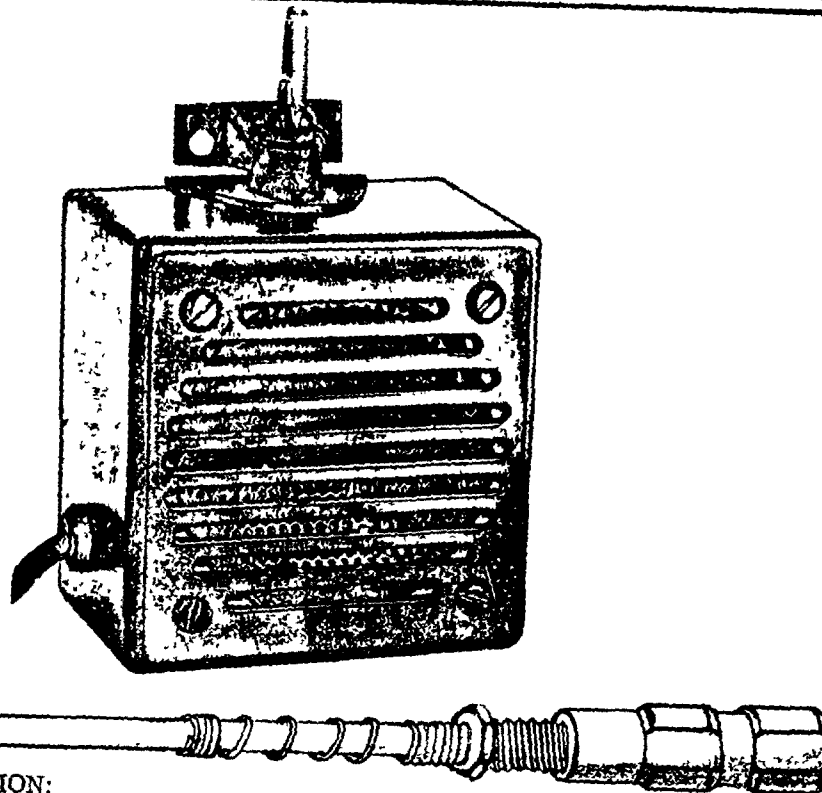
MIL-STD-2115
25 March 1982

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058	LS-450/B
32001	LS-450/B

MIL-STD-2115
25 March 1982

LOUDSPEAKER, PERMANENT MAGNET, LS-454/U
(APPLICABLE SPECIFICATION: MIL-L-12032)



FUNCTIONAL DESCRIPTION:

This unit is a 4-inch, direct radiator, dynamic type loudspeaker. It is housed in a metal inclosure and is resistant to weather, gunblast, immersion, humidity, temperature extremes, and bounce. The unit is intended for use with ground service tactical equipments where resistance to gunfire and immersion are requirements.

CONSISTS OF:

- 1 Loudspeaker Unit - Type LS-445/U.
- 1 Cabinet - Metal with Adjustable Clamp.
- 1 Cord - Type COS-2(23).
- 1 Plug - Type U229/U.
- 1 Transformer - In Case.

RELATIONSHIP TO SIMILAR EQUIPMENT:

This speaker is similar to the LS-590/U and the LS-166/U.

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25 March 1982

PHYSICAL DESCRIPTION:

Cone diameter - - - - - 4 inches (101.60 mm)
Mounting dimensions - - - - - Adjustable mounting bracket with
two 9/32-inch (7.14 mm) diameter
holes spaced 1-1/2 inch (38.10 mm) center to
center

Overall dimensions:

Length - - - - - 7.031 inches (178.59 mm)
Width - - - - - 5.656 inches (143.66 mm)
Depth - - - - - 3.312 inches (84.12 mm)

TECHNICAL DESCRIPTION:

INPUT

Voice coil impedance - - - - - 8 ohms
Power handling rating - - - - - 2 watts (warble tones)
Frequency range - - - - - 300 to 7,000 Hz

ADDITIONAL TECHNICAL DATA:

Transformer data - - - - - 600 ohms primary impedance
reflected at input terminals of connector

Environmental data

Operating conditions:

Temperature - - - - - From -65° to +160°F
Elevation - - - - - 5,000 feet above sea level
Relative humidity - - - - - 95 percent

Nonoperating conditions:

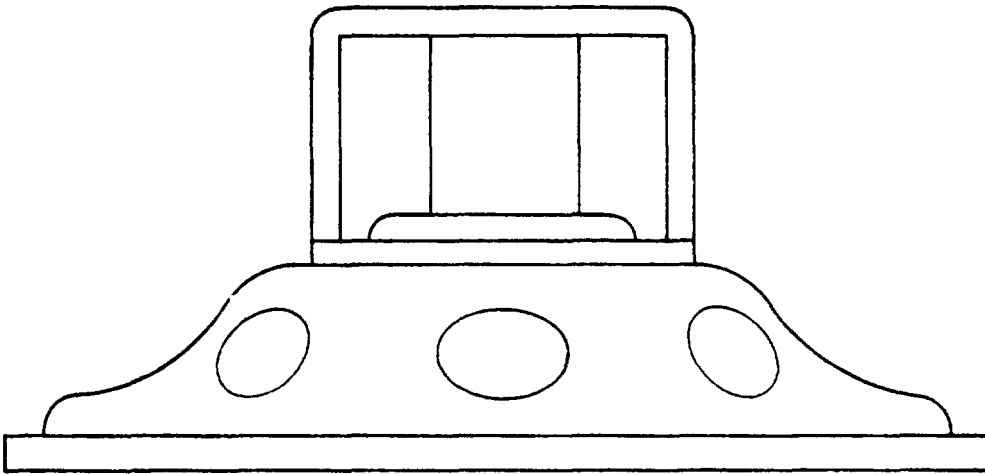
Temperature - - - - - From -80° to +160°F for 72 hours
Elevation - - - - - 50,000 feet above sea level
Relative humidity - - - - - 100 percent
Blast, immersion, bounce - - - - - In accordance with MIL-L-12632

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058	LS-454/U
80063	LS-454/U
87771	LS-454/U
04848	LS-454/U
32001	LS-454/U
74201	LS-454/U
84792	LS-454/U

MIL-STD-2115
25 March 1982

LOUDSPEAKER, PERMANENT MAGNET, LS-455/U
(APPLICABLE DRAWING: NAVY RE49C724)



FUNCTIONAL DESCRIPTION:

Loudspeaker LS-455/U is an unencased, 2-watt, permanent magnet type loudspeaker unit. It has a 4-inch diameter cone with a voice coil impedance of 3 2 ohms. It is suitable for use in announcing - equipment, shipboard.

CONSISTS OF:

- 1 Permanent Magnet Loudspeaker LS-455/U

RELATIONSHIP TO SIMILAR EQUIPMENT

This speaker, with appropriate transformer, is interchangeable with NT-49817.

PHYSICAL DESCRIPTION:

Diameter - - - - - 4 inches (101.60 mm)

Mounting Dimensions:

Four .187 dia. holes on 3.312 inch mounting centers and four .250 dia holes on .687 x 4.562 inch mounting centers.

Over-all Dimensions.

Length - - - - - 4.062 inches (103.17 mm)
Width - - - - - 4.062 inches (103.17 mm)
Depth - - - - - 1.875 inches (maximum) (47.63 mm)

MIL-STD-2115
25 March 1982

TECHNICAL DESCRIPTION.

INPUT

Voice coil impedance - - - - - 3.2 ohms
Power handling rating - - - - - 5 watts, peak
Frequency range - - - - - 200 to 5,000 Hz

ADDITIONAL TECHNICAL DATA

Environmental Service

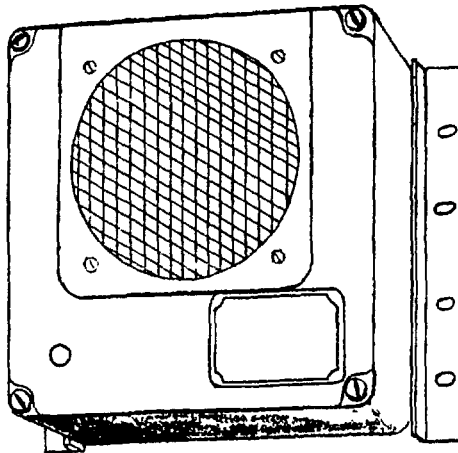
Moisture - - - - - Resistant
Shock - - - - - Resistant
Vibration - - - - - Resistant

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80063	LS-455/U
87771	C4BN06001
84792	LS-455/U

MIL-STD-2115
25 March 1982

LOUDSPEAKER, PERMANENT MAGNET, LS-474/U
(APPLICABLE SPECIFICATION MIL-L-17081)



FUNCTIONAL DESCRIPTION:

The LS-474/U Loudspeaker is designed as a general purpose unit having provision for mounting on a wall, rack panel, or table top.

CONSISTS OF:

- 1 Loudspeaker LS-474/U
- Including.
- 1 Cabinet, Including Mounting Brackets
- 1 Matching Transformer

RELATIONSHIP TO SIMILAR EQUIPMENT.

Similar to LS-195/U except for the single primary impedance transformer and elimination of attenuator.

ACCESSORIES:

A volume control, can be mounted on the front panel by removing the hole plug

Two loudspeakers may be mounted on relay rack CY-597A/G.

MIL-STD-2115
25 March 1982

PHYSICAL DESCRIPTION:

Weight_ Not available

Dimensions.

Length 8.562 inches (217.47 mm)
Width 8.688 inches (220.68 mm)
Depth 5 inches (127.0 mm)
Nominal Cone Diameter 6 inches (152.4 mm)

Mounting Dimensions:

4-7/32 inch diameter mounting holes spaced 4.33 inches center to center.
4 mounting holes on flanges provide for installation on a bulkhead.

TECHNICAL DESCRIPTION:

INPUT

Voice coil impedance 3.2 ohms
Power handling rating 4 watts, nominal
Frequency range 200 to 5,000 Hz

ADDITIONAL TECHNICAL DATA:

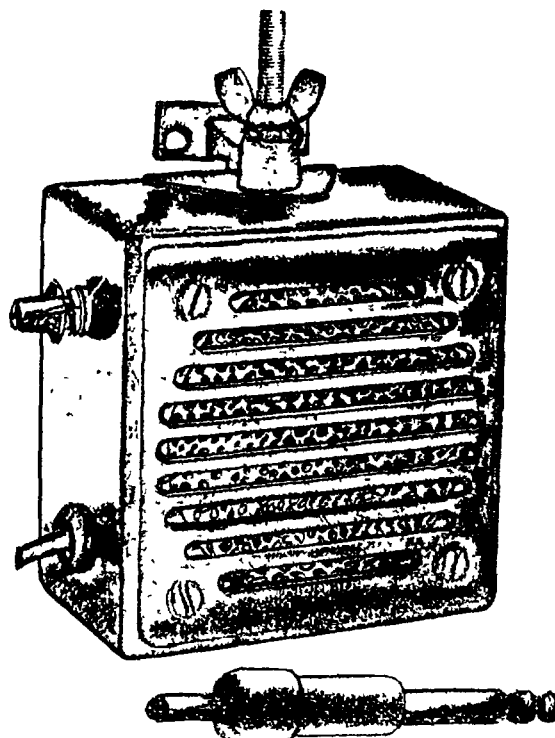
Transformer Primary Impedance . . . 600 ohms

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
81349	LS-474/U

MIL-STD-2115
25 March 1982

LOUDSPEAKER, PERMANENT MAGNET, LS-590()/U
(APPLICABLE SPECIFICATION MIL-L-12632)



FUNCTIONAL DESCRIPTION:

This unit is a 4-inch, direct radiator, dynamic type loudspeaker. It is housed in a metal inclosure and is resistant to weather, gunblast, immersion, humidity, temperature extremes, and bounce. The unit is intended for use with ground service tactical equipments where resistance to gunfire and immersion are requirements. The loudspeaker is equipped with a switch. The switch is a two-position switch. One position connects to a 4,000 ohm impedance, and the other position connects to a 250 ohm position.

CONSISTS OF:

- 1 - Loudspeaker Unit - Type LS445/U
- 1 - Cabinet - Metal with Adjustable Clamp
- 1 - Cord - Type COS-2(18)
- 1 - Plug - Type - 055B

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RELATIONSHIP TO SIMILAR EQUIPMENT:

Type LS-590()/U is a replacement for loudspeaker LS-11-A and LS-203/U. The LS-590()/U is similar to the LS-166/U and the LS-454/U.

PHYSICAL DESCRIPTION:

Diameter - - - - - 4 inches (101.60 mm)
 Mounting dimensions - - - - - Adjustable mounting bracket with two 9/32-inch
 (7.14 mm) diameter holes spaced 1-1/2 inch
 center to center.
 Plug - - - - - PJ-055B

Overall dimensions:

Length - - - - - 7.031 inches (178.59 mm)
 Width - - - - - 4.906 inches (124.61 mm)
 Depth - - - - - 3.312 inches (84.12 mm)

TECHNICAL DESCRIPTIONINPUT

Voice coil impedance - - - - - 8 ohms
 Power handling rating - - - - - 2 watts (warble tones)
 Frequency range - - - - - 300 to 7,000 Hz

ADDITIONAL TECHNICAL DATA:

Transformer data - - - - - Multi-stage - 4,000 ohms primary impedance and
 250 ohms primary impedance
 Resistant characteristics - - - - - Resistant to gun-blast, immersion, humidity,
 temperature extremes, and bounce

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25 March 1982

Environmental data:

Operating conditions:

Temperature - - - - - From -65° to +160°F
Elevation - - - - - 5,000 feet above sea level
Relative humidity - - - - - 95 percent
Salt-laden air - - - - - As encountered in coastal regions

Nonoperating conditions:

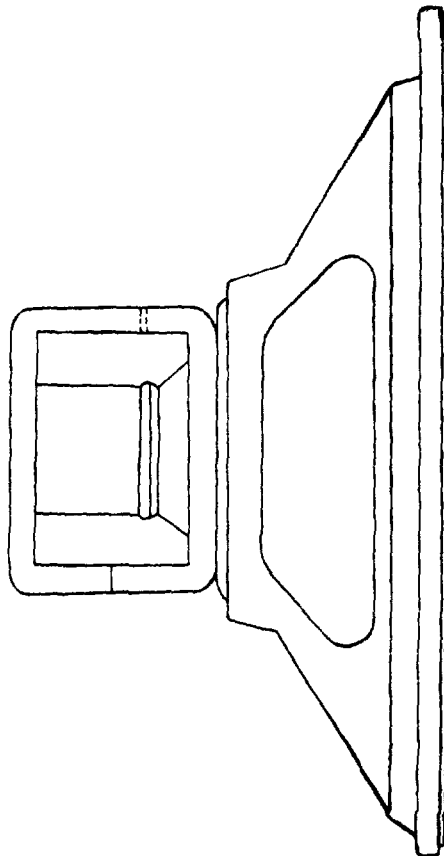
Temperature - - - - - From -80° to +160°F for 72 hours
Elevation - - - - - 50,000 feet above sea level
Relative humidity - - - - - 100 percent

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058	LS-590()/U
80063	LS-590()/U
87771	LS-590()/U
04848	LS-590()/U
84792	LS-590()/U

MIL-STD-2115
25 March 1982

LOUDSPEAKER, PERMANENT MAGNET, NT-491814
(APPLICABLE DRAWING NAVY RE49C764)



FUNCTIONAL DESCRIPTION

The NT-491814 is a six-inch low impedance loudspeaker resistant to shock, vibration, and salt spray, which is suitable for shipboard and general purpose use.

CONSISTS OF

- 1 Loudspeaker, Permanent Magnet NT-491814

MIL-STD-2115

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RELATIONSHIP TO SIMILAR EQUIPMENT:**PHYSICAL DESCRIPTION:**

Nominal Diameter - - - - -	6 inches (152.4 mm)
Diameter - - - - -	6-1/8 inches (155.58 mm)
Depth - - - - -	3-1/8 inches (79.38 mm)
Weight - - - - -	Not available

ADDITIONAL PHYSICAL DATA:**Mounting Dimensions:**

Four slots .203 x .297 inches at the corners of a 4-1/4 inch square.

Finish:

All corrosive metal parts finished in gray enamel.

TECHNICAL DESCRIPTION:**INPUT**

Voice coil impedance - - - - -	3.2 ohms at 400 Hz
Power handling rating- - - - -	4 watts
Frequency range - - - - -	200 to 5,000 Hz

ADDITIONAL TECHNICAL DATA.

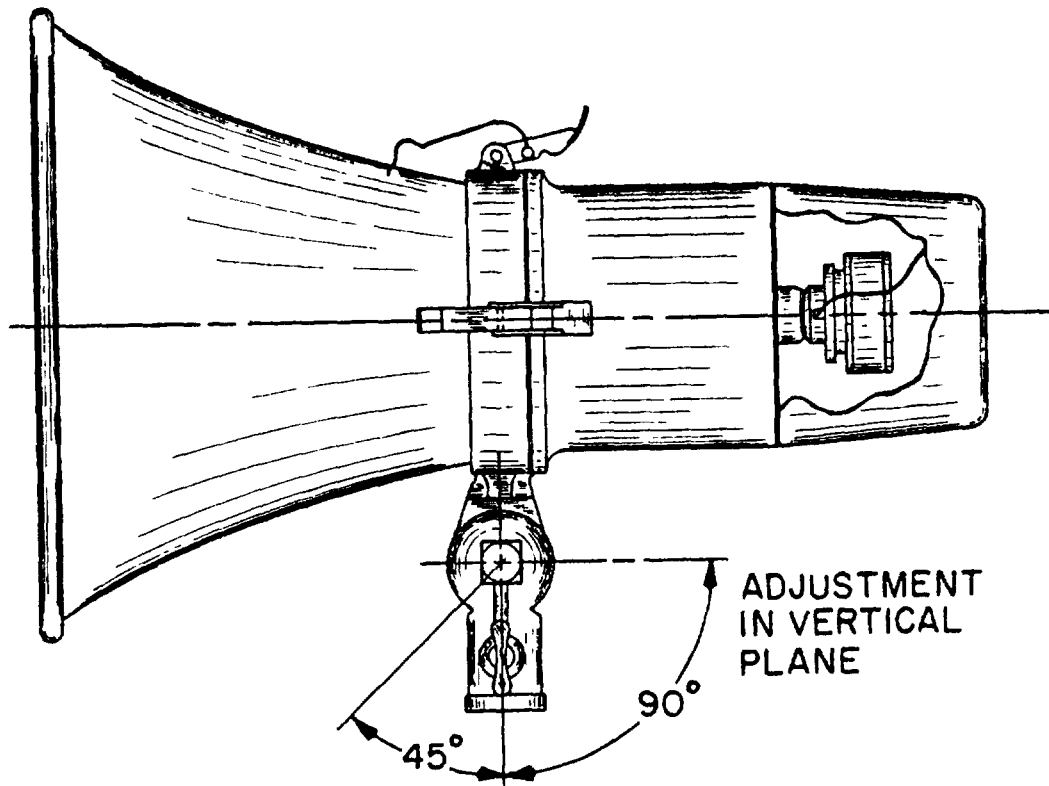
REFERENCE DATA and LITERATURE

MANUFACTURER CODE	PART NUMBER
70215	B7240

MIL-STD-2115
25 March 1982

SECTION 102

LOUDSPEAKER, HORN, LS-103()/TIQ-2
(APPLICABLE SPECIFICATION MIL-L-13941)



FUNCTIONAL DESCRIPTION.

The LS-103 is a permanent magnet dynamic, reentrant horn type loudspeaker. The unit is rugged in construction and will operate over a wide temperature range and under harsh environmental conditions. The LS-103 is primarily intended for use as part of Public Address Set AN/TIQ-2.

CONSISTS OF:

- 1 Loudspeaker, Permanent Magnet LS-103/TIQ-2.

RELATIONSHIP TO SIMILAR EQUIPMENT.

Used with Public Address Set AN/TIQ-2. This loudspeaker is similar to the LS-104(-)/TIQ-3.

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PHYSICAL DIMENSIONS:

Diameter - - - - - 19.06 inches (484.12 mm)
Mounting Dimensions - - - - - Adjustable mounting bracket with .84 inch mounting hole

Terminal/Connector
Designation - - - - - 5 binding posts

Over-all Dimensions:

Diameter - - - - - 19.06 inches (484.12 mm)
Length - - - - - 26 inches (660.50 mm)
Weight - - - - - 14 pounds

ADDITIONAL PHYSICAL DATA:

Horn thread size - - - - - 1-3/8-18
Loudspeaker color - - - - - Green
Horn material - - - - - Steel, Aluminum, or Bronze Alloys
Vertical adjustment - - - - - Provides for adjustment in the vertical plane
Fasteners - - - - - 4 fasteners for attaching horn and driver cover

TECHNICAL DESCRIPTION:

INPUT
Voice coil impedance - - - - - 16 Ohms
Power handling rating - - - - - 20 watts normal; 25 watts peak (warble tones)
Frequency range - - - - - 200 to 6,000 Hz

ADDITIONAL TECHNICAL DATA:

Environmental Data:

Nonoperating Conditions:

Temperature - - - - - From -80° (24 hours max.) to +160°F (4 hours max.)
Relative Humidity - - - - - 97% indefinitely, 100% for 4 hours
Elevation - - - - - 25,000 feet above sea level

Operating Conditions:

Temperature - - - - - From -65° (72 hours max.) to +150°F (4 hours max.)
Relative Humidity - - - - - 97%, 100% for 4 hours
Elevation - - - - - 100,000 feet above sea level

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Driver Unit Data:

Power Handling Capacity - - - - - 25 watts at 175 Hz
Weight - - - - - 4 pounds maximum
Magnet Material - - - - - Alnico Number 5 or equal

Transformer Data: - - - - - Primary impedances 250, 500, 1,000, and 2,500 ohms

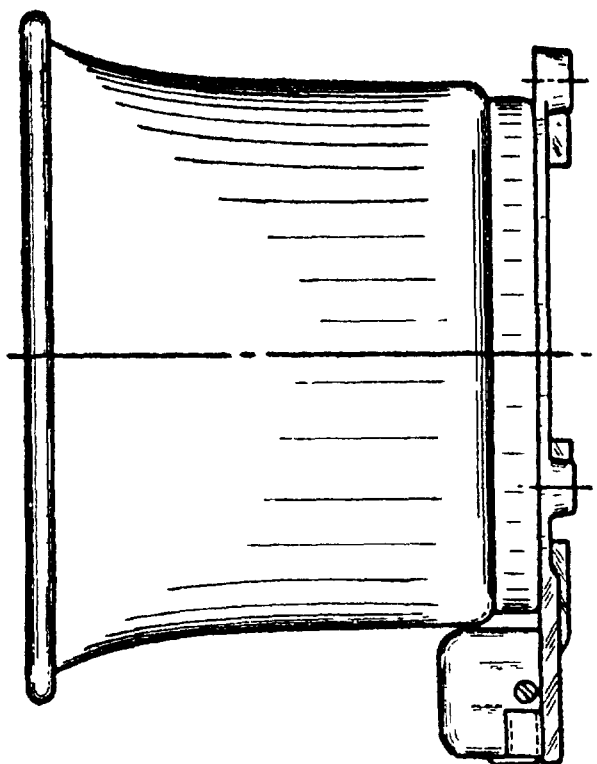
Resistant Characteristics. - - - - - Resistant to vibration, gun blast, moisture and shock

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058	LS-103()/TIQ-2
87771	LS-103()/TIQ-2

MIL-STD-2115
25 March 1982

LOUDSPEAKER, HORN, LS-211/AIC-13
(APPLICABLE SPECIFICATION: MIL-L-25547)



FUNCTIONAL DESCRIPTION:

The LS-211/AIC-13 is a permanent magnet loudspeaker. It is intended to be used as part of Public Address Set AN/AIC-13 to transmit audio messages at low altitudes or at ground level within a military aircraft or from a military aircraft on the ground to personnel in the immediate vicinity. This unit is used where high power is reduced to override high noise levels.

CONSISTS OF:

- 1 Permanent Magnet Reflex Re-entrant Horn Type Loudspeaker LS-211/AIC-13

RELATIONSHIP TO SIMILAR EQUIPMENT:

Part of Public Address Set AN/AIC-13

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PHYSICAL DESCRIPTION

Over-all dimensions:

Length - - - - - 7.53 inches (191.26 mm)
Width - - - - - 6.80 inches (172.72 mm)
Depth - - - - - 4.97 inches (126.24 mm)
Net weight - - - - - 3.12 pounds

TECHNICAL DESCRIPTION

INPUT

Voice coil impedance - - - - - 16 ohms nominal
Power handling rating - - - - - 20 watts, rms

OUTPUT

Frequency range - - - - - 500 to 8,000 Hz
Sensitivity - - - - - 115 dB at full rated power and at a distance
of 4 feet on axis

ADDITIONAL TECHNICAL DATA:

Environmental Data:

Operating Conditions:

Temperature - - - - - From -67° to +160° F
Pressure - - - - - To 50,000 feet

Other Data:

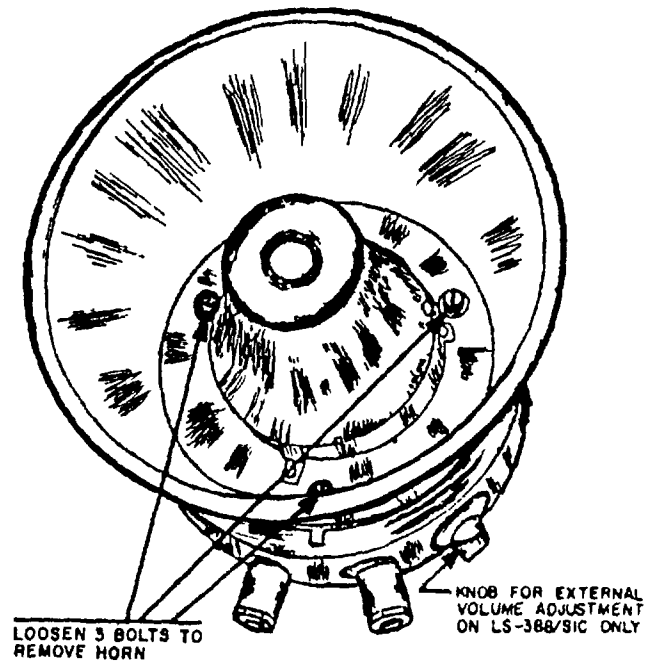
Explosive Decompression. - - - 10 consecutive explosive decompressions from
an altitude of 8000 feet to an altitude of 35,000
feet (corresponding to pressures of 22.2 to 7.04
inches of mercury).
Environmentally Resistant - - - Humidity, shock, vibration, fungus, salt spray

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
81349	LS-211/AIC-13
87771	LS-211/AIC-13

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25 March 1982

LOUDSPEAKER, HORN LS-387/LS-388/(SIC)
(APPLICABLE SPECIFICATION: MIL-A-20222)



FUNCTIONAL DESCRIPTION.

The LS-387/SIC and LS-388/SIC are high power loudspeakers intended for use on shipboard. They provide good speech intelligibility and good reproduction of alarm signals in areas with high noise levels.

CONSISTS OF

- 1 Loudspeaker LS-387/SIC or LS-388/SIC

Including:

- 1 Transformer FSN N5950-548-4829

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RELATIONSHIP TO SIMILAR EQUIPMENT

The LS-387/SIC is identical to the LS-388/SIC except for the method of volume adjustment. On the LS-387/SIC volume is adjusted internally by connecting a movable jumper to any one of five terminals inside the speaker case. The LS-388/SIC volume is adjusted by a five-position tap switch which is accessible on the outside of the case.

PHYSICAL DESCRIPTION

Nominal diameter - - - - - 12 inches (304.8 mm)

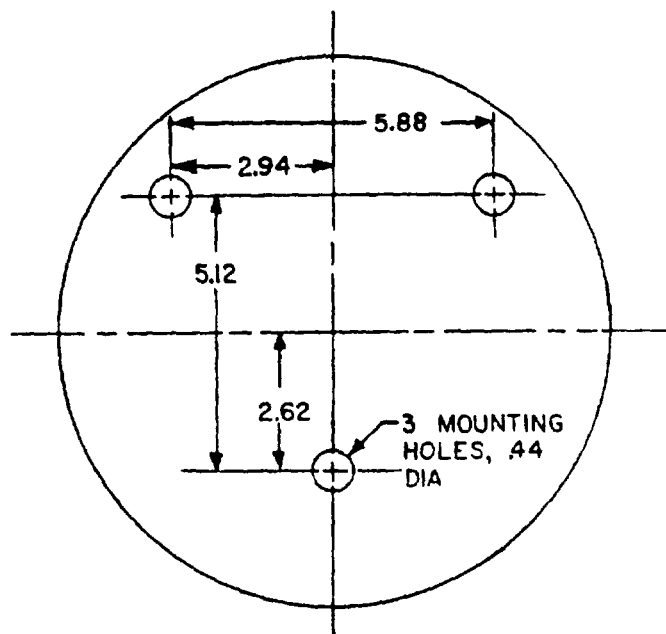
Mounting dimensions:

Refer to the following figure, Mounting dimensions, for arrangement of mounting holes

Over-all dimensions

Length - - - - - 10 inches (254.0 mm)
Diameter - - - - - 12.625 inches (320.68 mm)
Weight - - - - - 23 pounds

MOUNTING
DIMENSIONS ➤



ADDITIONAL PHYSICAL DATA

Material: Horn assembly and case are brass.
Finish Light Gray, Semi-Gloss.

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TECHNICAL DESCRIPTION:

INPUT

Voice coil impedance - - - - - 13.5 ohms
Power handling rating- - - - - 7.5 watts, peak
Frequency range- - - - - 400 to 4,000 Hz

ADDITIONAL TECHNICAL DATA:

Transformer data:

The transformer is tapped to allow use with either a 50 or 70 volt audio line.
Primary impedances at 70 volt tap: 670; 3100; 10,200; 18,400; 22,000 ohms.
Primary impedances at 50 volt tap: 350, 1,500; 5,200; 9,600, 11,300 ohms.

REFERENCE DATA and LITERATURE

MANUFACTURER CODE	PART NUMBER
32001	LS-387/SIC
32001	LS-388/SIC

MIL-STD-2115
25 March 1982

SECTION 200

MICROPHONES

Section

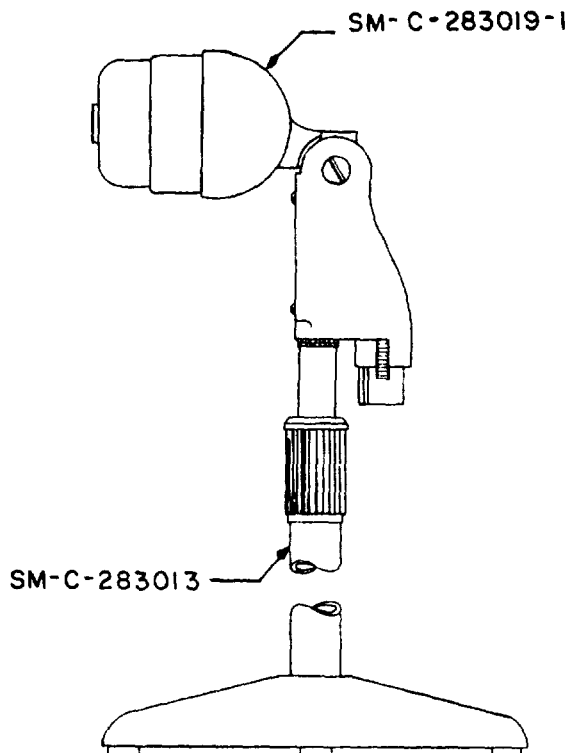
201

Microphone

MIL-STD-2115
25 March 1982

SECTION 201

MICROPHONE, M-65 (APPLICABLE SPECIFICATION MIL-M-11101)



FUNCTIONAL DESCRIPTION:

This microphone is a dynamic omnidirectional desk type with a stand, cable and a cable connector. It is used with a recorder-reproducer.

CONSISTS OF

- 1 Microphone M-65()/U

RELATIONSHIP TO SIMILAR EQUIPMENT

Used with and part of AN/TNH-2.

PHYSICAL DESCRIPTION

Dimensions (Over-all):

Length - - - - -	17.0 inches (431.8 mm)
Diameter (Base) - - - - -	6.0 inches (152.4 mm)
Height W/Stand - - - - -	12 inches (304.8 mm) to 17 inches (431.8 mm)

ADDITIONAL PHYSICAL DATA:

Cable Data:

Length (Extended) - - - - -	120 inches (3,048 mm)
Termination - - - - -	Integral Cable Type Connector

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25 March 1982

TECHNICAL DESCRIPTION:

INPUT

Operating Current - - - - - Not applicable
Polarizing Voltage - - - - - Not rated

OUTPUT

Nominal Impedance - - - - - 150 ohms
Frequency Range - - - - - 100 to 10,000 Hz

ADDITIONAL TECHNICAL DATA:

Consists of

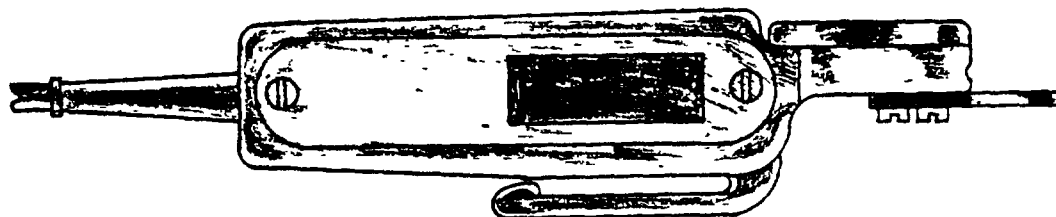
1 - Microphone - - - - - M-44()/U
1 Stand, Microphone - - - - - MT-1583()
1 Cable Assembly - - - - - CX-3322()/J

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058 82680	M-65()/U TM-226

MIL-STD-2115
25 March 1982

MICROPHONE, M-80C/U
(APPLICABLE SPECIFICATION MIL-E-55119)



FUNCTIONAL DESCRIPTION:

Palm held, dynamic, and noise canceling microphone that is equipped with a four conductor retractile cord terminated with a connector U-1902()/U and a clip for attaching the microphone to the user's clothing or a radio set.

CONSISTS OF:

- 1 Microphone, Dynamic M-80 C/U
- Including:
 - 1 Handle
 - 1 Five-conductor retractile cord
 - 1 Retractable cord with integral connector

RELATIONSHIP TO SIMILAR EQUIPMENT:

Similar to M-80()/GR microphone.

PHYSICAL DESCRIPTION:

Weight - - - - - Not rated

Dimensions:

Length - - - - - 2 inches (50.8 mm)
Width - - - - - 1.4 inches (35.56 mm)
Height - - - - - 6.1 inches (152.65 mm)

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Cable Data:

Length (Retracted) - - - - - 11.5 inches (292.10 mm)
Length (Extended) - - - - - 6 feet (1,828.8 mm)
No. of Conductors - - - - - 5
No. of Connectors - - - - - 1
Connector Plug- - - - - U-182()/U

TECHNICAL DESCRIPTION:

INPUT

Operating Current - - - - - Not rated

OUTPUT

Nominal Impedance - - - - - 150 ohms at 1,000 Hz
Frequency Range- - - - - 300 to 3,500 Hz

ADDITIONAL TECHNICAL DATA:

Environmental Data:

Moisture Resistance - - - - - Water tight (3 feet water for 2 hrs)
Relative Humidity (Nonoperating) - - - 97 to 100 percent
Elevation (Operating)- - - - - Up to 15,000 feet above sea level
Elevation (Nonoperating)- - - - - Up to 50,000 feet above sea level
Salt spray - - - - - 20 percent salt solution at 96°F for 48 hrs.
Vibration- - - - - Resistant
Blast - - - - - Resistant
Switch Data - - - - - Push-to-talk type

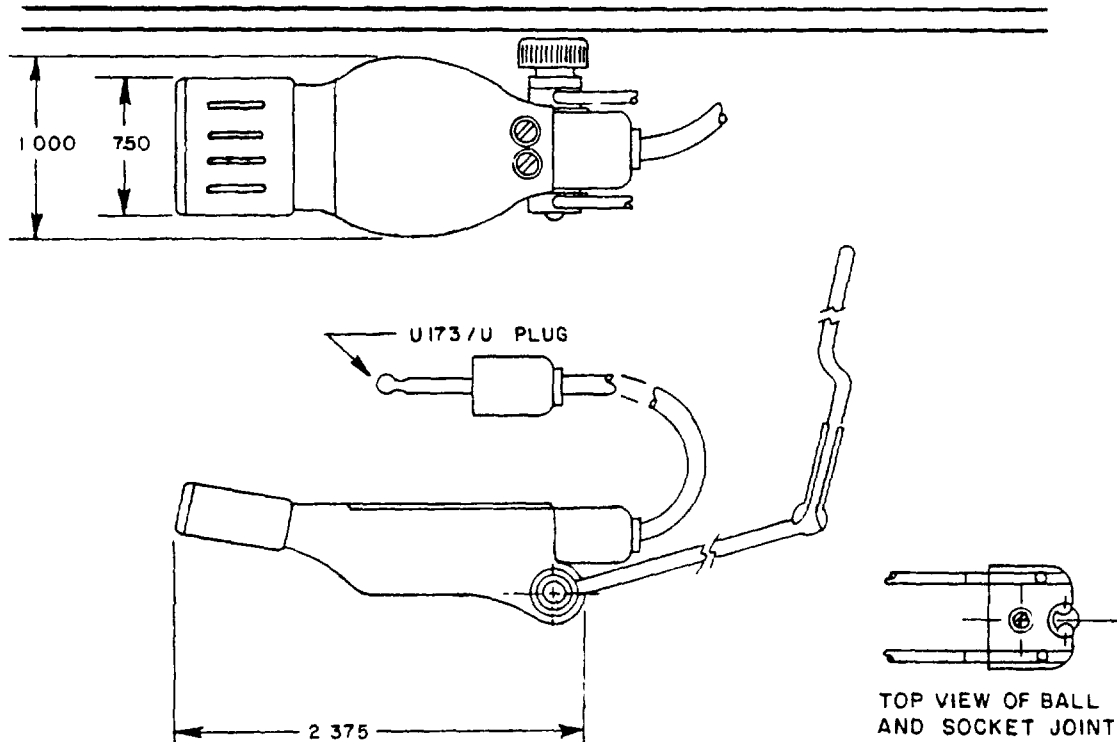
REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058 81134	M-80 C/U 980

MIL-STD-2115

25 March 1982

MICROPHONE, M-87/A1C
(APPLICABLE SPECIFICATION MIL-M-26542)



FUNCTIONAL DESCRIPTION

Microphone, dynamic M-87/A1C is a noise-canceling dynamic moving coil microphone designed for use on a headband type headset at low altitudes or for use in a pressure type oxygen helmet, at altitudes where the use of an oxygen helmet is required. The microphone is intended for use as a part of intercommunication set AN/A1C-10() to provide communication of high intelligibility under the extreme noise conditions encountered in military aircraft.

CONSISTS OF

- 1 Microphone, Dynamic M-87/A1C
- Including
- 1 Cable Assembly
- 1 Boom Assembly

RELATIONSHIP TO SIMILAR EQUIPMENT

PHYSICAL DESCRIPTION

Weight - - - - - 45 grams maximum.
 Color - - - - - Black

Dimensions:

Length - - - - - 8.67 inches (220.22 mm)
 Width (max point) - - - - - .72 inches (18.29 mm)
 Height (overall) - - - - - 1.0 inches (25.4 mm)

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25 March 1982

Cable Data:

Length - - - - - 5.25 inches (133.35 mm)
No. of Conductors - - - - - 2
No. of Connectors - - - - - 1
Connector Designation - - - - - U-173/U

ADDITIONAL PHYSICAL DATA:

Diaphragm Material - - - - - Metal or Mylar.

TECHNICAL DESCRIPTION:

INPUT

Operating Current - - - - - Not applicable

OUTPUT

Nominal Impedance - - - - - 5.0 ohms \pm 2.0 ohms at 1,000 Hz
Frequency Range - - - - - 200 to 6,000 Hz

ADDITIONAL TECHNICAL DATA:

Environmental Characteristics:

Ambient Operating Conditions:

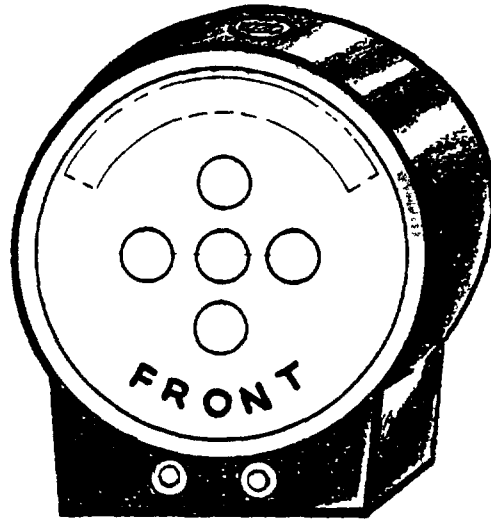
Temperature - - - - - -55° to 85°C
Explosive Decompression - - - - - Pressure reduction from 22 in Hg (8000 ft) to
7 in Hg (35,000 ft.) in 0.1 second
Moisture Barrier Seal - - - - - .25 lb_f/in²
Stray Magnetic Field - - - - - Maximum of 5° compass deflection at 12 inches
Humidity - - - - - Resistant
Vibration - - - - - Resistant
Shock - - - - - Resistant
Salt Spray - - - - - Resistant

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058 04848	M-87/AIC 7612-A1

MIL-STD-2115
25 March 1982

MICROPHONE, M-101/AIC
(APPLICABLE SPECIFICATION: MIL-M-28542)



FUNCTIONAL DESCRIPTION

Microphone element M-101/AIC is a noise-canceling dynamic moving coil microphone element designed for use on a headband type headset at low altitudes or for use in an oxygen mask or pressure-type oxygen helmet, at altitudes where the use of an oxygen helmet is required. The microphone element is intended for use with intercommunication sets AN/AIC-10 and AN/AIC-18 to provide communication of high intelligibility under the extreme noise conditions encountered in military aircraft.

CONSISTS OF:

- 1 Microphone Element M-101/AIC

RELATIONSHIP TO SIMILAR EQUIPMENT:

Microphone element M-101/AIC is used with microphone M-100/AIC.

PHYSICAL DESCRIPTION:

Weight - - - - - 16 grams maximum

Dimensions:

Length - - - - - 1.163 inches (29.54 mm) (exclusive of cable).
Width (max. point) - - - - - .5 inches (12.70 mm)
Height (overall) - - - - - 1.047 inches (26.44 mm)

Cable Data - - - - - Not applicable.

No. of Conductors - - - - - 2

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ADDITIONAL PHYSICAL DATA:

Diaphragm Material - - - - - Polyethylene terephthalate (Mylar polyester)

TECHNICAL DESCRIPTION:

INPUT

Operating Current - - - - - Not applicable.

OUTPUT

Nominal Impedance - - - - - 7 ± 2 ohms at 1,000 Hz.

Frequency Range - - - - - 200 to 6,000 Hz.

ADDITIONAL TECHNICAL DATA:

Environmental Characteristics:

Ambient Operating Conditions:

Temperature - - - - - -55° to 70°C

Humidity - - - - - 100 percent

Explosive Decompression - - - - - Pressure reduction from 22 in Hg (8000 ft.) to
7 in Hg (35,000 ft.) in 0.1 second

Vibration - - - - - Resistant

Shock - - - - - Resistant

Salt Spray - - - - - Resistant

REFERENCE DATA and LITERATURE

MANUFACTURER CODE	PART NUMBER
80058	M-101/AIC
81134	82368
04848	6604-B1

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MICROPHONE, M-125/SIC
(APPLICABLE SPECIFICATION: MIL-M-23813(SHIPS))

NO ILLUSTRATION AVAILABLE

FUNCTIONAL DESCRIPTION:

Hand held magnetic microphone that is equipped with a 120" 6 conductor coiled cord and a six pin connector. The microphone is of the noise canceling type and used in intercommunication and announcing systems aboard Naval ships.

CONSISTS OF

- 1 Microphone, M-125/SIC
 - Including
 - 1 120" 6 conductor coiled cord with 6 pin connector.

RELATIONSHIP TO SIMILAR EQUIPMENT

Used in conjunction with LS-305/306 and LS-387/388(SIC) loudspeakers in intercommunication and announcing systems aboard Naval ships.

PHYSICAL DESCRIPTION

Weight - - - - - Not rated

Dimensions

Length - - - - - Not rated
Width - - - - - Not rated
Height - - - - - Not rated

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Cable Data:

Length (Retracted) - - - - - Not rated
 Length (Extended) - - - - - 120 inches
 No. of Conductors - - - - - 6
 No. of Connectors - - - - - 1
 Connector Plug - - - - - In accordance with MIL-M-23813

TECHNICAL DESCRIPTION

INPUT

Operating Current - - - - - Not rated

OUTPUT

Nominal Impedance - - - - - Not rated
 Frequency Range - - - - - 200-6,000 Hz

ADDITIONAL TECHNICAL DATA

Environmental Data

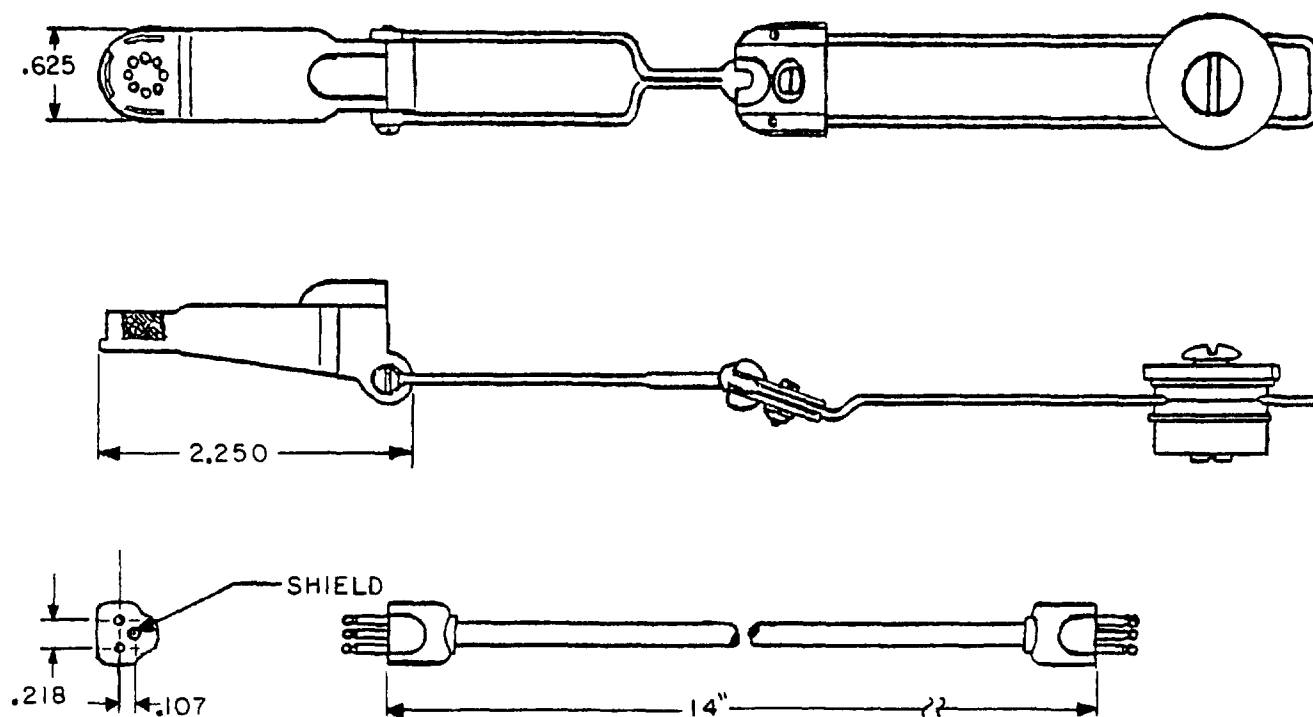
Shock - - - - - In accordance with MIL-M-23813
 Random Drop - - - - - In accordance with MIL-M-23813
 Salt Spray - - - - - In accordance with MIL-M-23813
 Vibration - - - - - In accordance with MIL-M-23813
 Blast - - - - - In accordance with MIL-M-23813
 Switch Data - - - - - Push-to-talk type

REFERENCE DATA and LITERATURE

MANUFACTURER CODE	PART NUMBER
81349	M-125/SIC

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MICROPHONE, M-162()/AIC
(APPLICABLE SPECIFICATION MIL-M-49199(CR))



FUNCTIONAL DESCRIPTION

Microphone, Linear, M-162/AIC is a noise-canceling dc powered, high gain microphone designed for use on a headband type headset at low altitudes or for use in a pressure type oxygen helmet, at altitudes where the use of an oxygen helmet is required. The microphone is intended for use as a part of the airborne communication system which will provide communication of high intelligibility under the extreme noise conditions encountered in military aircraft.

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CONSISTS OF:

- 1 Microphone, Linear M-162()/AIC
Including:
- 1 Cable Assembly
- 1 Boom Assembly

RELATIONSHIP TO SIMILAR EQUIPMENT:

PHYSICAL DESCRIPTION:

Weight - - - - - 45 grams maximum
Color - - - - - Black

DIMENSIONS:

Length - - - - - 2.250 inches nominal
Width (Max Point)- - - - - 0.625 inches nominal

CABLE DATA:

Length - - - - - 14 inches
No. of Conductors- - - - - 3 (Microphone Hi, Microphone Low, Shield)
No. of Connectors- - - - - 2
Connector Designation- - - - - Electro-Voice Part #17273

ADDITIONAL PHYSICAL DATA:

Diaphragm Material - - - - - Electret Condensor, Piezo-Electric
Ceramic or Polyvinylidene Fluoride

TECHNICAL DESCRIPTION:

INPUT

Power Requirement- - - - - 10 Vdc at 8 mA

OUTPUT

Nominal Impedance- - - - - 150 ohms ± 20 percent at any frequency
over the range of 400 to 6,000 Hz
Frequency Range - - - - - 400 to 6,000 Hz ± 3 dB

ENVIRONMENTAL CHARACTERISTICS

Temperature - - - - -	-55° to 85°C
Moisture Barrier Seal - - - - -	.25 lb _f /in ²
Stray Magnetic Field- - - - -	Maximum of 5° compass deflection at 12 inches
Humidity- - - - -	Resistant
Vibration - - - - -	Resistant
Shock - - - - -	Resistant
Salt Spray- - - - -	Resistant
Immersion - - - - -	Resistant

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
81134	M-162()/AIC

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SECTION 300

HANDSETS

Section

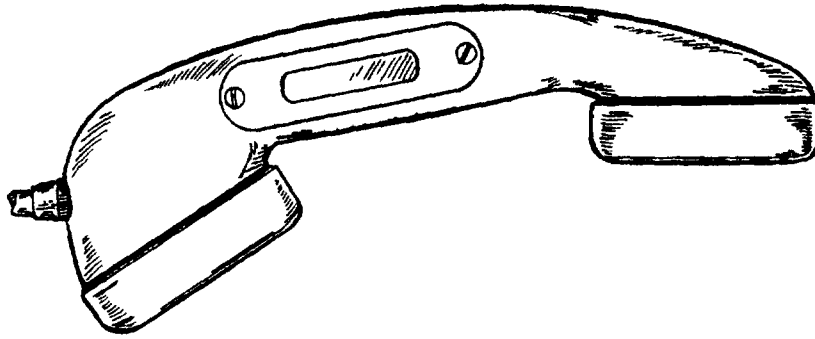
301

Handsets

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SECTION 301

HANDSET, H-60()/PT (APPLICABLE SPECIFICATION. MIL-H-11996)



FUNCTIONAL DESCRIPTION

Handset H-60()/PT is intended for use with wire communication equipment. The unit is waterproof and withstands severe environmental conditions. This handset is therefore suitable for outdoor use. It is used as part of Intercom Station AN/VIA-4, AN/MTC-3().

CONSISTS OF:

- 1 Handset H-60()/PT
 - Including:
 - 1 Transmitter Element - TA-117()/PT
 - 1 Receiver Element Telephone TA-235()/PT
 - 1 Switch Assembly SA-129/PT
 - 1 Handle
 - 1 Electrical Cord Assembly - CX2151()/U

RELATIONSHIP TO SIMILAR EQUIPMENT:

Handsets H-60()/PT, H-156()/U, and H-165()/U have the same electrical and mechanical construction except the cord assemblies are different.

PHYSICAL DESCRIPTION:

Dimensions (Over-all):

Length - - - - -	8.44 inches (214.38 mm)
Depth - - - - -	2.80 inches (71.12 mm)
Receiver Diameter - - - - -	2.56 inches (65.02 mm)
Transmitter Diameter - - - - -	2.59 inches (65.79 mm)

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Length (Retracted)- - - - - 9 inches (228.6 mm)
Length (Extended) - - - - - 36 inches (914.4 mm approximately)
No. of Conductors - - - - - 7
Connector Designation - - - - - Pin type
Weight - - - - - Not Rated

TECHNICAL DESCRIPTION: (MICROPHONE)INPUT

Operating Current - - - - - 125 mA (maximum)

OUTPUT

Nominal Resistance - - - - - 35 ohms
Frequency Range - - - - - 500 to 4,000 Hz

TECHNICAL DESCRIPTION: (EARPHONE)INPUT

Quantity of Earphones - - - - - 1
Nominal Impedance - - - - - 150 ohms
Frequency Range - - - - - 500 to 3,200 Hz

ADDITIONAL TECHNICAL DATA:ENVIRONMENTAL LIMITATIONS:Equipment Operating:

Elevation - - - - - Up to 10,000 feet

Equipment Nonoperating:

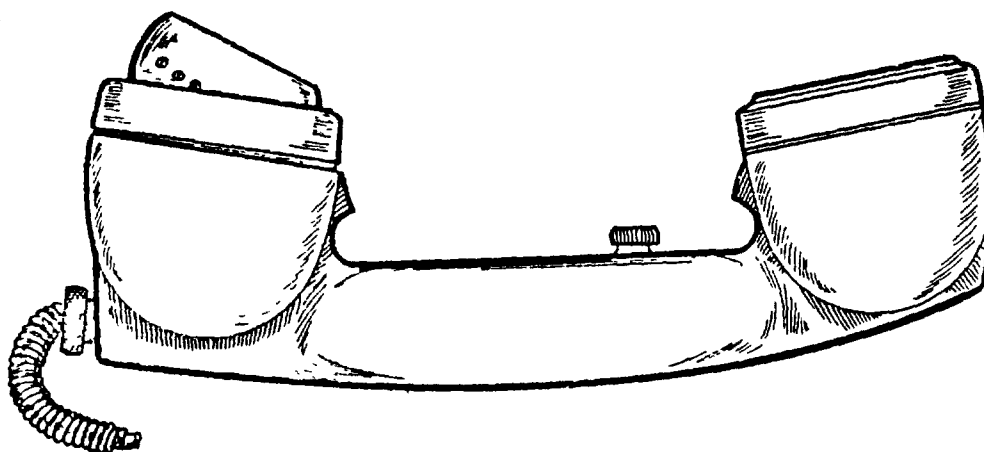
Relative Humidity - - - - - Up to 98%.
Elevation - - - - - 10,000 to 50,000 feet above sea level
Immersion - - - - - 3 feet of water for 2 hours
Blast - - - - - Resistant

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058	H-60()/PT

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HANDSET H-169/U
(APPLICABLE DRAWING RE-51-128E)



FUNCTIONAL DESCRIPTION

This unit is a noise canceling type handset containing a magnetic earphone element and a microphone with a transistorized amplifier. The handset is suitable for general use in telephone circuits.

The handset is battery powered

CONSISTS OF

- 1 Microphone Amplifier N5965-624-4134
- 1 Mouthpiece
- 1 Receiver Element N5965-678-5305
- 1 Receiver Cap N5965-683-2075
- 1 Handset Handle (MIL-M-19833, GDI 30 or MIL-M-22544, Type 4).
- 1 Cord Protector Assembly
- 1 Cord Assembly CX-1846()/U
- 1 Switch Soft Action 3 Pole Shorting

RELATIONSHIP TO SIMILAR EQUIPMENT

Similar to NT-51007A

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PHYSICAL DESCRIPTION:

Dimensions (Overall):

Length- - - - - 9.05 inches (229.87 mm)
Width (Transmitter End) - - - - - 2.72 inches (69.09 mm)
Depth (Transmitter End) - - - - - 4.06 inches (103.12 mm)

TECHNICAL DESCRIPTION. (MICROPHONE)

INPUT

Operating Current - - - - - Not rated

OUTPUT

Nominal Impedance - - - - - Not rated
Frequency Range - - - - - 300 to 5,000 Hz

TECHNICAL DESCRIPTION. (EARPHONE)

INPUT

Quantity of Earphones - - - - - 1
Nominal Impedance - - - - - 600 ohms
Frequency Range - - - - - 200 to 5,000 Hz

ADDITIONAL TECHNICAL DATA.

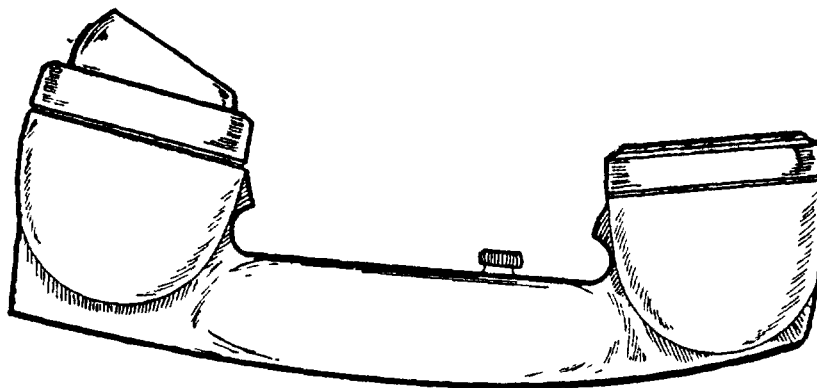
Microphone Amplifier Type - - - - - Dynamic Noise Canceling
Receiver Element Type - - - - - Magnetic
Switch Type - - - - - Push-to-talk

REFERENCE DATA and LITERATURE

MANUFACTURER CODE	PART NUMBER
80058	H-169/U

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HANDSET, SOUND POWERED, H-203/U
(APPLICABLE SPECIFICATION: MIL-T-15514)



FUNCTIONAL DESCRIPTION

The H-203/U is a sound powered receiver-transmitter employing magnet earphone and microphone elements. This handset is suitable for general use in telephone circuits.

CONSISTS OF.

1	Microphone Element	U S. Instrument Corp. Part No	UA1614-1
1	Receiver Element	U S. Instrument Corp. Part No	UA1614-1
1	Handset Handle	U.S.I.C. Part No	974-2
1	Cord	U.S I C. Part No.	UA2467-2
1	Pushbutton Switch	U.S I C. Part No	UA2175-1

RELATIONSHIP TO SIMILAR EQUIPMENT

PHYSICAL DESCRIPTION

Weight - - - - - Not available

Dimensions

Length - - - - - 9 inches (228.6 mm)
Width - - - - - 2.31 inches (58.67 mm)
Depth - - - - - 4.13 inches (104.90 mm)

ADDITIONAL PHYSICAL DATA

Cord Data.

Length, Retracted - - - - - 1 foot (304.8 mm)
Length, Extended (Approximate) - - - 6 feet (1,828.8 mm)
No. of Conductors - - - - - 2
No. of Connectors - - - - - 2
Connector Type - - - - - Lug type

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TECHNICAL DESCRIPTION: (MICROPHONE)

OUTPUT

DC Resistance- - - - - 90 ohms
AC Impedance - - - - - 1,690 ohms
Frequency Range- - - - - 500 to 2,500 Hz
Frequency of Maximum Response- - - - - Approximately 1,700 Hz

TECHNICAL DESCRIPTION: (EARPHONE)

INPUT

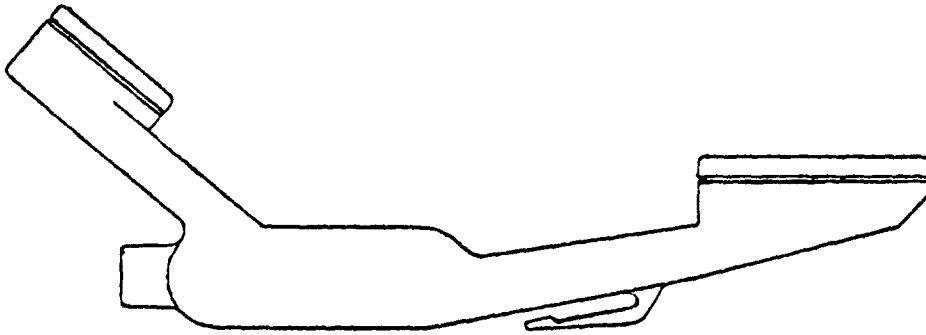
DC Resistance- - - - - 60 ohms
AC Impedance - - - - - 1,150 ohms
Frequency Range- - - - - 500 to 2,500 Hz

REFERENCE DATA and LITERATURE

MANUFACTURER CODE	PART NUMBER
80058	H-203/U

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HANDSET, H-250/U
(APPLICABLE SPECIFICATION MIL-H-49078(EL))



FUNCTIONAL DESCRIPTION:

Handset H-250()/U is a miniature light-weight handset consisting of a dynamic moving-coil microphone and earphone, a push-to-talk switch, a 6-foot long retractile cord terminated with Connector, Plug U-182B/U and handle. The assembled handset is blast proof and immersion proof. The earphone end of the assembled handset when in use does not interfere with the wearing of Infantryman Helmet M-1. A clip molded integrally with the handle is provided for securing the unit to the carrying harness straps, or to the operator's pocket.

CONSISTS OF:

- 1 Handset H-250/U
- Including:
- SEE FUNCTIONAL DESCRIPTION

RELATIONSHIP TO SIMILAR EQUIPMENT:

PHYSICAL DESCRIPTION:

Dimensions: (Over-all)

Length - - - - -	7.5 inches (179.07 mm)
Depth - - - - -	Not rated
Width - - - - -	Not rated
Weight - - - - -	235 grams (maximum)

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Cord Data:

SEE FUNCTIONAL DESCRIPTION

TECHNICAL DESCRIPTION: (MICROPHONE)

OUTPUT

Nominal Impedance - - - - - 150 ohms
Frequency Range - - - - - 300 to 3, 500 Hz

TECHNICAL DESCRIPTION: (EARPHONE)

INPUT

Quantity of Earphones - - - - - 1
Nominal Impedance - - - - - 1, 000 ohms
Frequency Range - - - - - 20 to 3, 500 Hz

ENVIRONMENTAL LIMITATIONS:

Equipment Operating:

Temperature - - - - - -40° to +120°F plus solar radiation.
Elevation - - - - - Up to 10, 000 feet above sea level.
Relative Humidity - - - - - Up to 95 percent.
Sand and dust - - - - - As encountered in the desert.

Equipment Nonoperating:

Temperature - - - - - -65° to +155°F
Elevation - - - - - Up to 50, 000 feet above sea level.
Relative Humidity - - - - - 94 ±4% at 86°F.
Immersion - - - - - 3 feet of water for 2 hours.
Salt fog - - - - - 5% solution
Drop - - - - - Withstands at least 12 drops from 6-foot height
onto a concrete floor faced with 1/8" asphalt tile.
Blast - - - - - Resistant
Vibration - - - - - Resistant
Bounce - - - - - Resistant
Fungus - - - - - Resistant

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058	H-250/U

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SECTION 400

HEADSET

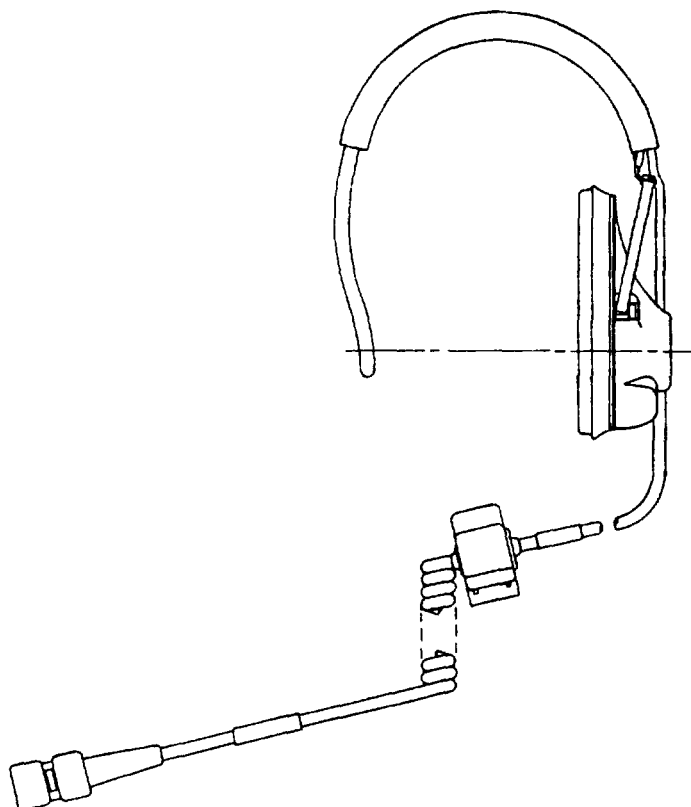
Section

401	Headsets
402	Headsets - Microphone
403	Headsets - Chestset

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SECTION 401

HEAD SET, H-139()/GR
(APPLICABLE SPECIFICATION MIL-E-55119)



FUNCTIONAL DESCRIPTION.

The headset has a single earphone with a flexible headband and a fold-away earphone intended for use in low and medium ambient noise areas.

CONSISTS OF:

- 1 Attenuation Plate
- 1 Impedance Matching Transformer
- 1 Earphone Receiver, Dynamic
- 1 Ear cushion
- 1 Headband
- 1 Connector - U-182
- 1 Toggle Switch

RELATIONSHIP TO SIMILAR EQUIPMENT:

The H-139 ()/GR, H-141 ()/GR, and H-161 ()/GR have identical earphone assemblies.

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PHYSICAL DESCRIPTION:

Dimensions: (Earphone)

Depth - - - - - 1.225 inches
Width - - - - - 3.270 inches
Length - - - - - 4.225 inches

Cord Data:

Length (contracted) - - - - - 20 ± 2 inches (508.0 ± 50.8 mm)
Length (extended) - - - - - 72 ± 2 inches (1829 ± 50.8 mm)
Quantity of Conductors - - - - - 5
Quantity of Connectors - - - - - 1
Connector Designation - - - - - U-182 ()/U

ADDITIONAL PHYSICAL DATA:

Headband Data:

Material - - - - - Steel
Type - - - - - Double Band, Adjustable

TECHNICAL DESCRIPTION: (HEADSET)

INPUT

Quantity of Earphones - - - - - 1
Nominal Impedance - - - - - 1,000 ohms at terminal
Frequency Range - - - - - 300 to 3,500 Hz

ADDITIONAL TECHNICAL DATA:

ENVIRONMENTAL LIMITATIONS:

Elevation (nonoperating) - - - - - 0 to 50,000 feet
Elevation (operating) - - - - - 0 to 15,000 feet
Immersion - - - - - 3 feet water, 2 hours
Salt Spray - - - - - 20% at 96°F for 48 hours
Blast - - - - - Resistant
Vibration - - - - - Resistant
Bounce - - - - - Package tester
Shock, Drop - - - - - 6 feet, 12 times concrete floor

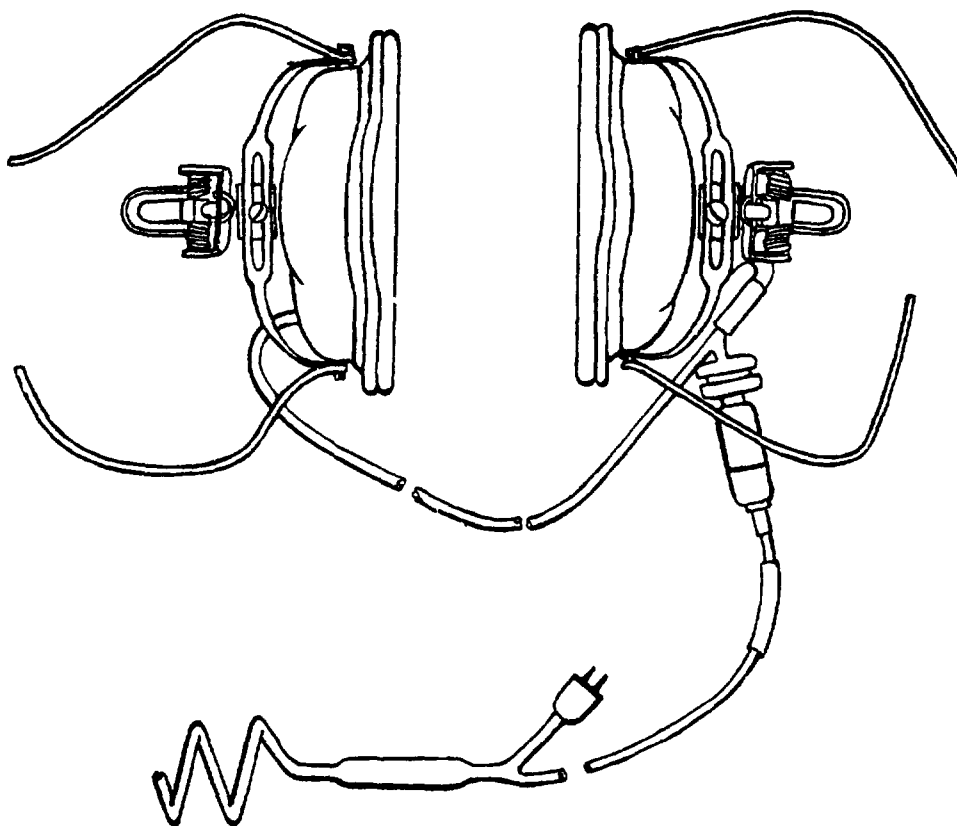
REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80063	H-139 ()/U

MIL-STD-2115

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HEADSET, H-154/AIC
(APPLICABLE SPECIFICATION MIL-H-27487)



FUNCTIONAL DESCRIPTION

The H-154/AIC is intended for use with Flying Helmet HGU-2A/P. The headset includes a plug connector to plug in a low-impedance dynamic microphone which is mounted in an oxygen mask. The headset is intended for use with Intercommunication Sets AN/AIC-10 and AN/AIC-18 to provide communication of high intelligibility under the extreme noise conditions encountered in military aircraft.

CONSISTS OF

- 2 Earphones H-143/AIC
- 2 Earphone Shells MX-3678/AIC and MX-3679/AIC
- 2 Cord Assemblies CX4707A/AIC and CX4708A/AIC

RELATIONSHIP TO SIMILAR EQUIPMENT

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PHYSICAL DESCRIPTION:

Earphone Dimensions.

Nominal Diameter - - - - - 2 inches (50.8 mm)
Depth - - - - - 0.45 inches (11.43 mm)

Cable Data (CX-4707A/AIC)

Length - - - - - 1 foot 7 inches (482.6 mm)
Jacket Material - - - - - Nylon Braid

Cable Data (CX-4708/AIC)

Length - - - - - 2 feet 3 inches (685.8 mm)
Jacket Material - - - - - Nylon Braid

ADDITIONAL PHYSICAL DATA:

Headband Data:

Type - - - - - Single band, adjustable
Material - - - - - Plastic covered steel
Connector type - - - - - Phone plug

TECHNICAL DESCRIPTION

INPUT

Quantity of Earphones - - - - - 2
Nominal Impedance - - - - - 10 ohms (in parallel)
Frequency Range - - - - - 100 to 5,500 Hz

ADDITIONAL TECHNICAL DATA

ENVIRONMENTAL LIMITATIONS.

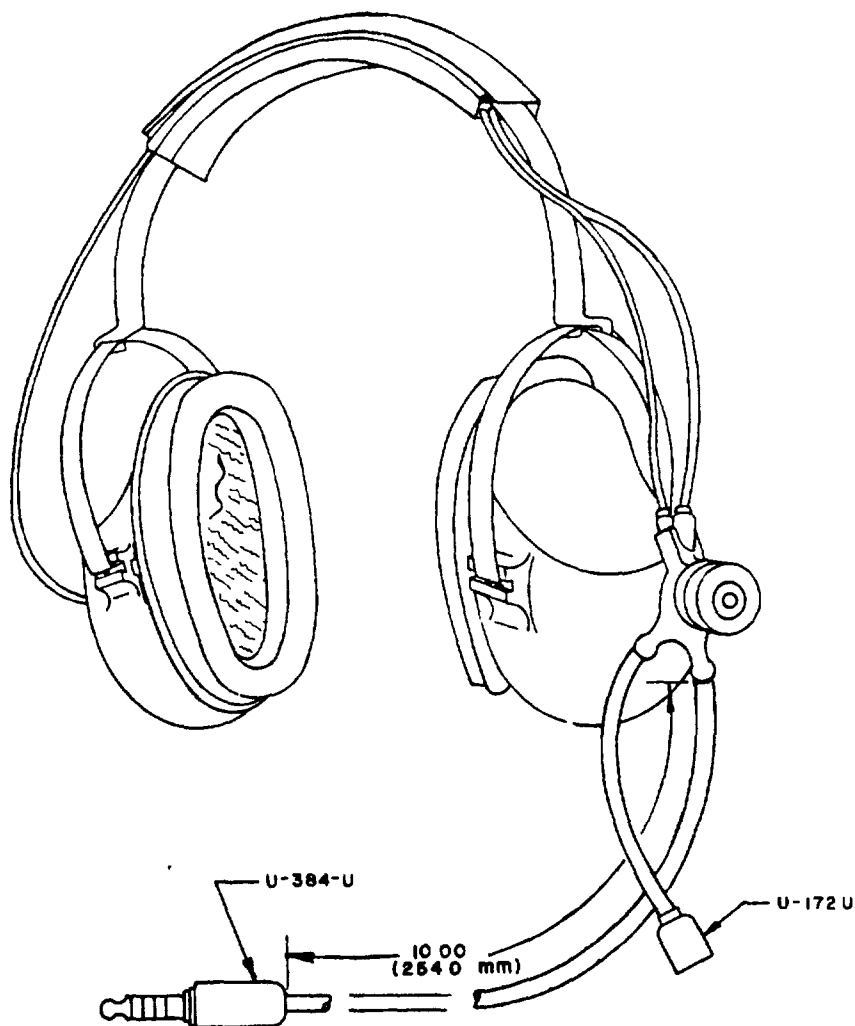
Temperature - - - - - -55° to +85° C
Altitude - - - - - Sea level to 25,000 feet

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
82872	10557
80058	H-154/AIC

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HEADSET, H-158/AIC
(APPLICABLE SPECIFICATION MIL-H-83511)



FUNCTIONAL DESCRIPTION

The H-158/AIC is a headband type headset intended for use at low altitudes as part of Intercommunication Set AN/AIC-10() to provide communication of high intelligibility under the extreme noise conditions encountered in Military Aircraft.

CONSISTS OF

- 2 Earphones H-143/AIC
- 2 Earphone Shells MX-2508/AIC and MX-3473/AIC
- 1 Headband MX-2506/AIC
- 2 Cord Assemblies CX-4434/U and CX-4435/U
- 1 Microphone Bracket MT-2007/AIC
- 1 Connector Telephone plug type U-174/U

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RELATIONSHIP TO SIMILAR EQUIPMENT

Headset H-158/AIC is similar to headset-microphone H-157/AIC, except for the microphone.

PHYSICAL DESCRIPTION:

Earphone Dimensions:

Nominal Diameter 2 inches (50.8 mm)
Depth 0.45 inches (11.43 mm)

Cord Data: (CX-4434/U)

Length 1 foot 4 inches (406.4 mm)
Jacket Material Nylon braid

Cord Data: (CX-4435/U)

Length 2 feet 4.50 inches (723.9 mm)
Jacket Material Nylon braid

ADDITIONAL PHYSICAL DATA

Headband Data:

Type Single Band
Construction Extruded plastic webbing over two steel wires

Connector Data:

Number of Connectors 1
Connector Type Telephone Plug
Earphone Weight 35 Grams Max.

TECHNICAL DESCRIPTION: (EARPHONE)

INPUT

Quantity of Earphones 2
Nominal Impedance 10 ohms (in parallel)
Frequency Range 100 to 5,500 Hz

ADDITIONAL TECHNICAL DATA:

ENVIRONMENTAL LIMITATIONS:

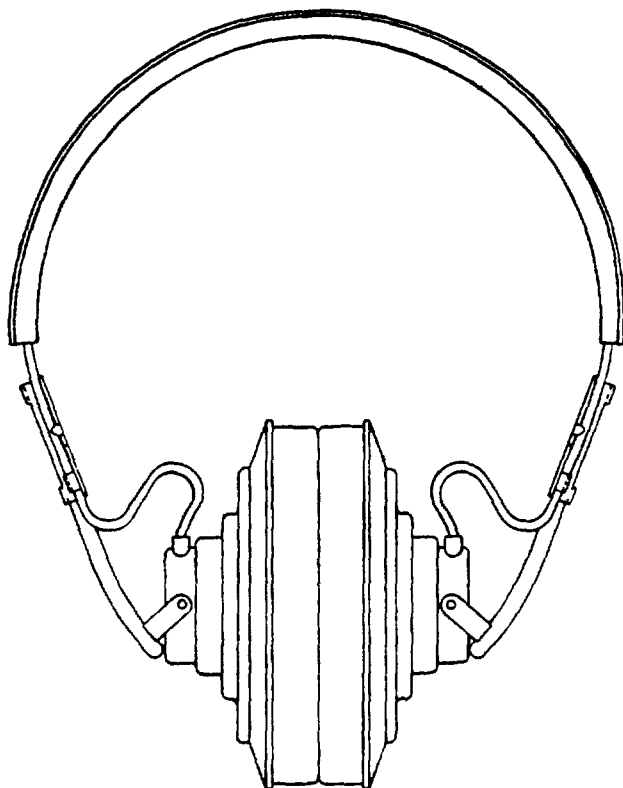
Temperature -55° to +85° C
Altitude (Operation) 25,000 feet
Altitude (Transportation) 50,000 feet

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058 82872	H-158/AIC 10558

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HEADSET, H-216()/U
(APPLICABLE SPECIFICATION: MIL-H-55353)



FUNCTIONAL DESCRIPTION

This headset has an extended frequency range of 100 to 7,000 Hz. This range makes the headset useful for such applications as sonar.

CONSISTS OF:

- 2 Earphones - H-301/U
- 1 Headband and Cover - HB-7
- 1 Plug
- 2 Earphone Cushions

RELATIONSHIP TO SIMILAR EQUIPMENT:

PHYSICAL DESCRIPTION:

Dimensions:

Width - - - - -	6.25 inches (158.75 mm)
Length (Extended) - - - - -	9.06 inches (230.12 mm)
Earphone Cushion:	
Height - - - - -	4.38 inches (111.25 mm)
Depth - - - - -	3.44 inches (87.38 mm)

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25 March 1982

PHYSICAL DESCRIPTION: (Cont)

Cable Data:

Length - - - - - 72 inches (1829 mm)
No. of Conductors - - - - - 2
No. of Connectors - - - - - 1
Connector Designation - - - - - PJ-054R
Jacket Material - - - - - Cloth

ADDITIONAL PHYSICAL DATA:

Headband Data:

Material - - - - - Stainless Steel
Cover - - - - - Black Vinyl
Type - - - - - Double Band Adjustable

TECHNICAL DESCRIPTION: (HEADSET)

INPUT

Quantity of Earphones - - - - - 2
Nominal Impedance - - - - - 600 ohms
Frequency Range - - - - - 100 to 7,000 Hz

ADDITIONAL TECHNICAL DATA:

Environmental Limitations:

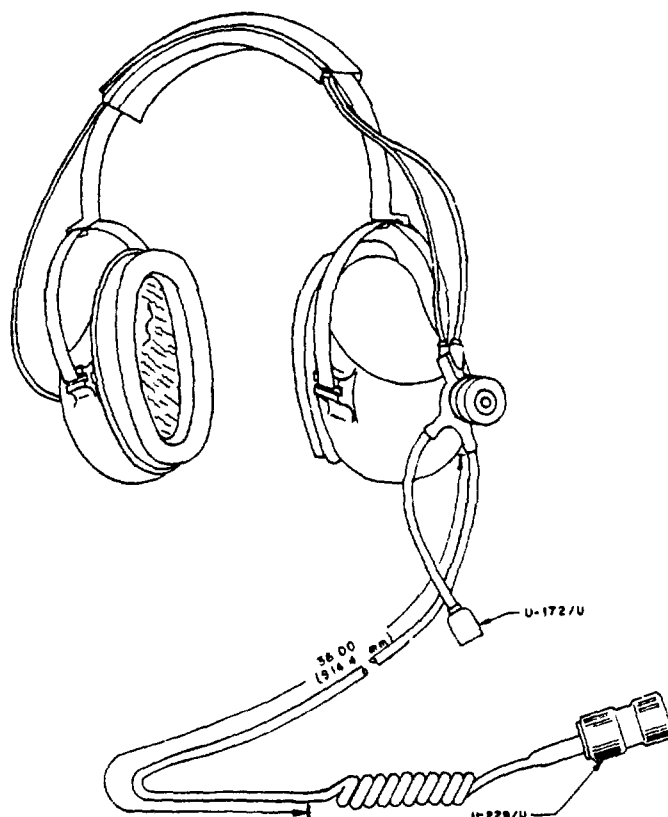
Pressure Cycling - - - - - 0 to 50,000 feet
Shock - - - - - Six-foot drops onto concrete surface with minimal
electrical and physical damage.
Salt Spray - - - - - 5% Salt Solution

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80063	H-216 ()/U

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HEADSET, H-251/U
(APPLICABLE SPECIFICATION MIL-H-83511)



FUNCTIONAL DESCRIPTION:

This headset is suitable for outdoor use with manpack radio sets and fits under the infantryman helmet M-1 and provides maximum comfort consistent with the electrical and acoustical requirements.

CONSISTS OF:

- 1 Adjustable Headband
- 2 Plastic Earcups
- 2 Dynamic Moving Coil Earphones
- 1 Retractable Cord
- 1 Plug - U-182BU

RELATIONSHIP TO SIMILAR EQUIPMENT:

This headset was designed for a replacement (electrical, mechanical, and performance) of the H-140/GR headset, with a lighter weight acoustic accessory

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PHYSICAL DESCRIPTION:

Dimensions: (Earphone)

Depth - - - - - 1.219 inches (30.96 mm)
Width - - - - - 3.5 inches (88.90 mm)
Height - - - - - 4.5 inches (114.30 mm)

Cable Data:

Length (extended) - - - - - 72 inches (1829 mm) (maximum)
Length (retracted) - - - - - 20 inches (508 mm) \pm 2 inches (50.8 mm)
No. of Conductors - - - - - 5 (4 conductors, one shield)
No. of Connectors - - - - - 1
Connector Designation - - - - - Plug U-182 B/U
Jacket Material - - - - - Rubber

ADDITIONAL PHYSICAL DATA:

Headband Data:

Material - - - - - Vinyl Covered Cloth
Type - - - - - Double Band, Adjustable

TECHNICAL DESCRIPTION: (HEADSET)

INPUT

Quantity of Earphones - - - - - 2
Terminating impedance at connector - - - - - 500 ohms \pm 20 percent
Frequency Range - - - - - 20 to 3,500 Hz

ADDITIONAL TECHNICAL DATA:

Environmental Limitations:

Altitude, operating - - - - - 0 to 10,000 feet
Altitude, nonoperating - - - - - 0 to 50,000 feet
Shock - - - - - 12 five-foot drops onto concrete surface faced with 1/8 inch asphalt tile, with minimal electrical and physical damage. Height of drop - 6 feet and temperature of -40°F .
Dust - - - - - Resistant
Immersion - - - - - Resistant
Blast - - - - - Resistant
Temperature, operating - - - - - -40° to $+120^{\circ}\text{F}$ with solar radiation
Temperature, nonoperating - - - - - -65° to $+155^{\circ}\text{F}$
Moisture Resistance - - - - - Resistant
Vibration - - - - - Resistant
Bounce (Loose Cargo) - - - - - Resistant
Salt Fog - - - - - Resistant
Fungus - - - - - Resistant

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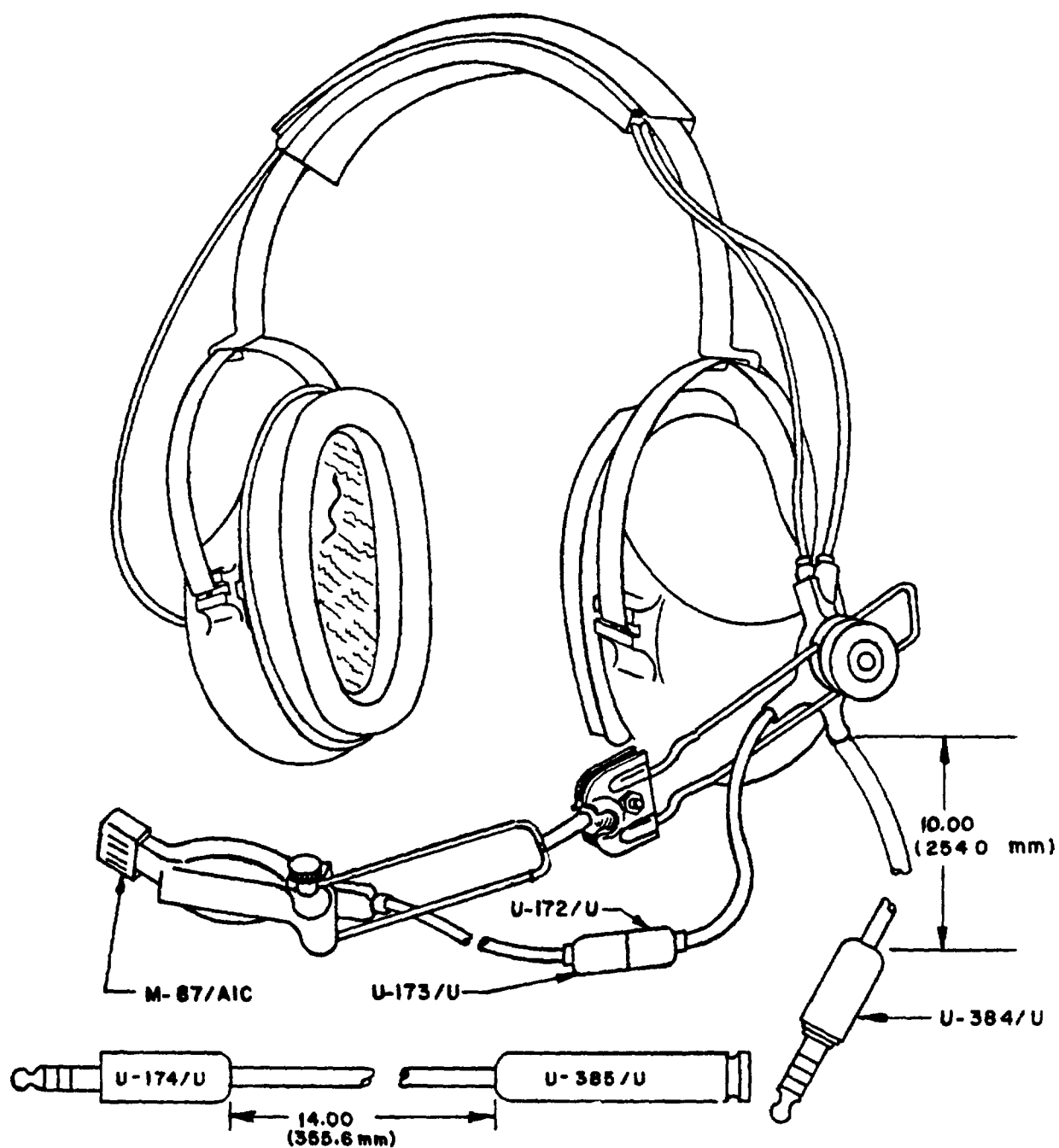
REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80063	H-251/U

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25 March 1982

SECTION 402

HEADSET-MICROPHONE, H-157/AIC
(APPLICABLE SPECIFICATION MIL-H-83511)



MIL-STD-2115
25 March 1982

FUNCTIONAL DESCRIPTION:

The H-157/AIC headset-microphone is used as part of Intercommunications Set AN/AIC-10() at low altitudes to provide high-intelligibility communication under the extreme noise conditions encountered in military aircraft and to provide maximum comfort and minimum fatigue compatible with optimum intelligibility.

CONSISTS OF:

2	Earphones	H-143/AIC
2	Earphone Shells	MX-2508/AIC and MX-3473/AIC
1	Headband	MX-2506/AIC
2	Cord Assemblies	CX-4434/U and CX-4435/U
1	Microphone Bracket	MT-2007/AIC
1	Microphone	M-87/AIC
1	Cord Assembly	CX-4434/U
1	Connector	U-174/U

RELATIONSHIP TO SIMILAR EQUIPMENT:

Similar to headset H-158/AIC except for the microphone.

PHYSICAL DESCRIPTION:

Earphone Dimensions:

Nominal diameter - - - - -	2 inches (50.8 mm)
Depth - - - - -	0.45 inches (11.43 mm)

Microphone Dimensions - - - - -	Not available
---------------------------------	---------------

CORD DATA: (CX-4434/AIC)

Length - - - - -	1 foot 4 inches (406.4 mm)
Jacket Material - - - - -	Nylon braid

CORD DATA: (CX-4435/AIC)

Length - - - - -	2 feet 4-1/2 inches (723.9 mm)
Jacket Material - - - - -	Nylon braid

ADDITIONAL PHYSICAL DATA:

Connector Data:

Connector Type - - - - -	Telephone plug
Connector Designation - - - - -	U-174/U

Headband Data:

Type - - - - -	Single band
Construction - - - - -	Extruded plastic web between two headband wires

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ADDITIONAL PHYSICAL DATA: (Cont)

Mounting and Suspension Data:

Microphone - - - - - Mounted on bracket which fits either earcup and
locks when bracket thumbscrew is tightened.

TECHNICAL DESCRIPTION: (MICROPHONE)

INPUT

Operating Current - - - - - Not applicable

OUTPUT

Nominal Impedance - - - - - 3.5 ohms
Frequency Range - - - - - 200 to 5,000 Hz

TECHNICAL DESCRIPTION: (EARPHONE)

INPUT

Quantity of Earphones - - - - - 2
Nominal Impedance - - - - - 10 ohms (in parallel)
Frequency Range - - - - - 100 to 5,500 Hz

ADDITIONAL TECHNICAL DATA

ENVIRONMENTAL LIMITATIONS:

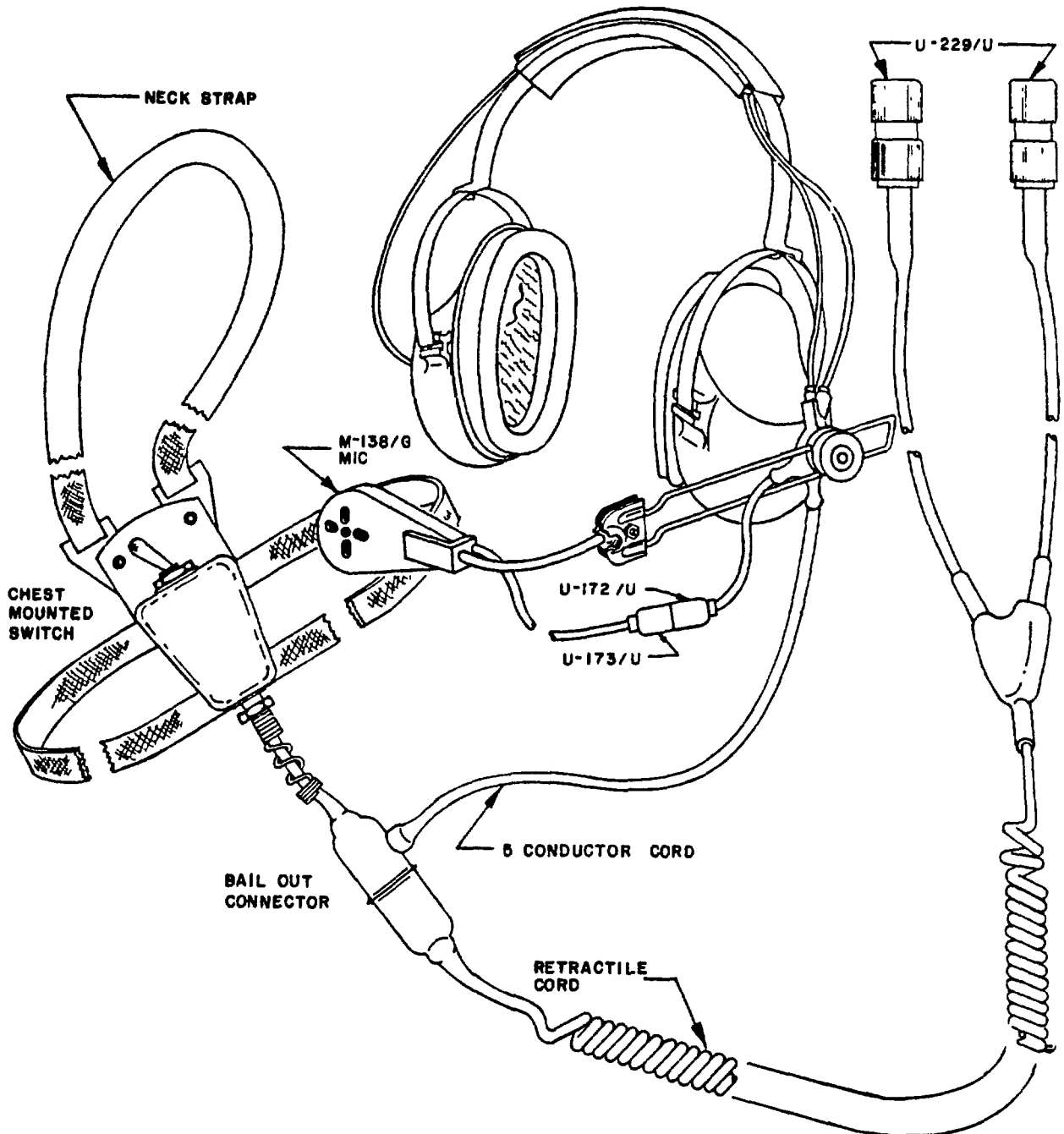
Temperature - - - - - -55° to +85° C
Altitude - - - - - Up to 35,000 feet

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058	H-157/AIC
82872	10057

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HEADSET-MICROPHONE, H-161C/GR
(APPLICABLE SPECIFICATION: MIL-H-83511)



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FUNCTIONAL DESCRIPTION:

The item is a headset-microphone with a switch chest-plate. It provides facilities for transmission and reception of voice-frequency speech signals. It can be used with portable and vehicular radio sets where background noise is medium to high. It can be worn under the M1 infantry helmet, and is used where free hand operation is required.

CONSISTS OF:

- 2 Earphones, Dynamic Type, H-269/G
- 2 Cords, Connector to Bailout
- 1 Microphone, Dynamic Type, M-138/U
- 1 Cord, Retractable
- 1 Connector, Bailout Plug
- 1 Switch, Push to Talk, Lock on for Interphone, and Hold Position for Radio Operation

RELATIONSHIP TO SIMILAR EQUIPMENT:

Handset H-138()/GR
 Headset, electrical H-139()/GR
 Headset, electrical H-140()/GR
 Headset-chestset, electrical H-141()/GR
 Headset-microphone H-161()/GR
 Handset H-207()/VRC
 Headset, electrical H-227()/U
 Microphone, dynamic M-80()/GR
 Microphone, dynamic M-81()/GR
 Modification kit, electronic equipment MK-567/G
 Headset-microphone kit MK-525()/G
 Headset-microphone kit MK-526()/G

This equipment is used as audio accessories for radio set AN/VRC-12.

PHYSICAL DESCRIPTION

Earphone Dimensions- - - - - Not available
 Microphone Dimensions - - - - - Not available

CORD DATA: (CONNECTOR TO BAILOUT)

Length- - - - - 18 inches (457.2 mm)

CORD DATA: (RETRACTILE, BAILOUT PLUG TO JUNCTION)

Length (Retracted) - - - - - 12 inches (304.8 mm)
 Length (Extended)- - - - - 6.5 feet (1,981.2 mm)

ADDITIONAL PHYSICAL DATA:

Connector Data:

Connector Type- - - - - TBS

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ADDITIONAL PHYSICAL DATA: (Cont)

Mounting and Suspension Data:

Microphone - - - - - Mounted on adapter fastened to left side of headband
Earphone - - - - - Suspended on headband

TECHNICAL DESCRIPTION: (MICROPHONE)

INPUT

Operating Current - - - - - Not applicable

OUTPUT

Nominal Impedance- - - - - 150 ohms (with transformer)
Frequency Range - - - - - 300 to 3,500 Hz

TECHNICAL DESCRIPTION: (EARPHONE)

INPUT

Quantity of Earphones - - - - - 2
Nominal Impedance- - - - - 1,000 ohms
Frequency Range - - - - - Not available

ADDITIONAL TECHNICAL DATA:

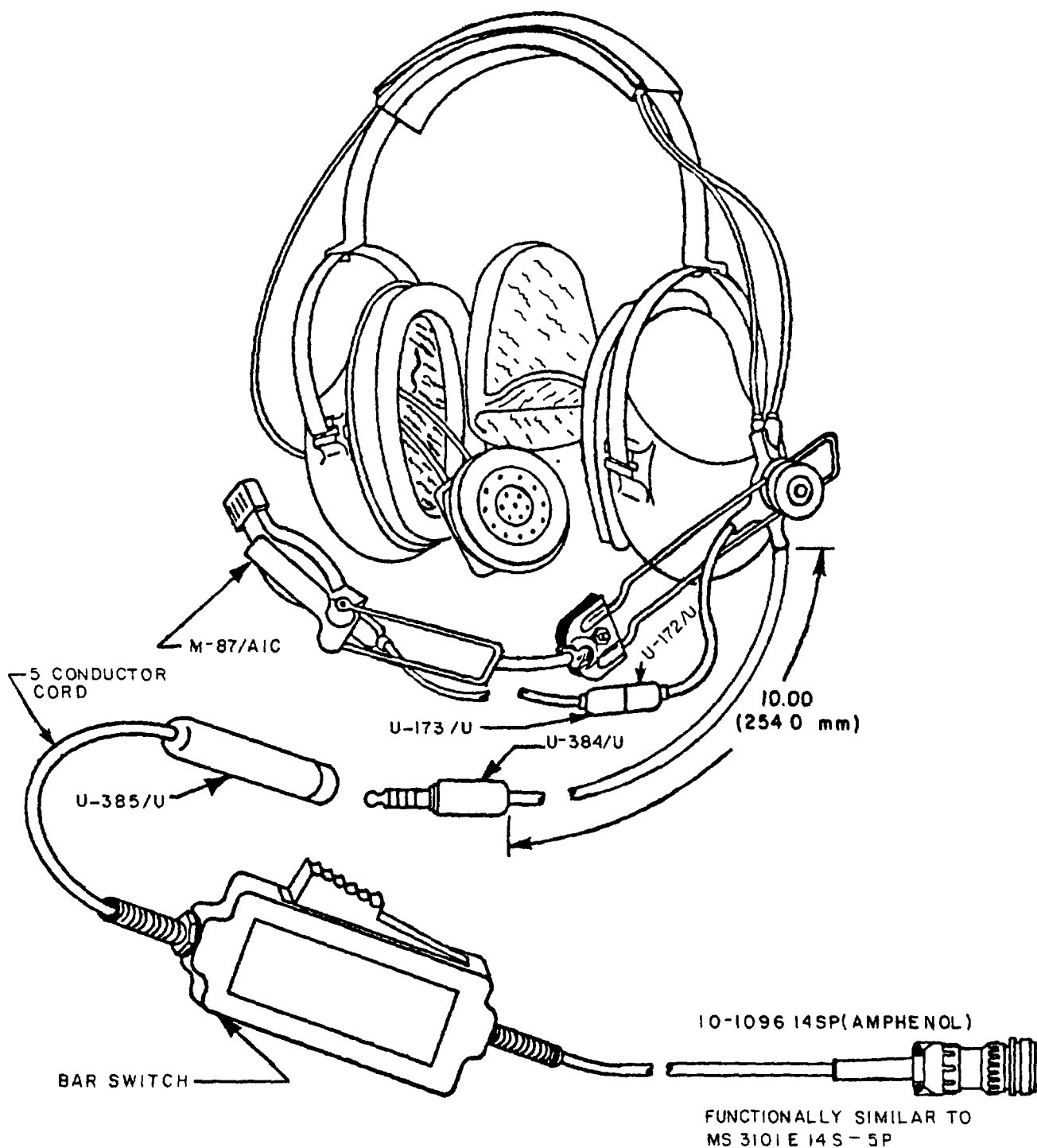
ENVIRONMENTAL LIMITATIONS:

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
80058	H-161/GR

MIL-STD-2115
25 March 1982

HEADSET-MICROPHONE, H-172/U
(APPLICABLE SPECIFICATION MIL-H-83511)



MIL-STD-2115
25 March 1982

FUNCTIONAL DESCRIPTION

The H-172/U is an extremely low-distortion, dynamic, noise-canceling headset-microphone which contains a transistor preamplifier in the headband.

CONSISTS OF:

- 1 Dynamic receiver element
- 2 Earphone cushions
- 1 Headband assembly, PC-16
- 1 Microphone, M-87/AIC
- 1 Cord (Microphone), MMOP-5
- 1 Cord assembly
- 1 Cord and plug assembly, Plug U-173/U
- 1 Connector 10-109614S-5P
- 1 Transistor preamplifier
- 1 In-line switch, D. P. S. T.

RELATIONSHIP TO SIMILAR EQUIPMENT

PHYSICAL DESCRIPTION

Dimensions:

Headband width (unextended) - - - - - 6-1/2 inches (165.1 mm)
Earphone face (with cushion) - - - - - 4-3/4 x 5-3/8 inches (120.65 mm x 136.53 mm) oval
Earphone depth (with cushion) - - - - - 2-1/4 inches (57.15 mm)

Cord Data:

Length (headband to switch) - - - - - 24 inches (609.6 mm)
Length (switch to connector) - - - - - 51 inches (1,295.4 mm)
Number of conductors - - - - - 5
Insulation - - - - - Synthetic rubber

TECHNICAL DESCRIPTION

Earphone:

Impedance (at 1,000 Hz) - - - - - 600 ohms
Frequency range - - - - - 100 to 4,500 Hz

Microphone:

Impedance - - - - - 3 ohms
Frequency range - - - - - 300 to 4,500 Hz

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ADDITIONAL TECHNICAL DATA

Environmental Limitations:

Temperature (nonoperating) - - - - - -60° to +75° C

Temperature (operating) - - - - - 0° to +50° C

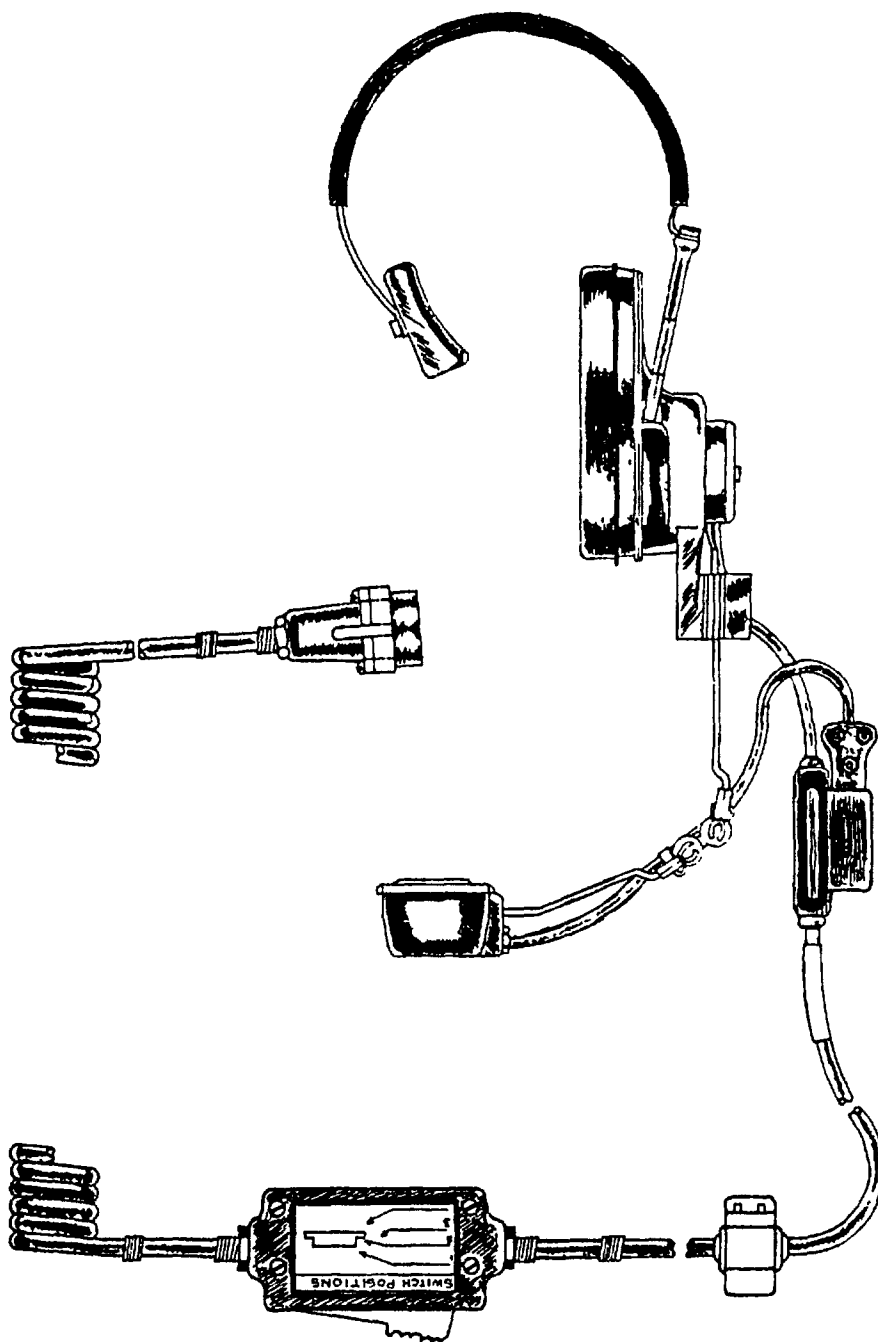
Resistance to salt spray and humidity

REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
82872	H-172/U

MIL-STD-2115
25 March 1982

HEADSET-MICROPHONE, H-182()/PT
(APPLICABLE SPECIFICATION: MIL-H-55460)



MIL-STD-2115
25 March 1982

FUNCTIONAL DESCRIPTION:

The H-182()/PT has a single earphone and an adjustable, boom mounted microphone. The head-set-microphone is intended to be used with telephone TA-312 and switchboard SB-22, and it is made to be worn under the combat helmet M-1.

CONSISTS OF:

- 1 Earphone element, magnetic type, TA-235()PT
- 1 Earcup, with cushion
- 1 Headband, single type
- 3 Cord assemblies, no type number
- 1 Microphone bracket, wire type
- 1 Microphone
- 2 Connectors, U-161/U and U-055
- 1 Clothing clip, no type number
- 1 Switch box, no type number

RELATIONSHIP TO SIMILAR EQUIPMENT

The H-182()/PT replaces the H-144()/U and is a part of SB-22/PT and SB-22A/PT

PHYSICAL DESCRIPTION:

Earphone Dimensions - - - - - Not available
Microphone Dimensions - - - - - Not available

CORD DATA: (RETRACTILE)

Length (retracted)- - - - - 12 inches (304.8 mm)

ADDITIONAL PHYSICAL DATA:

Connector Data:

Connector Type - - - - - Plug
Connector Designation - - - - - U-161/U

Headband Data:

Type- - - - - Single band
Construction - - - - - Vinyl covered with a vinyl head pad

Mounting and Suspension Data:

Microphone - - - - - Mounted on bracket which fits earcup and locks for optimum tacking position

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TECHNICAL DESCRIPTION: (MICROPHONE)

Input Operating Resistance - - - - -	125 mA
Resistance - - - - -	35 ohms dc
Frequency Range - - - - -	800 to 4,000 Hz

TECHNICAL DESCRIPTION: (EARPHONE)

INPUT

Quantity of Earphones	1
Nominal Impedance	150 ohms
Frequency Range	100 to 5, 500 Hz

ADDITIONAL TECHNICAL DATA:

Switch:

Position 1 - - - - -	For monitoring telephone or radio
Position 2 - - - - -	For "lock-on" telephone operation
Position 3 - - - - -	Nonlocking, for radio
Position 4 - - - - -	Push to talk for radio

Microphone connector pins molded into cable assembly. Clothing clip provided on cable assembly.

ENVIRONMENTAL LIMITATIONS:

Fungus	Resistant
Salt Fog	Resistant
Blast	Resistant
Sand and Dust	Resistant
Elevation	
Operating	Up to 15,000 feet
Nonoperating	Up to 50,000 feet
Humidity	Resistant
Immersion	3 feet water
Bounce	Package tester model 1,000SC and SC-A-46439 or equal
Vibration	5 hours, amplitude 0.03 inch .10 to 55 Hz
Drop	6 feet (1,828.8 mm) on concrete
Endurance	100 hours, 0.02 volt at 60 Hz ac
Temperature	
Operating	+125° to -40° F
Nonoperating	+160° to -80° F

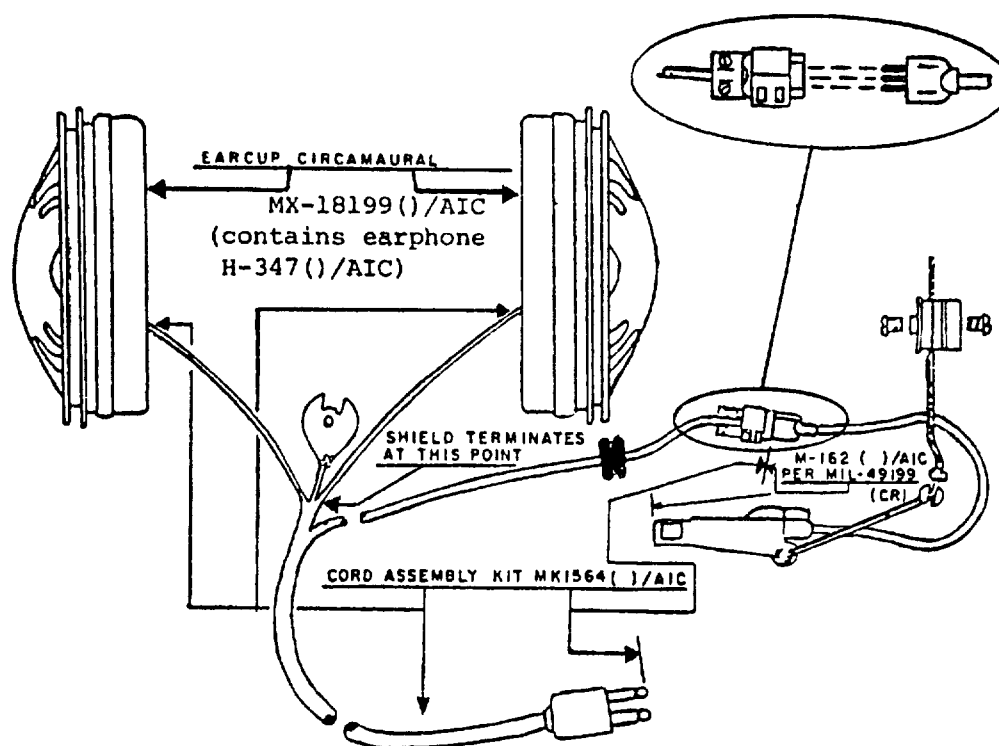
MIL-STD-2115
25 March 1982

REFERENCE DATA

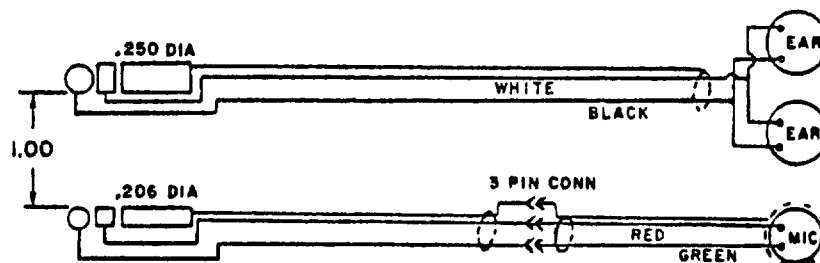
MANUFACTURER CODE	PART NUMBER
80058 18068	H-182()/PT 21954

MIL-STD-2115
25 March 1982

HEADSET-MICROPHONE KIT, MK-1564()/AIC
(APPLICABLE SPECIFICATION MIL-H-49198(AV))



MK-1564()/AIC, assembly of.



Schematic of Helmet Plug and MK-1564()/AIC wiring with Ferromagnetic Shielded Cable.

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FUNCTIONAL DESCRIPTION

The MK-1564()/AIC contains a linear earcup transducer assembly with improved far field noise attenuation properties over the MK-896A/AIC. It also contains the microphone, Linear M-162/AIC which is a noise-canceling dc powered, high gain microphone. The MK-1564()/AIC is intended for use in the improved SPH-4 aviator's helmet which is part of the airborne communications system which contains the C-10414()/ARC Intercommunication Control and will provide communications of high intelligibility under the extreme noise conditions encountered in military aircraft.

Component parts. The MK-1564()/AIC shall be supplied with the following components

- 1 each Microphone, Linear M-162/AIC, Boom Assembly (Standard Ball and Socket Type) and Cord Assembly Electrical #89282 (14 inches in length) per MIL-M-49199(CR).
- 2 each Linear earcup transducer assembly, MX-18199()/AIC, including earphone element, H-347()/AIC, per MIL-H-49198(AV)
- 1 each Cord Assembly Kit, MK-1564()/AIC per MIL-H-49198(AV).

RELATIONSHIP TO SIMILAR EQUIPMENT

Headset-Microphone Kit MK-1564()/AIC replaces the MK-896A/AIC when used with the new aircraft intercom, C-10414/ARC. (It is not electrically interchangeable with the MK-896A/AIC.)

PHYSICAL DESCRIPTION

Earphone Dimensions

Nominal diameter - - - - -	2 inches (50.8 mm)
Depth- - - - -	0.45 inches (11.43 mm)
Microphone Dimensions- - - - -	Length 2.250 inches nominal
	Width 0.625 inches nominal

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CORD ASSEMBLY DATA: (Electro-Voice Part #89351)

Length- - - - - Not available
Jacket Material - - - - - Nylon braid

MICROPHONE CORD DATA: (E-V Part #89282)

Length- - - - - 14 inches
Jacket Material - - - - - Nylon braid

ADDITIONAL PHYSICAL DATA:

Helmet Cord Assembly Connector Data.

Connector Type- - - - - Twin telephone plug
Connector Designation - - - - - Not available

Microphone Cord Connector Data.

Connector Type- - - - - 3 conductor telephone plug
Connector Designation - - - - - E-V Part #17273

Mounting and Suspension Data:

Microphone- - - - - Mounted on bracket which locks
when bracket thumbscrew is tightened

TECHNICAL DESCRIPTION (MICROPHONE)

INPUT

Operating Current - - - - - 10 mA

OUTPUT

Impedance - - - - - 150 ohms $\pm 20\%$ over 400 to 6,000 Hz
frequency range
Frequency Range - - - - - 400 to 6,000 Hz ± 3 dB

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TECHNICAL DESCRIPTION (EARPHONES)

INPUT

Quantity of Earphones- - - - - 2
Nominal Impedance- - - - - 10 ohms (in parallel)
Frequency Range- - - - - 300 to 6,000 Hz ± 5 dB
(when measured inside the
earcup assembly as per
MIL-H-49198(AV))

ADDITIONAL TECHNICAL DATA

ENVIRONMENTAL LIMITATIONS

Temperature- - - - - -55° to $+85^{\circ}\text{C}$
Altitude - - - - - Up to 35,000 feet

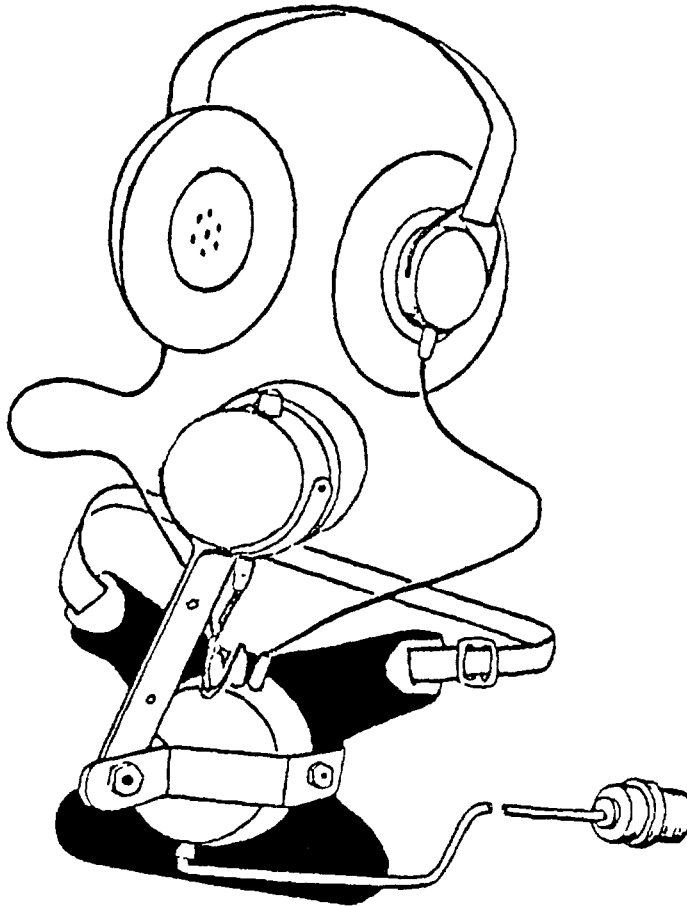
REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
81134	987-0202

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25 March 1982

SECTION 403

HEADSET-CHESTSET, H-200/U
(APPLICABLE SPECIFICATION MIL-T-15514)



FUNCTIONAL DESCRIPTION:

The H-200/U is a sound powered headset-chest set specially designed for shipboard use. The complete set will withstand immersion and heavy salt spray.

CONSISTS OF

- 1 Headband
- 1 Transmitter Assembly
- 2 Receiver Assemblies
- 1 Chestplate
- 1 Junction Box
- 1 Receiver Cable
- 1 Transmitter Cable
- 1 Jack Plug
- 1 Cable Assembly

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RELATIONSHIP TO SIMILAR EQUIPMENT:

H-202/U similar to H-200/U except equipped with cushioned hard shell ear cups
H-202 is intended for use in noisy environments.

PHYSICAL DESCRIPTION:

HEADSET DIMENSIONS:

Earphone diameter (with cushion) - 4-1/2 inches (114.3 mm)
Earphone depth (with cushion) - - - 2 inches (50.8 mm)

CHEST SET DIMENSIONS:

Nominal height - - - - - 6-1/2 inches (165.1 mm)
Nominal width - - - - - 5-1/2 inches (139.7 mm)
Nominal depth - - - - - 4-1/2 inches (114.3 mm)
Cord length - - - - - 20 feet (609.60 mm)
Weight - - - - - 4-1/2 pounds

ADDITIONAL PHYSICAL DATA:

Ear Cushion Material - - - - - Nylon-covered Neoprene
Chestplate Material - - - - - Aluminum
Junction Box Material - - - - - Rubber
Cordset Composition - - - - - Tinsel
Connector Designation - - - - - Navy Type S-74211
Chestplate Suspension - - - - - Neck Strap

TECHNICAL DESCRIPTION: (MICROPHONE)

INPUT

Operating Current - - - - - Not applicable

OUTPUT

Nominal Impedance - - - - - 60 ohms
Frequency range - - - - - 500 to 2,600 Hz

TECHNICAL DESCRIPTION: (EARPHONES)

INPUT

Quantity of Earphones - - - - - 2
Nominal Impedance - - - - - 1,200 ohms
Frequency Range - - - - - 500 to 2,500 Hz

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REFERENCE DATA

MANUFACTURER CODE	PART NUMBER
78957	702019-375, type H-200/U
	702020-230, type H-202/U
78957	701005-379
78957	702003-278
78957	702003-277
78957	701004-327
78957	702001-918
78957	702003-551
78957	702003-552
78957	702004-232
78957	702011-551

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