MILITARY SPECIFICATION SHEET

HEADSET - MICROPHONE,
H-172A/AIC

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

The complete requirements for procuring the headset - microphone described herein shall consist of this document and the latest issue of Military Specification MIL-H-83511

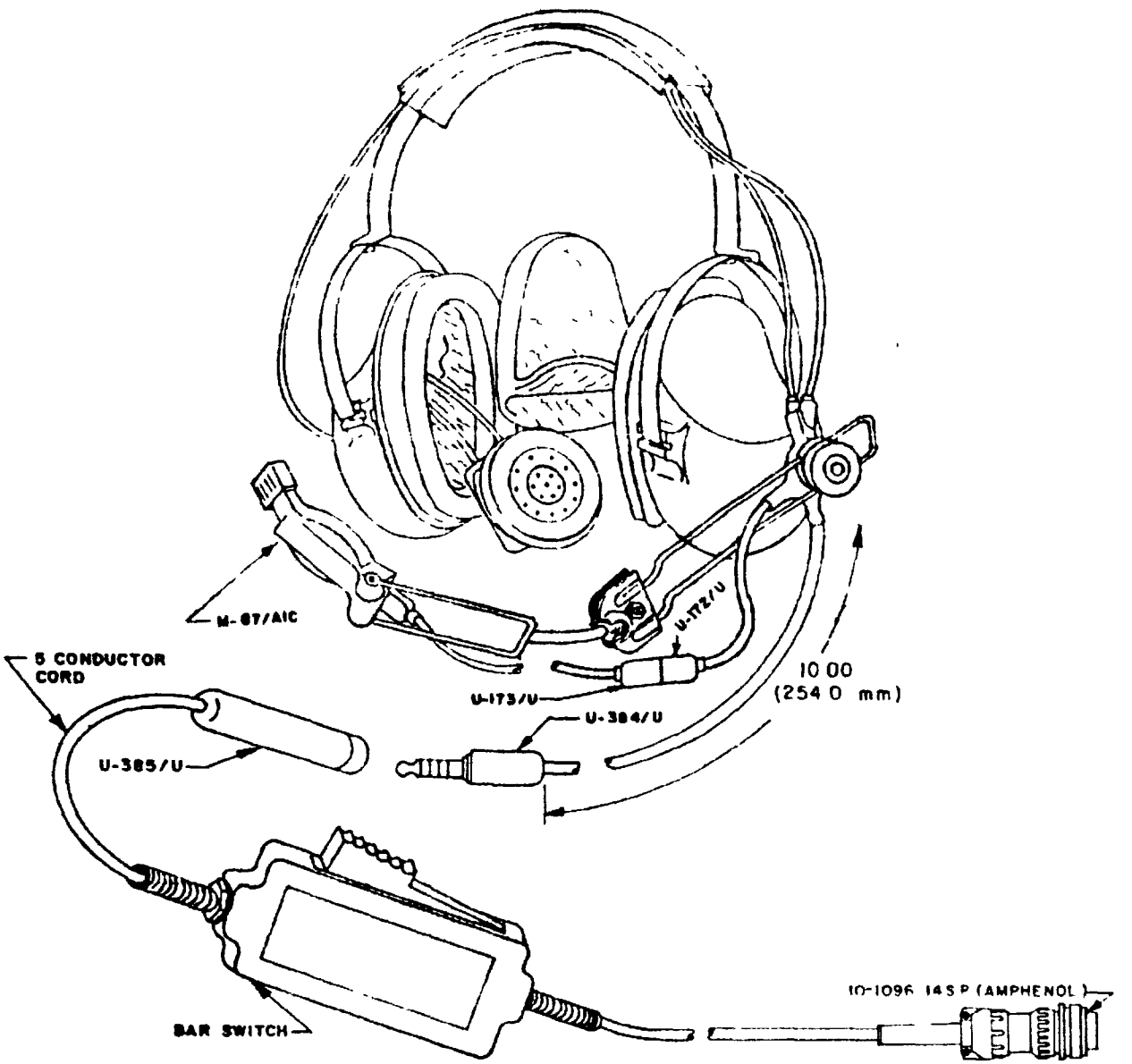
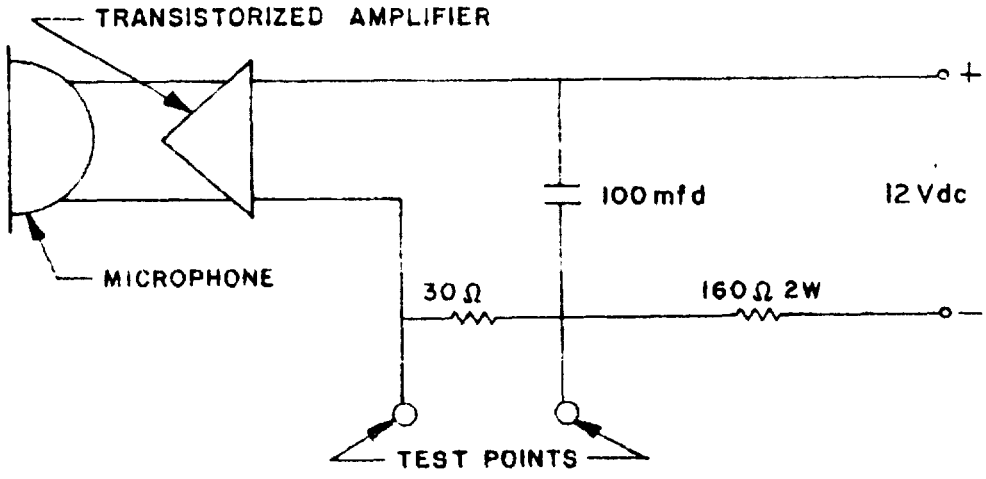



FIGURE 1 Headset-microphone

TABLE I

| Frequency in Hz | Response | Variation |
|---|---|---|
| 300 - 500 | 4 | ? 1/2 |
| 500 - 2 000 | 4 | 4 |
| 2, 000 - 4, 500 | 0 | 4 |




NOTES

1. ITEM IDENTIFICATION The Headset-Microphone H-172A/AIC is a single earphone headset-microphone assembly with a transistorized microphone amplifier located in one earcup which is perforated to provide ambient listening The assembly incorporates a quick-disconnect cord assembly The quick disconnect provides a means to attach a switch and cord to the output connector for termination of the headset-microphone assembly
2. ATTACHMENT PROVISIONS The earcup containing the earphone and the earcup containing the transistorized amplifier for the microphone shall be suspended by yokes from the headband, to allow quick adjustment and suitable pressure to the user

FIGURE 2 Test circuit (microphone amp )

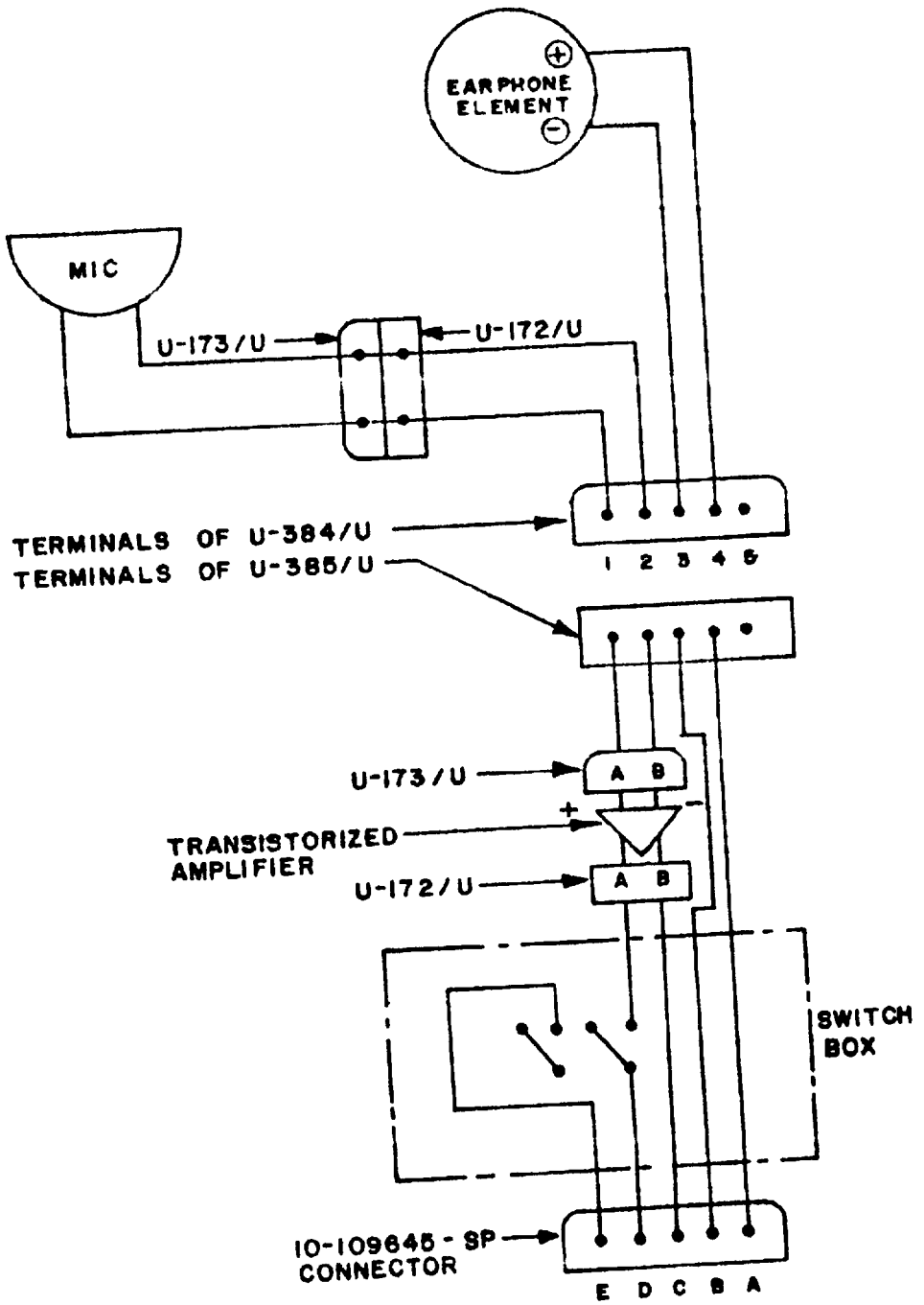



FIGURE 3 Wiring diagram (H-172A/AIC)

REQUIREMENTS

Design and construction  See figure 1.

Earphone  1 required, Roanwell Corp. P/N 10357 or equal.

General configuration  In accordance with MIL-H-8351

Nominal diameter  2 inches (50.8 mm).

Depth  0.45 inch (11.4 mm).

Frequency response range  100 to 4,500 Hz.

Frequency response  Maximum deviation from dB output ±7 dB at 1,000 Hz and 600 ohms

Sensitivity  The sensitivity of the earphone at ground level shall exhibit the following characteristics

| Frequency range | Decibels (reference level of 0.002 dynes/cm²) |
|---|---|
| 100 to 200 Hz | 103 to 112 |
| 200 to 1,000 Hz | 105 to 117 |
| 1,000 to 4,500 Hz | 103 to 119 |

Harmonic distortion  The harmonic distortion in the acoustic output of the earphone shall be no more than 5 percent over the audio frequency range of 300 to 3,500 Hz

Impedance  600 ±60 ohms at 1,000 Hz.

Microphone  M-87/AIC, per MIL-M-26542

Cord data
  Amplifier to terminal of main cord  16 inches (408.4 mm).
  Terminal to U-384/U Main cord  10 inches (254.0 mm)
  U-385/U to Switch  26 inches (660.4 mm).
  Switch to connector  51 inches (1295.4 mm).
  Specification  MIL-C-55668 Type 2, 5 conductor tinsel rubber jacket.

Bar switch  In accordance with MIL-H-83511.

Switch and housing
  Type  Bar actuated four position (to be supplied with clothing clip) Switch is interchangeable with bar switch used on H-182/PT Hdst/Mic Astrocom Electronics P/N 10235 or equal.

Belt (clothing) clip  Roanwell Corp. P/N 20860 or equal.
Microphone amplifier  Roanwell Corp. P/N 10374 or equal such as AM3578.
  Output impedance  Operates satisfactorily into input microphone circuit of Radio Control Unit C-1138/UR.
  Frequency response  300 to 4,500 Hz.

Interchangeability  This headset-microphone assembly is completely interchangeable with Navy type H-172/U headset-microphone assembly

Switch  The output of the microphone shall be transferred to the output connector by means of a four position switch. The switch shall be made of polycarbonate (Lexan G.E. #101-701 or equal), and comply with specification L-P-393  It shall be watertight when assembled, and marked to show the four positions of the bar.

Contact sequence. The switch shall provide operation in the following sequence.

a. Position "0" Switch not depressed OFF position.
b. Position "1" Closed half-way, non-locking for "push-to-talk" telephone.
c. Position "2" Closed half-way, pushed forward, for "lock-on" telephone.
d. Position "3" Closed all the way, non-locking for radio.

Switch details. The switch mechanism shall be made as follows.

a. Position "0" Without any pressure at all on the switch, the contact gap of 0.020 inch minimum.
b. Positions "1 and 2". The open contact shall have a gap of 0.015 inch, minimum, the closed contact shall develop a pressure of 15 grams, minimum, and have a contact resistance not over 0.05 ohm.
c. Position "3" Both contacts shall be closed, and the total pressure developed shall be 25 grams, minimum. The individual contact resistance shall not be over 0.05 ohm.
d. Positions "1 and 2". The force required to maintain these positions when exerted on the flat part of the bar, at the beginning of the radius, shall be from one to two and one-half pounds.
e. Position "3" The force required to maintain this position shall be from one to two and one-half pounds.
f. Insulation resistance The insulation resistance, as measured with 500 volts, alternating current, rms, between any open contacts, terminals, or other metallic parts shall be less than 10 megohms.
g. Life test The switch shall withstand 200,000 operating cycles

Clothes clip The clothes clip shall be of the alligator design, and be provided with corrugated rubber jaws. The pressure developed at the tip when the jaws are parallel to each other shall be from three to four pounds.

Test for clothes clip pressure The pressure developed between the tips of the jaws when parallel, shall be determined by means and using any equipment, which is capable of effecting this measurement with no more than ten percent error.

Microphone transistorized amplifier

Operating temperature The transistorized amplifier shall operate in temperatures between - 0 to +50 degrees centigrade.

Output impedance The output impedance of the amplifier shall be such that it operates satisfactorily into the input microphone circuit of Radio Control Unit C-1138 A/UR or equivalent circuit (see test circuit).

Frequency response The output of the microphone amplifier at 1,000 Hz when connected to the test circuit shall be 30 ±5 dB above a zero reference level of one millivolt, the input shall be 28 dynes per square centimeter (103 dB relative to 0.0002 dynes/cm$^2$) applied 1/4 inch from the microphone. A dip between 1,100 and 1,700 Hz not more than 150 Hz wide and not to exceed the lower limits by more than 7-1/2 dB is allowable.

a. Response variates - After the environmental tests, the microphone amplifier shall not vary more than 4 dB from its initial response at any frequency between 300 and 4,500 Hertz

Intermodulation distortion Intermodulation distortion tests shall be performed on the microphone amplifier using two tones at 700 and 1,000 Hz., each tone to be equal in sound pressure levels relative to 0.002 dynes/cm$^2$ at the output of the microphone amplifier the total harmonic and intermodulation products shall not be greater than 35 db below the output level of the total test tones with an input sound pressure level of 103 dB and not greater than 32 dB below the level of the total output test tones with an input sound pressure of 110 dB.

a. Distortion variation - After environmental tests the variations of harmonics and intermodulation products shall not be greater than 35 dB below the level of test tones with an input of 103 dB and 30 dB below the level of the other test tone inputs with an input of 106 dB

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Navy - EC
Air Force - 85

Review activities
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Navy -
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User activities
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Preparing activity
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MIL-H-83511/5 Headset, Microphone H-172A/AIC

NAME OF ORGANIZATION AND ADDRESS OF SUBMITTER

AFLC/LOIE
WPAFB, OH 45433

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