

INCH-POUND

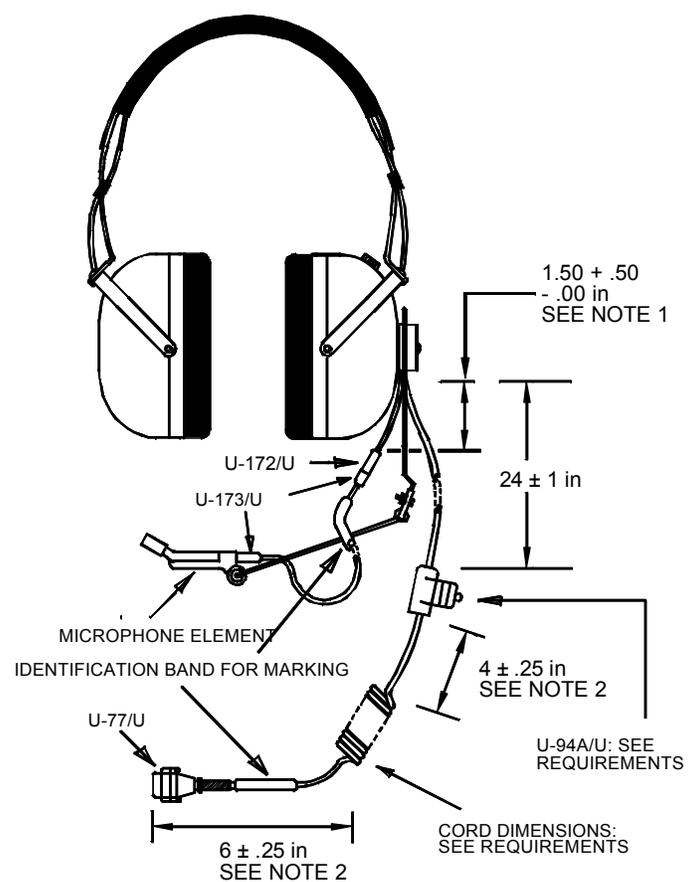
MIL-PRF-87819/6(USAF)
30 January 1997

PERFORMANCE SPECIFICATION SHEET

HEADSET-MICROPHONE, DICHOTIC,
HEARING PROTECTIVE TYPE, MODERATE AMBIENT NOISE LEVELS,
UP TO 105 dB, ENLARGED EARCUP,
INFLIGHT AIRCREW HEADSET-MICROPHONE,
M87819/6-01

This specification sheet is approved for use by Department of the Air Force, and is available for use by all Departments and Agencies of the Department of Defense.

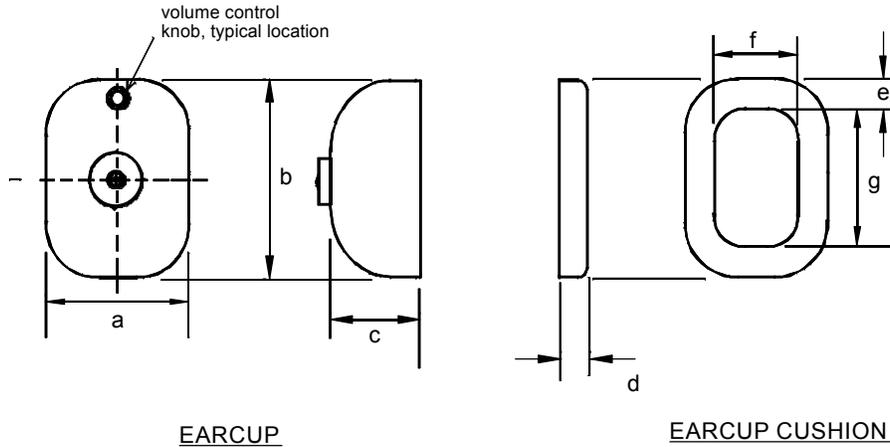
The requirements for acquiring the product described herein shall consist of this specification and MIL-PRF-87819.



NOTES:

- 1. Length of cord between U-172/U connector and its entry into earcup, for interface to oxygen mask.
- 2. Cord dimensions adjacent to coil sections are approximate.

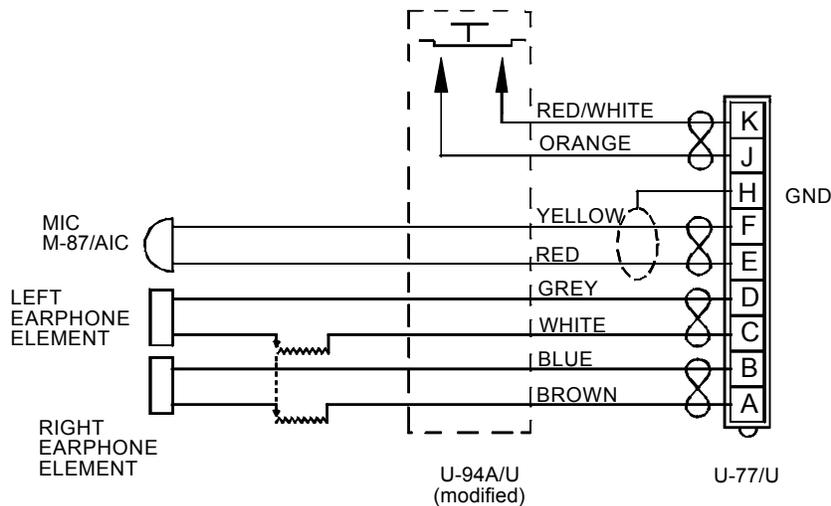
FIGURE 1. Headset-microphone assembly, M87819/6-01.



Letter	Dimension	Description
a	3.250 in \pm .010 in	width, earcup
b	4.500 in, MAX	height, earcup
c	2.200 in, MAX	depth, earcup (outwards, from head)
d	0.500 in, MIN	depth, earcup cushion (uncompressed)
e	0.625 in, MIN	width, earcup cushion
f	1.625 in, MIN	width, earcup cushion ear-opening
g	2.680 in, MIN	height, earcup cushion ear-opening

NOTE: The maximum dimensions of the earcup cushion shall not exceed the outer dimensions of the earcup.

FIGURE 2. Earcup Envelope and Earcup Cushion Dimensions.



NOTE: The U-77/U shall be wired as shown, with the addition that the nylon filler cord shall be twisted into two of the cords, then tied to the button washer inside backshell, to provide additional strain relief.

FIGURE 3. Wiring Diagram.

REQUIREMENTS:

Design and construction:

Dimensions and configuration: See figures 1 and 2.

Color: The color shall be in accordance with MIL-PRF-87819.

Headband Pressure: Headband pressure shall be sufficient to allow the part to meet the attenuation requirements of this specification, not to exceed 2.4 lb.

Headband Parts: The headband shall include those components necessary to allow the part to meet the performance requirements of this specification. The components shall be shielded in a manner minimizing the possibility of entangling the user's hair.

Headband and yoke dimensions: The headband and yoke shall allow the part to meet the performance Shock (drop) and Attenuation requirements of MIL-PRF-87819.

Headband adjustment: MIL-PRF-87819, Figure 2, Note 3 re-wording shall apply:
"Headband minimum adjustment range with headband pad removed. With dimension 'A' set at 5.58 in (5.33 + 1/2 earcup cushion depth) dimension 'B' shall be adjustable to 4.81 in (4.56 + typical headband cushion depth) minimum. With dimension 'A' set at 6.75 in (6.50 + 1/2 earcup cushion depth) dimension 'B' shall be adjustable to 6.19 (5.69 + 1/2 typical headband cushion depth) maximum." These dimensions accommodate the 5th percentile female head breadth and head height, respectively, through the 95th percentile male aviator head breadth and head height, respectively, as listed in MIL-STD-1472.

Cable and cord assemblies: MIL-PRF-87819, Figure 2, Note 5 re-wording shall apply:
"Angular deflection 'C' \pm 5 degrees with respect to axis 'E', maximum."

The cable and cord assemblies shall conform to MIL-C-55668 and the following:

Jacket material: The cable jacket material shall be a heat-resistant, flame-retardant, fuel and oil resistant compound.

Conductors: Cable shall be 8 stranded conductors (each equivalent to 28 AWG), where each conductor is constructed from 7 strands of 36 AWG tinned copper, insulated with a thermoplastic material. The color of the conductors shall conform to figure 3, to ensure consistency with established part repair procedures. The conductors shall be formed into 4 twisted pairs, one pair of which is shielded.

Dimensions: Shall conform to figure 1, for mobility within the aircraft. The overall dimension of the console cable shall be 300 in MIN when extended, and 36 in MIN when relaxed.

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Microphone assembly:

Microphone shall be military part number M-87/AIC, in accordance with MIL-M-26542/2 (1 required), or an equivalent noise-canceling, lightweight, altitude-capable microphone as approved by the qualifying activity.

The boom assembly shall be in accordance with Air Force drawing 67B1854, or other boom assembly providing equivalent adjustability (fine and coarse), and adherence to the Reparability and Shock (drop) requirements of MIL-PRF-87819, as approved by the qualifying activity.

Wiring Diagram: See figure 3.

Plug assemblies: U-172/U shall be per MIL-C-9177/2(USAF), U-173/U shall be per Air Force Drawing 57B12662, U-77/U shall be per MIL-C-10544, and U-94A/U shall be Part or Identifying Number (PIN) MIL-C-9177/5-1, or electrically and mechanically compatible parts. U-94A/U shall be modified such that; jack is removed, push-to-talk (PTT) switch and case used. PTT is normally open, momentary SPST. Molded section fills cavity where jack normally fits. J-K pair soldered to PTT switch terminals (see figure 3).

Earcup: The earcup dimensions shall conform to the envelope shown in figure 2.

Earcup Finish: Shall be smooth, without any texture at all, to accommodate rapid cleaning.

Earcup cushion: The earcup cushion's dimensions shall conform to those shown in figure 2. The earcup cushion shall be clearly marked with the manufacturer's cage code and manufacturer's part number, located on the underside surface.

Earphone element: The earphone element shall be either military part number H-143/AIC in accordance with MIL-PRF-25670/2 (2 required), or M25670/3-01 in accordance with MIL-PRF-25670/3(USAF) (2 required), or a lightweight, altitude-capable transducer meeting USAF hearing-protective standards, having equivalent or superior performance, as approved by the qualifying activity.

Volume control: The volume control potentiometer shall be a 100-ohm, dual-shaft type, wired to simultaneously and equally adjust both earcup transducer signals from one adjustment knob. The adjustment knob shall not exceed 0.438 inches high and 0.813 inches diameter. The volume control and knob shall not bind, stick, or restrict the movement of the microphone boom assembly, earcup or yoke.

Weight: 1.45 lb. maximum, when weighed without the cord and connectors.

Part or Identifying Number (PIN) shall be: M87819/6-01.

Performance characteristics: See table I,II and MIL-PRF-87819.

Attenuation: Testing for attenuation shall be per MIL-PRF-87819 with the exception that table I specified herein shall be used for attenuation values.

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TABLE I. Attenuation values.

Freq. (Hz)	63	80	100	125	160	200	250	315	400	500	630	800
Minimum attenuation (dB) mean minus 2 X standard deviation	3	3	4	5	7	9	12	14	16	18	19	20
Minimum attenuation (dB) mean minus 2 X standard deviation with eyeglasses	1	1	2	3	4	6	8	11	13	15	16	17

Freq. (Hz)	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000
Minimum attenuation (dB) mean minus 2 X standard deviation	21	21	22	22	22	22	22	21	21	20
Minimum attenuation (dB) mean minus 2 X standard deviation with eyeglasses	19	20	21	22	22	22	21	20	19	14

NOTE: Eyeglasses shall be in accordance with MIL-PRF-87819.

TABLE II. Performance characteristics.

Inspection	Requirements Paragraph	Test Paragraph	Qualification	Group A	Group B	Group C
<u>Subgroup 1</u>						
Visual and mechanical	3.3, 3.4, 3.6, 3.7	4.7.1	X	X		X
Acoustic quality	3.5.1	4.7.2	X	X		X
Attenuation	3.5.2	4.7.3	X			X
Speech Intelligibility	3.5.3	4.7.4	X			
Headset System Sensitivity	3.5.4	4.7.5	X			
<u>Subgroup 2</u>						
Headband Pressure	3.5.12	4.7.13	X		X	X
Headband Flexing	3.5.13	4.7.14	X			X
Twist and Pull	3.5.11	4.7.12	X			X
Shock (drop)	3.5.5	4.7.6	X			X
Fungus	3.5.6	4.7.7	X			
Vibration	3.5.7	4.7.8	X			X
Temperature	3.5.8	4.7.9	X			X
<u>Subgroup 3</u>						
Temperature Shock	3.5.9	4.7.10	X			X
Humidity	3.5.10	4.7.11	X			X
Salt Fog	3.5.15	4.7.16	X			X
<u>Subgroup 4</u>						
Cable Isolation	3.5.14	4.7.15	X			X

Supersession data: Headset-microphone M87819/6-01 supersedes Astrocom Electronics, Inc. part number 10827A and Roanwell Corporation part number 494-613-001-694.

Intended use: Headset-microphone M87819/6-01 is a moderate ambient noise level headset-microphone, providing dichotic communication under the noise conditions encountered in-flight in RC-135 aircraft. It's enlarged earcushion opening alleviates certain pain (e.g., eartip 'hot-spots') associated with headset wear over extended periods of time (in excess of 5 hours). This headset should only be used in conjunction with quick-don oxygen mask harness part number 358-1506V-01 (or equal; see Technical Order (T.O.) 15X5-4-10-1), and not with its smaller predecessor harness. This is a field-reparable part, the repair of which is described in T.O. 12R2-2AIC-222CL-1 (copies of this document are available from the Air Force Custodian).

CONCLUDING MATERIAL

Custodian:
Air Force - 85

Preparing activity:
Air Force - 85

Review activity:
DLA-ES

(Project 5965-0256)