

INCH-POUND

MIL-PRF-87819/6A

30 September 2009

SUPERSEDING

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 is approved 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 sheet and MIL-PRF-87819.

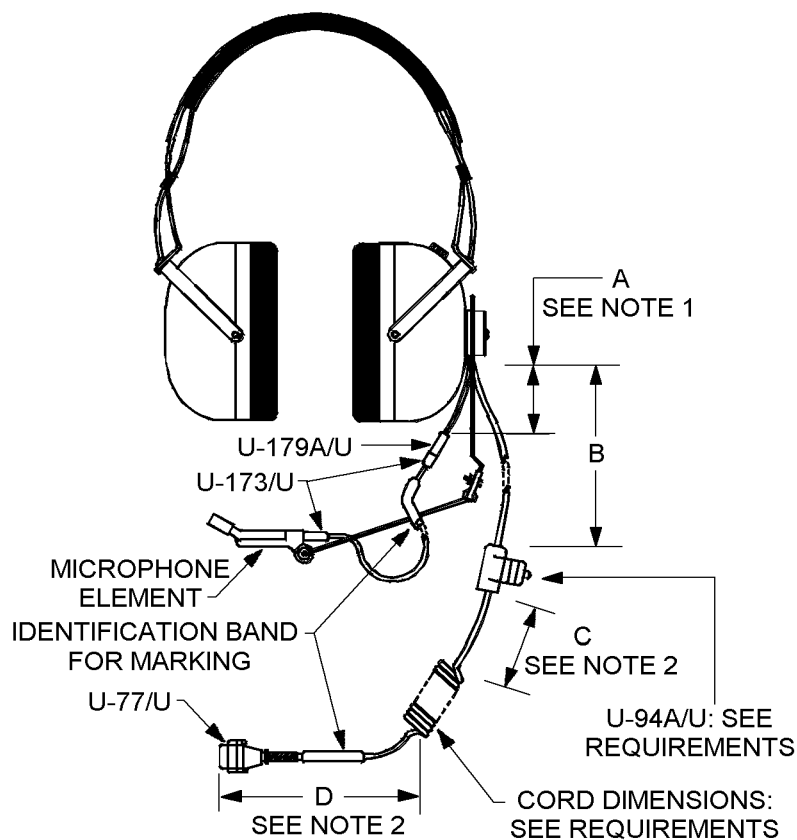


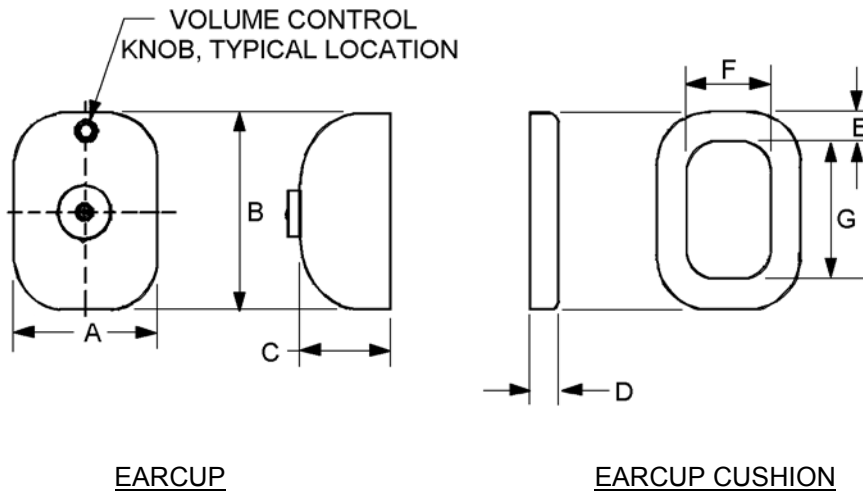
FIGURE 1. Headset-microphone assembly, M87819/6-01.

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Letter	Inches		mm	
	Design Dimension	Tolerances	Design Dimension	Tolerances
A	1.50	+ 0.50 – 0.00	38.1	+ 12.7 – 0.0
B	24.0	± 1.0	609.6	± 25.4
C	4.0	± 0.25	101.6	± 6.4
D	6.0	± 0.25	152.4	± 6.4

## NOTES:

1. Length "A" of cord between Part or Identifying Number (PIN) U-179A/U connector and its entry into earcup, for interface to oxygen mask.
2. The console cable dimensions "C" and "D" of straight portions of cord between its terminations and the beginning of the coiled portion are approximate. For mobility within the aircraft, the overall dimension of the console cable shall be 300 inches (7,620 mm) minimum when extended and 36 inches (914.4 mm) minimum when retracted.
3. Dimensions are in inches. Unless otherwise specified, tolerance is ± 0.015 inch. Metric equivalents are given for information only.

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

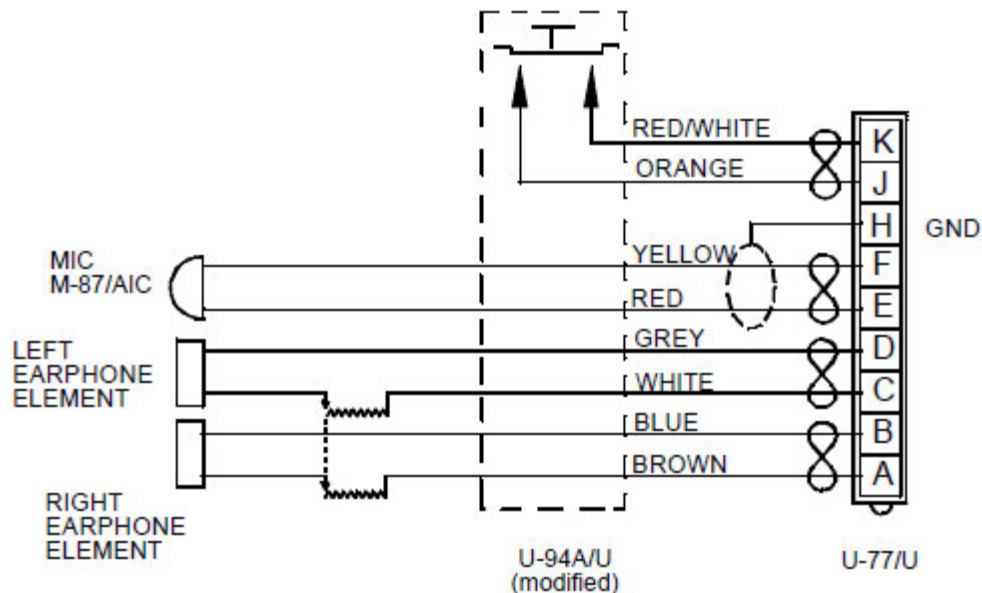
Letter	Dimension		Description
	Inches	mm	
A	3.250 ± .010	82.6	width, earcup
B	4.500 MAX	114.3	height, earcup
C	2.200 MAX	55.9	depth, earcup (outwards, from head)
D	0.500 MAX	12.7	depth, earcup cushion (uncompressed)
E	0.625 MIN	15.9	width, earcup cushion
F	1.625 MIN	41.3	width, earcup cushion ear-opening
G	2.680 MIN	68.1	height, earcup cushion ear-opening

## NOTES:

1. The maximum dimensions of the earcup cushion shall not exceed the outer dimensions of the earcup.
2. Dimensions are in inches. Unless otherwise specified, tolerance is ± 0.015 inch. Metric equivalents are given for information only.

FIGURE 2. Earcup envelope, and earcup cushion dimensions.

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NOTE: The U-77/U shall be wired as shown, with the addition that the nylon filler cord shall be twisted into 2 (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 as specified in 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 dimensions shall allow the headset to meet the performance requirements of MIL-PRF-87819, including Shock (drop) and Attenuation.

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## Headband adjustment:

The "Headband minimum adjustment" (see MIL-PRF-87819, figure titled: "Anthropometric headband adjustment requirements") shall apply as follows: "Headband minimum adjustment range with headband pad removed. With dimension 'A' set at 5.58 inches (141.7 mm) (5.33 + 1/2 earcup cushion depth), dimension 'B' shall be adjustable to 4.81 inches (122.2 mm) (4.56 + typical headband cushion depth) minimum. With dimension 'A' set at 6.75 inches (171.5 mm) (6.50 + 1/2 earcup cushion depth), dimension 'B' shall be adjustable to 6.19 (157.2 mm) (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 specified in MIL-STD-1472.

## Earcup yoke angular deflection:

The "Earcup yoke angular deflection" (see MIL-PRF-87819, figure titled: "Anthropometric headband adjustment requirements") shall apply as follows: "Angular deflection 'C'  $\pm$  5 degrees with respect to axis 'E', maximum."

## Cable and cord assemblies:

The cable and cord assemblies shall be as specified in MIL-DTL-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:** Cable assembly shall be as specified on figure 1, for mobility within the aircraft. The overall dimension of the console cable shall be 300 inches (7,620 mm), minimum when extended, and 36 inches (914.4 mm), minimum when relaxed.
- Connectors:** Assemblies shall include a PIN U-179A/U, PIN U-174/U as specified in MIL-DTL-9177/2, and PIN U-173/U as specified in Air Force drawing 57B12662, or electrically and mechanically compatible parts as approved by the qualifying activity. PIN U-77/U shall be as specified in MIL-C-10544. PIN U-94A/U shall meet requirements of MIL-DTL-9177/5 (PIN MIL-DTL-9177/5-1) or electrically and mechanically compatible parts, with the following changes. U-94A/U shall be modified such that the jack is removed and the push-to-talk (PTT) switch and case are used. The PTT shall be normally open and momentary SPST. The molded section shall fill the cavity, where the jack normally fits. The J-K pair shall be soldered to the PTT switch terminals (see figure 1 and figure 3).

## Microphone assembly:

Microphone shall be PIN M-87/AIC, as specified in MIL-PRF-26542/2 (1 required), or an equivalent noise-canceling, lightweight, altitude-capable microphone as approved by the qualifying activity. The boom shall be as specified in Air Force drawing 67B1854, or other boom 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.

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Wiring Diagram:	See figure 3.
Earcup:	The earcup dimensions shall conform to those specified on figure 2.
Earcup Finish:	The finish shall be smooth, without appreciable texture, to accommodate rapid cleaning.
Earcup cushion:	The earcup cushion's dimensions shall be as specified on figure 2. The earcup cushion shall be clearly marked with the manufacturer's cage code and part number, located on the underside surface.
Earphone element:	The earphone element PIN H-143/AIC as specified in MIL-PRF-25670/2 (2 required), or an equivalent lightweight, altitude-capable transducer having equivalent or superior performance, meeting hearing-protective standards, as approved by the qualifying activity.
Volume control:	The volume control potentiometer shall be a 100-ohm, tandem stereo type, wired to simultaneously and equally adjust both earcup transducer signals from one adjustment knob. The adjustment knob shall not exceed 0.438 inch (11.13 mm) high and 0.813 inch (20.65 mm) 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 cord and connectors.
PIN:	M87819/6-01.
Performance characteristics:	See table I, table II, and MIL-PRF-87819.
Attenuation:	Testing for attenuation shall be as specified in 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 <sup>1/</sup>	1	1	2	3	4	6	8	11	13	15	16	17

Freq.(Hz)	1,000	1,250	1,600	2,000	2,500	3,150	4,000	5,000	6,300	8,000
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 <sup>1/</sup>	19	20	21	22	22	22	21	20	19	14

<sup>1/</sup> Eyeglasses shall be HGU-4/P, as specified in MIL-PRF-87819.

TABLE II. Performance characteristics.

Inspection <sup>1/</sup>	Qualification	Group A	Group B	Group C
Subgroup 1				
Visual and mechanical	X	X		X
Acoustic quality	X	X		X
Attenuation	X			X
Speech Intelligibility	X			
Headset System	X			
Sensitivity				
Subgroup 2				
Headband Pressure	X		X	X
Headband Flexing	X			X
Twist and Pull	X			X
Shock (drop)	X			X
Fungus	X			
Vibration	X			X
Temperature	X			X
Subgroup 3				
Temperature Shock	X			X
Humidity	X			X
Salt Fog	X			X
Subgroup 4				
Cable Isolation	X			X

<sup>1/</sup> See MIL-PRF-87819, for inspection details.

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Intended use. Headset-microphone PIN M87819/6-01 is a moderate ambient noise level headset-microphone, providing communication within the noise conditions encountered in-flight in transport aircraft, as well as limited maintenance activities outside certain fighter and transport aircraft. For a listing of the aircraft and noise environments for which this headset provides acceptable protection, refer to the U. S. Air Force (Air Force Research Laboratory (AFRL) 711th HPW/RHCB (Battlespace Acoustics) Wright-Patterson AFB OH 45433). Its enlarged earcushion opening alleviates certain pain (e.g., ear tip 'hot-spots') associated with extended wear (in excess of 5 hours). This headset should only be used in conjunction with quick-don oxygen mask harness part number 358-1506V-1 ([or equal; see Technical Order (T.O.) 15X5-4-10-1), and not with its smaller predecessor. 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).

Changes from previous issue. The margins of this specification sheet are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Referenced documents. In addition to MIL-PRF-87819, this document references the following:

MIL-C-10544  
MIL-DTL-55668  
MIL-DTL-9177/2  
MIL-DTL-9177/5  
MIL-PRF-25670/2  
MIL-PRF-26542/2  
MIL-STD-1472  
57B12662  
67B1854

## CONCLUDING MATERIAL

Custodians:  
Air Force - 85  
DLA-CC

Preparing activity:  
DLA - CC

(Project 5965-2009-008)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.