

INCH-POUND

MIL-PRF-26542/2E  
w/AMENDMENT 2  
2 December 2013  
SUPERSEDING  
MIL-PRF-26542/2E  
w/AMENDMENT 1  
7 April 2005

PERFORMANCE SPECIFICATION SHEET

MICROPHONE AND MICROPHONE ASSEMBLIES,  
M-87/AIC, M26542/2-01, M26542/2-02, M26542/2-03, AND M26542/2-04

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-26542.

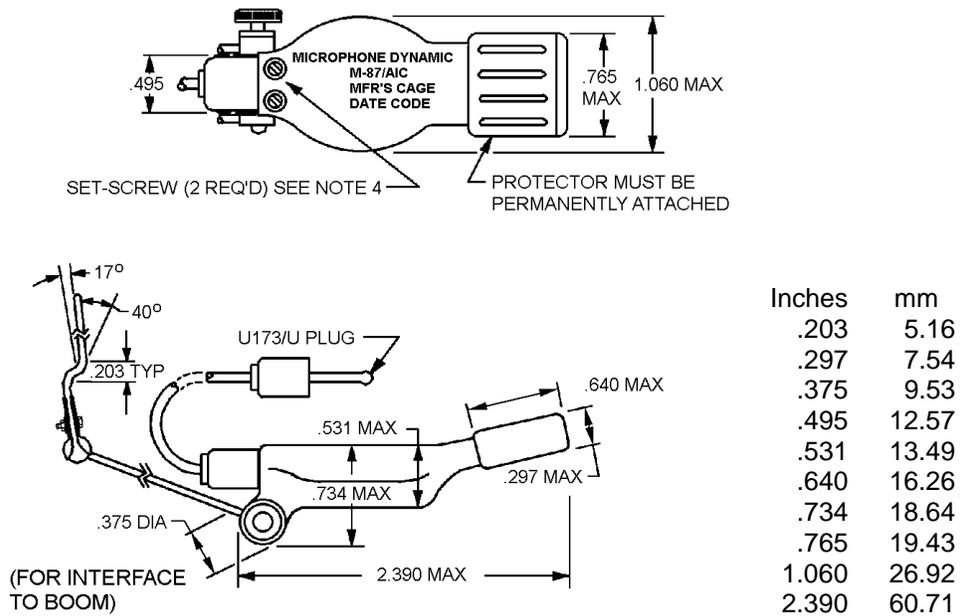


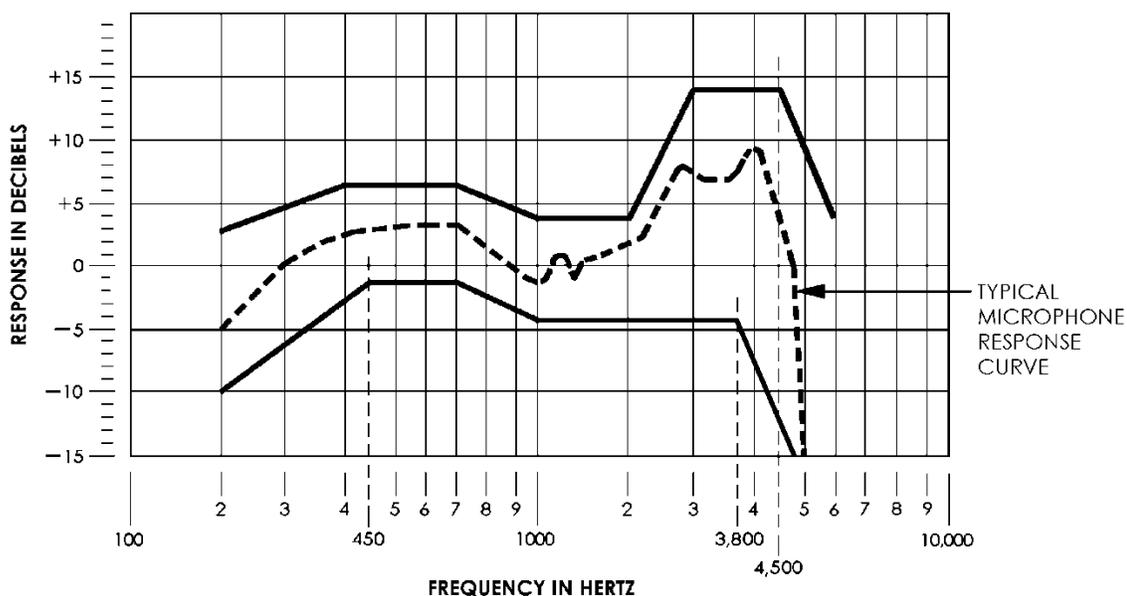
FIGURE 1. Microphone assembly.

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NOTES:

1. Quantity and configuration of sound ports optional.
2. The microphone element shall be marked with the same Part or Identifying Number (PIN) (i.e., M-87/AIC). Placement on surface shown is optional. The combined microphone-cable assemblies PIN (i.e., M26542/2-01, M26542/2-02, M26542/2-03, and M26542/2-04) shall appear on the packaging for that assembly, in accordance with MIL-STD-129.
3. Dimensions are in inches. Tolerance is  $\pm 0.015$  inch (0.38mm), unless otherwise specified.
4. Screws shall hold the element securely, shall be either slotted or Allen type, and shall not protrude above the surface of the element.
5. Angular requirements of boom shall be met to provide interface to headset, and for adjustability.
6. Metric equivalents are given for information only and are based upon 1 inch = 25.4 mm.

FIGURE 1. Microphone assembly – Continued.

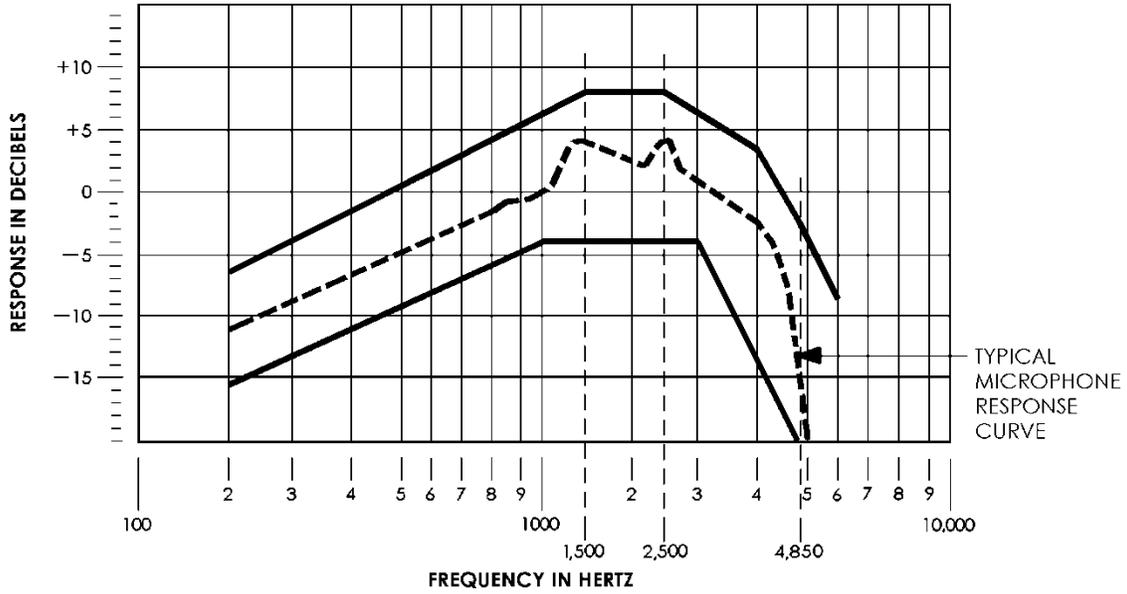


Frequency points (Hz)	200	400	700	1,000	3,000	3,800	4,500	6,000
Upper limits (dB)	+2.50	+7.0	+7.0	+3.75	+13.75	+13.75	+13.75	+3.0
Lower limits (dB)	-10.0	-2.60 <sup>1/</sup>	-1.50	-4.25	-4.25	-4.25	-11.46 <sup>1/</sup>	---

<sup>1/</sup> The dB limits between key break points are calculated using slope method.

FIGURE 2. Frequency response at sea level.

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Frequency points (Hz)	200	700	1,000	1,500	2,500	4,000	4,850	6,000
Upper limits (dB)	-6.5	+2.3 1/	+5.6 1/	+8.0	+8.0	3.5	-2.5 1/	-9.0
Lower limits (dB)	-16.0	-7.0	-4.0	-4.0	-4.0	-13.6 1/	-20.0	---

1/ The dB limits between key break points are calculated using slope method.

FIGURE 3. Frequency response at 25,000 feet.

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REQUIREMENTS

Component parts (see figure 1).

Boom:

Dimensions: Dimensions of the boom shall be in accordance with USAF Drawing 67B1854, for interchangeability with the next-higher-assembly headset-microphone.

Color: Boom shall be the same color as the microphone element.

Finish: Shall be in accordance with MIL-PRF-26542 (see boom finish requirement).

Operation: Shall be in accordance with MIL-PRF-26542 (see boom operating force requirement).

Material: Shall be constructed from a high-strength, corrosion-resistant metal, meeting or exceeding the environmental and durability requirements of MIL-PRF-26542.

Cable assembly: The cable assemblies shall be in accordance with the specified part (see table I and MIL-DTL-22442/36), for interface to oxygen gear, interchangeability, and environmental performance. The manufacturer shall meet the requirements of MIL-DTL-22442 in accordance with options specified in MIL-PRF-26542 for 'cable assemblies'. The microphone element shall provide a complete electrical and mechanical interface with the cable assembly.

Plug assembly: U-173/U, in accordance with USAF Drawing 57B12662, or electrically and mechanically compatible part.

Weight: 45 grams, maximum.

Performance:

Sensitivity at ground level: 34.0 dB – 40.98 dB (re 1  $\mu$ V) or 50.4  $\mu$ V – 112.0  $\mu$ V with a sound pressure level (SPL) input of 2.8 Pascal's (28 dynes/cm<sup>2</sup>) at 1 kHz, when tested with the microphone sound port 0.187 inch  $\pm$  0.015 inch (4.75 mm  $\pm$  0.38mm) from, and coaxial with, the opening of the artificial voice.

Sensitivity at altitude: Shall be within  $\pm$  3 dB of initial ground level sensitivity, when tested at a simulated 25,000 feet.

Frequency response envelope at ground level and at altitude: The response shall be as shown on figures 2 and 3, when tested with the microphone sound port 0.187 inch  $\pm$  0.015 inch (4.75 mm  $\pm$  .38 mm) from, and coaxial with, the opening of the artificial voice. The response curves generated shall be on the same scale as shown on figures 2 and 3. The response curve shall not exceed the upper and lower limit curves of the stationary frequency response envelope, within the frequency ranges identified on the appropriate chart (see figures 2 and 3).

Impedance: 4.0 ohms to 6.0 ohms.

Resistive load: 5.0 ohms.

Intended use: This is a noise-canceling dynamic microphone designed for use on a headband type

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headset at low altitudes or for use in a pressure type oxygen helmet, and at altitudes where the use of an oxygen helmet is required. It is not waterproof. The microphone is intended to provide communication under the noise conditions encountered in military aircraft.

The microphone assembly shall be designed in accordance with MIL-PRF-26542 and tested in accordance with the tests listed in table II.

Marking: The microphone element shall be marked with the same PIN (i.e., M-87/AIC). The combined microphone-cable assemblies PIN (i.e., M26542/2-01, M26542/2-02, M26542/2-03, and M26542/2-04) shall appear on the packaging for that assembly, in accordance with MIL-STD-129 and as shown in table I.

Part or Identifying Number (PIN): For the assemblies, the PIN consists of the letter M, the basic number of the specification sheet, and a dash number compiled from the code, as outlined in table I.

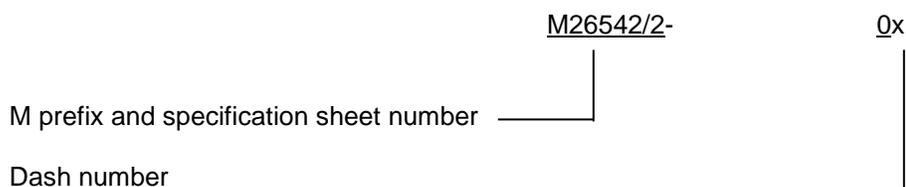


TABLE I. PIN designations.

PIN	Characteristics
M-87/AIC	Supplied with microphone element only
M26542/2-01	Supplied with microphone element, boom, and cable assembly M22442/36-3 (13.00 in) <sup>1/</sup>
M26542/2-02	Supplied with microphone element, boom, and cable assembly M22442/36-4 (16.25 in).
M26542/2-03	Supplied with microphone element, boom, and cable assembly M22442/36-6 (23.00 in).
M26542/2-04	Supplied with microphone element, boom, and cable assembly M22442/36-1 (6.25 in).

<sup>1/</sup> See MIL-DTL-22442/36

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TABLE II. Parameter applicability.

Inspection	Qualification	Group A	Group B	Group C
Group I				
Visual and mechanical inspection	X	X		
Sensitivity at ground level	X	X		
Sensitivity at altitude	X			
Frequency response at ground level	X	X		
Frequency response at altitude	X			
Impedance	X	X		
Noise cancellation characteristic	N/A			
Effect of external magnetic field	X			
Stray magnetic field	X			
Linearity	X			
Talk-out	X	X		
Dielectric withstanding voltage	X			
Signal-to-noise	X		X	
Distortion	X		X	
Interchangeability	X		X	
Group II				
Thermal shock	X			X
Humidity	X			X
Drop	X			X
Pressure equalization	X			X
Explosive decompression	X			X
Salt fog	X			X
Group III				
Vibration	X			X
Bounce	X			X
Altitude	X			X
Moisture barrier seal	X			X
Immersion	N/A			
Group IV				
Fungus	X			
Group V				
Gun blast	N/A			
Boom finish	X		X	
Boom operating force	X		X	

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Amendment notations: The margins of this specification sheet are marked with vertical lines to indicate modifications generated by this amendment. 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.

Referenced documents: In addition to MIL-PRF-26542, this document references the following:

MIL-STD-129  
USAF Drawing 57B12662  
USAF Drawing 67B1854  
MIL-DTL-22442  
MIL-DTL-22442/36

CONCLUDING MATERIAL

Custodians:

Army - CR  
Navy - EC  
Air Force -85  
DLA - CC

Preparing activity:  
DLA - CC

(Project 5965-2013-019)

Review activities:

Army - AR, AT, AV, CR4  
Navy - AS, OS  
Air Force - 99

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 <https://assist.dla.mil>.