

INCH-POUND  
MIL-PRF-26542/9C  
w/AMENDMENT 1  
2 December 2013  
SUPERSEDING  
MIL-PRF-26542/9C  
16 July 2002

PERFORMANCE SPECIFICATION SHEET

MICROPHONE ASSEMBLY AND MICROPHONE, DYNAMIC,  
M26542/9-01 AND M-133/U

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

The requirements for acquiring the products described herein shall consist of this specification sheet and  
MIL-PRF-26542.

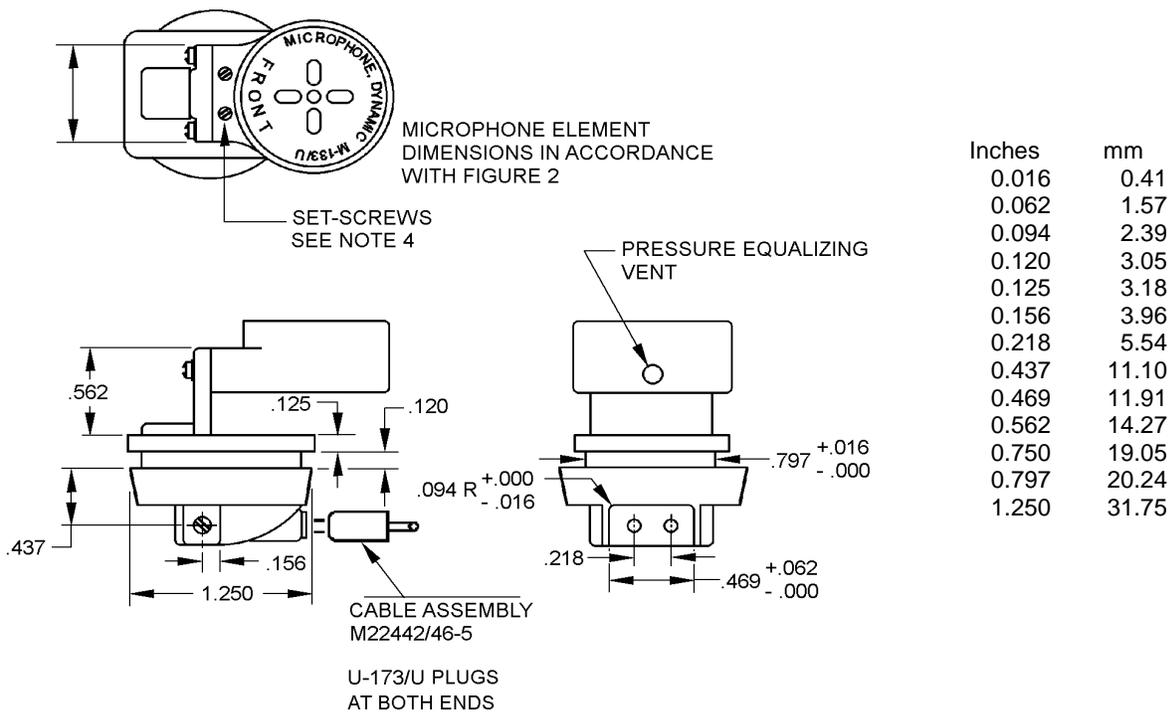


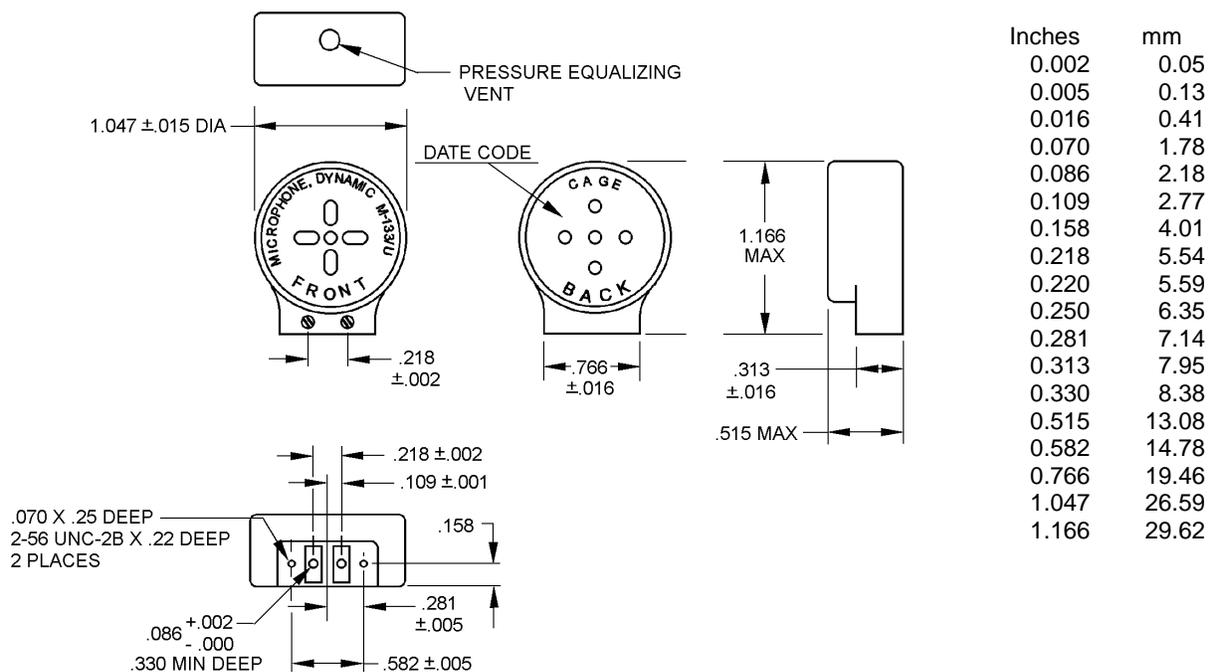
FIGURE 1. Microphone assembly, M26542/9-01.

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NOTES:

1. Dimensions are in inches. Tolerance is  $\pm .015$  inches (0.38 mm), unless otherwise specified.
2. Quantity and configuration of sound apertures is optional.
3. The microphone element shall be marked with the Part or Identifying Number (PIN) M-133/U. Placement on surface shown is optional.
4. Set-screws shall secure the microphone element to the bracket securely, of type slotted for consistency with established US Army field-repair procedures and tooling, and shall be recessed.
5. Metric equivalents are given for information only and are based upon 1 inch = 25.4 mm.

FIGURE 1. Microphone assembly, M26542/9-01 – Continued.

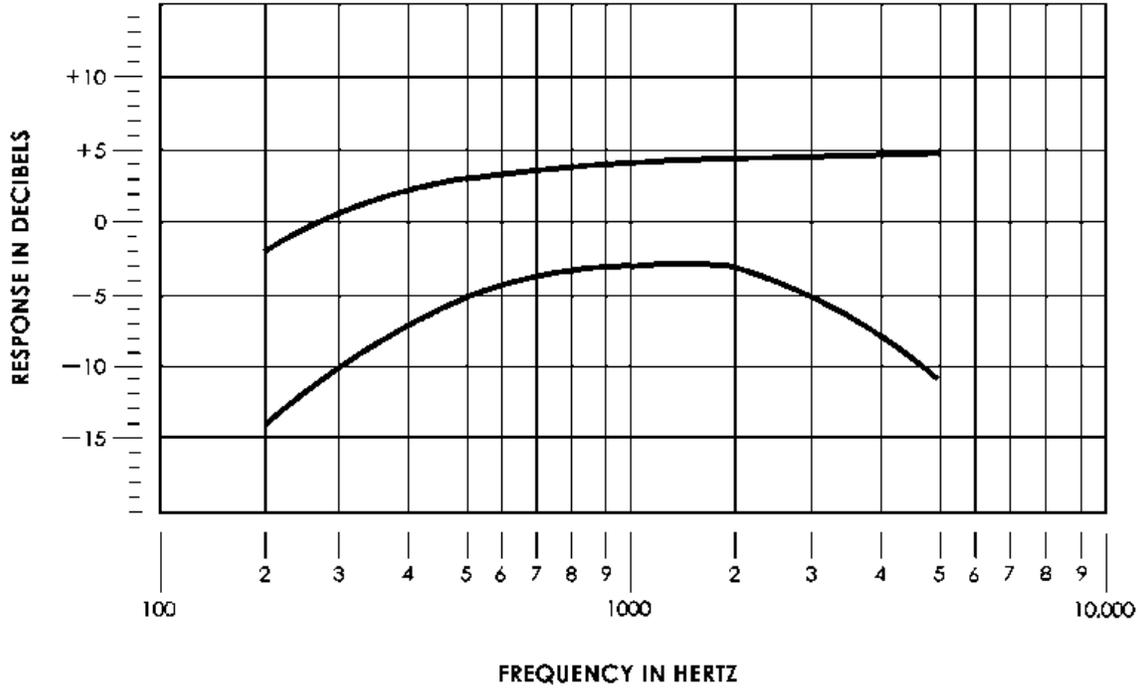


NOTES:

1. Dimensions are in inches. Unless otherwise specified, the tolerance is  $\pm 0.015$  inch (0.38 mm).
2. The microphone element shall be marked with the same PIN (i.e., M-133/U). Placement on surface shown is optional.
3. Set-screws shall hold the part securely to the bracket, shall be slotted (for interchangeability of spares among manufacturers and tri-Service applications), and recessed.
4. Sound aperture location and configuration are optional, provided that frequency response, environmental and performance requirements are met as specified.
5. Metric equivalents are given for information only and are based upon 1 inch = 25.4 mm.

FIGURE 2. Microphone element M-133/U.

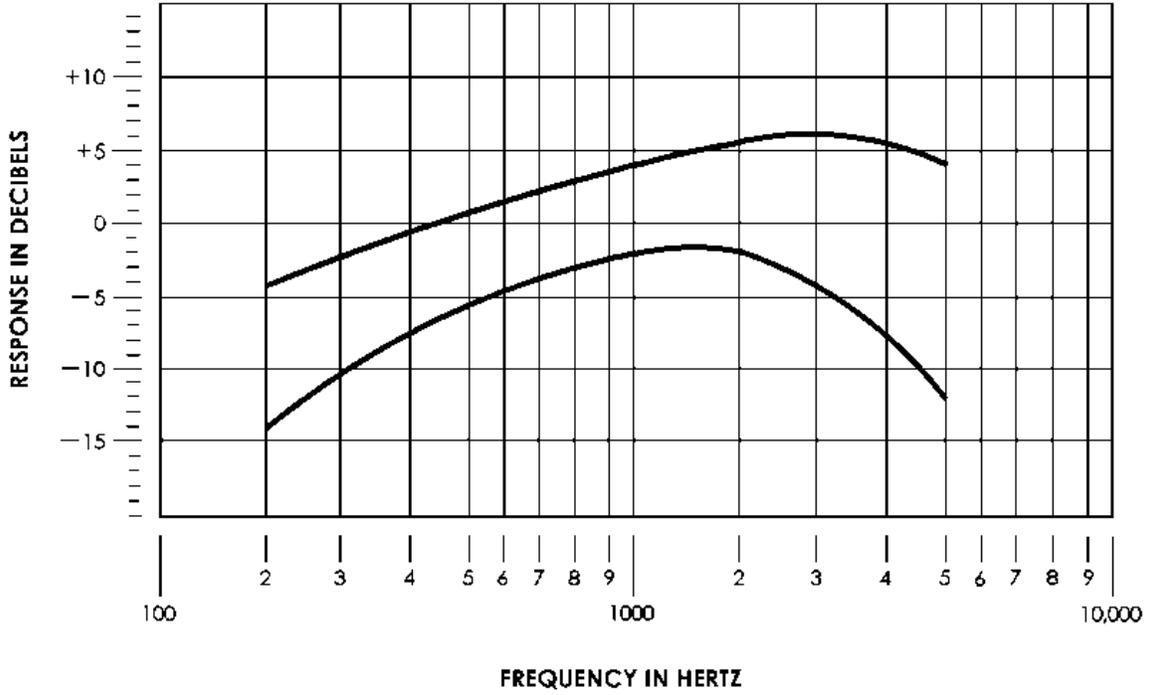
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Frequency points (Hz)	200	1,000	5,000
Upper limits (dB)	-2.0	+4.0	+5.0
Lower limits (dB)	-14.0	-3.0	-11.0

FIGURE 3. Frequency response envelope for microphone element M-133/U at ground level.

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Frequency points (Hz)	200	1,000	5,000
Upper limits (dB)	-4.0	+4.0	+4.0
Lower limits(dB)	-14.0	-2.0	-12.0

FIGURE 4. Frequency response for microphone element M-133/U at 25,000 feet.

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REQUIREMENTS:

Assembly:

Microphone assembly: Shall be in accordance with figure 1, as specified by the PIN (see table I).

Component parts:

Microphone element: Shall be in accordance with figure 2, as specified by the PIN (see table I).

Bracket: Shall be in accordance with figure 1, for interface to the dimensions of the gas mask assembly. Two (2) screws securing the bracket to the microphone element, with Air Force-Navy Aeronautical Standard type AN500D-6 (3/8 inch) 2-56 thread, shall be supplied for interchangeability. The bracket shall also be supplied with suitable hardware (such as lock washers), to ensure that the microphone element does not become disengaged during normal use.

Cable assembly: Shall be PIN M22442/36-5, for interchangeability, and to meet the environmental requirements of this specification and the end-item-assembly.

Plug assembly: U-173/U, in accordance with USAF Drawing 57B12662, or electrically and mechanically compatible part meeting the environmental requirements of MIL-PRF-26542.

Performance:

Sensitivity at ground level: 36.90 dB - 42.92 dB (re 1  $\mu$ V) or 69.98  $\mu$ V – 139.63  $\mu$ V with a Sound Pressure Level input of 2.8 Pascal's (28 dynes/cm<sup>2</sup>) at 1 kHz.

Sensitivity at a simulated altitude: Sensitivity shall be within 8 dB of the ground level sensitivity when tested at 25,000 feet.

Frequency response at ground level and at 25,000 feet: The envelope shall be as shown on figures 3 and 4. The frequency response range of the element shall be 200 Hz to 5,000 Hz.

The response curves generated shall be on the same scale as shown on figures 3 and 4. The response curve shall not exceed the upper and lower limit curves of the stationary Frequency Response Envelope, within the frequency ranges identified in the charts (see figures 3 and 4).

Impedance: 4.0 ohms to 6.0 ohms.

Resistive load: 5.0 ohms.

Intended use:

Microphone element M-133/U 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 primarily in US Army applications requiring the M45 or the M40A1 series of gas masks, to provide communication under the noise conditions encountered in military aircraft.

TABLE I. PIN designations.

PIN	Characteristics
M26542/9-01 Microphone Assembly 1/	Supplied with the bracket and cable assembly M22442/36-5 (19.50 in), as shown on figure 1.
M-133/U Microphone Element	Supplied with microphone element only. (figure 2)

<sup>1/</sup> The microphone assembly shall be designed, manufactured, and tested in accordance with MIL-PRF-26542, as listed in table II.

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TABLE II. Parameter applicability.

Inspection	Qualification	Group "A"	Group "B"	Group "C"
<u>Group I</u>				
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	N/A			
Dielectric withstanding voltage	X			
Signal-to-noise	X		X	
Distortion	X		X	
Interchangeability	N/A			
<u>Group II</u>				
Thermal shock	X			X
Humidity	X			X
Drop	X			X
Pressure equalization	X			X
Explosive decompression	N/A			
Salt fog	N/A			
<u>Group III</u>				
Vibration	X			X
Bounce	X			X
Altitude	X			X
Moisture barrier seal	N/A			
Immersion	X			X
<u>Group IV</u>				
Fungus	X			
<u>Group V</u>				
Gun blast	X			

Amendment notations: The margins of this specification 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-DTL-22442/36
- MIL-STD-129
- Air Force-Navy Aeronautical Standard type AN500D-6
- USAF Drawing 57B12662

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CONCLUDING MATERIAL

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

Preparing activity:  
DLA - CC  
  
(Project 5965-2013-023)

Review activities:  
Army - AT, AV, CR4, EA  
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>.