

NASA TECH BRIEF

John F. Kennedy Space Center



NASA Tech Briefs announce new technology derived from the U.S. space program. They are issued to encourage commercial application. Tech Briefs are available on a subscription basis from the National Technical Information Service, Springfield, Virginia 22151. Requests for individual copies or questions relating to the Tech Brief program may be directed to the Technology Utilization Office, NASA, Code KT, Washington, D.C. 20546.

Portable Headset Microphone Checker

A simple and reliable test system gives a go/no-go indication of the output level of headset microphones. The portable system has its own internal-battery power supply and can be used in the field or in the laboratory with a wide variety of headset types.

A commercially-available sound-level generator provides a repeatable constant-level acoustic signal. This signal is coupled to the microphone under test through a specially-designed test adapter. The electrical output of the microphone is connected to a voltmeter which indicates visually whether the output level is within tolerances.

The sound-level generator has a built-in battery-condition meter which allows the calibrator to be checked before each use. The headset microphone is attached to the generator by the adapter. The adapter (Figure 1) is made of heavy aluminum stock, and separate adapters have been designed for different styles of microphones to insure proper clamping and positioning. This feature helps to insure the repeatability of the calibrations.

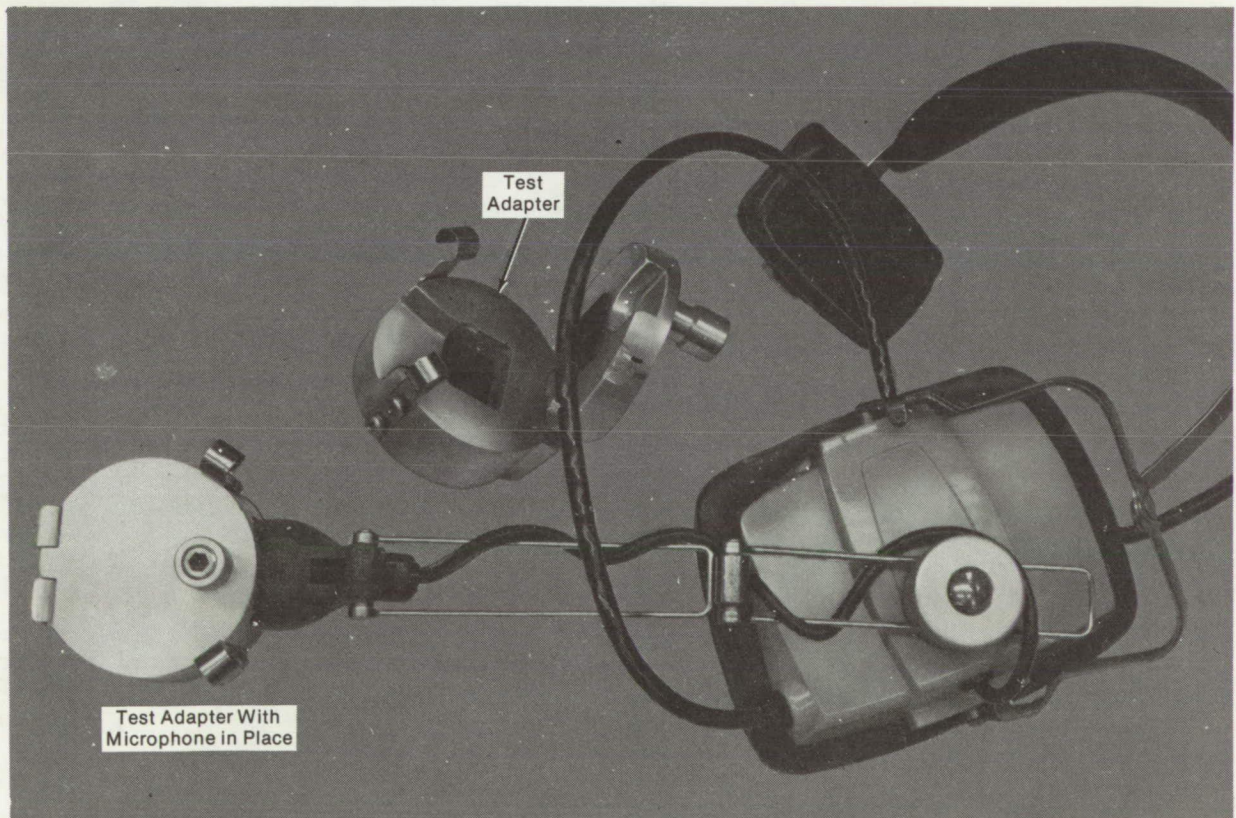


Figure 1. Test Adapter and Sound-Level Generator

(continued overleaf)

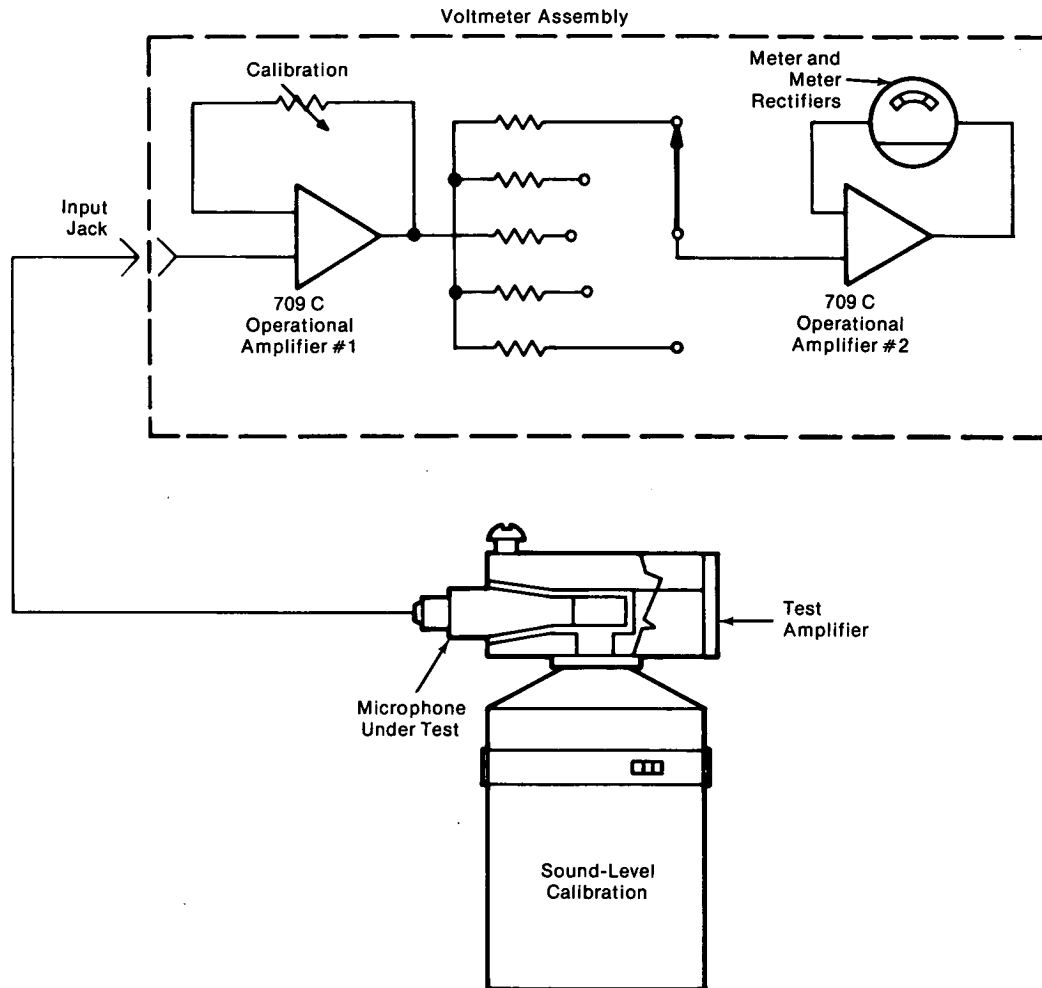


Figure 2. Microphone Output-Level Calibration System

Figure 2 is a schematic of the system; the electrical output of the microphone is plugged into the input jack of the voltmeter assembly. Two operational amplifiers increase the microphone signal to a level sufficient for the meter/indicator. Amplifier No. 1 has a variable resistor in its feedback circuit for calibrating the voltmeter assembly with a known reference source. The switch is used to select a voltmeter sensitivity appropriate to the particular microphone under test.

Amplifier No. 2 provides some gain, but serves primarily as a meter-compensation circuit for the effects of nonlinearities in the meter rectifiers. The operator need not interpolate any numerical data, since the face of the meter is clearly marked with the range of acceptable values (e.g., $\pm 4\text{dB}$).

Note:

Requests for further information may be directed to:

Technology Utilization Officer
 Kennedy Space Center
 Code AA-PAT
 Kennedy Space Center, Florida 32899
 Reference: TSP75-10254

Patent status:

NASA has decided not to apply for a patent.

Source: J. Davenport, J. A. Foster,
 and W. R. Langley
 (KSC-10699)