

Bystander Sound Level Measurement Procedure for Small Engine Powered Equipment – SAE J1175

SAE Recommended Practice
Approved October 1977

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BYSTANDER SOUND LEVEL MEASUREMENT PROCEDURE FOR SMALL ENGINE POWERED EQUIPMENT—SAE J1175

SAE Recommended Practice

Report of Specialized Vehicle and Equipment Sound Level Committee approved October 1977. Rationale statement available.

1. Scope—This SAE Recommended Practice establishes the instrumentation and procedure to be used in measuring the bystander sound level of engine powered equipment under 15 kW (20 bhp) typical of their normal operation. It is intended to include equipment such as lawn mowers, snow blowers, and tillers. It is not intended to include equipment designed primarily for operation on highways or within factories and buildings, or vehicles such as motorcycles, snowmobiles, and pleasure motorboats that are covered by other SAE Standards or Recommended Practices.

This procedure does not cover chain saws.

This SAE Recommended Practice may also be used when measuring the bystander sound level on similar equipment powered by electricity or other power sources.

2. Instrumentation—The following instrumentation shall be used for the measurement required:

2.1 A precision sound level meter which meets the Type 1 requirements of American National Standard, Specification for Sound Level Meters, S1.4-1971.

2.2 A sound level calibrator (see paragraph 4.2.3).

2.3 The microphone shall be used with a foam windscreen. The windscreen shall not affect the overall reading by more than ± 0.5 dB(A) for the sound source that is being measured (see paragraph 4.3).

2.4 An anemometer or other device for measurement of ambient wind speed.

2.5 An engine speed indicator (accuracy $\pm 1\%$ of full range).

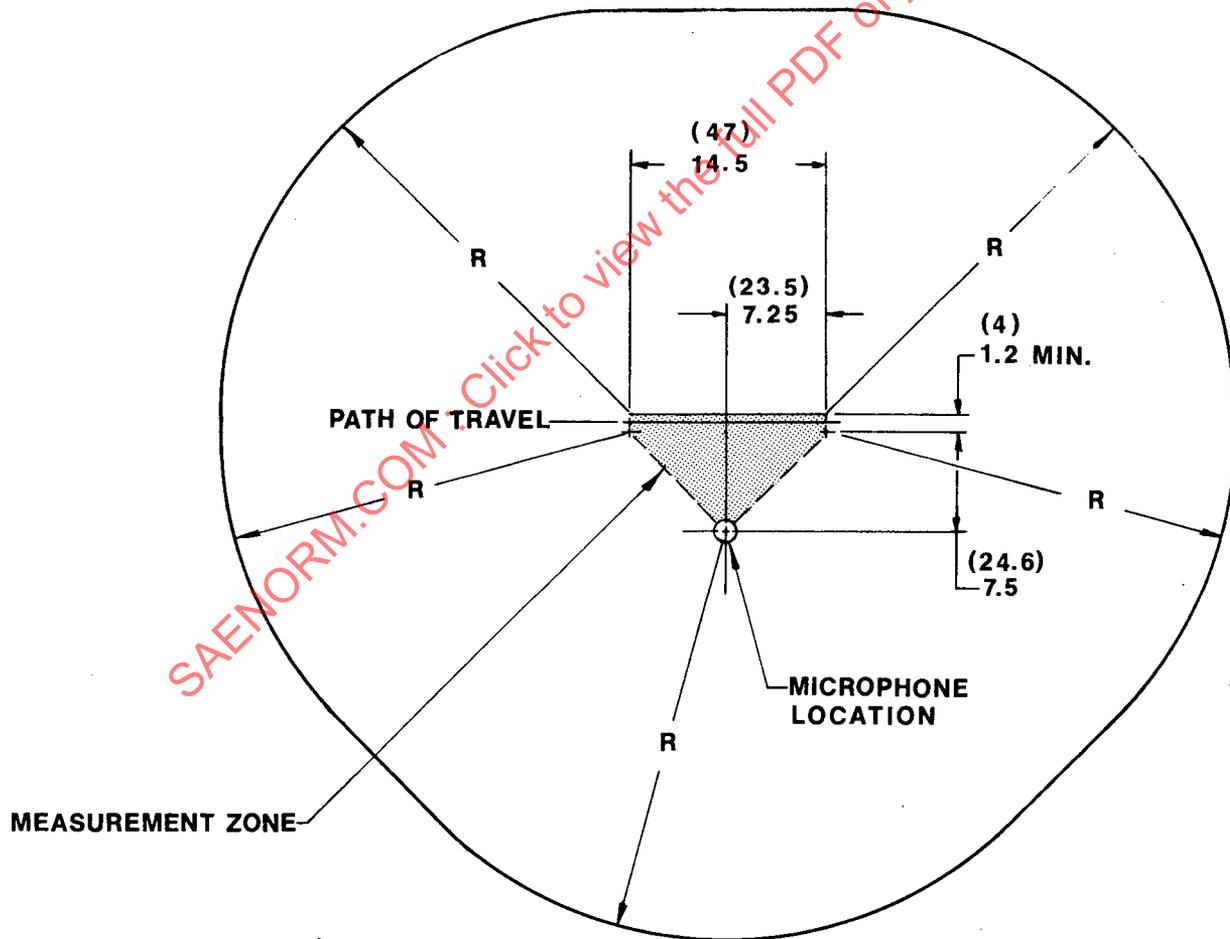
2.6 A thermometer for measurement of ambient temperature.

3. Procedure

3.1 Test Site—The test area shall consist of a flat open space free from the effects of any large reflecting surfaces such as signboards, buildings, or hillsides located for at least 30 m (98.4 ft) from the measurement zone (see Fig. 1).

3.1.1 The minimum dimensions of the measurement zone are defined as a path of travel 1.2 m (4 ft) wide by 14.5 m (47 ft) long plus an adjacent triangular area having a base along the edge of the path of travel and the apex 7.5 m (24.6 ft) from the midpoint of the base.

3.1.2 The entire surface of the measurement zone shall be synthetic surface mounted to 19 mm (3/4 in) exterior plywood or 13 mm (1/2 in) marine plywood with a suitable adhesive.



NOTE: DIMENSIONS ARE m (ft.)

R = 30 (98.4) MINIMUM

FIG. 1—TEST SITE

The ϕ symbol is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. If the symbol is next to the report title, it indicates a complete revision of the report.