SOCIETY OF AUTOMOTIVE ENGINEERS, INC. • TWO PENNSYLVANIA PLAZA • NEW YORK, NEW YORK 10001

LAND SEA AIR SPACE

TECHNICAL REPORT J366



# EXTERIOR SOUND LEVEL FOR HEAVY TRUCKS AND BUSES—SAE J366

**SAE Recommended Practice**

Report of Vehicle Sound Level Committee approved July 1969.

*1. Introduction*—This SAE Recommended Practice establishes the maximum exterior sound level for highway motor trucks, truck tractors, and buses, and describes the test procedure, environment, and instrumentation for determining the maximum sound level.

*2. Sound Level Limit*—The sound level produced by trucks and buses over 6000 lb gvw shall not exceed 88 db on an A-weighted network at 50 ft when measured in accordance with the procedure described herein (see paragraph 6.2).

*3. Instrumentation*—The following instrumentation shall be used, where applicable, for the measurement required:

3.1 A sound level meter which meets the requirements of International Electrotechnical Commission Publication 179, "Precision Sound Level Meters."

Alternatively, a microphone/magnetic tape recorder, indicating meter system whose overall response is equivalent to the above may be used.

3.2 A sound level calibrator (see paragraph 6.5).

3.3 A calibrated windscreen (see paragraph 6.4).

3.4 An engine-speed tachometer (see paragraph 5.1.1).

*4. Test Site*

4.1 A suitable test site shall consist of a level open space free of large reflecting surfaces, such as parked vehicles, signboards, buildings, or hillsides, located with 100 ft of either the vehicle path or the microphone. See Fig. 1.

4.2 The microphone shall be located 50 ft from the centerline of the vehicle path and 4 ft above the ground plane. The normal to the vehicle path from the microphone shall establish the microphone point on the vehicle path.

4.3 An acceleration point shall be established on the vehicle path 50 ft before the microphone point.

4.4 An end point shall be established on the vehicle path 100 ft from the acceleration point and 50 ft from the microphone point.

4.5 The end zone is the last 40 ft of vehicle path prior to the end point.

4.6 The measurement area shall be the triangular area formed by the acceleration point, the end point, and the microphone location.

4.7 The reference point on the vehicle, to indicate when the vehicle is at any of the points on the vehicle path, shall be the front of the vehicle except as follows:

4.7.1 If the horizontal distance from the front of the vehicle to the exhaust outlet is more than 200 in, tests shall be run using both the front and rear of the vehicle as reference points.

4.7.2 If the engine is located rearward of the center of the chassis, the rear of the vehicle shall be used as the reference point.

4.8 During measurement, the surface of the ground within the measurement area shall be free from powdery snow, long grass, loose soil, or ashes.

4.9 Because bystanders have an appreciable influence on meter response when they are in the vicinity of the vehicle or microphone, not more than one person, other than the observer reading the meter, shall be within 50 ft of the vehicle path or instrument, and that person shall be directly behind the observer reading the meter, on a line through the microphone and the observer.

4.10 The ambient sound level (including wind effects) coming from sources other than the vehicle being measured shall be at least 10 db lower than the level of the tested vehicle.

4.11 The vehicle path shall be relatively smooth, dry concrete or asphalt, free of extraneous material such as gravel.

*5. Procedure*

5.1 **Vehicle Operation**—Full throttle acceleration and closed throttle deceleration tests are to be used. A beginning engine speed and proper gear ratio must be determined for use during measurements.

5.1.1 Select the highest rear axle and/or transmission gear ("highest



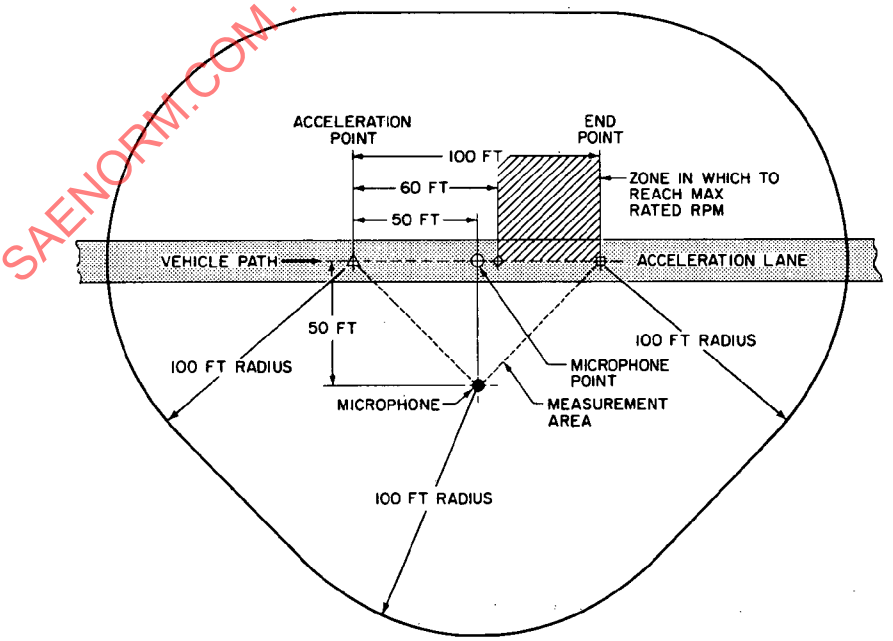


FIG. 1—MINIMUM UNIDIRECTIONAL TEST SITE (SEE PARAGRAPH 4.1)