



SURFACE VEHICLE RECOMMENDED PRACTICE

J1970™

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Superseding J1970 FEB2018

(R) Shoreline Sound Level Measurement Procedure for Recreational Motorboats

RATIONALE

SAE J1970 was originally developed for the specific purpose of measuring boat noise at the shoreline of recreational boating areas. Shoreline noise from recreational boats has now become a major public health and safety issue as a result of large “offshore-style” boats that are now being used on small inland lakes and rivers. The original version of SAE J1970 did not adequately define the applicable measurement restrictions (Section 4) and, as a result, the exact meaning of “shoreline noise” was often restricted to the point of rendering the procedure unusable in perhaps a majority of shoreline situations. This revision allows measurements to be made, for instance, at virtually any distance inland from the shoreline, thereby facilitating measurements to be performed under conditions where, for example, wave noise at the water’s edge produces unacceptably high ambient noise levels thereby rendering the original version to be unusable. Subsequent modifications regarding the required vertical distance from the waterline to the microphone have been included in the revised version thereby allowing sound level measurements to be performed that are much more realistic in terms of exposure of shoreline residents to boat noise. For practical reasons some restrictions such as the one regarding “immediate” equipment calibration have been eliminated to avoid conflicts regarding a specified time limit.

SAE J1970 has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

This SAE Recommended Practice establishes the procedure for measuring the sound level of recreational motorboats in the vicinity of a shore bordering any recreational boating area during which time a boat is operating under conditions other than stationary mode operation. It is intended as a guide toward standard practice and is subject to change to keep pace with experience and technical advances.

1.1 Purpose

This document specifies guidelines for sound level measurements made from the shoreline of recreational boating areas and is intended for recreational motorboats only.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

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Documents

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2.1.1 IEC Publications

Available from International Electrotechnical Commission, 3, rue de Varembé, P.O. Box 131, CH-1211, Geneva 20, Switzerland.

IEC 60942 Electroacoustics - Sound calibrators

IEC 61672 Electroacoustics - Sound level meters

2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE J34 Exterior Sound Level Measurement Procedure for Pleasure Motorboats

SAE J2005 Stationary Sound Level Measurement Procedure for Recreational Motorboats

2.2.2 ASA Publications

Available from Acoustical Society of America, <http://asa.aip.org> or from ANSI, 25 West 43rd Street, New York, NY 10036-8002, <http://www.ansi.org>.

ANSI S1.1 Acoustical Terminology

ANSI S1.13 Measurement of Sound Pressure Levels in Air

3. INSTRUMENTATION

The following instrumentation shall be used for the measurement required.

3.1 A sound level meter which meets IEC Standard 61672-1 Type 1 or Type 2 specification for Sound Level Meters.

3.2 A microphone windscreen that does not affect the overall reading by more than ± 0.5 dBA.

3.2.1 A sound calibrator which meets IEC Standard 60942 specification for Sound Calibrators.

4. PROCEDURE

4.1 Measurement Site

A suitable site is anywhere inland or no more than 6 m (20 ft) from the water's edge out into a body of navigable water

4.2 Boat Operation

4.2.1 The applicable reading does not require the measured boat to be at any specific distance from the shoreline or microphone.