

## Chapter NR 6

## SNOWMOBILE NOISE

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**NR 6.01 Definitions.** (1) "Snowmobile" as used in this chapter is defined in section 340.01 (58a), Wis. Stats.

(2) "Department" means the department of natural resources.

(3) "Noise" means total noise emission from the entire snowmobile.

**History:** Cr. Register, March, 1973, No. 207, eff. 4-1-73.

**NR 6.02 Department approval.** No person shall manufacture, after July 1, 1972 and offer for sale or sell snowmobiles within the state of Wisconsin, without first obtaining department approval. The procedures for obtaining department approval are:

(1) The applicant shall submit in letter form to the Wisconsin Department of Natural Resources, Box 450, Madison, Wisconsin 53701, marked to the attention of the Snowmobile Safety Section, the following information:

(a) The description and model number of the snowmobile to be approved;

(b) A copy of the manufacturer's or independent laboratory's test report; and

(c) A certificate certifying that the device has been tested in accordance with Wis. Adm. Code section 6.05 and found acceptable.

(2) The applicant shall give a minimum of 2 weeks advance written notice to the department of all dates of certification tests in order that a department representative may be present when the certification test is conducted.

(3) The certification and test reporting procedure followed shall be approved by the department, provided,

(a) Such approval is granted upon receipt of an acceptable certification from a manufacturer or an independent testing laboratory currently engaged in the examination, testing and evaluation of noise control devices and which maintains or employs adequate staff and facilities to perform such function.

(b) The certification and test report states that the equipment has been tested in accordance with provisions of section NR 6.05.

(c) The certification shall be accompanied by a full and complete test report setting forth the specifications and the general conditions under which the test was conducted.

(4) Upon receipt of a copy of an acceptable test and certification the department shall by letter notify the applicant that the snowmobile has been approved, and that it may legally be manufactured, imported or offered for sale in the state of Wisconsin.

**History:** Cr. Register, March, 1973, No. 207, eff. 4-1-73.

Register, August, 1973, No. 212

**NR 6.03 Modification.** No manufacturer shall modify a snowmobile on which an approval has been issued so as to change the noise emission level without resubmission of the modified snowmobile for approval in the same manner as required for the original snowmobile.

**History:** Cr. Register, March, 1973, No. 207, eff. 4-1-73.

**NR 6.04 Inspection.** The department may in order to insure compliance with the requirements set forth under section 350.09, Wis. Stats. and Wis. Adm. Code section NR 6.05 inspect snowmobile manufacturing plants and any snowmobiles sold in the state of Wisconsin by commercial dealers.

**History:** Cr. Register, March, 1973, No. 207, eff. 4-1-73.

**NR 6.05 Testing criteria.** Testing criteria: to be used after effective date of these rules.

(1) **SOUND LEVEL LIMIT.** (a) The total vehicle noise produced by every snowmobile manufactured after July 1, 1975, and offered for sale or sold in Wisconsin, shall not exceed 78 dB on an A-weighted network at 50 feet when measured in accordance with the procedures described herein.

(b) The total vehicle noise produced by every snowmobile manufactured after July 1, 1972 and offered for sale or sold in Wisconsin, shall not exceed 82 dB on an A-weighted network at 50 feet when measured in accordance with the procedures described herein.

(2) **INSTRUMENTATION.** The following instrumentation shall be used where applicable for the measurement required:

(a) A sound level meter which meets the requirement of the International Electronic Technical Commission publication 179, *Precision Sound Level Meters and American National Standards S1.4-1971 General Purpose Sound Level Meters*. As an alternative to making direct measurements using a sound level meter, a microphone or sound level meter may be used with a magnetic tape recorder and/or a graphic level recorder or indicating meter.

(b) A sound level calibrator.

(c) A calibrated engine-speed tachometer.

(3) **TEST SITE.** (a) A suitable test site is a level open space free of large reflecting surfaces such as parked vehicles, sign boards, buildings or hillsides located within 100 feet of either the vehicle path or the microphone (see Fig. 1).

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

2. A starting point shall be established on the vehicle path.

3. An end point shall be established on the vehicle path 50 feet beyond the microphone point.

4. The measurement area shall be the triangular area formed by the maximum engine rpm point, the end point and the microphone location.

5. During measurement, the surface of the ground within the measurement area, including the vehicle path, shall be covered with vegetation not exceeding 3 inches in height.

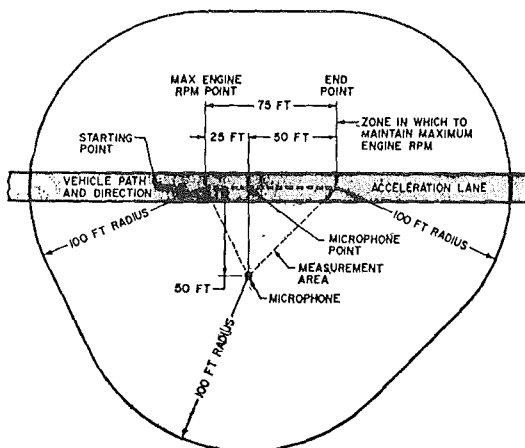


Fig. 1—Minimum Unidirectional Test Site.

(b) 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.

**Note:** Copies of the American National Standard Institute, Inc., publication No. S 1.4—1971 entitled "American National Standard Specifications for Sound Level Meters" are available for inspection in the office of the Department of Natural Resources, Pyare Square Building, and Secretary of State and Revisor of Statutes, Capitol, Madison, Wisconsin, and may be obtained for personal use from the American National Standards Institute, Inc., 1430 Broadway, New York, New York 10018.

**Note:** Copies of the International Electrotechnical Commission publication No. 179, 1965 entitled "Precision Sound Level Meters" are available for inspection in the office of the Department of Natural Resources, Pyare Square Building, Secretary of State and Revisor of Statutes, Capitol, Madison, Wisconsin and may be obtained for personal use from Bureau Central de la Commission Electrotechnique Internationale, 1, rue de Varembe, Geneve, Suisse.

(c) Because bystanders may 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 and the test driver, shall be within 50 feet of the vehicle path or microphone, and that person shall be directly behind the observer reading the meter, on a line through the microphone and the observer.

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

(4) PROCEDURE. (a) Vehicle Operation. Full throttle acceleration test as specified below shall be the basis for establishing maximum noise capability of the snowmobile. A starting point and maximum engine speed point must be determined for use during measurements. The starting point for the vehicle shall be established by carrying out a reverse direction procedure as follows:

1. From a standing start at the microphone point rapidly establish wide-open throttle and allow the vehicle to accelerate until maximum engine speed is reached. The starting point shall then be 25 feet beyond this point.

2. For the test, the vehicle shall be accelerated from a standing start by rapidly establishing wide-open throttle at the starting point. The wide-open throttle shall be maintained until the end point is reached.

(5) MEASUREMENTS. (a) The meter shall be set for "fast" response and the A-weighted network. The meter shall be observed while the vehicle is in motion between the starting point and the end point. The applicable reading shall be the highest sound level indicated for the run, ignoring unrelated peaks due to extraneous ambient noises.

(b) At least 4 measurements shall be made of each side of the vehicle. All values shall be recorded.

(c) Observation shall be repeated until the number of readings equals or exceeds the range in decibels of the A-weighted sound levels obtained.

(d) The sound level for each side of the vehicle shall be the average of all such readings. The sound level reported shall be that for the side of the vehicle with the highest readings.

(6) GENERAL REQUIREMENTS. (a) It is required that technically qualified personnel select equipment and that tests be conducted only by persons trained in the current techniques of sound measurement.

(b) Since the operation of recording and measuring equipment is likely to be affected by low temperatures, where measurements are undertaken at temperatures below  $-10^{\circ}\text{C}$  ( $13^{\circ}\text{F}$ ) special precautions must be taken to ensure the reliability of sound level meter readings and/or records.

(c) An additional 2 dB allowance over the sound level limit is allowed to provide for variations in test site, temperature gradients, wind velocity gradients, test equipment, and inherent differences in nominally identical vehicles.

(d) Instrument manufacturer's specifications for orientation of the microphone relative to the source of sound and the location of the observer relative to the meter shall be adhered to.

(e) Measurements shall be made only when wind velocity is below 12 mph.

(f) Instrument manufacturers recommended calibration practice of the instruments shall be made at appropriate times. Field calibration shall be made immediately before and after each complete test. Either an external or internal calibration means is acceptable for field use, provided that external calibration is accomplished immediately before and after field use. An acoustical coupler type of calibrator is recommended for field calibration in low temperature conditions.

**History:** Cr. Register, March, 1973, No. 207, eff. 4-1-73; cr. (1) (b) Register, August, 1973, No. 212, eff. 9-1-73.