SNOWMOBILE SAFETY AND CERTIFICATION PROGRAM

- SSCC/11 Supplement -

Detailed Standards and Testing Specifications and Procedures

Sponsored by

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(Revised 22 March 2018)

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INTRODUCTION

The recreation and sport of snowmobiling goes back several decades. However, the snowmobile manufacturing industry did not organize itself until 1965 when it formed the International Snowmobile Industry Association (ISIA). The ISIA had been the focal point for industry activities in all facets of the recreation of snowmobiling until it evolved into the International Snowmobile Manufacturers Association (ISMA) in 1995. ISMA represents manufacturers of snowmobiles in Canada, the United States, Finland and Japan.

As the use of snowmobiles increased, it became apparent that there existed a need for safety programs within the snowmobile industry and within the community of snowmobilers. In April 1970, the Society of Automotive Engineers (SAE) was encouraged by the snowmobile manufacturers to form a subcommittee to develop recommended practices to guide all snowmobile manufacturers in the production of safe snowmobiles. In 1971 and 1972, these recommended practices, developed through the SAE and from other sources, began to be assembled by the Safety Engineer Committee of ISIA into a single usable document. This document was finally published by the ISIA in May 1973 as the *Manual of Recommended Standards and Engineering Practices for Snowmobiles*. At the same time, ISIA published its *Recommendations Regarding Snowmobile Use Regulations* which addressed itself to the regulation of snowmobiles in use.

In August 1973, the International Snowmobile Council (ISC) was formed in Winnipeg, Manitoba, Canada by a founding group of associations representing snowmobilers at the provincial and state levels in Canada and the U.S., and representing snowmobile dealers, snowmobile distributors, and snowmobile manufacturers. The ISC is a federation of these associations which concerns itself with recommending solutions to problems confronting the individual snowmobiler, his club, and the snowmobile industry.

The *ISIA Manual of Recommended Standards and Engineering Practices for Snowmobiles* was submitted to ISC members for their review in August 1973 and again in May 1974.

In June 1973, this ISIA manual was submitted to the Canadian Federal Department of Transport and to the U.S. Consumer Product Safety Commission and the U.S. Bureau of Outdoor Recreation for their review.

In furtherance of its commitment to safe snowmobiling, the ISIA was instrumental in the formation of the Snowmobile Safety and Certification Committee, Inc. (SSCC) in May 1974. The ISMA now works with the SSCC.

The Snowmobile Safety and Certification Committee, Inc. (SSCC) is a nonprofit membership association which is concerned with one major area of activity: snowmobiles and how they relate to product safety.

This document is concerned with the development and implementation of minimum voluntary product safety standards for snowmobile manufacture and certification. The SSCC approved its first set of standards on February 1, 1975, which were designated SSCC/1. The second through the tenth editions of the document which incorporated changes were designated SSCC/2, …, SSCC/9 and SSCC/10 respectively. Since the eleventh edition of this document, only the revision date reflects the current updates. The provisions of SSCC/11 are set forth in this document.

The requirements specified in this document apply mostly to recreational snowmobiles. All snowmobiles of participating manufacturers which are produced will comply with the requirements of SSCC/11.

Under the certification program, an independent laboratory has been employed by the Snowmobile Safety and Certification Committee, Inc. to certify compliance by participating manufacturers. Verification of compliance is thus achieved by a rigorous system of evaluation of initial and continued compliance with SSCC/11.

Under the program, all snowmobile models determined to be in compliance with SSCC/11 will bear a permanent certification label as shown in Figure 1.

Figure 1 – SSCC Certification Label.

SSCC/11 is an outgrowth of the earlier work done by the snowmobile manufacturing industry to develop minimum standards for the manufacture of snowmobiles. In May 1973, and outlined above, the International Snowmobile Industry Association approved a document entitled *Manual of Recommended Standards and Engineering Practices for Snowmobiles*. SSCC/11 incorporates the portion of this document that pertains to snowmobile safety with changes necessary to establish safety standards which may be enforced through third party, independent certification. It is important that it be noted that SSCC/11 constitutes minimum standards for snowmobiles and components.

The SSCC actively solicits and encourages the submission of recommendations for changes, deletions, additions to and clarification in interpretations of SSCC/11.

SCOPE

The standard sets forth safety performance requirements and test procedures for the sub-assemblies and assemblies of snowmobiles.

A Class I, Competitive snowmobile, as defined in the Definition section, may be exempted by its Manufacturer from all the requirements of this document.

REFERENCES

The following publications form a part of this specification to the extent specified herein.

The latest issue of SAE publications shall become effective upon publication. A maximum of eighteen (18) months shall be given to Manufacturers prior to the incorporation of any new or revised publications. Except upon a specific written request of a Manufacturer to the Board of Directors within thirty (30) days after publication, this time may be extended by the Board of Directors up to a period not to exceed twenty four (24) months.

The year of any substantiating report, certificates and/or other data must be no more than five years old from the effective model year. Over this five year period, supporting data maintains its validity through changes of the SAE standards.

SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE ICS1000 Recreation Off-Road Vehicle Product Identification Numbering System

SAE J33 Snowmobile Definitions and Nomenclature – General

SAE J44 Service Brake System Performance Requirements – Snowmobile

SAE J68 Tests for Snowmobile Switching Devices and Components

SAE J89 Dynamic Cushioning Performance Criteria for Snowmobile Seats

SAE J92 Snowmobile Throttle Control Systems,

SAE J192 Maximum Exterior Sound Level for Snowmobiles

SAE J272 Vehicle Identification Number Systems

SAE J277 Maintenance of Design Voltage - Snowmobile Electrical Systems

SAE J288 Snowmobile Fuel Tanks

SAE J292 Snowmobile and Snowmobile Cutter Lamps, Reflective Devices, and Associated Equipment

SAE J1038 Recommendations for Children's Snowmobile

SAE J1062 Snowmobile Passenger Handgrips

SAE J1161 Operational Sound Level Measurement Procedure for Snowmobiles

SAE J1222 Speed Control Assurance for Snowmobiles

SAE J1279 Snowmobile Drive Mechanisms

SAE J1282 Snowmobile Brake Control Systems

SAE J2826 Probe Test for Contact with Power Driven Parts

CMVSS 115 Canadian Motor Vehicle Safety Regulation, C.R.C.,c. 1038, standard 115, www.tc.gc.ca/eng/acts-regulations/regulations-crc-c1038.htm

DEFINITIONS

The definitions of SAE J33 are part of this document.

Braking Distance: The distance traveled between the point of first application of the brake control and the point at which the snowmobile comes to rest.

Designed or Designed To: Designed and constructed in such a manner as to be expected in the exercise of reasonable and prudent engineering judgment, and assuming proper maintenance to achieve the desired performance level under normal conditions of operation.

Guard or Shield: A part or assembly provided for personal safety.

Right-Right Hand ; Left-Left Hand: The designation which refers to the orientation of the snowmobile when the operator is at the operator's position, facing forward.

Snowmobile: A self-propelled vehicle intended for off-road travel primarily on snow, having a curb weight of not more than 453.59 kg (1,000 lb.); driven by track or tracks in contact with the snow; and steered by a ski or skis in contact with the snow.

A snowmobile may be classified under the following special classes:

> **Class I, Competitive**: A snowmobile intended solely for use in organized public racing. Racing snowmobiles are snowmobiles advertised and sold by the manufacturer for use on race courses only and not for use on trails.
>
> **Class II, Children**: A snowmobile intended for daylight use, in restricted off-road areas, primarily on snow. This vehicle is intended to be used by a child at least 6 years of age, under adult supervision.

SSCC/11: Means SSCC/11 Supplement, "Detailed Standards and Testing Specifications and Procedures", and SSCC/11, "Safety Standards for Snowmobile Product Certification". Both documents were combined into the single SSCC/11 Supplement in the 2018 version. It is available from *Snowmobile Safety and Certification Committee, Inc*. at www.snowmobilesafetycertification.org.

Vehicle: The word "vehicle" is to be interpreted as interchangeable with "snowmobile."

1 - DOCUMENTATION

Compliance with any of the provisions of this document shall be reported in detail for potential review by a third party. Test reports shall minimally include the following information:

1. Manufacturer name;

2. Title of test and reference to related provisions of this document. For example, “SSCC/11 Supplement section 4 Occupant Support System, dated 18 October 2017”;

3. Performance and test method standards. For example, SAE standard reference number and version: SAE J89:2014;

4. Test report reference number and date. Includes a unique manufacturer identifier and/or outside laboratory number/name;

5. Name of testing laboratory (in house or external);

6. Part name or description, part number, part manufacturer reference and/or snowmobile representative model name/number;

7. Test and/or environmental conditions, where required. If a condition is specified, it shall be documented (e.g. required condition of “approach the starting point at a steady speed of 24 km/h ± 4 km/h” and a test report documenting “steady state speed of 26.4 km/h at starting point…”);

8. Test equipment information and calibration data. For example, last or next calibration date;

9. Test data. Includes any tabulations and/or required calculations;

10. Pass/Fail status. Shows individual compliance criteria, where applicable;

11. Technician and supervisor name and signatures;

12. Test date and/or report date;

13. Conclusion or compliance statement as well as, if applicable, any deviations from the procedure.

2 - SNOWMOBILE TECHNICAL REQUIREMENTS

2.1 - Class II, Children Snowmobile General Requirements

Class II, Children snowmobiles shall comply with the provisions specified in SAE J1038 in lieu of all the following sections except for those of clause 2.1.1.

2.1.1 - Additional Supplement Requirements

Additionally, Class II, Children snowmobile shall comply with the following provisions:

1. Device Preventing Snowmobile Runaway of section 5.2. For dynamic tests, operate the snowmobile at fully actuated throttle;

2. Snowmobile identification numbering of section 11;

3. Within SAE J1038:

    a) the headlight of paragraph 4.3.1 shall be positioned not less than 15 in (381 mm) above ground surface;

    b) the rear identification lights of paragraph 4.3.2 shall be positioned not less than 6 in. (152.4 mm) above the ground surface.

2.2 - Snowmobile General Requirement

Snowmobiles, except for Class II, Children, shall comply with all the subsequent sections, unless so stated in the particular section.

3 - SOUND EMISSION

3.1 - Constant Velocity

The sound pressure level of the snowmobile shall not exceed 73 decibels on the “A” scale (73 dB(A)) when tested in accordance with SAE J1161. The uncertainty of ±2 dB(A) of paragraph 7.7 shall be interpreted as reducing the test results by 2 dB(A).

3.2 - Acceleration

The sound pressure level of the snowmobile shall not exceed 78 decibels on the “A” scale (78 dB(A)) when tested in accordance with SAE J192. The uncertainty of ±2 dB(A) of paragraph 7.6 shall be interpreted as reducing the test results by 2 dB(A).

4 - OCCUPANT SUPPORT SYSTEM

The snowmobile shall be equipped with an occupant support system that complies with the requirements specified in SAE J89.

NOTE: There are no approved tests for seats having shapes significantly different from those depicted in SAE J33.

5 - CONTROLS

5.1 - Throttle Control System

The snowmobile shall be equipped with a throttle control system that complies with the requirements specified in SAE J92.

In addition to the laboratory testing of the previous paragraph, the adequacy of the system shall be verified by field testing. Documentation is expected.

5.2 - Device Preventing Snowmobile Runaway

5.2.1 - Runaway Prevention Device

The snowmobile shall be equipped with either a runaway prevention device or tether switch that complies with the requirements of both SAE J1222 and SAE J68.

NOTE: Within SAE J68:2017, the requirements of Moisture Test of SAE J575 (i.e. "4.10 Water Intrusion (Moisture) Test" of SAE J575:2015 or, "4.9 Moisture Test" of SAE J575:2010) may alternatively be substituted with the Corrosion Test of SAE J575 (i.e. "4.13 Corrosion Test" of SAE J575:2015 or, "4.12 Corrosion Test" of SAE J575:2010).

5.2.2 - Emergency Shutoff Switch

The snowmobile shall be equipped with an emergency shutoff switch, designed to provide an instantaneous interruption of the engine ignition system. It shall be readily accessible and designed for activation by the operator's right hand when in his/her normal driving position. It shall maintain interruption once activated without continuous contact from the operator's hand and, shall be red or orange.

The emergency shutoff switch shall comply with the requirements specified in SAE J68.

NOTE: Within SAE J68:2017, the requirements of Moisture Test of SAE J575 (i.e. "4.10 Water Intrusion (Moisture) Test" of SAE J575:2015 or, "4.9 Moisture Test" of SAE J575:2010) may alternatively be substituted with the Corrosion Test of SAE J575 (i.e. "4.13 Corrosion Test" of SAE J575:2015 or, "4.12 Corrosion Test" of SAE J575:2010).

5.3 - Braking System

5.3.1 - Brake System Performance

The snowmobile shall be equipped with a braking system that performs as per the requirements specified in SAE J44.

5.3.2 - Brake Control System

The snowmobile shall be equipped with a brake control system that complies with the requirements specified in SAE J1282.

In addition to laboratory testing of the previous paragraph, the adequacy of the system shall be verified by field testing. Documentation is expected.

5.4 - Stop Lamp Switch

The snowmobile shall be equipped with a stop lamp switch that complies with the requirements of SAE J68.

NOTE: Within SAE J68:2017, the requirements of Moisture Test of SAE J575 (i.e. “4.10 Water Intrusion (Moisture) Test” of SAE J575:2015 or, “4.9 Moisture Test” of SAE J575:2010) may alternatively be substituted with the Corrosion Test of SAE J575 (i.e. “4.13 Corrosion Test” of SAE J575:2015 or, “4.12 Corrosion Test” of SAE J575:2010).

6 - FUEL SYSTEM

The snowmobile shall be equipped with a fuel tank and attachments that comply with the requirements specified in SAE J288.

In addition to the fuel tank requirements of the previous paragraph, the snowmobile shall comply with:

1. Any spillage from the fuel tank filler and vent opening is led away from the snowmobile hot parts or electrical components;

2. All tank penetrations/openings shall be provided with appropriate liquid tight fittings and so located as to minimize the possibility of foreseeable damage during normal operation and/or service.

3. Metal tanks shall be designed and constructed such as that

    a. there is no contact between aluminium (Al), magnesium (Mg), or their alloys, and copper (Cu), or Cu bearing alloys, except for threaded caps;

    b. self-tapping screws or sheet metal screws are not used;

c. external surfaces are free of burrs, sharp edges, and corners;

d. tank exteriors and interiors are protected to prevent oxidation or rusting, both during use and while in inventory or storage;

e. no painting of sealing surface of filler neck is done;

f. the torque required to assemble/disassemble the cap did not exceed 45 in. lb (5.1N.m).

7 - SHIELDS AND GUARDS

7.1 - Physical Contact

Power driven parts of the engine, clutch and drive system, with the exception of the snowmobile track and sprocket system, shall be isolated by consoles, shields or guards of sufficient size, shape and configuration designed so as to prevent their physical contact with the operator, passengers or bystanders during normal use of the snowmobile. All consoles, shields and guards shall be in position and the hood closed.

The snowmobile shall comply with the requirements specified in SAE J2826.

7.2 - Shielding

Adequate shielding shall be provided to protect the operator, passengers or bystanders in the case of failure of those parts of the drive train known as belts, gears, and chains should a part or parts be ejected from said components or in the case of breakage of such belts, gears or chains as employed.

7.3 - Transmission Guards

Shielding and guards of centrifugal clutches, drive pulleys, driven pulleys, torque converters or similar mechanisms shall be employed and designed so that in the event of a failure of component structures, etc., no component can be expected to leave the engine and/or drive compartment in a manner to injure the operator, passenger or bystander.

7.4 - Heat Protection

Such additional guards or shields shall be provided to prevent inadvertent contact by the occupant(s) with any exposed components sufficiently hot to cause burns during normal operation of the snowmobile with all such components secured in position in accordance with manufacturers' instructions.

7.5 - Drive Mechanism

The snowmobile shall be equipped with drive mechanisms (drive pulleys, torque converters, centrifugal clutches, or similar mechanisms) that comply with the requirements specified in SAE J1279.

8 - LIGHTING SYSTEM

8.1 - Lightings

The snowmobile shall comply with the requirements specified in SAE J292.

8.2 - Headlamp beam switch

If the snowmobile is equipped with a headlamp beam switch, it shall comply with the requirements of SAE J68.

NOTE: Within SAE J68:2017, the requirements of Moisture Test of SAE J575 (i.e. "4.10 Water Intrusion (Moisture) Test" of SAE J575:2015 or, "4.9 Moisture Test" of SAE J575:2010) may alternatively be substituted with the Corrosion Test of SAE J575 (i.e. "4.13 Corrosion Test" of SAE J575:2015 or, "4.12 Corrosion Test" of SAE J575:2010).

9 - PASSENGER HANDGRIPS

Passenger handgrip(s) shall comply with the requirements specified in SAE J1062.

10 - GENERAL HAZARDS

10.1 - Snowmobile Capacity

A snowmobile designed for use by one person shall have a permanent label affixed to the external surface of the snowmobile, visible from the operator's seating position that states, in English and French:

> "This snowmobile is designed for operator only – no passengers" / "Ce véhicule est conçu seulement pour son conducteur – aucun passager".

10.2 - Levers and Controls

All levers and controls shall have blunt ends. No switch, control, console, or steering control shall have sharp edges or sharp protrusions or be so positioned so as to be hazardous to the operator or passengers under conditions of normal use.

11 - SNOWMOBILE IDENTIFICATION NUMBERING

All snowmobiles shall have an identification number assigned by the manufacturer using either a PIN as prescribed in SAE ICS1000, or a VIN as prescribed by CMVSS 115 or SAE J272.

12 - SNOWMOBILE EXHAUST SYSTEM IDENTIFICATION

12.1 - Current Requirement

The snowmobile shall be equipped with an exhaust system that complies with the requirements specified in section 12.2.

12.2 - Identification of Snowmobile Exhaust System

Each snowmobile manufacturer shall place on their exhaust system critical component(s) the letters

"SSCC Certified"

with the manufacturer's name underneath.

The letters shall be legible and have a minimum height of 4 mm. The marking must be on the exhaust silencer, visible and legible to an observer by lifting a snowmobile hood and without detaching or dismantling any component parts. The markings shall be embossed and pressed or attached in a similarly durable manner to the outer surface of the exhaust silencer assembly, and resistance to alteration. The markings shall be so affixed that it shall be difficult to remove, replace or alter without detection.

13 - ELECTRICAL SYSTEM

The maintenance of design voltage in the electrical system of a snowmobile shall comply with the requirements specified in SAE J277.

The insulated cables comprising electrical wiring circuits shall be protected by rubber, plastic, nonmetallic tape, or braid covering, or other means capable of withstanding severe abrasion, except where otherwise protected or not in potentially abrasive contact with metal surfaces. The electrical wiring assembly shall, where practicable, be grouped together, be properly supported, and be located so that no portion is in contact with the carburetor, metallic fuel lines, the exhaust system, moving parts, or sharp

edges. Any edges of metal members subject to contact with cables shall be rounded or protected to prevent possible damage to the cables by cutting or abrasion.

APPENDIX I - REVISIONS PROCESS

The SSCC Technical Committee shall be open to comments and/or document amendment proposals formally submitted to the SSCC Chairman.

This document should be reviewed at least every 5 years.

The SSCC Technical Committee is responsible for the review process and the SSCC Board of Directors is responsible to approve the changes. The latter approval shall at least be marked with a revision date on the cover sheet of this document.

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