



This document contains safety rules and forms part of the Model Aeronautics Association of Canada (MAAC) Safety Code for all activities described herein. Ensure that you have the latest version always check the MAAC [Web Site](#).

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**1.0 Title: MSD 16 – Space Modeling.**

**2.0 Purpose:** To explain aspects of the MAAC Safety Code and how they apply to Space Modeling.

**3.0 Definitions Glossary of Terms.**

**4.0 Discussion / Background.**

**4.1** MAAC defines a Space Model or Model Rocket as any model powered by a rocket motor. The operation of a Model Rocket in Canada is regulated by rules contained in the Canadian Aviation Regulations (CARs). CAR 101.01 defines a model rocket as follows. "Model Rocket means a rocket that:

- a. Is equipped with model rocket motors that will not generate a total impulse exceeding 160 N.s;
- b. Has a gross weight, including motors, not exceeding 1500 g (3.3 pounds); and
- c. Is equipped with a parachute or other device capable of retarding its descent."

**4.2** Exceptions to the above definition are rocket powered model aircraft usually launched from other models acting as a "mother ship" or rocket assist motors attached to models powered by other means. Such examples are generally created to replicate specific scale effects such as the Bell X1 launched from its B-29 Mother Ship and JATO assist take off of other scale models. Rocket motors used for these purposes are required to meet the same specifications as those defined in Para a. above.

**4.3** All Members operating space models or model rockets shall adhere to the following Paragraphs.

**5.0 Required Action.**

**5.1** All space models shall be constructed from lightweight materials such as paper, wood, plastic or rubber. No metal airframe components shall be used.

- 5.2 All space models shall employ aerodynamic surfaces or some other mechanical system to assure stable flight.
- 5.3 Only commercially-available approved model rocket motors shall be used as specified by the Explosives Regulatory Division of Natural Resources Canada.
- 5.4 All members shall follow the manufacturer's recommendations for the safe handling and ignition of the motors. Special care shall be exercised to avoid extreme shock or temperature.
- 5.5 No member shall attempt to modify or refill any motor.
- 5.6 Igniters shall be installed only immediately prior to launch.
- 5.7 Multistage and cluster rockets employing an on-board electrical system to ignite additional motors shall have removable keys or pins provided to disable this system until immediately prior to launch. Such pins or keys shall have a streamer affixed with the words "**REMOVE BEFORE FLIGHT**" clearly printed on them.
- 5.8 On recovery or after an aborted launch all pins or keys shall be reinserted until all remaining motors are removed from the model and all firing systems are discharged.
- 5.9 All models shall employ a recovery system to insure its safe return to the ground. Special care shall be taken to insure that the recovery system always deploys properly.
- 5.10 All space models shall weigh no more than 1500 grams at lift-off and the rocket motor(s) shall contain no more than 125 grams of propellant and produce no more than 160 N-s combined total impulse.
- 5.11 All space models shall be ignited using a remote electrical system. All such systems shall utilize a firing switch that returns to the off position when released and a safety interlock to prevent an accidental firing. The safety interlock key shall be removed from the ignition system immediately after launch and must never be left in the firing system between launches.
- 5.12 All launches shall be conducted from a stable launch platform having a device to initially guide the model and a blast deflector to deflect the exhaust away from the ground. All wire guide devices shall be positioned above eye level to prevent eye injury, or guarded between launches.
- 5.13 Space models shall never be launched near buildings; power lines or if there is any possibility of conflict with human-carrying aircraft. All persons shall remain at least 5 metres away from any model about to be launched.
- 5.14 In any direction from the launch position, the launch area shall be a minimum of  $\frac{1}{4}$  of the highest altitude to be flown. The area immediately around the launch system shall be clear of any flammable materials.

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- 5.15 Permission must always be obtained from the property owner(s) before using a launch site.
- 5.16 No models shall be launched in winds greater than 35 km/h or in conditions of low visibility or low cloud, which might impair the observation of the entire flight.
- 5.17 No model shall be launched in a direction below 30 degrees to the vertical.
- 5.18 All launches shall be announced with a countdown of at least five seconds.
- 5.19 In the event of a misfire, the safety interlock key shall be removed immediately and no person shall approach the model for a period of time sufficient to determine that no ignition will occur.
- 5.20 The payload shall never include a live animal.
- 5.21 The payload shall never include explosives or incendiaries nor shall the rocket be directed at any target in the air or on the ground.
- 5.22 No attempt shall be made to recover a model from a dangerous location such as power lines, high places or prohibited areas.
- 5.23 New and untested models shall be tested to the extent possible for stability and reliability of the design and shall be launched only in complete isolation from other persons.
- 5.24 All members shall abide by the above and conduct themselves in a responsible manner. They shall further abide by any decisions and follow instructions of all designated Range Safety Officer (RSO) or Launch Control Officer (LCO).

**6.0 History of Revisions.**

- a. Approved by the BOD, ( March 24, 2013)
- b. Version 2, Revised by the BOD, (January 16 2014)

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