This is a replacement for a submission from USA for the FAI Aeromodelling Code Section 4C Volume S Space. The original proposal is listed as 2020 AGENDA ANNEX 7o USA Agenda Item 14.13 cf) FAI SPACE MODEL SAFETY CODE. It was a new Annex 5 to the code.

This replacement version of the new Annex 5 is based on meetings and discussions of an international working group on safety organized by Zoran Pelagic.

Annex 5

FAI Space Model Safety Code

Text in *italics* is for explanation, it is not a part of the proposed Safety Code

1. **Materials.** Spacemodels shall use only lightweight, non-metal parts for the nose, body, and fins and shall not use any internal heavy metal part that could cause injuries to persons or damages to property.

   [Exactly from FAI Spacemodel code paragraph 2.4.3]

2. **Engines.** Spacemodels shall only be flown with spacemodel motors that have been certified by a National Airsports Control, and these motors shall not be tampered with or used for any purposes except those recommended by the manufacturer.

   [FAI Spacemodel Code paragraph 3.9 and 3.10]
   [Requirement to use only for the purposes recommended taken from US safety code, new text in 3.10 is proposed]

3. **Ignition System.** Spacemodels shall be launched with an electrical launch system and electrical motor igniters. The launch system shall have a safety interlock in series with the launch switch, and it shall use a launch switch that returns to the "off" position when released.

   [FAI Spacemodel Code paragraph 4.3.5]
   [New requirements for safety interlock and launch switch taken from US safety code, new text in 4.3.5 is proposed]

4. **Misfires.** If a spacemodel does not launch when the button of the electrical launch system is pressed, the launcher's safety interlock shall be removed or it shall be disconnected from its battery, and 20 seconds must pass after the last launch attempt before anyone approaches the spacemodel.

   [Taken from US safety code, new text in 4.3.5 is proposed]

5. **Range Safety Officer**. During all operations concerned with the launching and flight of space models, all authority for the safety and conduct of operations on the flying field shall be vested in a Range Safety Officer (RSO) who must be a member of a National Airsports Control and who must be 18 years of age or more. All space models presented for operation on the flying field shall be permitted or denied flight by the Range Safety Officer on the basis of his considered judgement with respect to the possible safety of the model in flight.

   [Exactly from FAI Spacemodel Code paragraphs 4.3.1 and 4.3.2]

6. **Launch Safety.** Spacemodels shall be launched from a launch device that is within 30 degrees of vertical and is of sufficient length to ensure that the spacemodel flies nearly straight up. They shall be launched only after a 5-second countdown that is audible to all persons nearby and only if all persons are at least 4 meters away. When launching spacemodels with multiple stages, with clusters of multiple motors, or with motors exceeding 20 N-sec, all persons must be at least 8 meters away and the launch device must be at least 10 degrees away from vertical. If the safety or stability of a spacemodel is in question, it shall only be flown after warning spectators and clearing them away to a safe distance and direction as determined by the RSO.
[FAI Spacemodel code paragraphs 4.3.3 and 4.3.5, but with specific distances for separation from people while launching added]
[US safety codes have requirements for the distance that all persons must be from any rocket being launched, new text in 4.3.5 is proposed.]

7. **Fire Safety.** Spacemodels shall not eject any materials such as recovery device protection that may burn or smolder and shall use containment tubes for fuse-type dethermalizers, so that the spacemodels do not present a fire hazard. Launch devices shall have a means to prevent the engine's exhaust from directly hitting the ground, and any dry grass close to the launch pad shall be cleared before launch.

   [New requirements for prevention of fire are taken from US safety code, launch site fires from each of these sources occur in the US. New text in 4.3.7 is proposed]

8. **Size.** Spacemodels shall not weigh more than 1,500 grams at liftoff and shall not contain more than 200 grams of propellant or 160 N-sec of total impulse.

   [Exactly from FAI Spacemodel Code paragraph 2.2]

9. **Flight Safety.** Spacemodels shall not be launched at targets, into clouds, or near airplanes, and shall not contain any flammable or explosive payload.

   [FAI Spacemodel Code paragraphs 2.4.6 and 4.3.7, some slight changes in text in 4.3.7 are proposed]

10. **Launch Site.** Spacemodels shall be launched outdoors, in an open area free of hazards to the safety of fliers or spectators and whose size is appropriate to the power of the models and to the weather conditions, as determined by the RSO, and with wind speeds no greater than 9 meters per second.

    [FAI Spacemodel code paragraph 4.3.6 covers wind speed, new text in paragraph 4.3.9 is proposed covering launch site safety]

11. **Recovery.** Spacemodels shall be so constructed to be capable of more than a single flight and shall contain a means for retarding the descent of all parts of the model to the ground so that the spacemodel's structure may not be substantially damaged and so that no hazard is created to persons and property on the ground.

    [FAI Spacemodel code paragraph 2.4.1]

12. **Recovery Safety.** No attempt shall be made to recover spacemodels from power lines or other dangerous places.

    [New requirement, taken from US safety code as a matter of life safety. 7 people have been killed in the US while trying to remove rockets from power lines. New text in 4.3.7 is proposed.]