

# **Amateur Rocketry Society of America**

## **Safety Code (Revised 9/14/02)**

### **Introduction**

The following are guidelines meant to allow you to enjoy Amateur Rocketry and to encourage safe and constructive involvement in it. Realize that no Safety Code can assure 100% safety this is up to you!

#### **1.0 ROCKET MOTORS:**

1.1 Commercial custom motors and experimental motors may be used at all launches, without being listed on TRA, NAR or any other organizations "Certified Motor List".

1.2 All rocket motors will be electrically ignited.

#### **2.0 ROCKETS:**

2.1 Rockets will be built as light as possible for the intended purpose of the rocket.

2.2 Rockets will have a suitable means for providing stabilizing and restoring forces necessary to maintain a substantially true and predictable upward flight path.

2.3 Rockets shall be constructed so as to be capable of more than one flight. It will be provided with means for a slow and safe descent. If a rocket is to descend in more than one part, then the parts should have means for a slow and safe descent.

2.4 Any equipment, devices, or material which relies upon flammable, smoldering, or otherwise combustible substances, which are not a motor, shall be designed, built, and implemented or otherwise used in a manner which will minimize the possibility of a fire after launch.

#### **3.0 LAUNCH PADS AND IGNITION SYSTEMS:**

3.1 A launching device, or mechanism, must be used which is sufficiently rigid and of sufficient length to guarantee that the rocket shall be independently stable when it leaves the device. This launching device shall be sufficiently stable on the ground to prevent significant shifts from the planned launch angle, or the accidental triggering of any first-motion ignition devices.

3.2 A launch angle of less than 15 degrees from the vertical must be used when flying rockets.

3.3 Any and all ignition systems on rockets must be remotely and electrically activated.

3.4 The launch of any rocket must be completely under the control of the person launching it. When flying alone, the individual person is responsible for range safety, and launch control safety. When flying at an Amateur Rocket Society of America sponsored meet, the Range Safety Office (RSO) will turn over control of the launch, for the duration of the countdown, to the designated Launch Control Officer (LCO) when the launching range is deemed safe to launch. It is permitted for the RSO and LCO to be the same person.

3.5 The launch system firing circuit must return to the off position when released (if a mechanical launch system is used) or reset (if an electronic launch system is used).

3.6 Excessive lengths of fuse, or complex pyrotechnical ignition arrangements should be avoided. The simplest and most direct ignition trains are encouraged to promote range safety.

3.7 Igniters should be installed at the last practical moment, and once installed, electrical igniter wires should be shorted and/or pyrotechnical systems mechanically protected to prevent premature ignition from EMI or heat sources.

#### **4.0 LAUNCHES AND CONDITIONS:**

4.1 All launches of rockets must be conducted in compliance with Federal, State, and Local law.

4.2 Rocket flights must be made only when weather conditions permit the average person to visually observe the entire flight of the rocket from lift-off to the deployment of the recovery system. It is recommended that no rockets be launched when winds exceed 20 miles per hour.

4.3 No rocket shall contain an explosive warhead type device, nor will they be launched at targets on the ground.

4.4 An amateur rocket flying field must be equipped with an appropriately rated fire-extinguishing device. Each launch pad should have a water container within 10 feet of the pad. A well-stocked First Aid kit and a person, familiar with their use is recommended.

4.5 Advanced Rockets shall be launched from a clear area, free of any easy to burn materials, and away from buildings, power lines, tall trees, or flying aircraft. The flying field must be of sufficient size to permit recovery of a given rocket within its confines.

4.6 At no time shall recovery of a rocket from power lines, or other dangerous places, be attempted. Any rocket that becomes entangled in a utility line (power, phone, etc.) is a hazard to the utility line and untrained persons who may be attracted to it. The owner of the vehicle will make every effort to contact the proper utility company and have their trained personnel remove it.

4.7 No rocket shall be caught during descent.

4.8 All persons in the vicinity of any launches must be advised that a launching is imminent before a rocket may be ignited and launched. A minimum five-second countdown must be given immediately prior to ignition and launch of a rocket.

4.9 A spectator line will be established parallel with the launch controller's table. Launch pads for motors exceeding J class, or clusters of G, H, and/or I's shall be set 200 feet from the spectator line.

4.10 Commercial motors and experimental motors must be permitted to fly on the same launch days.

4.11 Experimental motors deemed unusually dangerous or hazardous by the RSO will be permitted to fly, but must be placed further away from the launch table and spectators so that all participants are safe. The only exception to this rule is if there is a field fire danger associated with the operation of this motor that exceeds the ability of the participants to put out. In this case, the RSO may prohibit the operation of the experimental motor at the launch.