

## **National Association of Rocketry Level 3 High Power Certification Requirements**

### 1.0 Flyer Requirements

- 1.1 Any individual attempting NAR Level 3 Certification must be a Level 2 high power certified NAR member in good standing.

An individual may not submit a design for a Level 3 Certification project review to the L3CC until Level 2 certification has been successfully accomplished.

### 2.0 Rocket Requirements

- 2.1 The certification rocket must be substantially built by the certifying flyer. "Substantially built" will be defined, as a minimum, as:

- a) Fabrication of the engine mount with centering rings (if applicable)
- b) Alignment and mounting of the individual fins (prefabricated fin canisters are specifically disallowed)
- c) Installation of attachment points for the recovery system
- d) Mounting and installation of airframe electronics
- e) Final flight preparations including pyrotechnics installation, recovery system packing, motor assembly (as required) and motor installation

Only the builder of the rocket may use that rocket for a certification attempt. Rockets built by other than the certifying flyer are specifically disallowed. Certification rockets may be built from commercially available kits and may contain components built to the specifications of the certifying flyer but fabricated by others.

- 2.2 Multiple stage and clustered rockets are specifically disallowed for certification flights.
- 2.3 Each parachute event must be initiated by redundant control systems. Redundancy must be present in the power sources, safe and arm provisions, control logic, and output devices (e.g. bridgewires, electric matches). Redundancy is not required in the energetic materials (e.g. black powder charges), parachutes, attach points, risers, and disconnects. Models recovered by alternate methods, e.g. glide or autorotation, must be reviewed by a L3CC member on a case by case basis for recovery system design. Motor ejection charges may be used as a redundant system, but rockets depending primarily on motor ejection for any recovery event are specifically disallowed. A safe rate of decent. (20ft/ second is **recommended**) for any component weighing in excess of eight ounces.
- 2.4 The capability must exist to externally disarm all pyrotechnic devices on-board the rocket. In this context, 'disarm' means the ability to physically break the connection between a pyrotechnic system and its power source. Simply turning off the device controlling the pyrotechnic(s) may not be sufficient.
- 2.5 The rocket must conform in all respects to any restrictions imposed by the NAR High Power









