

# National Association of Rocketry

## **SPORT ROCKETRY: AMERICA'S SAFE, EDUCATIONAL AEROSPACE HOBBY**

### **WHAT IS SPORT ROCKETRY?**

Sport rocketry is aerospace engineering in miniature. This popular hobby and educational tool was founded in 1957 to provide a safe and inexpensive way for young people to learn the principles of rocket flight. It has grown since then to a worldwide hobby with over 12 million flights per year, used in 25,000 schools around the U.S.. Its safety record is extraordinarily good, especially compared to most other outdoor activities. It is recognized and permitted under Federal and all 50 states' laws and regulations, and its safe and inexpensive products are available in toy and hobby stores nationwide. Sport rocketry has inspired two generations of America's young people to pursue careers in technology.

### **WHAT IS A SPORT ROCKET?**

A sport rocket is a reusable, lightweight, non-metallic flight vehicle that is propelled vertically by an electrically-ignited, commercially-made, nationally-certified, and non-explosive solid fuel rocket motor. For safety reasons no rocket hobbyist is ever required or allowed to mix or load chemicals or raw propellant; all sport rocket motors are bought pre-made. Sport rockets are always designed and built to be returned safely and gently to the ground with a recovery system such as a parachute. They are always designed to be recovered and flown many times, with the motor being replaced between flights. Sport rockets come in two size classes: MODEL rockets, which are under one pound in weight (3.3 pounds under some conditions), have less than 4.4 ounces of propellant, and are generally available to consumers of all ages; and HIGH-POWER rockets, which are larger, use motors larger than "G" power, and are available only to adults.

### **ARE THESE ROCKETS LEGAL?**

Model rockets are legal under the laws and regulations of all 50 states and the Federal government, although some local jurisdictions may have ordinances restricting their use. Model rockets are regulated by the National Fire Protection Association (NFPA) Code 1122, which is adopted as law in most states. They are specifically exempted from Federal Aviation Administration (FAA) air traffic control by Part 101.1 of Federal Aviation Regulations (14 CFR 101.1) and may be flown anywhere without FAA clearance. They are permitted for sale to children by the Consumer Product Safety Commission under their regulations (16 CFR 1500.85 (a) (8)). They are permitted for shipping (with appropriate packaging and labeling) by the Department of Transportation and U.S. Postal Service. They are not subject to regulation or user licensing by the Bureau of Alcohol, Tobacco, Firearms & Explosives (BATFE). They are endorsed and used by the Boy Scouts, 4-H Clubs, the Civil Air Patrol, and NASA.

High power rockets are regulated under NFPA Code 1127. Because of their size and power they are not available to people younger than age 18. Their flights are subject to FAA air traffic regulations, and purchase of the larger motors for these rockets generally requires user certification by a national rocketry organization, plus BATFE licensing in some cases. Despite these greater legal restrictions, high power rockets are also very popular. They also have an outstanding safety record.

### **IS THIS HOBBY SAFE?**

In well over 500 million flights since the founding of the hobby, there has never been a death caused by the flight of a sport rocket. Injuries are rare and generally minor. They are almost always the result of failure to follow the basic safety precautions and instructions provided by the manufacturers. Sport rocketry's record shows that it is safer than almost any sport or other outdoor physical activity. The hobby operates under the simple and easy-to-follow Model Rocket and High-Power Rocket Safety Codes of the National Association of Rocketry, which have been fine-tuned by professional engineers and public safety officials over the past 50 years to maximize user and spectator safety. The foundations of these Safety Codes are that sport rockets must be electrically ignited from a safe distance with advance warning to all those nearby, must have recovery systems, must be flown vertically in a suitably-sized field with no aircraft in the vicinity, and must never be aimed at a target or used to carry a pyrotechnic payload. All sport rocket motors are subjected to extensive safety and reliability certification testing to strict NFPA standards by the National Association of Rocketry or other national organizations before they are allowed to be sold in the U.S..

### **AREN'T THESE ROCKETS FIREWORKS?**

All Federal and state legal codes recognize sport rockets as different from fireworks. Fireworks are single-use recreational products designed solely to produce noise, smoke, or visual effect. They have few of the designed-in safety features or pre-consumer national safety testing of a reusable sport rocket, and none of the sport rocket's educational value. Fireworks are fuse-lit, an inherently dangerous ignition method that is specifically forbidden in the hobby of sport rocketry. Sport rockets are prohibited from carrying any form of pyrotechnic payload; their purpose is to demonstrate flight principles or carry educational payloads, not blow up, make noise, or emit a shower of sparks.

### **WHO ARE THE EXPERTS?**

The oldest and largest organization of sport rocketeers in the U.S. is the National Association of Rocketry (NAR). This non-profit organization represents the hobby to public safety officials and federal agencies, and plays a key role in maintaining the safety of the hobby through rocket engine certification testing and safety code development. The NAR also publishes Sport Rocketry magazine, runs national sport rocketry events and competitions, and offers liability insurance coverage for sport rocketeers and launch site owners. You may reach the NAR at:

National Association of Rocketry  
Post Office Box 407  
Marion, IA 52302  
<http://www.nar.org>

You may purchase copies of the NFPA Codes 1122 or 1127 regulating sport rocketry from:

National Fire Protection Association  
1 Batterymarch Park  
Quincy, MA 02269-9101  
<http://www.nfpa.org>