Rockets and Rocketry

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Different Needs..

- Self Launch – launch site permission, size of launch site, FAA requirements Class 1 or 2 rockets rocket safety rules
- Balloon Launch…Steve Kliewer
- TRA or NAR event
- Sending payloads to a flier to be flown and then returned

Self Launch

- Obtain land owner permission
- Model Rocket (class 1) Safety code: under 53 ounces and under H impulse http://www.nar.org/NARmrsc.html
- 1000 ft launch site
- FAA -

a. You must operate an amateur rocket in such a manner that it: 1.Is launched on a suborbital trajectory;

2. When launched, must not cross into the territory of a foreign country unless an agreement is in place between the United States and the country of concern;

3.Is unmanned; and

4.Does not create a hazard to persons, property, or other aircraft.

b. The FAA may specify additional operating limitations necessary to ensure that air traffic is not adversely affected, and public safety is not jeopardized.

Balloon Launch

- Steve Kliewer
- Contact info

Organized Launch

- Two National Organizations
- National Association of Rocketry NAR (smaller rockets and contest) NAR Junior program <18 http://www.nar.org/index.html
- Tripoli Rocket Association TRA (bigger, higher rockets and Research Rocketry) http://www.tripoli.org/ Mentoring program 12-18 year olds
- Contacting local club/flier through web sites

Sending payloads in

- Paloads can be sent to fliers, flown and the returned.
- Contact Tony Alcocer tfish38@aol.com for info

Rocketry

- Model rockets – Estes cardboard wood plasic
- High Power Rockets – H motors and above, cardboard fiberglass carbon fiber some metal - fins nose cone
- Research Rocketry- home made propellant motor case or modifications to certified motors
- Amature Rocketry

How Rockets Work

- Motor Thrust – Black Powder BP, Ammonia Perchlorate Composite Propellant APCP, Hybrid: solid (plastic, paper) liquid Nitrous Oxide
- Fins – stabilize rocket (30 mph)
- Center of Pressure
- Center of Gravity
- Calibers of stability

Constructions materials

- Cardboard - cheap easy to work with
- Plastic- light weight
- Fiberglass – strength – radio transparent
- Carbon fiber – strength to weight
- Aluminum- strong lite weight – hard to work with

Recovery System

- Motor Ejection BP
- Electronics
- Ematches
- BP charges