The Risk Management Process

Risk Management is the process of identifying and controlling hazards to people and property.

Its five steps give us a logical and systematic thought process which we can quickly and easily apply to our rocketry activities.

It is a continuous process applicable to any situation and environment. (see the list of terms below)

1. **Identify hazards:** Consider all aspects of current and future situations, environments, and known historical problem areas. One hazard might be a grass fire.

2. **Assess hazards to determine risks:** Assess the impact of each hazard in terms of potential loss and cost based on probability and severity. Dry conditions can make a grass fire more likely. A grass fire could cause personal injury or death as well as damage to property.

3. **Develop controls and make risk decisions.** Develop control measures that eliminate the hazard or reduce its risk. As control measures are developed, risks are re-evaluated until the residual risk is at a level where the benefits outweigh the cost. The appropriate decision authority then makes the decision. Control measures for dry conditions could be:

   - Clear anything that might burn away from the launcher.
   - Have fire fighting equipment and trained people to use it.
   - Use a blast deflector that keeps the rocket's exhaust from striking the ground.
   - Avoid using sparky motors.

4. **Implement controls that eliminate the hazards or reduce their risks.** Ensure the controls are communicated to all involved. Ask yourself if your controls reduce the risk of starting a grass fire to an acceptable level. If not, you should develop other controls or not launch.

5. **Supervise and evaluate.** Enforce standards and controls. Evaluate the effectiveness of controls and adjust/update as necessary. Ensure lessons learned are fed back into the system for future planning.

Terms

- **Risk Management** - The process of identifying and controlling hazards to protect people and property.
- **Control** - Action taken to eliminate hazards or reduce their risk.
- **Hazard** - Any real or potential condition that can cause injury, illness, death of personnel, damage to or loss of equipment or property, or cause problems for our rocketry activities.
- **Risk** - Chance of hazard or bad consequences; exposure to chance of injury or loss. Risk level is expressed in terms of hazard probability and the severity of bad consequences.
- **Exposure** - The frequency and length of time people and property are subjected to a hazard.
- **Probability** - The likelihood that an event will occur. This can be based on historical records, experience, and/or common sense.
- **Severity** - The expected consequence of an event in terms of degree of injury, property damage that could occur. You should also consider other factors that could effect or rocketry activities. For example: bad publicity, strained relationships with land owners and/or local authorities, loss of land use, etc.
- **Risk Assessment** - The identification and assessment of hazards (first two steps of the risk-management process).
- **Residual Risk** - The anticipated level of risk remaining after controls have been identified and selected for hazards that may result in injury, illness, death of personnel, damage to or loss of equipment or property, or cause problems for our rocketry activities.
- **Risk Decision** - The decision to accept or not accept the risk(s) associated with an action. This decision must be made by the appropriate authority. For example, during an NAR contest the Range Safety Officer has the final say in safety matters. During section activities, the section should identify the person or persons who will make the risk decision.

See also:

The Long Version: US Army FM 100-14
http://ojames3.tripod.com/tccrangesafety/FM100-14.pdf

Risk Management Worksheet
http://ojames3.tripod.com/tccrangesafety/RiskManagementWorksheet.pdf