NASA Range Safety Program
2006 Annual Report

RANGE SAFETY ORIENTATION TRAINING COURSE
RANGE FLIGHT SAFETY ANALYSIS TRAINING COURSE

The *Range Safety Orientation* course is designed to give NASA senior, program, and project managers an understanding of the Range Safety mission, associated policies and requirements, and NASA roles and responsibilities. It introduces the major ranges and their capabilities, defines and discusses the major elements of Range Safety (flight analysis, flight termination systems, range operations), and briefly addresses associated range safety topics such as ground safety, frequency management, and uninhabited aerial vehicles.

The course emphasizes the principles of safety risk management to ensure the public and NASA workforces are not subjected to risk of injury greater than their normal day-to-day activities. It is designed to inform the audience of the services offered by the Range Safety organization and to recommend ways of making the working relationship with Range Safety most beneficial for the Range User. It also presents timeframes that allow adequate interface with Range Safety during program/project startup and design to minimize potential delays and costs. This course includes a visit to range safety facilities at Cape Canaveral Air Force Station and Kennedy Space Center and will normally only be given at this location. If you wish to discuss presenting the class at your location, please contact the NASA Safety Training Center staff.

Target Audience: Senior, program, and project managers; Safety, Reliability, Quality, and Maintainability professionals with an interest in range safety activities

The *Range Safety Orientation* course includes the following topics:

- Range Safety Mission and Organization
- Policies, Standards, and Directives
- Launch and Test Facilities
- Flight Analysis
- Flight Termination Systems
- Tracking and Telemetry Systems
- Range Safety Operations
- Ground Safety
- Frequency Management
- Uninhabited Aerial Vehicles
- The Way Ahead
- Hands-On Orientation

The *Range Flight Safety Analysis* course provides a detailed understanding of range safety analysis. It includes NASA, Federal Aviation Administration, and Department of Defense requirements for flight safety analysis; a discussion of range operations hazards, risk criteria and risk management processes; and an in-depth coverage of the containment and risk management analyses performed for expendable launch vehicles at the Eastern Range.

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Although the course is based on expendable launch vehicles at the Eastern Range, the overall analysis process and concepts are applicable to other vehicles and other ranges as well. The course concentrates on debris hazards and analyses but includes an overview of toxic, blast, and radiation analyses. The course includes a class exercise that covers the entire analysis process.

Prerequisite: Completion of NSTC 074, *Range Safety Orientation*, or equivalent experience (engineering degree and a background in range safety).

Target Audience: NASA, Federal Aviation Administration and Department of Defense Range Safety Analysts; range safety personnel in other disciplines; program/project managers and engineers who design potentially hazardous systems to operate on a range

The *Range Flight Safety Analysis* course outline is shown in the graphic below.