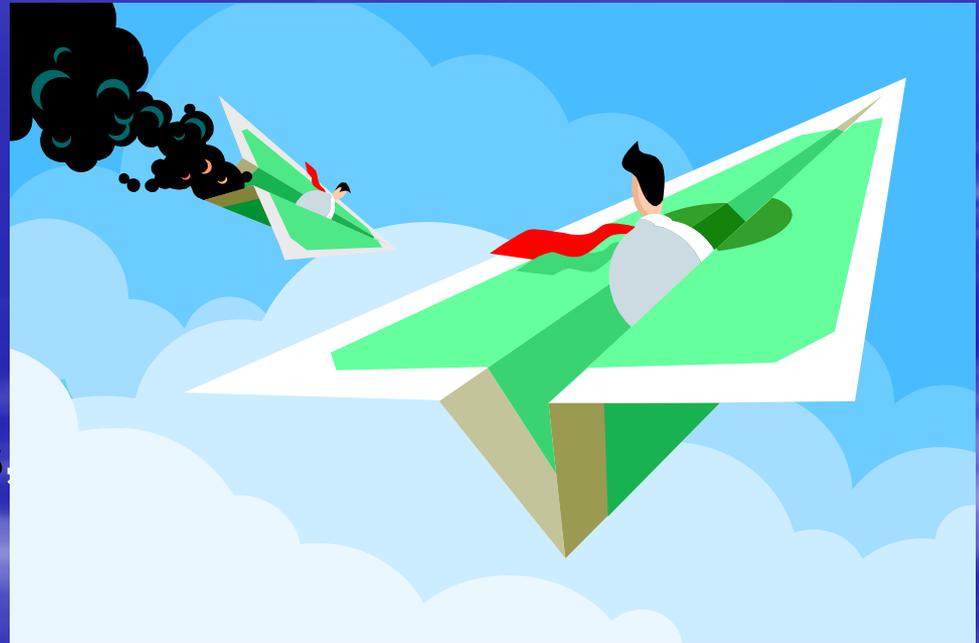# U.S. Forest Service
Aviation and Fire Management

Safety Management System

Branch of Risk Management and Human Performance 2008

Safety Efforts are Changing

What is Driving this?

- – Financial stress for Aviation Providers, Users and Regulators

- – A Tangle of Regulations, Standards, Policies and Procedures

- – Lessons Learned

A Time of Transition

- Management response to 30 Mile (2001)and Cramer fire (2003)fatalities

- GAO direction for "accountability"

- Legal actions against employees (2004)

Policy to Doctrine

2004 Move from rules based decision-making to leadership discretion

Shift liability away from policy deviation

Major shift in Fire Program culture, from reactive culture of blame to proactive learning culture

Fire and Aviation Safety managers directed to develop new programs

Safety … the *Proactive* Way

Safety Management Systems

In 2005 the FS adopted SMS as its new Aviation Safety direction

Principles

- Safety is Not a program, Safety is an end state

- SMS Risk Management is a process used to achieve the end state.

- The 2008 Fire and Aviation goal is twofold:
  - Achieve Zero accidents
  - Achieve a Highly Reliable Organization (HRO)

HRO …

Develops a "Just Culture" or "Safety Culture" to:

Capture the operational knowledge and experience of the employees

Involve the employees in the safety achievement process

"SMS"

A systematic and continuous *Management* process based on proactive identification of *Hazards*, and analyses of their *Risk*.

What is the Operator's Duty?

- ***Safety achievement* is the responsibility of the "provider"**

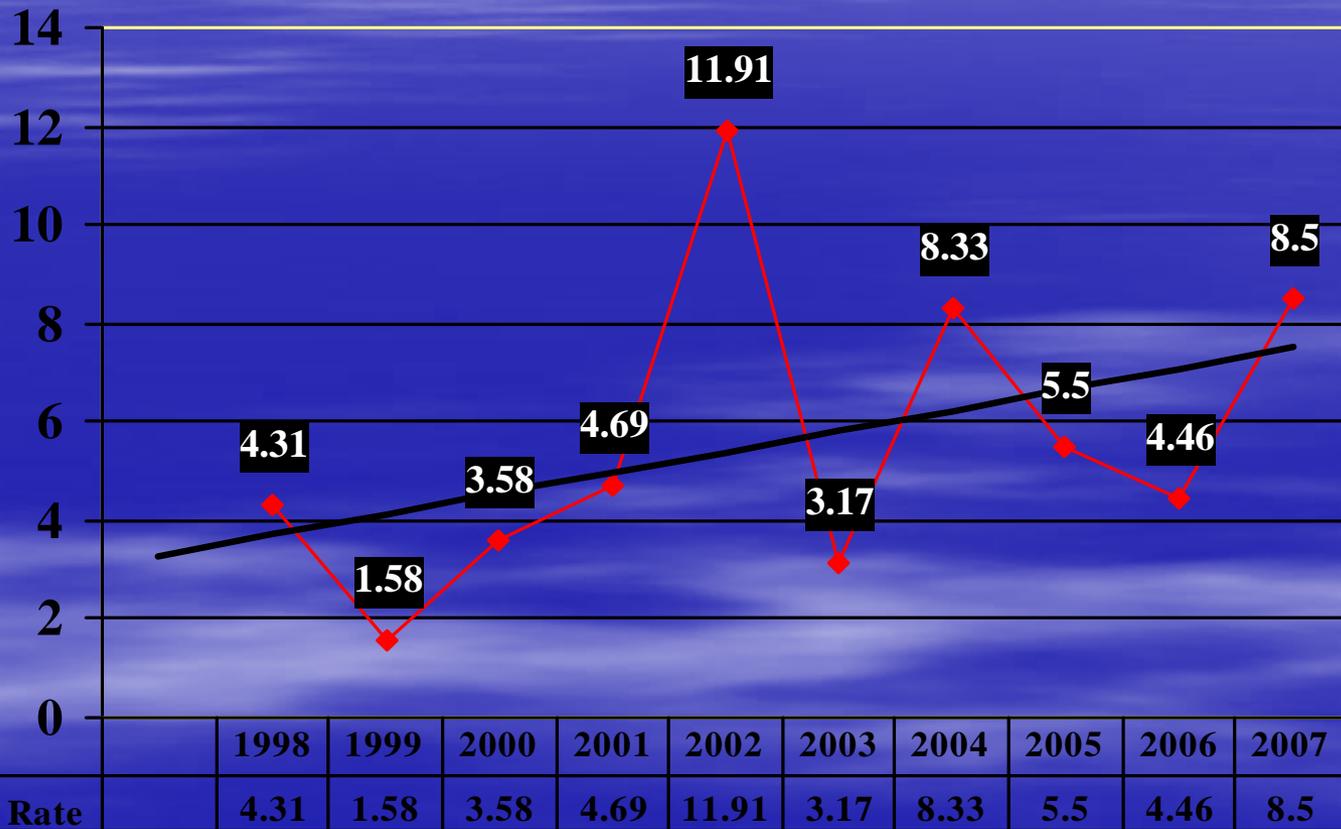Forest Service resources are best applied in *assisting / enabling* safety management by enabling the business or flight operation

Accident Rates 1998 to 2007
Mishaps per 100,000 flight hours

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Accident Rate	4.31	1.58	3.58	4.69	11.91	3.17	8.33	5.5	4.46	8.5

5.21 → 5.59

POLICY
Philosophy
Doctrine
Practices

Principles
Just Culture

Risk Management
Informed/Flexible Culture
Proactive
Prevention

HRO
Fewer mishaps

than others

Assurance
Reporting Culture
Investigations
Audits

Promotion
Learning culture
Communications
Training

POLICY

Doctrine
Rewrite FSM
5100 in 2007

Rewrite FSM
5700 in 2008

Just Culture

HRO

HRO

Assurance

Review SAFECOM system performance

Investigation Enterprise Team

Audits; formal OSOH process

Risk Management
Proactive Prevention
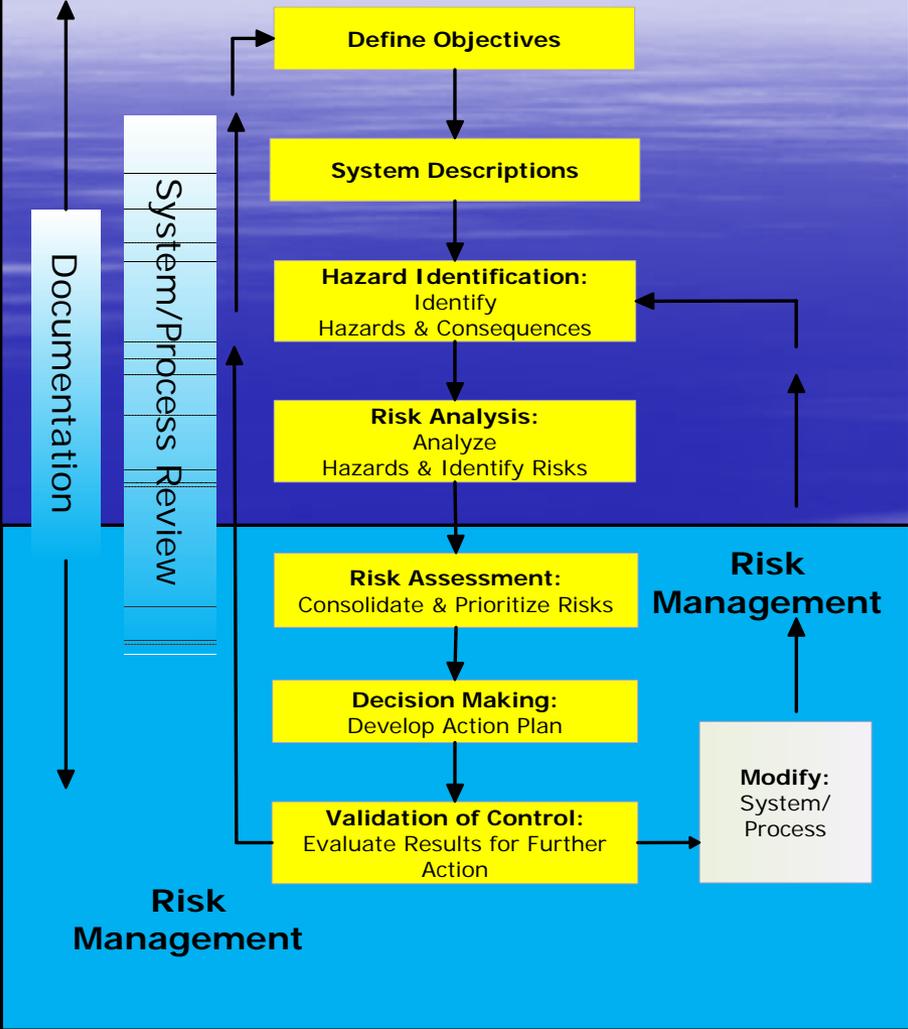
Program Risk Assessments
Agency/Operator

Contract Requires Operator Safety
Programs

      - 32 proposals
      25% Unacceptable
      25% Marginal
      12% Include Risk Mgt.

HRO

System Safety Process

```
                          ┌─────────────────────┐
                          │  Define Objectives  │ ◄──┐
                          └─────────────────────┘    │
                                    │                 │
                                    ▼                 │
                          ┌─────────────────────┐    │
                          │ System Descriptions │    │
                          └─────────────────────┘    │
                                    │                 │
                                    ▼                 │
                          ┌─────────────────────┐    │
                          │Hazard Identification:│◄──┐│
                          │      Identify        │   ││
                          │Hazards & Consequences│   ││
                          └─────────────────────┘   ││
                                    │                ││
                                    ▼                ││
                          ┌─────────────────────┐   ││
                          │   Risk Analysis:     │   ││
                          │      Analyze         │   ││
                          │ Hazards & Identify Risks│ ││
                          └─────────────────────┘   ││
```

Documentation

System/Process Review

- **Risk Assessment:** Consolidate & Prioritize Risks
- **Decision Making:** Develop Action Plan
- **Validation of Control:** Evaluate Results for Further Action
- **Modify:** System/ Process
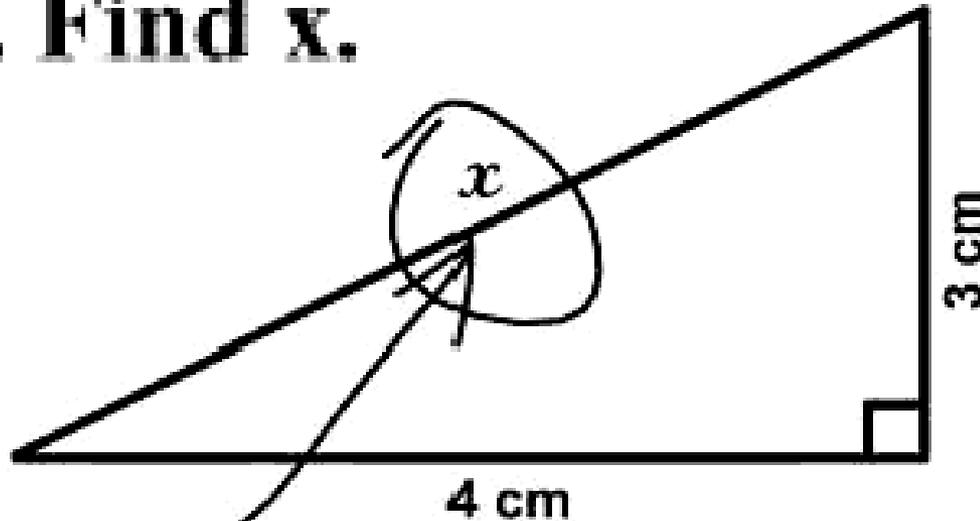
Risk Management

Risk Management

SMS is the toolbox for…

- Policies & Management Practices

- Risk Management processes

- Safety Assurance processes

- Safety promotion practices

DISCUSSION ?