



**United States Department of Agriculture
Forest Service**

Aviation Safety and Mishap Prevention Plan Northern & Intermountain Regions

June 1, 2005



FOREWORD

This document supplements the USDA-Forest Service (FS), *National Aviation Safety and Mishap Prevention Plan*. Information presented in this document is a critical component of the Forest Service's Aviation Safety Program. It is the Northern (R-1) & Intermountain (R-4) Regions' safety philosophy that all mishaps are preventable and that mishap prevention is an inherent function of management.

Questions regarding this plan should be directed to the appropriate Regional Aviation Safety Manager (RASM). The Northern Region, RASM, retains the original signed copy and electronic version of this plan.

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INTRODUCTION

Chapter 1

1.1. PURPOSE

- A. This document was developed to supplement the USDA Forest Service (FS) National Aviation and Safety Mishap Prevention Plan (NASMPP). These procedures and practices are meant to prevent aviation mishaps and to support the Forest Service's institutional concern for safety. The FS considers it essential, "a core value" to safeguard against human injury, property loss, and damage to the environment.
- B. This document provides a general description of the elements and activities considered critical to aviation mishap prevention. Although each specific activity is deemed essential, it is the dynamics of all prevention and training activities that collectively form the foundation of the Aviation Safety Program required by Forest Service Manual (FSM 5700) and make that program successful.
- C. Each Forest and Grassland is to supplement this plan with Forest level aviation plans containing more specific details of process and procedures.
- D. The primary goal of the Aviation Safety Program is to eliminate mishap occurrences.

1.2. OBJECTIVES

- A. To minimize human exposure to hazards through implementation of effective risk management techniques.
- B. To eliminate loss of life, suffering from injury or permanent impairment.
- C. To eliminate the costs associated with mishaps.

MANAGEMENT PHILOSOPHY

Chapter 2

2.1. SAFETY CULTURE

- A. Safety culture is a term used to identify an overall approach to managing safety within an organization. Rather than being a set of rules or procedures, safety culture is an attitude or way of life that is practiced in all endeavors. An example of safety culture is the unprompted action of fastening your seat belt when entering any automobile, even a taxicab, when traveling. For organizations and individuals practicing a culture of safety, giving safety briefings and wearing a safety belt become second nature.
- B. Safety awareness is a mental attitude and individual commitment fostered by proper management and supervisory procedures. Forest Service management must be a partner in aviation safety to ensure that the standards and procedures established are understood and followed. It means that where operational decisions must be made, they are made prudently, with safety an integral part of mission accomplishment. This requires individuals to know how to do a job or mission properly, applicable FS policies, approved operating procedures, and how to follow them consistently. With a safety awareness attitude and appropriate training, most aviation mishaps can be prevented.
- C. Aviation safety cannot be legislated or mandated; it can only be successfully accomplished by fostering and inspiring an attitude in which aviation safety is the foremost priority. An undeviating and persistent commitment to professional conduct by everyone involved in the aviation program is paramount to achieving mishap prevention and successful risk management.
- D. All individuals involved in the aviation program play a role in the successful and safe outcome of aviation activities. Management is responsible for fostering a culture of safety in the organization. This can only be accomplished through awareness and uncompromising support by management.

2.2. SYSTEM SAFETY (See NASMPP Chapter 4.1)

System Safety is the application of special technical and managerial skills in a systematic, forward-looking manner to identify and control hazards throughout the life cycle of a project, program, or activity. System Safety is a comprehensive approach to safety management designed to achieve an acceptable level of risk within the constraints of operational effectiveness, time, and cost. System Safety reviews the individual parts of the program to produce an overall review of the entire system.

2.3. RISK MANAGEMENT (See NASMPP Chapter 6)

- A. Risk management is a technique of applying order to an intuitive human decision-making process. The technique guides the decision of how to accomplish something considering the hazards, exposure to those hazards, and the probability of a specific hazard contributing to a mishap.

$$\text{Risk} = \text{Hazards} \times \text{Exposure} \times \text{Probability}$$

1. Hazards. The causes of damage and injury. Human error is the most difficult hazard to predict and is the cause of approximately 70% of all aviation mishaps
 2. Exposure. The frequency of occurrence and the number of people or aircraft that may encounter a hazard
 3. Probability. The likelihood that, considering the hazard and exposure, a mishap will occur.
- B. The process of managing risk makes operations safer without compromising the mission accomplishment. The purpose of managing risk is to preserve human and material resources by identifying and preventing events that cause damage and injury to those resources. Three rules guide the risk management process.
1. Accept no unnecessary risk
 2. Make risk decisions at the proper level
 3. Accept risks only if benefits outweigh the potential safety costs
- C. Successful outcomes can be achieved by applying the following steps of risk management to each flight or aviation mission:
1. Identify Risks. Identify specific risks associated with all specified and implied tasks. Determine the hazards, exposures, and probabilities causing these risks.
 2. Assess Risks. Determine the magnitude of each risk.
 3. Make Decisions. Make risk acceptance decisions by balancing risk benefits against risk magnitude, and eliminate unnecessary risks. These decisions should include the appropriate level of FS management whenever possible. Sometimes the only appropriate decision is to cancel the mission. More often the benefits justify the mission, but only if the risk can be minimized by controls over how and who conducts the mission. This also helps to reduce the potential costs of a mishap to an acceptable level.
 4. Identify Controls. Appropriate controls may be in the areas of individual qualifications, training, performance of the aircraft, aircraft equipment, weather conditions, operating procedures, ground support equipment and people, personal protective equipment, communications and others. Appropriate controls reduce the

magnitude of mission-essential risks through proper application of established and identified controls.

5. Implement Controls. Integrate specific controls into aviation plans and mission performance. Knowledge and understanding of controls down through the organization to each individual involved in aviation use is essential to the successful and safe outcome of each mission. This means following established agency policies and procedures contained in FS documents. It means using trained personnel and following all contract specifications.
 6. Monitor Operations. Review mission performance, suitability of controls, adherence to controls, and mission progress. Take prompt and appropriate corrective actions.
- D. The moving force driving aviation safety and training efforts is: "Safety through Prevention". Risk management is a key component in successful mishap prevention.
- E. Identifying Hazards
1. Steps must be taken to detect and accurately identify those hazards that increase the risk in accomplishing FS aviation missions. Hazard identification is most effectively approached as a team effort, as many hazards that exist in both ground and flight operations may not be readily detectable. Diverse perspectives are held by all individuals (pilots, mechanics, managers, crewpersons, etc.) associated with aviation operations.
 2. Hazard identification is accomplished through a sequence of prescribed actions, which are similar, whether taken before or after a mishap. Actions taken prior to a mishap are "proactive" measures and are intended to prevent occurrence. Actions taken after a mishap are "reactive measures" and are intended to prevent recurrence. These actions may be termed hazard detection and hazard correction. Although both hazard detection and correction are integral components of our prevention efforts, the greatest benefit is gained through proactive prevention efforts. Therefore, our major effort should be to implement "proactive" measures for the purpose of preventing mishap occurrence.

2.4 HUMAN FACTORS

- A. Human error is the single area that, if possible to eliminate or reduce, would pay the greatest dividends in mishap prevention since it touches every operation. Human behavior is so complex that it is unrealistic to think that human error can be eliminated. Realistic training and experience are the most effective methods of minimizing human error mishaps as much as can be expected. When a person responds to an emergency situation, they immediately rely on trained reactions or past experiences. We must provide appropriate training and meaningful experience to individuals who are placed in positions requiring them to manage risk effectively.
- B. Management or supervisory errors that directly or indirectly exert pressure on individuals to act against their judgment stretch or ignore policy and standard operating procedures, or complete the mission regardless of risk is another form of human error that causes many mishaps.

OPERATIONS

Chapter 3

3.1. ORGANIZATION FOR MISHAP PREVENTION

- A. All personnel with aviation responsibilities are expected to actively participate in the execution of a successful aviation safety program.
- B. The Northern & Intermountain Regions have designed professional aviation organizations and require each Forest and Grassland to design a Forest/Grassland aviation organization to emphasize safety awareness. Regions are staffed with technical and managerial specialists in various aviation fields. They operate in their respective areas to provide continuous observations, implement mishap prevention measures, monitor compliance with established procedures, modify existing procedures and policy when necessary, and advocate a cooperative safety-oriented attitude in the execution of aviation operations. Mishap prevention activities include all segments of aviation and integrated with other FS functions.

3.2. FLIGHT OPERATIONS

- A. There is considerable risk involved with flying aircraft in the FS due to the typical mission profile (e.g., low altitude, mountainous terrain, poor visibility, turbulence, and traffic congestion in confined airspace). This formidable environment is more demanding of pilot skill, reduces the allowable margin of pilot error, and limits the options and time to make good decisions for a safe outcome. While the quality and operational limitations of the aircraft play an important role in reducing the level of risk, statistics indicate that the human element is the leading factor in aviation mishaps. It is, therefore, imperative to have a means to develop and promote safe attitudes for those people involved in flight operations. In addition, contract and management controls must be in place to assure that contract and employee pilots are fully qualified, proficient and current for the missions being performed.
- B. Pilots, crewmembers, and ground personnel play a primary role in preventing mishaps, and they must approach job accomplishment in a professional manner and use good judgment if the outcomes are to be successful. While management regards proficiency training as a productive means to accomplish this, a concentrated effort must be placed on the human factors aspect of performance. Human factors information allows for better interface with the machinery and environment in which we operate. Therefore, human factors training must be identified as a significant aspect of any mishap prevention plan.

- C. Aviation safety is best met by using a standardized approach. The FS has, through many years of operating experience, developed national requirements that set organizational limitations for flight operations. The purpose of these national requirements is to reduce exposure to hazards and manage risk through management controls. This approach emphasizes the importance of management interest, support, and involvement in nurturing successful outcomes in flight operations.
- D. Policy: All employees involved in aviation activities shall follow the policy set forth in FSM 5720.3. Additionally, Safety considerations will take precedence over costs or mission accomplishment.

Aircrew proficiency, currency, training, and standardization will receive high priority in an effort to prevent pilot error mishaps.

3.3. GROUND OPERATIONS

- A. Ground operations include those activities that are both directly and indirectly related to the support of aircraft and mission accomplishment. Ground activities that are undertaken haphazardly have the potential of being root causes to catastrophic mishaps. Mishaps that occur in flight operations frequently have causal factors that are directly attributable to ground activities. Therefore, ground activities are critical to assuring safe outcomes in flight operations. Forest Service management has acknowledged the significance of hazard identification and development of standard aviation ground operations. Details of adopted national requirements are found in various FS aviation manuals, handbooks, and guides. The requirements are used as controls in the development of operational procedures.
- B. Policy:
 - 1. Aviation objectives will be achieved by adherence to FS manuals, handbooks, guides, and operating procedures. (FSM 5703)
 - 2. Ground crews assigned to support aviation either directly or indirectly will be properly qualified for the specific assignment
 - 3. Helicopters deployed for project or suppression activity will be staffed with qualified personnel. Call-when-Needed (CWN) modules must be given time to conduct pre-use inspections, power checks, and verify pilot and aircraft qualifications cards prior to use. It is important that this be done at a location other than the incident helibase. (*Interagency Helicopter Operations Guide and National Interagency Mobilization Guide*)

REACTIVE MISHAP PREVENTION

Chapter 4

4.1. MISHAP INVESTIGATION

- A. The primary purpose of aircraft mishap investigations is the prevention of future occurrences. Investigations are conducted to identify and determine causal factors. Reactive hazard detection is accomplished through the identification of the cause(s) of mishaps and then taking corrective action to prevent their recurrence. Factors that could have a system-wide adverse effect on the safety of personnel, whether or not they contributed to the mishap, are included in the investigation.
- B. Forest Service investigations are to be conducted by professional aviation investigators to the greatest extent possible. Experience has shown that investigations performed by experienced professional investigators reveal more about what is causing mishaps. In addition to determining causal factors, investigators will forward management issues directly related to the mishap. Data obtained from investigations will be used for trend analysis and as a source of institutional memory. (FSM 5723)

4.2. HAZARD CORRECTION

The causes of most mishaps reveal failures to observe controls already established through previous risk management efforts and mishap experiences. In addition, some mishap causal factors reveal hazards not previously addressed adequately. It is imperative that these hazards or hazardous practices be corrected or they are sure to be repeated.

4.3. CHAIN-OF-EVENTS

Not all-hazardous situations result in mishaps. There is often a thin line between having a mishap and not having one occur. Mishaps tend to be random, unpredictable, and caused by a combination of circumstances and errors or chain-of-events. The same chain-of-events will not necessarily result in a mishap or the same magnitude of injury or damage if the timing is different. Often just altering one condition can prevent a mishap. Rarely is there a single, simple solution to preventing a mishap. Mishaps evolve from multiple causes and require multiple actions to prevent them from occurring.

4.4. PROXIMATE and ROOT CAUSE(S)

The cause of a mishap can be thought of as an unsafe act, unsafe condition or both which have potential for resulting in injury or damage. This type of mishap cause is referred to as "Proximate Cause(s)" defined as the nearest definable event, act or condition that can be identified as causative of the mishap. However, in order to eliminate the potential of experiencing a mishap we must determine the "Root Cause(s)". Root causes should be thought of as proximate causes reduced to answer the question "Why did this mishap occur." Root causes are always human deficiencies. Ultimately, human errors cause mishaps. If it's a mechanical failure, then you can be sure that human error is involved, either in how the device was designed, manufactured, or used.

PROACTIVE MISHAP PREVENTION

Chapter 5

5.1. REPORTING SAFETY EVENTS AND CONCERNS

- A. Each individual and organizational unit has an obligation to the aviation community to share mishap prevention information. A communication tool used to assist in this effort is the SAFECOM (FS Form 5700-14).
- B. SAFECOMs are used to report any condition, observance, act, maintenance problem, or circumstance, which has potential to cause an aviation-related mishap. Submitting a SAFECOM is not a substitute for “on-the-spot” correction(s) to a safety concern; rather it is a tool used in the documentation, tracking, and follow-up of corrective action(s) related to safety issues. Categories of reports include aircraft mishaps, aviation hazards, aircraft maintenance deficiencies, and airspace intrusions.
- C. If a mishap involves damage or injury, notify the appropriate Regional Aviation Safety Manager immediately by the most expeditious means available.
- D. Non-scheduled aircraft maintenance or repairs require that the appropriate Regional Aircraft Maintenance Inspector be notified before the aircraft is returned to service. A SAFECOM is required to be submitted to the Regional Aviation Safety Manager (RASM) within 5-days of the return to service.
- E. Submission (Electronic):
 - 1. Access the FS Aviation Safety Web Site at:
http://www.fs.fed.us/fire/av_safety/index.html
 - 2. From the Home page click on the “SAFECOM” link.
 - 3. From the SAFECOM page, click on “Submit SAFECOM” and complete the form. Once submitted, the SAFECOM will reside in the FS Aviation Mishap Database and the appropriate aviation safety managers will be notified by email that a SAFECOM has been submitted within the selected region.
- F. Submission (Hard Copy):
 - 1. Fill out the SAFECOM form and provide a copy to the appropriate Forest Aviation Officer (FAO).
 - 2. Upon receipt, the FAO will submit the SAFECOM electronically.
- G. Processing. Once a SAFECOM comes to the attention of the appropriate FAO, when necessary, corrective action(s) and comments should be documented on the form. It is incumbent on the FAO to quickly process SAFECOMs for distribution and dissemination to aviation users and managers.

- H. Dissemination. Timely distribution of SAFECOMs is a key component in mishap prevention. SAFECOMs may be accessed and printed from the "Public Access" area of the database. FAOs and the appropriate RASM should be contacted if additional information or follow-up action(s) is required.
- I. Access (Protected Area). Access to the SAFECOM "Protected Area" is limited to regional aviation safety program managers and FAOs.

5.2. TREND MONITORING

The identification of prevailing events serves to indicate areas of risk so that appropriate action may be taken accordingly. Trends develop when singular events occur at a rate that a general direction or tendency may be detected. Trends are more apparent when the frequency is high and the events are recent; however, events that occur over an extended period of time also develop trends that, if corrected, can reduce operational risk. Trends that develop locally are usually dealt with locally. However, they must be looked at from a national perspective to determine if they have a broader significance. Careful attention to hazards and causal factors that compromise flight safety can reduce our operational risk. The use of SAFECOM information for trend monitoring is another key component in a mishap prevention program.

5.3. OPERATING PLANS

It is imperative that all aviation operations be planned with necessary consideration given to safety goals that meet or exceed aviation safety standards established by the FS. Considerable forethought must be given to managing the risks and minimizing the hazards associated with FS missions. Each unit or project-operating plan is to be used to set procedures and generally state how aviation resources are to be utilized. Many factors are involved and each location has different needs. Plans must be continually reviewed and updated, as aviation operations are dynamic and continually evolve through operational experience. The next higher level in the organization should approve each operating plan. Both ground and air operations personnel must review the approved operating plan prior to beginning the planned mission.

Project Aviation Safety Plans are required for any aviation activity not formally addressed in the Forest/Grassland Aviation Safety Plan. See the National Aviation Management Plan or the Interagency Helicopter Operations Guide (IHOG Chap. 3) for details on preparing the Project Aviation Safety Plan.

5.4. TRAINING

- A. Training is clearly one of the most important factors in safe and successful aviation operations. It is essential that, in addition to aircraft pilots, aviation users, supervisors, and managers be knowledgeable of the inherent hazards and risks of aviation operations.

- B. Forest Service management is dedicated to conducting or providing for professional and technical training of employees in all levels of the organization that use and/or influence the use of aviation resources. Each operating unit develops and implements plans for the identification of initial and recurrent aviation training needs specific to its mission. Areas of aviation training are:
1. Orientation and basic aviation safety for all users (ie, Flight Manager/Chief of Party Training)
 2. Dispatching and flight-following procedures
 3. Management of aviation operations and equipment
 4. Planning and execution of projects using aviation resources
 5. Proficiency and special mission training for pilots
 6. Technical maintenance training on aviation equipment
 7. Advanced safety practices for aviation professionals and specialists
 8. Human factors in aviation for aviation professionals and managers
- C. Managers, supervisors and employees shall use the Interagency Aviation Training Guide to determine minimum course and currency requirements at the full performance level for all Forest Service personnel involved in aviation operations. Course requirements, computer-based training, and guides may be found at www.iat.gov.

5.5. STANDARD CONTRACT

Contractors provide approximately 90% of all FS aviation services. Therefore, national standard contract specifications have been developed for the technical aspects of administering contractor-furnished aviation services. The standard contract specifications are minimum safety and performance requirements for mission-specific equipment and operations. The Contracting Officer (CO) is the legal authority for administration of the contract. Every employee using or managing contractor-furnished aviation services is required to immediately notify the CO when a contractor or a contractor's employee engages in unsafe acts or violates a requirement of the contract. The appropriate Regional Aviation Safety Office should also be notified and the occurrence documented on a SAFECOM.

5.6. INSPECTIONS AND APPROVALS

The FS has adopted requirements and developed inspection procedures for FS aviation inspectors to verify and evaluate contractors and cooperators-provided flight crews, aircraft, and required equipment. The requirements, which are the foundation of the approval system, have evolved through operational experience and are the minimally acceptable criterion for providing an adequate standard of safety while conducting FS missions. The inspection procedures are intended to provide the pilot inspectors with a means of determining the flight crew's qualifications, level of proficiency, and application of mishap

prevention measures. In addition, the procedures also provide equipment inspectors with a means of determining the condition of the aircraft, required equipment, and the level of compliance with an approved maintenance program. Each employee that uses or causes the use of contractors and cooperator-furnished aircraft is required to determine that the pilots and aircraft have been approved for the specific FS mission.

5.7. SAFETY EVALUATIONS

- A. Safety evaluations are a means of determining compliance with safety standards and to detect unsafe conditions prior to experiencing a mishap involving possible loss of life, personal injury, or property damage.
- B. Formal evaluations are accomplished using a team of FS, interagency and/or industry aviation and management officials to conduct surveys, audits, and reviews. The evaluation team is responsible for providing the operation unit and its managing organization with a written report of its findings and responsible for developing and implementing an action plan that addresses the findings and recommendations contained in the report. These evaluations should be conducted periodically at each established aviation base.
- C. Informal evaluations are conducted on a more frequent basis and are performed by aviation specialists during field assistance visits to Forests and Grasslands, aviation bases, incident bases, and projects. In all cases, follow-up includes all subsequent activity needed to see that corrective actions are taken.

AIRCRAFT MISHAP RESPONSE ACTIONS

Chapter 6

6.1. RESCUE OPERATIONS

- A. Time is an extremely critical factor in responding to an emergency situation. Immediate positive action is necessary; delay may effect someone's survival.
- B. Preserve life and secure the area.
- C. Do whatever is necessary to extricate injured occupants and to extinguish fires, keeping in mind the necessity of protecting and preserving evidence.
- D. Secure the area and deny access except to authorized officials.
- E. Document and/or photograph the location of any debris which must be disturbed in order to carry out rescues and/or fire suppression activities.

6.2. SITE SAFETY PRECAUTIONS

Aircraft wreckage sites can be hazardous for many reasons other than adverse terrain or climatic conditions. Personnel involved in the recovery, examination, and documentation of wreckage may be exposed to physical hazards posed by such things as hazardous cargo, flammable and toxic fluids, sharp or heavy objects, and disease. It is important to exercise good judgment, utilize available protective devices and clothing, and use extreme caution when working in the wreckage. Do not exceed your physical limitations.

6.3. WRECKAGE SECURITY

Treat the area like a crime scene. Arrange for security at the mishap scene. Determine if hazardous materials (HazMat) are on the aircraft and request special assistance if necessary. Wreckage and cargo should not be disturbed or moved except to the extent necessary:

- To remove persons injured or trapped
- To protect the wreckage from further damage
- To protect the public from injury
- Deactivate the emergency locator transmitter (ELT) if installed. Where it is necessary to move aircraft wreckage, mail or cargo, sketches, descriptive notes, and photographs should be made. Monitor mishap site security. Permit only authorized persons on site.

6.4. NEWS RELEASES

The National Transportation Safety Board (NTSB) should make contacts with news media regarding the mishap.

6.5. EVIDENCE

Perishable evidence, e.g. human factors data and witness information must be quickly documented.

FLIGHT FOLLOWING

Chapter 7

7.1. IDENTIFICATION OF FLIGHT FOLLOWING REQUIREMENTS

- A. The time required to rescue a survivor is directly related to how accurately the survivor's position can be determined. If a flight plan was filed, the aircraft stayed on course, and its progress was updated with frequent position reports, the chance of rescue is greatly enhanced.
- B. At the time the flight is planned, flight following requirements should be clearly identified. Requirements should identify check-in procedures, including time and locations, dispatch office(s) or other flight following facilities involved, individuals responsible for flight following, frequencies to be used, and any special circumstances requiring check-ins (i.e. military facilities within Special Use Airspace). Flight Following may be accomplished using Automated Flight Following (AFF). AFF is a web-based application that provides the flight follower real time information regarding an aircraft's location, airspeed, current heading, current altitude, and the flight history. (See National and Area Interagency Mobilization Guides, Chapter 24.3.1 for AFF requirements and procedures.)

7.2. CHECK-IN REQUIREMENTS

Check-in intervals or times must be specified in the agency's flight following procedures. Check-ins must be documented and provide enough information so that the aircraft can be easily located if it is overdue or missing.

7.3. FAILURE TO MEET CHECK-IN REQUIREMENTS

The dispatch or other flight following facility shall implement response procedures for overdue or missing aircraft.

7.4. OVERDUE OR MISSING AIRCRAFT

- A. An aircraft is considered "Overdue" when the pilot fails to check-in within the time frame specified in the agency's flight following request, or when an aircraft operating on an FAA (VFR) Flight Plan, fails to arrive within 30-minutes past ETA, and its location cannot be established.

- B. An aircraft may be considered missing when its fuel duration, as reported on its request for flight following or as reported on its FAA Flight Plan, has been exceeded and the aircraft's location is not known. Agencies have the option of instituting missing aircraft procedures at any time prior to fuel exhaustion time. An aircraft is considered "Missing" by the FAA when it has been reported to an FAA Flight Service Station (FSS) as being "Overdue" and FSS has completed its administrative search for the aircraft.

FAA Flight Service Station
Dial 1-800-992-7433 or 1-800-WXBRIEF

The FSS may require the following information:

- | | |
|--------------------|------------------------|
| ▪ Reported by: | ▪ Agency: |
| ▪ Phone: | ▪ Flight Plan (type): |
| ▪ Operator: | ▪ Pilot's Name: |
| ▪ Aircraft # | ▪ Aircraft Type: |
| ▪ Aircraft Color: | ▪ Number Aboard: |
| ▪ Departure Point: | ▪ Departure Date/Time: |
| ▪ Route: | ▪ Destination: |
| ▪ ETA: | ▪ Fuel on Board: |

APPENDIX 1

DEFINITIONS

- A -

Aircraft Accident. An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage.

Aircraft Incident. An occurrence other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations.

Airspace Conflict. A near mid-air collision, intrusion, or violation of airspace rules.

Automated Flight Following. A satellite-based tracking system used to flight follow aircraft equipped with appropriate equipment. Dispatchers/coordinators may use the web-based computer-tracking program to flight follow aircraft instead of the traditional radio check-in.

Aviation Hazard. Any condition, act, or set of circumstances that exposes an individual to unnecessary risk or harm during aviation operations.

- B -

Backcountry Airstrip. An airstrip located in remote, rugged, usually mountainous terrain which is maintained to lower standards than FAA funded airports. These airstrips are generally surfaced with sand, sod and/or gravel and may contain hazards that may include one-way-in/one-way out access with the runway not visible to the pilot until the aircraft is committed to landing. Often unattended, wild or domestic animals, washouts, overgrowth, humps, swells, and side slopes may be encountered with landing areas that are rarely straight and level. Mountain winds, high density altitudes, short runways, turbulence, and mountain obstacles are additional hazards that may challenge the capabilities of the aircraft and pilot.

- C -

Causes. Causes are those findings, which singly or in combination with other causes, resulted in the damage, or injury that occurred. A cause is a deficiency, the correction, elimination or avoidance of which would likely have prevented or mitigated the mishap damage or significant injuries. A cause is an act, an omission, a condition, or a circumstance, and it either starts or sustains the mishap sequence. A cause may be an element of human or mechanical performance. An environmental condition may be a cause if it was not reasonably avoidable. Findings which sustained the mishap sequence, but were normal to the situation as it developed, are not causes. These are often unavoidable effects of a preceding cause. Apply the 'reasonable person' concept when determining the causes. If a person's performance was reasonable, considering the mishap circumstance, do not assign cause. It is not appropriate to expect extraordinary or uniquely superior performance in activities.

DEFINITIONS

(Continued)

- F -

Fatal Injury. Any injury which results in death within 30 days of the accident.

Findings. Findings are the conclusions of the investigation team. They are based on the weight of evidence, the investigation teams professional knowledge and their best judgment. They are statements of significant events or conditions leading to the mishap or event. They are arranged in the order in which they occurred. Though each finding is an essential step in the event sequence, each is not necessarily a cause factor.

First Aid. Any medical attention that involves no medical bill. If a physician prescribes medical treatment for less than serious injury and makes a charge for this service, that injury becomes "medical attention."

Forced Landing. A landing necessitated by failure of engines, systems, or components which makes continued flight impossible, and which may or may not result in damage.

- G -

General Aviation. That portion of civil aviation that encompasses all facets of aviation except air carriers.

- H -

Human Factors. A multidisciplinary effort to generate and compile information about human capabilities and limitations; and apply that information to equipment, systems, facilities, procedures, jobs, environments, training, staffing, and personnel management for safe, comfortable, effective human performance.

- I -

Incident with potential. An incident that narrowly misses being an accident and in which the circumstances indicate significant potential for substantial damage or serious injury. Final classification will be determined by the Forest Service (FS), Aviation Safety Manager.

- L -

Life-Threatening. A situation or occurrence of a serious nature, developing suddenly and unexpectedly and demanding immediate action to prevent loss of life.

- M -

Maintenance Deficiency. An equipment defect or failure which affects or could affect the safety of operations, or that causes an interruption to the services being performed.

DEFINITIONS
(Continued)

- M -

Medical Attention. An injury, less than serious, for which a physician prescribes medical treatment and makes a charge for this service.

Mission Use. The use of an aircraft that in itself constitutes discharge of official Forest Service responsibilities. Mission flights may be either routine or emergency, and may include such activities as leadplane, smokejumper/paracargo, aerial photography, mobilization or demobilization of emergency support resources, reconnaissance, survey, backcountry flights/airstrips, and project support. Mission flights do not include official travel to make speeches, attend conferences or meetings, or make routine site visits.

Mountainous Terrain. That terrain as identified in 14 CFR 95.11 and depicted in the Aeronautical Information Manual Figure 5-6-2 ADIZ Boundaries and Designated Mountainous Areas.

- N -

Non-chargeable Accidents. Those accidents in which Forest Service (FS) was not exercising operation control over the aircraft at the time of the accident but in which FS employees or FS procured aircraft were involved.

- O -

Operational Control, Aircraft. The condition existing when an entity exercises authority over initiating, conducting or terminating a flight.

Operator. Any person who causes or authorizes the operation of an aircraft, such as the owner, lessee, or bailee of an aircraft.

- P -

Precautionary Landing. A landing necessitated by apparent impending failure of engines, systems, or components which makes continued flight inadvisable.

- S -

Serious Injury. Any injury which: (1) requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, muscle, or tendon damage; (4) involves any internal organ; or (5) involves second or third degree burns, or any burns affecting more than 5 percent of the body surface.

Statistically Accountable Accidents. Those accidents in which Forest Service exercised operational control of the aircraft.

DEFINITIONS
(Continued)

-S-

Substantial Damage. Damage or failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Engine failure or damage limited to an engine if only one engine fails or is damaged, bent fairings or cowling, dented skin, small punctured holes in the skin or fabric, ground damage to rotor or propeller blades, and damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wing tips are not considered "substantial damage".

System Safety. The application of special technical and managerial skills in a systematic, forward-looking manner to identify and control hazards throughout the life cycle of a project, program, or activity.

APPENDIX 2

ABBREVIATIONS

AMIS	Aviation Management Information System
ASM	Aerial Supervision Module
AFF	Automated Flight Following
CO	Contracting Officer
CWN	Call-when-Needed
ELT	Emergency Locator Transmitter
FAA	Federal Aviation Administration
FAO	Forest Aviation Officer
FARS	Federal Aviation Regulations
FS	Forest Service
FSM	Forest Service Manual
FSS	Flight Service Station
HAZMAT	Hazardous Material
IAT	Interagency Aviation Training
IHOG	Interagency Helicopter Operations Guide
IFR	Instrument Flight Rules
MTR	Military Training Route
NASMPP	National Aviation and Safety Mishap Prevention Plan
NTSB	National Transportation Safety Board
RASM	Regional Aviation Safety Manager
SAFECOM	Safety Communiqué
TFR	Temporary Flight Restriction
VFR	Visual Flight Rules

APPENDIX 3
EMERGENCY CONTACT LIST
 (Sample)

Position/Name	Agency	Phone #	Radio Frequency
Fire/Crash Rescue			
Fire			
Rescue			
Medical			
Ambulance			
Air Ambulance			
Hospital			
Burn Center			
Poison Center			
Law Enforcement			
Police			
Site Security			
Accident Investigation			
Safety Manager			
Investigator			
Public Affairs Representative			
Flight Following			
Dispatch			
Flight Service Station			
Other			