



WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

Aviation Program Operating Plan

June 2010

DRAFT

Washington State Department of Natural Resources
Aviation Program Operating Plan

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Introduction

Purpose of the Aviation Program Operating Plan

The Washington State Department of Natural Resources (WADNR) has developed this Aviation Program Operating Plan as a tool to provide aviation operation information to department employees, contractors and cooperators.

Mission Statement

The aviation program provides a safe and cost effective transportation and wildfire suppression services to the DNR and its cooperators. The aviation section provides these services in compliance with all federal, state and local laws, rules and guidelines pertaining to aviation issues and associated personnel and equipment.

Objectives of Plan

- A.** Define and standardize WADNR management and aviation operating procedures.
- B.** Provide direction for agency personnel to conduct safe, efficient, and effective aircraft operations.

This plan is reviewed and updated annually. Suggestions for changes are routed through the WADNR Fire Aviation Section Manager. Items pertaining to life safety will be addressed immediately. These revisions or alerts will be made known to all field and office personnel via statewide memorandum. Items not pertaining to safety, such as suggestions for operational change or new inclusions to the Plan, are submitted at WADNR's annual Fall Aviation Meeting for consideration in the following year's rewrite, or at other times to the WADNR Fire Aviation Section Manager. The Resource Protection Division Manager gives final approval to changes to the Aviation Management Plan.

Copies of this document are distributed to each DNR Region and Division, dispatch and communications centers, user programs and cooperator agencies.

A copy of this document can be found on-line at the WADNR Internet site at <http://www.dnr.wa.gov/> or be requested through:

WA DNR Aviation Section
Resource Protection
PO Box 47037
Olympia, WA 98504-7037
(360) 902-1300

SIGNATURES

This document has been reviewed and approved. Contents of this document, title the Washington State Department of Natural Resources Aviation Program Operating Plan, constitute current agency policy and procedure, and may be supplemented in greater detail by additional manuals and/or documents.

Signature: _____ Date: _____
Dennis Carlson, Resource Protection (360) 902-1736
Fire Aviation Section Manager

Signature: _____ Date: _____
Gerry Day, Resource Protection (360) 902-1207
Assistant Division Manager, Fire Control and Aviation

Signature: _____ Date: _____
Joe Shramek, Resource Protection (360) 902-1317
Division Manager

Chapter 1

ADMINISTRATION

I. Aviation Operations Overview

The Washington State Department of Natural Resources (WADNR) operates a combination of fixed wing and rotor wing aircraft to support agency/cooperator operations. The WADNR owns/leases several of its aircraft, and also relies on contracted and cooperator aircraft for support.

The WADNR aviation program includes the following missions or activities:

Initial Attack: Currently WADNR operates a fleet of four Federal Excess Personal Property (FEPP) UH-1H (Huey) helicopters and four operational AH-1F (Cobra) helicopters for wildland fire support. In addition, a UH-1H helicopter is leased from the Chelan County Fire District 1. All are staffed by WADNR pilots based in Olympia. As fire season begins, the helicopters are detailed to strategic locations (coinciding with fire danger levels). The base of helitack operations is at Bowers Field in Ellensburg, adjacent to DNR's Southeast Region Headquarters, where the helitack crew resides. A fleet of WADNR fuel trucks support helicopter operations in the field and WADNR employees do the fueling.

Contract Aircraft and National Guard: The WADNR may contract medium type air tankers for fire suppression. These tankers may be strategically based at various locations around the state. These medium air tankers may scoop water from surrounding lakes to be dropped on fires. Other smaller fixed wing aircraft are contracted for a variety of uses, including aerial spraying, forest health survey flights, lightning detection, and fire support.

The WADNR also contracts private helicopters for field projects and fire suppression.

During wildfire incidents where aid is needed or multiple jurisdictions are involved, the WADNR often relies on aircraft assistance from cooperators--using their helicopters, air tankers and lead planes. The regulations governing these cooperator aircraft are set forth in interagency agreements, and within cooperators' own policies and procedures. When other aerial resources are exhausted, National Guard Blackhawk, Huey, and Chinook helicopters may be brought to assist with fire suppression and support missions when activated by the Governor.

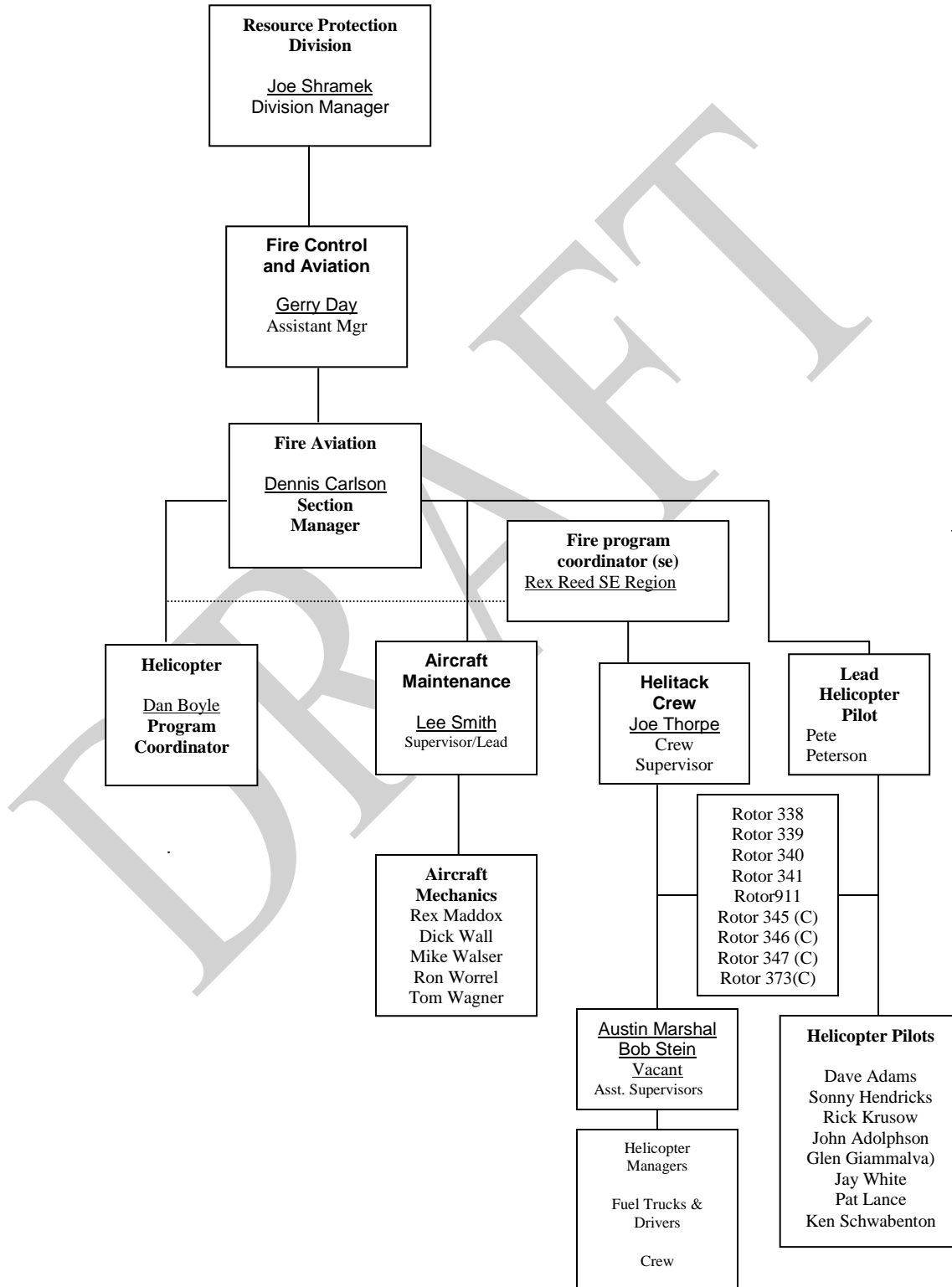
Support Activities: WADNR employees provide a number of skills and services to support the following functions:

- a. **Aviation Safety:** Statewide responsibility for Aviation Safety is provided by the Resource Protection Division Safety Officer.

- b. **Maintenance/Inspection:** WADNR pilots and/or maintenance personnel inspect and approve owned, contracted, and Call When Needed (CWN) aircraft for specific missions annually.
- c. **Helicopter Pilot Inspection and Approval:** WADNR lead helicopter pilot is responsible for the review of qualifications, check-ride status, and approval of seasonal, contract, and call when needed pilots, for specific missions.
- d. **Training:** The specialized nature of WADNR's aviation functions requires extensive training efforts. The WADNR helicopter lead pilot establishes and implements training and certification programs for employees in helicopter pilot related positions. In addition to Incident Command System Qualifications courses as described in PWS 310-1, WADNR provides several other types of training for its aviation programs, including: Helicopter Fuel Truck Driver Training, Helitack Operations Field Training, Helicopter Safety and Long line Training for field personnel, and Helicopter Pilot Fire Suppression/Support Missions Training. (see *Chapter 6: Training*).

II. Organization and Management

Washington State Department of Natural Resources Aviation Section



Fire Aviation Section Authority

The WADNR Aviation Section manages all agency helicopter, contract, and call when needed (CWN) aviation operations.

Regional Authority

The Aviation Section delegates operational authority to the Regions when aircraft are stationed within their jurisdictional boundaries. While on fires, or other incidents, the Incident Commander exercises operational control of helicopters, crews, other WADNR or contract aircraft, and aircraft pilots and mechanics.

Contact Information

Aviation Mishap Emergency Contacts List

Update phone numbers, frequencies and points of contact annually

PRIMARY RESPONDERS (Emergency Response—911)

Local dispatch & user groups fill in the closest:

| | | |
|-----------------------------|--|--|
| Fire Department | | |
| Police Department, Security | | |
| Ambulance | | |
| Air Ambulance | | |
| Hospital | | |
| Burn Center | | |

Other/Notes:

SECONDARY RESPONDERS (Support Personnel)

| | | |
|--|----------------|------------------|
| FAA Flight Service Station (to report missing aircraft or crash) | (800) 992-7433 | (1 800 WX BRIEF) |
| FAA 24 hr. Communication Center | (202) 267-3333 | |
| NTSB Communication Center | (202) 314-6290 | |
| OAS/USDA-FS Aviation Safety Manager | (888) 464-7427 | (1 888 4MISHAP) |
| Hazmat Response Team | | |
| Coroner | | |
| Clergy | | |
| Explosive Ordnance Disposal (Military or Police) | | |
| Engineer/Recovery Specialist | | |

Other/Notes: Dennis Heryford is designated lead investigator on any aircraft accidents.

AGENCY MANAGEMENT (Contact ASAP-- without hindering dispatch of life support or rescue)

| | | |
|---|------------------|------------------|
| Dennis Carlson, Fire Aviation Section Manager | W (360) 902-1736 | C (253) 307-0196 |
| Joe Shramek, RP Div. Mgr. | W (360) 902-1317 | C (360) 791-8360 |
| Gerry Day, RP Div. Assistant Manager | W (360) 902-1207 | C (360) 623-9302 |
| Gary Kessler, Agency Safety Officer | W (360) 902-1133 | |

| | | |
|---|------------------|---|
| Dan Boyle, Division Safety Officer Public Affairs Officer | W (509) 925-0967 | C (360)480-0490 |
| Dan Boyle, Helicopter Program Coordinator | W (509) 925-0967 | C (360)480-0490 |
| Other/Notes: Dennis Heryford is lead investigator on any aircraft accident. | | |
| OTHER (Contact as Needed) | | |
| Military Base Operations | | |
| Federal Emergency Management Agency (FEMA) | | |
| Aircraft Owner/Operator | | |
| Washington State Department of Transportation | (206) 764-4131 | (206) 443-4131 |
| WA State Department of Emergency Services | (360) 438-8639 | (360) 585-8638 |
| Seattle Air Route Traffic Control Center | (800) 258-5990 | (206) 351-3560 bus. Hrs. (206) 351-3520 after hrs. |
| Aeronautics Division | (800) 522-0666 | |

Aviation Contact List

| Name & Title | Office Number | Cell Number / Pager | E-Mail |
|---|----------------------------------|------------------------|--|
| Joe Shramek Resource Protection Division Manager | (360) 902-1708 | (360) 791-8360 | joe.shramek@dnr.wa.gov |
| Gerry Day Fire Control & Aviation Asst. Div. Mgr | (360) 902-1754 | 360-742-7442 cell | gerry.day@dnr.wa.gov |
| Dan Boyle Helicopter Program Coordinator | (509) 925-0967 | (360) 480-0490 | Dan.boyle@dnr.wa.gov |
| Dennis Carlson Fire Aviation Section Manager | (360) 902-1736 | (253) 307-0196 cell | dennis.carlson@dnr.wa.gov |
| Albert Kassel Emergency Operations Mgr. | (360) 902-1316 | (360)701-5042 cell | albert.kassel@dnr.wa.gov |
| Lee Smith Aircraft Mechanic Supervisor | (360) 753-5314 | (360)480-7305 cell | lee.smith@dnr.wa.gov |
| Dennis Heryford Division Investigator | (360) 902-1326 | | Dennis.heryford@dnr.wa.gov |
| Rex Reed Fire Helicopter Program, Ellensburg | (509) 925-0968 | (509)899-5135 cell | rex.reed@dnr.wa.gov |
| Rette Bidstrup Airtanker Program, Deer Park | (509) 685- 69004 | | rette.bidstrup@dnr.wa.gov |
| Glenn Kohler Forest Health Survey Flights | (360) 902-1342 | | glenn.kohler@dnr.wa.gov |
| Joe Thorpe Helitack Crew Supervisor | (509) 925-0958 | (509)899-1847 cell | Joe.thorpe@dnr.wa.gov |
| Pete Peterson Helicopter Pilot, Lead | (509) 925-0958 (360) 753-5314 | (360)790-9635 | Pete.peterson@dnr.wa.gov |
| Aviation Hanger, Olympia | (360) 753-5314 (360) 664-8602 | | |
| Helitack, Ellensburg | (509) 925-0958 | | |

| | | | |
|---|----------------|--|--|
| | (509) 925-0981 | | |
| Pilot Ready Room, Ellensburg | (509) 925-0921 | | |
| Central Washington Interagency Communications Center (CWICC) | (509) 884-3473 | | |
| Northeast Washington Interagency Communications Center (NEWICC) | (509) 685-6900 | | |
| DNR Emergency Coordination Center | 360-902-1300 | | |

III. Aircraft Operations

General Conditions

Aircraft operated by WADNR fall under multiple governing regulations. WADNR aircraft operations follow Federal Aviation Regulations (FAR's) as a *minimum*, in conjunction with WA DNR internal policies and procedures. Additional regulations apply to FEPP aircraft, as well as aircraft that may be called upon to respond to interagency incidents.

Federal Aviation Administration Regulations

All WADNR flight operations comply with the Federal Aviation Regulations (FAR). For Civil Aircraft--see FAR part 43 for Maintenance Regulations, and FAR part 91 for Operations Regulations. For Public Aircraft—see FAR part 91.

FEPP Regulations

The FEPP program provides State agencies with the means to acquire, through the USDA Forest Service, excess aircraft from military services and federal civilian agencies. In accordance with FEPP Guidelines, States that acquire FEPP aircraft from the USDA Forest Service acquire them based entirely on the State's own fire protection needs, and may use the aircraft only for fire protection activities. Loaning FEPP aircraft to non-fire-protection entities is not permitted. FEPP aircraft may be used for non-fire, but only up to 10 percent of the annual flight time for each individual aircraft.

- Remaining the property of the U.S. Government, WADNR must provide adequate security and control of these aircraft. Part of this management entails having an aircraft operating plan, an aviation safety officer, documentation of the State's aviation safety program, an organizational chart showing lines of authority, and the designation of a lead pilot. All aircraft and parts must also be protected from theft, weather, vandalism, and other damage.
- Renting of FEPP aircraft is not permitted. If incidental use of FEPP aircraft is authorized or assistance is rendered, it is permissible to recover the direct cost of operating the equipment.

- Due to the inherent advantages that government agencies have, including the use of FEPP, the WADNR cannot bid against nor compete in any other way with the private sector in using FEPP equipment. Therefore, in non-emergency situations where there are commercial services available, the WADNR does not use FEPP aircraft.
- FEPP aircraft are maintained using the original military standards and/or manufacturer's maintenance specifications, but may be maintained to meet additional commercial (FAA) standards. If used in combination, and resulting in conflict, the more stringent standards apply. The WADNR maintains appropriate records on all time/life parts. Federal aircraft or aircraft parts that are no longer needed to support WADNR programs are to be disposed of per FEPP guidelines.
- The FEPP Aircraft Annual Use Report for each aircraft is submitted annually by December 31st to the regional/area FEPP manager, and by January 15th to the national FEPP manager.

Further information about FEPP Guidelines and Regulations is available on the USDA Forest Service FEPP aviation website @

www.fs.fed.us/fire/partners/fepp/desk_guide/chapter40.htm

Updates on FEPP are posted regularly at www.fs.fed.us/fire/planning/fepp

The National FEPP manager can be contacted at:

FEPP Manager, USDA Forest Service

Fire and Aviation Management

P.O. Box 96090

Washington, D.C. 20090-6090

Questions about WADNR FEPP acquisition, use, or guidelines can be directed to the WADNR FEPP specialists: Daniel Boyle at 509-925-0967 or Bob Bannon at (360) 902-1315.

Approved Uses of Aircraft

WADNR aircraft are used only for official agency business. Priorities for aircraft use are established based upon the needs of the agency. Normal aviation functions can be over-ridden by State emergencies (example: wildfire, floods, and life-threatening events).

Cost of Operation

Total cost of operation for each type and size of FEPP aircraft can be no more than that for similar commercial aircraft rentals. For rates on WADNR operated aircraft see *VI, finance and billing* of this chapter.

Pilot and Crewmember Entitlements: For current pilot and crewmember per diem entitlements and salaries, and rate of personal vehicle or personal aircraft mileage reimbursements, refer to DNR Human Resources, Office of Personnel Management, 1 (360) 902-1150 or visit the WADNR website.

Passenger Policy

Passengers approved for WADNR flights must be on official state business and/or be essential to the official mission. Passengers are not limited to State employees, but may also include:

- Contractors hired by the state
- Other state, federal, city, and county employees
- Volunteer firefighters on state or county fires
- Detailers/trainees from cooperator agencies
- Persons needing assistance (such as evacuations or medical aid flights)
- Emergency response personnel

All passengers are provided a safety briefing before the flight (done by pilot or authorized manager/crewmember), and follow the agency personal protective equipment (PPE) and flight-discipline requirements, as covered in this document. (*See chapter. 2 subsection on Aviation Life Support Equipment, and chapter 4 subsections on Passenger Conduct, Passenger Briefings, and Passenger & Cargo Manifests*).

Interagency Agreements

WADNR annually enters into incident response agreements with its cooperators. This allows for quick and coordinated mutual aid on new fire starts. For the terms of this agreement, contact Financial Management at 1 (360) 902-1665. For the USDA/USDI Fire and Fire Aviation Management standards see the “Redbook” at www.fire.blm.gov/standards.redbook.htm

IV. Use of Interagency Helicopter Operations Guide (IHOG)

The WADNR uses the Interagency Helicopter Operations Guide (IHOG) as a *guide*, rather than agency policy. WADNR abides by IHOG regulations on fires where jurisdiction is that of a governing agency for which the IHOG is policy, with the exception of WADNR variances. *See Chapter 9, subsection titled “Agency Variances to the IHOG.”*

V. Aviation Operations Guides and Supplements

Because of the diversity of agency aircraft capabilities and the types of missions performed, this Plan provides latitude for each aviation program user group to develop and review/update its own supplements, operation guides, and operation manuals. These may include (but are not limited to) local operational procedures, training guidelines and detailed information not found in the Plan itself. (Examples: Helitack Crew Guidelines, Maintenance Operations Manual, Helicopter Operations Manual, Airplane Operations Manual, and the Resource Protection Division Forest Health Section Aviation Safety Plan)

WADNR may also adopt sections of other agency/interagency materials (such as IHOG) as appropriate. When adopted as agency policy, these sections are specifically referenced in this document and do not constitute agency policy until so referenced. No aviation operations conducted by the WADNR may be in conflict with this Plan.

VI. Finance: Billing and Aircraft Rates

Aircraft hourly rates are established annually to cover anticipated operating expenses—such as fuel, oil, inspections and maintenance—and to maintain the aircraft in a safe operating status. As per FEPP guidelines (*see previous section on Federal Excess Personal Property Regulations*), use rates for FEPP aircraft do not include depreciation, amortization, modification, profit, risk, startup or replacement costs.

Flight hours are recorded and tracked through the Aircraft Flight Logs, where pilots break down hours according to incident and mission type. Helicopter missions on fires are also assigned a program/incident code, and recorded on the Helicopter Manager’s form entitled Helitack Fire Time and Extra Hours Report. Billing and cost recovery are done through the Resource Protection Aviation Section, often in close coordination with RPD Fire and Business and Cost Containment Section and Regional billing representatives.

Aircraft rates are reviewed annually, and adjusted as necessary. The calendar year 2010 rates are as follows:

| | |
|------------------------------|-------------|
| UH-IH Huey Helicopters | \$2,750/hr. |
| AH-IF Cobra Helicopters..... | \$2,750/hr. |

VII. Insurance

Effective June 8, 2010 the King Air aircraft was sold and the primary aviation policy has been cancelled. DNR’s eight helicopters and the one helicopter owned by Chelan County and managed by DNR’s aviation program are covered under the Excess Aviation Liability insurance policy. DNR’s third aviation policy is an Airport Liability policy for Olympia’s airport where DNR owns one hanger and leases two others.

The following subsections on *Liability* and *Aviation Accidental Death & Disability Insurance Coverage* does reflect policies for 2010. Updates on rates, coverage, exclusions, etc., and other questions, are to be directed to:

Jim Smego Risk Manager
DNR Finance Management Division
P.O. Box 47041
Olympia, WA 98504-7041
(360) 902-1200
jim.smego@dnr.wa.gov

Liability

The WADNR maintains three commercial aviation policies. The first two are listed here, and the third is found under Aviation Accidental Death & Disability. -The agency helicopters-are owned by the USDA Forest Service (on permanent loan to the WADNR.)

The excess aviation policy provides for liability coverage only for WADNR's eight helicopters for losses between \$1 to \$25 million, and for the Chelan County helicopter it provides both hull and liability coverage at the same limits

Aviation Accidental Death & Disability

The Aviation Accidental Death & Disability policy provides supplemental coverage (from Labor & Industries) of up to \$95,000 for passengers of the WADNR helicopters if injured or killed in the course of business operations for the WADNR. This policy is covered in the Revised Code of Washington (RCW 43.01.120)

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Chapter 2

AVIATION SAFETY, SECURITY, and EMERGENCY RESPONSE

I. Aviation Safety Plan

General: The objective of an effective safety plan is to minimize injuries, losses and damage resulting from WADNR operations; the top priority of the safety plan is the safety of WADNR's employees and members of the public.

WADNR's approach to accomplish this objective is to prevent accidents. The primary determinant for success in preventing accidents is attitude. All individuals involved in aviation operations consistently maintain an attitude of safety awareness, and aviation managers consistently practice, encourage and support safety awareness.

Accident prevention is an integral part of the WADNR Aviation Safety Program. Accident prevention comes through standardized operating procedures, the identification of training needs and provision for adequate training, identification and mitigation of known hazards, and a functional open communications system for wide dissemination of information pertaining to aviation safety. WADNR is committed to providing these accident prevention standards for all employees involved in aviation operations.

Periodic review of the WADNR Aviation Safety Program occurs, to ensure safety standards are being met. The Resource Protection Division Aviation Section encourages all aviation managers and users to maintain close contact with other aviation organizations (federal, state, civil, military) for the purpose of sharing safety updates and information. Aviation managers disseminate this information by way of program changes, training supplements, and crew briefings.

Safety Awareness. Safety awareness means knowing how to do the job or mission properly before starting. It requires knowing WADNR policies, applicable standards and procedures, and following them consistently. Operational decisions are made with safety given top priority. Safety-related policies, standards, procedures and contract specification's are developed through a technique called risk management.

Risk Management. Risk Management is a technique of applying order and system to an intuitive human decision making process. The decision is whether and/or how to do something in the face of hazards to its successful accomplishment. Hazards in this context are conditions, situations or events, which are potential causes of accidents. A risk is the probability of a specific hazard causing or contributing to an accident with undesirable consequences in a particular operation. Successful risk management is based on three rules:

- A. Accept no unnecessary risk.
- B. Make risk decisions at an appropriate level.
- C. Accept risks only if benefits outweigh potential consequences.

WADNR RPD Aviation Section encourages all employees involved to ask the following questions before beginning any aircraft operation. Applying the rules of risk management to an aviation mission involves the following steps:

- A. Identify the hazards associated with each specified or implied task involved in the flight or mission.
- B. Assess the risks: evaluate the probability of each hazard causing an accident and the probability of potential injuries, losses or damage, which could result from such an accident.
- C. Make the appropriate decisions. Sometimes there is only one to make: cancel the flight or disapprove the mission until hazards are more acceptable, or, alternatively, launch the flight or approve the mission. More often, the benefits to be gained by the operation dictate that it be conducted, but only if the risks can be eliminated or minimized by controls over how and by whom the operation is conducted.
- D. Identify appropriate controls. These may be in the areas of qualifications of participating individuals, performance capability of aircraft used, aircraft equipment, weather conditions, operating procedures, terrain environment, personal protective equipment, ground support, communications and others.
- E. Implement controls. This may mean establishing agency policies, standards and procedures in the WADNR manuals, handbooks, and guides, providing training to participating employees, and developing contract and rental agreement specifications for pilots, aircraft, support and operations.
- F. Monitor operations. Review mission performance and suitability and adherence to controls. Take prompt corrective actions as appropriate.

To assist in the decision making process several questions may/should be asked by all personnel involved in the operation:

- Is this flight necessary?
- Who is in charge?
- Are all hazards identified and have you made them known to the flight personnel?
- Should you stop the operation/flight due to a change in conditions?
- Is there a better way to do it?
- Are you driven by an overwhelming sense of urgency?
- Can you justify your actions?
- Are there other aircraft in the area?
- Do you have an escape route?
- Are there any rules being broken?
- Are communications getting tense?
- Are you deviating from the assigned operations of flight?

Hazards. Hazards existing in both ground and flight operations are not always easily detectable. Pilots, mechanics, managers, dispatchers, crewpersons and passengers all see aviation operations from differing perspectives. Consequently, hazard identification is most effectively approached as a team effort. All aviation managers must encourage hazard detection and accurately identify hazards to decrease aviation risks. This is the first step in risk management.

Identification of hazards by participating individuals, observation of ‘near misses’, analysis of data, safety evaluations and reviews of project plans provide means of proactive, risk management. All individuals involved in aviation activities have an obligation to share hazard, mishap and causal information. Mitigating known safety hazards is instrumental to creating a safe aviation work environment. It is the responsibility of each employee to report safety hazards when encountered.

Hazard documentation and reporting permits risk management decisions on appropriate corrective action, where needed, to be made at the correct organizational level, since most identified hazards will effect all units whose operations are exposed to the identified hazard. Hazard reports, when accumulated in a database; also provide the basis for monitoring hazard trends.

Having standardized procedures in place and providing adequate training cannot prevent all accidents. Safety hazards can lead to accidents or incidents if left unmitigated. Do not wait to report or act on a hazard. Take immediate action! If the hazard cannot be mitigated on the spot, warn/notify others, and report the hazard to the RPD Aviation Section Manager. (*Refer to Section IV of this chapter to learn how to report a safety hazard*).

Passenger Briefings

All passengers on WADNR sanctioned flights are given a passenger briefing prior to boarding. Briefings can be simple or detailed according to aircraft type, flight profile, and passenger type. At a minimum, before takeoff each pilot-in-command of an aircraft carrying passengers shall ensure that all passengers have been orally briefed on:

- Location and operations of emergency exits and fire extinguishers
- Location of first aid kit and any survival equipment
- Aircraft entry and departure procedures
- Emergency Procedures
- Use of seat belts, also the placement of seat backs during take-off and landing (if so equipped)
- Personal Protective Equipment (PPE) and Personal Flotation Device (PFD) use (as needed for mission/aircraft type)
- Safety considerations or in-flight factors specific to the mission

Passenger briefings will be given to passengers each time they fly. In addition, all flights on federal fires, or involving the transport of federal government employees, require full passenger briefings. *See Appendix 1 for the federally required **Standard Aircraft Safety Briefing*** and see the WADNR Helicopter Operations Manuals for a specific passenger briefing.

Critical Proactive Prevention Activities

Several aviation activities provide effective means to exercise proactive accident prevention.

- A. Operations Plans.** When planning aviation-supported projects, risk management techniques are utilized to minimize accident/incident potential. This is especially important for first-time projects on a given unit. The plans specifically identify the directives and guides containing applicable standards and controls and set forth the “who,

what, when, where, why” and “how” information to insure that safety considerations are adequately covered. All participating personnel are to have the opportunity to review the plans before initiating the project. Responsibility for monitoring operations for adherence to the plan and initiating changes where prudent must be assigned by managing personnel.

- B. Standardization.** Standardization is a key element to aviation safety. Standardized equipment training and operational procedures are essential to safe operation. One purpose of the Plan is to standardize agency aviation operations through highlighting the regulations and policies that govern them, and by defining procedures to meet these regulations. Standardized procedures provide the groundwork for safe and legal operations.

The WADNR Fire Aviation Section Manager approves equipment modification and changes recommended by the Helicopter Program Coordinator, Helicopter Aviation Safety and Training Officer. The equipment in aircraft that are flown by different pilots shall be standardized in order to minimize potential for cockpit confusion.

- C. Training.** Qualification of individuals to accomplish their assigned aviation tasks and roles is a proactive accident prevention tool. Qualification for participating in DNR aviation missions, given their often-specialized nature, requires extensive training efforts. In addition to Incident Command System Qualifications courses (Interagency Red Card “S” or “T” courses) the WADNR provides several other types of training for its aviation programs, including: Helicopter Fuel Truck Driver Training, Helitack Operations Field Training, Helicopter Safety and Long line Training for field personnel, and Helicopter Pilot Fire Suppression/Support Missions Training. In addition, RPD, Aviation Section develops and implement plans which identify initial and recurrent aviation training needs specific to personnel and missions. Areas of aviation training include:

- Orientation and basic aviation safety for all users
- Dispatching and flight following procedures.
- Management of aviation operations and equipment.
- Planning and execution of projects using aviation resources.
- Proficiency and special mission training for pilots.
- Technical maintenance training on aviation equipment.
- Advanced safety practices for aviation professionals and specialists.
- Human factors in aviation for aviation professionals and managers.

- D. Information Dissemination and Direction.** Clear and direct communication is paramount in the prevention of accidents. Lines of communication must stay open about changing aviation regulations, maintenance problems or recalls, and aviation accidents or near-misses. The WADNR recognizes the need to disseminate this information to as wide a user base as possible. Some of the ways to accomplish this follow:

- 1. Standardized Procedures:** One purpose of the Plan is to standardize agency aviation operations through highlighting the regulations and policies that govern

them, and by laying down procedures by which to meet these regulations. Standardized procedures provide the groundwork for safe and legal operations.

2. **Temporary Directives:** If any life-safety issues are discovered, the RPD Aviation Safety Officer will issue through the Fire Aviation Section Manager a temporary directive to all WADNR aviation users and programs, until the issue is resolved. Directives can be restrictive in nature, or may be active requiring that an action being taken. If the temporary directive is deemed to be of permanent importance (for example, a permanent change in the passenger policy, as opposed to a part recall/replacement) it will be included in the Plan as a revision. Temporary Directives are disseminated to all affected WADNR and non-WADNR personnel by way of e-mail, fax and phone calls.
3. **Memoranda:** Memoranda are used as a method to provide non-urgent guidance and direction for specific situations and procedures. If deemed of permanent importance, memoranda will be included in the Plan as revisions, appendixes or annexes. Memoranda are not used to disseminate information relevant to safety of flight or aircraft maintenance—information of this nature is relayed immediately via temporary directive.
4. **Aviation Safety Alert (USFS):** The USDA Forest Service issues Aviation Safety Alerts to disseminate urgent information relevant to the safety of flight in the most expeditious manner. Aviation Safety Alerts are immediately forwarded to user groups, and can also be viewed on-line at www.fs.fed.us/r6/fire/avation.
5. **Updates During Training:** Training sessions, such as classes needed for the Incident Qualification (Red Card) System, provide an important venue for the dissemination of any changes in aviation regulations, operations, or safety. Instructors for courses can check with the WADNR Interagency Fire Training Program Manager, (360) 902-1229 for current requirements. Open communication with cooperators and attendance at their training and update venues (like the Helicopter Managers' Biennial Workshop) also prove a helpful source for learning changes in federal and other agency regulations.

E. Inspection and Assistance

The RPD Fire Aviation Section Manager, will at times conduct site inspections of all aviation bases and aircraft. This will occur both on a scheduled or non-scheduled basis. Inspections may include (but are not limited to):

- Personnel: Items such as pilot qualifications, currency, ground crew training and readiness, emergency procedures, and personnel equipment.
- Equipment: Adequacy of personal protective equipment, adequacy of maintenance and ground equipment, and adequacy of aircraft.
- Base Operations: Such as condition and layout of helipads, taxiways, lighting, refueling, aviation maintenance facilities and work areas, hazard maps, local airport or heliport restrictions, communications, and areas of special concern to the unit.

The USDA Forest Service Region 6 Helicopter Operations Manager along with Bureau of Land Management DOI Aircraft Safety Manager evaluate and inspect the WADNR helicopters, pilots, and fuel trucks and general overall program on an annual basis. This is done at WADNR's request so that DNR helicopters can be operated on federal jurisdiction incidents. Issuance of an "acceptance letter" is done each spring. For more information on the federal "lettering" of WADNR aircraft, contact Ken Ross, the Region 6 Helicopter Program Manager, at (541) 504-7265, kross01@fs.fed.us

II. Emergency Response

General: If an aircraft becomes overdue, or is known to have been involved in an accident, any responder, whether a crewmember, pilot, dispatcher, or a nearby WADNR employee, must be able to count on the Aircraft Mishap Response Guide being up-to-date with names, numbers, and the procedures to follow. A copy of this plan, or a condensed version of the aviation mishap response information contained within (formatted into a quick-reference tabulated chart, see *Washington State Department of Natural Resources Aircraft Mishap Emergency Response Plan*) is provided to dispatchers, managers, and users of WADNR aircraft. Updates to this Accident/Incident Response section are made and disseminated as they are reported. It is the responsibility of each WADNR employee involved in aviation operations to annually review accident/incident response plans and updates.

Pre-accident Plan. Pre-plans are used to ensure that proper notification and rescue procedures are known in advance and will be successfully implemented if an aircraft accident/incident occurs. This enables rescue or dispatch personnel to respond quickly and safely. Each WADNR aviation user group or program will develop pre-accident plans for their own operations in consultation with the RPD Aviation Safety Officer. Pre-accident planning includes the following three general areas:

- A. Crash-Alert Plan.** How you respond if you hear of an accident or emergency and you are not in a position to provide direct aid. An example would be a planned response to receiving a telephone call that one of your aircraft has crashed.
- B. Crash-Rescue Plan.** How you would respond if an airplane crashed near your location and you have the capability of providing direct assistance (such as airborne medical support, or crash rescue truck.)
- C. Medical Aid Procedures.** A plan for the prompt and efficient use of helicopters, fixed-wing air ambulances, trained medical personnel and the nearest hospital. A plan of this type often involves the area dispatch center, as they have means in place to acquire these services most expeditiously.

Immediate Notification Procedures: Any accident or incident meeting FAR 830.5 criteria must be immediately reported to the National Transportation Safety Board (NTSB.) *See Accidents, Incidents and Hazard Reporting—FAA (later in this chapter.)*

Precautionary and Forced Landings.

A precautionary landing is a voluntary landing initiated because of a real or suspected problem. In the event of a precautionary landing, the pilot (or a manager/crewmember if pilot's concentration must remain at the controls) will notify the communications/flight following center that a precautionary landing is being made, and provide the location. Contact can also be made with the nearest Flight Service Station (FSS) or air route traffic control center (ARTCC) if a dispatcher is not immediately available. The communication must include a description and extent of the difficulty, the assistance required, the pilot's intentions, and any other pertinent information. Communications personnel will begin documentation and be prepared to start notification and crash-rescue procedures if the situation escalates to a forced or crash landing.

A forced landing (mayday) is normally involuntary and may be the result of a major mechanical malfunction, or pilot, or crewmember incapacitation affecting continued flight safety. The pilot or manager/crewmember will immediately notify the communications center of status and location. The communications center will clear the channel frequency of all but emergency traffic and will begin documentation. Unless otherwise advised by the pilot or manager, the communications center will initiate crash-rescue: dispatching crash-rescue equipment, ambulance (ground or air), and emergency incident management personnel. (*See WADNR Aviation Mishap Response Plan tabulated chart, or refer to same information listed below in the Aviation Mishap Response—Communications Center.*)

Overdue and Missing Aircraft Procedures. An aircraft is considered "overdue" when it fails to arrive within 30 minutes of the estimated time of arrival (ETA) and it cannot be located. An aircraft is considered "missing" when it has been reported by flight following personnel to the FAA as being "overdue" and the FAA has completed without success an administrative search for the aircraft. An aircraft is considered officially missing when the fuel duration has been exceeded and the aircraft location is unknown.

Procedures:

AT OVERDUE TIME: Immediately contact aircraft by radio or phone. If unable to raise contact with the aircraft, contact appropriate dispatch office (aircraft may have switched flight following due to poor radio reception), or the aircrafts planned destination (agency airbase/airport or incident) to see if the aircraft has made contact with them.

Begin gathering information required for Aircraft Accident Report:

- Name of pilot(s)
- Number and Name(s) of passengers
- Aircraft Registration ("N") Number
- Type and color of aircraft
- Type of mission
- Location of accident or of last reported location and heading
- Injuries or fatalities (do NOT give names over radio)
- Name, address and telephone number of reporting party (person reporting accident, incident, or "missing" status)

15 MINUTES PAST DUE: Contact originating or en route agency dispatch. Contact originating or en route agency airbase. Contact originating or en route airports. Keep a written log of actions and communications.

30 MINUTES PAST DUE: Contact Resource Protection Emergency Coordinating Center (360-902-1300). Contact FAA Flight Service Station. Keep a written log of actions and communications.

FUEL DURATION EXCEEDED, OR ACCIDENT IS SUSPECTED: Contact WADNR RP Division Aviation Safety Officer at 1(360) 753-5314, the Fire Aviation Section Manager at 1(360) 902-1736 and submit Aircraft Accident Report to the FAA Flight Service Station 1 800- WXBRIEF (800-992-7433.)

Notify Helitack Crew Supervisor, if the aircraft involved was conducting a Helitack flight or had Helitack crew or pilots onboard. 1(509) 925-0958

If the flight involved federal aircraft, including FEPP, or personnel, contact 1 888-4MISHAP (1 888-464-7427) to reach the DOI/USDA-FS Aviation Safety Manager. Complete OAS Form 77 or FS 5700-28.

Aircraft Crash Search and Rescue Operations

Local area dispatchers have access to rapid response from appropriate emergency personnel and will coordinate the response. Responders may include (but are not limited to) the local sheriff's office, incident or airbase/airfield crash-rescue services, airborne emergency medical response, other agency or cooperator aircraft in the area with trained medical personnel on board, and the Washington State Department of Emergency Services. Search and Rescue Operations (SAR) are usually coordinated through the FAA to the Air Force Rescue Coordination Center (AFRCC.) Once an aircraft is declared missing and SAR is initiated, the AFRCC becomes the controlling agency. WADNR aircraft may participate in the SAR under the direction of the AFRCC.

It is critical that field personnel and/or dispatch initiate crash-rescue response with expediency. Document all calls, information received, and actions.

Accident/Incident Investigation. The National Transportation Safety Board investigates aircraft accidents (fatality, serious injury or substantial damage). WADNR and/or OAS/USDA-FS personnel may be appointed to the investigation as well. Incidents with potential (fatality, serious injury or substantial damage) may not necessarily be investigated by the NTSB—but the determination is made by the NTSB itself but in any case the WADNR will report all accidents to the NTSB. If Federal aircraft are involved, Air Safety Investigators from OAS/USDA-FS will investigate.

The NTSB has the responsibility to investigate Public Aircraft accidents and certain incidents. Other types of aircraft incidents do not require a NTSB report unless one is specifically requested. Any agency can decide to internally investigate its own incident. WADNR will investigate any aircraft incident not requiring an NTSB report. WADNR's lead investigator, Larry Raedel (360-902-1600) will be contacted and will assign an investigator from his staff. If

Federal Aircraft are involved, such as WADNR FEPP helicopters, the local OAS/USDA-FS Aviation Manager or Aviation Safety Manager will investigate.

In addition to a technical investigation, the WADNR will also conduct a management investigation to evaluate whatever act or managerial process contributed to the incident. Under the lead investigator or his designee, the RPD Aviation Safety Officer, the Fire Aviation Program manager and a WADNR Region or Division Manager will be responsible for identifying and reporting factors relating to management which contributed to the accident or incident. The results of the investigation will be written and provided to the Resource Protection Division manager.

Emergency Contacts and Medical Information Form

WADNR encourages its employees to annually update their personal emergency medical information forms. This confidential information is sealed in an envelope or file within the home Region/Division for emergency use. At a minimum, emergency contact information for the pilots and crewmembers of agency aircraft is compiled and/or updated annually in an “Emergency Contact List.” A copy of this list is submitted to the home Region/Division, as well as to the Fire Aviation Section Manager. A copy is also submitted to local dispatch offices, since they are usually the first contacted by units in the field and are likely to be the first to know of a potential aircraft accident.

A standardized Emergency Medical Information form can be downloaded from:
[http://sharepoint/sites/ne/teams/BusinessAndOperations/Evaluation Forms Information Library/medinfocard\[1\].doc](http://sharepoint/sites/ne/teams/BusinessAndOperations/Evaluation Forms Information Library/medinfocard[1].doc)

Direct questions regarding the Emergency Medical Information form, or employee health and safety, to:

Gary Kessler, Safety and Health Manager
WA DNR Headquarters
Box 47033
Olympia, WA 98504-7033
(360) 902-1133
gary.kessler@dnr.wa.gov

Aircraft Mishap Emergency Response For Ground Personnel on Scene

General: Ground personnel’s actions to protect or save lives at the site of the crash must not put more lives at risk—do only what you can do safely!

Time is an extremely critical factor in responding to an emergency situation. Immediate positive action is necessary; delay may effect someone's survival.

Establish clear control over the incident and utilize the Incident Command system. One person is to be designated as incident commander and that person’s name is to be communicated to all others at the scene and to the dispatch office. The IC remains in command until another more qualified individual arrives and assumes command.

Rescue Operations

- **Preserve life, Protect People--** Many times in the urgency to assist accident victims the rescuers place themselves in jeopardy and become victims themselves. Protecting people means keeping yourself and others in the area safe, as well as assisting survivors.

Do whatever is necessary and safe to extricate injured occupants and to extinguish fires, keeping in mind personal safety and the necessity of protecting and preserving evidence.

Administer first aid, help survivors move away from the aircraft if there is a chance of fire. Do not move someone with suspected back or neck trauma unless *not* moving them will risk their life. Try to keep survivors stable until help arrives.

- **Establishing Communications**—Establishing communications with WADNR to order an investigator and other needed resources to manage the incident to initiate emergency response. Request a Temporary Flight Restriction (FAR 91.137) through dispatch if aircraft in the area poses an additional threat to life and safety.
- **Secure the area**-- Treat the area as a crime scene. Keep public and media safely clear. If uncertain about granting access to the scene, work through the dispatch office for assistance. Document in journal format everything regarding actions, events, points of contact. (Who, what, where, when, why.)
- **Protect Property/Preserve evidence**-- Document and/or photograph the location of any debris that must be disturbed in order to carry out rescues and/or fire suppression activities. *See section on Site Security & Preserving Wreckage*

Site Safety Precautions

Aircraft wreckage sites can be hazardous for many reasons. Personnel involved in the recovery, examination, and documentation of wreckage may be exposed to physical hazards posed by things such as hazardous cargo, flammable and toxic fluids, sharp or heavy objects, components under extreme tension or pressure, and disease (including the Hepatitis B virus (HBV) and Human Immunodeficiency Virus (HIV)). When working with wreckage, exercise good judgment, utilize available protective devices and clothing, and use extreme caution. Do not exceed your physical limitations!

When administering assistance, use appropriate personal protective equipment such as boots, long pants, long-sleeved shirts, protective helmet or hardhat, and leather gloves. Use latex/surgical gloves when dealing with blood or bodily fluids—these can be inserted inside leather gloves to protect against cutting and burning surfaces. CPR masks should also be used to safeguard against disease.

Wreckage Security and Preserving Evidence

Treating the area like a crime scene includes arranging for 24-hour security at the accident site until the investigation team arrives and you are relieved as IC. Determine if hazardous materials are on the aircraft and request special assistance if necessary. Wreckage and cargo should not be disturbed or moved (FAR 830.10) except to the extent necessary:

- To remove persons injured or trapped.

- To protect the wreckage from further damage.
- To protect the public from injury.

If it is necessary to move aircraft wreckage or mail or cargo, then sketches, descriptive notes, and photographs must be made of the original positions and condition of the wreckage and any significant impact marks. Photograph everything including switch positions, ground scars, and location of perishable evidence.

Perishable evidence, e.g., human factors data, fuel samples and witness information, must be quickly documented. Get statements and contact information from witnesses, and from crewmembers and survivors who are capable of giving a statement. Try to separate witnesses for this process to reduce errors caused by the comparison of notes and consequent amending of stories of statements.

News Releases and Next-of-Kin Notification

The NTSB and a DNR incident commander should make contacts with news media and devise any public statements regarding the accident. If you are the IC, remind reporters of the hazards and to avoid disturbing the wreckage, and ask them to be respectful of the victims. Also;

1. Be courteous to the media: there are there to do their job
2. Protect the media--Keep them (and the public) at a safe distance, preferably upwind of the wreckage.
3. Do not release to the media nor divulge over the radio the names of the deceased, injured or those involved.

III. Accident and Incident Reporting

General: There are numerous requirements for the reporting of accidents, incidents, and hazards. The following subsections define the requirements for each of the agencies/departments listed.

Federal Aviation Administration and National Transportation Safety Board

As per FAR 830.5, immediate notification must be made to the nearest National Transportation Safety Board (NTSB) field office when an aircraft accident or any of the following listed incidents occur:

- Flight control system malfunction or failure;
- Inability of any required flight crewmember to perform normal flight duties as a result of injury or illness;
- Failure of structural components of a turbine engine excluding compressor and turbine blades and vanes;
- In-flight fire; or
- Aircraft collide in flight
- Damage to property, other than the aircraft, estimated to exceed \$25,000 for repair (including materials and labor) or fair market value in the event of total loss, whichever is less.
- For large multi-engine aircraft over 12,500 lbs. maximum certificated takeoff weight, refer to FAR 830.5 for additional qualifiers.

Notification shall contain the following information, if available (FAR 830.6):

- Type, nationality, and registration marks of the aircraft;
- Name of the owner, and operator of the aircraft;
- Name of the pilot-in-command
- Date and time of the accident;
- Last point of departure and point of intended landing of the aircraft;
- Position of the aircraft with reference to some easily defined geographical point;
- Number of persons aboard, number killed, and number seriously injured;
- Nature of the accident, the weather and the extent of damage to the aircraft, so far as is known, and
- A description of any explosives, radioactive materials, or other dangerous articles carried.

Notification shall be immediate, and to the nearest NTSB field office. Fully completed reports shall then be filed on Board Form 6120.1 (OMB No. 3147-0001) within 10 days after an accident, or after 7 days if an overdue aircraft is still missing. Forms are available from Board field offices, national headquarters, and FAA Flight Standards District Offices.

FAA and NTSB Addresses and Phone Numbers

NTSB Northwest Regional Office
19518 Pacific Highway South, Suite 201
Seattle, WA 98188
1(206) 870-2200 phone
1(206) 870-2219 fax

Aircraft Accident Information
D.O. National Transportation Safety Board
Avenue
Public Inquiry Section, RE-51
490 L' Enfant Plaza East SW
Washington, DC 20594
1(209) 314-6551

Portland Flight Standards District Office
Portland-Hillsboro Airport
1800 NE 25th Avenue, Suite 15
Hillsboro, OR 97124
1(503) 681-5500
1(800) 847-3806

FAA National Headquarters
FAA National Headquarters
800 Independence Avenue SW
Washington DC 20591
1(202) 366-4000

Spokane Flight Standards
6133 East Rutter

Spokane, WA 99212
1(509) 353-2434

Seattle Flight Standards District

1601 Lind Avenue SW, Suite 260
Renton, WA 98055-4056
1(800) 354-1940

FAA Regional Boundaries & Regional Office Locations:



DRAFT

For defining or reporting situations of unsafe aircraft operations, use one of the following:

A. Near Midair Collision Report (NMAC)

A near midair collision is an incident associated with the operation of an aircraft in which the possibility of collision occurs as a result of proximity of less than 500 feet to another aircraft, or a report is received from a pilot or flight crew member stating that a collision hazard existed between two or more aircraft.

Notification should be made as soon as possible after any unsafe occurrence, and a written report filed with the nearest Flight Standards District Office (FSDO) within 15 calendar days. In a near midair collision identification numbers may be hard to read. If so, provide as much information as possible, such as direction of flight, altitude, color, and aircraft type. (*For more information, refer to the AIM 7-6-3, or the Interagency Airspace Coordination Guide Ch. 8.*)

B. Pilot Deviation Reports

Pilot deviation reports are used to report other incidents which violate FARs and create an unsafe situation, such as:

- Operation of aircraft in a careless or reckless manner (FAR 91.13)
- Airplanes flying below 500' AGL unless in sparsely populated areas or over water (FAR 91.119)
- Temporary Flight Restriction (TFR) intrusions (FAR 91.137) which are occurrences of non-participating aircraft entering a TFR without permission (except Law Enforcement, airport traffic, and media)
- Flight operations in restricted/prohibited areas (FAR 91.127)
- Non-compliance with standard or acceptable airport operations (FAR 91.127)
- Aircraft not operating within the parameters of their special use airspace (like MOAs or Ras) or MTRs (FAR 91.117, FAAH 7610.4)

C. NASA Voluntary Aviation Safety Reporting

NASA's Voluntary Aviation Safety Reporting is a cooperative safety reporting program that invites pilots, controllers, flight attendants, maintenance personnel, and other users or observers of the airspace system, to file written reports of actual or potential discrepancies and deficiencies involving the safety of aviation operations. These must be postmarked within 10 days of the incident. *Refer to NASA ARC 277B or the Interagency Airspace Coordination Guide Ch. 8.*

WADNR

All aviation accidents or incidents involving helicopters, as well as accidents involving any fueling or support vehicles, must also be reported on the agency Initial Incident Report (IIR), and submitted to the WADNR Helicopter Program Coordinator within 3 days of accident or incident. He/she will get copies to the DNR Aviation Safety Officer for review within 4 working days. Initial Incident Report forms (# HH-13) can be downloaded from the WADNR intranet. *For further information pertaining to IIR, refer to agency procedure number PR22-004.*

In the event of a serious accident the Fire Control and Aviation Assistant Manager will be notified immediately. If the Assistant Manager cannot be reached contact the Resource Protection Division Manager directly.

If the accident or incident involves an agency vehicle, then a Vehicle Accident Report must also be submitted. The *Vehicle Accident Report, WA State Form # 137*, can be found on the Washington State Government internet site, or through your local Region office. The Washington State Patrol's *Vehicle Collision Report* must be completed when a collision occurs that results in an injury (including injury to one's self) or in which any person's property sustains damage in the amount of \$500.00 or more. This report is numbered 3000-345-161 R, and is mailed to WSP once Completed.

For accidents occurring on a project fire, refer to the WADNR's procedures on *Reporting and Processing Fire Accidents*.

For liability coverage, the *General Liability Claim Form #SF 210*, and the *Standard Vehicle Accident Tort Claim Form #SF 138*, should also be completed after a vehicle accident.

USDA Forest Service, National Parks Service, Bureau of Land Management, Department of Fish and Wildlife, Bureau of Indian Affairs

In addition to being reported to the NTSB, any FEPP aircraft involved in an accident or incident resulting in serious injury or substantial damage must be reported to the Forest Service region or area PMO. Verbal reports shall be made as soon as possible following the accident/incident and follow with a written report within 10 working days.

If the accident or incident involves federal aircraft, personnel, or facilities, or occurred on a federal incident an OAS SAFECOM report must also be submitted. SAFECOMS can be obtained and filed on-line at: <https://www.safecom.gov/instructions.asp> or See also *SAFECOM: Use and Routing of, further on in this chapter, for more information.*

VI. Reporting Hazards

Reporting hazards is essential for preventing accidents or incidents. Safety Hazard Reports and SAFECOMS are used in accident prevention and with personnel on operational evaluations. WADNR employees will fill out either the SAFECOM form or the Safety Hazard Report Form, depending upon the event. (For example, the Safety Hazard Report form might be used to mitigate inadequate security features at a designated aircraft base, whereas the SAFECOM might be used to report a dropped helicopter bucket or an airspace conflict.) **Neither form should be sent on without prior notification to the person(s) involved, and without immediate efforts to mitigation.** The *Safety Hazard Report Form (#7540 SAF 001)* is used to report unsafe practices or conditions that do not pose an immediate threat to flight or personnel safety, but which should be investigated and resolved. Completed hazard reports should be discussed first with the parties involved and resolved on a local level, if possible. Whether resolved or not, the hazard report is then forwarded to the RP Division Aviation Safety Officer for review and action. The form is in quadruplicate, with a copy for the person filing the report, the direct supervisor, the RPD Fire Aviation Section Manager and DNR's Safety Officer (Gary Kessler).

Definitions

For the purposes of taking correct action and filing the corresponding reports, the following definitions are provided:

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

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

Serious Injury: Any injury that:

- VII.** Requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received.
- VIII.** Results in a fracture of any bone (except simple fractures of fingers, toes, or nose).
- IX.** Causes severe hemorrhages, nerve, muscle, or tendon damage.
- X.** Involves any internal organ.
- XI.** Involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface.

Substantial Damage: Damage or failure that adversely affects the structural strength, performance, or flight characteristics of the aircraft, and that normally would require major repair or replacement of the affected component. Examples of failures NOT considered substantial damage are: engine failure; damage limited to an engine; bent fairings or cowlings; dented skin; small puncture holes in the skin or fabric; ground damage to rotor or propeller blades; damage to landing gear, wheels, tires, flaps, engine accessories, or brakes.

Aircraft Incident: An occurrence other than an accident associated with the operation of an aircraft that affects or could affect the safety of operations, which interrupts or prevents the mission of the aircraft, or which results in the aircraft being placed out-of-service. Some examples include:

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

- **Precautionary Landing:** A landing necessitated by apparent impending failure of engines, systems, or components, which makes continued flight inadvisable. It is a voluntary landing initiated because of a real or suspected problem.

Operational Hazard: Any condition, act or set of circumstances that exposes or could expose aircraft operations, associated personnel or equipment to unnecessary risk or harm.

SAFECOMS:

The SAFECOM system was developed to assist in accident prevention through trend analysis, accountability and corrective action. All aviation - related events that impact aviation safety are to be reported using the SAFECOM (Forest Service form FS 5700-14, and BLM, NPS, OAS form OAS-34.) A SAFECOM is to be completed for any aircraft incident potential, incident, maintenance deficiency, accident, or hazard. A hazard is defined as any circumstance that could compromise the safety of personnel engaged in aviation operations, and can include (but is not limited to):

- A deviation from policies, procedures, regulations, instructions, flight plan, planned operations or types of use
- Inadequate training, or failure to meet training requirements
- Improper use of load calculations or manifests
- Failure to use PPE in accordance with agency policy
- Communications breakdown
- Unsafe actions by aircrew, passengers, pilots, or support personnel
- Fuel contamination
- Extreme environmental conditions
- Airspace Conflicts
- Improper transport or handling of Hazardous Materials

Anyone who witnesses an aviation operation accident, incident or hazard can fill out a SAFECOM form.

SAFECOMS are submitted through the agency that had operational control of the aircraft at the time of the occurrence. If on a WADNR incident, even if involving federal aircraft, the SAFECOM will first be routed to the WADNR Helicopter Program Coordinator. He/she will then forward copies to the WADNR Fire Aviation Manager. The Fire Aviation Manager will then forward a copy to the authorized representative from the agency involved. If on a Federal incident, even if involving a WADNR aircraft, the SAFECOM will first be routed to the Aviation Safety Officer for the forest/Region by which the fire was operationally controlled. A copy shall be sent to the WADNR Helicopter Program Coordinator.

To view or submit SAFECOMS online see <https://www.safecom.gov/instructions.asp>

HAZMAT:

Report all spills immediately. There are severe civil and criminal penalties if a spill is not reported promptly. If on an incident contact the Incident Commander, Supply Unit Leader, Logistics Chief, or Helibase Manager. If away from an incident, contact the nearest WADNR

dispatch center. For further information pertaining to fuel spills see *IX, Mitigation Procedures In The Event of Fuel Spills*, of this chapter.

V. Aviation Security

National security measures for aviation increased immediately following the events of 9/11/2001, and all government agencies using aircraft were put on heightened alert. Aviation security for the WADNR includes locking aircraft and aircraft fuel caps; installing two flight control locking devices, when left unattended after normal operational hours; providing overnight security (either through parking at an airport, by hiring security personnel, or by assigning a minimum two crewmembers to stay with the ship); and following state hiring and training guidelines. For measures to be taken in the event of a declared emergency, refer to the Washington Department of Natural Resources Emergency Management Plan, available at <http://sharepoint/sites/rp/Teams/EmergencyInfo/default.aspx>. *For required Aircraft Base security specifications see Chapter 7, section V: Base Security.*

VI. Interception Procedures

In the event of military interception of agency aircraft, pilots will adhere to interception procedures, as governed by 14 CRF Part 99.

VII. Aviation Life Support Equipment

Aviation Life Support Equipment (ALSE) includes Personal Protective equipment (PPE) and other items like Personal Flotation Devices (PFD), oxygen units and survival kits. ALSE requirements vary according to aircraft type and mission, and are outlined below:

A. Personal Protective Equipment (PPE)

Personal Protective Equipment consists of clothing and equipment that provide protection to an individual in a hazardous environment. Different aircraft and mission types require different levels of PPE. *Refer to Chapter 4 under subsections for aircraft type to determine PPE requirements for the aircraft and mission.*

B. Personal Flotation Devices (PFDs)

All WADNR pilots when conducting over water flights that are beyond gliding/autorotation distance from shore will wear personal Flotation Devices. If passengers are on board aircraft when beyond gliding/autorotation distance, PFDs and instructions on use will be provided for them. Any agency personnel who may be involved in these types of flights are encouraged to go through Water Ditching and Survival training.

C. Emergency Locator Transmitter (ELT)

ELTs are electronic, battery operated transmitters designed to automatically activate and continuously emit an emergency audio tone on 121.5 MHz and 243.0 MHz, when subjected to crash generated forces. ELTs will operate continuously for at least 48 hours over a wide temperature range. If properly installed and maintained, an ELT can expedite search and rescue operations and save lives. All WADNR aircraft will be equipped with ELTs.

D. First Aid Kits

Each WADNR aircraft, or aircraft hired by the WADNR, will have first aid kits installed, sufficient for the number of personnel on board. First Aid kits will be readily accessible to the flight crew and passengers. All passengers will be briefed on the location of First Aid kits, and any other survival equipment. First Aid kits will be checked annually for expired items such as allergy medicine and aspirin.

E. Survival Kits

Survival Kits are *recommended* for all agency aircraft, and all aircraft hired by the agency. They are *required* only for WADNR Helicopters. All passengers riding onboard an aircraft carrying Survival Kits will be given a briefing as to their location and use. Survival Kits will be checked annually for expired items such as potable water tablets, food, and batteries.

VIII. Physiological Factors

General

Managing for physiological factors is key in accident prevention, as the cause of accidents has been known to be due to either fault of the man (generic), machine, or medium. All WADNR pilots will immediately notify their supervisor upon any change in their legal flying status. WADNR pilots will decline flights when their physical or mental condition could be detrimental to the safety of the operation. Aviation managers will not assign flights to any WADNR known to be suffering from physical or mental anguish, anxieties, or other problems that could prevent his/her full concentration and attention to flight.

Some key physiological factors to be aware of are listed below:

A. Fatigue

Fatigue is a state or condition that follows a period of excessive mental or physical activity or inactivity, which results in decreased work capacity and performance, and a feeling of tiredness and desire for rest. Depending on the type and duration of fatigue simple rest may be adequate to recover, however if more chronic, long-term recovery or hospitalization may be necessary.

B. Stress

Stress is a perceived imbalance between a demand and the ability to meet the demand and can cause fatigue. Aviation related stress could be a factor of altitude, speed, hot/cold environment, aircraft design, aircraft characteristics, work/rest schedule, job responsibilities and performance, illness, family commitments, mental and emotional health, circadian cycle, and many other factors. It can lead to simple fatigue, burnout or physical illness if allowed to go unchecked.

C. Medical Factors/Medication

As with fatigue, medical factors and certain types of medication can reduce a pilot's ability to perform to a point where he/she should be grounded. The Federal Aviation Regulations (FAR's) provide general guidance for the use of medications, and the grounding of pilots due to certain medical factors, but do not give all of the specific information needed for all cases.

Illnesses such as the common cold and sinus or ear infections can be very dangerous for pilots and flight crewmembers. WADNR pilots shall evaluate their physical condition and exercise common sense and good judgment when dealing with illness or medications. When possible, an FAA qualified aviation medical doctor should be consulted on medications, including over-the-counter types. Many medications can cause drowsiness or decreased alertness, and cannot be taken if performing flight duties. Other medications may have adverse effects when coupled with increased altitude. Pilots should consult their medical practitioners about all medications.

D. Use of Alcohol and Drugs

No person may act or attempt to act as a flight crewmember of a civil aircraft within 8 hours after the consumption of any alcoholic beverage, while under the influence of alcohol, while using any drug that affects the person's faculties in any way contrary to safety, or while having .04 percent by weight (or more) alcohol in the blood. (CFR 91.17)

IX. Hazardous Material/Fuel Spills

This section covers fuel truck breakdown procedures and accident procedures; mitigation procedures in the event of a fuel spill; and mitigation procedures for fuel spillage on personnel.

Fuel Truck Breakdown and Accident Procedures

For information pertaining to fuel truck breakdown and accident procedures refer to *the Helicopter Operations Manual, #15, Fuel Truck Breakdown and Accident Procedures*.

Mitigation Procedures in the Event of a Fuel Spill

- Report all spills immediately; There are severe civil and criminal penalties if a spill is not reported promptly. If on an incident contact the Incident Commander, Supply Unit Leader, Logistics Chief, or Helibase Manager. If away from an incident, contact the nearest dispatch center for assistance.
- Consider all fuel spills a fire hazard, regardless of size, and proceed to:
 - Have all non-essential personnel leave the area immediately for their safety
 - Alert airport or helibase fire crews, or if none are available or spill is off-site, assign someone to stand by with a fire extinguisher
 - Approach spill cautiously and from upwind
 - Attempt to stop the flow of fuel and fueling operation immediately, keeping your own safety and the safety of those in the vicinity, your first priority
 - Contain the liquid spilled with spill-kit materials. **If the spill is larger than 5 gallons, call 911 and Resource Protection Division Emergency Coordination Center at 360-902-1300.** If on an incident, do this as well as notifying incident command staff. Begin cleanup only if it is safe to do so. Resource Protection Division will alert a HazMat unit to complete the cleanup.
- If a spill occurs during hot refuel open-port operations (not used with the WADNR's closed-circuit refueling methods) the pilot will make the decision whether to move or keep the helicopter in place. If the latter, electrical power must be shut down and the helicopter evacuated. Before the helicopter is put back into service, it must by

thoroughly checked for damage and for flammable vapors that may have entered the fuselage areas.

Mitigation Procedures for Fuel Spillage on Personnel:

If the fuel handler's clothing becomes soaked with fuel, the individual should:

- Avoid ignition sources
- Leave the fueling area immediately
- Wet the clothes with water before removing clothes, since the act of removing clothes creates static electricity. If water is not available, the individual should be grounded to prevent sparks when he/she removes clothing. Caution: entering a warm room wearing fuel-soaked clothing can be dangerous as the chances of fire starting due to static electricity are increased.
- Wash fuel off skin with soap and water as soon as possible
- Seek medical attention

X. State Disaster & Emergency Operations (All Risk)

State aircraft or personnel may be called upon to respond to disasters or emergency operations other than wild land fires. In the event the disaster encompasses any WADNR buildings, facilities or personnel, the guidelines set forth in the *WADNR Emergency Management Plan*, (specifically, *Annex J: Department Aviation Section Emergency Management Plan*) will be followed.

Chapter 3

PILOT AND AIRCRAFT REQUIREMENTS

I. Helicopter

WADNR Federal Excess Equipment helicopters are bound by a combination of rules and regulations. For the following list of minimum specifications, Refer to pilot PD Form (Position Description) as well as the WADNR Helicopter Pilot Training Manual and the Maintenance Operations Manual for more information.

Pilot Requirements

Qualifications and Experience

Department helicopter pilots must:

- Possess a valid FAA Commercial pilot certificate with rotorcraft helicopter rating
- Meet basic requirements set forth as needed for entry onto the Aircraft Pilot 2 register
- Have accumulated flight time as listed below
- Be able to obtain the Federal Government Interagency Helicopter Pilot Qualification card
- Posses a valid class I or II Medical Certificate that is valid through December of each year.

Note: Cost of the medical exam is not covered by the agency.

Flight Time Requirements

Pilots shall have accumulated, as pilot-in-command, the minimum flight times listed below. Flight time shall be determined from a certified pilot log.

- | | |
|-------------------------------------|------------|
| • Turbine engine powered helicopter | 1500 hours |
| • Weight Class | 100 hours |
| • Make, Model & Subsequent Series | 50 hours |
| • Typical Terrain | 200 hours |

Flight Currency and Training

Annually, prior to the start of the fire season, fire helicopter pilots will undergo refresher training conducted by the Aviation Section's designated instructor pilot. The training will be in accordance with the WADNR Helicopter Pilot Training Manual. New pilots shall be evaluated on all tasks listed in the training manual. Normally, flight training will not exceed ten hours. All pilots shall complete a flight review biannually in accordance with 14 CFR 61.56 (a). Two hours of pilot training per month will be allowed for pilot proficiency and Helitack crew training. *See also chapter 6: Training.*

Interagency Pilot Approval Process

WADNR pilots and aircraft are inspected and “carded” each spring through an approval letter issued by the USFS-R6 Helicopter Program Manager or designated representative. The letter states the pilots, aircraft, missions, mechanics, and support trucks that are approved for use on Federal fires.

Evaluations, Mission Debriefings/Critiques

The evaluation or debriefing/critique of all aviation operations is essential for improving operational effectiveness, promoting safety, maintaining free-flowing communication, and for recognizing successes. Debriefings should be done at the end of each operational period on an incident and should include: items that went well and items needing correction, for both ground and air resources, any communication difficulties, and corrective actions/methods for improvement.

In addition to daily briefings and debriefings, an evaluation should be requested at the end of the incident/assignment. Evaluations can come from the Incident Commander, the Helibase Manager, the Air Operations Branch Director, or any direct line supervisor of the helicopter and crew. Evaluations should discuss both pilot and crew capabilities and performance.

Airbase or helicopter managers may also evaluate pilot and crew performance. In all evaluations, operating safety shall be the primary consideration. Successful performance of tactical assignments is also preferred, but will not override the use of safe operating practices.

Grounding, Reinstatement, Investigation and Appeal Procedures

Safety is always paramount and it is each pilot’s responsibility to assure he/she is at peak mental and physical condition to assume a flight role. If for any reason a pilot feels unprepared to fly, they should temporarily suspend themselves from those duties and take appropriate action to rectify the condition.

Temporary suspension or grounding of a pilot will only occur when there is an “Imminent Danger,” or there is a history of repeat poor performance suggesting the potential for “Imminent Danger.” Imminent danger is defined as any condition or practice where a danger exists which could reasonably be expected to cause death or serious physical harm immediately or before the danger can be eliminated through normal procedures.

Crew supervisors, aircraft base managers, and helicopter managers may suspend (temporarily “ground”) operations, or in the case of contracted aircraft refuse the contractor’s services. Long-term grounding, suspension or revocation of Department pilot privileges shall occur at the level of the Resource Protection Division Manager.

Once grounded, the Fire Aviation Section Manager and his/her designee(s) will investigate the grounding and provide a written report to the Resource Protection Division Manager. The Resource Protection Division Manager will determine whether corrective action or discipline is warranted. This will occur within five business days of the grounding.

Duty Stations and Assignments

The duty station for WADNR helicopter pilots is Olympia. Pilots travel as needed to other staging or detail locations during the fire season to meet staffing needs. Pilots are not assigned to a specific aircraft; they rotate through the fleet according to aircraft status and availability. A pilot may be designated to fly both UH-1 and AH-1, or may be limited to one aircraft type depending upon staffing requirements and his/her experience and ability.

Aircraft Requirements

FAA Standards

(Section Reserved, to be Developed Later)

Aircraft Data Card and Aircraft Certificates

(Section Reserved, to be Developed Later)

Interagency Approval Process

As with the interagency qualified helicopter pilot approval process, the WADNR helicopters go through an annual “carding” or certifying inspection by the USDA USFS-R6 Helicopter Operations Manager and the USDI Bureau of Land Management Safety Officer, or his/her designee. Prior to utilization pilot data and Helicopter maintenance records are reviewed by the USFS and a letter of authorization is issued to the Fire Aviation Section Manager and maintained in the aircraft.

III. Medium Air Tankers

Medium Air tankers can be contracted from various contractors for initial and extended attack firefighting and other fire control support missions. The following sections are a summary of information contained in the contract(s).

Each year, prior to use, WADNR conducts a pre-use inspection of the aircraft for compliance with the contract specifications and conditions. All maintenance, other than the inspections required by FAR 91.169, is performed IAW FAR 43.

A current USFS or OAS letter of approval issued by a USDA/USDOJ Regional Aviation Officer/Area Director is required for Medium Air Tanker use on an USDA or USDOJ incident.

Pilot Requirements

The Pilot in Command must:

- Possess FAA commercial certificate with Multi-Engine and Instrument rating
- Have category/class and type ratings in aircraft to be flown, not limited for VFR
- Possess a current FAA Second Class medical certificate current through period of contract
- All pilots be registered with the State of Washington, Department of Transportation, Aeronautics Division
- Meet “recent flight experience” Pilot-in-Command requirements of FAR Part 61 Sec. 61.57 and 61.58(a).
- Ability to obtain a Letter of Approval by the USFS
- Must be qualified to meet FAR Part 137.53 for congested areas when required.

- Have the following flight experience:
 - Total time—all aircraft 1,500 hours
 - Pilot-in-Command, airplane 1,200 hours
 - Make & model to be flown (plus a unrestricted type rating if over 12,500 lbs.) 25 hours
 - Category and class to be flown 200 hours
 - Multi-engine aircraft over 12,500 lbs.(if applicable) 100 hours
 - During preceding 12 months – Airplanes 100 hours
 - Actual or Simulated instrument time, minimum 50 actual 75 hours
 - Night flying to include at least 3 takeoffs and landings to a full stop 100 Hours during the 90 days preceding the designated availability period in category and class.
 - Typical terrain and landing facilities (mountain and low-level) 200 hours
 - During 60 days prior to contract designated availability period. Five Hours
 - A. In make and model, five (5) takeoffs and landing, to include two (2) on water.
 - B. Scoop and drop one (1) load of water.
 - C. Minimum two current PIC's prior to contract availability period. Additional PIC shall meet the requirements prior to PIC duties

PPE Requirements: The following Contractor-furnished personal protective clothing and equipment shall be required on all flights except during ferrying of aircraft at cruise altitude when the aircraft is not loaded with fire retardant material.

- Fire resistant clothing and gloves (with no skin exposed between gloves and sleeves, and boots and pant hemlines), leather boots, and PFDs available in cockpit for each air crewmember (fitted ahead of time.)

For Co-Pilot requirements or full details of PPE requirements, see the contract.

Aircraft Requirements

Aircraft must:

- Be registered with the State of Washington DOT, Aeronautics Division and the FAA. Present a neat, clean appearance--with upholstery, paint and plexi/window glass in good condition
- Be a twin-engine super console air-tanker or equivalent
- Be a scoop-type aircraft capable of loading without landing
- Be capable of carrying a minimum of 800 gallons of liquid
- Be capable of speeds up to 140 mph.
- Be capability of loading retardant on the ground from a certified air-tanker base.

- Contractor must be currently certified under FAR (CFR) 14, Part 137 (Agricultural Aircraft Operations) and the aircraft must be certified by the National Air Tanker Board at the time of bid opening.

IV. Other Contracted

Forest Health Survey Flights:

Systematic aerial detection surveys have been conducted in the Pacific Northwest annually since 1947. Approximately 45 million forest acres are surveyed each year throughout Oregon and Washington. The Washington survey is conducted using a contract aircraft and pilot and covers approximately 20 million forested acres over all ownerships. The survey flights make use of a digital aerial sketch mapping (D-ASM) system. The D-ASM guide covers these operation procedures in more detail and can be viewed on-line at http://www.fs.fed.us/foresthealth/id/id_tech.html.

Scope of the Program: The Forest Health Survey Flight program, also known as the Aerial Insect and Disease Detection Survey, is a joint cooperative program between the USDA-Forest Service and the WADNR. Two observers on opposite sides of the contract aircraft look for and map “tree damage” to a distance of two miles out. Observers are looking for signs or symptoms (colors, patterns, timing, etc.) of current year mortality, defoliation, disease, and/or weather damage. Observations are recorded on 1:100,000 USGS maps, and most flights are conducted on a grid pattern at approximately 100-120 mph and 500-2,000’ AGL. The USDA-FS arranges the multiyear contract with a plane and pilot, and the WADNR reimburses them for up to half of the costs associated with the survey.

The program is operated within USDA-FS guidelines as set out in the Northwest Aviation Management Plan. *See contract R6-03-033* for conditions of use, accident/incident procedures, certifications, operations, aircraft specifications, maintenance, pilot requirements, flight and duty limitations, pre-use inspections, approval, flight time measurement, availability and extended standby, and invoice procedures.

Pilot and aircraft requirements for the current contract are summarized below (refer to the contract for full scope.)

Pilot/Vendor Requirements

- Vendors must be currently certificated under FAR Part 135 (Air Taxi Operators and Commercial Operators.) Vendors shall provide copies of their FAR Part 135 certificate and operations specifications, state and local certificates and licenses, and any current FAA exemptions, compliance deadline extensions, or other amendments to certificates or operating specifications at the time of inspection or service visit.
- Pilots and aircraft undergo a pre-use inspection and approval process.
- The Pilot in Command (PIC) is responsible for the safe operation of the aircraft, the safety of its occupants, and cargo. The PIC has authority to postpone, change, or cancel any flight when existing or impending conditions are believed to be hazardous. The PIC is the sole manipulator of flight controls.

PIC Requirements:

- Possess an agency Pilot Qualification Card issued by a designated USDA/USDI Inspector of Pilots
- Hold a valid FAA Commercial or Airline Transport Pilot Certificate with a current Instrument Rating
- Have a current statement of competency (FAA Form 8410-3) for the aircraft to be flown
- Hold an FAA Class I or Class II Medical Certificate as appropriate to the ratings held and utilized
- Read and sign a safety briefing sheet
- Have accumulated the minimum flight hours listed below:
 - Total time (all airplanes) 1,500 hours
 - Airplane Pilot in Command 1,200 hours
 - Category and Class to be flown 200 hours
 - Cross Country 500 hours
 - Typical Terrain /2 200 hours
 - Category—Preceding 12 months 100 hours
 - Preceding 60 days 10 hours
 - Night (all aircraft) 100 hours
 - Instrument—actual and simulated total /3 75 hours
 - Make and Model to be flown 25 hours
 - Make and Model preceding 12 months 10 hours

Aircraft Requirements

Aircraft must:

- Have a seating capacity for a minimum of 3 passengers
- Be capable of maintaining 90 knots indicated airspeed while equipped as prescribed in the contract
- Be twin engine, all metal, unpressurized, with at least 200 horsepower per engine
- Be maintained and operated in accordance with FARs and the regulations of the States in which aircraft may be operated (14 CFR 135.1 subparagraph (b) notwithstanding.) Note: Status as “public aircraft” does not alter the requirement for compliance with the above regulations.
- Be clean inside and out
- Have certified power plant and airframe log books and other necessary papers substantiating the maintenance, overhaul and airworthiness history

General Requirements

In addition to pilot and aircraft requirements, the contract also states that:

- Only personnel or cargo (including the Contractor’s) authorized by the WA DNR shall be aboard the aircraft during use by the WA DNR.
- Night flying is permitted only to and from airports with operational runway lighting systems. Minimum acceptable airport lighting system consists of runway boundary and threshold lights.
- Instrument flight operations shall be in accordance with FAR 135
- Smoking in or around aircraft is prohibited
- Alcohol will not be served to Government employees on flights
- Flights shall be conducted within the allowable weight and balance limits of the aircraft, and in accordance with FAR 135.63 (c).

- At the time of an actual flight, the PIC may be requested to complete a load calculation considering the conditions present at the time of the flight. The WA DNR will furnish a form if requested.

Designated Base Requirements

The designated base for the Forest Health Survey Flight contracted aircraft shall be any all weather surface runway greater than or equal to 3,000’ in length located in one of the following counties:

Oregon
 Washington
 Clackamas
 Thurston
 Multnomah

Washington
 Clark
 Cowlitz
 King
 Lewis
 Pierce

V. National Guard

Pilot Requirements (Section Reserved, to be developed later)

Aircraft Requirements (Section Reserved, to be developed later)

CWN Rotor craft (Section Reserved, to be developed later)

CWN fixed wing (Section Reserved, to be developed later)

Chapter 4

AIRCRAFT OPERATIONS AND FLIGHT RULES

I. General

Performance limitations of the aircraft shall not be exceeded. Items specific to WADNR individual aircraft's operation and flight rules are detailed in the subsequent sections. This general section covers only policies and rules that pertain to all WADNR aircraft.

II. Helicopter

General and Standard Operating Procedure (SOP)

- A. The WADNR or DNR contracted helicopters will be operated In Accordance With (IAW) the *WADNR Helicopter Operations Manual* that is a separate document.

IV. Contracted Aircraft

A. Medium Air Tanker

Flight and Duty Limitations

All flight crew members are limited to the following tours of duty and flight hours:

- Flight time may not exceed a total of 8 hours in any duty day
- Assigned duty of any kind shall not exceed 14 hours in any 24 hour period
- Within any 24-hour period flight crewmembers shall have a minimum of 10 consecutive uninterrupted hours off duty immediately prior to the beginning of the next duty day.
- Flight crewmembers accumulating 36 hours of flight time in any 6 consecutive days, or less, are required to have the following day off. Maximum cumulative flight hours shall not exceed 42 hours in any 6 consecutive days.
- The government will schedule a day off once every seven days in the contiguous 48 states.

Flight time is calculated in hours and minutes and begins when the aircraft starts its takeoff run on an ordered flight and ends when the aircraft has taxied to parking, loading, refueling or warm-up operations. All flights are recorded on Daily Flight Reports and must be approved by the purchaser.

B. Forest Health Survey Flights

Aircraft operations and flight rules for the Forest Health Survey Flights are set forth in an interagency agreement between the USDA-Forest Service, and the WADNR. The WADNR contract number is FY00-122, and the USDA-FS contract number is nfs-00-C0-11060000-010. Overviews of flight and duty limitations are listed in this section, but refer to the contract itself for full scope of requirements.

Flight and Duty Limitations

Pilots flying Forest Service missions shall be limited to the following tours of duty (all work-related flying time shall count towards the limitations):

- Flight time shall not exceed a total of 8 hours per day.
- Flight time shall not exceed a total of 42 hours in any 6 consecutive days.
- Pilots accumulating 36-42 hours of flying in any 6 consecutive days shall be off duty the following full calendar day.
- Within any 24-hour period, pilots shall have a minimum of 10 consecutive hours off duty, immediately prior to the beginning of any duty day.
- During any 14 consecutive days, pilots shall be off duty for two full calendar days. Days off need not be consecutive.
- FAR Part 121 Contractors shall comply with FAR Part 121 flight time limits.
- Pilots may be removed from duty for fatigue or other causes created by unusually strenuous or severe duty prior to reaching duty limitations

The Project Coordinator for each of the parties to the contract shall be responsible for and shall be the contact person for all communications and billing regarding the performance of the agreement. Contract numbers are liable to change, as scope of the contract is revised, or new vendors are selected. For more information on the contract, or on the program itself, contact:

WADNR

Glenn Kohler

DNR Resource Protection Division
P.O. Box 47037
Olympia, WA 98504-7037
(360) 902-1342

USDA-FS

Keith Sprengel

USDA-FS, FID
16400 Champion Way
Sandy, OR 97055
(503) 668-1476

Automated flight following is used. Visit the website at <http://www.fs.fed.us/foresthealth/id/3400-RPTR3.pdf> for information on this automated program.

The WADNR Forest Health Survey Flight program has developed a supplemental Aviation Safety Plan for its operations. *To view the contents of this plan, see Appendix 6.*

V. National Guard

The National Guard follows aircraft operations and flight rules as set forth in its operational policies and procedures. While flying on fires or incidents for the WADNR, and wherein a conflict in regulations occurs, the National Guard follows the more restrictive of the policies. For guidance in military use, WADNR personnel can consult the Military Use Handbook (NFES 2175, available through the NIFC Cache) or speak with a military liaison.

VI. Operations and Maintenance in Volcanic Ash Environment

Areas of Concern:

- Aircraft flight into ash-laden atmosphere

- Aircraft operation into, and out of, landing areas that may contain ash
- Maintenance of aircraft operating in conditions mentioned above

WADNR aircraft's anticipated problems for volcanic ash exposure include:

- Ash abrasion: Ash will adhere to all components, and damage many. Expect any engine damage to occur during take-off, landing, or low-level operations. Turbines may experience abrasive wear in the compressor section resulting in reduced power.
- Sulfuric acid formation: There is a possibility of sulfuric acid being formed when ash is wet. This may corrode magnesium and aluminum parts. The area of greatest potential problems is in the turbine engines used in WADNR aircraft.

Minimizing the effects of Volcanic Ash Exposure: The following guidelines shall be used when operating WADNR aircraft in an ash environment:

Helicopters

- During ash-contact periods, anticipate and plan for a significant initial increase in labor hours for pilots, crews and maintenance personnel to keep helicopters operational.
- Local procedures and support equipment will change as needed to meet the requirements of keeping helicopters operational
- The engine and transmission oil spectro-analysis sample intervals (50 operating hours) will be adjusted as indicated by the results of the analysis. Oil change intervals for engine, transmission, and gearboxes, is every 100 operating hours, or annually, whichever comes first. Intervals may be adjusted downward as a result of the ash environment.
- The entire aircraft shall be washed thoroughly as soon as possible after flight in ash-laden atmosphere.
- Engines shall be washed internally per WADNR procedures as soon as possible after--and within 24 hours of—flight in an ash-laden environment or after 10 operating hours, whichever comes first.
- Turbine engines without engine inlet filters and/or particle separators shall not be operated in ash-contact environments.
- Clean all engine inlet filters and/or particle separators at regular intervals to eliminate significant ash buildup in filter reservoir and blockage of screens.
- Helicopter operations shall be kept to a minimum on or near the ground when ash is loose.
- 25, 50, 75, 100 hour progressive and annual inspections will remain at normal intervals.
- Engine Health Indicator Tests (HIT) shall be performed each flight day, or more often, to assist in determining engine condition trends. Abnormal conditions will be reported immediately to the Aviation Maintenance Supervisor.

Chapter 5

AIRCRAFT MAINTENANCE and SERVICING

I. General

The WADNR uses a combination of FAA, FEPP, IHOG, and agency maintenance regulations. The WADNR Aircraft Maintenance Supervisor (AMS), is responsible for the agency's aircraft maintenance program. The AMS determines which maintenance regulations (FAA, FEPP, IHOG, agency) are applicable, and develops a maintenance plan for each aircraft accordingly. These detailed plans are covered in the WADNR's *Maintenance Operations Manual (MOM)*.

Federal Aviation Regulations: FAR 91 stipulates what actions are required, including flight rules.

For more information on aircraft maintenance, or to view the "MOM", contact:

Lee Smith, Aircraft Maintenance Supervisor
7613 Old 99 Hwy SE
Olympia, WA 98501
(360) 753-5314 or (360) 664-8602
lee.smith@dnr.wa.gov

II. Aircraft Grounding

No aircraft will be flown that has a known "safety of flight" discrepancy unless the AMS, for test purposes or to facilitate maintenance, has authorized a ferry flight. See subsections under aircraft type for specific grounding requirements.

Aircraft Grounding

Grounding is required for aircraft when any of the following conditions exist:

- Structural failure
- Aircraft damage incurred as the result of an accident or incident. On-site inspection by WADNR maintenance personnel is required, and a written release must be signed ("in a condition acceptable for return to service in the discrepancy report) before the aircraft will be released to further flight.
- Failure of any equipment that adversely affects characteristics of flight
- Center of gravity beyond published limitations or weight beyond the control or structural limits of the aircraft.
- IAW CFR 61

In addition to the above, grounding of a helicopter is required when:

- Hydraulic system leakage is of an amount capable of dangerously depleting the hydraulic reservoir during normal flight operations. Static= 1 pint per day, Dynamic= one pint per ten flight hours, or one drop from irreversible weep valve in 25 cycles.
- Transmission oil level drops from full mark on upper sight gage to the add mark on the lower sight gage between flights.
- Engine oil consumption is in excess of one quart per hour.

- The level on the 42 and 90-degree gearboxes drops from the full mark to a level that uncovers the sight gage hole.

In addition to 1-5 above, grounding of the King Air is also required when:

- Any equipment becomes inoperative IAW the approved minimum equipment list (MEL).
- There is non-compliance with:
 - FAR 91.22 minimum fuel requirements for VFR
 - FAR 91.23 minimum fuel requirements for IFR
 - FAR 91.24 transponder operational (one may be inoperative)
 - FAR 91.25 VOR receiver checks must be current and within limits

III. Helicopter

Maintenance Test Flights

For information pertaining to maintenance test flights on WADNR helicopters refer to the WADNR *Helicopter Operations Manual*, number “10”, *Maintenance Test Flights*.

Airframe and Engine Manufacturers Specifications

The WADNR Aviation Maintenance Program combines the airframe and engine manufacturer’s maintenance specifications with military maintenance schedules, and other applicable regulations. See the *Maintenance Operations Manual (MOM)* for more information.

Weight and Balance

Weight and balance will be determined to be within limits before any agency aircraft is flown. WADNR aircraft will be weighed empty, and a new weight and balance calculated and recorded at least once every three years. Results are recorded on DD Form 365F (or a similar form.)

All cargo and passengers will be weighed as necessary and manifested. In the event that a cargo scale is unavailable, helicopter pilots or Helitack crewmembers may estimate the weight of individual cargo items using pre-made reference sheets. Document on the load manifest that weights are estimated and not actual. Estimations, however, should be avoided when at all possible, if scales are readily available on the helicopter support trucks or through the cache system.

For record keeping purposes, one copy of the basic weight and balance remains with the aircraft records aboard the helicopter and the other is kept in the aircraft master record file at the maintenance office at the Olympia hanger.

For further information pertaining to helicopter weight and balance, refer to the WADNR *Helicopter Operations Manual*, number “12”, *Weight and Balance*.

Authorized Fuels and Grades of Oil

Only oil IAW the operators’ manual may be used in WADNR helicopters. Engine and transmission oils will not be used past their expiration dates. Refer to can markings to determine expiration. Example: A can marked D698D expired on June of 98, and a can marked 24 Apr 03 was manufactured on April 24 of 2003 and therefore expires 3 years from that date.

Helicopter Fueling

For further information on helicopter fueling, refer to the *DNR Helicopter Operations Manual*, number “17” Operations, “J” *Helicopter Fueling*.

Helicopter Maintenance Personnel Requirements

WADNR aircraft maintenance personnel must be currently certified as an Airframe and Power plant (A&P) mechanic or an Aircraft Maintenance Technician (AMT), and meet the qualifications of position as set forth in the *Maintenance Operations Manual*.

Helicopter Maintenance Program

The WADNR Helicopter Maintenance Program is accomplished IAW the *WADNR Maintenance Operations Manual (MOM)*.

Water Buckets and Foam Delivery System

Buckets will be suspended beneath the helicopters IAW the Interagency Helicopter Guide (IHOG, current USFS rules, and as specified in the Helicopter Operations Manual.

The foam delivery system uses regular wildland fire suppressant foam. This foam can be extremely slippery. Helicopter skids and steps will be rinsed of foam spills regularly. Small spills can be disposed of by diluting the foam solution with a thorough flushing of water. Eye protection will be worn when pouring foam into the tanks, and the use of waterproof gloves is recommended. Foam can be severely irritating to the eyes and skin, and exposure should be mitigated through repeated flushing with clean water. Avoid inhalation of foam fumes, as they can irritate the lining of the nose and mouth.

In-Field Maintenance

In-field maintenance will be accomplished IAW the *WADNR Helicopter Operations Manual* and IAW the *WA DNR Maintenance Operations Manual*.

Chapter 6

TRAINING

I. General

Each pilot who flies WADNR aircraft must undergo initial, and recurrent, training. It is the duty of the Program Manager of fixed wing operations and Supervising Helicopter Pilot of rotor wing aircraft to ensure that each pilot completes these training programs and ensure that training records are accurate and current. Initial and recurrent training requirements are set forth in the WADNR operation and/or pilot training manuals, and will cover all elements of flight operations, as well as mission specific training, emergency procedures, and updates in safety or operational procedures.

As a minimum, new pilots will receive training in:

- A. Agency and Division operations, policies, and procedures
- B. Organizational structure of the RPD
- C. Review of FAA rules and regulations governing the specific program
- D. Safety and emergency procedures
- E. Pilot duties and responsibilities
- F. Aircraft and program overviews
- G. Pilot training and task certification flight (“check ride”)

See program manuals, as listed below under the specific program type, for more information.

II. Helicopters

Pilots

Chapter 3, Section I covers requirements for Pilot qualifications and experience, flight time, and flight currency and training.

Detailed procedures and requirements are provided in the Helicopter Operations and Training Manual.

In addition to the biannual flight review (14 CFR part 61.56(a)), pilots are evaluated on all tasks listed in the WADNR Helicopter Pilot Training Manual. New pilots must demonstrate proficiency with all tasks as a condition of hiring, whereas returning seasonal career pilots must have knowledge of all tasks but may not be required to perform all tasks in the aircraft. Recurrent evaluations or post-accident evaluations are tailored by the Aviation Section Standardization Officer to meet department needs. Emergency Operations tasks are performed with an evaluator aboard the aircraft who has access to the pilot’s controls.

Helicopter pilots receive basic fire operations and incident command system training. Although not a requirement, many complete firefighter 2 training.

Helitack Crew

All helicopter crewmembers, helicopter managers, and helibase managers assigned as WADNR Helitack employees, detailers or trainees must meet the minimum interagency standards for the

incident position(s) held. To view the Interagency training requirements for Helicopter Crew positions, go to the 310-1 online at <http://www.nwcg.gov/pms/docs/docs.htm>

In addition to these minimum qualifications, WADNR Helitack Crew members complete annual classroom and field training. Training elements include, but are not limited to, annual LCES Refresher training; S-271 Helicopter Crewmember; Department Fuel Truck Driver and Helicopter Manager training; helicopter water bucket and foam system maintenance; and Hazardous Material training. Refer to the Helitack Crew Guidelines for more information, or contact the Crew Supervisor at (509) 925-0958.

Fuelers

As a minimum, agency fuelers attend as a condition of employment an 8-hour Fuel Truck Driver Training covering:

- Federal requirements for the transportation of aviation jet fuel
- Emergency procedures for fire, accident and breakdown
- Hazardous materials regulations and handling procedures
- Use of drivers logbooks and required paperwork
- CDL holders responsibilities and duty limitations
- Vehicle inspections and brake adjustments
- Vehicle loading, placarding, driving and parking
- Inventory of cargo, manifests

Agency fuelers will attend 2 hours of training pertaining to Federal Drug and Alcohol Testing Regulations. Supervisors of employees who must have CDL's attend 4-hours of Federal Drug and Alcohol Testing Regulations.

In addition, Helitack Fuel Truck Drivers also receive Helicopter Operations and Fire Operations training commensurate with a Helicopter Manager Trainee position. *Refer to the Helitack Crew Guidelines for more information on crew training.*

III. Other Contracted Pilots

Pilot training requirements will be IAW the appropriate FARs pertinent to the type of services for which contracted and IAW the contract for the specific aircraft.

Chapter 7

BASE OPERATIONS for FIRE-READY AIRCRAFT

General: Each aircraft operations base for the WADNR, whether permanent or seasonal, shall keep a current copy of the Aircraft Mishap Response Plan posted and visible. All aviation personnel will review the Aircraft Mishap Response Plan annually. Telephone numbers and points of contact will be updated as changes occur, and this information then disseminated throughout the field.

Each aircraft operations base is equipped with fire extinguishers and First Aid Kits (number to reflect the size and scope of operations.) A local Flight Hazard Map and a list of hospitals with helipads (flight routes, radio frequencies, hazards and telephone numbers) is posted.

I. Aircraft Availability and Status

Aircraft availability and status vary between aircraft bases and time of year. For fire-ready aircraft, the pilots, crews, and aircraft shall be ready and available for immediate incident response during regular hours of operation (which is generally 0930-1800 during peak fire season.) RPD Aviation Section Management may alter schedules to provide adequate coverage 7 days a week.

The WADNR Emergency Operations Manager determines the location of the various aircraft.

Aircraft bases will call into local dispatch and the DNR ECC at the beginning and end of each duty day, to advise of availability and status. Any changes in aircraft status during the shift will be transmitted to the same offices. The Helicopter Program Coordinator is responsible for notifying the WADNR Emergency Coordination Center helicopter status and changes on a daily basis. In addition to Resource Protection the Helicopter Program Coordinator will post the status report on the DNR aviation web site or send out a daily status of helicopters in the form of e-mail to other interested parties to include but not limited to:

- RP&S assistants and/or designee
- DNR and inter agency dispatch centers and NWCC
- DNR aviation staff

To view the DNR aviation web site go to: <http://www.dnr.wa.gov/htdocs/rp/aviation/index.html>.

II. Crew and Ground Personnel

Crew and ground personnel will be IAW the WADNR *Helicopter Operations Manual* and IAW the *Helitack Crew Guidelines*. Generally all aircrew and ground personnel assigned to fire-ready aircraft will be dispatch-ready during normal work hours. Personnel will monitor radios or telephones, and will advise supervisor of their location when away from the immediate work area. Personnel are expected to secure their work area and be launch (flight) ready within 5 minutes of the dispatch call. Consequently, overnight and extended stay gear must be prepared ahead of time, and pre-flight inspections done first thing at the start of each shift.

- All aircrew and ground personnel are responsible for maintaining a safe work environment and following safe operational practices by monitoring base working conditions and co-worker physical/mental conditions. Any notice of an unsafe work

environment must be immediately mitigated, as per Chapter 2 subsection on “Safety Hazard Reduction.”

III. Aircraft Dispatching

General: Aircraft and personnel will be dispatched via phone or radio by the local dispatch/communications center. Resource Protection Division Emergency Coordination Center may also receive and fill requests for aircraft, coordinating through local dispatch centers or aircraft bases.

Dispatchers shall provide the following information: resource order number, type of aircraft and capabilities needed, response area or magnetic course and distance, general geographical area, radio frequencies and contacts, flight hazards in the incident area, other aircraft responding, special instructions or conditions affecting flight, GPS coordinates, and Township/Range/Section for ground resources.

The responding aircraft personnel (pilot or helicopter manager) will calculate the estimated time en route to the destination, and will advise dispatch of Estimated Time of Arrival (ETA) after take-off.

IV. Inspections & Maintenance

Helicopter Inspections and Maintenance will be done IAW the Helicopter Operations Manual and IAW the DNR Maintenance Operations Manual. Base managers, crew supervisors, pilots and all aircrew members are responsible for assuring daily inspections of the base and aircraft to detect safety or operating problems have been accomplished. Inspections include:

- Aircraft pre-flight checks
- Crew readiness inspections
- Vehicle walk-around inspections
- Inspection of the general condition of facilities, work areas, public viewing areas, aircraft parking pads and taxiways
- Check operating condition of equipment and systems
- Ensuring security of facilities, aircraft, vehicles, equipment, fuel, communications systems, and tools
- Check for oil or fuel spills in work areas and on taxiways or aircraft pads
- Check for FOD (foreign objects/debris) around parking pads and taxiways

In addition to daily inspections, the Fire Aviation Program Manager, the Helicopter Coordinator, or the Resource Protection Division Management will inspect aircraft bases and operations on an unscheduled and scheduled basis.

Chapter 8

COMMUNICATIONS and RADIO-USE PROTOCOL

I. Standards/Protocol

All WADNR aircraft and support vehicles will be equipped with adequate and reliable communications equipment. All aviation personnel will use clear text and standard Incident Command System (ICS) terminology.

II. Aircraft Identification

Aircraft registration/identification numbers shall be displayed on the side of the aircraft exterior and be highly visible.

When communicating with a FAA facility or airport, aircraft will use their full call sign. (Example: N330WN would be “November-Three-Three-Zero-Whisky-November.”) WADNR aircraft use only the last three numbers of the aircraft registration number when working on an incident. (Example: N330WN would be “Rotor Three-Three-Zero.”)

A national transponder code (1255) was designated by the FAA in 1997 for aircraft involved in firefighting operations. It was developed to enable en route and terminal radar service facilities to identify aircraft engaged in tactical fire suppression missions, and if necessary, separate them from non-participating aircraft.

III. Equipment

(Section Reserved, to be Developed Later)

IV. Channels

At a minimum, all WADNR aircraft will have the capability of transmitting and receiving on: a guard channel, a primary and secondary air-to-air (“victor”) channel, and a primary and secondary air-to-ground frequency.

V. Air Guard

All WADNR aircraft will monitor the National Air Guard frequency 168.625. Though meant for emergency use, this frequency can also be used for initial call-up or redirection, if the aircraft cannot establish positive contact on any other frequency. If used in this manner, the parties involved must switch over to another frequency as soon as contact has been established.

VI. FAA Requirements

WADNR pilots shall adhere to FARs Part 91 governing communications and clearance requirements for airspace class and airport size.

VII. Flight Following and Fire Contact

Flight following frequencies are assigned for the purpose of tracking aircraft from the base of operations to an incident. This is a positive method of communication usually conducted at 15-minute intervals, which is initiated by the originating dispatch office and continues until responsibility for communication with the aircraft has shifted to the incident, aerial supervision

aircraft over the incident, or another dispatch office. WADNR owned or leased aircraft involved in fire missions follow 15-minute interval flight following standards. Unless directed otherwise by the local dispatch office, the flight following will be done on the national flight following frequency 168.650. Flight following reports are given by position and heading.

No WADNR or contracted aircraft shall enter the incident (fire) area until communications have been established with the control aircraft, Air Attack, the Incident Commander, or a ground contact. See Fire Traffic Area procedures at the USDA USFS aviation website. The only exception is when the aircraft is first on scene, making an initial attack. By 12 miles out communications should be established, and if none has occurred by 7 miles out the aircraft must not enter the airspace with the incident until communications are established.

There are several methods of flight following, those that are appropriate for point-to-point flight and those appropriate for mission flight. Flight following methods include:

- Instrument Flight Rules (IFR) flight plan.
- Visual Flight Rule (VFR) flight plan with radio check-in to an FAA facility at intervals specified. (60 minutes minimum or at every fuel stop). This method is used for helicopters on long flights from point-to-point.
- An agency VFR flight plan maintaining 15 minute radio contact with a dispatch office, helibase or field staff. If using field staff, the field staff must have contact with dispatch to allow timely reporting of any accident or problems that may be encountered.
- A tracker system reporting via satellite that is compatible with the Forest Service Automated Flight Following (AFF). Standard reporting is every 2 minutes.

During non-fire related flights, i.e. maintenance, training, point to point etc., the pilot and/or manager is still required to use one of the flight following methods listed above.

While performing a flight outside the normal work hours of a dispatch office, or transitioning through a Region outside normal hours, typically (0800-1630), the pilot is required to flight follow with an FAA facility. The WADNR pilot and manager must plan the flight accordingly.

Not required, but highly recommended, is the use of the **Initial Attack Management System (IAMS)** Program, or **Computer Aided Hazard Information System (CAHIS)**. Basically different names for the same system, IAMS/CAHIS is used to help locate current Military Training Routes, Special Use Airspace, VORs and other navigational aids, helibases, air tanker bases, nearby airports, airspace boundaries, TRFs, etc. Access at <http://www.fs.fed.us/fire/planning/nist/iams.htm>

Chapter 9

INCIDENT OPERATIONS

I. Coordination and Control; Governing Regulations

Requesting Agency and Jurisdiction

When conflicts in aircraft operating procedures occur on interagency incidents, the regulations of the agency with operational control/jurisdiction shall be adhered to. The exception occurs when the regulations of the agency with operational control/jurisdiction are less restrictive than those of the WADNR. In that event, the more restrictive of the regulations applies.

Examples:

A WADNR helicopter on a USDA FS fire will abide by WADNR's flight duty limitations of 7 hours of external load operations, as this is more restrictive than the USFS standard of 8 hours flight duty limitations.

At times contract aircraft may be ordered through a federal agency contract but used on a WADNR fire (or vice versa). In these instances, the aircraft are bound by the contract that they were hired under, except when the contract's regulations are less restrictive than the jurisdictional agency's. Contract aircraft are then be limited by the more restrictive of the regulations. If the Contractor is unable or unwilling to abide by these more restrictive regulations, then the options exist to reroute the aircraft to another incident run by the ordering agency, reorder the aircraft under the contract of the jurisdictional agency, or replace the aircraft.

Interagency Helicopter Operations Guide (IHOG) -- Use of

WADNR accepts the IHOG as a guide, not as official agency policy. WADNR will abide by IHOG regulations on fires under which jurisdiction is of a governing agency for whom the IHOG is policy, with the exception of the following agency variances:

WADNR Variances to the IHOG (from the May 31, 2001 document):

- **AIR OPERATIONS POSITIONS:** Will meet the minimum qualifications listed in PMS 310-1 (Wild land and Prescribed Fire Qualifications System Guide) Dated January 2000. (Chapter 2,II)
- **STAFFING LEVEL:** WADNR will provide one Aviation Manager for up to three helicopters. The agency will be excluded from meeting minimum staffing required by IHOG during initial attack. Once into extended operations, the appointed Air Operations Manager will decide on staffing levels for aviation operations after consultation with the Incident Commander and review of the Delegation of Authority. (Chapter 2-III)
- **APPROVAL AND CARDING:** All WADNR aircraft and pilots will follow FAA requirements for commercial or military operator, and public use aircraft requirements. (Chapter 5)
- **LOAD CALCULATIONS:** The WADNR pilot in command is responsible for load calculation accuracy and completeness. (Chapter 7-2, B, C)

- **SURVIVAL AND FIRST-AID EQUIPMENT:** All WADNR aircraft shall be equipped as per FAA regulations. (Chapter 9-IV)
- **REFUELING OPERATIONS:** WADNR FEPP helicopters will be fueled in accordance with agency procedures and guidance from FM 10-67-1 Concepts and Equipment of Petroleum Operations. All flights will be planned so that the helicopter will land with a minimum of 20 minutes of fuel. (Chapter 13)
- **PILOT FLIGHT HOURS:** WADNR flight hour maximum is eight hours, but limits agency pilots to a maximum of seven flight hours during external load operations.

II. Ordering Aircraft

WADNR owned/FEPP aircraft can be ordered through local WADNR dispatch or through RPD ECC.

The medium air tanker is ordered through RPD ECC or the Northeast Washington Interagency Communications Center (NEWICC).

Canadian air tankers are contracted through RPD ECC or Northeast Region dispatch. Northeast Region dispatch orders the air tankers through a direct call to the tanker base for the DNR or others. The originating dispatch office will complete Customs/Immigrations documentation.

The Washington National Guard is ordered through RPD ECC and requires an emergency declaration by the Washington State Governor.

III. Dispatching and Diverting Aircraft

Dispatch of WADNR aircraft is the function of the dispatchers at each geographical zone dispatch center, communications center, or area office. Dispatching is done in accordance with the mission priorities and governing regulations set forth in this Plan. Aircraft en route to an extended attack, project fire, or reported smoke may be diverted to an initial attack, or to an incident where the threat to life or property is greater than the threat at the assignment to which the aircraft is en route.

Where conflicting priorities exist, local dispatch is to contact RPD ECC for direction.

V. Initial Attack

Initial attack is done in accordance with the *Helicopter Operations Manual*.

VI. Extended Attack and Project Fires

WADNR helicopters may be used by the WADNR, or its cooperators, on extended attack and project fires as long as the helicopters retain initial attack status and are freed up to respond to new starts.

VII. Helibase Operations

All helibase operations will be conducted in accordance with IHOG standards, except wherein stated differently in the agency Variances.

VIII. Fire Support and Fire Suppression Missions

WADNR fire support and suppression missions will be done in accordance with pilot training specifications and accepted interagency standards (such as those set forth in the *IHOG*.) and IAW the WADNR *Helicopter Operations Manual*.

Water/Foam Drops

For all bucket operations, an emergency release check must be performed with manual and electrical releases prior to commencing water drops. As with other external loads pilots shall avoid, to the extent possible, flying over any person, vehicle or structure in such a way as that an inadvertent release of the bucket or water could be a safety threat. Water/foam drops will also be done IAW the WADNR *Helicopter Operations Manual*. For more information on water/foam drop techniques, refer to the WADNR *Helicopter Pilot Training Manual*. For information on ground personnel standards for calling bucket drops refer to S-217, the *IHOG*, or the *Helitack Crew Guidelines*.

Medium Air Tanker Dipping and Notification Procedures

Dipping into lakes is done at the pilot's discretion. In addition, NEWICC notifies the county sheriffs to provide boat traffic control, if needed. Long Lake and Newman Lake are frequently used for dip sites, and notification procedures for these lakes are coordinated before the fire season. "Warning to all Watercraft" signs are placed in the campgrounds that have boat launches.

Whenever fixed wing and rotor wing aircraft are being utilized on the same incident, personnel trained in air operations management shall be assigned by the incident commander/operations section chief.

Prior to the initiation of air operations, all personnel operating in close proximity to an air drop shall be notified of such activity (WAC 296-305-07015.) Medium air tanker notification takes place through the signs posted, the boat traffic control, and the sounding of an external siren (located on the aircraft) before the pilot dips down to skim the lake.

Internal/External Cargo

All internal and external cargo will be weighed and manifested. Pilots will be apprised of any hazardous materials or weapons being transported, and of cargo weight and destination. Cargo will be transported, weighed and manifested in accordance with the WADNR *Helicopter Operations Manual* and *IHOG* standards (*IHOG* Chapter 11: Cargo Transportation.)

During external load operations, a trained aircrew member (helitack) may be aboard the aircraft to assist with the operations (such as ensuring rotor blade clearance, or calling the load) as long as the safety of the operations is substantially enhanced and the capability of the helicopter is not significantly reduced (FAR 133).

Reconnaissance & Mapping

(Section Reserved, to be Developed Later)

Personnel Transport

Passenger Transport will be done in accordance with the *Helicopter Operations Manual, #16, F, Passenger Transportation*. All passengers will meet Chapter 1, Section III: Passenger Policy criteria, have appropriate PPE, and be briefed prior to flight.

Medivac

(Section Reserved, to be developed later)

Rehab

(Section Reserved, to be developed later)

Urban Interface Fires

(Section Reserved, to be developed later)

Rappel, Aerial Ignition (Helitorch, PSD)

WADNR helicopters and crews are not trained nor authorized to perform aerial ignition or rappel operations from the WADNR FEPP aircraft.

Airspace Coordination and TFR's

Temporary Flight Restriction (TFR): A TFR is an area of airspace (defined both laterally and vertically) that has been temporarily or partially closed to non-participatory aircraft for a specified period of time. Notification of new TFR's is made through a NOTAM (Notice to Airmen). NOTAM's are a FAA method of distributing information to pilots. They may contain information (not known in advance to publicize by other means) concerning the establishment, condition or change in any component (facility, service or procedure of, or hazard in the National Airspace System). NOTAM's may be regulatory (restrictive) or advisory in nature.

TFR's are considered legal regulations. Intrusions into a TFR may carry a penalty or the suspension of licenses. The standard dimensions of a TFR are: laterally—five nautical mile radius from the center point of the disaster area; vertically—extending up to 2,000' above the highest terrain of the disaster area, or above the operating altitude of participating aircraft.

In wildland firefighting operations, the TFR's most commonly dealt with come under 14 CFR Section 91.137 (a) (2): to provide a safe environment for the operation of disaster relief aircraft. These TFR's include (but are not limited to):

- Wildland fires being fought by aviation resources
- Aircraft relief activities following a disaster such as earthquake, tidal wave, flood, hurricane, etc.
- Aircraft accident sites

Those allowed inside this type of TFR are: participating aircraft, law enforcement, IFR traffic, airport traffic, and the media.

Rarely a TFR under 14 CFR 91.141 is set up for wildland fire operations, but could occur for the protection of the President of the United States, or for other public figures, during their appearances at large wildland fires.

All WADNR pilots will monitor TFR changes, and avoid violating TFR's or other airspace restrictions.

For more information about TFR's, and to learn about the Midair Collision Avoidance Program (MACA) see chapters 6 and 7 of the Interagency Airspace Coordination Guide at www.fs.fed.us/r6/fire/aviation/airspace/asguide.html

State Disaster and Emergency Operations (All Risk)

(Section Reserved, to be developed later)

Performance Evaluation

(Section Reserved, to be developed later)

DRAFT

Chapter 10

NON-INCIDENT OPERATIONS

I. Field/Project Work

Forest Health Survey Flights

Forest Health Survey Flights are done in accordance with the operating procedures and aircraft/pilot requirements detailed in Chapters 3 and 4.

Aerial Spraying

(Section Reserved, to be developed later)

Lightning Detection Flights

(Section Reserved, to be developed later)

II. Acquisition & Disposal of Aircraft

(Section Reserved, to be developed later)

III. Lease, Rental & Contract Aircraft

(Section Reserved, to be developed later)—See attached document.

Standard Aircraft Safety Briefing

Required for all flights carrying Federal passengers,
And all flights flew on Federal fires or projects.

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| <p>It is recommended that passengers be briefed in groups rather than individually.</p> <p style="text-align: center;"><u>MANAGER BRIEFING to PILOT & PASSENGERS</u> <u>(General)</u></p> <ol style="list-style-type: none"> 1.) Pilot Card: Qualified and current for aircraft type and mission. 2.) Aircraft Card: Aircraft approved for mission? 3.) Flight Plan/Resource Tracking: FAA or Agency Flight Plan filed; Resource Tracking procedures identified. 4.) Flight Following/Radio Equipment: Flight following procedures in place; radio equipment is adequate and operational. 5.) Nature of Mission: Pilot briefed on nature and sequence of mission. 6.) Analysis of Known Hazards: Known hazards discussed; high level recon prior to decent to low-level. 7.) PIC Concept: Pilot shall not be pressured into performing missions beyond pilot’s capability or that of the aircraft. 8.) Hazardous Materials: Identify any Hazardous Materials that will be transported and notify the Pilot. Take appropriate actions. <p style="text-align: center;"><u>PILOT or MANAGER BRIEFING to PASSENGERS</u></p> <ol style="list-style-type: none"> 1.) Personal Protective Equipment (PPE): Appropriate head protection (Refer to IHOG Chart 9-1); Nomex clothing; ear and eye protection; boots; other survival equipment as applicable (PFD, life rafts, etc.) [PPE is required for special use airplane missions and for all helicopter flights. Available and worn by all passengers, pilot(s), and aircrew members.] 2.) Approach and Departure Paths: <ul style="list-style-type: none"> • when landing in helicopters in uneven terrain, always Approach and depart from the down slope (lower) side • Approach and depart helicopter in a crouch position • Keep in the pilot’s field of vision at all times • Stay clear of the landing area when helicopters are landing Or departing • Never go near the tail of the helicopters; do not approach Airplanes from the front 3.) Tools and Equipment: | <p style="text-align: center;"><u>PILOT or MANAGER BRIEFING to PASSENGERS</u> <u>(Cont.)</u></p> <ol style="list-style-type: none"> 4.) Seating in Aircraft: <ul style="list-style-type: none"> • No movement between seats unless authorized by pilot • Seat belt fastened at all times • Unbuckle only when specifically directed to do so by pilot Or helicopter loading/unloading personnel • Follow the instructions of the pilot • Know location of first aid kit, survival kit, fire extinguisher, ELT (Emergency Locator Transmitter), fuel shutoff switch, Radio operation, oxygen (if available) 5.) Security of Equipment: <ul style="list-style-type: none"> • Loose items secured and manageable; all baggage secured in aircraft or in compartment • Never throw any object from a helicopter or airplane • Around helicopters, never reach up or dart after a hat or other object that has become unsecured 6.) Smoking: Explain the rules for smoking—in and around aircraft 7.) Emergency Exits: Location and Use <p style="text-align: center;"><u>HELICOPTER IN-FLIGHT EMERGENCY PROCEDURES</u></p> <ul style="list-style-type: none"> • Follow instructions of pilot/helicopter personnel • Fasten seat belt and shoulder harness: secure gear • Appropriate head protection properly worn • Forward facing passengers restrained with shoulder harnesses, sit in full upright position with head back against seat and arms folded across chest • Forward facing passengers without harnesses: bend forward at waist, grasp arms under legs and place head between knees • Aft (rearward) facing passengers: sit in full upright position with head and back against seat • Side facing passengers: bend forward at waist, grasp arms under legs and place head between knees |
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| <ul style="list-style-type: none"> ● Secure the hand tools and equipment awaiting transport (Will not blow into rotor system) ● Carry tools or other long objects parallel to the ground, not Over the shoulder into the air ● Make assignments for carrying tools/equipment to and from The helicopter or airplane | <ul style="list-style-type: none"> ● Assist any injured person who cannot leave the aircraft ● Move clear of the aircraft only after rotor blades have stopped or when instructed to do so by the pilot or helicopter crew ● Assess situation, follow pilot/helicopter manager instructions, render first aid, pilot and/or helicopter manager to remove first aid kit, radio, ELT, and fire extinguisher (unless incapacitated, then any passenger capable should remove) |
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