

Appendix L

Forest Aviation Plans

2004

Francis Marion and Sumter National Forests

Aircraft Down/Missing Rescue

and Medivac Plan

Francis Marion and Sumter National Forests

Aircraft Down/Missing Rescue and Medivac Plan

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Date: 10/15/03

Reviewed by: /s/ Charles W. Kerr
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Date: 10/15/03

Approved by: /s/ Stephen E. Wells
Stephen E. Wells, Fire & Lands Staff Officer

Date: 11/06/03

Philosophy:

Although no one conducts aviation operations with the intent of having an accident, the possibility is always there. When an accident does occur, one very common factor occurs -- **confusion**. This plan is a document by which the Forest can pre-plan most of the things that must take place in the event a Forest Service contracted or owned aircraft is overdue or involved in an accident. This should eliminate some of the confusion that usually occurs and will assist in expediting search and rescue efforts. The primary objective of these pre-planned operations are to prevent or minimize loss of life and property.

A key element in safe aviation operations is the assurance that all flight crews are familiar with the known flight hazards of the area in which they will be operating. The Coordination Center Manager with the assistance of the Forest Air Officer will be responsible for the review and revision of the Forest Aviation Hazard Maps. Regardless of the type of mission, Pilots, Dispatchers and Aircraft Managers will review the hazard maps, and any other available flight hazard information sources prior to each flight.

This plan has three categories:

OVERDUE AIRCRAFT

DOWNED AIRCRAFT - AWAY FROM AIRFIELD/HELIBASE

DOWNED AIRCRAFT - ON AIRFIELD/HELIBASE

Each category lists priorities and actions to follow.

SOMEONE'S LIFE MAY DEPEND ON IT!!

**DOWNED AIRCRAFT - AWAY FROM AIRFIELD/HELIBASE
KNOWN LOCATION**

- 1) Rescue survivors - render first aid.
- 2) Coordinate local crash/rescue, if available.
- 3) Complete actions in Appendix C.
- 4) Get information in Appendix B.
- 5) Contact SCC by radio or telephone 803-561-4086
Paggers: Coordination Center Mgr. 800-614-5613

If information is given via radio, the names of deceased and or seriously injured will not be stated.
Express need for Coroner if there are fatalities.

Dispatchers will:

- A) Contact Anderson Flight Service Station 864-231-0301.
- B) Contact Jacksonville (ARTCC) 904-549-1566/1537 (If Temp. Flight Restriction needed)
Contact Atlanta Center (ARTCC) 770-210-7622
- C) Provide transportation for medivac by helicopter with medical staff or ground transportation by ambulance.
- D) Notify or insure the proper hospital is notified of incoming patients.
- E) Notify Forest Air Officer: Charlie Kerr 803-561-4054
Home 803-996-0718
Cell 803 960-2921
- F) Notify the appropriate local Law Enforcement Agency:
Mountains - Oconee Co. Sheriff's Office 864-638-4111
Pickens Co. 864-898-5500
Piedmont - Abbeville Co. 864 446-6000
Edgefield Co. 803-637-5337
Fairfield Co. 800-553-9998 Dispatch
Greenwood Co. 864-942-8601
Laurens Co. 800-922-0523 Dispatch
McCormick Co. 864-465-2520 864 465-3211 Dispatch
Newberry Co. 803-321-2222
Saluda Co. 864-445-2112
Union Co. 864-429-1611
Coast - Berkeley Co. 843-719-4429/4412
Charleston Co. 843-554-4700

Forest Air Officer will:

- A) Notify responsible District Ranger and Fire Staff Officer.
- B) Notify S.C. Law Enforcement Division (SLED) 803-737-9000
- C) Notify: R8 Aviation Officer: Ofc.404-347-3735 Cell: 678-640-7702 Hm:
R8 Aviation Safety Mgr.: Ofc.404-347-1623 Cell: 404-909-0246 Hm: 706-348-8559
Southern Area Coordinator: Ofc.770-458-2464 Cell: 404-909-1471
- D) Complete Accident/Incident Report (SafeCom)

**DOWNED AIRCRAFT - AWAY FROM AIRFIELD/HELIBASE
KNOWN LOCATION**

**OVERDUE AIRCRAFT
APPENDIX A**

Date _____

Local Time

1. Name of Pilot
2. Name of Vendor
3. Name of Passengers / Crew Members
4. Aircraft Tail # _____ Aircraft Type
5. Color Aircraft
6. Mission Type
7. Last known point of take off
8. Last known location
9. Intended destination / direction of travel from last location

10. Was flight plan filed with Agency and/or FAA?
11. Time aircraft was due at destination?
12. Name and Telephone number of persons coordinating location effort

***** AIRCRAFT ARE OVERDUE 30 MINUTES PAST ETA *****

***** MISSING 1 HOUR PAST ETA OR STATED FUEL EXPIRATION TIME. *****

**OVERDUE AIRCRAFT
APPENDIX A**

**INITIAL ACCIDENT/INCIDENT REPORT
APPENDIX B**

1. Name of person making this report:
Phone No: _____ Title: _____
2. Date of Accident / Incident: _____ Time: _____
3. Brief description of Accident/Incident:
4. Injured:

POSITION	NAME	EMPLOYED BY	NATURE OF INJURIES
PILOT			
PAX			
PAX			
PAX			

***** IF INFORMATION IS GIVEN VIA RADIO,
THE NAMES OF DECEASED AND/OR SERIOUSLY INJURED
WILL NOT BE STATED. ******

EXPRESS THE NEED FOR CORONER IF THERE ARE FATALITIES.

RESCUE PROCEDURE APPENDIX C

1. Rescue:
 - A. Assist survivors and render first aid until relieved by medical personnel.
 - B. If there is danger of post crash fire -- move survivors a safe distance away.
 - C. Keep bystanders and unauthorized personnel out of crash area.
 - D. Establish "NO SMOKING" rule. Fire and explosion is a "real" danger with residual fuel and hot metals.
2. Search wreckage carefully for other survivors.
3. Notify SCC, providing the dispatcher the information in Appendix B, making sure to give location.
4. Preserve the accident site. Every piece of the aircraft and its location is important to the investigators. Nothing should be disturbed. Use Agency and local law enforcement to secure site.
5. Identify witnesses, use some form picture of ID, such as driver's license.

***** THIS IS A VERY CRITICAL ELEMENT *****

- A. Obtain written statements, if possible.
- B. Document names, addresses and phone numbers of each witness.

Military Aircraft

- A. Never approach wreckage from downwind, smoke & fumes from burning composite materials can be deadly.
- B. If approach is necessary, do not touch anything. Survey the wreckage and adjacent area thoroughly for munitions and/or firing devices and **avoid them**. Avoid aircraft ejection seat levers as the seat could eject in your direction. Plan escape routes and safety zones and make them known.
- C. Post lookouts.
- D. Rescue survivors as described above in steps 1 - 5.

APPENDIX D
HOSPITAL DIRECTORY UPDATED AND VERIFIED 5/28/03 BT

HOSPITAL	PHONE	LAT/LONG	RADIO FREQ.	SERVICES AVAILABLE
COASTAL AREA				
Medical University 171 Ashley Ave Charleston,, SC	800-423-1330 843-792-3311 (ER)	N 32 47.14 W 79 57.21 LZ=East end of Ashley Rvr.	155.325 tx/rx tone 179.9 155.340 (universal)	LIFE FLIGHT (Medu Care) Burn Unit Hospital Heliport serves: Roper Hosp. and V.A. downtown
Trident Medical Center 9330 Medical Plaza Dr. Charleston, SC	843-797-8860	N 32 58.7 W 80 04.2 LZ=NE corner I-26 & 78 @ Charleston Southern Univ.	155.325 tx/rx tone 179.9 155.340 (universal)	
Georgetown Memorial Hospital 606 Black River Dr. Georgetown, SC	843-527-7000 843-527-7477 800-423-1330 Magic Care	N 33 23.2 W 79 17.1	155.340 (universal)	Land @ GGe for ground transportation N 33 18.72 W 79 19.02
Berkeley Roper Hospital 730 Stoney Ldg.Rd Moncks Corner, SC	843-724-2000 843-899-5937	N 33 11.6 W 79 59.0 LZ west side of hospital	155.340 (universal)	
PIEDMONT AREA				
Providence Hospital 2345 Forest Dr. Columbia SC	800-327-2611	N 34 00.0 W 81.00.0	155.265 TN 17 155.340 (universal)	LIFE FLIGHT Level II Trauma Center. Burns - AGS/CHS
Richland Memorial Hospital 5 Harden St. Columbia, SC.	803-434-6620 803-434-7000 803-434-1663 (ER)	N 34 01.7 W 81 02.0 LZ=N.side of hospital on Sunset Blvd. (2 pads)	155.340 (universal)	Level I Trauma Center Serves 17 counties. will treat burns & refer them to CHS or Augusta Burn Center
Newberry County Memorial Hospital 2669 Kinard Dr. Newberry, SC	803-276-7570 ER=ex. 148	N 34 17.6 W 81 36.3 LZ=SE side of hospital @ Kinard & Wilson	155.340 (universal)	Will treat burns & reefer to CHS or Augusta Burn Center
Self Memorial Hospital 1325 Spring St. Greenwood, SC.	864-227-4111 ER=227-4781	N 34 10.5 W 82 09.3 LZ = field on south side of hospital	155.340 (universal) 155.380 155.240 155.160	Will treat burns & transport to Augusta Burn Center or CHS (Med Univ)
MOUNTAIN AREA				
Spartanburg Regional Hospital 101 E. Wood St. Spartanburg, SC.	864-560-6000 ER=560-6222	N 34 55.0 W 81 57.5 LZ=Airport (SPA) to meet ambulance	155.340 (universal)	Level I Trauma Center Will treat burns and transport to AGS or CHS Burn Centers.

FOREWORD

This plan was developed to describe the aviation services, agency policies, regulations, and procedures on the Forest. Information presented in this document is a critical component of the Southern Region Aviation Program.

Questions regarding this plan should be directed to the Francis Marion and Sumter National Forests, Forest Supervisor. This plan shall be reviewed and updated annually.

Francis Marion and Sumter National Forests

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Chapter 1

ORGANIZATION

Scope

The scope of this document is in the Francis Marion and Sumter National Forests (FM&S) and the employees, cooperators, and users of the Forest.

Purpose

The purpose of the plan is to identify Forest aviation management, objectives, programs and activities, and to provide strategic and operational guidance to users as appropriate. This plan is supplemental to the Regional Aviation Management and Safety Plan.

Objectives

- Provide emphasis on aviation safety.
- Provide for safe, effective, and economical use of aviation resources to efficiently meet the needs of land management activities.
- Describe Forest aviation management programs and activities.

Overview

Forest aviation resources include contract, and Forest Service (FS) owned aircraft. The primary mission of these aircraft is wildland fire suppression. Mission support aircraft include airtankers, lead-planes, air attack platforms, aerial supervision modules (ASM), helicopters, fire-detection aircraft, and passenger/cargo transportation aircraft. Other missions include, but are not limited to, support for various land management activities such as prescribed fire, forest health protection, aerial photography, law enforcement, and search/rescue operations.

Operations are performed over relatively flat terrain, with an elevation range from sea level to approximately 2300-foot mean sea level. Vegetative cover includes Southern hardwoods, open pine stands, dense palmetto/gallberry and southern rough, and intermingled swamps. Climatic conditions range from hot humid summers to dry moderately cold winters.

The FM&S consists of the four ranger districts the Francis Marion, Long Cane, Enoree, and Andrew Pickens representing approximately 617,000 acres. With the land ownership pattern and the proximity to developed/urban areas and associated flight paths, the FM&S manages a complex aviation program.

The overlying airspace includes several Military Training Routes, private/public airports. There are no Military Operations Areas (MOA), Prohibited/Restricted Areas located over the National Forests.

On occasion, there is one Portable Airtanker Base (PAB) managed by the FM&S. This base is located at the Charleston International Airport (KCHS) (Refer to specific Airtanker Base Plan).

The Seed Orchard Helibase, located on the Francis Marion is the only permanent Helibase managed by the FM&S (Refer to specific Helibase Plan).

Organization and Responsibilities

Refer to Appendix B, Aviation Organizational Chart.

Fire Management Staff Officer (FMSO)

Supervises the FM&S fire and aviation management activities.

Forest Aviation Officer (FAO)

Provides direction, leadership, and management of the forest aviation program (as delegated by the Forest Supervisor), including coordination of aviation activities with the Regional Office (RO) and other agencies aviation staff.

Chapter 1

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Assistant Forest Aviation Officer (AFAO)

Manages and coordinates aviation activities on the FM&S.

Project Aviation Officer (PAO)

Administers special aviation projects outside the normal aviation activity of the Forest. Examples: wildlife surveys, seeding, insect detection etc.

Forest Dispatcher

Implements the safe, cost effective ordering, scheduling, dispatching, and tracking of FM&S aviation resources. Coordinates Temporary Flight Restrictions (TFR) and Notices to Airmen (NOTAM) with the Federal Aviation Administration (FAA). Coordinates and implements emergency response plans.

Designated Local Flight Follower

Provides remote radio and/or visual contact with aviation resources during a mission. Maintains communications with the aircraft, tracks the location, and provides assistance needed. The flight follower shall be familiar with the Aviation Mishap Response Plan (NFES 1356) or Forest Crash Rescue Medivac Plan to initiate the proper response procedures.

Chief-of-Party (COP)

A COP will be designated for all passenger airplane flights other than scheduled airline flights. The unit scheduling the flight will make this designation. On those flights with only one passenger, that passenger will become the COP. When a flight manager, such as a mission coordinator or helicopter manager, is already assigned, a COP need not be designated. (Refer to Appendix C, Chief-of-Party Duties and Responsibilities)

Airtanker Base Manager (ATBM)

Manages airtanker base operations. (Refer to specific Airtanker Base Operations Plan).

Mixmaster (MXMS)

Supervises the retardant-mixing and loading. (Refer to specific Airtanker Base Operations Plan).

Ramp Manager (RAMP)

Supervises aircraft, cargo, and personnel on the ramp. (Refer to specific Airtanker Base Operations Plan).

Helibase Manager (HEB1/HEB2)

Manages helibase operations. (Refer to specific Helibase Operations Plan).

Helicopter Manager (HELB/HCWN)

Manages helicopter operations. [Refer to Interagency Helicopter Operations Guide IHOG) and specific Helibase Plan].

Air Tactical Group Supervisor (ATGS)

Performs surveillance and supervision from an aerial platform to support ground personnel and coordinate the use of tactical aircraft during complex aviation operations (FSM 5716.32).

Aerial Observer (AOBS)

Performs reconnaissance missions for fires and other types of projects.

Chapter 1 ORGANIZATION

Contracting

Refer to Appendix D, Contracting Organizational Chart.

Contracting Officer (CO)

Responsible for all contracting actions including contracting procedures and methods, contract legality, compliance with existing laws and regulations, contract administration and terminations.

Contracting Officer's Representative (COR)

Monitors contract performance as designated/delegated by the CO to ensure compliance with the administrative provisions of the contract.

Contract Inspector (CI)

Designated/delegated by the COR to assist in administering the contract.

Chapter 2

OPERATIONS

General

Forest Service aviation activities include both "civil" and "public" operations. Civil aircraft operations shall comply with applicable sections of 14 CFR as well as Forest Service (FS) policy. Public aircraft operations shall comply with applicable sections of 14 CFR (control of air traffic, use of airspace, and aircraft registration) as well as FS policy. Life-threatening emergencies may require deviation from policy. The pilot-in-command (PIC) is responsible for the safety of the aircraft, its occupants, and cargo. The PIC shall comply with federal aviation Regulations (FARs), and FS Aviation policies or contract specifications to the maximum extent practical. The PIC shall refuse any flight considered unsafe. These situations shall be reported by the pilot and documented on Aviation Safety Communiqué (SafeCom, Form FS-5700-14).

Aviation operations shall comply with the Federal Aviation Regulations (FAR), Forest Service Health and Safety Code, Forest Service Manual (FSM), and Forest Service Handbooks (FSH) as supplemented by the Region and Forest. The following activities, procedures, and services shall be guided by the stated policy. When a more detailed explanation is required the appropriate reference is cited.

Procedures

Aircraft and Pilots

Forest Service employees shall use only aircraft and pilots that have been properly approved (FSM 5703.1 and 5720.3.4). Aircraft will display an Interagency Aircraft Data Card or letter of authorization in the aircraft. Pilots are required to present a Pilot Qualification Card, or letter of authorization listing the missions for which they are approved to fly. The COP has the responsibility to check these documents to confirm the aircraft/pilot authorizations have not expired and authorized to perform the intended mission.

Interim Pilot Duty Limitations

Interim flight and duty limitations can be found in Chapter 20 of the National Mobilization Guide and in FSH 5709.16. When Phase 2 and 3 Duty Limits are anticipated, notification within 48-hours of effective date and time will be sent by RAO to the National Interagency Coordination Center (NICC), Washington Office (WO) Contracting, and the Geographic Area Coordination Centers (GACC), dispatchers will then forward notification to local aviation managers, COs, and Incident Management Teams.

Single-Engine Aircraft

Night and Instrument Flight Rules (IFR) flights with passengers are prohibited. (Night is defined in Appendix A)

Night Flying/Operations

Use only multi-engine aircraft for night flights. Pilots flying night missions shall not land at an airport or heliport unless it meets Federal Aviation Administration (FAA) 14 CFR Part 135 lighting standards.

Single-engine aircraft flights at night may be authorized by the controlling dispatcher only for ferry when:

- Requested by the pilot.
- No persons other than pilot(s) are aboard.
- The flight is conducted in accordance with 14 CFR Part 91.
- Agency flight and duty limitations are observed.

Notwithstanding the Federal Aviation Administration (FAA) definition of night in 14 CFR Part 1; for operational purpose within the Southern Region, night shall mean: 30-minutes after official sunset to 30-minutes before official sunrise, based on local time of appropriate sunrise/sunset tables nearest to the planned destination.

The following FS operations in the Southern Region are authorized to be conducted only between 30-minutes before official sunrise to 30-minutes after official sunset:

Chapter 2

OPERATIONS

- Single-engine aircraft missions, other than ferry flights.
- Dropping of retardant/suppressants.

Low-Level Flight (Airplane)

Low-level (below 500-feet) flight is prohibited except for: operations approved by FSM 5716.3.

Fuel Reserves (Airplane)

FAR 135 will be followed. Daytime flights require a 30-minute reserve, night flights require 45-minutes.

Temporary Flight Restrictions

Request for Temporary Flight Restrictions (TFR) over an area shall be initiated by the local Dispatch through the South Carolina Interagency Coordination Center (SCICC). (Refer to Appendix E & F, Temporary Flight Restrictions Checklist, and Request Form.)

Temporary Air Traffic Control Tower

A resource order should be placed with the SCICC for a temporary air traffic control tower when the volume of aircraft operations at an airport or field site are anticipated to exceed the ability of pilots to maintain adequate traffic separation; or when operating in the vicinity of congested airspace.

Animal Transport (Internally)

The pilot shall be notified and must approve the transportation of animals before they are loaded aboard an aircraft. Animals must be confined, restrained; or when necessary, sedated, accompanied by a trained handler, and transported in the rear of the aircraft.

Hazardous Materials (HAZMAT) Transport

HazMat is a commonly used term for hazardous materials including explosives, compressed gases, flammable liquids and solids, oxidizers, poisons, corrosives, and radioactive materials that have been classified by the Department of Transportation (DOT) to require, specific containers, specific labeling, and special handling for transportation. The Forest Service along with the Department of Interior (DOI), and several states, is party to Exemption DOT-E 9198, which allows aircraft transportation of hazardous materials in accordance with the Aviation Transport of Hazardous Materials Guide. This guide provides descriptions, as well as required procedures for aircraft transportation, of HazMat items commonly used in resource management activities. (Refer to FSM 5714.2, the Exemption, and the Guide for more specific requirements) Some important provisions are:

- The guide applies to field operations. HazMats that are not specified in the guide and those transported by aircraft not under the exclusive direction and control of the Forest Service or DOI, must be transported in compliance with 49 CFR Part 175.
- A copy of exemption DOT E-9198 and the Aviation Transport of Hazardous Materials Guide must be carried aboard each aircraft operating under the provisions of the exemption.
- Personnel on aircraft carrying HazMat will be limited to those essential to the mission.
- HazMat will only be carried on aircraft when other means of transportation are impractical.
- HazMat must be declared in writing (manifested). The pilot must approve of the HazMat being transported its packaging and placement (location) aboard the aircraft. Passenger must be informed of HazMat being transported.
- Mishaps involving HazMat shall immediately be reported to the Regional HazMat Coordinator, and RASM.

Chapter 2

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- Training shall be documented for personnel involved with the handling of HazMat on aircraft.

Aircraft Performance Specifications

Refer to contract specifications.

Forest Service Employees Piloting Non-Government Aircraft

Refer to the Southern Region Aviation Management and Safety Plan.

Flight Hazard Maps

The Forest will create Flight Hazard Maps. As a minimum, these maps shall be updated annually and dated. Maps shall be available, displayed, and used at each location where flight planning, flight following, aircraft dispatch, or flight mission briefings occur.

Flight Hazard Maps shall depict known hazards, i.e. towers, cables, congested areas, Military Training Routes (MTR), Military Operations Areas (MOA), restricted areas, airports, and remote airstrips. Flight Hazard Maps should also depict hospitals, schools, helispots, dipsites, and other prominent landmarks.

Specific information about each MTR's location, activity scheduling, and scheduling centers are found in IAMS/CAHIS Software or Department of Defense (DOD) AP/IB charts/publication.

Particular attention shall be placed on hazards that exist in the approach and/or takeoff patterns of helibases, helispots, dipsites, airports, and commonly flown routes.

Temporary hazards shall be marked and noted with legal information, i.e. name of contact, radio frequency, legal location, dates and/or times in effect.

All personnel are responsible for reporting aerial hazards to the FAO/UAO as the designated point-of-contact for inclusion of information on hazard maps.

Ordering Flights

Flights shall be for official business only. Requests for aircraft that involve FS personnel or projects will be coordinated through the appropriate dispatch center. Administrative flights require FS Form 5710 be completed. (Refer to Appendix I, Flight Request/Justification for Administrative Use of Aircraft)

Requests for airtanker retardant drops shall be placed with the SCICC. The order should include: fire name, job code, latitude and longitude, air contact and frequency, ground contact and frequency, other aircraft in the vicinity, and any known hazards. A written order shall be prepared and relayed to the air tanker base. The Incident Commander (IC) shall be provided an estimated-time-of-arrival (ETA) of the airtanker.

Infrared flights should be ordered through the SCICC. The flights are dispatched on a priority need basis and are limited in number. (Refer to Appendix H, Infrared Aircraft Scanner Request)

Flight Plans

All FS flights will be on an agency or FAA Flight Plan. The appropriate dispatch center shall be notified of any flight plan changes. When the scheduled flight has reached its destination, the flight plan will be closed. It is the pilot's or COP's responsibility to close the flight plan with dispatch.

Passenger Manifest

Airplane passenger manifest shall be on file with dispatch. Helicopter passenger manifest shall be on file with the Helicopter Manager or departure location. Names and weights will be documented on the passenger/cargo manifest.

Chapter 2

OPERATIONS

Passengers (Federal)

Federal employees shall be on official duty and have the approval of the FAO/UAO or Helicopter Manager in order to be manifested on a government flight.

Senior Federal Officials and Senior Executive Branch Officials shall be approved, manifested, and documented in accordance with OMB Circular A-126.

Passengers (Non-Federal)

The Regional Forester has the authority to approve non-federal passengers on official government flights. When a decision to approve/disapprove a flight request does not meet the criteria in FSM 5716.4 or the decision maker is unclear regarding any aspect of the request, the request should be elevated to the Regional Forester for resolution.

Aircraft may carry such non-employees as cooperators, persons involved in search & rescue, etc., but only with the approval of the FAO/UAO. (Appendix K, Day Trip Authorization)

News media reporters shall have the approval of the FAO prior to any flight on Type III, IV, V Incidents.

Congressional members shall be approved, manifested, and documented in accordance with OMB Circular A-126.

The following passengers (FSM 5710.5) are approved for transport aboard FS owned, leased, rented, chartered, or contracted aircraft (Day Trip Authorization not required):

- Cooperator wildland fire fighters
- Essential aircraft test flight technicians
- Essential personnel responding to an emergency

Resource Tracking

The SCICC shall provide radio frequencies for mission flights. Airport-to-airport flights may be flight followed by Air Traffic Control (ATC) or Flight Service Station (FSS) when filed on a FAA Flight Plan. When an aircraft is operating on FAA Flight Plan, the aircraft shall be tracked from point-of-origin to destination with the appropriate dispatch centers. It is the responsibility of the COP to contact dispatch to report takeoff and landing times, and passenger manifest information.

Flight Following

Aircraft position reports shall be transmitted to dispatch every 15-minutes. If the pilot losses radio contract with dispatch, the flight shall be terminated as soon as practical, and dispatch contacted.

Overdue Aircraft

If an aircraft fails to report after 15-minutes, dispatch will initiate overdue aircraft procedures. (Refer to specific Aviation Mishap Response Plan and Appendix K, Emergency Contact List)

Search and Rescue

The County Sheriff or designee is usually responsible for search and rescue of overdue or missing persons, depending on the legislative jurisdiction of National Forest System lands. Pursuant to 16 USC 575, the Secretary of Agriculture is authorized to incur such expenses as may be necessary in searching for persons lost within the National Forests; or to provide transportation to persons seriously ill, injured; or who die within the National Forests to the nearest place where the sick or injured person(s) may be transferred to interested parties or local authorities.

Forest Service owned, contracted, or leased aircraft shall not be used in Search and Rescue (SAR) operations unless approved by the FAO. The only exception would be if a pilot and aircraft are released from contract obligation and the requesting agency assumes responsibility. (Refer to specific contract.)

Chapter 2

OPERATIONS

The CO or COR may decline any requests for release of an aircraft from contract if the flight is not in the interest of the Forest Service. The contractor or contractor's representative may also decline any requests for release.

Law Enforcement

Flights scheduled for law enforcement purposes will meet the same requirements as other administrative flights. Pilots and aircraft must be approved prior to use. Flight following will be accomplished in a manner that will not compromise the law enforcement mission. Procurement of aircraft, logistics, communications, and other mission specifics details will be coordinated through the FAO, Special Agent, and Dispatch. (Refer to Southern Region Aviation Management and Safety Plan)

Wilderness Areas

The Regional Forester or Forest Supervisor shall authorize the initial flight for medical or rescue aircraft missions in wilderness areas. The advance approval for initial missions in wilderness is only applicable to life-threatening emergencies when time is critical. Subsequent flights will require a separate Forest Supervisor approval.

Aerial Detection

Refer to specific Forest Aerial Detection Plan

Special Projects

Special projects require a Project Aviation Safety Plan (PASP) reviewed by the RASM or RAO. Consult with the FAO/UAO early in the planning stage for assistance. Examples:

- Seeding, fertilization, spraying, and aerial photography
- Timber, soil, hydrologic, and wildlife surveys
- Law enforcement

A qualified helicopter manager shall supervise project helicopter operations. If there is no local Helicopter Program Manager or acting, contact the FAO/UAO or Regional HOS. Provide date and location information to the FAO/UAO and the local dispatch center.

State Cooperators

State aviation programs that meet comparable Forest Service aviation safety standards may be used if State pilots and aircraft are approved by the RAO. (Refer to FSM 5712.14).

Military

National Guard (Title 32) helicopters must be approved for FS use. They will have a letter on board each helicopter stating that they are authorized for FS use. All FS policies and procedures apply when FS employees are involved (PPE, flight following, etc). Active Duty Military (Title 10) helicopters can be used, but only with prior approval from the RAO and only on a case-by-case basis. It is the responsibility of FS employees to verify both pilot and aircraft are authorized for the operation.

Pilot Briefing

Pilot Briefing shall be given to all contract pilots as soon as possible after the contract is activated. It shall cover the items shown in the pilot briefing checklist. (Refer to Appendix J, Pilot Briefing Checklist)

Sterile Cockpit

During ground operations, takeoff/landing, and flight within 10-nautical miles of an airport, passengers shall refrain from talking with the pilot.

Chapter 2

OPERATIONS

Helicopter Operations

Bucket Operations (Extended)

Continuous communications capability between the helicopter and the flight following station or another aircraft is required while operating at the dip site. A ground observer able to communicate with the helicopter at the dip site may be used for this purpose.

External Loads (Long-line/Remote Hook)

Only pilots approved for external load work will perform external load operations. Qualified personnel will conduct long-line/remote hookups. Long-lines utilized for bucket operations shall be a minimum of 50-feet in length to reduce the risk of the bucket/load or line entanglement with the tail boom/tail rotor. Pilots utilizing long-lines must be carded for vertical reference operations.

Initial Attack and Fire Support Transport

A helicopter manager will supervise initial flight to a fire when the passengers are other than trained helitack. During fire support, personnel qualified in helicopter use will supervise the operation at each helicopter-landing site.

Load Calculations

All flights will be within the limits shown on the Helicopter Load Calculation (Form FS 5700-17 or Form OAS 67) prepared by the pilot and helicopter manager.

Personal Protective Equipment (PPE) Requirements

The intent of this requirement is to equip individuals with the best PPE to the extent possible for all helicopter flights. Personal protective equipment includes approved flight helmet, fire resistant flightsuit, gloves, and leather boots. It is the responsibility of each Forest Supervisor/Unit Manager to provide FS helicopter flight crewmembers with an aviator flight helmet and other necessary PPE.

A hardhat maybe substituted for a flight helmet of wildland firefighter being transported during fire suppression operations between an established and managed helispot/helibase, and an established and managed helispot/helibasee.

As a minimum, individuals shall wear the PPE required for a firefighter as specified in the IHOG. Any deviation from this requirement must be reviewed in accordance with the Project Aviation Safety Plan.

In lieu of flightsuit, firefighters approved fire resistant pants and shirt may be worn.

In accordance with Chapter 9 of the IHOG, rubber/synthetic boots may be worn if the environmental situation warrants; otherwise leather boots are required.

Personal Flotation Devices

Personal Flotation Devices (PFD) shall be worn by each individual aboard the helicopter when conducting operations beyond power-off gliding distance to shore, and during all hovering flight operations conducted over water sources such as ponds, streams lakes and coastal waters. Water activated PFDs are prohibited.

Wilderness Areas

Helicopter use in wilderness areas must first be approved for fire, project, or emergency situations according to each specific Wilderness Plan. Long-line operations require a risk assessment, including consideration of other delivery methods before use. Long-line operations are classified as helicopter landings in some wilderness areas and require approval before use.

Chapter 2
OPERATIONS

Military Rappel/STABO

Other than the WO approved Law Enforcement operation on the Daniel Boone NF; military rappel/STABO operations involving FS employees are prohibited.

Cargo Letdown/Toe-in

These operations are prohibited in the Southern Region.

Chapter 3

FUELS AND FIRE BEHAVIOR

General

The Fire Management Plan for the Francis Marion & Sumter NF's has a complete and comprehensive breakdown of each Ranger District including fuel types, fire behavior, occurrence, and historical data.

Included in this document, is a general statement of seasonal conditions that contribute to the wildland fire activity on the Forest's. Managers should be familiar with the overall Fire Management Plan and the related fuels, weather, fire behavior, ecosystems and other information contained within Fire Management Plan for the FM&S.

Fire Management Situation

The wildland fire environment in the FM&S can change quickly. The well-drained soils allow areas that have received several inches of rainfall to burn within just a few days of drying. If precipitation is not received, conditions on the FM&S can change from moist condition to High/ Extreme fire potential within a matter of weeks. When the Keech-Byrum Drought Index (KBDI) exceeds 600-700 duff layers and organic soils become available for fire consumption as well as other natural fuels that normally would not have burned which creates a situation of potential extreme fire behavior.

Fire Season and Weather Patterns

The FM&S fire season is basically year-round, with fires occurring in every month of the year. The overall yearly fire regime are mostly human caused fires occurring from mid November through mid December and early February through mid May. During the months mid December through January, short daylight hours, cooler temperatures, and precipitation associated with frontal passages generally keeps fire behavior moderated.

From April through June, temperatures may reach 90-degrees or higher. Rainfall is scarce until summer when typical afternoon thunderstorm development increases in June and July. Droughts usually reach their peak during this time period, lightning occasionally becomes a factor in fire occurrence, though most often precipitation will accompany afternoon thunderstorms. Most large fires occur during the months of March through April, multiple human caused fires can also be expected. Around July, the daily thunderstorm activity increases and locally heavy rainfall is common. Occasional fires are started by lightning; however, most are "wet" fires and easy to control. This pattern continues into the hurricane season, which may bring more rain and humid days.

Fire activity continues to decline August through October, with October being the month with the lowest recorded number of fires per year. As November approaches, daylight hours become shorten, temperatures fall, and thunderstorms are few. Most fires in November and December are human caused and fire behavior more manageable.

Dominate Fuel Types and Conditions Influencing Fire Behavior

Chapter 4**RECORDS AND REPORTS****Flight Plans**

When a pilot files a flight plan with dispatch, a record shall be kept in the Dispatcher's Log.

Daily Flight Reports

The Daily Flight Report (FS 6500-122) shall be used to record all flights where a payment is required. Flight cost will be provided to the user.

Annual Air Operations Report

The FAO or their designee shall complete this report by using the AMIS database program. (Refer to FSM 5717)

Exclusive Use Helicopter Report

This report is to be completed the FAO or their designee for all Exclusive Use RX and Suppression helicopters and returned to the Regional HOS by November the 1st of each year. (Refer to Appendix K, Exclusive Use Helicopter Report)

Administrative Flight Package

In order to comply with FSM 5711.2 each FAO will forward, on the first day of each month, the previous month's completed "Administrative Flight Packages", to the Southern Area Coordination Center (SACC) Aircraft Desk. This package will include the Administrative Flight Request/ Schedule (BLM 9400-1a), Flight Use Report (FS-6500-122) and Flight Request/ Justification for Administrative Use of Aircraft (FS-5700-10).

Senior Federal/Congressional/Non-Federal Travel Report

This report is due to the SACC Aircraft Desk semiannually. Record on this form administrative (non-mission) travel by Senior Federal Officials, non-Federal passengers, and Congressional members aboard Forest Service owned or contract/rental agreement aircraft for any purpose. (Senior Federal Travel Form GSA-3641)

Chapter 5

SAFETY

Purpose

The primary purpose of the Aviation Safety Program is to eliminate mishap occurrences.

Objectives

- Increase safety awareness through aviation training.
- Eliminate human exposure to hazards through implementation of effective risk management techniques.
- Eliminate loss of life, suffering from injury of permanent impairment, and the anguish and suffering of family and friends.
- Eliminate the costs associated with mishaps.

Awareness

Safety awareness is a mental attitude and individual commitment fostered by proper management and supervisory procedures. Forest Service management must be a partner in aviation safety to ensure that the standards and procedures established are understood and followed. It means that where operational decisions must be made, they are made prudently, with safety given priority over mission accomplishment. This requires individuals to know how to do a job or mission properly, applicable FS policies, approved operating procedures, and how to follow them consistently. With a safety awareness attitude and appropriate training, most aviation mishaps can be prevented.

Aviation safety cannot be legislated or mandated; it can only be successfully accomplished by fostering and inspiring an attitude in which aviation safety is the foremost priority. An undeviating and persistent commitment to professional conduct by everyone involved in the aviation program is paramount to achieving mishap prevention and successful risk management.

All individuals involved in the aviation program play a role in the successful and safe outcome of aviation activities. However, management is responsible for achieving safety goals. This can only be accomplished through awareness and uncompromising support by management.

Risk Management

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

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

Hazards

The causes of damage and injury. Human error is the most difficult hazard to predict and in the past has been the cause of 80% of all aviation mishaps.

Exposure

The frequency of occurrence and the number of people or aircraft placed against a hazard.

Probability

The likelihood that considering the hazard and exposure, a mishap is likely to occur. It is important to note that similar missions accomplished without mishap does not mean that you have a no-risk mission.

The process of managing risks makes operations safer without compromising the mission accomplishment with a mishap. The purpose of managing risks is to preserve human and material resources by identifying and preventing events that cause damage and injury to those resources. Three rules guide the risk management process.

Chapter 5

SAFETY

- Accept no unnecessary risk
- Make risk decisions at the proper level
- Accept risks only if benefits outweigh the potential safety costs

Successful outcomes can be achieved by applying the following steps of risk management to each flight or aviation mission:

- Identify Risks. Identify specific risks associated with all specified and implied tasks. Determine the hazards, exposures, and probabilities causing these risks.
- Assess Risks. Determine the magnitude of each risk.
- Make Decisions: Make risk acceptance decisions by balancing risk benefits against risk magnitude, and eliminate unnecessary risks. These decisions should include the appropriate level of FS management whenever possible. Sometimes the only decision to be made is to cancel the mission. More often the benefits justify the mission, but only if the risks can be minimized by controls over how and who conducts the mission. This also helps to reduce the potential costs of a mishap to an acceptable level.
- Identify Controls. Appropriate controls may be in the areas of individual qualifications, performance of the aircraft, aircraft equipment, weather conditions, operating procedures, ground support equipment and people, personal protective equipment, communications and others. Appropriate controls reduce the magnitude of mission-essential risks through proper application of established and identified controls.
- Implement Controls. Integrate specific controls into aviation plans and mission performance. Knowledge and understanding of controls down through the organization to each individual involved in aviation use is essential to the successful and safe outcome of each mission. This means following established agency policies and procedures contained in FS documents. It means using trained personnel and following all contract specifications.
- Approval. Decision to perform the mission and approval made at appropriate level.
- Monitor Operations. Review mission performance, suitability of controls, adherence to controls, and mission progress. Take prompt and appropriate corrective actions.

Prevention

The moving force driving aviation safety and training efforts is "Safety through Prevention." Risk management is a key component in successful mishap prevention.

Identifying Hazards

Steps must be taken to detect and accurately identify those hazards that increase the risk in accomplishing FS aviation missions. Hazard identification is most effectively approached as a team effort, as many hazards that exist in both ground and flight operations may not be readily detectable. Diverse perspectives are held by all individuals (pilots, mechanics, managers, foremen, crewpersons, etc.) associated with aviation operations.

Hazard identification is accomplished through a sequence of prescribed actions, which are similar, whether taken before or after a mishap. Actions taken prior to a mishap are "proactive" measures and are intended to prevent occurrence. Actions taken after a mishap are "reactive measures" and are intended to prevent recurrence. These actions may be termed hazard detection and hazard correction. Although both hazard detection and correction are integral components of our prevention efforts, the greatest benefit is gained through proactive prevention efforts. Therefore, our major effort should be to implement "proactive" measures for the purpose of preventing mishap occurrence.

Chapter 5

SAFETY

Human Factors

Human error is the single area that if possible to eliminate or reduce, would pay the greatest dividends in mishap prevention since it touches every operation. Human behavior is so complex that it is unrealistic to think that human error can be eliminated. Realistic training and experience are the most effective methods of minimizing human error mishaps as much as can be expected. When a person responds to an emergency situation, they immediately rely on trained reactions or past experiences. We must provide appropriate training and meaningful experience to individuals who are placed in positions requiring them to manage risk effectively.

Management or supervisory errors that directly or indirectly exert pressure on individuals to act against their judgment, stretch or ignore policy and standard operating procedures, or complete the mission regardless of risk is another form of human error that causes many mishaps.

Aviation Mishap Response Plan

Aviation personnel shall familiarize themselves with the local Forest Aviation Mishap Response Plan. The plan's Emergency Contact List must be kept current (Refer to Appendix O). Mishap response training shall be conducted annually and include the following:

- Review of the Aviation Mishap Response Plan
- Conduct equipment familiarization and emergency flight procedures
- Conduct a crash response simulation

Hazard, Incident, and Mishap Reporting

Each individual and organizational unit has an obligation to the aviation community to share mishap prevention information. A communication tool used to assist in this effort is the SafeCom (FS 5700-14).

Aviation Safety Communiqués

Aviation Safety Communiqués (SafeCom) are used to report any condition, observance, act, maintenance problem, or circumstance, which has potential to cause an aviation-related mishap. Submitting a SafeCom is not a substitute for "on-the-spot" correction(s) to a safety concern, rather it is a tool used in the documentation, tracking, and follow-up corrective action(s) related to safety issues. Categories of reports include aircraft mishaps, aviation hazards, aircraft maintenance deficiencies, and airspace intrusions.

If a mishap involves damage or injury notify the Regional Aviation Office immediately by the most expeditious means available.

Non-scheduled aircraft maintenance or repairs require that the Regional Aircraft Maintenance Inspector be notified before the aircraft is returned to service. A SafeCom is required to be submitted to the Regional Aviation Safety Manager (RASM) within 5-days of the return to service.

All employees have the responsibility to initiate action to stop any unsafe aviation operation (FSM 5720.45.2). Anyone may refuse or curtail a flight or operation when an unsafe condition may exist. Unsafe conditions shall be corrected on-the-spot when possible and documented on a SafeCom. If the unsafe condition raises a serious safety concern, it shall be immediately reported through channels to the RASM or RAO.

Submission (Electronic)

Access the FS Aviation Web Site at: www.fs.fed.us/fire/av_safety

From the Home page click on the "SafeCom" button.

From the SafeCom page, click on "Submit a SafeCom" and complete the form. Once submitted, the SafeCom shall reside in the FS Aviation Management Information System (AMIS) database and designated aviation managers shall be notified by email that a SafeCom has been submitted within the selected region.

Chapter 5

SAFETY

Submission (Hard Copy)

Fill out the SafeCom form and provide a copy to the FAO.

Upon receipt, the FAO shall submit the SafeCom electronically.

Processing

Once a SafeCom comes to the attention of the FAO, when necessary, corrective action(s) and comments should be documented on the form. It is incumbent on the FAO to quickly process SafeComs for distribution and dissemination to aviation users and managers.

Dissemination

Timely distribution of SafeComs is a key component in mishap prevention. SafeComs may be accessed and printed from the "Public Access" area of the database. The FAO and RASM should be contacted if additional information or follow-up action(s) is required.

Access (Protected Area)

Access to the SafeCom "Protected Area" is limited to regional staff aviation program managers and FAOs.

Appendix A

DEFINITIONS AND ABBREVIATIONS

Definitions

Administrative Use. Use of a Government aircraft for routine (non-emergency) point-to-point transportation of authorized passengers and cargo. Emergency support or tactical transportation of fire crews, overhead, and other personnel or equipment required for management of an incident or project, are not considered administrative use. (See definition of "mission use").

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

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

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

Alternate Base. A base, other than the designated base, established to permit operation from vicinity of a project area.

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

Cargo. Any material thing carried in the aircraft.

Chief-of-Party. Designated Government representative for all passengers on a flight.

Civil Twilight. Begins in the morning, and ends in the evening when the center of the sun is geometrically 6 degrees below the horizon.

Contractor. An operator being paid by the Government for services.

Crewmember. A person assigned to perform duty in an aircraft during flight time.

Cruising Speed, Service Ceiling, and Cruising Range. Shall be the same as applied by the CAB and FAA, United States Department of Transportation and the aircraft manufacturer.

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

Federal Aviation Regulations. Rules and regulations contained in Title 14 or the Code of Federal Regulations.

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

Flight Time. Begins when the aircraft leaves the ground in takeoff for a given flight and ends when the aircraft has taxied to parking or unloading spot when the aircraft has landed.

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

Fully Operated. The Contractor shall furnish the aircraft, pilots, and other personnel, repairs, operating supplies, service capability, and other incidentals necessary to the operation of the aircraft.

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

Ground Mishap, Aircraft. An aircraft mishap in which there is no intent to fly; however, the power plants and/or rotors are in operation and damage incurred requiring replacement or repair of rotors, propellers, wheels, tires, wing tips, flaps, etc., or an injury is incurred requiring first aid or medical attention.

Appendix A

DEFINITIONS AND ABBREVIATIONS

Incident-With-Potential. An incident that narrowly misses being an accident and in which the circumstances indicate significant potential for substantial damage or serious injury. Final classification shall be determined by the Forest Service, National Aviation Safety Manager.

Instrument Flight Rules. As defined in Chapter 91 of the Federal Air Regulations of the FAA.

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

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.

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

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

Mishap, Aviation. Mishaps include aircraft accidents, incidents-with-potential, aircraft incidents, aviation hazards and aircraft maintenance deficiencies.

Night. The time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac, converted to local time.

Official Sunset and Sunrise. The times when the upper edge of the disk of the Sun is on the horizon, considered unobstructed relative to the location of interest. Atmospheric conditions are assumed to be average and the location is in a level region on the Earth's surface.

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

Operating Agency. An executive agency or any entity thereof using agency aircraft, which it does not own.

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

Passenger. Any person aboard an aircraft who does not perform the function of a flight crewmember or crewmember.

Pilot-In-Command. The pilot responsible for the operation and safety of the aircraft during the time defined as flight time.

Point-to-Point. Aircraft operations between any two geographic locations operationally suitable for take-off and landing (airport-to-airport).

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

SafeCom. Use to report any condition, observance, act, maintenance problem, or circumstance, which has potential to cause an aviation related mishap. The purpose of the SafeCom form is not intended to be punitive in nature. It shall be used to disseminate safety information to aviation managers, and also to aid in accident prevention by trend monitoring and tracking.

Appendix A

DEFINITIONS AND ABBREVIATIONS

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

Special Mission Aircraft. Aircraft approved for other than point-to-point only missions. Transportation is limited to personnel required to carry out the special mission of the aircraft.

Substantial Damage. Any damage or failure which adversely affects the structural strength, performance or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Engine failure or damage limited to an engine if only one engine fails or rotor or propeller blades, and damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wing tips are not considered "substantial damage" for the purpose of this part.

Trip. The elapsed time between the time that an aircraft leaves its designated base point and time of return to that point.

Visual Flight Rules. As defined in Chapter 91 of the Federal Air Regulations of the FAA.

Abbreviations

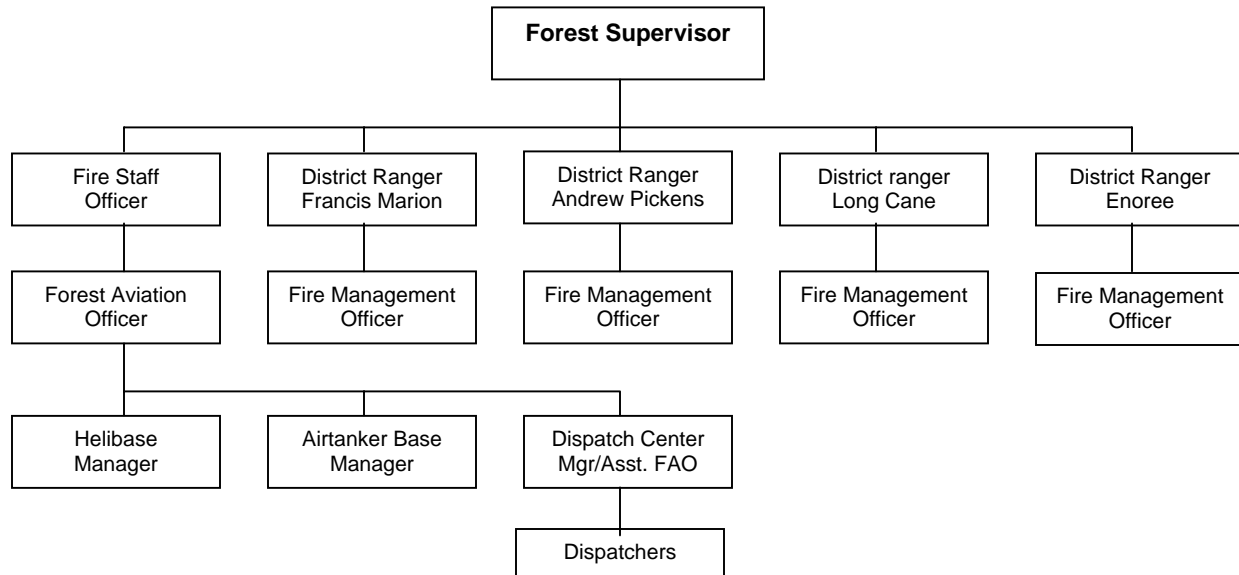
A&P	Airframe & Powerplant (Mechanic)
AD	Airworthiness Directive
AFAO	Assistant Forest Aviation Officer
AMIS	Aviation Management Information System
ARTCC	Air Route Traffic Control Center
AOBS	Aerial Observer
ATBM	Airtanker Base Manager
ATC	Air Traffic Control
ATGS	Air Tactical Group Supervisor
ASM	Aerial Supervision Module
CAB	Civil Aeronautics Board
CFR	Code of Federal Regulations
CG	Center of Gravity
CI	Contract Inspector
CO	Contracting Officer
COP	Chief-of-Party
COR	Contracting Officer's Representative
CFR	Code of Federal Regulations
COR	Contracting Officer's Representative
CWN	Call-When-Needed
DOI	Department of the Interior
DOT	Department of Transportation
ELT	Emergency Locator Transmitter
EPA	Environmental Protection Agency
ETA	Estimated Time of Arrival
FAA	Federal Aviation Administration
FAO	Forest Aviation Officer
FAR	Federal Aviation Regulations
FDO	Forest Dispatch Office
FICC	Florida Interagency Coordination Center
FMO	Fire Management Officer
FMSO	Fire Management Staff Officer
FPMR	Federal Property Management Regulations
FS	Forest Service
FSH	Forest Service Handbook
FSM	Forest Service Manual
FSO	Fire Staff Officer

Appendix A

DEFINITIONS AND ABBREVIATIONS

FSS	Flight Service Station
GACC	Geographic Area Coordination Center
GFP	Government Furnished Property
GSA	General Services Administration
HEB1	Helicopter Manager (Type 1)
HEB2	Helicopter Manager (Type 2)
HCWN	Helicopter Manager (Call-when-Needed)
HELB	Helicopter Manager (Exclusive Use)
IC	Incident Commander
IHOG	Interagency Helicopter Operations Guide
IFR	Instrument Flight Rules
IMC	Instrument Meteorological Conditions
IR	Infrared
KBDI	Keech-Byrum Drought Index
M&IE	Meals and Incidental Expenses
MOA	Military Operations Area
MSDS	Material Safety Data Sheets
MSL	Mean Sea Level
MTR	Military Training Route
MXMS	Mixmaster
NFES	National Fire Equipment System
NICC	National Interagency Coordination Center
NTSB	National Transportation Safety Board
NOTAM	Notice to Airmen
OMB	Office of Management and Budget
PAB	Portable Airtanker Base
PAO	Project Aviation Officer
PASP	Project Aviation Safety Plan
PFD	Personal Floatation Device
PIC	Pilot-in-Command
PPE	Personal Protection Equipment
RA	Restricted Area
RAMP	Ramp Manager
RAO	Regional Aviation Officer
RASM	Regional Aviation Safety Manager
SACC	Southern Area Coordination Center
SAFECOM	Safety Communiqué
SAR	Search and Rescue
STABO	Stability Operations
TBO	Time Between Overhaul
TFR	Temporary Flight Restriction
USDA	United States Department of Agriculture
VFR	Visual Flight Rules
WO	Washington Office

Appendix B
AVIATION ORGANIZATION CHART



Appendix C

CHIEF-OF PARTIES DUTIES AND RESPONSIBILITIES

A Chief-of-Party (COP) will be designated for all passenger airplane flights other than scheduled airline service flights. The unit scheduling the flight will do this designation. On those flights with only one passenger, that passenger will become the COP. When a flight manager, such as a mission coordinator or helicopter manager, is already assigned, a COP will not need to be designated.

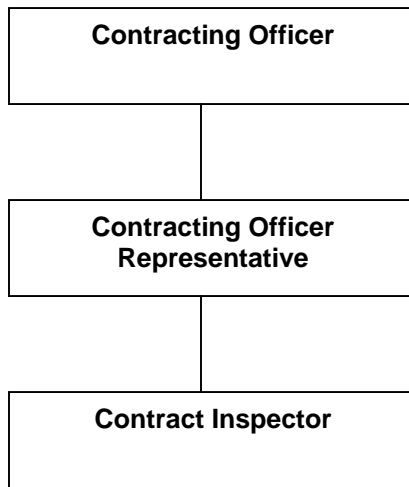
Individuals designated as COP shall have received training in performing COP duties. A FS pilot may be designated as COP. As a minimum this training should include: NFES 2572 COP workbook, NFES 2573 COP Video, NFES 1373 Interagency Aviation User Pocket Guide, and NFES 1399 Five Steps to a Safe Flight.

Chief-of-Party duties and responsibilities are also found in FSH 5709.16 and Chapter 60 of the National Interagency Mobilization Guide, and includes:

- Overview of travel and final destination
- Route of travel, intermediate stops, if applicable, and estimated time(s) of arrival
- Ensure the passenger manifest is accurate and contains the correct names and weights
- Provide one copy of the manifest to the PIC and ensure that additional copies are available for the receiving unit and sending unit dispatcher
- Assist in the stowage of baggage as directed by the PIC
- Assemble the personnel in an orderly manner in the designated staging area
- Ensure the pilot and aircraft are currently authorized for the intended mission and the PIC can verify the aircraft is within the weight and balance limitations
- Ensure that a passenger briefing is provided
- Maintain a current list of telephone numbers for the sending and receiving units, including dispatch numbers for reporting delays of more than 30-minutes. Provide the receiving dispatcher with the reason(s) for the delay and a revised Estimated Time of Arrival (ETA).

Appendix D

CONTRACTING ORGANIZATION CHART



Appendix E**TEMPORARY FLIGHT RESTRICTIONS CHECKLIST**

- ✓ Receive request for Temporary Flight Restrictions (TFR) from Incident Commander (IC), Project Manager, Air Attack, Leadplane, Aerial Supervision Module (ASM) or Air Operations Branch Director (AOBD).
- ✓ Plot Incident or Project location on map. [If Special Use Airspace or Military Training Routes (MTR) involved pass this information to Air Route Traffic Control Center (ARTCC)]
- ✓ Complete resource order with request for TFR.
- ✓ Request TFR from ARTCC obtain and document TFR Number.

ARTCC Jacksonville, FL	904-549-1537	(TFR needed west of Columbia, SC)
ARTCC Atlanta, Ga	770-210-7622	(TFR needed east of Columbia, SC)

- ✓ If Special Use Airspace (MOA, RA, MTR) is involved, contact Military Scheduling Agency at Shaw AFB, Sumter, SC. **803-895-1118** request de-confliction of airspace until TFR is granted by FAA). Document military contacts.
- ✓ Notify IC, Project Manager, Air Attack, Leadplane, ASM or AOBD and all aircraft of TFR status. Relay information of activity in Special Use Airspace as applicable.
- ✓ Confirm that the TFR is depicted and the Notice to Airmen (NOTAM) correctly posted by ARTCC.
- ✓ Provide Southern Area Coordination Center (SACC) (Tel. 770-458-2464) with TFR Number.
- ✓ Conduct a daily follow-up with ARTCC of status and continued need for TFR

Appendix F

INTERAGENCY REQUEST FOR TEMPORARY FLIGHT RESTRICTIONS

(TFR request must be phoned in as per FAA. This form may also be FAXed to provide documentation.)

Resource Order Number:	Date: _____
Request #: A -	Time: _____
To: FAA ARTCC _____	From: Dispatch Office _____
FAA Person Contracted: _____	Person Requesting TFR: _____
FAA Phone: _____	24 Hr. Phone (No toll Free #s): _____

[] Check if this TFR is a replacement. If so, NOTAM of TFR being replaced. _____
 (Existing TFRs cannot be changed, only cancelled and replaced.)

Geographic Location of Incident (nearest town, state): _____

Location (Circular TFR) List nearest NAVAID (distance should be less than 50 NM) – do not use NDB or T-VOR				
VOR ID	Radial (Degrees)	Distance (NM)	Lat/Long of Center Point (use US NOTAM Office Format ddmmsN/ddmmssW)	Radius (NM) (5 NM is standard)
			N/	W

Or (Polygon TFRs should be rare and only used if circular shape is not adequate.)

Location (Polygon TFR) (List perimeter points in clockwise order) List nearest NAVAID (distance < 50 NM) – do not use NDB or T-VOR.									
Point	VOR ID	Radial (Degrees)	Distance (NM)	Lat/Long (ddmmsNdddmmssW)	Point	VOR ID	Radial (Degrees)	Distance (NM)	Lat/Long (ddmmsNdddmmssW)
1					5				
2					6				
3					7				
4					8				

Altitude restrictions: _____ Feet MSL (do not use AGL – Standard is 2,000' above highest terrain point)

The _____ / _____ at _____
 Agency Name Incident Name 24 Hr Phone # VHF – AM Air/Air Frequency

Is in charge of on scene emergency response activities. TFR to provide a safe environment for fire fighting aircraft operations effective immediately, until further notice, 24 hrs/day.

The requested TFR affects the following Special Use Airspace:					
The requested TFR affects the Military Training Routes listed below:					
Route	Scheduling Activity	Segment(s)	Route	Scheduling Activity	Segment(s)

Important Note To FAA: If the TFR affects SUA and/or MTR(s), we request NOTAM distribution to all military bases involved, to the Coordinating Flight Service Station, and, for MTRs, to the Flight Service Station and Air Route Traffic Control Center with responsibility for the airspace at the rout entry point(s).

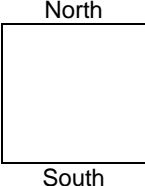
NOTAM #: _____ Issued at: _____ On: _____ (Date)

Data/Time TFR Cancelled: _____ By: _____

Appendix G

USDA Forest Service	FS-5700-10 (9/93)
FLIGHT REQUEST/JUSTIFICATION FOR ADMINISTRATIVE USE OF AIRCRAFT (FSM 5710 & FSH 5709.11 Ch. 10)	
User: _____ Agency/ Unit	Date(s) of Use: _____
Purpose of Flight	
Service Requested:	
Planned travel requires the use of air transportation, and Forest Service operated or chartered aircraft will be used because (check a, b, or c. If c is checked, attach a cost comparison).	
[] a The aircraft is schedule to perform a bona fide mission, training, or proficiency activity compatible with secondary use of the flight for transportation, and the minimum mission, training, or proficiency requirements have not been exceeded.	
[] b No airline service is reasonable to effectively fulfill the transportation requirement that is within the same calendar day as required.	
Explanation:	
[] c The actual cost of using this aircraft is not more than other suitable and available air transportation. (Use FS-5700-11, Cost Comparison Travel Worksheet.) This cost should be the total cost of the Government; calculations should include per diem, overtime, and lost work time as well as actual transportation costs.	
_____ Signature	

Appendix H

USDA Forest Service	
INFRARED AIRCRAFT SCANNER REQUEST	
Date of Order: _____	P Number: _____
Incident Name: _____	Time of Order: _____
Ordering Unit: _____	Number: _____
Local Dispatch: _____	Telephone: _____
Regional Coordination Center: _____	Telephone: _____
National IR Coordinator (Name): _____	Telephone: _____
IR Field Specialist: _____	Telephone: _____
IR Interpreter Ordered: Yes [<input type="checkbox"/>] No [<input type="checkbox"/>]	Fax: _____
Name of Motel/Hotel: _____	Telephone: _____
Incident Location (Lat/Long): _____	Fax: _____
Elevation (Incident): _____ Approximate Size: _____	
Weather at Deliver Point: _____	
Delivery Point (City or Airport): _____	Time: _____
Alternate Delivery Point: _____	
Radio Frequencies: Local Admin Unit _____	Tone: _____ Mhz
Air Attack Supervisor _____	Tone: _____ Mhz
Remarks:	
Information Needed For Each Mission	
North: _____	
South: _____	
East: _____	
West: _____	
Instructions: 1. Write full degrees, minutes, and seconds for each side of the Box. 2. Use area codes on all Telephone and Fax Numbers. 3. Complete all information Blocks. Write large and legible. 4. Add additional pages for Complexes with more than one Box.	

Appendix I

Appendix J**PILOT BRIEFING CHECKLIST****Pilot Briefing Checklist**

- Local Communications Systems
- Transmitter sites and call sign identifiers
- Lead plane communications and communication procedures
- Communications plans
 - ✓ Large fire
 - ✓ Airfield and tanker base
- Dispatching Procedures
 - ✓ Forest fire
 - ✓ State or zone
 - ✓ Regional
- Legal description as well as Lat./Long (Lookouts use true bearings)
- Prominent landmarks
- Forest fuels and fire behavior (Pocket Cards)
- Flight Hazards
- Payment Procedures and Contract Administration
- Submitting flight reports
- Duty limitations and days off
- Maintenance scheduling
- Tanker Base Operations (Refer to local Air Tanker Base Plan)

Appendix K

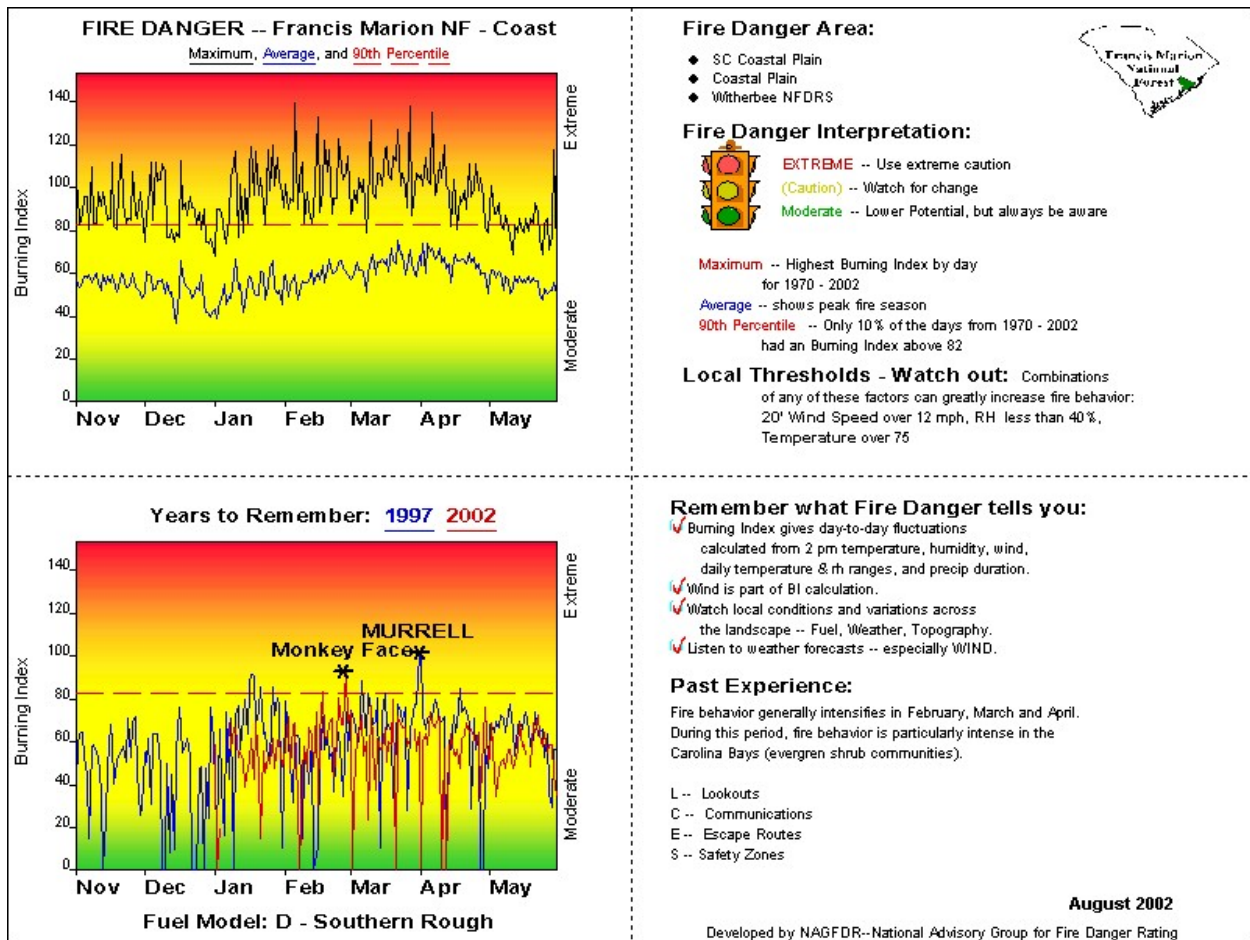
EXCLUSIVE USE HELICOPTER REPORT

This report is for the following dates. Start: _____ Stop: _____

1. Base name. _____
2. Region and Unit. _____
3. Base contact person. _____
4. Helicopter make/model. _____
5. Number of initial attacks for season. _____
6. Number of large fires. _____
7. Percent of initial attacks supported with helicopter bucket/tank. _____ %
8. Percent of initial attacks demobed by helicopter. _____ %
9. Crew size. _____
10. Number of days helicopter was under contract. _____ days
11. Hours flown for fire management. _____ hrs
12. Hours flown for "other users." _____ hrs
13. Hours flown "On" Forest. _____ hrs
14. Hours flown "Off" Forest. _____ hrs
15. Total hours flown. _____ hrs
16. Number of passengers carried. _____ paxs
17. Pounds of cargo carried. _____ lbs (internal) _____ lbs (external)
18. Gallons of retardant/water/foam delivered (combined). _____ gals
19. Helicopter daily availability rate. \$ _____
20. Helicopter hourly flight rate. \$ _____
21. Total contract cost for season. \$ _____
22. Is your crew aerial ignition certified (Y/N) _____
23. Type and number of aerial ignition equipment. (Helitorch/PSD) _____
24. Location of aerial ignition equipment (city and state) _____
25. Number of person days in support of large fires _____ days
26. Number of person days on prescribed fire assignments _____ days
27. Number of acres treated with aerial ignition _____ acres
28. Number of plastic spheres utilized _____
29. Provide an example of a fire suppression effort that resulted in a significant resource or dollar savings, e.g. successful structure protection, decreased exposure to firefighters, multiple use of the helicopter on a wildfire, reduced number of shifts on the fire, etc.

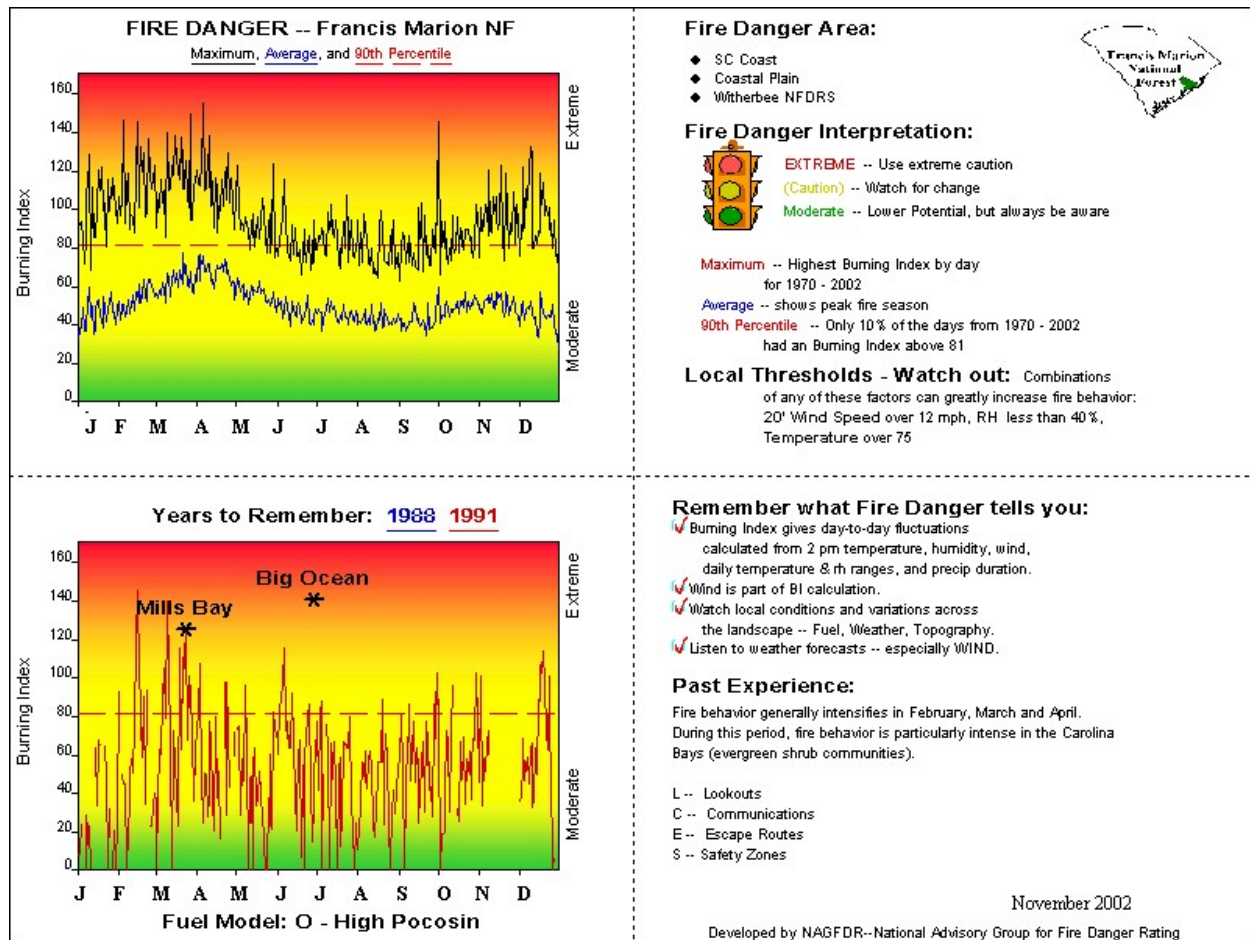
Appendix L

NFDRS POCKET CARDS



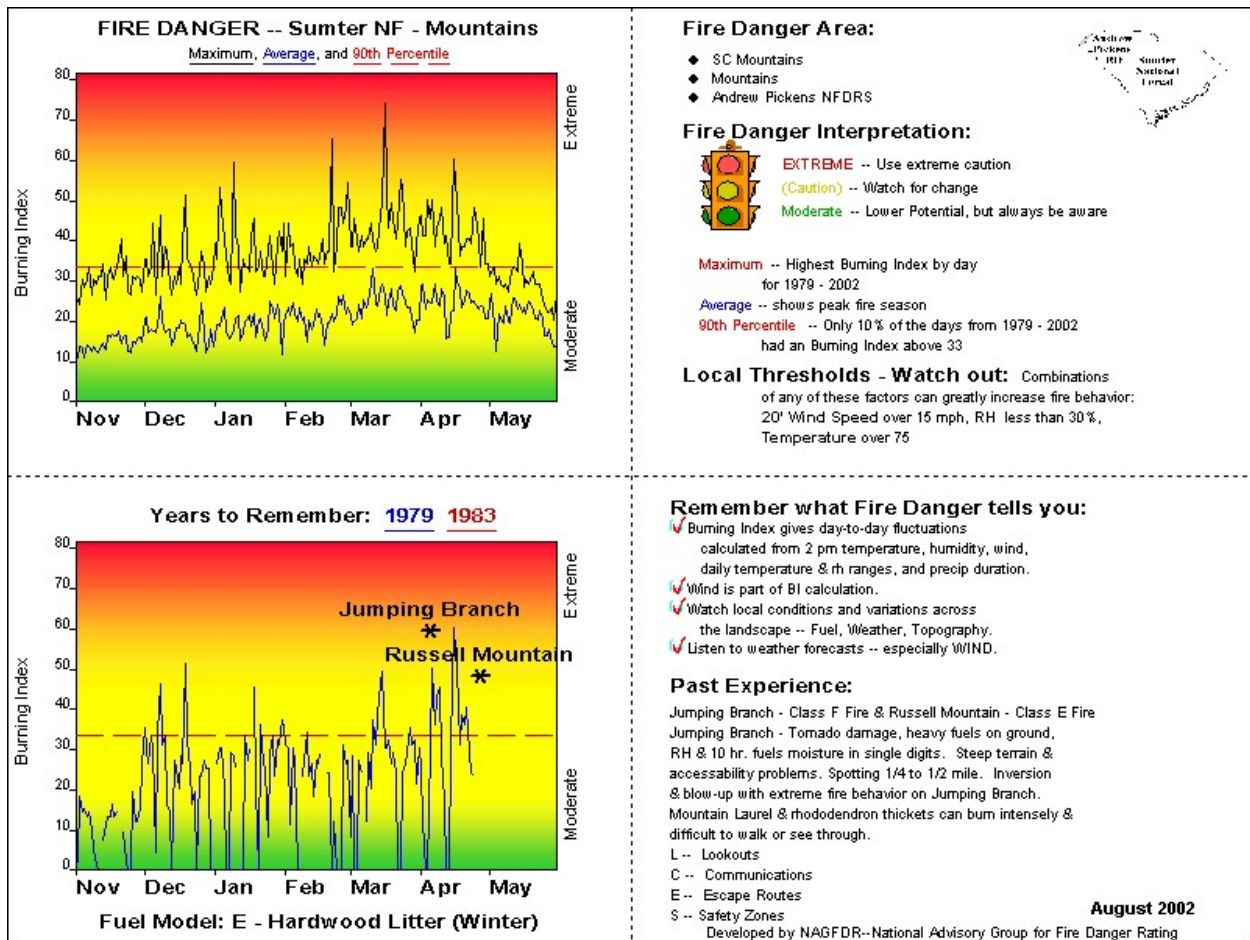
Appendix L

NFDRS POCKET CARDS



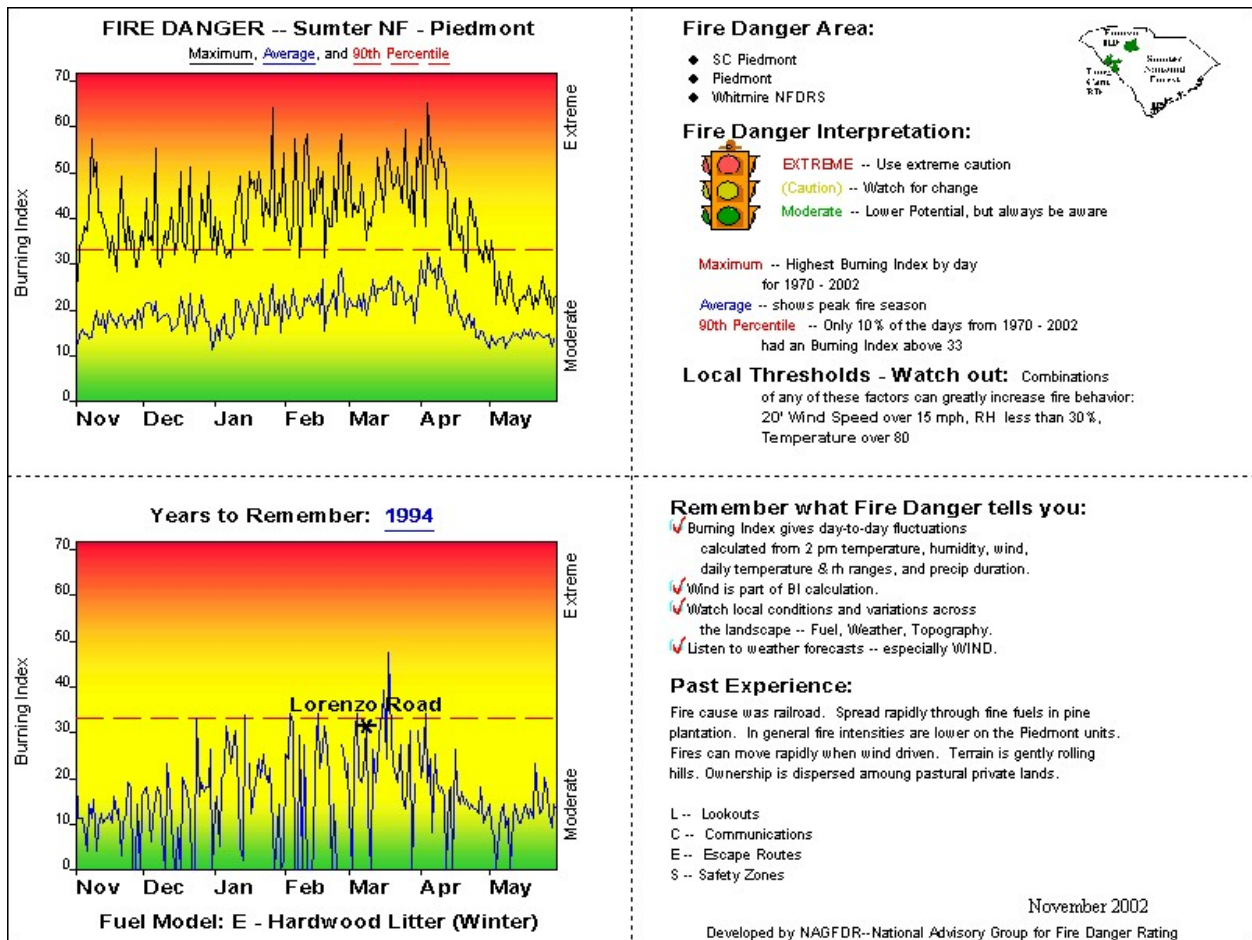
Appendix L

NFDRS POCKET CARDS



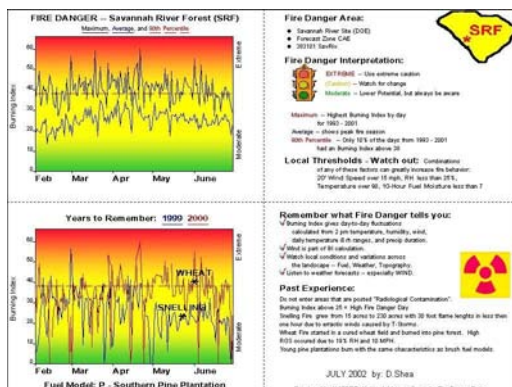
Appendix L

NFDRS POCKET CARDS



Appendix L

NFDRS POCKET CARDS



Appendix M

EMERGENCY CONTACT LIST

FAA Flight Service Station

800-224-8151

Primary Response (Emergency Responders)	
Fire Department	
Police	
Ambulance	
Air Ambulance	
Hospital	
Secondary Response (Support Personnel)	
South Carolina Interagency Coordination Center	803-561-4086
Southern Area Coordination Center	770-458-2464
FAA Anderson Flight Service Station	864-224-8151
NTSB	800-992-7433
SC Law Enforcement Division (SLED)	803-737-9000
SC Civil Air Patrol	803-822-5476
HazMat Response (County)	
Coroner	
Clergy	
Explosive Ordnance Disposal (Ocala Bombing Range)	
Engineering/Recovery	
Agency Management and Other Agencies (As Required)	
Forest Safety Officer	803-561-4042
Forest Aviation Officer	803-561-4054
Forest Fire Staff Officer	803-561-4061
Forest Public Affairs Officer	803-561-4091
Regional Aviation Safety Manager	404-347-1623
Regional Aviation Officer	404-347-3735
Regional Public Affairs Officer	404-347-7226
Regional Aircraft Maintenance Inspector	770-237-0119
Regional Helicopter Operation Specialist	770-237-0019
Regional Helicopter Pilot Inspector	770-237-0019
Contracting Officer	404-347-2624
Security (LE&I)	
Security (County Sheriff)	
Security (County Sheriff)	
Aircraft Owner	



FRANCIS MARION and SUMTER NATIONAL FORESTS

AVIATION MANAGEMENT SAFETY PLAN

2004





**FRANCIS MARION and SUMTER
NATIONAL FORESTS**

SEED ORCHARD HELIBASE OPERATIONS PLAN

2004

U.S. Department of Agriculture Forest Service	1. WORK PROJECT/ACTIVITY Helitack Operations – Fire Suppression	2. LOCATION FM&S, SC-Various	3. UNIT R8
JOB HAZARD ANALYSIS (JHA) References-FSH 6709.11 and -12 (Instructions on Reverse)	4. NAME OF ANALYST Laura Barrett	5. JOB TITLE Helicopter Specialist	6. DATE PREPARED 11/01/03
7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE	
Flying in Helicopters	Mechanical failure. Mid-air fixed collisions. Engine noise.	Regular Turbine Engine Power Checks (every 10hrs). Maintain maintenance schedules. Ensure pilot is completing preflights. Flight crew and all passengers must stay alert to surroundings. Do not interfere with pilot while in flight. Keep conversation to minimum while in flight (esp. near airports and moa). Follow operational planning guidelines according to IHOG (ch.3). Wear PPE according to IHOG and agency direction.	
Loading and unloading personnel and cargo	Rotor strikes. Overloading. Improper loading. Passenger unfamiliar with helicopter. Fuel spills on board helicopter.	Use marshaller and approved helispots. Do a proper recon prior to landing at any helispot. Complete a load calculation daily or as conditions change. Complete an accurate manifest for all personnel and cargo, and ensure weights are with allowable limits. Do proper passenger briefings prior to flight.	
Fueling Helicopters	Spills. Fires from fueling. Static electricity. Burns from fires.	Fueling personnel should follow servicing instructions and use proper equipment. Ensure fuel truck has adequate absorbent material in case of accidental spill. Report all spills immediately to Forest Haz Mat coordinator (or Dispatch). Ensure contractor is following correct bonding procedures. Fueller must wear required PPE (see contract). Agency personnel should be trained and briefed on emergency response to fuel fires and proper PPE must be worn.	
Travel to, from and on project	Motor vehicle accidents. Slippery road surfaces. Narrow roadways. Weather/darkness/ smoke	Drive defensively. Use seat belts. Identify road conditions in briefing. Post road guards when needed. Use backers and chock vehicles. Have vehicles facing out. Maintain communications. Notify law enforcement when necessary	
Qualifications for assigned position	Lack of experience, injuries, accidents	Ensure all personnel involved in operation have maintained currency and are qualified. Reference FSH 5109.17, Interagency Aerial Guide and Pilot/aircraft qualification card.	
Briefing with appropriate personnel	Inadequate briefing done, personnel absent from formal briefing.	Provide project briefing prior to activities with all personnel to clarify objectives, organizational responsibilities, communications, hazards, weather, expected fire behavior. Communications/flight following verified. Flight crew to brief on PSD operations – Reference Aerial Ignition Guide and PSD training document.	

Takeoff and landings	Unknown hazards causing accidents and incidents	Brief on weather and hazards daily. Use marshaller when possible. Put up wind indicators. Use radio communications (or hand-signals) to inform pilot of any hazards that arise. Marshaller should inspect landing areas prior to directing pilot to land. Remove or mitigate all known hazards. All personnel shall be informed of emergency procedures and their responsibilities. Ensure that all landing areas meet IHOG requirements – safety circle/support equipment/fire extinguisher/signs. Allow only authorized personnel on-site.
Injuries due to heavy lifting and awkward movements	Injuries incurred from lifting heavy objects (PSD, bucket, cargo) or improper lifting techniques.	Work area should be clear of obstacles. Use help if possible. Always practice proper lifting/bending techniques. Prepare for the operation by performing stretching/bending exercises.
Personal Protective Equipment (PPE)	Injuries	Always wear required PPE and ensure others wear it also. Reference Interagency Helicopter Operations Guide (IHOG) or Aviation Life Support Equipment (ALSE), Aerial Ignition Guide (harness required for PSDO)
Hazardous Materials (HazMat)	Injuries/burns. Ingestion-Inhalation of chemicals	Identify and mitigate any possible HazMat problems utilizing “Transportation of Hazardous Materials Guide”. Practice safe work ethics. Avoid mixing of any on-site chemicals. Comply with agency Haz Mat refresher Regulations (bi-annual testing).
First Aid	Injuries	Notify dispatch of any threatening injury and treat accordingly. Burn plan/Helicopter Operations plan should have other pertinent information. Remain within the scope of your training.
Communications	Poor communications, faulty equipment	Perform radio checks with all concerned parties. Identify emergency procedures beforehand. Ensure additional hand-held batteries available to landing area personnel. Helicopter shall remain in contact with someone on ground or Columbia Dispatch.
Incidents/accidents	Unprepared for accident/incident and/or uninformed of procedures	Discuss incident/accident possibility and emergency procedures in your briefings. Communicate problems with Dispatch, activate crash-rescue plan. Ensure your safety prior to any action. <i>“Sometimes the only action you should take is notifying dispatch that an accident has occurred”</i> - SAFECOM to be completed for all incidents/accidents (as soon as possible). Always think ahead or “what if”. Know your role!
Feeling the need for speed	Mistakes made	Do not get moving so fast that your actions overrun your ability to cope. Avoid mistakes, do not hurry. Firefighter and public safety is always the highest priority! If something happens, inform those around you and follow procedure.
Preflight equipment – Plastic Sphere Dispenser operation	PSD malfunction and or incorrectly installed.	Operator shall ensure PSD is inspected, bench tested, installed correctly in the aircraft and operational prior to use. Machine will be cleaned properly after every use.
PDS Briefing for RX burning	Inadequate briefing done, personnel absent from formal briefing.	Provide project briefing prior to activities with all personnel to clarify objectives, organizational responsibilities, communications, hazards, and weather, expected fire behavior. Communications/flight following verified. Flight crew to brief on PSD operations – Reference Aerial

		Ignition Guide and PSD training document.
Bucket work and Dipsite personnel	Bucket malfunction. Unintentional release of bucket. Bucket exceeds allowable weight limit.	Complete all checks after hooking up bucket (electrical and mechanical release and bucket release). Inspect bucket after operations and prior to use. Approve dipsites and ensure any hazards are identified, mitigated, or removed (or do not use site). Use dipsite personnel whenever possible of ensure adequate communications are in place. Bucket capacity must not exceed helicopter capabilities according to daily load calculation and current fuel load.
Helispot construction and maintenance	Chainsaws. Handtools. Heavy lifting.	Saw chaps, PPE and proper training and qualifications. Use proper sheaths when tools are not in use. Lift with legs and ask for help. Always wear proper PPE.
Hover hook-ups	Engine failure. Static electric shock.	Properly trained and qualified according to IHOG. Preflight briefing with pilot on emergency procedures (which way will you go?). Properly remove static electricity from helicopter (esp. cold windy days). Loads must be within allowable limits according to daily load calculation and current fuel loads.
Sling loads	Improperly loaded net. Improper hooking. Faulty equipment. Dusty conditions. Hook malfunction. Static electric shocks.	Follow IHOG for loading cargo nets. Ensure loose/small items are properly secured. Follow IHOG for hooking procedures. Pre brief with all personnel involved in external load operation. Inspect all equipment (remote hook, longline, leadlines, swivels and nets) prior to use. Use dust abatement as needed. Wear proper PPE. Check hook release prior to operations. Properly remove static electricity from helicopter (esp. cold windy days). Let hook touch ground prior to touching.
10. LINE OFFICER SIGNATURE		11. TITLE
		12. DATE

Previous edition is obsolete

(over)

FOREWORD

Information presented in this document is a critical component of Seed Orchard Helibase Operations. Questions regarding this plan should be directed to the Helicopter Specialist on the Francis Marion & Sumter National Forests. This plan shall be reviewed and updated annually.

Francis Marion and Sumter National Forests

Prepared By:	<u>/s/Laura Barrett</u> LAURA BARRETT Helicopter Specialist & Forest Fire Planner	<u>10/31/03</u> Date
Reviewed By:	<u>/s/Charlie Kerr</u> CHARLIE KERR Forest Aviation Officer & FFMO	<u>11/03/03</u> Date
Reviewed By:	<u>/s/Dave Kuhn</u> DAVE KUHN Dispatch Center Coordinator & COR	<u>11/03/03</u> Date
Reviewed By:	<u>/s/Jack Finley</u> JACK FINLEY Helicopter Operations Specialist	<u>11/03/03</u> Date
Approved By:	<u>/s/ JEROME THOMAS</u> JEROME THOMAS Forest Supervisor	<u>11/03/03</u> Date

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Chapter 1

ORGANIZATION

Introduction

The Seed Orchard Helibase is the home base for the Francis Marion and Sumter Forests Exclusive Use helicopter. The Francis Marion & Sumter National Forests are located throughout South Carolina. The Francis Marion is located in the southeast part of the state and includes the Witherbee Ranger District and Wambaw work center, including more than 250,000 acres with mixed ownership throughout the forest. The Sumter National Forest includes three Ranger Districts: the Andrew Pickens Ranger District in the northwest corner, the Enoree Ranger District in the middle of the state (north of the Supervisors office in Columbia), and the Long Cane Ranger District west of Columbia, totaling nearly 360,000 acres. Since the helibase is located on the Francis Marion National Forest, this plan will deal primarily with this forest.

Use of rotor wing aircraft is essential to help with wildfire suppression and prescribed burn activities. The Seed Orchard Helibase, located on the Francis Marion National Forest Seed Orchard, is a 5-minute drive from the Witherbee office. The helibase is located on South Hampton road, less than one mile east of Highway 41. (Refer to Appendix B, HELIBASE ACCESS DIAGRAM)

Purpose

The purpose of this plan is to establish helibase policy for the safe operational use of helicopters assigned to the Seed Orchard Helibase and on the Francis Marion and Sumter National Forests. This plan is supplemental to the Francis Marion and Sumter National Forests, Aviation Management and Safety Plan. Guidance set forth in the Interagency Helicopter Operations Guide (IHOG), Forest Service Manual FS 5700, Handbooks, and other applicable aviation policy references shall be followed.

Helitack

All personnel must meet or exceed air operations qualifications as described in the (IHOG). Crewmembers must meet or exceed the physical qualifications set forth in the physical standards for red card qualifications at the level appropriate to the assignment. The Helicopter manager position is now separated into two positions. These are an exclusive use boss and call when needed. [Refer to USFS, Fire and Aviation Management Qualifications Handbook (FSH 5109.17) for additional details].

Air Attack

When air attack is ordered for the Francis Marion and Sumter National Forests, they will be working out of the Charleston International Airport located on Airport Road in Charleston.

Contracting

Position	Name	Telephone Numbers
Contracting Officer (CO):	Kay Mathews	(404) 347-1635
	Southern Region, Atlanta	
Contracting Officer Representative (COR):	Dave Kuhn	(803) 561-4057 Desk
	Columbia SO, SCC	960-2943 Cell
Contract Inspectors (CI):	Laura Barrett	(843) 336-4572 Helibase
	Francis Marion NF	(803) 960-3651 Cell

Note: During Helicopter operations, appropriate CO, COR and CIs will be used.

Contracting Officer

Responsible for all contracting actions including contracting procedures and methods, contract legality, compliance with existing laws and regulations, contract administration and terminations.

Chapter 1

ORGANIZATION

Contracting Officer's Representative

Responsible to the CO for monitoring contract performance. The COR is primarily responsible for assuring compliance with the administrative provisions of the contract. The COR maintains communications with the contractor concerning day-to-day operations, though this may be further delegated to the CI. The COR is responsible for verifying the work performed upon which payment is based.

Contract Inspector

Designated by the COR to assist in administering the contract. Responsibilities may include:

- Verifying services performed by contractor
- Ensuring contractor's compliance with contract specifications
- Discussing daily work requirements
- Ordering services within the contract specifications
- Completing Aircraft Contract Daily Diary (OAS-137), and the Flight Use Report (FS 6500-122)
- Ensure serious problems are brought immediately to the attention of the COR or CO

Chapter 2

COMMUNICATIONS / MAPS / SERVICES

Communications

Dispatch

Dispatch or Coordination Center	Telephone Numbers
South Carolina Coordination Center, Columbia Dispatch:	(803) 561-4086 or 4085 Fax
Southern Area Coordination Center:	(770) 458-2464

Flight following

The helicopter manager or delegated helitack crewmember shall report all takeoffs/landings and maintain a 15-minute check-in with Columbia Dispatch. Flight following shall be accomplished according to the local, geographic and national guidelines. Columbia Dispatch or appropriate radio contact shall be made aware of all scheduled and unscheduled flights to facilitate flight following. If contact with Columbia is not possible, local flight following will be established, or the mission will be aborted.

Telephone

There are three phone lines located in the helibase office, two phone and one fax line. Please keep one phone line open for emergencies. Below is a list of telephone numbers:

Line	Telephone Number
Line 1	(843) 336-4572
Line 2	--same as above--
Line 3 FAX	(843) 336-4552 FAX

Radio

There is a base radio located in the helibase office. Helicopter manager and helitack crewmembers can use handheld King radios while communicating with helicopters, if necessary. When the helibase is activated with multiple helicopter operations going on, a radio operator shall be ordered or crewmember assigned; flight following will still occur through Columbia Dispatch, unless otherwise notified. Radio frequencies for the Francis Marion NF are located in the radio room on the wall above the radio, and in the right-hand drawer below the radio. A separate list of local frequencies for the Sumter NF is located in Appendix C. These frequencies and additional frequencies can be found in the Wildland Firefighter Frequency Guide. (Refer to Appendix C, Frequency Lists for Francis Marion and Sumter)

Airspace

All personnel in air operations shall follow the Interagency Airspace Coordination Guide FSM 5715. Temporary Flight Restrictions (TFRs) and Notice to Airmen (NOTAM) shall be coordinated through the appropriate dispatch offices and coordination centers. NOTAMS are required for all prescribed burns.

Maps

Forest

There are four separate maps: one for the Francis Marion and three for the Sumter (one for each district). Forest maps show the local area, prominent landmarks, compartment numbers, ownership, roads, trails, and water systems. Maps are available at Columbia Dispatch, District Offices, workcenters, and Seed Orchard Helibase.

Helispots/Dip Sites

Helicopter operations often required the use of remote helispots and dipsites, many of these sites are more permanent in use, and have been pre-identified and numbered. These sites are depicted on flight hazard and dispatch maps as shown in the following example: **H22** = Helispot 22 (no water available) **HD22** = Helispot/Dipsite (helispot co-located with a dipsite), **D22** = Dipsite (not pre-approved for landing). A forest map displaying helispots and dip sites on the Francis Marion NF can be obtained from the helibase manager or the Witherbee RD.

Chapter 2

COMMUNICATIONS / MAPS / SERVICES

All helispots and dipsites must be approved by the HELICOPTER MANAGER prior to use. Annual inspections, and needed or accomplished maintenance will be documented and kept at the Seed Orchard Helibase. Historically this has been the District FMO's responsibility. The Seed Orchard Helibase Manager is responsible for the maintenance of these records.

Pre-identified helispots and dipsites, not located on Forest Service land, will have a written agreement in place between the Forest Service and the landowner; copies of these agreements will be kept at the helibase. Prior to use of any helispot or dipsite on private property, at a minimum, verbal approval must be obtained by the helicopter manager from the landowner.

Flight Hazards

The helibase Flight Hazard Map shall be updated annually and dated. The Flight Hazard Map shows known hazards, i.e. towers, cables, congested areas, Flight detection routes, Military Training Routes (MTRs), Military Operations Areas (MOAs), restricted areas, airports, and remote airstrips. A map of helibase flight hazards will be displayed at the helibase (Refer to Appendix D, Helibase Diagram & Flight Hazard Map).

There are three Military bases that schedule military training missions on the MTRs in South Carolina. Cherry Point MCAS located in Cherry Point NC, Shaw AFB in Sumter SC, and Charleston AFB in Charleston SC. Dispatch will inform the Military Airspace Managers when Forest Service aviation activities are planned with the boundary of scheduling offices airspace to obtain information on planned military maneuvers within the MTRs listed below. When potential conflicts exist, dispatch will request a Temporary Flight Restriction (TFR) for the affected area. The MTRs listed below have the greatest influence on aviation activities in the proximity of the Seed Orchard Helibase, these are also shown on the helibase flight hazard map.

Training Routes (MTRs) passing over the Francis Marion NF.

Training Route		Contact	Phone Number
SR 0166	02 NM/centerline	Charleston AFB	843 583-2705
VR 1041	10 NM/centerline	Cherry Point MCAS	919 466-4040 / 4041
VR 088	10 NM/centerline	Shaw AFB	803 895-1122 / 1118
VR 095	10 NM/centerline	Shaw AFB	803 895-1122 / 1118
VR 1059	10 NM/centerline	Shaw AFB	803 895-1122 / 1118

For more information on MTRs refer to DOD flight information publication AP/1B, Area Planning Military Training Routes North and South America. MTRs are updated 4 times per year.

Airfields

The Seed Orchard Helibase is operated on Forest Service owned land, this is not a public airstrip.

There are three small airports located in the vicinity of the Francis Marion NF. Private airstrips located on or around Francis Marion & Sumter National Forests are identified on the Flight Hazards map.

Commonly used airports on the Francis Marion and Sumter are listed in Appendix F, Commonly Used Lat/Long Locations.

Services

Fuel

Contractors using their fuel trucks/trailers in accordance with IHOG Chapter 13 fueling requirements and other applicable guidelines will carry out fueling. Helicopters are fueled by vendor's fuel trucks/trailers.

Additional fuel can be purchased through local airports. One known vendor will deliver to Seed Orchard Helibase listed below:

Chapter 2

COMMUNICATIONS / MAPS / SERVICES

Fuel Vendor	Location	Telephone Number
East Cooper Airport	Mount Pleasant	(843) 884-8837 will deliver to Seed Orchard Helibase

Lodging and Restaurants

Per Deim Rate: Berkley and Charleston Counties = \$99.00 motel, \$42.00 meals and incidentals (October, 2002)

Lodging and restaurants in the local area are:

Lodging	Location	Telephone Number
Comfort Inn Suites	Mount Pleasant – Hwy 517, Isle of Palms Connector	(843) 216-0004
Comfort Inn	Mount Pleasant - 310 Hwy 17N By-pass	(843) 884-5853
Hampton Inn	Mount Pleasant - 255 Jonnie Dodds Blvd.	(843) 881-3300
Microtel Inn & Suites	Mount Pleasant - 259 Jonnie Dodds Blvd	(843) 971-7070
Holiday Inn Express	Moncks Corner – 505 Rembert C Dennis Blvd.	(843) 761-5900

Restaurants	Location	Telephone #	Cuisine
Art's Bar & Grill	Mount Pleasant	(843) 849-3040	Pizza, Calzone's, etc.
Charleston Crab House	Mount Pleasant	(843) 884-1617	Fresh Seafood
Gullah Cuisine	Mount Pleasant	(843) 881-9076	Gullah cuisine
Gilligans	Isle of Palms/Mt P	(843) 849-2244	Fresh Local Seafood, Steamer & Raw Bar
T Bonz	Mount Pleasant	(843) 971-7777	Grilled: Steak, Seafood, Chicken & Micro Brew
Wild Wings Cafe	Mount Pleasant	(843) 971-9464	Wings, Bar & Grill type food + Micro Brews
Apple Bs	Moncks Corner	(843) 761-4545	Café type: salads, soups, entrées
Barony House	Moncks Corner	(843) 761-7600	Southern cuisine
C&C BBQ	Cordesville	(843) 899-5005	Bar-B-Que and Buffet, in or carryout
Dock Seafood	Moncks Corner	(843) 761-8080	Seafood, Etc.

Chapter 3

EQUIPMENT AND SUPPLIES

Personal Protective Equipment

Helitack personnel shall be issued personal protective equipment (PPE) that includes: Nomex clothing, SPH-4/5 flight helmet, Nomex gloves, earplugs, and eye protection. PPE shall be worn as required by IHOG and agency policies.

Passengers aboard the helicopter shall wear protective clothing, as outlined in the IHOG. For most passengers this includes: an SPH-4/5 flight helmet, Nomex shirt and pants or Nomex flight suit, Nomex or leather gloves and high-top leather boots. The only acceptable situation where a hardhat may be substituted for a flight helmet is for point-to-point passengers, for example firefighting crews going from a managed helibase/helispot to an established managed helibase/helispot.

Undergarments or garments worn under the flight suit or shirt/trousers combination provides the best protection if made of Nomex. However, Nomex is not required. Fire resistant cotton blends, fire-resistant cotton, or natural fibers (cotton, wool, or wool/cotton blends) are acceptable substitutes.

The Forest Service shall furnish the pilot with a fire shelter and training in its proper use.

Helicopter

The helicopter manager shall ensure that the helicopter and pilot are available for immediate dispatch as required in the specifications of the contract.

Packs (PG & IA)

Helitack crewmembers shall be issued by the home unit a personal gear pack (25 lbs. max.), and a "Red Bag" (35 lbs. max.). Initial attack packs and equipment shall be refurbished immediately after returning from an incident and weight tagged.

Handtools

All fire handtools shall be maintained to specifications outlined in the Fireline Handbook PMS 410-1. All used tools shall be reconditioned and stocked as soon as possible.

Support Vehicle/Trailer/"Chase Truck"

There is no dedicated support vehicle or trailer assigned to the Seed Orchard Helibase. However one shall be designated at the beginning of each day for each helicopter. The support vehicles should be loaded and ready for dispatch as soon as possible each morning. Contents of the support vehicle will be dictated by projects and IHOG requirements for helicopter support at helispots.

Helicopter Support Kit

The Helicopter Support Kit contains the basic support items for a helicopter and is utilized whenever a helicopter is operating from the helibase. An inventory list of kit contents will be kept with the kit and a back up copy kept in the helibase radio room, in the *inventory lists* file. Support kits are located in the Seed Orchard Helibase aviation shed.

Evacuation Kit

The Evacuation Kits shall be stored at the Seed Orchard Helibase in either the aviation shed or under the small covered stand near pad 1. Employees shall be trained in the proper use of the kit. Kits will be inspected and maintained yearly. An inventory list of contents shall be located inside the kit and a back up copy kept in the helibase radio room, in the file titled *inventory lists*.

Chapter 3

EQUIPMENT AND SUPPLIES

Crash Rescue Kit

There are four crash rescue kits available at the Seed Orchard Helibase. The Crash Rescue Kits are stored in the aviation shed at the Seed Orchard Helibase or inside the garage as aviation activity increases. As possible, kits will be taken to active helispots and/or dipsites. Employees shall be trained in the proper use of the kit contents. Kits will be inspected and maintained yearly. An inventory list of contents shall be located inside the kit and a back up copy kept in the helibase radio room, in the file titled *inventory lists*. (Refer to IHOG for the number of kits required.)

Helibase Stock

Equipment and supplies necessary for helitack operations shall be maintained and available at the Helibase. The helibase manager is responsible for maintaining stocks. When additional supplies are necessary, the helibase manager shall coordinate with the Dispatch Coordinator and/or local purchasing person on the district.

Equipment shall be inspected prior to use and before returning to storage. All damaged or excessively worn equipment shall be brought to the attention of the helibase manager. Equipment should only be used for its designed purpose. Equipment shall not be used unless properly marked or tagged with weight limitations.

If no helibase manager is present, helicopter manager or district designee may carry out the above duties within their qualifications.

Chapter 4

FUEL AND FIRE BEHAVIOR

General

Located in the Fire Management Plan for the Francis Marion and Sumter National Forests (FMS) is a complete and comprehensive breakdown of each Fire Management Units (FMU), including fuel types, fire behavior, occurrence, and historical data. In the current Francis Marion National Forest FMP is a description of the Management Areas, taken from the Francis Marion LMP, and the fire management strategies associated with each.

For this document only a general statement on fuels and fire behavior follows for the Francis Marion National Forest. Managers should be familiar with the overall Fire Management Plan and the related fuels, weather, fire behavior, ecosystems and other information contained within Fire Management Plan for the Francis Marion and Sumter.

Fires on the Forest are almost exclusively caused by humans, and so are not predictable. However, conditions that support fires define our fire season, and the majority of the starts. Arson should be assumed as the cause until otherwise confirmed. Always be observant as to suspicious people going to, on scene, and returning back to helibase. Let the forest LEO know anything you observe in regards to Arson.

Fire Management Situation

Francis Marion

In 1989 Hurricane Hugo passed over the Francis Marion NF causing extensive damage, leaving most of the large pines on the ground. The resulting increase in 1000-hour fuels can dramatically change suppression tactics and effectiveness. If a fire burns through this Hugo debris, an increase in fire intensity, fire behavior, and residual smoke should be expected. The forest has an intensive prescribed fire program that has been effective but not totally reduced the Hugo debris.

The fire environment on the Francis Marion can change quickly in response to rain or drought. The well-drained soils allow areas that have received several inches of rainfall to burn within a day or two of drying. The Francis Marion can go from almost flood-like conditions to extreme fire potential within a matter of weeks if no rain occurs. The largest influencing weather pattern is lack of rainfall. This compounds itself when the lack of rain becomes long term and the Keech-Byram Drought Index (KBDI) exceeds 600-700 or more. When this occurs, duff layers and organic soils become available for fire consumption as well as other natural fuels that normally would not have burned.

Another indicator used in Fire Management is the Energy Release Component (ERC), which is an indicator of the potential fire intensity.

ERC Values	Staffing Class	Fire Danger
1 -12	A	Low
13 - 24	B	Moderate
25 - 48	C	High
49 - 57	D	Very High
58	E	Extreme

Fire Season and Weather Patterns

The FMS fire season is from November 1 through May 30, with fires occurring in nearly every month of the year. Fire occurrence and intensity increases December through May, with peaks January through mid May. From April through June, temperatures may reach 90-degrees or higher. Rainfall is scarce until the summer thunderstorms pick up in June and July. Droughts usually reach their peak during the winter months, resulting in the greatest potential for large fire growth. However, short daylight hours, cooler temperatures and frontal passage rains begin to keep fire behavior in check in December and January. Most large fires occur during January through April and days with multiple fires can be expected. Fire behavior may be intense and erratic especially during thunderstorm passage or when prolonged drought increases available fuels. Wind has a dramatic effect on fire spread, and fires can become dangerous fast, with changes in wind speed and especially direction. Not only does the helicopter prove to be a useful tool for supplying water in hard to reach areas, but is invaluable as a lookout for firefighter safety. Fire activity continues to decline July through October.

Chapter 4

FUEL AND FIRE BEHAVIOR

Fuel Types and Conditions Influencing Fire Behavior

The Francis Marion NF contains NFDRS fuel model D, specifically for palmetto-gallberry understory-pine overstory association of the southeast coastal pine. The slope is primarily flat on the Francis Marion NF having little influence on fire behavior. However, wind has a much more dramatic and immediate influence on fire behavior and spread, and is much less predictable. Southern Rough, typifies fast moving intense fires. Helicopter support, Tractor Plows, and Engine support are needed, handline is not common and is of little to no use. Bays are characterized by thick, almost unimpenetrable vegetation. If dry enough to burn, they can be extremely intense and very difficult to contain. In 1989, Hurrigan Hugo hit the forest and caused extensive damage. The after effects can be seen in the high density of 1000 hr. fuels, making line construction and fire suppression more difficult. Because conditions on the Francis Marion can change so quickly, air support is an essential tool which can act as a lookout, besides being another suppression tool.

The following discussion on vegetation types and fire behavior is meant only for general discussion. Actual fire behavior depends greatly on fuel conditions and weather. A helpful tool, assessing current fire potential based on historical fire data, is the pocket card. These can be obtained from the helibase manager, local district, or Internet (famweb.nwcg.gov/pocketcards⇒Southern Area⇒South Carolina⇒Francis Marion, Sumter, or Savanna River).

The following is a list of fuel types found on the Francis Marion NF:

FUEL MODEL D: Palmetto-Gallberry understory Pine association of the southeast and "low-pocosins". A high moisture of extinction is associated with this fuel model. This is a fire dependent system, with high frequency fires of low intensities. However, if fire has been excluded, higher intensities and even crown fire can and should be expected.

FUEL MODEL O: Pocosins.

Fuels, except for deep litter layer, are almost entirely living. Foliage burns readily, except during the active growing season. Typical traits for the dense brush: over 6 feet tall, and found under open stands of pine. Pocosins have highly combustible fuels and deep, peaty soils. Fires can "blowup" in the volatile evergreen vegetation, especially where ladder fuels of continuous needle drape exist. Fires can be severe in peaty soils; severity is usually related to depth of water table at the time of burning.

Chapter 5

DUTIES / RESPONSIBILITIES / STAFFING

Helicopter Manager

Duties and responsibilities include, but are not limited to the following:

- Coordinates with dispatch, pilot, and users on mission requirements
- Identifies specific project requirements
- Completes Aircraft Flight Request/Schedule
- Ensures availability
- Obtains approvals and authorizations for flights
- Establishes work schedules
- Completes required administrative and operational forms specified in Appendix A and B in the IHOG
- Ensures that the contractor completes records and reports specified in the contract
- Ensures PPE is available and utilized correctly
- Performs preflight briefing and ensures preflight passenger briefing is accomplished
- Ensures that the aircraft and pilot are approved and authorized for the mission
- Ensures flight following, resource tracking, and radio checks are accomplished
- Reviews and signs helicopter load calculations; completes or delegates the completion of passenger/cargo manifests
- Directs personnel in proper conduct of helicopter operations
- Reports any condition, observance, act, maintenance problem, or circumstance which has potential to cause an aviation related-mishap utilizing an Aviation Safety Communiqué (SafeCom) [Informs FAO of any SafeCom resulting on forest]
- Performs daily inventory check on equipment, vehicles, and tools
- Ensures safety information, changes in aviation policy, procedures, and regulations are shared with personnel
- Tracks contractor personnel duty limitations
- Completes FS 6500-122 and submits them to the COR
- Functions as a CI and reports to the COR

Helicopter Manager (Substitute)

Performs the same duties and responsibilities in the absence of the helibase manager.

Helitack/Helicopter Crewmembers

Duties and responsibilities include, but are not limited to the following:

- Improves or constructs helispots, manifests, loads and unloads cargo and personnel, marshals helicopter, rigs external loads

Chapter 5

DUTIES / RESPONSIBILITIES / STAFFING

- Assists helicopter manager in performing daily inventory checks
- Ensures operational readiness of helicopter unit
- Performs tool, equipment, and vehicle maintenance
- Performs facility and cache maintenance
- Participates in proficiency checks and drills
- Participates in safety session
- Completes aviation and vehicle forms when required
- Maintains cleanliness of helibase, inside and outside
- Informs manager of any hazards or unsafe conditions

Staffing

All helicopters assigned to the Seed Orchard Helibase will be staffed according to guidelines outlined in the IHOG. SCCC along with the Forest Fire Management Staff shall determine how CWN helicopters are ordered (ie. limited versus standard).

New Aviation Policy allows for the Forest exclusive use helicopter to be designated as either standard or limited use. A *Draft* form for requesting a change in helicopter status is located in Appendix K.

Standard Use

Helicopters designated as Standard Use will be staffed according to IHOG direction. The helicopter will be designated as standard use according to Regional Aviation Policy, for example: whenever someone not attached to the helicopter needs a flight. One exception to this is during prescribed fire, where the Ignition specialist and PSDO are allowed to fly during ignition and holding operations.

Limited Use

Helicopters designated as limited use will be staffed with a minimum of a manager, but can have additional helicopter crewmembers. Under this designation, the helicopter will be used for Initial Attack bucket work or prescribed fire ignition and holding operations. Only crewmembers attached to the helicopter and prescribed fire personnel will be allowed to fly on limited use helicopters. When personnel flights are essential to the mission, other than the allowed helicopter personnel, the helicopter will be re-designated as Standard Use. See Appendix K for form.

Initial Attack

Helicopter manager(s) or manager trainees shall remain with the helicopter at all times, except when the aircraft is dispatched with an external load or other tasks are to be accomplished by the helicopter manager. Example: Deliver payment documents.

Assigned helitack shall remain at the helibase at all times, unless released for short periods of time by the helibase or helicopter manager.

All aircraft shall be dispatched by the South Carolina Coordination Center (SCC) through Columbia Dispatch and shall not take more than 10-minutes to commensurate their mission. If Columbia Dispatch is down, dispatch will occur by phone or locally. An exception to this may occur when a team is assigned to the forest. In this case, alternate arrangements may be made between the team and SCC. This can quickly become confusing. It is the responsibility of the helibase manager to ensure all helibase personnel are informed of any changes.

When a helicopter is dispatched for fire suppression, it must be staffed in accordance with IHOG prior to blades turning.

Chapter 5

DUTIES / RESPONSIBILITIES / STAFFING

Standard initial attack scenarios are as such:

- Helicopter is dispatched by Columbia Dispatch to IA a fire given lat/long
- Helicopter with crew (manager + one) and bucket on board fly to coordinates
- Manager gives dispatch a size up, and asks if they are to take action
- If ordered to take action, a suitable dipsite and helispot are located, then called into dispatch
- (a map of approved dipsites and helispots is located at the helibase, and onboard ship)
- Bucket is hooked-up and checked at helispot
- Pilot begins bucket operations (if dipsite is separate from helispot, chase vehicle shall proceed to dipsite)
- Fuel truck and chase truck are ordered as needed
- When IC arrives, he/she will maintain local flight following, and direct or delegate helicopter bucket drops
- Helicopter is not released from fire until IC and dispatch state so

Standard procedure for determining allowable load calculation for unknown conditions are as follows: calculate for initial attack landing sites on FS-5700-17 Load Calculation Forms (FS 5700-17) at Sea Level and 35-degrees Celsius or the actual computed temperature, while utilizing Hover-Out-of-Ground Effect Charts (HOGE) and applying limitations or performance adjustments as necessary. This affects the available payload of the aircraft and shall necessitate adjustments to the standard initial attack load if weight reductions are required to safely operate the helicopter. If landing site conditions are known, a Load Calculation Form shall be utilized to plan for specific conditions present at the time of the operations, or forecasted highs for the day.

After arrival on the Incident, the helicopter manager shall select the preferred strategy on how personnel and cargo shall be deployed, or contact the appropriate supervisor for instructions.

- Option #1 - Leave the crew at helispot or dip-site and deploy bucket. (Most Common)
- Option #2 –Conventional Helitack - land and discharge firefighters with all gear and walk to the fire. (Rare)
- Option #3 - Combination of Option 1& 2

Helitack personnel shall exhibit preservation of resource values when conducting air operations and fire suppression activities. Wilderness areas are marked on the Forest map. Local policy shall dictate suppression activities.

Prescription Burn

Initial attack capability shall be maintained while conducting prescription burns. Dispatch shall be notified whenever initial attack capabilities may not meet the 10-minute get away. (Refer to specific Burn Plans for details)

Special Projects

Any activity involving aircraft or aviation resources also becomes an aviation project. Employees must contact local aviation managers prior to planning any aviation activity. Involvement of local aviation personnel is necessary at the earliest possible planning stage. Employees shall review applicable aviation and safety plans before planning aviation projects.

Reoccurring projects on the Witherbee/Wambaw Districts are:

- Prescribed fire

Chapter 5

DUTIES / RESPONSIBILITIES / STAFFING

- Timber / insect / storm damage / wildlife inventories

The Forest Aviation Office (FAO) will be made aware of all non-fire aviation activities. A Project Aviation Safety Plan (PASP) is required by the IHOG and should be completed prior to all non-fire aircraft use. Only one PASP per non-fire project is required.

The Regional Aviation Officer (RAO) shall review and approve special aviation project plans, which are outside the scope of those projects covered by the Unit Aviation Management Plan. Contact the RAO in determining this need.

Prior to the issuance of any procurement document for projects where there is a possibility that aircraft may be used, procurement officials must first be in receipt of a Project Aviation Safety Plan (PASP) approved by the RAO.

Chapter 6

RECORD KEEPING

Timekeeping

Local agency personnel assigned to the helibase shall document their duty time and process it for bi-weekly payment. All others shall document their duty time on Form SF-261 Crew Time Report, approved by the Helicopter Boss. Firefighter time reports shall be filled out for all non-contract personnel attached to the Helibase, and a copy left at the helibase before demobing.

Forms and Reports

The Helicopter manager records Hobbs meter readings, completes load calculations, records power checks, and keeps accurate flight time readings for individual projects. At the end of the day, the helicopter manager completes the duty logs, trend analysis chart, FS-6500-122 Flight Use Report, daily diary, helicopter use summary, and updates schedules. Examples of these forms may be found in the Interagency Helicopter Operations Guide (NFES 1885) and the IHOG Supplement Forms Package (NFES 1878).

Load Calculations (Form FS-5700-17 Helicopter Load Calculation)

Load calculations shall be completed for all flights to ensure the helicopter is operated within its limitations. It is the responsibility of the pilot to complete and sign the load calculation; the load calculation is reviewed and signed by the helicopter manager. New load calculations shall be completed for every 3-degrees temperature change. (Refer to the IHOG for additional details)

Turbine Engine Power Checks (Form OAS-87 Helicopter Power Check Turbine Engine)

A Turbine Engine Power Check shall be completed at the beginning of the contract and shall be completed again after every 10-hours of flight. These recordings shall be documented on a power trend analysis chart to track the engine output and shall be posted in the helibase office and the contractors trailer.

Standby/Availability

As specified in existing, exclusive-use contracts, the helicopter and fuel servicing vehicle shall be available for 14-hours/day, unless otherwise specified by the CO, COR, or CI. Standby hours shall be 9-hours/day. For call-when-needed helicopters, the contractor shall be compensated in accordance with their contract specifications.

Payment Documents Submission

Daily availability, flight time, fuel truck mileage, unavailability, and all other authorized expenses shall be recorded on the FS-6500-122 Flight Use Report. The CI shall complete the FS-6500-122 on a daily basis, and the CI will sign the invoice and contractor's representative.

Completed FS-6500-122s will be sent to the COR twice monthly for processing and payment.

Chapter 7

HELIBASE FACILITIES

Electrical

The Seed Orchard Helibase and its associated facilities operate on electrical power, which gives a continuous power supply.

There are three outdoor electrical boxes: one between the garage and front door, one at pad 1, and one inside the well house.

The main helibase circuit breaker box is located inside the helibase on the wall across from the bathroom door. A second circuit breaker box, for power at pad 1, is located inside the well house. The main shut off is located on the south wall outside the well house.

Power is supplied through the Berkeley Electrical CO-OP Inc. (843) 761-8200. For outages only, call (888) 253-4232.

Maintenance

The helibase manager will be responsible for ensuring the helibase facilities, equipment and grounds associated with the helibase are maintained. The helibase shall be kept cleaned. Facilities and grounds shall be maintained and kept in a professional manner. If problems arise, contact Witherbee District.

Washdown, Draining, and Spill

It is the responsibility of all personnel, both vendor and government, to ensure that fueling operations are conducted in accordance with procurement document specifications, agency fueling directives, and all other applicable federal, state, and local hazardous materials regulations and to the agency-specific fuel avoidance requirements.

There are water lines at the front of the helibase, at pad 1, and at the well house.

The fuel service truck is responsible to carry sufficient fuel product absorbent material to absorb fuel spills up to 5-gallons.

Fuel spills shall be reported to Columbia Dispatch, which will contact the district or forest haz-mat coordinator.

Helicopter Parking

A helicopter-parking plan will be posted on bulletin board.

Fuel Servicing

Fuel servicing vehicles/trailers shall be parked in the designated fuel truck parking, just inside the gate to the east. Other arrangements may be made with the helibase manager if necessary. Helicopter fuel servicing on the helibase shall adhere to Department of Transportation (DOT), Forest Service and IHOG policies.

Helibase Diagram

A diagram of helibase facilities and general area are attached to this plan as labeled in the table of contents, for general reference only. (Refer to Appendix D, Helibase Diagram & Hazard Map)

Chapter 8

MISHAP RESPONSE

General

When the District helibase is active, takeoffs and landings may occur daily and assignments may vary from prescribed fire to wildfire to project operations. Most helicopter accidents occur during takeoffs and landings. Proper planning and action may greatly reduce the severity and consequences of such an accident.

Equipment

Equipment available in the event of a helicopter accident includes an evacuation kit, crash rescue kit, and helicopter support kit (See Chapter 3, Support Trailers). In addition a 200 lb extinguisher and two or more 20 lb. fire extinguishers, a loud speaker system for notification of ground personnel, a radio to receive declaration of emergency and notify other appropriate personnel, Nomex clothing, gloves and protective helmet, fire shelters, Burn Kit and 20-Person First Aid kit will be available at the helibase.

Personnel

Pilot

Declares emergency to passengers/flight following personnel, avoids ground personnel, fuel storage and other sensitive areas.

Helicopter Boss

Radios emergency and location to Dispatch, and follows in-flight emergency procedures.

Passengers on Board

Keep calm and follow flight emergency procedures.

Interagency Aviation Mishap Response Plan (NFES 2659)

Dispatch and appropriate personnel will familiarize themselves with this plan as modified for District use. This plan must be reviewed annually for currency.

Training

Training shall be conducted annually and include the following:

- Review of the Interagency Aviation Mishap Response Plan, as modified
- Conduct equipment familiarization and review emergency flight procedures
- Conduct a crash response simulation by calling listed telephone contacts to see if their numbers are current

Aviation Safety Communiqués (Form FS-5700-14)

Aviation Safety Communiqués (SafeCom) are used to report any condition, observance, act, maintenance problem, hazard, incident, or circumstance, which has potential to cause an aviation-related mishap. Submitting a SafeCom is not a substitute for "on-the-spot" correction(s) to a safety concern, rather it is a tool used in the documentation, tracking, and follow-up corrective action(s) related to safety issues. Categories of reports include aircraft mishaps, aviation hazards, aircraft maintenance deficiencies, and airspace intrusions.

If a mishap involves damage or injury, notify the Regional Aviation Office immediately by the most expeditious means available.

Both non-scheduled repairs and scheduled aircraft maintenance where problems are found require that Regional Aircraft Maintenance Inspector Donna Shope be notified before the aircraft is returned to service. A SafeCom is required to be submitted to the Regional Aviation Safety Manager (RASM) within 5-days of the return to service.

Chapter 8

MISHAP RESPONSE

Submission (Electronic)

Access the FS Aviation Web Site at: www.aviation.fs.fed.us

From the Home page click on the "SafeCom" button.

From the SafeCom page click on "Submit a SafeCom" and complete the form. Once submitted, the SafeCom will reside in the FS Aviation Mishap Information System (AMIS) database and designated aviation managers will be notified by email that a SafeCom has been submitted within the selected region.

Submission (Hard Copy)

Fill out the SafeCom form and provide a copy to the FAO.

Upon receipt, the FAO will submit the SafeCom electronically.

Processing. Once a SafeCom comes to the attention of the appropriate FAO, when necessary, corrective action(s) and comments should be documented on the form. It is incumbent on the FAO to quickly process SafeComs for distribution and dissemination to aviation users and managers.

Dissemination

Timely distribution of SafeComs is a key component in mishap prevention. SafeComs may be accessed and printed from the "Public Access" area of the database. FAOs and the RASM should be contacted if additional information or follow-up action(s) is required.

Access (Protected Area)

Access to the SafeCom "Protected Area" is limited to regional staff aviation program managers and FAOs.

Chapter 9

SAFETY

General

Safety in air operations is outlined in safety plans from the Regional Office and Forest Supervisor's Office, as well as FSM 5700, FS Health and Safety Code, IHOG, Federal Aviation Regulations, Transportation of Hazardous Materials Guide, and Interagency Aerial Ignition Guide. This plan was developed from the sources listed above and reinforces items of concern.

Training

Helitack recurrent training is the responsibility of the helibase manager. Training shall include, but not be limited to, the Interagency Helicopter Training Guide format and S-217, yearly helicopter refresher and Aviation Transport of Hazmat training (for online hazmat refresher go to www.oas.gov). Helitack crewmembers must meet the requirements set forth in the IHOG. Crewmembers shall receive this training on an annual basis and documentation must be forwarded to the FMO and Forest Training Officer.

Helicopter manager trainees shall be used only under direct supervision of a qualified helicopter manager. This does not mean they must be onboard the helicopter at all times.

Operational Policy

Forest Service Air Operations Policy includes the following:

- Aircraft and pilots must be carded.
- All pilots must adhere to flight and duty limitations.
- Low-level flights of 500 feet or less shall be avoided when possible.
- A 30-minute fuel reserve is required.
- Only authorized personnel shall fly onboard Forest Service owned or contracted aircraft.
- Load calculations shall be made for all helicopter flights before take-off.
- Receiving unit or pilot is responsible for closing flight plan.
- All helicopter landings must be made in terrain where the landing gear shall be solid on ground.
- Report any condition, observance, act, maintenance problem, or circumstance which has potential to cause an aviation related-mishap utilizing an Aviation Safety Communiqué (SafeCom)
- Shoulder harness is required for front seat passengers and pilot and is required for passenger seats in the rear cabin seats if harnesses are available.
- Flight Hazard Map must be posted and reviewed periodically at base by the pilot and crew.
- Radio dispatch or base when landings and taking off.
- Fifteen-minute radio check-ins shall be maintained throughout all flights with the forest or appropriate dispatch office. Check-ins shall give geographical or Lat/Long location and direction of travel. Dispatch shall be informed of route changes.
- Manifests shall be made for every flight listing personnel and cargo weights.
- Flights should follow terrain most suitable to forced landings.
- The helicopter manager may accompany the helicopter when transporting external loads during special circumstances as outlined in Chapter 10, Section IV of the IHOG.

Chapter 9

SAFETY

- Grant of Exemptions. DOT-E 9198 allows hazardous materials to be carried in FS aircraft. Always consult the "Aviation Transport of Hazardous Materials Guide" when transporting hazardous materials. The guide and the current letter of exemption must be carried on the aircraft.
- No smoking allowed in or within a 50-foot radius of aircraft.
- Seat belts are required for all passengers.
- Forest Service employees shall not ride in military aircraft unless the Regional Aviation Officer has approved it for personnel transport.
- All aircraft operating in Region 8 shall be equipped with, and monitor national airguard (VHF 168.625). Air net is for emergency use only, but it can be used to establish flight following when coming to a new area.
- Aircraft shall not be flown without an acceptable communication system that includes national airnet.
- All passengers are required to wear Nomex clothing, protective helmet (SPH-4 or SPH-5), leather boots and overlapping leather or Nomex gloves. A hard hat with chinstrap and hearing protection may be used only when flying managed helispot to manage helispot. "Managed helispot" means qualified helispot manager on the ground prior to aircraft landing.
- Authorization to transport animals shall be requested and approved by the FAO before the flight is scheduled. The pilot shall be notified and must approve the transportation of animals before they are loaded aboard an aircraft. Animals must be confined, restrained, or, when necessary, sedated.
- Passenger briefing and aircraft familiarization shall be accomplished prior to each flight.
- Turbine engine power check shall be completed and documented every 10-flight hours on a Power Check and Trend Analysis chart appropriate to the type of aircraft being used.
- Contractor's fuel servicing vehicle sump shall be drained daily and pressure differential readings recorded on a log to be kept in fuel truck. Fuel sump on contractors' bulk tank should be checked weekly.
- Periodic fuel samples shall be taken and checked for contaminants.
- Vertical landings and takeoffs should be avoided.
- Hearing protection is required for all helitack crewmembers and for all other passengers. Eye protection is also required for all helitack personnel when working around helicopters.
- Helicopters shall not fly if wind speeds average 30 mph over a 5-minute period on exposed peaks and ridges.

Flight Above Ground Level	Winds Less Than / Max. Gust Spread (Knots)		
	Type 1	Type 2	Type 3
More than 500' AGL	50 / NA	50 / NA	50 / NA
Less than 500' AGL	40 / 15	40 / 15	30 / 15

- No night flights allowed. Daylight limitation is ½ hour before sunrise and ½ hour after sunset.
- Motorized equipment can be transported in a ventilated compartment with fuel in tanks provided they do not leak and can be secured in upright position.
- Sling loads shall not be flown over populated areas. Sling loads to be flown over public roads shall require the stopping of traffic on high speed, heavy use roads, i.e. paved highway systems. Visually check and avoid over flying vehicles on low speed periodically used roads, i.e. backcountry dirt-type roads.

Chapter 9

SAFETY

- All flights shall be computed on load calculation FS 5700-17, using the appropriate HIGE or HOGE charts. The helicopter manager and Pilot shall adhere to the definitions and circumstances governing HIGE and HOGE landings.
- A qualified helicopter manager shall supervise all helicopter operations.
- It is mandatory that ground personnel utilize radio contact or hand signals when conducting external load operations.
- The helicopter manager is responsible for meeting project work schedules, posting crew time slips and the overall supervision of crew.

Operational Procedures

The following is a list of operational procedures that cover the most common situations encountered regarding safety.

- Approach or depart helicopter only after pilot has signaled approval.
- Assure that proper approach and departure routes are used.
- Maintain control of all personnel around helicopters, do not hurry or run around helicopter, crouch when approaching helicopter, keep tools and equipment low and clear of rotors, maintain 100 foot safety zone, and never approach tail rotor of helicopter.
- Proper hand or radio signals shall be used, especially during sling operations and landings and takeoffs on unfamiliar helispots.
- Always indicate wind direction for approaching aircraft.
- Pilot has final say! Pilot must approve all missions and be informed of what is loaded on the aircraft.
- All passengers must be briefed on helicopter operations and safety.
- Landing areas shall be kept clean. All light material shall be removed.
- Dust proof landing areas when necessary.
- Do not talk with pilot during takeoffs or landings.
- Ensure mission is understood before departure.

Overdue or Missing Aircraft

Refer to the Aviation Mishap Response Plan located on the helibase bulletin board.

Appendix A

DEFINITIONS AND ABBREVIATIONS

Definitions

Administrative Use. Use of a Government aircraft for routine (non-emergency) point-to-point transportation of authorized passengers and cargo. Emergency support or tactical transportation of fire crews, overhead, and other personnel or equipment required for management of an incident or project, are not considered administrative use. (See definition of "mission use").

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

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

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

Alternate Base. A base, other than the designated base, established to permit operation from vicinity of a project area.

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

Cargo. Any material thing carried in the aircraft.

Chief-of-Party. Designated Government representative for all passengers on a flight.

Civil Twilight. Begins in the morning, and ends in the evening when the center of the sun is geometrically 6 degrees below the horizon.

Contractor. An operator being paid by the Government for services.

Crewmember. A person assigned to perform duty in an aircraft during flight time.

Cruising Speed, Service Ceiling, and Cruising Range. Shall be the same as applied by the CAB and FAA, United States Department of Transportation and the aircraft manufacturer.

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

Federal Aviation Regulations. Rules and regulations contained in Title 14 or the Code of Federal Regulations.

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

Flight Time. Begins when the aircraft leaves the ground in takeoff for a given flight and ends when the aircraft has taxied to parking or unloading spot when the aircraft has landed.

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

Fully Operated. The Contractor shall furnish the aircraft, pilots, and other personnel, repairs, operating supplies, service capability, and other incidentals necessary to the operation of the aircraft.

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

Ground Mishap, Aircraft. An aircraft mishap in which there is no intent to fly; however, the power plants and/or rotors are in operation and damage incurred requiring replacement or repair of rotors, propellers, wheels, tires, wing tips, flaps, etc., or an injury is incurred requiring first aid or medical attention.

Appendix A

DEFINITIONS AND ABBREVIATIONS

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

Instrument Flight Rules. As defined in Chapter 91 of the Federal Air Regulations of the FAA.

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

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.

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

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

Mishap, Aviation. Mishaps include aircraft accidents, incidents-with-potential, aircraft incidents, aviation hazards and aircraft maintenance deficiencies.

Night. The time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac, converted to local time.

Official Sunset and Sunrise. The times when the upper edge of the disk of the Sun is on the horizon, considered unobstructed relative to the location of interest. Atmospheric conditions are assumed to be average and the location is in a level region on the Earth's surface.

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

Operating Agency. An executive agency or any entity thereof using agency aircraft, which it does not own.

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

Passenger. Any person aboard an aircraft who does not perform the function of a flight crewmember or crewmember.

Pilot-In-Command. The pilot responsible for the operation and safety of the aircraft during the time defined as flight time.

Point-to-Point. Aircraft operations between any two geographic locations operationally suitable for take-off and landing (airport-to-airport).

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

SafeCom. Use to report any condition, observance, act, maintenance problem, or circumstance, which has potential to cause an aviation related mishap. The purpose of the SafeCom form is not intended to be punitive in nature. It will be used to disseminate safety information to aviation managers, and also to aid in accident prevention by trend monitoring and tracking.

Appendix A

DEFINITIONS AND ABBREVIATIONS

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

Special Mission Aircraft. Aircraft approved for other than point-to-point only missions. Transportation is limited to personnel required to carry out the special mission of the aircraft.

Substantial Damage. Any damage or failure which adversely affects the structural strength, performance or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Engine failure or damage limited to an engine if only one engine fails or rotor or propeller blades, and damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wing tips are not considered "substantial damage" for the purpose of this part.

Trip. The elapsed time between the time that an aircraft leaves its designated base point and time of return to that point.

Visual Flight Rules. As defined in Chapter 91 of the Federal Air Regulations of the FAA.

Abbreviations

A&P	Airframe & Powerplant (Mechanic)
AD	Airworthiness Directive
AFAO	Assistant Forest Aviation Officer
AMIS	Aviation Management Information System
ARTCC	Air Route Traffic Control Center
AOBS	Aerial Observer
ATBM	Airtanker Base Manager
ATC	Air Traffic Control
ATGS	Air Tactical Group Supervisor
ASM	Aerial Supervision Module
CAB	Civil Aeronautics Board
CFR	Code of Federal Regulations
CG	Center of Gravity
CI	Contract Inspector
CO	Contracting Officer
COP	Chief-of-Party
COR	Contracting Officer's Representative
CFR	Code of Federal Regulations
CWN	Call-When-Needed
DOI	Department of the Interior
DOT	Department of Transportation
ELT	Emergency Locator Transmitter
EPA	Environmental Protection Agency
ETA	Estimated Time of Arrival
FAA	Federal Aviation Administration
FAO	Forest Aviation Officer
FAR	Federal Aviation Regulations
FMO	Fire Management Officer
FMSO	Fire Management Staff Officer
FPMR	Federal Property Management Regulations
FS	Forest Service
FSH	Forest Service Handbook
FSM	Forest Service Manual
FSO	Fire Staff Officer
FSS	Flight Service Station
GACC	Geographic Area Coordination Center
GFP	Government Furnished Property

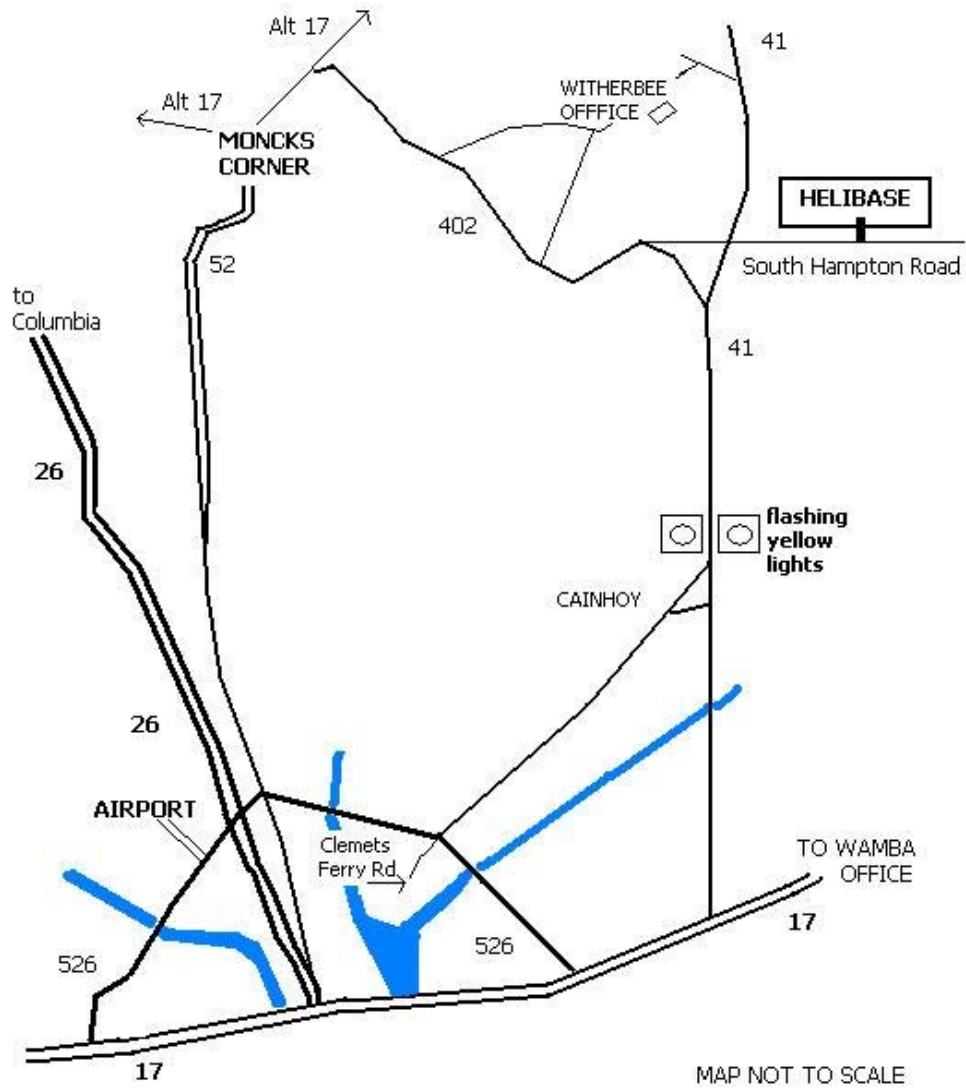
Appendix A

DEFINITIONS AND ABBREVIATIONS

GSA	General Services Administration
HECM	Helicopter crewmember
HEB1	Helibase manager (Type 1)
HEB2	Helibase manager (Type 2)
HCWN	Helicopter manager (Call-when-Needed)
HELB	Helicopter manager (Exclusive Use)
IC	Incident Commander
IHOG	Interagency Helicopter Operations Guide
IFR	Instrument Flight Rules
IMC	Instrument Meteorological Conditions
IR	Infrared
KBDI	Keech-Byram Drought Index
MICC	Mississippi Interagency Coordination Center
M&IE	Meals and Incidental Expenses
MOA	Military Operations Area
MSDS	Material Safety Data Sheets
MSL	Mean Sea Level
MTR	Military Training Route
MXMS	Mixmaster
NFES	National Fire Equipment System
NFM	National Forest in Mississippi
NICC	National Interagency Coordination Center
NTSB	National Transportation Safety Board
NOTAM	Notice to Airmen
OMB	Office of Management and Budget
PAB	Portable Airtanker Base
PAO	Project Aviation Officer
PASP	Project Aviation Safety Plan
PFD	Personal Floatation Device
PIC	Pilot-in-Command
PPE	Personal Protection Equipment
RA	Restricted Area
RAMP	Ramp Manager
RAO	Regional Aviation Officer
RASM	Regional Aviation Safety Manager
SACC	Southern Area Coordination Center
SAFECOM	Safety Communiqué
SAR	Search and Rescue
SCC	South Carolina Coordination Center
TBO	Time Between Overhaul
TFR	Temporary Flight Restriction
USDA	United States Department of Agriculture
VFR	Visual Flight Rules
WO	Washington Office

Appendix B

HELIBASE ACCESS DIAGRAM



Appendix C
FREQUENCY LIST

Francis Marion Channel Plan
For Official Use Only

CH	AGENCY	RECEIVE	RX TONE	TRANSMIT	TX TONE
1	FMS (TALK AROUND)	168.675	103.5	168.675	103.5
2	FMS REPEATER (HUGER)	168.675	136.5	164.125	136.5
3	R8 FIRELINE	169.900	103.5	169.900	103.5
4	FMS DISPATCH	170.525	103.5	170.525	103.5
5	SCFC (STATEWIDE TAC)	159.285	203.5	159.285	203.5
6	SCFC (COASTAL TAC1)	151.175	97.4	151.175	97.4
7	SCFC (COASTAL OPER)	159.405	97.4	159.405	97.4
8	SCFC (HUGER REPEATER)	159.375	192.8	151.265	192.8
9	NIFC TAC 2	168.200		168.200	
10	SCFC (AIR DETECT-COAST)	159.315	97.4		
11	BERKELEY CO EMERG	154.355	127.3	154.010	127.3
12	WEATHER	162.400			
13	WEATHER	162.550			
17	GOV USER TALK AROUND	163.100	103.5	163.100	103.5
18	FMS REPT (WHITMIRE-EN)	168.675	131.8	164.825	131.8
19	FMS REPTR (LONG CR-AP)	168.675	110.9	164.825	110.9
20	FMS REPTR (LIB HILL-LC)	168.675	123.0	164.825	123.0
21	FMS REPTR (P MTN-LC)	168.675	123.0	164.825	156.7
22	FMS REPTR (HUGER-FM)	168.675	136.5	164.125	136.5
23	FMS REPTR (COLA-SO)	168.675	146.2	164.825	146.2
98	AIR NET	168.650		168.650	
99	AIR GUARD	168.625		168.625	

All frequencies other than printed above must be coordinated with the telecommunications specialist.

Revised 8/2/00

Appendix C
Frequency List

S.O. Channel Plan
For Official Use Only

CH	AGENCY	RECEIVE	RX TONE	TRANSMIT	TX TONE
1	FMS (TALK AROUND)	168.675	103.5	168.675	103.5
2	FMS REPEATER (COLA)	168.675	146.2	164.825	146.2
3	R8 FIRELINE	169.900	103.5	169.900	103.5
4	FMS DISPATCH	170.525	103.5	170.525	103.5
5	SCFC (STATEWIDE TAC)	159.285	203.5	159.285	203.5
6	SCFC (PIED REG OP)	159.420	88.5	159.420	88.5
7	SCFC (PIED REG TAC)	151.400	88.5	151.400	88.5
8	SCFC (COASTAL OP)	159.405	97.4	159.405	97.4
9	NIFC TAC 2	168.200		168.200	
10	SCFC (AIR DETECT-PIED)	159.300	186.2		
13	WEATHER	162.400			
14	WEATHER	162.475			
15	WEATHER	162.550			
17	GOV USER TALK AROUND	163.100	103.5	163.100	103.5
18	FMS REPT (WHITMIRE-EN)	168.675	131.8	164.825	131.8
19	FMS REPT (LONG CR-AP)	168.675	110.9	164.825	110.9
20	FMS REPT (LIB HILL-LC)	168.675	123.0	164.825	123.0
21	FMS REPT (P MTN-LC)	168.675	123.0	164.825	156.7
22	FMS REPT (HUGER-FM)	168.675	136.5	164.125	136.5
23	FMS REPT (COLA-SO)	168.675	146.2	164.825	146.2
98	AIR NET	168.650		168.650	
99	AIR GUARD	168.625		168.625	

All frequencies other than printed above must be coordinated with the telecommunications specialist.

Revised 8/2/00

Appendix C
Frequency List

Andrew Pickens Channel Plan
For Official Use Only

CH	AGENCY	RECEIVE	RX TONE	TRANSMIT	TX TONE
1	FMS (TALK AROUND)	168.675	103.5	168.675	103.5
2	FMS REPEATER (LONG CR)	168.675	110.9	164.825	110.9
3	R8 FIRELINE	169.900	103.5	169.900	103.5
4	FMS DISPATCH	170.525	103.5	170.525	103.5
5	SCFC (STATEWIDE TAC)	159.285	203.5	159.285	203.5
6	SCFC (PIED REG OP)	159.420	88.5	159.420	88.5
7	SCFC (PIED REG TAC)	151.400	88.5	151.400	88.5
8	SCFC (LONG MT REPEATER)	159.225	110.9	151.100	110.9
9	NIFC TAC 2	168.200		168.200	
10	SCFC (AIR DETECT-PIED)	159.300	186.2		
11	CHATTAHOOCHEE NF	168.775		168.775	136.5
12	CHAT. (LONG CREEK RPTR)	168.775		168.175	127.3
13	NANTAHALA NF	171.475		171.475	103.5
14	NANTAH. (TOXAWAY RPTR)	171.475		168.125	146.2
15	CIVIL DEFENSE	155.220	192.8	155.220	192.8
16	OCONEE CO RURAL FIRE	154.130	103.5	154.130	103.5
17	GOV USER TALK AROUND	163.100	103.5	163.100	103.5
18	FMS REPT (WHITMIRE-EN)	168.675	131.8	164.825	131.8
19	FMS REPTR (LONG CR-AP)	168.675	110.9	164.825	110.9
20	FMS REPTR (LIB HILL-LC)	168.675	123.0	164.825	123.0
21	FMS REPTR (P MTN-LC)	168.675	123.0	164.825	156.7
22	FMS REPTR (HUGER-FM)	168.675	136.5	164.125	136.5
23	FMS REPTR (COLA-SO)	168.675	146.2	164.825	146.2
98	AIR NET	168.650		168.650	
99	AIR GUARD	168.625		168.625	

All frequencies other than printed above must be coordinated with the telecommunications specialist.

Revised 8/2/00

Appendix C
Frequency List

Enoree Channel Plan
For Official Use Only

CH	AGENCY	RECEIVE	RX TONE	TRANSMIT	TX TONE
1	FMS (TALK AROUND)	168.675	103.5	168.675	103.5
2	FMS REPTR (WHITMIRE)	168.675	131.8	164.825	131.8
3	R8 FIRELINE	169.900	103.5	169.900	103.5
4	FMS DISPATCH	170.525	103.5	170.525	103.5
5	SCFC (STATEWIDE TAC)	159.285	203.5	159.285	203.5
6	SCFC (PIED REG OP)	159.420	88.5	159.420	88.5
7	SCFC (PIED REG TAC)	151.400	88.5	151.400	88.5
8	SCFC (UNION REPEATER)	159.345	179.9	151.385	179.9
9	NIFC TAC 2	168.200		168.200	
10	SCFC (AIR DETECT-PIED)	159.300	186.2		
11	RURAL FIRE (NEWBERRY)	154.220		154.220	141.3
12	RURAL FIRE (UNION)	154.445		153.890	127.3
13	WEATHER	162.400			
14	WEATHER	162.475			
15	WEATHER	162.550			
17	GOV USER TALK AROUND	163.100	103.5	163.100	103.5
18	FMS REPT (WHITMIRE-EN)	168.675	131.8	164.825	131.8
19	FMS REPTR (LONG CR-AP)	168.675	110.9	164.825	110.9
20	FMS REPTR (LIB HILL-LC)	168.675	123.0	164.825	123.0
21	FMS REPTR (P MTN-LC)	168.675	123.0	164.825	156.7
22	FMS REPTR (HUGER-FM)	168.675	136.5	164.125	136.5
23	FMS REPTR (COLA-SO)	168.675	146.2	164.825	146.2
98	AIR NET	168.650		168.650	
99	AIR GUARD	168.625		168.625	

All frequencies other than printed above must be coordinated with the telecommunications specialist.

Revised 8/2/00

Appendix C**Frequency List****Long Cane Channel Plan**
For Official Use Only

CH	AGENCY	RECEIVE	RX TONE	TRANSMIT	TX TONE
	FMS (TALK AROUND)	168.675	103.5	168.675	103.5
2	FMS REPEATER (LIB HILL)	168.675	123.0	164.825	123.0
3	R8 FIRELINE	169.900	103.5	169.900	103.5
4	FMS DISPATCH	170.525	103.5	170.525	103.5
5	SCFC (STATEWIDE TAC)	159.285	203.5	159.285	203.5
6	SCFC (PIED REG OP)	159.420	88.5	159.420	88.5
7	SCFC (PIED REG TAC)	151.400	88.5	151.400	88.5
8	SCFC (JOHNSTON REPTR)	159.405	151.4	151.235	151.4
9	NIFC TAC 2	168.200		168.200	
10	SCFC (AIR DETECT-PIED)	159.300	186.2		
11	ABBEVILLE COUNTY FIRE	154.010		154.010	179.9
12	GREENWOOD COUNTY FIRE	151.040		151.040	156.7
13	CIVIL DEFENSE	154.220		154.220	
14	WEATHER	162.475			
15	WEATHER	162.550			
16	FMS REPEATER (PARSON'S MOUNTAIN)	168.675	123.0	164.825	156.7
17	GOV USER TALK AROUND	163.100	103.5	163.100	103.5
18	FMS REPT (WHITMIRE-EN)	168.675	131.8	164.825	131.8
19	FMS REPTR (LONG CR-AP)	168.675	110.9	164.825	110.9
20	FMS REPTR (LIB HILL-LC)	168.675	123.0	164.825	123.0
21	FMS REPTR (P MTN-LC)	168.675	123.0	164.825	156.7
22	FMS REPTR (HUGER-FM)	168.675	136.5	164.125	136.5
23	FMS REPTR (COLA-SO)	168.675	146.2	164.825	146.2
98	AIR NET	168.650		168.650	
99	AIR GUARD	168.625		168.625	

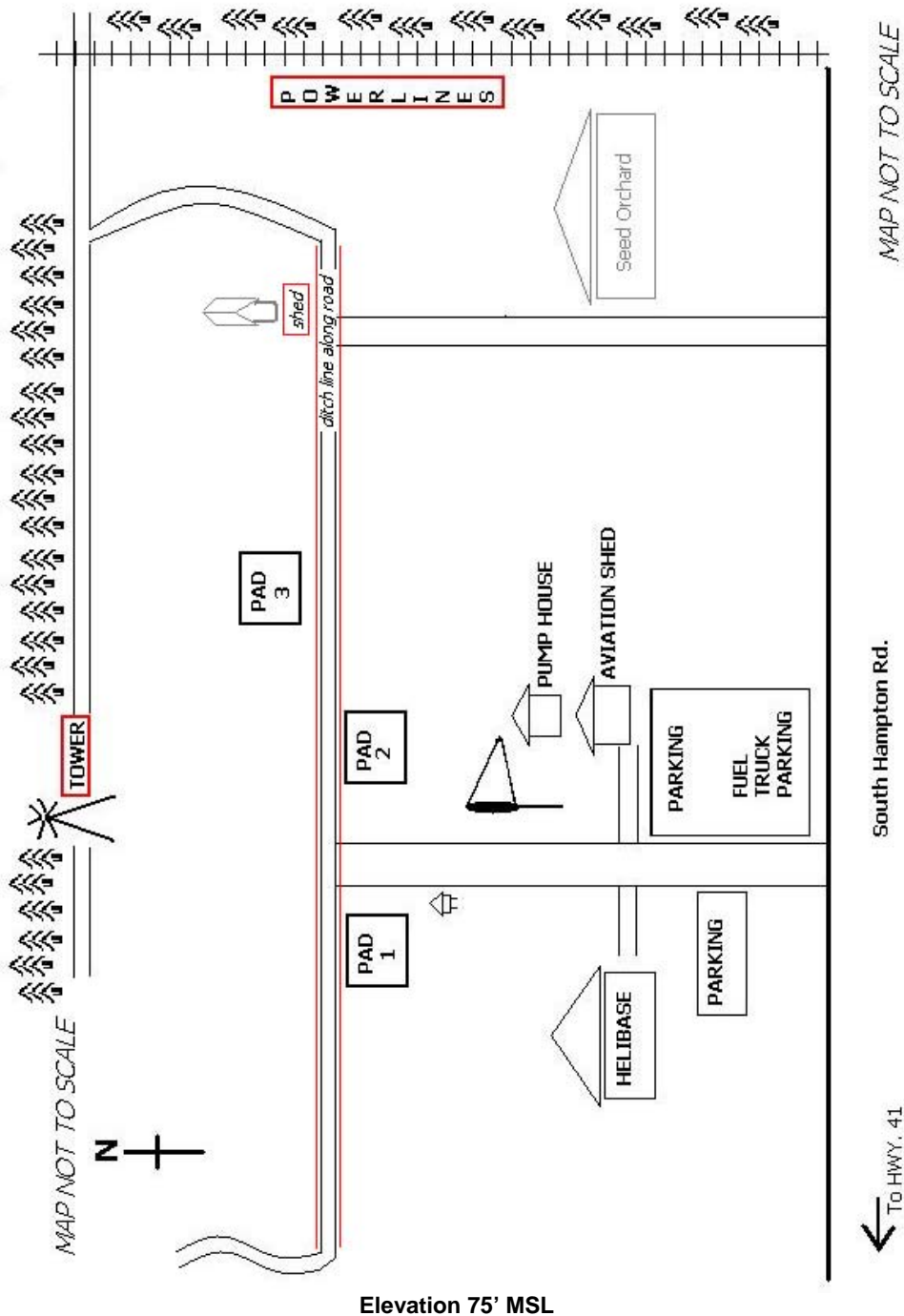
All frequencies other than printed above must be coordinated with the telecommunications specialist.

Revised 8/2/00

Appendix D
FLIGHT HAZARD MAP

Map Posted at Helibase.

Appendix E HELIBASE DIAGRAM



Elevation 75' MSL

Latitude N 33° 06.48 / Longitude W 79° 46.48

Appendix F

COMMONLY USED LAT/LONG LOCATIONS

Description	Owner	Hazards	Latitude	Longitude
HD-2	FS		N 33°18.657	W 79°53.711
H-4	PVT	Fences and livestock	N 33°13.739	W 79°53.967
D-8	FS	Debris in water	N 33°14.480	W 79°43.376
HD-9	FS	Dead limbs	N 33°10.668	W 79°46.134
HD-10	FS	Debris in water	N 33°07.486	W 79°42.473
H-11	PVT		N 33°07.354	W 79°40.102
HD-12	FS	Some trees	N 33°12.075	W 79°38.502
HD-18	PVT		N 33°07.218	W 79°26.449
D-21	FS	Stump in middle	N 33°06.048	W 79°31.013
HD-22	PVT	PWR lines in field	N 33°02.390	W 79°35.801
D-23	FS		N 33°03.394	W 79°37.813
D-24	PVT		N 33°59.065	W 79°46.454
HD-25	FS		N 33°58.500	W 79°46.377
D-27	FS	Lots of trees around	N 33°00.735	W 79°42.373
D-28	PVT		N 33°00.134	W 79°39.722
HD-30	FS	Trees / light poles	N 33°58.087	W 79°40.115
HD-31	FS	W-end shallow	N 33°08.520	W 79°37.860
HD-32	PVT		N 33°01.58	W 79°45.71
H-33	PVT		N 33°16.7	W 79°39.3

H = Helispot, HD = Helispot and Dipsite

NAME	Location	Latitude	Longitude	Jet A	Commo	Phone #
East Cooper (8S5)	Wambaw Workcenter Charleston Co	N 33°53.87	W 79°46.97	Y	122.7 ctaf/unicom	(843) 884-8837 Aero-East
Moncks Corner (50J)	Witherbee RD Berkley Co	N 33°11.16	W 80°02.14	Y	123.05 ctaf/unicom	(843) 899-7711 Berkley Co AP
Clemson (CEU)	Andrew Pickens RD Oconee Co	N 34°40.32	W 82°53.19	Y	122.7 ctaf/unicom	(864) 682-2959 Oconee Co AP
Columbia Metro (CAE)	SO Lexington Co	N 33°56.33	W 81°07.17	Y	122.95 unicom	(888) 425-7466 Eagle Aviation
Greenwood (GRD)	Andrew Pickens RD Greenwood Co	N 34°14.92	W 82°09.55	Y	122.8 ctaf/unicom	(864) 942-9634 Buzz Aviation
McCormick Co (S19)	Longcane RD McCormick Co	N 33°54.49	W 82°18.02	N	122.9 ctaf	(803) 465-2231 Douglas Burns Mgr
Owens (CUB)	SO Lexington Co	N 33°58.23	W 80°59.72	Y	122.8 ctaf/unicom	(888) 425-7466 Midlands Aviation
Newberry Muni (27j)	Enoree RD Anderson Co	N 34°18.56	W 81°08.38	N	133.4 ctaf/unicom	(803) 276-6247
Union Co, Troy Shelton Fld (35A)	Enoree RD Union Co	N 34°41.19	W 81°38.51	N	122.7 ctaf/unicom	(864) 429-1680

Appendix G

**LANDOWNER REQUEST LETTER
(Dip Site)**

LAND USE AGREEMENT FOR HELICOPTER OPERATIONS

The _____ Ranger District of the Francis Marion and Sumter National Forests and the owner, or the duly appointed representative of the owner, of the property described below, agree to the governments use of the owner’s property as a water source and/or helicopter landing area during wildland fire operations. The site(s) identification coordinates: _____ Helicopter Landing Area, and/or _____ Water Source.

The site(s) is/are the property of _____ and generally described as: _____.

Forest Service Conditions

Should landowner change conditions of site, e.g. add powerlines, plantings, structures, etc., landowner will notify Forest Service within 48 hours.

By signing this agreement landowner is giving Forest Service prior permission for use from date of signature until termination. Forest Service will notify the landowner (within 48 hours) after each period and type of use.

A documented pre-use inspection will be agreed on (signed and dated) by both parties at the signing of this agreement, and repeated annually until termination of this agreement.

Forest Service will only be responsible for effects caused from the agencies actual use of the site.

Landowner Conditions

This agreement will terminate three years from the last signature below. Should either party wish to terminate the agreement prior to that date, it must be done in writing.

Owner (or Owner’s Agent)

USDA Forest Service Representative

By:
Title:
Date:
Name:
Street:
Address:
Telephone – Day:
Evening:

By:
Title:
Date:
Name:
Street:
Address:
Telephone – Day:
Evening:

Appendix H

AGREEMENT FOR USE

LAND USE AGREEMENT FOR HELICOPTER OPERATIONS

The _____ Ranger District of the Francis Marion and Sumter National Forests and the owner, or the duly appointed representative of the owner, of the property described below, agree to the governments use of the owner’s property as a water source and/or helicopter landing area during wildland fire operations. The site(s) identification coordinates: _____ Helicopter Landing Area, and/or _____ Water Source.

The site(s) is/are the property of _____ and generally described as: _____.

Forest Service Conditions

Should landowner change conditions of site, e.g. add powerlines, plantings, structures, etc., landowner will notify Forest Service within 48 hours.

By signing this agreement landowner is giving Forest Service prior permission for use from date of signature until termination. Forest Service will notify the landowner (within 48 hours) after each period and type of use.

A documented pre-use inspection will be agreed on (signed and dated) by both parties at the signing of this agreement, and repeated annually until termination of this agreement.

Forest Service will only be responsible for effects caused from the agencies actual use of the site.

Landowner Conditions

This agreement will terminate three years from the last signature below. Should either party wish to terminate the agreement prior to that date, it must be done in writing.

Owner (or Owner’s Agent)

USDA Forest Service Representative

By:
Title:
Date:
Name:
Street:
Address:
Telephone – Day:
Evening:

By:
Title:
Date:
Name:
Street:
Address:
Telephone – Day:
Evening:

Appendix I

FREQUENTLY ASKED QUESTIONS (Dip Site)

What does the Forest Service look for when choosing a water source for a helicopter dip site?

There are several criteria the Forest Service must use when choosing locations for helicopter dip sites. First, the water source must be in fairly close proximity to the fire. For this reason, we try to identify water sources scattered throughout the county spaced about ½ mile apart. This gives us an efficient and cost-effective use of the helicopter. Second, the water source must be safe for the helicopter to approach and depart. It should be clear of overhead power lines, close-growing tall trees, etc. Third, it should have a sufficient amount of water present in order to supply firefighting needs without damaging the aquatic life. And fourth, there should be open areas near the water source for the helicopter to land and allow the firefighting crews to rig the bucket for dipping water.

Why can't the Forest Service pick up water from a source on National Forest?

The Forest Service always chooses helicopter dip sites on National Forest lands first before looking for sites on private lands. For example, we frequently use dip sites on the Wandoo River and Intercoastal Waterway for fire fighting in the southern portion for the forest. However there very few water sources on National Forest system lands in the other areas of Charleston or Berkeley County that meet the criteria listed above.

Will the helicopter pick up any fish out of my pond?

This has been a concern for many years, both for the public and for the Forest Service. The Forest Service has done extensive studies on this question and has found that there have been extremely few instances where fish have been picked up by helicopter dipping operations. The bucket only sinks a few feet underwater and the wind generated by the helicopter rotors scare away and prevent fish from being picked up by the bucket. In the many years we have been using helicopters for water drops in Charleston and Berkeley County, there has never been an instance where fish were picked up and dropped onto a fire!

Will I be held liable if there are any accidents while the helicopter is using my pond as a dip site?

No. The Forest Service assumes liability during the helicopter dipping operations. Our safety record in Charleston or Berkeley County is exemplary for this type of operation and our fire fighting personnel take every effort to make fire fighting safe, both to the Forest Service personnel and to the public. By returning the enclosed Agreement for Use, you further protect yourselves from any potential liability.

You've used my pond in the past for a water source. Why am I getting a letter now asking for an Agreement for Use?

Nothing has changed from our past operations, it is just that we are trying to better formalize our relationships with our many cooperators. This benefits both the Forest Service and the cooperator by clarifying the terms of agreement. We value the goodwill generated by the public for allowing the Forest Service to use private water sources as dip sites, and we are striving to protect and enhance that relationship.

If I agree to this, what are the benefits for me?

You are helping to provide fire protection not only for your own property, but for your neighbor's also. A water source on your property will allow a quick response to fires, allowing us to keep them both small and less damaging. You are welcome to view the helicopter operations (from a safe distance, of course!) and can take some great pictures to share with your family and friends. Most of all, you can take pride in the fact that you are helping to protect our forest resources in Charleston or Berkeley County!

Appendix J

EMERGENCY CONTACT LIST

FAA Flight Service Station **800-992-7433**
FAA Air Route Traffic Control Centers:
Jacksonville ARTC **904-549-1537**
Atlanta ARTC **770-210-7622**
NTSB Communication Center **202-314-6290**

Primary Response (Emergency Responders)	
Berkeley Power	888-253-4232
Fire Department	911
Police	911
Ambulance	911
Air Ambulance	
Poison Control	1-800-922-1117
Secondary Response (Support Personnel)	
Trident Medical Center (Moncks Corner Medical Center)	(843) 761-8721
Berkeley Roper Hospital	(843) 899-7700
Charleston Memorial Hospital	(843) 577-0600
Georgetown	(843) 527-7000/7477
MUSC - Medical University of South Carolina	(843) 792-2300
South Carolina Interagency Coordination Center SCC	(803) 561-4086
Southern Area Coordination Center SACC	(770) 458-2464
FAA Flight Service Station	(864) 224-8151
Agency Management and Other Agencies (As Required)	
Forest Fire Management Officer/FAO, Charlie Kerr	(803) 561-4054 wk (803) 960-2921 cell
COR, Dave Kuhn	(803) 561-4057 wk (803) 960-2943 cell
Forest Haz-mat Coordinator & Safety Officer, Charles Reese	(803) 561-4042
Forest LEO, Mark Heitzman (Francis Marion)	(800) 302-0216 pgr (843) 412-3599 cell
Regional Aviation Safety Manager	404-347-1623
Regional Aviation Officer	404-347-3735
Regional Public Affairs Officer	404-347-7226
Regional Aircraft Maintenance Inspector	404-386-4849
Regional Helicopter Operation Specialist	404-909-0248
Regional Helicopter Pilot Inspector	404-909-0245
Contracting Officer	404-347-1635

Appendix K

DRAFT Limited versus Standard Use Helicopter Designation Form (R8)**Francis Marion & Sumter Supervisors****Office**

USDA Forest Service
4931 Broad River Road
Columbia, SC 29212-3530

Alexander, Donna	4044
Alexander, Jackie	4014
Bell, Dorothy	4000
Bergeron, Ray	4040
Bishop, Kevin	4013
Branch, Fristella	4000
Brewster, Wanda	4009
Bryant, Claudette	4012
Bryant, Larue	4046
Cleeves, John	4058
Cooper, Robbin	4077
Corbitt, Jeri	4035
Davis, Beth	4036
Deene, Pat	4010
Dent, John	4073
Fidler, Fred	4051
Forney, Caroline	4002
Furch, Roz	4065
Garner, Mark	4063
Gough, John	4056
Hansen, Bill	4059
Hansen, Lynda	4015
Hedgecock, Ed	4039
Hines, Barbara (SSS)	4055
Jackson, Kattie	4093
Johnson, Stephanie	4091
Jones, Gina	4024
Kerr, Charlie (FFMO / FAO)	4054
Knibbs, James	4078
Kuhn, Dave (COR)	4057
Law, Dennis	4060
LeBoeuf, Jeanne	4081
Liles, Bruce	4043
Little, Ruby	4017

Marshall, James	4008
Moore, Stanley	4034
Morris, JaSal	4066
Mundo, Luis	4045
Nadler, Peggy	4053
Ott, Terri	4069
Peters, Gary	4068
Purnell, Jay	4062
Pye, Willa	4005
Reese, Charles	4042
Riley, Jeanne	4076
Robles, Joseph	4067
Roecker, Robin	4071
Sadler, Andy	4090
Schmeckpeper, Eric	4031
Sharpe, Ronny	4032
Stewart, Oscar	4083
Thomas, Ginger	4038
Thomas, Jerome	4081
Truss, Darrius	4064
Wells, Stephen	4061
White, Gail	4075
White, Tony	4072
Zissette, Christina	4011
Walnut Conf Room	4079
Large Conf Room	4037
PAO Conf Room	4003
Lobby	4001
Dispatch	4086
Dispatch FAX	4085
Mailroom FAX	4004
Personnel TDD	4023
Fire Beeper: 1-800-614-5613	

Appendix J**EMERGENCY CONTACT LIST****Sumter National Forest**Andrew Pickens Ranger District

112 Andrew Pickens Circle
Mountain Rest, SC 29664
Tel. (864) 638-9568
FAX (864) 638-2659

Enoree Ranger District (Enoree Office)

20 Work Center Road
Whitmire, SC 29178
Tel. (803) 476-4810
FAX (803) 276-9303

Indian Creek Work Center

76 Work Center Road
Whitmire, SC 29178
Tel. (803) 476-4810

Enoree Ranger District (Tyger Office)

3557 Whitmire Highway
Union, SC 29379
Tel. (803) 427-9858
FAX (803) 427-3529

Union Work Center

Tel. (864) 427-7100

Long Cane Ranger District

810 Buncombe Street
Edgefield, SC
Tel. (803) 637-5396
FAX (803) 637-5247

Bradley Work Center

Tel. (803) 746-6120

Edgefield Work Center

Tel. (803) 637-6724

Francis Marion National ForestWitherbee Office

2421 Witherbee Road
Cordesville, SC 29434
Tel. (843) 336-3248
FAX (843) 336-4789

Wambaww Office

PO Box 888
McClellanville, SC 29458
Tel. (843) 887-3257
FAX: (843)997-3848

Francis Marion Seed Orchard

PO Box 757
Moncks Corner, SC 29461
Tel. (843) 336-3246

Appendix K

DRAFT Limited versus Standard Use Helicopter Designation Form (R8)