

Marion Helibase
Operations Plan
Shawnee National Forest
2011-2012

Information presented in this document is a critical component of the Shawnee National Forest Aviation Program. Questions regarding this plan should be directed to the Shawnee National Forest Aviation Officer. This plan shall be reviewed and updated annually.

Shawnee National Forest

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Chapter 1

ORGANIZATION

Introduction

The Shawnee National Forest (SHF) is located in the rolling hills of Southern Illinois. The forest is comprised of approximately 285,000 acres and is divided into two Districts. National Forest System land ownership is discontinuous and intermixed with state, private, and other federal lands. Fire suppression is of the utmost importance due to the varieties of ownership and management direction.

Rotor wing aircraft may be used for fire suppression, aerial ignition, reconnaissance, personnel and cargo transport, law enforcement, and other uses. One helibase, the Shawnee Helibase, is maintained within the Forest protection boundary. The Shawnee Helibase is located at the Williamson County Regional Airport, 2 miles west of Marion, Illinois. The coordinates for the Helibase are: 37.7531° N - 89.0115° W (37° 45.19' N – 89° 0.69' W).

Purpose

The purpose of this plan is to establish helibase policy for the safe operational use of helicopters on the Shawnee National Forest. This plan is supplemental to the Shawnee National Forest 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 and Helicopter Support Personnel

At this time the Forest does not support an exclusive use helicopter or supporting helitack module. However, such helicopters may be used temporarily from other parts of the region. In these cases, the Contracting Officer's Representative (COR) and Project Inspectors will be those that are normally assigned to the R9 Exclusive Use aircraft in use. In addition, Call-When-Needed (CWN) may also be used. The contracting personnel used for CWN helicopters are listed in the table below. When either type of aircraft is used on the Forest, all support personnel must meet or exceed air operations qualifications as described in Forest Service Handbook 5109.17. Crewmembers must meet or exceed the physical qualifications set forth in the physical standards for incident qualifications at the level appropriate to the assignment. Refer to Wildland and Prescribed Fire Qualifications Guide (PMS 310-1) 5109.17 and FSM 5108 for additional details.

Contracting

Personnel:

Position	Name	Telephone Numbers
Contracting Officer (CO):	Richard Saltzman	W: 414-297-3625
Contracting Officer Representative (COR):	Scott Hocking	W: 612-713-7301 C: 414-339-8486 Fax: 612-713-7317 Email: shocking@fs.fed.us
Primary Project Inspectors (PI):	Duties completed by Helicopter Manager (HCWN)	

Note: During helicopter operations appropriate CO, COR and PI will be used.

Duties:

Contracting Officer

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

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.

Project 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). Completing flight invoices in the Aviation Business System database (ABS).
- 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
Shawnee Dispatch:	866-684-2051
Eastern Area Coordination Center:	612-713-7300

Flight Following

R9 Contract Helicopters are equipped with Automated Flight Following (AFF). However, in the event aircraft are utilized without this capability, the helicopter manager or designated helicopter crewmember shall report all takeoffs/landings and maintain a 15-minute check-in with Shawnee Dispatch. Flight following shall be accomplished according to the local, geographic and national guidelines. Shawnee Dispatch or appropriate radio contact shall be made aware of all scheduled and un-scheduled flights to facilitate flight following.

Telephone

At this time the Shawnee has not formalized the lease or rental agreement for office space for the Helibase, though several options are available. Three phone lines will be activated in the helibase office, with one being reserved for facsimile. These numbers will be added to this plan as they are acquired. Below is a list of telephone numbers:

Line	Telephone Number
Line 1 (Main)	TBD
Line 2 (Secondary)	TBD
Line 3 (Fax)	TBD

**Note: Phone Numbers will be active during Spring Fire Season or as needed throughout the year.

Radio

There is a base radio located in the helibase office. Helicopter manager and helicopter crewmembers can use handheld radios while communicating with helicopters, if necessary. When helibase is activated with multiple helicopter operations going on, a radio operator shall be ordered. Radio frequencies can also be found in the Shawnee Dispatch Office, and the Wildland Firefighter Frequency Guide. (Refer to Appendix B, Frequency List)

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.

Maps

General Forest, Fire Preparedness, and Project Maps

The Shawnee National Forest maps show land ownership, other political boundaries, prominent landmarks, roads, trails, and water ways. USGS 15 Minute (Quad) maps show topographic lines and physiographic features in addition to the above features. Both types of maps are available at Shawnee Dispatch, District offices, work centers, and the Helibase. Fire Management Zone (FMZ), Mutual Aid response zones, and other fire suppression-related maps are available at Shawnee Dispatch and/or the Murphysboro Work Center. Project maps are included in Project Aviation Plans delivered to the Helibase, or are available at the District in which the project takes place.

Flight Hazards

The aviation flight hazard map shall be updated annually and dated. The flight hazard map shows known hazards, i.e. potential aerial obstructions and Military Training Routes (MTRs). The flight hazard map may also show

hospitals, schools, helispots, dip sites, and other prominent features. The flight hazard map is located on the bulletin board in the Shawnee Helibase.

Shawnee Dispatch will contact the route scheduler for deconfliction of airspace. At that time, Shawnee Dispatch will notify the helicopter manager of notification.

Airfields

There are several private and municipal airstrips located around the Shawnee National Forest. Known airstrips airstrips will be located on the Flight Hazard Map.

Services

Fuel

Contractors will perform fueling operations using their fuel trucks/trailers in accordance with the procurement document, IHOG Chapter 13 fueling requirements and other applicable guidelines. Consult with the Regional Aviation Officer (RAO) prior to any fueling with the engine(s) running. Aircraft with single point fueling can be fueled on the grass. All others must be fueled on assigned pads. Helicopters are normally fueled by vendor's fuel trucks/trailers at project sites, but Aeroflite Sales and Service, the Williamson County FBO, has exclusive rights to fueling vehicles at the airport.

Additional fuel can be purchased through the Williamson County Airport. AvGas and Jet A are available from the FBO, Aeroflite.

Lodging and Restaurants

Lodging and restaurants in the local area include:

Lodging	Address	City	Telephone Number	Comments
Drury Inn	2706 W. DeYoung St.	Marion	618-997-9600	IP, OP, Exer, HSInt
Hampton Inn	2710 W. DeYoung St.	Marion	618-998-9900	OP
Best Inns	2700 W. DeYoung St.	Marion	618-997-9421	OP
Holiday Inn Express	400 Comfort Dr.	Marion	618-998-1220	Rest, Exer, IP, OP

IP = Indoor Pool

OP = Outdoor Pool

Exer = Exercise Room

Rest = Restaurant in Hotel

CB = Continental Breakfast

Frig = Refrigerator in room

HSInt = High Speed Internet

Restaurants	Location	Telephone Numbers
Applebees Restaurant	2712 W. Deyoung St Marion	618-997-9436
Bob Evans Restaurant	2708 W Deyoung St Marion	618-993-1487
Burger King	1100 Halfway Rd Marion	618-997-6571
China Wok	709 W Main St. Marion	618-997-3325
Connie's Café	213 S. Broadway Goreville	618-995-2602
Country Cupboard Restaurant	1323 S. Division St Carterville	618-985-4470
Cracker Barrel Old Country Store	2602 W. Main St. Marion	618-993-6306
Dad's Pizza	213 N. Broadway Goreville	618-995-2200
Dairy Queen Brazier	201 E. Deyoung	618-998-0262
Fazoli's Restaurant	1135 N. Carbon St. Marion	618-993-9081
The Feed Store Restaurant	118 E. Walnut St Herrin	618-988-1904
Gibby's Lounge and Grill	Rt 37 Johnston City	618-983-4244
Girolama Pizzeria	210 N Park Ave Herrin	618-942-4207
Happy Garden	4 Park Plaza Herrin	618-988-8553
Hardee's	1308 S. Division St Carterville	618-985-2883
Henricci's Pizza and More	108 N. 14 th St Herrin	618-988-1550

Honeybaker's Restaurant & Catering	Town & Country Shopping Center Marion	618-997-0992
House of Seasons	741 S. Division St Carterville	618-985-9090
Just One More	1303 Enterprise Way Marion	618-993-9687
Kay's Sugar Creek Café	105 W. Blue Ave Creal Springs	618-996-8289
Kentucky Fried Chicken	1404 W. Deyoung St Marion	618-997-3121
Kew Gardens	1520 S. Park Avenue Herrin	618-988-1718
Kokopelli Golf Club Restaurant	1401 Champions Drive Marion	618-997-5656
La Fiesta Mexican Restaurant	1000 N Carbon St. Marion	618-993-0028
Latta Java	1112 N Johnson St. Marion	618-997-9900
Lola's Uptown Restaurant	120 E. Main St West Frankfort	618-932-2541
Lombard Café	112 N. 14 th St. Herrin	618-942-5446
Long John Silvers	1118 N. Carbon St. Marion	618-997-2261
Longhorn Restaurant	448 Rte 37 Goreville	618-995-9575
Lucky's Express Café	3000 W. Deyoung St. Marion	618-997-7771
Mary's Restaurant	509 S. Park Ave Herrin	618-942-2742
McDonald's (multiple locations)	2603 W Deyoung Marion	618-993-8889
Mimmo's Family Restaurant	313 E Broadwy Blvd Johnston City	618-983-5445
Mollie's Bar and Grill	107 E. Union St Marion	618-997-3424
Monarch Restaurant	517 E. Monroe Herrin	618-988-8818
Nong Chen Buffet	1108 N. Carbon St. Marion	618-997-7788
O'Charley's	2808 W. Deyoung Marion	618-993-1555
Pali Kai Chinese Restaurant	108 ½ S Madison Marion	618-993-8480
Papa John's Pizza	1120 N Carbon St. Marion	618-993-1133
The Pioneer's Cabin	1000 Pioneer Cabin Dr Carterville	618-985-8290
Pizza Hut	1600 Kimmel Rd Marion	618-997-2424
The Pizza and Pasta Express	104 N. Division Carterville	618-985-6262
Rebecca's BBQ and Ice Cream	200 W. Blue Ave. Creal Springs	618-996-8251
Red Lobster	2900 W. Deyoung Marion	618-993-6996
Ruby Tuesday	Illinois Center Mall Marion	618-997-1924
Ryan's Family Steak House	2706 Walton Way Marion	618-993-8869
Sans Chinese Restaurant	706 E Plaza Dr Carterville	618-985-2813
Sbarro Pizza	3000 W Deyoung Marion	618-993-9098
17 th St Bar and Grill	2700 Seventeenth St Marion	618-998-1114
Smokin' Joe's BBQ	601 W. Herrin St Herrin	618-942-3144
Sonic Drive In	2710 Walton Way Marion	618-997-5005
Southern Grill	2805 E Outer Dr Marion	618-998-1888
Steak N' Shake	2724 W. Deyoung St Marion	618-993-3939
Sub Shack	304 W. Collins St Goreville	618-995-1457
Subway (multiple) locations	1121 S. Park Ave Herrin	618-942-6328
Taco Bell	2712 Walton Way Marion	618-997-7777
Taco John's	901 N Court St Marion	618-993-8901
Tequila's Mexican Restaurant	1906 W Coolidge Marion	618-997-0162
Tony's Steak House	105 S. Market St. Marion	618-993-2220
Triple E BBQ	906 E. Deyoung Marion	618-997-1369
20's Hideout Steakhouse	2606 W Main St Marion	618-997-8325
Walt's Restaurant	213 S Court on Hwy 37 S Marion	618-993-8668
Western Sizzlin Steakhouse	1808 Bittle Place Marion	618-993-2426
Zeigler Café	11 Circle St. Zeigler	618-596-6300

Consult the local yellow pages for other facilities.

Chapter 3

EQUIPMENT AND SUPPLIES

Personal Protective Equipment

General

The intent of this requirement is to equip individuals with the best PPE to the extent possible for all helicopter flights. Personal protective equipment (PPE) includes an approved flight helmet, fire resistant flight suit, 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. Personal protective equipment shall be operable and maintained in serviceable condition as per appropriate manufacturer's specifications.

Individuals aboard helicopters shall wear as a minimum PPE required for a firefighter as specified in the IHOG. Any deviation from this requirement shall be specified in the Project Aviation Safety Plan.

Helmets

Personnel flying aboard helicopter shall wear a protective flight helmet with chinstrap fastened.

A hardhat may be substituted for a flight helmet for wildland firefighters being transported during wildland fire operations between an established and managed helispot/helibase, and an established and managed helispot/helibase. A helibase/helispot is considered to be managed when there is a helicopter crewmember or helispot manager in place on the ground before the passengers are delivered to the helibase/helispot.

An aviator's flight helmet, consisting of a one-piece hard shell made of polycarbonate, Kevlar, carbon fiber, or fiberglass, shall cover the top, sides (including the temple area and to below the ears), and the rear of the head. The helmet shall be equipped with a chinstrap and shall be appropriately adjusted for proper fit. The helmet shall be worn with the chinstrap fastened.

Flight helmets currently meeting this requirement are known to include:

- SPH-4B, 5
- HGU-56P, 84P
- ALPHA- 200, 400, E900
- GALLET- LH050, LH150, LH 250

Helmets designed for use in fixed wing aircraft do not provide adequate protection for helicopter occupants and are not approved for helicopter use.

Clothing

In lieu of flight suit, 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.

Personnel shall wear long-sleeved shirt and trousers (or long-sleeved flight suit) made of fire-resistant polyamide or aramid material, leather boots and leather, polyamide, or aramid gloves. A shirt with long-sleeves overlapping gloves, and long-pants overlapping boots by at least 2-inches shall be worn by the pilot(s). Personnel shall not wear clothing made of non fire-resistant synthetic material under the fire-resistant clothing described herein.

Nomex® or other material proven to meet or exceed specifications contained in MIL-C-83429A may be worn. Currently, the following "other" materials meet this specification:

- FRT Cotton Denim Cloth, MIL-C-24915
- FRT Cotton Chambray Cloth, MIL-C-24916

Clothing not containing labels identifying the material either by Brand Name or MIL-Spec will not be acceptable.

Ground Personnel

While within the safety circle of a helicopter with engine(s) running and/or rotor(s) turning, all Contractor personnel shall wear the following personal protective equipment (PPE):

- Shirt with long-sleeves overlapping gloves, long-pants, hardhat/flight helmet with chinstrap, appropriate footwear, hearing and eye protection.
- Maintenance personnel working on running aircraft are exempt from gloves, eye protection (eye protection may be worn at the option of maintenance personnel or company policy), long sleeves, and hardhat requirements.

During all fueling operations, fuel servicing personnel shall wear a long-sleeved shirt, long trousers, boots, and gloves. The shirt and pants must be made of 100% cotton or other natural fiber, or be labeled as non-static.

Personal Flotation Devices

An inflatable personal flotation device (PFD) that meets requirements of 14 CFR 91 or inflatable life preserver required by 14 CFR 135 shall be worn by each individual on board the helicopter when conducting operations beyond gliding distance to shore, and during all hovering flights over water sources such as ponds, streams, lakes, and coastal waters. Automatic inflation (water activated) personal flotation devices are prohibited. (See IHOG chapter 9 and glossary for additional information).

Helicopter

The helicopter manager shall ensure that the helicopter and pilot are available for immediate dispatch as required in the specifications of the contract. The helicopter manager will inform the FAO or dispatch whenever the aircraft and/or crew are unavailable to perform.

Packs

Helitack crewmembers shall be issued by the home unit a personal gear pack (45 pounds maximum gear weight) and an initial attack line gear pack (20 pounds maximum gear weight). Initial attack packs and equipment shall be refurbished immediately after returning from an incident and weight tagged.

Hand tools

All fire hand tools 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

If an exclusive use helicopter is positioned at the Shawnee Helibase, the helitack crew will have with it a support trailer or helitack vehicle containing necessary equipment to support helicopter operations. An inventory list is located in the trailer and on the bulletin board in the Helibase. A helicopter or helibase support kit will be provided by the SHF to support helicopter operations if a CWN aircraft is used.

Helicopter Support Kit (NFES 0520)

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 the kit components will be kept with the kit and a back up copy being kept at the district office in aviation files. Support kits are located in the garage at the Helibase.

Evacuation Litter Basket Kit (NFES 0630)

The Evacuation Kit shall be stored in the office at the Helibase whenever the base is active. Employees shall be trained in the proper use of the kit. An inventory list of components shall be located inside the kit.

Crash Rescue Kit (NFES 1040)

There is one crash rescue kit located in the office at the Helibase during periods of use. Employees shall be trained in the proper use of the kit. (Refer to IHOG for the number of kits required.)

Premo Mark III Aerial Ignition Device

This is the only plastic sphere dispenser that is authorized for use (Interagency Aerial Ignition Guide [NFES 1080]). One Premo Mark III will be carried in the trailer, along with plastic spheres (a.k.a. Ping-Pong balls), bags, etc. The glycol-based antifreeze needed to activate the spheres will not be carried inside the trailer with the spheres. Instead, it will be carried separately, such as in a locked box mounted on the tongue of the trailer or in a locked box secured in the bed of the chase truck.

Helibase Stock

Equipment and supplies necessary for helitack use shall be maintained and kept in the garage at the Helibase. The helibase manager is responsible for maintaining stocks. The helibase manager shall coordinate with Fire Management Officer (FMO) on ordering stocks.

Equipment shall be inspected by crewmembers 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

FUELS AND FIRE BEHAVIOR

General

Forests and other wildlands contain widely different combinations of vegetation, soils, fauna, climate, and ecological interactions. Values-at-risk indicate any or all of the useful resources jeopardized when a fire occurs. Forest and other wildlands are valuable because they serve human needs. Value is thus a cultural characteristic of wildland resources rather than an intrinsic property. The Shawnee NF is committed to providing progressive and professional direction in the management of wildland fires. The Forest averages approximately 30 wildfires annually. The SHF objectives for fire suppression are stated in Fire Management Plan and are derived from the Shawnee National Forest Land and Resource Management Plan. In daily operations, fire management staff considers public and firefighter safety, the resource values at risk, and current conditions of fuel, weather and topography in making fire management decisions.

For this document only a general statement on fuels and fire behavior follows. 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 SHF.

Fire Management Situation

Shawnee National Forest lands are much intermingled with other ownerships that often have different objectives and directives for managing fire. This greatly increases the need for effective interagency cooperation, which has not historically been in place. The State of Illinois joining the National Wildfire Coordinating Group, combined training, active discussions, and collaborative planning have all contributed to increased interagency cooperation in recent years. Ignitions are overwhelmingly human-caused, with lightning accounting for less than 1% of fire starts in the past 10 years.

The Shawnee NF is divided into 2 districts for administrative purposes. Each district has a Fire Management Officer and a variety of suppression resources, such as Type 6 and 7 engines, a dozer or tractor-plov, and militia firefighters with varying availability. Currently the Illinois Coordination Center and Forest Fire Cache are hosted at the Murphysboro Work Center on the Mississippi Bluffs Ranger District. The Golconda Job Corps also houses students who may be used as firefighters with appropriate training and equipment. The SHF also has several agreements in place with other agencies for cooperative prevention, suppression, training, and the like.

Fire Season and Weather Patterns

The SHF has a bimodal fire season. Fire seasons are February 5 to May 5 (Spring) and October 10 to December 10 (Fall) but fires may occur any month of the year. Spring fire season average temperatures are 30's for a low to 80's for a high. Fall fire season temperatures average about the same.

Dominate Fuel Types and Conditions Influencing Fire Behavior

Fire behavior is influenced by three primary environmental factors. These are fuel, weather, and topography.

Fuel

Fuel is generally defined as the material that ignites and supports combustion. On the SHF the fuel is primarily (91%) hardwood leaf litter and pine litter on the forest floor (Fire Behavior Fuel Model 9). The continuity, arrangement, and fuel bed depth all influence fire intensity. The moisture content of the fuels is the principle factor determining whether they are available for combustion. Small fuels (leaves, needles, grass) respond most quickly to changes in temperature and humidity. Large fuels (branches, logs) are most affected by periods of drought after which they can significantly increase fire severity. Elevations on the SHF vary from 300' to 1100', and topography ranges from flat to quite complex, creating a wide range of fire behavior scenarios. Fireline construction can be quite very rapid, as the leaf litter in the fall lends itself to leaf blowers and fire rakes (Council Tools), or very slow, in thick vines and undergrowth, in wetland areas, or in very steep, rocky areas.

While the SHF is mainly Fuel Model 9 (91%) there are areas that are best described by the Fuel Models 3 (Tall Grass - 4%), 6 (hardwood slash, brush - 4.6%), and 8 (compacted hardwood leaf litter, especially during leaf out period - .4%).

Fuel model 3 (Tall Grass)

This fuel model consists of tall, standing grass (>2.5 feet tall). On the Shawnee NF these fuels are almost exclusively in restored prairies, land parcels enrolled in Conservation Reserve Program (CRP) or Wetland Reserve Program (WRP) and planted to warm season grasses, or managed openlands and wildlife openings. Flame Lengths, Fireline Intensities, and Rates of Spread can all be quite high in this fuel type. Since these fuels are more exposed to the drying and warming effects of sun and wind, they are available to burn more frequently during the year. Wetlines and mobile attack are often good choices as suppression tactics here.

Fuel Model 6 (Upland Brush or Hardwood Slash)

This fuel model described situations where upland brush or woody shrub species have some to dominate a site. It also can be used to model fire behavior outputs in hardwood slash, because the slash fuel models (Fuel models 11, 12, and 13) were designed from western coniferous forests and vastly overpredict fire behavior in hardwoods. Flame lengths, fireline intensities, and Rates of Spread can be high in this fuel model as well. Wind, Relative Humidity, and dryness of 1 and 10-hour fuels are key components driving fire behavior.

Fuel Model 8 (Closed Timber Litter)

This fuel model consists of closed canopy stands of healthy, short needled conifers or hardwoods that have leafed out. This layer is mainly needles, leaves, and some twigs since little undergrowth is present. Representative conifer types are white pine found on the SHF. Representative hardwood types include maple-beech. Slow burning surface fires with low flame heights are typical, although an occasional "jackpot" or heavy fuel concentration can cause flare-ups.

Fuel Model 9 (Hardwood Litter)

In this fuel model fire spread is primarily in surface litter such as concentrations of dead, dry leaves in the fall and spring. Stands can be hardwoods, mixed hardwood/conifers, or long needle conifers. The oak/hickory types are best represented, but also cover other hardwoods and loosely compacted litter under long-needed conifers as in Southern pine plantations.

Weather

The fire environment on the SHF can change quickly. Weather values can change dramatically over a short time frame, and fuel characteristics are quite variable across the landscape. The combination of winds, relative humidity, temperature, and rainfall are used in computation of various fire danger indices. The daily staffing class is determined using the Burning Index. Rate of spread, flame length, and even the presence and absence of wildland fire are strongly correlated to the availability of fine fuels, which Burning Index accurately captures.

Weather is typically the most critical factor influencing fire intensity and spread. Temperature, relative humidity, precipitation, and wind all affect the moisture content of the fuels, influencing availability. Additionally, wind provides the oxygen needed to sustain combustion, as well as most of the energy needed for fire spread. Weather is constantly changing, making it the most difficult of the environmental factors to predict. The SHF and its cooperators maintain a network of fire weather stations in southern Illinois that help to determine fire danger and potential fire behavior. Large fire growth on the Shawnee is strongly correlated with elevated wind speeds, as wind-driven fires are much more common than plume-dominated fires.

Topography

Topography refers to the landscape of a given area. Steep slopes offer greater potential for increased fire intensity than flat ground. Additionally, steep slopes make fire suppression more difficult by limiting strategies and tactics that can be utilized. South and southwest facing slopes typically will have lower fuel moisture regimes and more fire-adapted fuels as a result of solar heating. Topographic features that channel wind and heat energy such as chutes, saddles, and box canyons all are potentially dangerous situations for firefighters, and are frequently found on the Shawnee National Forest.

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 located in the Appendices of 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)
- 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. Inputs flight invoice data into ABS.
- Functions as a CI and reports to the COR

Assistant Helicopter Manager

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

Helitack Crewmembers

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

- Constructs helispots, manifests, loads and unloads cargo and personnel, marshals helicopter, rigs external loads

- 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

Staffing

Suppression

The designated helitack crew is assigned to Shawnee Helibase during each day of the contract period while on the Shawnee National Forest and is under the direction of the Forest Fire Management Officer.

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

Standard initial attack shall consist of the helicopter flying from helibase to the fire with the bucket onboard. Most fires on the SHF are suppressed by initial attack responses that are quick and effective during normal weather conditions (i.e. no periods of extended drought).

Criteria listed below – must be met in order to launch the ship:

1. Helicopter will be launched by Shawnee Dispatch only
2. Automatic launch when:
 - a. Fire is located on Forest Service Land AND
 - b. Adjective Fire Danger Rating is Very High or above OR Red Flag Conditions exists
3. Launch of helicopter when:
 - a. Forest Service personnel or local volunteer fire chiefs request helicopter as fire is threatening life and/or property AND
 - b. Fire is located within forest fire response boundaries or in areas protected by the SHF by agreement.

If the fire behavior is such that quick containment seems unlikely, then the Incident Commander may request the helicopter manager to establish a helispot closer to the fire.

Standard procedure for determining allowable load calculation shall be to calculate for initial attack landing sites on FS-5700-17 Load Calculation Forms (FS 5700-17) at 1,000 feet at 35 degrees Celsius or the actual computed temperature 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.

Once dispatched to an incident, Shawnee Dispatch will notify the helicopter manager of the IC of the fire. If no IC is present or identified, the helicopter manager will take command of the fire until the appropriate personnel arrive. 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 dip-site and deploy bucket.
- Option #2 –Conventional Helitack - land and discharge firefighters with all gear and walk to the fire.

- 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. No mechanized equipment will be utilized within the wilderness boundaries without Forest Supervisor approval.

Prescribed Burning

Initial attack capability shall be maintained while conducting prescribed burns, unless the helicopter is specifically committed to a prescribed fire project. Dispatch shall be notified whenever initial attack capabilities may not meet the 10-minute get away. (Refer to specific Burn Plans for details)

Project

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 Shawnee National Forest include:

- Prescribed fire
- Timber / insect / storm damage / wildlife inventories
- Search and Rescue

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.

A helicopter may be used for project work as well as suppression. During periods of high to extreme fire danger, project work assignments shall not impede the ability of the aircraft to be used for suppression. Project work locations will be no more than 45 minutes (drive time) away from the helibase. This is to facilitate the timely return of the crew in coordination with one hour call back time of the helicopter pilot.

Chapter 6

RECORD KEEPING

Timekeeping

Local agency personnel assigned to helibase shall document their duty time and process it for payment bi-weekly. All others shall document their duty time on the crew time report and shall be signed by the Helibase Manager.

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, daily diary, helicopter use summary and updates schedules.

Exclusive Use Helicopter Report

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

Load Calculations

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 +/- 5 degrees Celsius temperature change, or +/- 1,000 feet altitude change, or when the helicopter operating weight changes. (Refer to the IHOG for additional details)

Turbine Engine Power Checks

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.

Standby/Availability

The helicopter and fuel serving vehicle shall be available for 14-hours each day, unless otherwise specified by the CO, COR, or PI. Standby hours shall be 9-hours per day. The contractor shall be compensated in accordance with the contract specifications.

Availability of the helicopter shall be as specified in the contract.

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 Reports shall be completed daily by the PI, signed by the PI and contractor's representative.

When a Call-When-Needed contractor is on base, submission of the Flight Use Report to the proper payment office and/or COR is the responsibility of the contractor.

In the case of the Forest Exclusive Use contractor, Flight Use Reports will be submitted to the COR twice monthly covering the periods from the 1st – 15th and 16th through the end of the month.

Helicopter Managers are responsible for inputting data from the flight use report into ABS for vendor payment.

Chapter 7

HELIBASE FACILITIES

Electrical

Shawnee Helibase and its associated facilities operate on electrical power that gives a continuous power supply.

Power is supplied through Ameren CIPS. Their 24 hour call center number is 1-888-789-2477.

Maintenance

The helicopter crew with assistance of district personnel, as needed will be responsible for maintaining the helibase facilities, equipment and grounds associated with the helibase when activated. When the helibase is not in active status – the facility is the responsible of the Williamson County Airport Authority. The helibase office shall be cleaned as needed or at least once a week upon activation. Facilities and grounds shall be maintained and kept in a professional manner. For additional information on facilities maintenance, contact Doug Kimmel, Airport Manager, at 618-993-3353.

All damaged and worn equipment should be brought to the attention of the helicopter manager or designee. Any equipment that is worn or broken should be tagged or marked for non-use. Equipment transfers or replacements shall be done through the helibase manager. If no helibase manager present a qualified local district representative will be designated.

Helitack equipment shall be maintained and replaced according to the IHOG.

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.

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

Large fuel spills shall be reported to SHF Dispatch, airport maintenance, and the forest hazardous materials coordinator.

Information regarding spills should be kept on file with a copy being given to the SHF Dispatch in the event of any later claims.

Helicopter Parking

The helicopter can utilize any paved or flat grassy area for parking as long as it is located around the airport office facility and/or hanger.

Fuel Servicing

Fuel servicing vehicles/trailers shall be parked in the paved parking area along side the airport office facility and hanger. Helicopter fuel servicing on the helibase shall adhere to Department of Transportation (DOT), Forest Service and IHOG policies. Aeroflite Sales and Charter has exclusive license to dispense fuel at the Williamson County Regional Airport. They can be reached at (618) 993-2764.

Helibase Diagram

A diagram of facilities, etc. that exist year round at Williamson County Airport and general area are attached to this plan as labeled in the table of contents and is for general reference only. (Refer to Appendix C Helibase Diagram). The facility is a public airport with secure facilities meeting Forest Service standards. The security of the airport falls under the authority of the Williamson County Sheriff Department which provides a deputy for 24 hour security at the facility. The helicopter is stored nightly inside a secure hangar.

Chapter 7
HELIBASE FACILITIES

Chapter 8

MISHAP RESPONSE

General

When the Forest 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).

Personnel

Pilot

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

Helicopter Manager

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 Forest 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

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 5720.46). 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)

The SafeCom home page is accessed at the following URL: <http://www.safecom.gov>

Hyperlinks for SafeCom instructions and for submitting a SafeCom are located on this page. There is an additional link at this site for searching the SafeCom database. 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.

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.

Chapter 9

SAFETY

General

Safety in air operations is outlined in safety plans from the Regional Forester's and Forest Supervisor's Offices, as well as FSM 5700, Forest Service Health and Safety Code, IHOG, Federal Aviation Regulations, Transportation of Hazardous Materials Guide (NFES 1068), and Interagency Aerial Ignition Guide. This plan was developed from the sources listed above, and reinforces items of concern.

Training/Recertification

Helicopter recurrent training is the responsibility of the helicopter manager in coordination with the Forest Aviation Officer. This training is normally done during periods of no fire activity. Training shall include, but not be limited to the interagency Helicopter Training Guide format and S-271. This will include classroom and field exercises, including practice loading internal and external cargo, mock briefings, hover hook-ups, etc. Helitack crewmembers must meet the requirements set forth in the 5109.17. Exclusive use crewmembers, shall meet the requirements set forth in FSH 5109.17 and FSH 5108. Documentation must be forwarded to the Fire Management Officer (FMO) and Forest Training Officer.

The FMO is responsible for seeing that the annual recertification of PLDOs occurs. Follow the guidelines in Chapter 2 of Interagency Aerial Ignition Guide. Regional Helicopter Operations Specialist must approve instructors.

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 and these cards must be shown upon request.
- All pilots must adhere to flight and duty limitations.
- Low-level flights of 500 feet or less shall be avoided when possible.
- To provide adequate fuel reserve all operations shall comply with 14 CFR for VFR (20 minute reserve).
- A 30-minute fuel reserve is required. (20 minutes for Heli unless the forest needs/wants to be more restrictive – (14CFR part 91 for VFR)
- Only authorized personnel shall fly onboard Forest Service owned or contracted aircraft.
- Load calculations shall be made for all helicopter flights before take-off as defined Chapter 6, Load Calculations of this plan and the IHOG.
- 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 landing 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 for passengers shall be made for every flight listing personnel and cargo weights as defined in the IHOG.
- 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.
- Special Permit Authorization: DOT-E 9198 allows hazardous materials to be carried in Forest Service 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. The current exemption expires on August 31, 2010.
- No smoking allowed in or within a 50-foot radius of aircraft.
- Seat belts are required for all passengers.
- PLDOs are required to wear restraining harnesses during operations.
- 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 9 shall be equipped with, and monitor national airguard (VHF 168.625, TX tone 110.9). 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 firefighters to managed 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.
- Wind restrictions for Types 1-3 helicopters are listed in Chapter 6 (Helicopter Capabilities/Limitations) of the IHOG.
- 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.
- The helicopter pilot is responsible for following all FAA regulations when flying sling loads.
- All flights shall be computed on load calculation FS-5700-17, using the appropriate HIGE or HOGE charts. However, one calculation is valid if there is no change of +/- 5 degrees C in temperature, or +/- 1000 feet of altitude or change in operating weight. Each load will be manifested.
- 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.
- The helicopter manager or a member of their module will 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.
- Passengers may refuse any flight he/she may deem unsafe.

Overdue or Missing Aircraft

Refer to the Interagency Aviation Mishap Response Plan as modified for area use.

Transporting of Accident Victims

If at all possible, victims should be transported by air ambulance with qualified medical personnel on board. Our own aircraft with qualified medical personnel should only be used as a last resort. Air ambulances are superior to our aircraft for the following reasons: (1) Qualified medical personnel with the proper life support equipment will enhance victim's chances of surviving the incident, and (2) Air ambulance pilots are familiar with radio frequencies and traffic patterns at hospitals.

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.

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.

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.

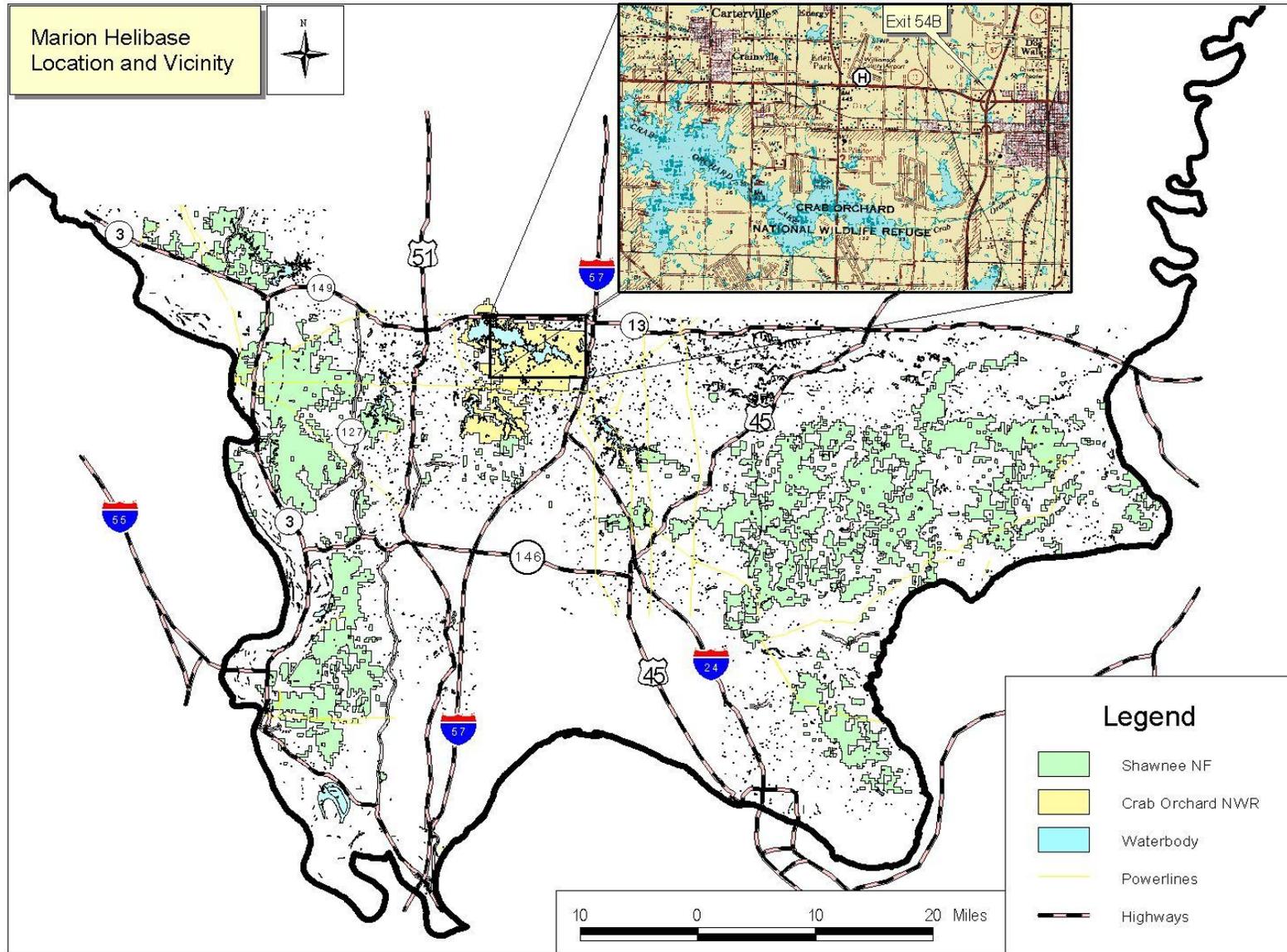
Visual Flight Rules. As defined in Chapter 91 of the Federal Air Regulations of the FAA.

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
BI	Burning Index
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
EACC	Eastern Area Coordination Center
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
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
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
ILC	Illinois Coordination Center
IMC	Instrument Meteorological Conditions
IR	Infrared
KBDI	Keech-Byram 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
NFS	National Forest System
NICC	National Interagency Coordination Center
NTSB	National Transportation Safety Board
NOTAM	Notice to Airmen
NWR	National Wildlife Refuge
OMB	Office of Management and Budget
PAB	Portable Airtanker Base
PAO	Project Aviation Officer
PASP	Project Aviation Safety Plan
PDF	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
SAFECOM	Safety Communiqué
SAR	Search and Rescue
SHF	Shawnee National Forest
TBO	Time Between Overhaul
TFR	Temporary Flight Restriction
USDA	United States Department of Agriculture
VFR	Visual Flight Rules
WO	Washington Office

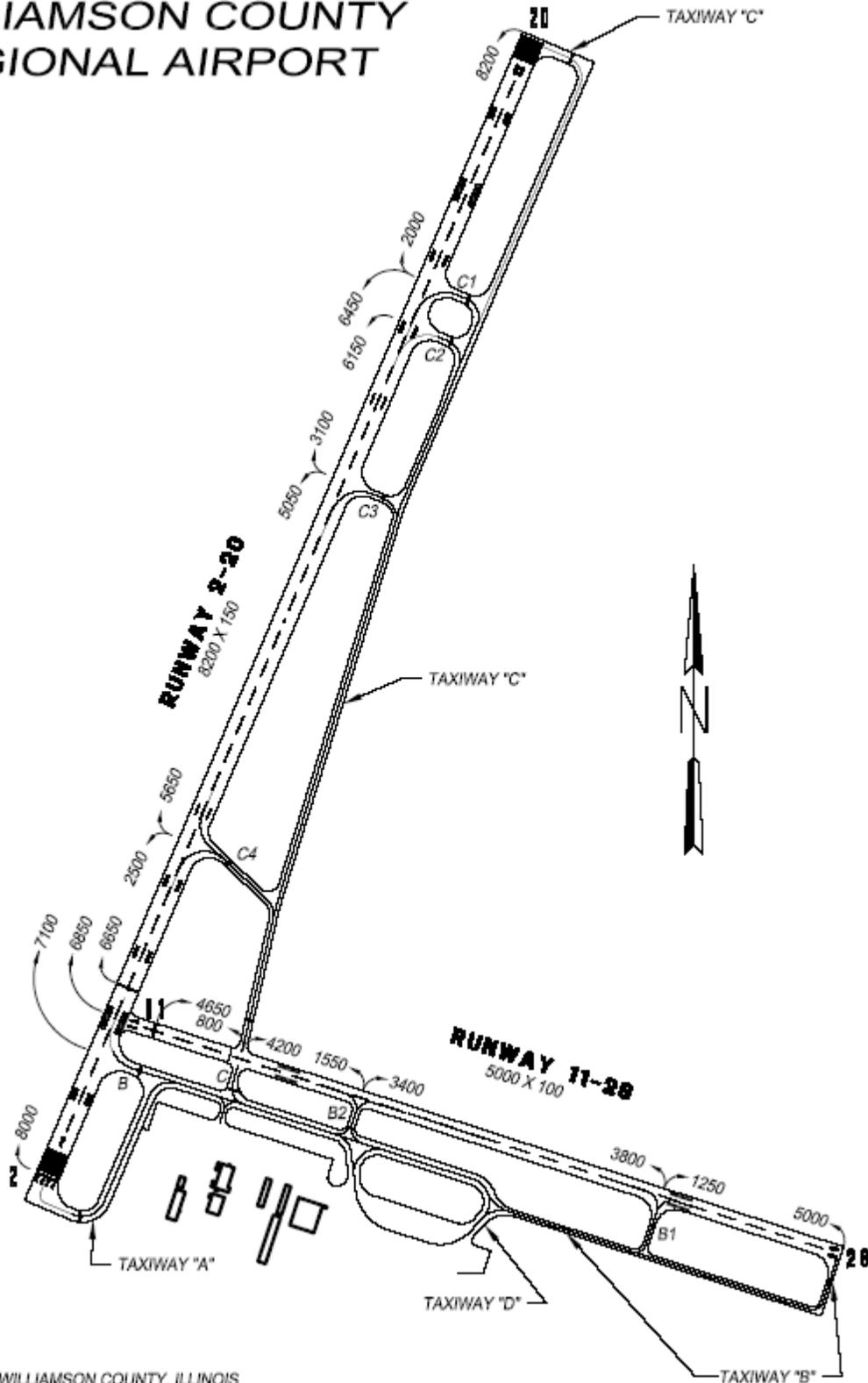
Appendix B
HELIBASE LOCATION



Appendix C

HELIBASE DIAGRAM

WILLIAMSON COUNTY REGIONAL AIRPORT



MARION-HERRIN, WILLIAMSON COUNTY, ILLINOIS

Appendix D
FLIGHT HAZARD MAP
Attached separately

Appendix E

FREQUENCY LIST

<u>Channel</u>	<u>Rec. Frequency</u>	<u>Rec. CG</u>	<u>TX – Frequency</u>	<u>TX CG</u>	<u>Label</u>	<u>Scan</u>	<u>Bandwidth</u>
1	168.67500	103.5	168.67500	103.5	Direct	Y	N
2	168.67500	103.5	170.50000	173.8	Bald Knob	Y	N
3	168.67500	103.5	170.50000	110.9	Bean Ridge	Y	N
4	168.67500	103.5	170.50000	186.2	Rosebud/Gum Ridge	Y	N
5	168.67500	103.5	170.50000	192.8	Williams Hill	Y	N
6	168.20000		168.20000		FS Tac 2	Y	N
7	166.67500		166.67500		Air Tac1 (Air-Ground)	Y	N
8	170.00000		170.00000		Air Tac2	N	N
9	167.95000		167.95000		Air Tac 3	N	N
10	168.65000		168.65000		National Flight Following	Y	N
11	168.62500		168.62500	110.9	Air Guard	Y	N
12	151.28000	146.2	151.28000	146.2	IDNR Talk-Around	N	W
13	151.28000	146.2	159.30000	146.2	IDNR Union	N	W
14	151.28000	151.4	159.30000	151.4	IDNR Pope	N	W
15	151.28000	110.9	159.30000	110.9	IDNR Perry	N	W
16	154.07000		154.07000		Coal Belt (Mutual Aid)	Y	W
17	155.01000	162.2	155.01000	162.2	Jackson County Direct	N	W
18	156.22500	114.8	150.80500	114.8	Jackson County Fire Repeater (Firecom)	N	W
19	159.15000	D411	159.15000	D411	Union County Direct	N	W
20	159.15000	D411	153.86000	D411	Union County Repeater	N	W
21	154.40000		154.40000		FireGround	N	W
22	159.18000	D411	159.18000	D411	Alexander County	N	W
23	154.37000	167.9	154.37000	167.9	Pope County Direct	N	W
24	154.37000	167.9	153.95000	167.9	Pope County Rptr	N	W
25	154.29500	136.5	154.29500	136.5	Johnson County Direct	N	W
26	154.29500	136.5	153.89000	136.5	Johnson County Rptr	N	W
27	154.78500	156.7	154.78500	156.7	Hardin County Direct	N	W
28	154.78500	156.7	156.090	156.7	Hardin County Rptr	N	W
29	154.34000		154.34000		Massac County Direct	N	W
30	122.225		122.225		R9 Zone Standard Air-Air (Victor)	Y	
31	121.70		121.70		Williamson County Airport (Ground-Ground)	Y	
32	126.90		162.90		Williamson County Airport (Air-Air)	Y	
33	122.95		122.95		Williamson County Airport Unicom (FBO)	Y	

Appendix F

DIP SITE / LANDING ZONE LOCATIONS

Type	Location		Legal	Ownership	Ship Size(s)	Dip Onsite	Road Access	Nearby Hazards
	Lat. (° ' '')	Long. (° ' '')			Yes/No	Yes/No	Yes/No	
Helispot / Dip Site								
Helispot/Dip	N 37 40 23.9	W 089 28 00.2	T10S R3W Sec 8	FS	1 2 3	Y / N	Y / N	Powerlines
Helispot/Dip	N 37 40 26.2	W 089 27 44.2	T10S R3W Sec 5	FS	1 2 3	Y / N	Y / N	None
Helispot/Dip	N 37 40 27.9	W 089 24 45.1	T10S R3W Sec 2	FS	1 2 3	Y / N	Y / N	None
Helispot/Dip	N 37 41 04.4	W 089 24 41.5	T10S R3W Sec 2	FS	1 2 3	Y / N	Y / N	Traffic
Helispot/Dip	N 37 39 58.7	W 089 27 14.5	T10S R3W Sec 9	FS	1 2 3	Y / N	Y / N	None
Helispot/Dip	N 37 37 47.2	W 089 26 52.5	T10S R3W Sec 21	FS	1 2 3	Y / N	Y / N	Traffic
Helispot/Dip	N 37 37 31.6	W 089 25 42.9	T10S R3W Sec 27	FS	1 2 3	Y / N	Y / N	None
Helispot	N 37 35 43.8	W 089 27 43.8	T11S R3W Sec 8	Other Public	1 2 3	Y / N	Y / N	None
Helispot	N 37 16 39.9	W 089 26 35.2	T14S R3W Sec 21	FS	1 2 3	Y / N	Y / N	None
Helispot	N 37 15 39.9	W 089 27 44.2	T14S R3W Sec 32	Other Public	1 2 3	Y / N	Y / N	None
Helispot	N 37 33 05.2	W 089 20 47.0	T11S R2W Sec 20	Private	1 2 3	Y / N	Y / N	Powerlines, Cross, Structures
Dipsite	N 37 15 01.7	W 089 22 44.0	T14S R2W Sec 31	FS	1 2 3	Y / N	Y / N	None
Dipsite	N 37 40 58.6	W 089 24 42.1	T10S R3W Sec 2	FS	1 2 3	Y / N	Y / N	None
Dipsite	N 37 40 29.6	W 089 27 44.1	T10S R3W Sec 5	FS	1 2 3	Y / N	Y / N	None
Dipsite	N 37 40 23.9	W 089 28 00.1	T10S R3W Sec 8	FS	1 2 3	Y / N	Y / N	Powerlines
Helispot	N 37 49 20.0	W 089 30 06.4	T8S R4W Sec 24	Private	1 2 3	Y / N	Y / N	None
Helispot	N 37 49 35.9	W 089 30 41.4	T8S R4W Sec 14	FS	1 2 3	Y / N	Y / N	Radio Tower
Helispot	N 37 51 33.7	W 089 31 40.5	T8S R4W Sec 4	FS	1 2 3	Y / N	Y / N	None
Helispot	N 37 51 59.1	W 089 32 30.7	T8S R4W Sec 4	FS	1 2 3	Y / N	Y / N	None
Helispot/Dip	N 37 50 22.1	W 089 30 37.4	T8S R4W Sec 11	FS	1 2 3	Y / N	Y / N	Traffic
Helispot	N 37 51 30.9	W 089 31 03.8	T8S R4W Sec 2	FS	1 2 3	Y / N	Y / N	None
Helispot	N 37 49 17.6	W 089 27 30.1	T8S R3 W Sec 20	FS/State	1 2 3	Y / N	Y / N	None
Helispot/Dip	N 37 48 18.3	W 089 24 11.9	T8S R3 W Sec 23	State	1 2 3	Y / N	Y / N	Powerlines, Traffic
					1 2 3	Y / N	Y / N	
					1 2 3	Y / N	Y / N	
					1 2 3	Y / N	Y / N	
					1 2 3	Y / N	Y / N	
					1 2 3	Y / N	Y / N	

Appendix G

LANDOWNER REQUEST LETTER FOR DIP SITES / LANDING ZONES

(Address of Landowner)

Dear Landowner,

The US Forest Service, (Name) Ranger District is the agency charged with the suppression of wildfires on National Forest System lands in (Name) County. Part of our firefighting efforts may include using a helicopter to perform water drops, transporting supplies, equipment, and personnel, and other missions. For water drops, the helicopter uses a collapsible bucket slung underneath the helicopter by cables. The helicopter will dip water out of a pond, river, or lake (water source) and then drop the water onto the fire. For supply shuttles, the helicopter will transport loads in a cargo net or in an otherwise secured fashion. The load is secured to a release hook, which is in turn connected to a cable that attaches to the belly of the helicopter. The helicopter can also carry loads internally in cargo holds. For internal cargo missions and troop transports the helicopter must set down in a cleared area known as a landing zone. Landing zones are also used by the helicopter crew to attach the collapsible buckets, cables, cargo nets, etc, and are there fore crucial for fighting fires via helicopters.

In order to have an efficient fire fighting operation, potential water sources and landing zones should be located prior to a fire event occurring. This will allow us to quickly dispatch the helicopter to the closest water source to the fire, or to the best place for setting up external load operations. We are in the process of locating the water sources that we may use as dip sites and cleared areas that we may use as landing zones for helicopter operations. While we use water sources and landing zones on National Forest lands as a first priority, there are areas of the county where no such water sources or landing zones exist. In those areas, we must use water sources and landing zones on private lands, with the landowner's permission.

We have successfully and safely used water sources on private lands for many years and wish to continue this cooperation on the Shawnee National Forest. A pond or landing zone on your property has been identified as being a candidate for use in helicopter operations. In order to address any questions of potential liability, we are asking that you participate in the enclosed Agreement for Use. After your review, please return the signed Agreement to our office. We will return a copy for your records.

If you have any questions, please see the Frequently Asked Questions, or you may contact xxxx or xxxx, Shawnee Helibase Managers at xxx-xxx-xxxx. Also, I may be reached at xxx-xxx-xxxx. We look forward to our continued cooperation in wildland fire suppression efforts in xxx Country.

Sincerely,

District Ranger

Appendix H

AGREEMENT FOR USE

The _____ Ranger District of the Shawnee National Forest and the owner, or the duly appointed representative of the owner, of the property described below, agree to the government's 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 power lines, 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 form 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

Name: _____
Address: _____

Phone (Day): _____
Phone (Night): _____

Landowner Signature _____ Date _____

USDA Forest Service Representative

Name: _____
Address: _____

Phone (Day): _____
Phone (Night): _____

FS Representative Signature _____ Date _____
(Title Here)

Appendix I

FREQUENTLY ASKED QUESTIONS (DIPSITES)

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 (Name) River for fire fighting in the eastern areas of the county. However there very few water sources on National Forest system lands in the other areas of xxx 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 props scares away and prevents any fish from being picked up by the bucket. In the many years we have been using helicopters for water drops in (Name) 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 (Name) 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 (Name).

Appendix J

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 K

EMERGENCY CONTACT LIST

FAA Flight Service Station 800-992-7433
 FAA Communication Center 202-267-3333
 NTSB Communication Center 202-314-6290

Primary Response (Emergency Responders)	Emergency	Non-Emergency
Williamson County Fire Department (Headquarters at Airport)	911	618-997-4802
Williamson County Sheriff	911	618-997-6541
Williamson County Ambulance	911	618-993-3019
Air Evac Lifeteam (Emergency Dispatch in West Plains, MO)	1-800-247-3822	
Air Evac Lifeteam (Base 35 in Marion)		618-998-1611
Secondary Response (Support Personnel)		
Heartland Regional Medical Center	618-998-4888	
SHF Dispatch	1-866-684-2051	
SHF NF Law enforcement Officer	1-866-684-2051 (Dispatch)	
Eastern Area Coordination Center	612-713-7300	
FAA Flight Service Station	800-992-7433	
NTSB	202-314-6290	
Agency Management and Other Agencies (As Required)		
SHF Safety Officer	Chris Peterson-618-253-1032, 618-521-6729	
SHF Aviation Officer	Chris Peterson	
SHF Fire Management Officer	Chris Peterson	
SHF Public Affairs Officer	Becky Banker- 618-253-1031, 618-201-3364	
Regional Aviation Safety Manager	Vacant	
Regional Aviation Officer	Tim Caughlin 414-297-3744	
Regional Public Affairs Officer	Jane Cliff- 414-297-3664	
Regional Aircraft Maintenance Inspector	Rick Howe-414-297-3165, 414-339-8480	
Regional Helicopter Operation Specialist	Scott Hocking-612-713-7301- 414-339-8486	
Regional Helicopter Pilot Inspector	Vacant	
Aviation Contracting Officer	Richard Saltzman-414-297-3625	

HOSPITALS		
SE Missouri Hospital (Cape Girardeau, MO)	573-334-4822	
St. Francis Medical Center (Cape Girardeau, MO)	573-335-1251	
Harrisburg Medical Center (Harrisburg, IL)	618-253-7671	
Heartland Regional Medical Center (Marion, IL)	618-998-7000	37x44x35 X 088x59x29
Herrin Hospital (Herrin, IL)	618-942-2171	
VA Medical Center (Marion, IL)	618-997-5311	
Massac Memorial Hospital (Metroplis, IL)	618-524-2176	
Memorial Hospital (Chester, IL)	618-826-4581	
Memorial Hospital (Carbondale, IL)	618-549-0721	
Saint Joseph Memorial Hospital (Murphysboro, IL)	618-684-3156	
Union County Hospital (Anna, IL)	618-833-4511	
*** Memorial Medical Center (Springfield, IL) ***	217-788-3325	BURN TRAUMA UNIT
Lourdes Hospital (Paducah, KY)	270-444-2444	
Western Baptist Hospital (Paducah, KY)	270-575-2100	
*** Washington University Medical Center (St. Louis, MO) ***	314-747-7000	BURN TRAUMA UNIT
*** St. John's Mercy Medical Center (St. Louis, MO) ***	314-569-6055	BURN TRAUMA UNIT