

## Appendix B – Helitorch Operations

### Required Forms

(Information may be contained in the IAP, Prescribed fire plan, or PASP and may be utilized in lieu of the following forms.)

- Helitorch Operations GO/NO GO Checklist\*
- HTMG, HTMM, HTPT Position Task Sheet\*
- <http://www.blm.gov/nifc/st/en/prog/fire/Aviation/training.html>
- Helitorch Project Aviation Safety Plan
- Job Hazard Analysis
- Aviation Risk Assessment Worksheet (Reference IHOG Appendix J)
- Job Risk Analysis
- Aerial Ignition Organization Chart – Helitorch Prescribed Fire
- Aerial Ignition Organization Chart – Helitorch Wildland Fire
- Helicopter Crash Rescue/Medivac Plan
- Helitorch Inspection Checklist
- Helitorch Mix Systems Checklist

### Optional Forms

- Aerial Ignition Preplanning Checklist
- Aerial Ignition Annual Qualifications Update Sheet
- Helitorch Pre-Use Checklist
- Helitorch Post-Use Maintenance Checklist
- Helitorch Annual Maintenance and Winterization Checklist
- Helitorch Use Record (Example)

### NOTE; \* INDICATES REQUIRED FORMAT

#### Job Hazard Analysis (JHA)

A required document that should outline the primary tasks, identify hazards, and describe methods to mitigate or remove risks associated with helitorch operations. Review of the helitorch JHA with all helitorch personnel prior to commencing a project is required.

**Project Aviation Safety Plan is required; this is an optional format**

## **Project Aviation Safety Plan**

OPM-6 and FSM-5700 require a Project Aviation Safety Plan be completed prior to any special use missions involving aircraft. The Project Aviation Safety Plan is a proactive measure used for pre-planning and risk assessments which are paramount to a successful accident free mission. The PASP allows for a collaborative effort of all personnel involved to address all elements of the mission and generate a plan with risks at acceptable levels. The process is simple. Once the PASP is completed, project supervisors or flight managers must get approval to execute the mission. The amount of risk involved to accomplish the mission, dictates the level of approval required. The Risk Assessment matrix included in the PASP template provides guidance on the level of approval based on the level of risk. A mission with a level of risk in “Low” or “Medium” may only need approval from a Unit Aviation Manager or Forest Aviation Officer, but a mission in the “Serious” or “High” category will require approval from an Aviation Division or Regional Aviation Manager. After the mission is approved, conduct an on-site briefing covering the pertaining elements of the mission with all participants, and then you may implement the plan.

The key to a smooth process for the PASP is to be thorough. Line officers must be able to understand your plan from a written form. A template for Forest Service and DOI is available to aid in this process. Below is a list of the elements in PASP’s.

1. **Supervision-** Identify the qualified Project Aviation Manager.
2. **Project Name and Objective-** Description of the project and its objectives.
3. **Justification-** Indicate why the project will require the use of an aircraft in special use flight conditions and list the most practical alternative for completion of the project.
4. **Project Dates-** Dates the project will begin and end. These may be approximate, since the exact dates of flight may not be known.
5. **Location-** Enter a descriptive location and include a map clearly showing the area where the flights will occur. Aerial hazard maps must be clearly indicated.
6. **Projected Cost and Aviation Resources-** Enter cost coding, projected flight hours and cost, projected miscellaneous expense (overnight charges, service truck mileage etc.), and total cost of the aviation portion of the project.
7. **Aircraft-** if know, identify company that own the aircraft anticipated to be used, registration number, aircraft type, date of aircraft data card expiration, and approved missions.
8. **Pilot-** If know, identify Pilot(s), types of aircraft qualified in, types of mission qualified for, and expiration date of pilot card.
9. **Participants-** List individuals involved in flights, their qualifications and role.
10. **Communications Plan, Flight Following, Accident Response-** Identify the procedures to be used.
11. **Aerial Hazard Analysis-** An aerial hazard analysis with attached map will be provided to the pilot before the flight. Flights made in confined areas require that a prior ground and/ or aerial survey of hazards be made. A copy of the hazard map shall be provided to the pilot prior to any project flight. The necessary temporary flight restrictions and coordination with FAA and, if appropriate, military authorities, must be accomplished prior to project.
12. **Protective Clothing and Equipment-** Identify the protective equipment required for the mission.
13. **Weight & Balance-** The pilot is responsible for the accurate completion of weight and balance load calculations. Trained aviation personnel shall ensure that aircraft scheduled are capable of performing the mission(s) safely and within the capability of the aircraft selected. The helicopter or fixed wing manager shall ensure that manifests and weight and balance load calculations are completed properly and completed daily.
14. **Risk Assessments/SMS-** Risk assessment utilizing the tools listed in Appendix J of IHOG or bureau approved SMS.
15. **Signatures-**Line Manager or appropriate level of approval based on the risk assessment or other bureau requirement.

## Project Aviation Safety Plan

### 1. Supervision

Qualified Project Aviation Manager:
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### 2. Project Name and Objectives

<b>Aerial Ignition Project Aviation Safety Plan</b>			
Mission:	Project Name:	Unit:	
Project Plan Prepared by:	Title:	Date:	
Note: Signature by the preparer verifies that all personnel have the required training for the mission.			
Objectives:			

### 3. Justification

Indicate why the project will require the use of an aircraft in special use flight conditions/environments and list the most practical alternative for completion of the project. For example: Management has deemed aerial ignition as the best method of achieving Agency goals. Aerial ignition is conducted below 500' above ground level (AGL). Reference IHOG chapter 3, Operational Planning. All aerial ignition operations will be conducted in accordance with agency policy as well as the Interagency Aerial Ignition Guide and Interagency Helicopter Operations Guide. :
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### 4. Project Dates

Anticipated Project Date:	Start Time:	Ending Time:
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### 5. Location

Start Location	Latitude	Longitude	Elevation	Runway length & Surface or Helispot Size
Enroute Stops	Latitude	Longitude	Elevation	Runway length & Surface or Helispot Size
Destination Location	Latitude	Longitude	Elevation	Runway length & Surface or Helispot Size
Attachments: <input type="checkbox"/> Map <b>REQUIRED</b>		<input type="checkbox"/> Other:		

***Attach Map, clearly showing areas to be flown; aerial hazards must be indicated***

### 6. Projected Cost and Aviation Resources

Type of Flight:	Desired Aircraft Type:	Charge Code:
Type Procurement:	Method of Payment:	Projected Cost:
Support Equipment Needed:		

### 7. Aircraft

Vendor:	Phone:	Cell:
Aircraft N#:	Make & Model:	Aircraft Color:
Other:	Aircraft Card Expiration Date:	A/C Carded: <input type="checkbox"/> Yes <input type="checkbox"/> No

8. Pilot

Pilot Name:	Pilot Carded: <input type="checkbox"/> Yes <input type="checkbox"/> No
Expiration Date:	

9. Participants

Project Supervisor:	Phone:	Cell:
Aircraft Manager:	Phone:	Cell:
Participants:		
Site visit completed by aviation personnel: Y N		

10. Communications Plan, Flight Following, Accident Response

Flight Follow Procedure:	Request or Flight #:
Method of Resource Tracking: <input type="checkbox"/> Phone <input type="checkbox"/> Radio <input type="checkbox"/> AFF	<input type="checkbox"/> Prior to Takeoff <input type="checkbox"/> Each Stop Enroute <input type="checkbox"/> Arrival at Dest.
Scheduling Dispatch Phone:	Destination Dispatch Phone:
FM Receive:	FM Transmit:
FM Receive:	FM Transmit:
FM Receive:	FM Transmit:
AM Air to Air:	AM Unicom:
	Tones:
	Tones:
	Tones:
	Other:

Helicopter Crash Rescue/Medivac Plan

<b>General Instructions</b>		
In the event of an accident, the Helicopter/Helibase/Helitorch Manager will supervise and coordinate the crash rescue activities. Specific crash rescue duties will be assigned to helibase personnel each morning before flights of any kind. Crash rescue, evacuation and first aid equipment will be located near the helipad and equipment's location made known to all helibase personnel. Information and instructions will be sent/received through the local dispatch office or communications.		
<b>Specific Information and Instructions</b> (Utilize cell phone if possible. Do not use names over the radio.)		
1.	Nature of the injury(s)/illness.	
2.	Is medical help needed? If available supply vital signs!	
3.	What transportation is needed? Is patient(s) ambulatory?	
4.	Location of victim.	
5.	Route to be taken (use land marks as guide).	
6.	Equipment needed.	
7.	Name of contact on site.	
8.	Notify appropriate agency line officer.	
<b>EMT(S) on project</b>		
<b>Available Medivac helicopters</b>		
FAA #	HMGB	
Litter/rappel/extraction capable		
Remarks		
FAA #	HMGB	
Litter/rappel/extraction capable		
Remarks		
<b>Nearest medical facility</b>	Location	
Latitude	Longitude	Contact Freq
VOR	NM	DEG
<b>Nearest burn center</b>	Location	

Latitude	Longitude	Contact Freq
VOR	NM	DEG
<b>Life Flight</b>		Location
Type aircraft	Phone Number	Contact Freq
<b>Site conditions</b>		
Latitude	Longitude	Contact Freq
VOR	NM	DEG
Wind speed	Elevation (msl)	Temperature (F, C)
Terrain factors		Helispot size
Proximity of helispot to injury site		Visibility/sunrise/sunset limitations
Flight hazards		
Other aircraft in area (call signs and frequencies)		
Ground contact and frequencies		

### 11. Aerial Hazard Analysis

Identify if projected flight paths/project area involves military Special Use Airspace and/or Military Training Routes (MTR's), or Low Altitude Tactical Navigational Areas (LATN). Mission planning involving Military Airspace shall include "Risk Management Considerations." Aircraft Manager must confirm with Dispatch prior to the flight that affected routes or other airspace concerns have been de-conflicted.

**Military Training Route (MTR) Information**

MTR	Route Legs-Altitude	Activity	Time	Time Zone
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> Local
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> Local
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> Local
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> Local
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> Local
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> Local
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> Local
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> Local
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> Local
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> Local
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> Local
<input type="checkbox"/>		<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> Local

Other airspace concerns/hazards:

Area Hazard map must be attached.

### 12. Protective Clothing and Equipment

<input type="checkbox"/> General/ground personnel	Nomex clothing (or cotton clothing with helitorch mix crew), hardhat w/chin strap, gloves, leather boots, eye protection, hearing protection, fire
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	extinguisher
<input type="checkbox"/> Helicopter flights	Flight helmet, Nomex clothing, gloves, leather boots, eye protection, hearing protection, approved secondary restraint harness for doors off flights.

### 13. Weight and Balance

The Pilot is responsible for the accurate completion of a load calculation. Trained aviation personnel shall ensure that aircraft scheduled are capable of performing the mission(s) safely and within the capabilities of the aircraft selected. For helicopter operations, expected conditions of altitude, temperature and weight will be included. The helicopter manager will ensure load calculations are completed properly. The Flight Manager will ensure that cargo/passenger manifests are completed.

Passenger Name	Weight	Departure Point	Destination Point
Cargo	Weight	Hazardous Material	Destination
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	

Special Instructions:

### 14. Risk Assessment

Applicable Risk Management Worksheet/Job Hazard Analysis (JHA) referenced and on file:

Risk Assessment Code Matrix					
		HAZARD PROBABILITY			
Severity Code		Frequent (A) Immediate danger to health and safety of the public, staff, property and/or resources.	Likely (B) Probably will occur in time if not corrected, or probably will occur one or more times.	Occasional (C) Possible to occur in time if not corrected.	Rarely (D) Unlikely to occur; may assume exposure, will not occur.
Catastrophic Imminent and immediate danger of death or permanent disability.	I	State Director/Associate State Director 1 CRITICAL	State Director/Associate State Director 1 CRITICAL	District Manager 2 SERIOUS	Field Office Manager 3 MODERATE

<b>Critical</b> Permanent partial disability, temporary total disability.	<b>II</b>	<b>State Director/Associate State Director</b> 1 <b>CRITICAL</b>	<b>District Manager</b> 2 <b>SERIOUS</b>	<b>Field Office Manager</b> 3 <b>MODERATE</b>	<b>Branch Chief</b> 4 <b>MINOR</b>
<b>Significant</b> Hospitalized minor injury, reversible illness.	<b>III</b>	<b>District Manager</b> 2 <b>SERIOUS</b>	<b>Field Office Manager</b> 3 <b>MODERATE</b>	<b>Branch Chief</b> 4 <b>MINOR</b>	<b>Line Supervisor</b> 5 <b>NEGLIGIBLE</b>
<b>Minor</b> First aid or minor medical treatment.	<b>IV</b>	<b>Field Office Manager</b> 3 <b>MODERATE</b>	<b>Branch Chief</b> 4 <b>MINOR</b>	<b>Line Supervisor</b> 5 <b>NEGLIGIBLE</b>	<b>Line Supervisor</b> 5 <b>NEGLIGIBLE</b>

**Helitorch Job Hazard Analysis (Example)**

Aircraft Manager/Pilot review with all participants as part of preflight briefing.

<b>JOB HAZARD ANALYSIS (JHA)</b> <i>(Instructions on next page) This form complies with Certification of Hazard Assessment 29 CFR 1910.133</i>	<b>1. WORK PROJECT/ACTIVITY</b> Helitorch Operations	<b>2. LOCATION</b>	<b>3. UNIT</b>
	<b>4. Prepared By</b>	<b>5. JOB TITLE</b>	<b>6. DATE PREPARED</b>
<b>7. TASKS/HAZARDS</b>	<b>8. ABATEMENT ACTIONS</b>		

Personnel Qualifications Unknown	-Helitorch Module shall be certified annually. Pilot and helicopter will be carded annually for Helitorch operations. Pilot will be knowledgeable in fire behavior and trained in use of the fire shelter. Use of proper PPE by all. Pre- and Post Op briefings will be performed.
Responsibilities	-Prior to each project, operator will review appropriate portions of IHOG and IAIG. The project briefing will cover responsibilities and emergency procedures
Aircraft Avoidance	-See and avoid. Check Military Training Routes (MTR) in advance. Practice risk management; confirm that Dispatch has made contact with schedulers to de-conflict. Fly established airport patterns, initiate and stay in radio contact.
Weather	-Use weather advisory. Maintain VFR minimums, cancel mission if necessary.
High/Hot/Heavy	-Performance planning complete/insure accurate load calculations. Do not place the aircraft in performance related situations for current and expected environmental conditions. Do not place the aircraft in performance related situations. Avoid down-wind runs.
Low level obstacles	-Complete a high level recon, no unnecessary low level flight.
Pilot not familiar with area	-Supply hazard maps. Complete high-level recon prior to low-level work, project area identified. Pre – Burn orientation flight.
Noise, rotor wash	-Wear ear and eye protection. 15-minute eye wash station on site.
Hazardous materials	-All personnel equipped with required PPE and trained in crash procedures. -Qualified personnel will handle, review MSDS, inform pilot. Use proper PPE. Driver of batch truck will have current Hazmat endorsement, and comply w/all applicable federal/state/local laws.
Unplanned aircraft events	-Flight following established, checked and followed, communication plan posted. Maintain communications at all times, establish backup alternate frequencies. Take handheld radio along. Call in prior to landing. If radio contact is lost return to best suitable landing area and check-in. Parking tender outfitted with radio and headset/helmet w/remote transmit switch for takeoffs/landings. All hand held electronic devices such as radios, pagers, cell phones, etc. shall be turned off within 50' of any fuel preparation/vapor removal area.
Communications	
Rotor hazards	
Multiple project aircraft	-Pilot perform aircraft safety brief, approach/depart safely or after shutdown and rotors stop. -Adequate aerial supervision. Carded managers for each aircraft. Maintain aircraft separation and positive communications.

<b>JOB HAZARD ANALYSIS (JHA)</b> <i>(Instructions on next page)</i> This form complies with Certification of Hazard Assessment 29 CFR 1910.133	<b>1. WORK PROJECT/ACTIVITY</b> Helitorch Operations	<b>2. LOCATION</b>	<b>3. UNIT</b>
	<b>4. Prepared By</b>	<b>5. JOB TITLE</b>	<b>6. DATE PREPARED</b>
<b>7. TASKS/HAZARDS</b>	<b>8. ABATEMENT ACTIONS</b>		



Helitorch Equipment	-Use only approved equipment with current retrofits as per IAIG. Equipment checks prior to operations.	
Fuel/Gelling Agent Ignition Issues	-MSDS sheets on-site and reviewed, fire protection in place, personnel briefed on hazards, emergency contingency plan reviewed and in place, transportation of hazmat complies with agency direction, No Smoking signs posted, no ignition sources. Proper bonding. Limit personnel on site to those required for operation. Eyewash station onsite.	
Aircraft Fueling	-Conduct orientation flight with Firing Boss, hang fire mitigation and escaped fire contingency established, must complete all operational checklists prior to starting operations.	
Missing Aircraft, Crash/Search & Rescue Malfunctions	-Vendor responsibility. No agency personnel on board. Aircraft shutdown unless closed circuit, open port in accordance with NFPA 407 3-21, 4073-21.2(b) and requested by government. Trained personnel staff extinguisher.	
Personal in Burn Area	-Duties assigned for extraction, suppression and flight following. Dispatch/helibase responsible to have current Aviation Incident Response/Crash Search and Rescue Plan posted and ready to implement.	
General Aviation Aircraft	-Malfunctions will be addressed in project briefing. Any malfunctions will immediately halt the project. Helicopter will sit down until the problem is identified and mitigated. If entanglement occurs, wait until the torch and helicopter are safely on the ground and the pilot has given approval to approach the aircraft. Designate helitorch jettison site.	
Moving fuel barrels	-Perform high level recon to insure that agency personnel near burn unit maintain communication and are clear of the burn area. Insure that non-agency personnel are clear of burn area.	
Pressure release of fuel barrels	-PIO will post maps and descriptions of activities at Local FBO's. Backcountry VHF-AM will be monitored in the aircraft and at the Helibase.	
Barrel exchanges	<p><b>ITEMS LISTED BELOW ARE SPECIFIC TO WESTERN HELICRAFT HELITORCH</b></p> <p>-Get help moving fuel drums. Lift with legs rather than back. Ensure route is unobstructed. Hand and foot protection.</p> <p>-Remove large barrel bung slowly to provide gradual release of pressure. Use eye protection.</p>	
Component changes	-Maintain good visual and radio communication between pilot and ground crew. Ground crew is equipped with a radio headset and hardhat or SPH 4/5 flight helmet with remote transmit button/switch. Maintain visual contact with cables. Primary crewmember ensures cables do not twist as helicopter lifts. Do not attempt to make contact with the helitorch until it has made ground contact.	
	-Mixing of helitorch components between kits may cause compatibility issues due to different tolerances.	
9. LINE OFFICER or DESIGNEE SIGNATURE	10. TITLE	11. DATE

**Job Hazard Analysis (Example) Continued**  
 Aircraft Manager/Pilot review with all participants as part of preflight briefing.





Assess the risks involved with the proposed operation. Use additional sheets if necessary.			
Assignment:		Date:	
Describe the Hazard:	Pre-Mitigation hazards rate out as:		
	Likelihood A-E	Severity I-IV	Risk Level
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Pre-Mitigation Overall Rating:			
Mitigation Controls:		Post Mitigation hazards rate out as:	
	Likelihood A-E	Severity I-IV	Risk Level
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Post-Mitigation Overall Rating:			
Success Probability/Benefits Statement:			
Operation Approved By:		Title:	Date:

	Appropriate Management Level for Risk Decisions	
Risk Level	Fire	Project
<b>HIGH</b>	Incident Commander or Ops Chief	State Director/ Regional Manager
<b>SERIOUS</b>	Incident Commander or Ops Chief	District Manager/Forest Aviation Officer
<b>MEDIUM</b>	Air Operations Branch Chief	Field Manager/District Ranger

LOW	Helibase Manager	Helicopter or Flight Manager
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Contact your unit aviation manager if you questions on the level of approval.

### 15. Signatures

Note: Signature by the preparer verifies that all personnel have the required training for the mission. Attach Map, clearly showing areas to be flown; aerial hazards must be indicated.		
Project Plan Reviewed by:	Title:	Date:
Project Plan Reviewed by:	Title:	Date:
Project Plan Reviewed by:	Title:	Date:
This Flight is Approved by:	Title:	Date:

Mission Planning/Preflight Briefing Checklist: Review with all participants as part of preflight briefing

1. Chain of command, individual roles and responsibilities are identified to all participants?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
2. Project Aviation Safety Plan is approved and signed at the appropriate levels?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
3. Is the emergency evacuation plan, helibase crash/rescue plan reviewed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
4. Are communications and flight following established, including repeater tones?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
5. Can terrain, altitude, temperature or weather that could have an adverse effect be mitigated?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
6. Are all aerial hazards identified and known to all participants?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
7. Have ground operations hazards and safety been identified to all participants?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
8. Have mitigating measures been taken to avoid conflicts with military or civilian aircraft?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
9. Have adequate landing areas been identified and or improved to minimum standards?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
10. Are all agency personnel qualified for the mission?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
11. Are there enough (qualified) agency personnel to accomplish the mission safely?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
12. Is the pilot carded and experienced for the mission to be conducted?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
13. Will adequate briefings be conducted prior to flight to include Pilot, Passengers and Dispatch (all participants)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
14. Are all involved aware that the pilot has the final authority, but if any passenger/aircrew/ground personnel feels uncomfortable, that they can refuse/curtail the flight without fear of reprisal?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
15. Is the aircraft capable of performing the mission with a margin of safety?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
16. Have manifests of cargo and passengers, load calculations and/or weight & balance completed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
17. Is the aircraft properly carded?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
18. Do all personnel have the required PPE?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
19. Fuel planning, adequate fuel on board, fuel truck location, availability of commercial fuel?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
20. Remember; maps of areas/sites, handheld radios, cell phones, day/survival packs, sic sacks	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
21. Will the mission be conducted at low levels? (Below 500' AGL)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
22. Can the same objective be achieved by flying above 500' AGL?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
23. Are pilot flight and duty times compromised?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
24. Is there an alternative method that would accomplish the mission more safely?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
25. Other? (identify)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
26. Other? (identify)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
27. Other? (identify)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
28. Other? (identify)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA

Above items (1-20) checked "NO" and item (22-24) checked "YES" require on the spot correction, and /or re-evaluation of flight/mission before proceeding. Evaluate additional items accordingly. Identify Correction:

Aircraft/Flight Mgr. Signature:		Date:	Pilot Signature:		Date:
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Project Aviation Safety Briefing

A copy of this briefing page will be submitted to the Aviation Manager.

Briefing Leader: \_\_\_\_\_

Briefing Date: \_\_\_\_\_ Time: \_\_\_\_\_ Location: \_\_\_\_\_

Discussion Items:

- a. Hazard Analysis (as outlined in plan)
- b. Safety Air Ops (Ground)
- c. Safety Air Ops (Flight)
- d. Military Training Routes
- e. Flight Following
- f. Frequencies
- g. Fueling
- h. Emergency Evacuation Plan
- i. Authorities
- j. Weather Considerations
- k. Review applicable JHAs/Risk Assessments
- l. other

Briefing Attendees Signature and Concurrence:	


### Helitorch Aerial Ignition Preplanning Checklist

- Prescribed Burn plan approved  yes  no  N.A.
- Project Aviation Safety Plan approved  yes  no  N.A.
- Burn Blocks prepped for aerial ignition  yes  no  N.A.
- Helitorch Equipment serviced and ready  yes  no  N.A.
- Approved Flight Helmets for all occupants of aircraft  yes  no  N.A.
- Adapters needed/available  yes  no  N.A.
- Extra Gelling Agent/Propane/Fuel available/where  yes  no  N.A.
- Backup/spare Helitorch  yes  no  N.A.
- Crash rescue/Evacuation equipment ready  yes  no  N.A.
- Helispots prepared and approved  yes  no  N.A.
- Fire Suppression needs available (extinguishers, foam, Engine, CAFS)  yes  no  N.A.
- Enough qualified people available
  - Helicopter Manager(s)  yes  no  N.A.
  - Helibase Manager  yes  no  N.A.
  - Helitorch Manager  yes  no  N.A.
  - Parking Tender(s)  yes  no  N.A.
  - Mixmaster  yes  no  N.A.
  - Mixing Crew  yes  no  N.A.
  - Fire Protection Group  yes  no  N.A.
- Approved aircraft availability  yes  no  N.A.
- Aircraft and fuel truck reserved/scheduled the week before  yes  no  N.A.

**Additional reminders:**

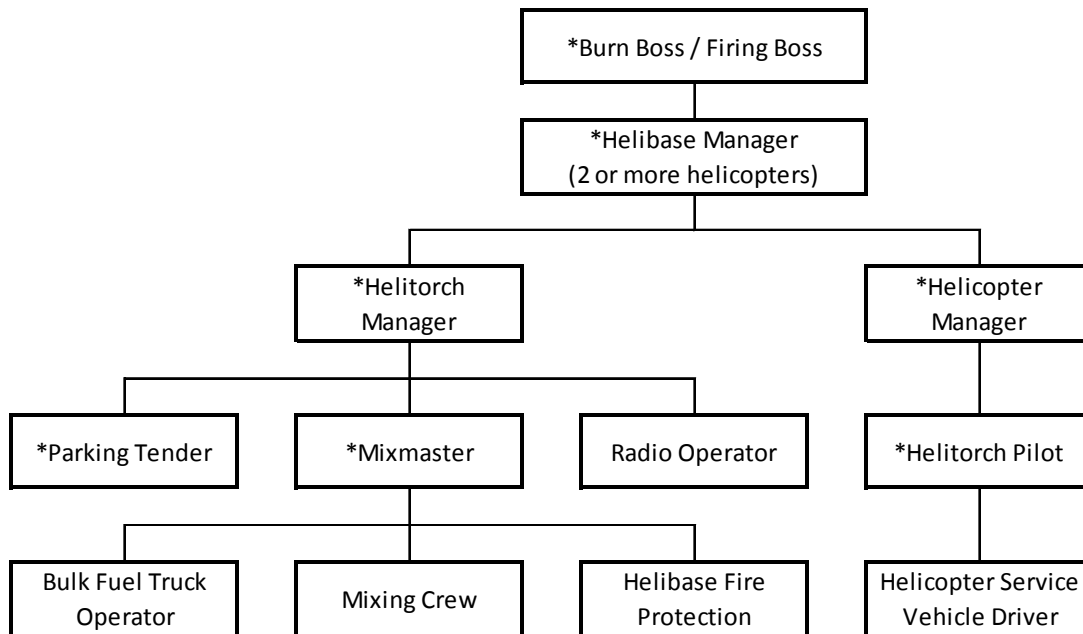
- \_\_\_\_\_  yes  no  N.A.
- \_\_\_\_\_  yes  no  N.A.
- \_\_\_\_\_  yes  no  N.A.

Estimated cost: \_\_\_\_\_



**Location of aircraft:**\_\_\_\_\_

## Helitorch Organization Chart –Prescribed Fire

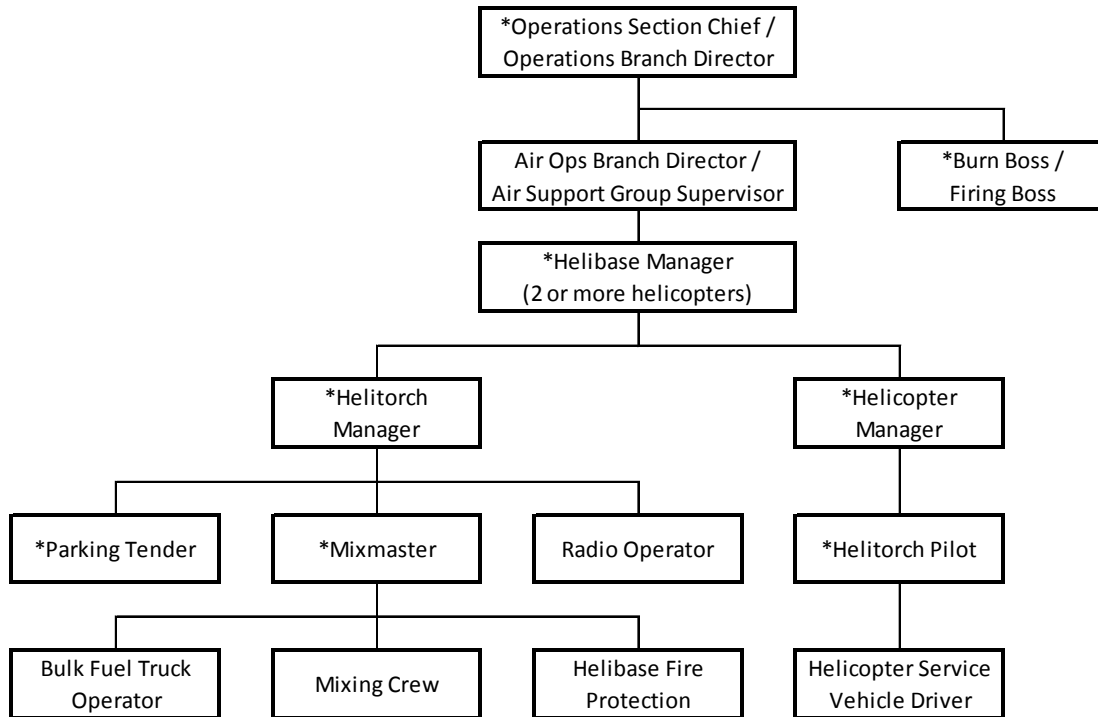


**\*Minimum required organization. Deviation from staffing required positions requires prior approval from Regional Helicopter Operations Specialist or State/Regional Aviation Manager. Other positions to be filled as needed to provide for a safe and efficient operation.**

**Note:** Helibase Fire Protection may be staffed by members of the Mixing Crew.

**Note:** Identify all trainees for given positions on the organization chart.

## Helitorch Organization Chart –Wildland Fire



**\*Minimum required organization. Deviation from staffing required positions requires prior approval from Regional Helicopter Operations Specialist or State/Regional Aviation Manager. Other positions to be filled as needed to provide for a safe and efficient operation.**

**Note:** On operations utilizing only one helitorch helicopter, the Helitorch Manager may have collateral duties as the Helicopter Manager as well as either (not both) the HTMM or HTPT (reference chapter IV for collateral duty allowances for all positions).

**Note:** Helibase Fire Protection may be staffed by members of the Mixing Crew.

**Note:** Identify all trainees for given positions on the organization chart.

### Helicopter Crash Rescue/Medivac Plan

<b>General Instructions</b>	
In the event of an accident, the Helicopter/Helibase/Helitorch Manager will supervise and coordinate the crash rescue activities. Specific crash rescue duties will be assigned to helibase personnel each morning before flights of any kind. Crash rescue, evacuation and first aid equipment will be located near the helipad and equipment's location made known to all helibase personnel. Information and instructions will be sent/received through the local dispatch office or communications.	
<b>Specific Information and Instructions</b> (Utilize cell phone if possible. Do not use names over the radio.)	
1.	Nature of the injury(s)/illness.
2.	Is medical help needed? If available supply vital signs!
3.	What transportation is needed? Is patient(s) ambulatory?

4.	Location of victim.	
5.	Route to be taken (use land marks as guide).	
6.	Equipment needed.	
7.	Name of contact on site.	
8.	Notify appropriate agency line officer.	
<b>EMT(S) on project</b>		
<b>Available Medivac helicopters</b>		
FAA #	HMGB	
Litter/rappel/extraction capable		
Remarks		
FAA #	HMGB	
Litter/rappel/extraction capable		
Remarks		
<b>Nearest medical facility</b>	Location	
Latitude	Longitude	Contact Freq
VOR	NM	DEG
<b>Nearest burn center</b>	Location	
Latitude	Longitude	Contact Freq
VOR	NM	DEG
<b>Life Flight</b>	Location	
Type aircraft	Phone Number	Contact Freq
<b>Site conditions</b>		
Latitude	Longitude	Contact Freq
VOR	NM	DEG
Wind speed	Elevation (msl)	Temperature (F, C)
Terrain factors	Helispot size	
Proximity of helispot to injury site	Visibility/sunrise/sunset limitations	
Flight hazards		
Other aircraft in area (call signs and frequencies)		
Ground contact and frequencies		

### Helitorch Inspection Checklist

Project/Incident		Location
Helitorch Manager		Date
Helitorch Mixmaster		Date
<b>DAILY INSPECTION</b>		
<b>HELITORCH DRUM/TANK</b>		
<input type="checkbox"/>	Visually inspect for damage and leaks	
<input type="checkbox"/>	Clean and ready for use	
<input type="checkbox"/>	Valves clean and working properly	
<input type="checkbox"/>	All fittings in place and leak free	
<input type="checkbox"/>	Removable drum head in place, securing band tight, and leak free	
<input type="checkbox"/>	All bolts/pins in place and secure	
<input type="checkbox"/>	Bonding cable connection paint free and clean to allow continuity	
<input type="checkbox"/>	Replacement drum available on-site	
<b>HELITORCH FRAME</b>		
<input type="checkbox"/>	No cracks or breaks	
<input type="checkbox"/>	Clean and ready for use	
<input type="checkbox"/>	All bolts/pins in place and secure	
<b>MOTOR AND ELECTRICAL HOUSING</b>		
<input type="checkbox"/>	Clean	
<input type="checkbox"/>	Motor pulley and belt in good condition	
<input type="checkbox"/>	Electrical wiring free from cracks, corrosion and connected properly	
<input type="checkbox"/>	Pump motor lubricated	
<input type="checkbox"/>	All screws and bolts in place and tight	
<input type="checkbox"/>	Pump operating (primed)	
<input type="checkbox"/>	Ignition system adjusted, clean and working	
<b>HOSE CONNECTIONS</b>		
<input type="checkbox"/>	Clean with clamp or compression fittings tight/leak free	
<input type="checkbox"/>	Dry Break Valves clean. <b>Caution! Do not open valve unless attached!</b>	
<input type="checkbox"/>	Swivel rotates freely	
<b>SUSPENSION SYSTEM AND HELITORCH ELECTRICAL CABLE</b>		
<input type="checkbox"/>	Clean and free of kinks, nicks, corrosion, and burrs	
<input type="checkbox"/>	Suspension line connectors secure and in good condition	
<input type="checkbox"/>	All bolts, nuts, and attachment ring meet MTDC drawing, properly secured	
<input type="checkbox"/>	Electrical connector clean and tight w/line properly attached to suspension system and Helitorch	
<input type="checkbox"/>	Separator bars not cracked or broken and properly attached between cable swedges	
<b>HELITORCH SUPPORT KIT</b>		
<input type="checkbox"/>	Windsock	<input type="checkbox"/> Dust masks
<input type="checkbox"/>	Approved powder dispenser	<input type="checkbox"/> First aid kit/burn kit
<input type="checkbox"/>	Fire extinguishers, one per pad, four per mixing area; 40 BC, or compressed foam extinguishers (see Chapter IV)	<input type="checkbox"/> 100% Cotton coveralls or Carbon Fiber NOMEX (variety of sizes)
<input type="checkbox"/>	Continuity tester	<input type="checkbox"/> Spare dry break valves
<input type="checkbox"/>	Two 5-gallon slop buckets.	<input type="checkbox"/> Chemical splash goggles
<input type="checkbox"/>	Tool kit and Bung wrench	<input type="checkbox"/> Wire brush, steel wool
<input type="checkbox"/>	Spare parts kit	<input type="checkbox"/> Wire ties
<input type="checkbox"/>	Hearing protection	<input type="checkbox"/> Electrical & duct tape
<input type="checkbox"/>	Orange paint/fluorescent flagging/pad markers	<input type="checkbox"/> Silicon based lubricant/engine de-greaser
<input type="checkbox"/>	Bonding cables	<input type="checkbox"/> Washbasin, soap, and 5 gallons of water
<input type="checkbox"/>	Emery cloth and extra tip parts	<input type="checkbox"/> Hand cleaner and rags
<input type="checkbox"/>	Metal funnel and coffee can	<input type="checkbox"/> Scale and scoop for measuring gelling agent
<input type="checkbox"/>	Approved Flight helmet, flight suit	<input type="checkbox"/> Fuel thermometer
<input type="checkbox"/>	Approved vapor recovery/removal hose 2"	<input type="checkbox"/> Clay Bailey pressure relief valve
<input type="checkbox"/>	2 extra sight glasses	<input type="checkbox"/> Nonferrous paddle/scrapper
<input type="checkbox"/>	5 gallons of diesel for cleanup	<input type="checkbox"/> Cleaning rags, hand cleaner, garbage bags
<input type="checkbox"/>	2 extra drum head seals	<input type="checkbox"/> Nitrile, cotton, leather gloves
<input type="checkbox"/>	Grease gun w/grease	<input type="checkbox"/> Single pole guarded electrical switch
<input type="checkbox"/>	Extra nuts and bolts	<input type="checkbox"/> Propane bottles if needed
<input type="checkbox"/>	5-gallon hazmat spill kit	<input type="checkbox"/> Headset/patch cords
<input type="checkbox"/>	2 nonferrous metal pipe wrenches	<input type="checkbox"/> Eye wash station
<b>Helitorch Mixmaster</b>	<b>Signature:</b>	<b>Date</b>

### Helitorch Mix Systems Checklist

Project/Incident	Location		
Helitorch Manager	Date		
Helitorch Mixmaster	Date		
<b>DAILY INSPECTION</b>			
<b>DRUM/TANK</b>			
<input type="checkbox"/>	Visually inspect for damage and leaks		
<input type="checkbox"/>	Clean and ready for use		
<input type="checkbox"/>	Valves clean and working properly		
<input type="checkbox"/>	All fittings in place and leak free		
<input type="checkbox"/>	Removable drum head in place, securing band tight, and leak free		
<input type="checkbox"/>	All bolts/pins in place and secure		
<input type="checkbox"/>	Bonding cable connections paint free and clean to allow continuity throughout mixing system		
<input type="checkbox"/>	Drum stand on-site and in working condition		
<input type="checkbox"/>	Replacement drum available on-site		
<b>MIXING SYSTEM FRAME</b>			
<input type="checkbox"/>	No cracks or breaks		
<input type="checkbox"/>	Clean and ready for use		
<input type="checkbox"/>	All bolts/pins in place and secure		
<b>ENGINE AND ELECTRICAL SYSTEMS</b>			
<input type="checkbox"/>	Clean		
<input type="checkbox"/>	Pulleys, shafts, and belts in good condition		
<input type="checkbox"/>	Electrical wiring free from cracks, corrosion, and connected properly		
<input type="checkbox"/>	Drive shaft bearings lubricated		
<input type="checkbox"/>	All screws and bolts in place and tight		
<input type="checkbox"/>	Pump operation checked		
<input type="checkbox"/>	Gas tank full		
<input type="checkbox"/>	Oil clean and at operating level		
<input type="checkbox"/>	Spark plug operational and spare available		
<input type="checkbox"/>	Air filter clean and foam sponge lightly oiled		
<input type="checkbox"/>	Ignition system clean and operational		
<b>PLUMBING AND HOSES</b>			
<input type="checkbox"/>	Clean with clamp or compression fittings tight/leak free		
<input type="checkbox"/>	Dry Break Valves clean. <b>Caution! Do not open valve unless attached!</b>		
<input type="checkbox"/>	Bonding continuity tested		
<input type="checkbox"/>	Check for cracks, wear and serviceability		
<input type="checkbox"/>	Swivels rotate freely and not leaking		
<b>MIXING SYSTEM SUPPORT KIT (in addition to Helitorch support kit)</b>			
<input type="checkbox"/>	Spare tire, jack, tire lug wrench	<input type="checkbox"/>	Jumper cables, tow chain
<input type="checkbox"/>	Spare trailer light bulbs	<input type="checkbox"/>	First aid kit
<input type="checkbox"/>	1 fire extinguisher, 40-B:C	<input type="checkbox"/>	Extra trailer hitch ball
<input type="checkbox"/>	Extra fuses	<input type="checkbox"/>	Extra motor oil
<input type="checkbox"/>	Chock blocks	<input type="checkbox"/>	Safety can of gasoline
<input type="checkbox"/>	Gelling agent 8 hours worth	<input type="checkbox"/>	20-foot emergency shut off lanyard
<input type="checkbox"/>	Current copy of Interagency Aerial Ignition Guide	<input type="checkbox"/>	Emergency release attachment handle
<input type="checkbox"/>	Copy of MSDS	<input type="checkbox"/>	Extra pressure gauge
<input type="checkbox"/>	DOT Transportation papers	<input type="checkbox"/>	Terra torch wand
<input type="checkbox"/>	North America Hazardous Materials Guide	<input type="checkbox"/>	Barrier flagging
<b>Helitorch Mixmaster</b>	<b>Signature:</b>	<b>Date</b>	

## Helitorch Operations GO/NO GO Checklist

The helicopter operations on this project require the use of this checklist. If all items are not checked as satisfactory and maintained in that state for the duration of the mission, flying operations will be suspended until the deficiency is mitigated.

Project/Incident		Location	
Helitorch Manager		Date	
Burn Boss/ Firing Boss		Date	
DAILY INSPECTION			
ORGANIZATION			
GO	NO/GO		
		Helitorch organization chart has been prepared and posted showing responsibility for functions by name.	
		All helitorch positions are filled by qualified personnel and trainees identified.	
		Pilot and aircraft agency approved cards checked.	
		Agency Helitorch module certified by agency aviation manager/HOS and documentation checked by HTMG.	
		Vendor provided equipment and personnel approved through contracting and checked by HTMG.	
		Multiple aircraft - Helibase Manager qualified and assigned.	
		Briefing: to include as a minimum all required Helitorch personnel, key-firing personnel, fire protection personnel, fuel handling personnel, and Helitorch pilot.	
		Overhead personnel responsibilities and authorities identified and discussed.	
		Area flight hazard map posted, hazards discussed and mitigated with pilot.	
		Personnel assignments/duties/responsibilities known and understood.	
		Helibase Managers checklist reviewed.	
		Fire Shelter provided for pilot, on board and accessible and pilot familiar with use.	
		Establish rendezvous point, escape routes and safety zone for personnel and equipment accountability for Helitorch base incidents and escaped fire situation. Radio notification will be made in the event personnel need to evacuate work area.	
		All personnel will be briefed on the hazards associated with the handling of the materials.	
CRASH RESCUE PLAN			
		Aviation Safety Plan approved, and posted at helibase.	
		Helibase crash rescue personnel assigned, duties discussed and understood.	
		Aircraft Incident Response Plan/Crash Rescue Plan posted at Helitorch base and dispatch	
		Map showing flight routes, Helitorch area, flight hazards, ground access routes, and alternate landing posted on a bulletin board.	
		Emergency procedures with torch operations reviewed, duties discussed and understood.	
		Emergency fire suppression and Medivac procedures reviewed, duties discussed and understood. Location of crash rescue, evacuation and 1 <sup>st</sup> aid equipment discussed with all.	
MIXING AREA			
		Separate from other helibase activities	
		Traffic, ground vehicles, personnel, and aircraft control measures in place.	
		Bulk fuel supply available and properly located, bonding measures properly applied, fuel handlers briefed.	
		Operational 15 minute gravity fed portable eye wash station that meets ANSI Z358.1-1998, OSHA 1910.141	

## Helitorch Operations GO/NO GO Checklist (continued)

<b>MIXING AREA (continued)</b>		
GO	NO/GO	
		Fire suppression equipment in place: Reference IAIG Chap IV section VI
		Post "No Smoking" signs at all vapor removal outlets and mixing areas.
		Equipment operational, dry run/walk through with mixing personnel completed.
		Personal protective equipment: Personnel must be equipped with eye protection, hardhat, fire retardant anti-static or 100 percent cotton coveralls and Nitrile Chemical Resistant gloves.
		Mixing equipment located outside of safety circle and out of approach and departure paths.
		OSHA 1910.141 and 1926.51 Requires that potable drinking water be provided at each jobsite. In addition if the employee is consuming their lunch at the site then hand soap and water or another form of cleansing/disinfecting agent must be provided.
<b>LANDING AREA(s)</b>		
		Approach and departure paths adequate.
		Landing Area/Safety Circle free from hazards.
		Traffic, ground vehicles, personnel, and aircraft control measures in place.
		Dust abatement measures taken.
		Helicopter fuel truck parking area and driving route designated, located away from flight routes, landing areas, and personnel.
		Fire extinguishers, crash rescue/extraction kit and evacuation kit on site per IHOG.
<b>COMMUNICATIONS</b>		
		Communication Plan completed and posted at Helitorch base
		Have established radio frequencies as designated on the Aviation Safety Plan.
		Parking Tender is equipped with a radio with headset and hardhat or approved Flight Helmet with remote transmit button/switch.
		Radio frequency assignments established to include the discrete frequency.
		Communications tested and operational with all functions to include Dispatch/ICP.
<b>ORIENTATION FLIGHT</b>		
		Discuss flight profile, watchout situations including loss of tail rotor authority, settling with power, downwind turns, etc.
		Ignition patterns understood.
		Location of control lines and personnel known.
		Communication terminology and objectives discussed.
		Flight routes include jettisoning torch considerations and alternate landing sites, identified during pilot orientation flight/briefing.
<b>GO/NO GO CHECKLIST</b>		
		All checklists completed (Helitorch Inspection Checklist, Mixing Systems Checklist).
		Helitorch Operations Go/No Go Checklist Completed. (All items must be checked GO prior to commencing operations.)
<b>Helitorch Manager</b>	<b>Signature:</b>	<b>Date</b>
<b>Mixmaster</b>	<b>Signature:</b>	<b>Date</b>





## Helitorch Pre-Use Checklist

### Batch Mixer

#### Pump:

- Gas
- Oil
- Air filter
- Zirc greased
- Hose reel
- Pump
- Start and warmup

### Fuel Drum

- All welds
- Interior clean
- Cover and latch working
- Properly placarded

### Helitorch

- Grease zirco on drum
- Dry-breaks tight and functioning
- Inspect:
  - Hoses
  - Switches
  - Cables
  - Electrical lines
  - Bell ring properly configured for specific helicopter
- Install spreader bars
- Inspect barrel for cleanliness
- Replace propane bottle for new, full one
- Inspect hose clamps
- Ensure U-bolts for paddles are tight
- Inspect lid on barrel
- Ensure correct polarity
- Inspect drive belt
- Check ignitor distance from propane nozzle (1/2")
- Check plunger on tip, ensure complete springback
- Inspect sled for cracks, welds, etc.
- Flush 50-foot line of remnant diesel prior to inserting into torch
- Perform pre-operational checks on:
  - Hook check
  - Pump
  - Ignition
  - Propane
  - Complete checklist from burn plan (**daily**)

## Helitorch Post-Use Maintenance Checklist

Date: \_\_\_/\_\_\_/\_\_\_

Inspector: \_\_\_\_\_

- \_\_\_\_\_ Flush batch mixer and helitorch(s) with diesel; remove residual gel.
- \_\_\_\_\_ Ensure pump switches are turned off.
- \_\_\_\_\_ Cover helitorch tips.
- \_\_\_\_\_ Cover batch mixer dry break.
- \_\_\_\_\_ Remove spreader bars.
- \_\_\_\_\_ Tape up cables.
- \_\_\_\_\_ Protect torches and pump with covers.
- \_\_\_\_\_ Grease trailer axles.
- \_\_\_\_\_ Ensure all lights, electrical connections on trailer functioning.
- \_\_\_\_\_ Properly secure all items on trailer.

## Helitorch Annual Maintenance and Winterization Checklist

Date: \_\_\_/\_\_\_/\_\_\_

Inspector: \_\_\_\_\_

- \_\_\_\_\_ Completely clean and drain batch mixer and barrels.
- \_\_\_\_\_ Remove all gas from pump.
- \_\_\_\_\_ Add 5 gallons diesel to batch mixer, circulate, and store.
- \_\_\_\_\_ Grease all zircs on batch mixer.
- \_\_\_\_\_ Disassemble and clean all helitorch tips.
- \_\_\_\_\_ Inspect all items and store trailer in covered area.
- \_\_\_\_\_ Ensure all items on inventory are present and functioning.
- \_\_\_\_\_ Reorder/purchase any needed items.
- \_\_\_\_\_ Routine inspection of equipment should occur even during times of non-use to prevent corrosive damage.

### Helitorch Use Record (Example)

Date: \_\_\_/\_\_\_/\_\_\_ Location: \_\_\_\_\_

Agency: \_\_\_\_\_ Management Code: \_\_\_\_\_

Burn Boss: \_\_\_\_\_

Helitorch Base Manager: \_\_\_\_\_

Mixmaster: \_\_\_\_\_

Parking Tender: \_\_\_\_\_

Driver (Batch Mixer): \_\_\_\_\_

Torch #: \_\_\_\_\_ Fuel Used (gal): \_\_\_\_\_ Gelling Agent Used (lb/gal): \_\_\_\_\_

Bottles of Propane Used: \_\_\_\_\_ Acres Treated: \_\_\_\_\_

Fuel Vendor: \_\_\_\_\_

Helicopter Make/Model: \_\_\_\_\_ N#: \_\_\_\_\_

Helicopter Company: \_\_\_\_\_ Pilot: \_\_\_\_\_

Weather: \_\_\_\_\_

Problems Encountered: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Maintenance Performed/Needed: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_