Appendix A – Plastic Sphere Dispenser 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.)

- PSD Air Operations/Safety GO/NO GO Checklist*
- PLDO Position Task Sheet* http://www.blm.gov/nifc/st/en/prog/fire/Aviation/training.html
- PSD Project Aviation Safety Plan
- Job Hazard Analysis
- Job Risk Analysis
- Aviation Risk Assessment Worksheet (Reference IHOG Appendix J)
- PSD Organization Chart – PSD Prescribed Fire
- PSD Organization Chart – PSD Wildland Fire
- Helicopter Crash Rescue/Medevac Plan

Optional Forms/Documents

- Aerial Ignition Preplanning Checklist
- Interagency PSD Operator Annual Recertification Training Form
- Aerial Ignition Annual Qualifications Update Sheet
- PSD Use Record
- Premo Mark III kit information
- Red Dragon kit information
- Manufacturer supply contact list

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 Plastic Sphere Dispenser (PSD) operations. Review of the PSD JHA with all Plastic Sphere Operations personnel prior to commencing a project is required.

THE FOLLOWING FORMS ARE REQUIRED

PSD Air Operations/Safety 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.

HELIBASE SAFETY		
GO	**NO/GO**	
		Approved Project Aviation Safety Plan.
		Qualified Helibase Manager assigned (if necessary).
		Helibase/helispot meet established standards.
		Organizational chart posted, assignments known.
		Communication Chart posted. Frequency assignments known.
		Helibase/helispot fire protection meets established standards.
		Crash rescue/evacuation kits on the helibase/helispot.
		Current Mishap Response Plan posted at helibase/dispatch and ready to implement
		All personnel briefed. Aerial ignition personnel briefed on in-flight operations.
		Personnel protective equipment meets established standards.
		Flight hazard map posted/ hazards known to pilot.
AIRCRAFT/PILOT(S)		
		Check pilot and aircraft approval cards, qualified for mission?
		Check pilot and aircraft limitations.
		Load calculations prepared, reviewed, signed and posted.
		Check aircraft radios, frequencies programmed?
		Remove ALL loose articles from aircraft.
		Fire shelter on board aircraft for EACH person.
		Water bucket ordered with aircraft (optional)
		Approved secondary restraint – check to see it does not reach beyond the sill of the aircraft when secured.
		Discuss flight profile, watch out situations including loss of tail rotor authority, settling with power, downwind turns, etc.
PLASTIC SPHERE DISPENSER		
		Installation correct with restraints in place.
		Bench test complete, mechanical operations satisfactory.
		Extinguisher (water reservoir) system filled and operational.
		Glycol reservoir filled and tightly capped
		20-second ignition delay achieved.
		Intercom and aircraft-to-ground communications operable.
		Pilot has been briefed and agrees that all is in order.
		Sphere containers secured.
		Seat belt cutter available for emergency use.
		Additional container of water available.
		Tool kit/Operators manual on board aircraft (optional).
BURNING OPERATIONS		
		All persons briefed and assignments known.
		Maps/photos of project area used/posted.
		Special weather considerations known/discussed.
		Communication plan posted and frequency assignments known
		Emergency operations plan known and discussed.
		Personal protective equipment meets established standards.
		Special safety considerations known and discussed.
SUPPORT EQUIPMENT/PERSONNEL		
		Adequate support equipment/personnel to complete mission.
		Pump/engine operational checks.
		Radios/communications operationally checked.

		Support equipment/personnel propositioned before actual operations begin.
		Adequate supply of plastic spheres and glycol to complete project.

PSD Operator	/ Date	Pilot	/ Date
Burn Boss/Firing Boss	/ Date	Helicopter Manager	/ Date

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:

2. Project Name and Objectives

Aerial Ignition Project Aviation Safety Plan		
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. :

4. Project Dates

Anticipated Project Date:	Start Time:	Ending Time:

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: ☐ Map **REQUIRED**	☐ 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: ☐Yes ☐ No

8. Pilot

Pilot Name:	Pilot Carded: ☐Yes ☐No
Expiration Date:	

9. Participants

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

1O. Communications Plan, Flight Following, Accident Response

Flight Follow Procedure:		Request or Flight #:
Method of Resource Tracking: ☐ Phone ☐ Radio ☐ AFF		☐ Prior to Takeoff ☐ Each Stop Enroute ☐ Arrival at Dest.
Scheduling Dispatch Phone:		Destination Dispatch Phone:
FM Receive:	FM Transmit:	Tones:
FM Receive:	FM Transmit:	Tones:
FM Receive:	FM Transmit:	Tones:
AM Air to Air:	AM Unicom:	Other:

Helicopter Crash Rescue/Medivac Plan

General Instructions	
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.	
Specific Information and Instructions (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.
EMT(S) on project	
Available Medivac helicopters	
FAA #	HMGB
Litter/rappel/extraction capable	
Remarks	
FAA #	HMGB
Litter/rappel/extraction capable	
Remarks	
Nearest medical facility	Location
Latitude	Longitude Contact Freq
VOR	NM DEG
Nearest burn center	Location
Latitude	Longitude Contact Freq

VOR	NM	DEG
Life Flight	Location	
Type aircraft	Phone Number	Contact Freq
Site conditions		
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
☐		☐Hot ☐Cold	Start Stop	☐UTC☐Local
☐		☐Hot ☐Cold	Start Stop	☐UTC☐Local
☐		☐Hot ☐Cold	Start Stop	☐UTC☐Local
☐		☐Hot ☐Cold	Start Stop	☐UTC☐Local
☐		☐Hot ☐Cold	Start Stop	☐UTC☐Local
☐		☐Hot ☐Cold	Start Stop	☐UTC☐Local
☐		☐Hot ☐Cold	Start Stop	☐UTC☐Local
☐		☐Hot ☐Cold	Start Stop	☐UTC☐Local
☐		☐Hot ☐Cold	Start Stop	☐UTC☐Local
☐		☐Hot ☐Cold	Start Stop	☐UTC☐Local
☐		☐Hot ☐Cold	Start Stop	☐UTC☐Local
Other airspace concerns/hazards:				

Area Hazard map must be attached.

12. Protective Clothing and Equipment

☐ General/ground personnel	Nomex clothing (or cotton clothing with helitorch mix crew), hardhat w/chin strap, gloves, leather boots, eye protection, hearing protection, fire extinguisher

☐ 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
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐No	
		☐Yes ☐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
Critical Permanent partial disability, temporary total disability.	II	State Director/Associate State Director 1 CRITICAL	District Manager 2 SERIOUS	Field Office Manager 3 MODERATE	Branch Chief 4 MINOR
Significant Hospitalized minor injury, reversible illness.	III	District Manager 2 SERIOUS	Field Office Manager 3 MODERATE	Branch Chief 4 MINOR	Line Supervisor 5 NEGLIGIBLE
Minor First aid or minor medical treatment.	IV	Field Office Manager 3 MODERATE	Branch Chief 4 MINOR	Line Supervisor 5 NEGLIGIBLE	Line Supervisor 5 NEGLIGIBLE

PSD Job Hazard Analysis (Example)

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

JOB HAZARD ANALYSIS ***(JHA)*** ***(Instructions on next page)*** **This form complies with Certification of Hazard Assessment 29 CFR 1910.133**	**1. WORK PROJECT/ACTIVITY** Plastic Sphere Dispenser Operations	**2. LOCATION**	**3. UNIT**
	4. PREPARED BY	**5. JOB TITLE**	**6. DATE PREPARED**
7. TASKS/HAZARDS	**8. ABATEMENT ACTIONS**		

Unqualified Personnel	-Sphere Dispenser Operator shall be certified annually. Pilot and helicopter will be carded annually for PSD operations. Pilot will be knowledgeable in fire behavior and trained in use of the fire shelter.
Unknown 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 MTR routes 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 Low level obstacles	-Performance planning complete/insure accurate load calculations. Do not place the aircraft in performance related situations. -Complete a high level recon, no unnecessary low level flight.
Doors off helicopter operations	-Use approved secondary restraint in addition to seat belt. Remove/secure loose items from cabin. Know VNE.
Pilot not familiar with area	-Supply hazard maps. Complete high-level recon prior to low-level work, project area identified.
Noise, rotor wash	-Wear ear and eye protection.
Unplanned aircraft events	-All personnel equipped with required PPE and trained in crash procedures. Review Crash Rescue/Medevac plan. Utilize Personnel Flotation Device when required.
Hazardous materials	-Qualified personnel will handle, review MSDS, inform pilot.
Communications	-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 for takeoffs/landings.
Rotor hazards	-Pilot perform aircraft safety brief, approach/depart safely or after shutdown and rotors stop.
Multiple project aircraft	-Adequate aerial supervision. Carded managers for each aircraft. Maintain aircraft separation and positive communications.
PSD Equipment Spheres/Gylcol Ignition Issues	-Use only approved equipment with current retrofits as per IAIG. Bench testing will be completed prior to any operational mission and conducted a safe distance away from aircraft. -MSDS sheets on-site and reviewed, personnel briefed on hazards, transportation of hazmat complies with agency direction.
Missing Aircraft, Crash/Search & Rescue	-Conduct orientation flight review emergency procedures with appropriate personnel, and complete all operational checklists prior to starting operations.
Aircraft Fueling	-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). Trained personnel staff extinguisher.
PSD Malfunctions	Duties assigned for extraction, suppression and flight following. Dispatch/helibase personnel responsible to have current Aviation Incident Response/Crash SAR Plan posted and ready to implement. -Malfunctions will be addressed in project briefing. Operator will immediately notify pilot of problem and take appropriate action to correct. If malfunction cannot be corrected in the air, the helicopter will land. If fire occurs that the operator cannot extinguished, the pilot will be notified and operator will take appropriate actions.
Cold Weather Operations	-Utilize approved cold weather garments.

9. LINE OFFICER OR DESIGNEE SIGNATURE	**10. TITLE**	**11. DATE**

Job Risk Analysis

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

Is everything approved with clear instructions, aviation plan signed and reviewed?	Yes	No	NA
Are communications and flight following established, including repeater tones?	Yes	No	NA
Can terrain, altitude, temperature, or weather that could have an adverse effect be mitigated?	Yes	No	NA
Are all aerial hazards identified and known to all participants?	Yes	No	NA
Have mitigating measures been taken to avoid conflicts with military or civilian aircraft.	Yes	No	NA
Have adequate landing areas been identified and or improved to minimum standards.	Yes	No	NA
Are all agency personnel qualified for the mission?	Yes	No	NA
Is the pilot carded and experienced for the mission to be conducted?	Yes	No	NA
Are pilot flight and duty times compromised?	Yes	No	NA
Are there enough agency personnel to accomplish the mission safely?	Yes	No	NA
Will adequate briefings be conducted prior to flight to include Pilot, Passengers, and Dispatch?	Yes	No	NA
Are all involved aware that the Pilot has the final authority, but if any passenger feels uncomfortable, that they can decline the flight?	Yes	No	NA
Is the aircraft capable of performing the mission with a margin of safety?	Yes	No	NA
Have manifests of cargo and passengers, load calculations, and/or weight and balance completed?	Yes	No	NA
Is the aircraft properly carded?	Yes	No	NA
Do all personnel have the required PPE?	Yes	No	NA
Fuel planning, adequate fuel on board, fuel truck location, availability of commercial fuel?	Yes	No	NA
Remember maps of areas/sites, handheld radios, cell phones, day/survival packs, and sick sacks.	Yes	No	NA
Is there an alternative method that would accomplish the mission more safely?	Yes	No	NA
Will the mission be conducted at low levels? (Below 500’ AGL). Discuss.	Yes	No	NA
	Yes	No	NA
	Yes	No	NA
	Yes	No	NA
	Yes	No	NA
	Yes	No	NA
	Yes	No	NA
	Yes	No	NA
	Yes	No	NA
	Yes	No	NA

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
HIGH	Incident Commander or Ops Chief	State Director/ Regional Manager
SERIOUS	Incident Commander or Ops Chief	District Manager/Forest Aviation Officer
MEDIUM	Air Operations Branch Chief	Field Manager/District Ranger
LOW	Helibase Manager	Helicopter or Flight Manager

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?	☐ Yes	☐ No	☐ NA
2. Project Aviation Safety Plan is approved and signed at the appropriate levels?	☐ Yes	☐ No	☐ NA
3. Is the emergency evacuation plan, helibase crash/rescue plan reviewed?	☐ Yes	☐ No	☐ NA
4. Are communications and flight following established, including repeater tones?	☐ Yes	☐ No	☐ NA
5. Can terrain, altitude, temperature or weather that could have an adverse effect be mitigated?	☐ Yes	☐ No	☐ NA
6. Are all aerial hazards identified and known to all participants?	☐ Yes	☐ No	☐ NA
7. Have ground operations hazards and safety been identified to all participants?	☐ Yes	☐ No	☐ NA
8. Have mitigating measures been taken to avoid conflicts with military or civilian aircraft?	☐ Yes	☐ No	☐ NA
9. Have adequate landing areas been identified and or improved to minimum standards?	☐ Yes	☐ No	☐ NA
10. Are all agency personnel qualified for the mission?	☐ Yes	☐ No	☐ NA
11. Are there enough (qualified) agency personnel to accomplish the mission safely?	☐ Yes	☐ No	☐ NA
12. Is the pilot carded and experienced for the mission to be conducted?	☐ Yes	☐ No	☐ NA
13. Will adequate briefings be conducted prior to flight to include Pilot, Passengers and Dispatch (all participants)?	☐ Yes	☐ No	☐ 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?	☐ Yes	☐ No	☐ NA
15. Is the aircraft capable of performing the mission with a margin of safety?	☐ Yes	☐ No	☐ NA
16. Have manifests of cargo and passengers, load calculations and/or weight & balance completed?	☐ Yes	☐ No	☐ NA
17. Is the aircraft properly carded?	☐ Yes	☐ No	☐ NA
18. Do all personnel have the required PPE?	☐ Yes	☐ No	☐ NA
19. Fuel planning, adequate fuel on board, fuel truck location, availability of commercial fuel?	☐ Yes	☐ No	☐ NA
20. Remember; maps of areas/sites, handheld radios, cell phones, day/survival packs, sic sacks	☐ Yes	☐ No	☐ NA
21. Will the mission be conducted at low levels? (Below 500' AGL)	☐ Yes	☐ No	☐ NA
22. Can the same objective be achieved by flying above 500' AGL?	☐ Yes	☐ No	☐ NA
23. Are pilot flight and duty times compromised?	☐ Yes	☐ No	☐ NA
24. Is there an alternative method that would accomplish the mission more safely?	☐ Yes	☐ No	☐ NA
25. Other? (identify)	☐ Yes	☐ No	☐ NA
26. Other? (identify)	☐ Yes	☐ No	☐ NA
27. Other? (identify)	☐ Yes	☐ No	☐ NA
28. Other? (identify)	☐ Yes	☐ No	☐ 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:

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

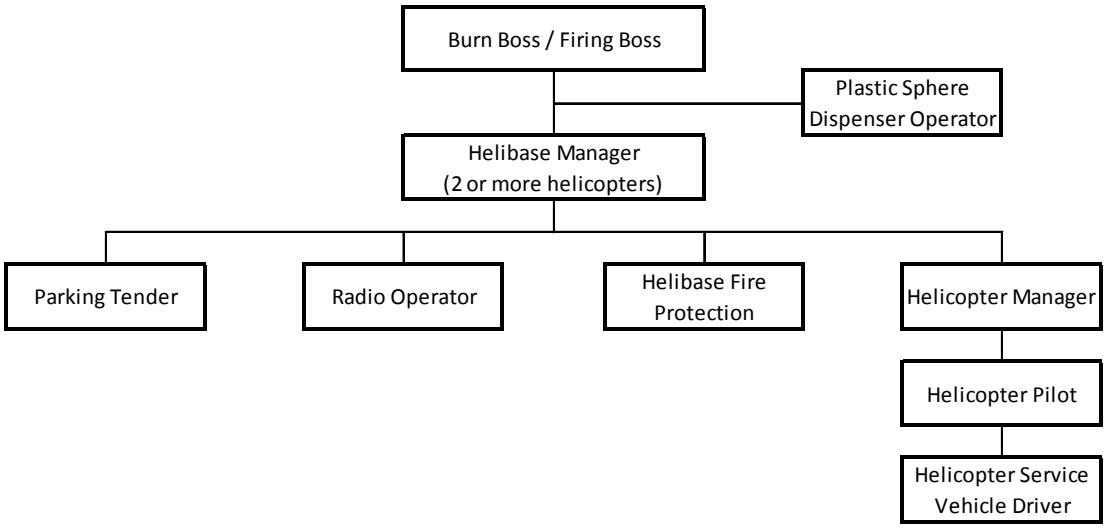
__ j. Weather Considerations

__ k. Review applicable JHAs/Risk Assessments

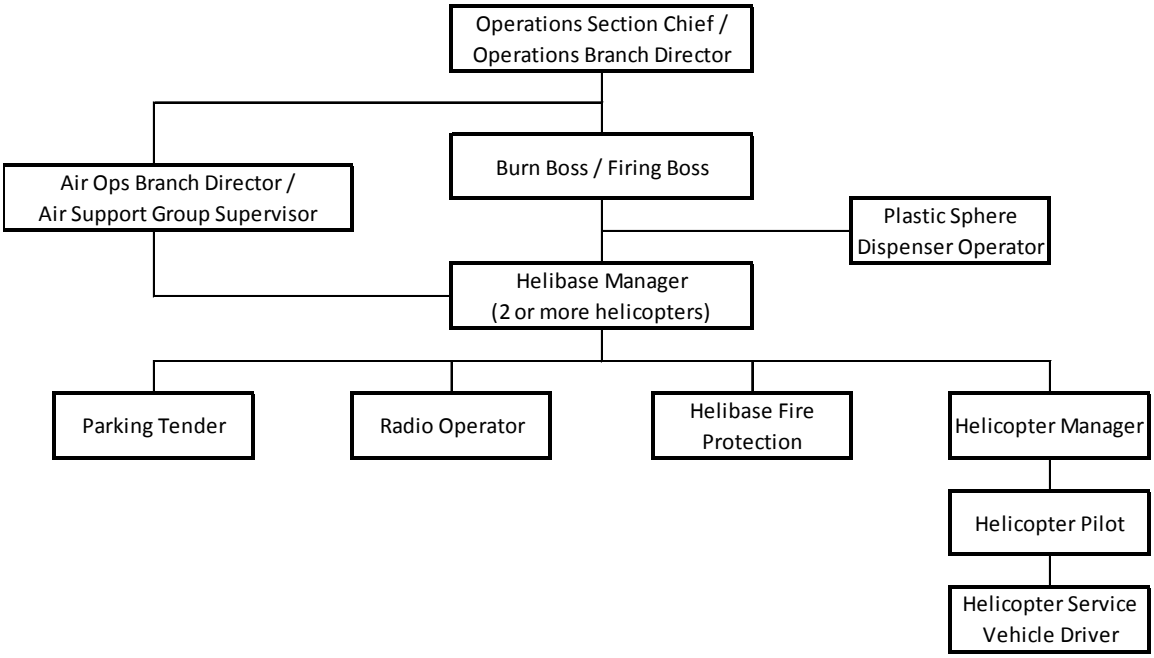
__ l. other

Briefing Attendees Signature and Concurrence:	

Plastic Sphere Dispenser Organization – Prescribed Fire



Plastic Sphere Dispenser Organization – Wildland Fire



Helicopter Crash Rescue/Medevac Plan

General Instructions			
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.			
Specific Information and Instructions (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.		
EMT(S) on project			
Available Medevac helicopters			
FAA #	HMGB		
Litter/rappel/extraction capable			
Remarks			
FAA #	HMGB		
Litter/rappel/extraction capable			
Remarks			
Nearest medical facility	Location		
Latitude	Longitude		Contact Freq
VOR	NM		DEG
Nearest burn center	Location		
Latitude	Longitude		Contact Freq
VOR	NM		DEG
LifeFlight		Location	
Type aircraft	Phone Number		Contact Freq
Site conditions			
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			

The Following Forms are Optional

PSD 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.**
Is there an aircraft and pilot available/carded	☐ **yes**	☐ **no**	☐ **N.A.**
Aircraft and fuel truck reserved/scheduled the week before	☐ **yes**	☐ **no**	☐ **N.A.**
PSD Equipment serviced and ready	☐ **yes**	☐ **no**	☐ **N.A.**
PPE including fire shelters for all participants	☐ **yes**	☐ **no**	☐ **N.A.**
Adapters needed/available	☐ **yes**	☐ **no**	☐ **N.A.**
Extra Spheres available/where	☐ **yes**	☐ **no**	☐ **N.A.**
Backup/spare PSD	☐ **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, CAF)	☐ **yes**	☐ **no**	☐ **N.A.**
Enough qualified people available	☐ **yes**	☐ **no**	☐ **N.A.**
PSD Operator(s)	☐ **yes**	☐ **no**	☐ **N.A.**
Helicopter Manager(s)	☐ **yes**	☐ **no**	☐ **N.A.**
Helibase Manager	☐ **yes**	☐ **no**	☐ **N.A.**
Parking Tender(s)	☐ **yes**	☐ **no**	☐ **N.A.**
Fire Protection Group	☐ **yes**	☐ **no**	☐ **N.A.**

Additional reminders:

_____	☐ **yes**	☐ **no**
_____	☐ **yes**	☐ **no**
_____	☐ **yes**	☐ **no**

Estimated cost:_____

Location of aircraft:_____

Interagency PSD Operator
Annual Recertification Training Form

Suggested Time 2 hours.

Training Aids Premo Mark III-Red Dragon plastic sphere dispenser
Current Interagency Aerial Ignition Guide (IAIG).

Objectives Each PSD Operator shall review the applicable sections of the Interagency Aerial Ignition Guide as well as agency-specific guidance and direction. In Chapter II section IV.A complete items 1-6 and the PLDO will have fulfilled the annual refresher requirement.

Document annual recertification on the Aerial Ignitions Qualification Sheet.

Student's Name _____

Date _____

Location of Training _____

Instructor _____

A. PLDO will complete the pre-use bench test.

PART I - BENCH TEST

1. ❑ Properly examine machine prior to firing
2. ❑ Check fuses
3. ❑ Check glycol level and emergency water
4. ❑ Checked needles
5. ❑ Rotated manual assist
6. ❑ Checked power and rotation of manual assist (arrow)
7. ❑ Briefed with burn boss/firing boss
8. ❑ Gave proper responses
9. ❑ Clear communication (concise)
10. ❑ Remained calm
11. ❑ Handled malfunctions (comments)
12. ❑ Secured machine properly

The recertification form is continued on the next page.

Interagency PSD Operator
Annual Recertification Training
(Continued)

B. Emergency Procedures (to be memorized and relayed back to certifier)

1. ❑ Operator notifies pilot of problem, stops firing and gives brief explanation.
2. ❑ If machine continues to operate, operator assesses situation.
3. ❑ If problem is a jammed machine, w/NO FIRE, operator rotates manual assist wheel until spheres have cleared machine. When obstruction is cleared, operator checks and or resets circuit breakers; operator continues communication with pilot.
4. ❑ If "FIRE IS PRESENT," operator pushes red button (emergency water) and holds button depressed for up to 30 seconds. If power is off, operator uses the required 1-gallon canteen to extinguish fire by pouring water into the hopper. Make sure the fire is out. Pilot is to land at nearest possible site.
5. ❑ If fire proves uncontrollable, operator notifies pilot and takes appropriate action.

C. Verbal Commands – In flight (to be memorized and relayed back to certifier)

1. ❑ Burn Boss/Firing Boss communicates to PLDO location boundaries of burn unit and states, "Prepare to fire."
2. ❑ PLDO responds, after machine is ready, "Ready to fire."
3. ❑ Burn Boss/Firing Boss communicates to PLDO to "start firing/number of chutes/machine speed."
4. ❑ PLDO responds, "Firing # of chutes and speed."
5. ❑ Burn Boss/Firing Boss states, "Prepare to stop firing." PLDO has hand on controls and stat "Ready to stop."
6. ❑ Burn Boss/Firing Boss states, "Stop firing."
7. ❑ PLDO states, "Chutes closed." *** PLDO waits until spheres stopped dropping and states, "Machine clear."

D. Personal Protective/Emergency Equipment (certifier asks operator to recite)

1. ❑ Approved Helicopter flight helmet
2. ❑ Nomex flight suit or Nomex shirt and trousers
3. ❑ Nomex flight gloves or other approved (leather, etc.)
4. ❑ Eight-inch top leather boots (boot tops covered by Nomex)
5. ❑ Inspect secondary restraint system before each use.
6. ❑ Seatbelt cutter – located within reach of operator
7. ❑ One-gallon canteen – located within reach of operator

* Aerial Ignition Annual Qualifications Update Sheet

Submitted by:

As of (date):

Name/Agency	Helitorch/PSD Annual Re-Certification** Dates:	Last Operational Assignment Dates and type of equipment:			
		HTMG	HTMM	HTPT	PLDO

*** Agency/Bureau Unit Name**

**** Reference the Interagency Aerial Ignition Guide Chapter II for annual re-certification requirements.**

Submit this form annually to the appropriate Agency/Bureau manager responsible for tracking qualifications and re-certification.

Plastic Sphere Dispenser Use Record

Machine # and Manufactuer_____

****

Date: ___/___/___ Location/Project: _____

Operator: _____Acres treated: _____ Spheres used: _____

Problems encountered: _____

_____

_____

_____

Maintenance performed: _____

_____

_____

_____

Resupply needs: _____

_____

_____

_____

Order/purchase date: _____/_____/_____

Comments: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

The record is continued on the next page.

PSD Use Record
(continued)

Date	*Spheres Used*	*Maintenance and Repairs Performed*

Premo Mark III

Required PSD Support Kit, Tools, Supplies, and Spare Parts

1. Harness/Gunner strap Minimum requirement is Gunner strap attached to the two point tether. A full body harness may be utilized in lieu of the gunner strap, must conform with 29 CFR 1910.66 or CFR 1926.502 or ANZI Z359.1
2. Two point tether (MTDC-993)
3. Two carabiners for two point tether (must comply with ANZI Z359.1 per 3.2)
4. Seatbelt cutter (NFES 1093) or approved Rappel knife
5. Sphere bag (refer to tech tip 91571305 Dec 1991) (cache item NFES 3004)
6. Interagency Aerial Ignition Guide
7. One gallon canteen
8. Adapter plate

TOOLS:

1. Small 3-inch slotted screwdriver
2. Medium 5-inch slotted screwdriver
3. No.2 Robertson screwdriver (square tip)
4. Set of Allen wrenches
5. Small, smooth file for emergency touch-up of needles
6. Tooth brush
7. Set of adjustable tubing wrenches
8. Combination box end wrenches (5/16”, 3/8”, 7/16”, 1/2”, and 11/16”)
9. Small, adjustable (crescent) wrench
10. Toothbrush/bottle brush

SUPPLIES:

1. Lubricant (silicon based)
2. Teflon tape
3. Brass wool
4. Scotch Brite pad
5. Hand cleaner
6. Rags
7. Paper towels
8. Citrus Based or Organic cleaner

SPARE PARTS:

1. Fuses 5A, 3A, 1.5A (newer PSDs have circuit breakers)
2. Needles (set of 4)
3. Valve springs (set or 4)
4. “O” rings for valve stem (set of 4)
5. Bulbs for indicator light
6. 1/4 x 20 wing nuts (2)
7. Electric drive motor*
8. Water/glycol pump*
9. Solenoid valve*
10. Caps for glycol/water tank*

*suggested items are field serviceable, but may result in delay of 1 to 2 hours if repair is necessary.

Required PSD Kit Items

RED DRAGON TOOL KIT

A field service tool kit is provided by the manufacturer consisting of:

1. Slotted screwdriver for operating drain valve.
2. #1 Philips screw driver for removing glycol pump assemblies.
3. Two 7/16” open end wrenches for removing injection needles.
4. Needle nose pliers.
5. 1/8” hex key wrench.
6. 2.5 mm hex key wrench.
7. Sharpening stone for needle touch-up.
8. Tip cleaner set for cleaning needle bore.
9. Scotch-brite abrasive pad for cleaning moving parts.
10. Small metal bristle brush.

SPARE PARTS

The following spare parts are included in the tool kit:

1. Two injection needles.
2. 6 mm X 12” blue tubing.
3. 6 mm X 12-1/2” red tubing.
4. 8 mm X 32” red tubing.
5. Two 6 mm tube caps.

LIST OF MANUFACTURES AND CONTACTS FOR AERIAL IGNITION SPHERES AND REPAIR SERVICES

SEI INDUSTRIES LTD, PREMO MARK III

Fire and Aviation Resource Service
200 Ember Two Road
Alexander, NC 28701
Tel: 828-775-1871
E-mail: guyfire@aol.com

SEI INDUSTRIES LTD, RED DRAGON

7400 Wilson Avenue
Delta B.C. Canada
V4G 1E5
Phone: 604-946-3131
Fax: 604-940-9566
E-mail: seisales@sei-ind.com
Website: www.sei-ind.com

Aerial and Ground Ignition Products
Type One Incident Support Inc.
PO Box 8209 Bend, OR. 97708-8209 USA
Tel: 541-330-4341
Support@typeoneproducts.com
www.typeoneproducts.com

AEROSTAT, INC.

8830 Airport Blvd
Leesburg, FL. 34788
Tel. 352-787-1348
Fax 352-787-4666