# Appendix A – Plastic Sphere Dispenser Operations

## Required Forms

Information may be contained in the IAP, Prescribed fire plan, IHOG or PASP and may be utilized in lieu of the following forms. Required forms are available at: <https://www.nwcg.gov/committees/interagency-aerial-ignition-unit>

* PSD Air Operations/Safety GO/NO GO Checklist\*
* PSD Project Aviation Safety Plan
* Job Hazard Analysis (JHA) or Risk Management Assessment (RMA)
* Aviation Risk Assessment Worksheet ([IHOG Appendix J](https://www.nwcg.gov/sites/default/files/publications/IHOG_HBM%20Forms_2016.xlsx))
* PSD Organization Chart – PSD Prescribed Fire
* PSD Organization Chart – PSD Wildland Fire
* Helicopter Crash Rescue/Medivac Plan ([IHOG HBM-15](https://www.nwcg.gov/sites/default/files/publications/IHOG_HBM%20Forms_2016.xlsx))
* Hazardous Materials Manifest ([Interagency Aviation Transportation of Hazardous Materials, Appendix 4](https://www.doi.gov/sites/doi.opengov.ibmcloud.com/files/uploads/HAZMAT_Handbook_2005.pdf))
* [Interagency Transportation Guide for Gasoline, Mixed gas, Drip torch fuel and Diesel](https://www.nwcg.gov/sites/default/files/products/pms442.pdf)

**NOTE: \* INDICATES REQUIRED FORMAT**

## Optional Documents

* Aerial Ignition Preplanning Checklist
* Interagency PSD Operator Annual Recertification Training Form
* PSD Use Record
* Manufacturer supply contact list
* Briefing Checklist
* Aerial Ignition Device Additional Training

## 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/IMT ICs 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.

Example PASPs are available at: <https://www.nwcg.gov/committees/interagency-aerial-ignition-unit>

## 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 shelters for each occupant must be carried in the aircraft and accessible during flight. |
|  |  | 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 |
|  |  | Appropriate ignition delay achieved, recommend approximately 20 second delay |
|  |  | 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 one gallon backup emergency water container 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 prepositioned before actual operations begin. |
|  |  | Adequate supply of plastic spheres and glycol to complete project. |
| **FIRING BOSS** |
|  |  | Aerial firing patterns and commands discussed and understood |
|  |  | PSD emergency procedures discussed and understood |
|  |  | Crew Resource Management between Pilot, FIRB and PLDO |
|  |  | Understanding of aircraft radio operation  |
|  |  | Understand aircraft limitations and flight profile – discussed with Pilot and PLDO |

 / /

PSD Operator Date Pilot Date

 / /

Firing Boss Date Helicopter Manager Date

## Plastic Sphere Dispenser Organization – Prescribed Fire



## Plastic Sphere Dispenser Organization – Wildland Fire



**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 [ ]  yes [ ]  no [ ]  N.A.

(Extinguishers, foam, Engine, CAF)

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:

## BRIEFING CHECKLIST

|  |
| --- |
| **Discussion Items: Pre-flight discussion points to be briefed with all.****Items that are not being met below require justification and may require a new risk assessment.****The project supervisor is responsible for this per the project aviation safety plan.**  |
| **[ ]** Aircraft inspection complete | [ ]  Pilot card Inspected | **[ ]** Fuel truck inspected (If available) Combine these three boxes and add a box for medical plan.Add phone contact list into the PASP. |
| [ ]  Clear and bright complete- Fuel sample(If vendor fuel truck is used) | **[ ]** Fuel planning(Fuel truck not on onsite) | [ ]  Aircraft still meets mission objectives (equipment and performance capabilities) |
| [ ]  Load calculation(s)/Weight and Balance (Complete and adjusted as needed) | **[ ]** Manifest(s) and briefings | [ ]  Risk assessment still applicable to mission objectives |
| [ ]  Aerial hazard/site map available and reviewed for specific project hazards | [ ]  Project site conditions evaluated (sending and receiving) | **[ ]** Crash rescue & medivac plan procedures reviewed |
| **[ ]** Equipment inspected (i.e. sling gear, nets, swivels) | **[ ]** Airspace de-conflicted (if required) | **[ ]** Hazardous materials addressed per Interagency Aviation Transportation of Hazardous Materials Guide (NFES 1068) and SDS. |
| [ ]  Communication and contact information plan reviewed  | [ ]  PPE and ALSE requirements met | [ ]  Personnel assignments identified, individual qualifications/ aviation training verified |
| **[ ]** Flight follow procedures  | [ ]  Required Go-No Go check lists completed pending mission type | [ ]  Weather briefing complete |
| **Briefing Notes:** |

## 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)**

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| ***Date*** | ***Spheres Used*** | ***Maintenance and Repairs Performed*** |
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| Aerial Ignition Device Additional Training |
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| Trainee |  |
| Unit |  |
| Specific Device Training (e.g. Red Dragon) |  |
| Date of Classroom Training for specific Device |  |
| Training Location |  |
| Instructor |  |
| Device which originally completed PTB |  |
| Instructor Comments: |
| **Purpose of Additional Device Training**: to show additional aerial ignition devices in which the operator has received classroom training and is certified to operate. An initial Position Taskbook (PTB) must have neem completed and the user showing Qualified as PLDO/HTMG/HTMM/HTPT within the IQCS/IQS system. **This does not replace the PTB.** |
| Instructor Home Unit and Contact Information |  |
| Instructor Signature |  |
| Date |  |

## 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

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

seisales@sei-ind.com

[www.sei-ind.com](http://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](http://www.typeoneproducts.com)

## AEROSTAT, INC.

8830 Airport Blvd

Leesburg, FL. 34788

Tel. 352-787-1348

Fax 352-787-4666

<http://www.aerostatinc.com>

## RAINDANCE R3

Storm King Mountain Technologies, Inc.

4725 Calle Alto

Camarillo, CA 93012

<https://www.stormkingmtn.com>
<https://www.raindancesystems.com.au>