

## Interagency Fire UAS Risk Assessment (v1.0, 5/19/19)

*Assess the risks involved with the proposed operation. Use additional sheets if necessary. Line Officer/Designee signature is required.*

### Risk Assessment Matrix

LIKELIHOOD	SEVERITY			
	Negligible IV	Marginal III	Critical II	Catastrophic I
Frequent - A				
Probable - B				High - 4
Occasional - C			Serious - 3	
Remote - D		Medium - 2		
Improbable - E	Low - 1			

### Appropriate Management Level for Risk Decisions

Risk Level	Incident	Project
High	Incident Commander	Line Officer
Serious	Air Operations Branch Director/Operations Section Chief	State Aviation Manager, Regional Aviation Manager, Regional Aviation Officer
Medium	Line Supervisor	Unit/Forest/Park Aviation Manager
Low	UAS Remote Pilot	UAS Remote Pilot

### Severity Scale Definitions

<b>Catastrophic</b>	<i>Results in fatalities.</i>
<b>Critical</b>	<i>Severe Injury or loss (non-repairable damage) of the sUAS.</i>
<b>Marginal</b>	<i>Minor injury or major (reparable damage) to the sUAS.</i>
<b>Negligible</b>	<i>Less than minor injury or minor damage to the sUAS.</i>

### Likelihood Scale Definitions

<b>Frequent</b>	Individual	<i>Likely to occur often.</i>
	Fleet	<i>Continuously experienced.</i>
<b>Probable</b>	Individual	<i>Will occur several times.</i>
	Fleet	<i>Will occur often.</i>
<b>Occasional</b>	Individual	<i>Likely to occur sometime.</i>
	Fleet	<i>Will occur several times.</i>
<b>Remote</b>	Individual	<i>Unlikely to occur, but possible.</i>
	Fleet	<i>Unlikely but can reasonably be expected to occur.</i>
<b>Improbable</b>	Individual	<i>So unlikely, it can be assumed it will not occur.</i>
	Fleet	<i>Unlikely to occur, but possible.</i>

<i>Assess and describe the risks involved with the proposed operation. Use additional sheets if necessary.</i>			
Description of Hazards	Pre-Mitigation Hazards Rating		
	Likelihood	Severity	Risk Level
	A-E	I-IV	1-4
1. Collision with another aircraft	D	I	3
2. Collision with personnel or vehicles	C	II	3
3. Collision with a fixed aerial hazard	B	I	4
4. Aircraft flyaway (loss of control)	B	II	4
5. Aircraft loss of link with ground control station	B	II	4
6. Injury caused by spinning propellers	D	II	2
7. Adverse Weather (wind, thunderstorms, etc.)	C	II	3
8. Night operations	C	II	3
9. Battery fire	C	II	3
10. Operating aircraft outside of published parameters	C	III	2
11. Lack of training in Firefighting strategy, tactics, terminology, basic ICS, frequency mgmt, etc.	B	II	4
12. Fatigue	B	II	4
13. Low CRM with crew rotations (multiple relief pilots)	A	II	4
14. PSD Operations	C	II	3
15. PSD malfunction-fire in machine attached to aircraft	C	II	3
16.			
17.			
18.			
<b>Pre-Mitigation Overall Rating (Highest Risk Level)</b>			<b>4</b>

Hazard Mitigations	Post-Mitigation Hazards Rating		
	Likelihood	Severity	Risk Level
	A-E	I-IV	1-4
1. The remote pilot will utilize a visual observer (VO) who will scan the area for air traffic and other hazards to aviation. IFUAS PMS 515 will be utilized for all incident flights and implemented when appropriate on RX projects. The remote pilot will file a NOTAM as per DOI/ FAA policy. Flights within TFRs will be coordinated with the controlling authority and participating aircraft. The remote pilot will give way to manned aircraft. Interagency Aviation Officer will send out an airspace de-confliction email to local aviation cooperators about the mission.	E	I	2
2. The remote pilot will conduct a pre-flight briefing which will include flight patterns and safe observation/parking areas. The remote pilot will not fly the UAS over personnel or vehicles.	D	II	2
3. The remote pilot will conduct a survey of the operations area prior to flight operations and consult an aviation hazard map and/or aviation sectional of the operations area.	E	IV	1
4. UAS pilot will utilize specific make/model emergency procedures. Aircraft, personnel and ATC having jurisdiction over the airspace will be notified with the last location, heading, speed and approximate battery/time remaining of the UAS. The crew actions to recover the UAS will be relayed as well.	D	IV	1
5. UAS will be programmed to return to home and land.	C	IV	1
6. Preflight briefing will include safety precautions when working around UAS with motors running. Only allow qualified UAS pilots and aircrew near the UAS during takeoff and landing operations.	E	II	1
7. Remote pilot will obtain a current forecast and ensure the aircraft is flown within approved parameters. The crew will monitor weather conditions periodically during flights. Cease	C	IV	1

aircraft operations when weather precludes mission objectives from being accomplished.			
8. The UAS will have DOI approved lighting. The launch and recovery area will be well lit. UAS pilots will be trained in UAS night operations and follow agency protocols.	C	IV	1
9. Batteries will be stored in approved containers. Batteries will be inspected prior to each flight, if and damage or abnormalities are noted the batteries will not be used and specific manufactures guidelines will be followed. A fire extinguisher will be available on site.	D	II	2
10. The remote pilot will ensure the aircraft is operated within policy and the provisions of the aircraft operations manual.	D	III	1
11. Establish requirements for documentation of online training to meet basic, minimum level of knowledge for all contracts. Consider pilot academy. Ensure IFUAS PMS 515 is utilized for all incident UAS operations and implemented when appropriate on RX projects. Follow all provision of aerial ignition plan (project or incident) and the aerial ignition guide.	C	III	2
12. Managers work with company personnel to ensure adequate rest. Manage missions to be most effective with proper use of pilots & aircraft. Implement Phase Duty Limitations as appropriate	D	II	2
13. Ensure there incoming crews are thoroughly briefed. Practice CRM, conduct effective AARs, etc. Enforce contract language regarding relief pilot/personnel changes.	C	II	2
14. Conduct orientation flight with Ignition Specialist, hang fire mitigation and escaped fire contingency established, complete all operational checklists prior to starting operations.	C	III	2
15. Emergency procedures covered by Remote Pilot, Visual Observer and Burn Boss/Ignition Specialist in pre-burn briefing. Emergency release operations tested before flight.	D	II	2
16.			
17.			
18.			
<b>Post-Mitigation Overall Rating (Highest Risk Level)</b>			<b>2</b>
<b>Rationale Statement:</b>			
<b>Drafted By:</b>		<b>Date:</b>	
<b>Approved By:</b>		<b>Date:</b>	