

M3

Aviation Management Training for Supervisors



Participant Workbook

Prepared by Office of Aviation Services - Training Division
Revised May 16, 2016

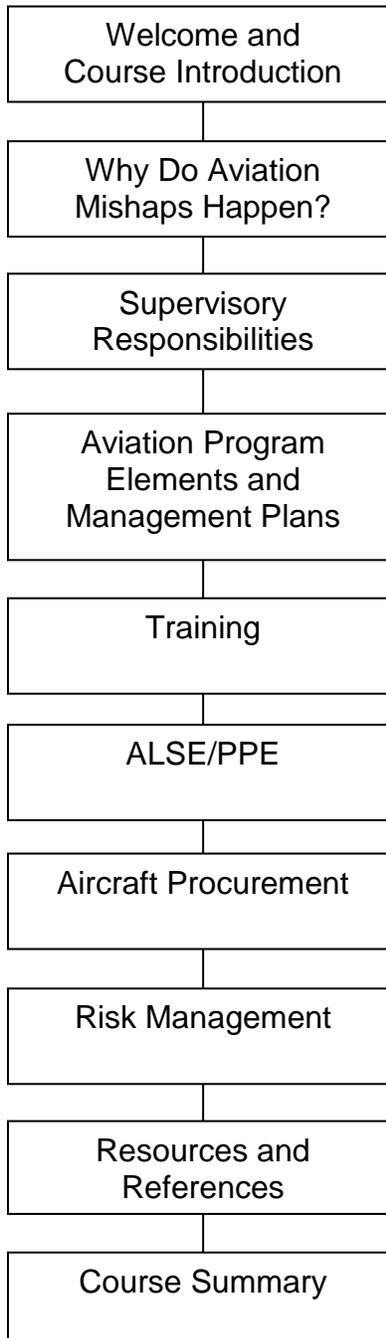
M-3 Aviation Management Training for Supervisors

Version Control

Version	Description	Date
1.00	Original Materials	02/06
1.50	Revisions made to current addition – to include objectives, format, IG, electronic presentation, participant workbook	2/8/2011
1.60	Revision following Course Revision Cycle submissions by Bureaus	7/16/2012
1.70	Corrected all reference to AMD with OAS. Updated website references. Added NTSB information for accident reviewed	2/14/2013
1.80	Formatting edits	11/8/2013
1.90	Corrected AMD reference to OAS. Crosswalk to balance of materials; minor grammatical and formatting edits.	5/23/2014
1.95	Updated to include OPM-6 and OPM-11 references, corrected outdated web links and revised exercises.	5/16/2016

M3 Aviation Management Training for Supervisors

Course Map



Welcome and Course Introduction



Get to Know Your Classmates

Be prepared to share:

- Your name?
- Your position?
- How long have you supervised people involved in aviation operations?
- What are some of the ways you use aviation support to accomplish your mission?

Objectives

At the conclusion of this course, you should be able to:

1. Define the term contributing factor as it relates to aircraft mishaps.
2. Explain how supervisors can break the chain of events that result in an aircraft mishap.
3. List three documents that provide aviation policy for your bureau.
4. Describe five key responsibilities of those who supervise aviation operations.
5. List three consequences of working outside your scope of employment.
6. Identify areas for improvement in your organization's written aviation management plan, project aviation safety plan and mishap response plan.
7. Identify aviation training you and your employees must complete; and explain how to monitor training compliance.
8. List resources available to determine required ALSE your employees must use for aviation missions.
9. Define the term End Product Contract in relation to aviation procurement.
10. List the principles of risk management and how they apply to the five-step risk management process.
11. Given an aviation scenario, demonstrate how to identify and mitigate risk using the risk assessment matrix.
12. List resources available to assist you in fulfilling your responsibilities.

Why Do Aviation Mishaps Happen?

Notes

Put Yourself in This Situation:



Interaction/Activity: ICE BREAKER EXERCISE

Take a few minutes to read and discuss the ICE BREAKER Exercise provided to your group. Designate a spokesperson to share your answers to the questions with the rest of the class.

Aircraft mishaps are the result of a chain of diverse, yet interconnecting links (events) that together produce unintended yet **predictable** consequences.

These links are expressed in terms of “contributing factors.”

Definition of contributing factor: something that helps cause a result. “According to the police report of the accident, excessive speed was a contributing factor.” “The coach's positive attitude was a contributing factor to/in the team's success.”

Contributing Factors are any behavior, omission, or deficiency that sets the stage for an accident, or increases the severity of injuries.

Source: <http://www.merriam-webster.com/dictionary/contributing%20factor>

Let's look at possible links in the chain related to supervision and ask ourselves, “What are we doing to break this chain of events?”

Shappell and Weigmann (The Human Factors Analysis and Classification System – HFACS, Feb. 2000) have identified four levels of human failures: Organizational Factors, **Unsafe Supervision**, Preconditions for Unsafe Acts, and Unsafe Acts.

Let's look at each factor affecting Unsafe Supervision:

Inadequate Supervision. The role of any supervisor is to provide the opportunity to succeed. To do this, the supervisor, no matter at what level of operation, must provide guidance, training opportunities, leadership, and motivation, as well as the proper role model to be emulated.

While empowering individuals to make decisions and function independently is certainly essential, this does not divorce the supervisor from accountability.

Planned Inappropriate Operations. Occasionally, the operational tempo and/or the scheduling of missions is such that individuals are put at unacceptable risk and ultimately performance is adversely affected. Such operations, though arguably unavoidable during emergencies, are unacceptable during normal operations.

Failure to Correct a Known Problem. The third category of known unsafe supervision, Failed to Correct a Known Problem, refers to those instances when deficiencies among individuals, equipment, training or other related safety areas are "known" to the supervisor, yet are allowed to continue unabated.

Likewise, the failure to consistently correct or discipline inappropriate behavior certainly fosters an unsafe atmosphere and promotes the violation of rules.

Supervisory Violations. Supervisory violations, on the other hand, are reserved for those instances when existing rules and regulations are willfully disregarded by supervisors.

Preventing an aircraft mishap requires that only one link (contributing factor) in the mishap chain be broken.

As supervisors, we have the opportunity to become the "chain breaker" that breaks the chain of events.

Without intending to, we may become "chain makers" when we deviate or allow our employees to deviate from established safeguards.

Supervisory Responsibilities

Notes

Where do you find aviation policy and requirements?

- Public Law (CFR's, FAR's)
- Departmental Policy
(DM 350 -354, OPM's, Handbooks)
- Field Reference Guide for Aviation Users

Where do you find bureau specific policy and requirements?

- BIA BIAM 59
- BLM BLM 9400
- BOR 114S-37
- BOEMRE MMS Manual Part 485.5
- FWS Parts 330-339 (FWS)
- NPS RM-60
- OSM ADS14
- USGS SM 445-2-H Chapter 27

350 DM 1.1

General Administration – Purpose

“DOI is responsible for air crewmembers and passengers on-board aircraft under its operational control, the provisions of Departmental Manual Series 350-354, OAS Operational Procedures Memoranda (OPMs) and appropriate handbooks are applicable to Interior employees, individuals or groups providing volunteer services without compensation, or any other persons supervised by Departmental employees.”

Supervisory Responsibilities

Notes

Key Responsibilities

- Required written plans are in place
- ALL personnel are properly trained
- Personnel use required ALSE/PPE
- Pilot(s) and aircraft are approved
- Personnel follow Departmental and Bureau policies/guidance
- Personnel consult Bureau and/or OAS aviation specialists when needed

Personal Liability

Code of Federal Regulations (CFRs) states that an employee cannot be held liable for their actions if that employee was “performing within the scope of their employment.”

Scope of Employment

Doing what you were hired to do, at the time and place you were supposed to be doing it. With the motivation to serve the employer, and act reasonably.

Professional Liability Insurance

DOI can reimburse employees holding certain Law Enforcement and Supervisor/Manager positions up to 50% of the premium for liability insurance.

**Interaction/Activity: How Are We Doing?**

Take a few minutes to assess your organization's aviation program on a scale of 1-10, with 1 being "Poor" and 10 being "Excellent" for each of the following responsibilities.

1. _____ Required written plans are in place.
2. _____ ALL personnel are properly trained.
3. _____ Personnel use required ALSE/PPE.
4. _____ Pilot(s) and aircraft are approved.
5. _____ Personnel follow Departmental and Bureau policies/guidance.
6. _____ Personnel consult Bureau and/or OAS aviation specialists when needed.

Aviation Program Elements

Notes

**“Bureau Directors are responsible for the implementation of an aviation safety program within their organizations.”
(352 DM 1.6C)**

OPM-6 Aviation Management Planning directs Bureaus to develop and publish a National Aviation Management Plan that addresses the minimum elements listed below:

1. Aviation Organization
2. Aviation Administration
3. Aviation Safety
4. Aviation Operations
5. Aviation Training
6. Aviation Security
7. Airspace Coordination
8. Aviation Project Planning Requirements

National Aviation Management Plans will be formally reviewed and approved by the respective Bureau Director at a minimum of every three years.

Aviation Program Elements – Bureau Level

- Aviation Safety Program Responsibilities
- Aircraft Mishap Prevention Program
- Aviation Review Program
- Aviation Safety Awards Program
- Aircraft Mishap Investigation
- Aircraft Safety Education and Training

Aviation Management Plan

- Establishes roles and responsibilities at the local level
- Specific guidance for your unit
- May be more restrictive than next higher level
- Includes unit risk management process
- “Who gets to make the decision?”

Opportunities for improvement may include

- Needs to be revised/updated
- Management needs to review and sign
- “Best kept secret” syndrome
 - Distribute to employees
 - Do they understand it?

Aviation Program Elements

Notes

Project aviation safety plan

- Key information that must be briefed to ALL personnel participating

What information do they contain?

Project Name and Objectives – Brief description of the project and its objectives.

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.

Project Dates – Dates the project will begin and end. These may be approximate, since the exact dates of flight may not be known.

Location – Enter a descriptive location and include a map clearly showing the area where the flights will occur. Aerial hazards must be clearly indicated.

Projected Cost of Aviation Resources – Enter cost coding, projected flight hours and cost, projected miscellaneous expenses (overnight charges, service truck mileage, etc.), and total cost of the aviation portion of the project.

Aircraft – If known, identify company(ies) that own(s) aircraft anticipated to be used, registration number, aircraft type, date of aircraft data card expiration and missions for which the aircraft is approved.

Pilot – If known, identify Pilot(s), types of aircraft qualified in, types of missions qualified for and Pilot card expiration date.

Participants – List individuals involved in flights, their qualifications (Helicopter Manager, Passenger, Helibase Manager, etc.), dates of last aviation training, and include individual's project responsibilities.

Communication Plan, Flight Following and Emergency Search and Rescue – Identify the procedures to be used.

Aerial Hazard Analysis – An aerial hazard analysis with attached map will be provided to the pilot before the flight. Flights made in confined areas (e.g. deep, narrow canyons) require that a prior ground and/or aerial survey of hazards be made. A copy of the hazards map shall be provided to the pilot prior to any

project flight. The necessary temporary flight restrictions and coordination with the Federal Aviation Administration and, if appropriate, military authorities, must be accomplished prior to project.

Protective Clothing and Equipment – Identify the protective equipment and clothing necessary for the particular operation. Survival equipment (extra water, flotation devices, sleeping bags, etc.) beyond the normal PPE complement may be required.

Weight & Balance / Load Calculations – 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.

Risk Assessment/SMS – Risk assessment utilizing the tools listed in Appendix J of IHOG or bureau approved SMS.

Risk management principles and processes are described in detail in Chapter 3 of the IHOG:

http://www.nwcg.gov/pms/pubs/pms510/23_Chapter03.pdf.

A variety of risk assessment tools can be found in the IHOG Appendix J:

http://www.nwcg.gov/pms/pubs/pms510/53_AppendixJ.pdf

Signatures – Line Manager or appropriate level of approval based on the risk assessment or other bureau requirement.

Reference OPM-6 Aviation Management Plans for further information:

<https://www.doi.gov/sites/doi.gov/files/uploads/OPM-06.pdf>

Opportunities for improvement may include

- Need to be updated as project evolves
- Risk assessment should not be “boilerplate”
- Management must review and sign
- “Second best kept secret”
- Share with ALL personnel

Aviation Mishap Response Plan

- Identifies roles and actions
- Medical services contact information
- Chain of contact for bureau and DOI management

Opportunities for Improvement

- Needs to be specific to local area
- Needs to be reviewed annually
- Appropriate personnel should practice a mock response exercise drill annually

If you have access to the internet, go to the OAS Homepage: <https://www.doi.gov/aviation> go to the *Aviation Safety* site and you can also access the *Interagency Aviation Mishap Response Plan & Checklist*.

In addition, the OAS Homepage provides current DMs, OPMs, the Aviation Training Schedule, OAS contact points, current Memorandums of Understandings with Cooperators and related links to other aviation sites.

**Interaction/Activity: What's the Plan?**

Take 4-5 minutes to identify opportunities you have to improve your:

- Aviation Management Plan
- Project aviation safety plan
- Mishap Response Plan

Write those things down and be prepared to share the opportunities you identified.

Training

Notes

**“The education and training of Interior personnel at all organizational levels is the responsibility of management.”
(352 DM 1.5B)**

Aviation Training Requirements (OPM-4)

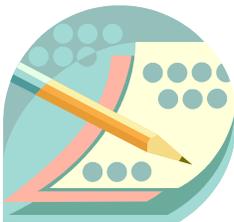
- Aircrew Members
- Passengers
- Flight Crew Members
- Supervisory Personnel
- Line Managers

Completing Training vs. Being Properly Trained

- Synthesis and application to your unit
- Assess knowledge and skills of those we supervise
- Provide employees opportunities to practice and demonstrate skills

Monitoring Training Compliance

- Individual has responsibility to keep documentation
- IAT website
- Email OAS training division with names :
iat_admin@ios.doi.gov



Interaction/Activity: Are They Properly Trained?

Take a few minutes to answer the following questions:

1. Who do I supervise that must be trained?
2. What training is required?
3. Have they completed the training?
4. Have you given them opportunities to demonstrate their knowledge and skills?

Aviation Life Support Equipment (ALSE)

Notes

Where Do I Find ALSE Requirements?

- ALSE Handbook
- Department and bureau policy
- Document exemptions granted
 - “If it ain’t in writing, it didn’t happen!”



Interaction/Activity: Today’s Top Ten List

Take 2-3 minutes and come up with a list of the “Top Ten Reasons Employees Don’t Use Required ALSE/PPE.”
Be prepared to share your list with other classmates.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Aircraft Procurement

Notes

All Flight Services Shall Be Acquired Through DOI Aviation Management Except:

- Seat Fare on Flights With Scheduled Air Carrier (353 DM 1)
- End-Product Contracts (OPM-35)
- DOI Use of USFS Procured Aircraft (OPM-39)

https://www.doi.gov/aviation/aqd/aviation_resources

The Aviation Resource List contains Aircraft and Pilots under Contract with the DOI IBC Acquisition Services. This list of aircraft and pilots are inspected and "Carded" by the DOI Office of Aviation Services, and are available for use by DOI Bureaus as well as other Federal Agencies.

This information is only accessible to DOI Employees, you must be logged in to your DOI Bison Connect email account to access the Aviation Resource List.

End Product Contract

- Aircraft and/or crew specification will **not** be identified in contract.
- **No** aircraft or pilot approval will be specified.
- DOI does **not** have operational control of aircraft.
- **No** DOI personnel are aboard the aircraft.

The following table provides some guidance to identify end product/service or flight service procurement. If the answer is YES in any block under a project, you have a flight service that must be procured through DOI OAS (OPM-35).

PROJECT

	Aerial photo remote sensing	Aerial application (spray/seed)	Aerial ignition	Animal inventory	Animal capture (net gun, dart, paintball, etc.)	Animal herding/gathering	Your project
Set pilot standards							
Direct aircraft maintenance							
Dispatch aircraft							
Helibase manager							
Aircraft manager							
Use of PPE							
DOI personnel on board							
Public aircraft							
Other aircraft and pilot requirements							

Ratification

- Unauthorized commitments subject to ratification. Will cost bureau \$1000.
- Utmost importance due to legal complications created and adverse safety implications.
- Failure to assure aircraft and pilot approved could expose passengers to unnecessary risk.

Cooperator Aircraft

- Affiliate Aircraft
- Military Aircraft
- Other Government Aircraft

Risk Management

Notes

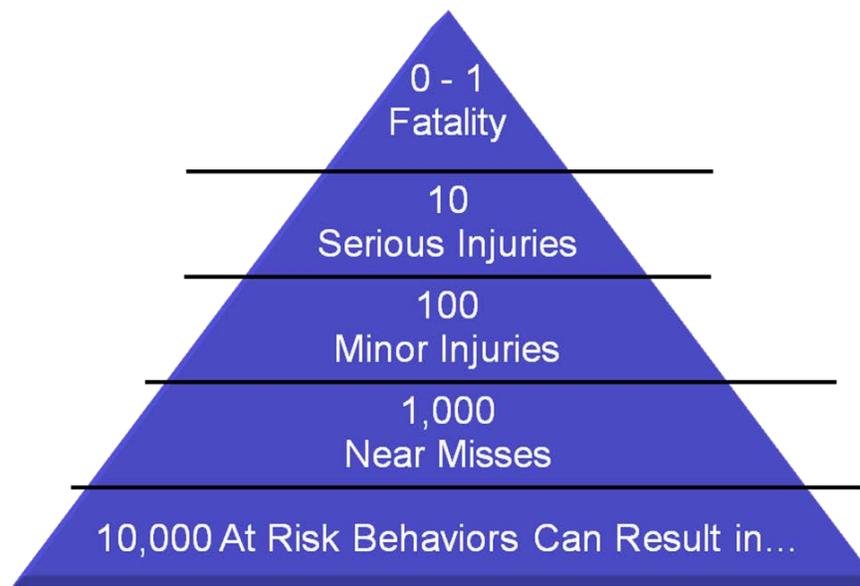
Risk is Inherent to Aviation

The primary objective of safety programs is the elimination of unnecessary or unacceptable risks **(352 DM 1.1)**.

Aviation can increase the overall safety of an operation.

Examples: A medical evacuation where ground transport is not available or too far to meet critical needs. A remote bridge project that would entail moving large amount of cargo through narrow, steep trails via pack animals when one single load via helicopter longline could accomplish the mission.

William Heinrich researched industrial accidents in the early 1900's. He discovered that there is a direct relation between at risk behavior and accidents. Since that time many researchers have studied this topic. The following accident pyramid is just one of the many illustrations resulting from such research.



Risk Management (continued)*Notes***Risk must be managed at all levels.**

- Executive Leadership
- Senior Supervisors
- Local Managers
- Pilots and Operators

In order to successfully manage risk all levels must:

- Responsible
- Accountable
- Involved
- Disciplined

Principles to consider when managing risk.

- Accept no unnecessary risk.
- Make risk decisions at appropriate level.
- Accept risk when the benefits outweigh the costs.
- Integrate risk management into planning and execution at all levels

There are steps that can be taken in order to manage risk. The Five-Step Process is one example of affective risk management.

1. Identify hazards to their mission
2. Assess what could go wrong
3. Develop risk controls
4. Implement controls
5. Supervise and Evaluate

Risk Matrix

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

Matrix Guidelines

Severity Scale Definitions	
Catastrophic	Results in fatalities and/or loss of the system.
Critical	Severe injury and/or major system damage.
Marginal	Minor injury and/or minor system damage.
Negligible	Less than minor injury and/or less than minor system damage.

Hazard Probability

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

**Interaction/Activity: How Would You Rate the Risk?**

Take 10 minutes and complete the following exercise:

1. Read the following scenario.
2. Write down some identifiable hazards on the Risk Assessment Worksheet.
3. Discuss and record a mitigation control for each identified hazard, on the Risk Assessment Worksheet.
4. Use the Risk Matrix to assign a level of risk with each of the identified hazards both pre mitigation and post mitigation.

Scenario

You have been asked to do the risk assessment for an upcoming project. The following information has been given to you concerning the project.

Project: round up of wild horses utilizing contracted helicopter and pilot in conjunction with agency personnel on the ground. The helicopter will be utilized to spot the horses which are located across a 15 square mile area of grassland plains. A government employee will be required on board to assist in locating the horses. Once located the horses will be driven by the helicopter towards a series of holding pins located within the area. The helicopter will need to push the horses into the first of several holding stalls, where the agency wranglers will then finish driving the horses into the narrowing stalls towards the final holding pins.

The project will be conducted in October prior to the first snow storms in the area.

The agency personnel performing this mission have all been exposed to similar missions in the past. The contracted helicopter and pilot are also carded for the mission and the pilot has many years of flying similar missions under his belt.

There are some communication towers in the area, however they have been well scouted and marked on aerial hazard maps. The vegetation in the area is predominately grass. The terrain is mild rolling hills. The only other identified hazards in the area are the many fence lines that mark grazing allotments in the area and the final holding cells which are made up of 10 foot high fences.

Risk Assessment Worksheet

→ Aviation Risk Assessment Worksheet

Assess the risks involved with the proposed operation. Use additional sheets if necessary.			
Assignment:	Date:		
Describe the Hazard:	Pre-Mitigation hazard rate out as:		
	Likelihood A-E	Severity I-IV	Risk Level
Pre Mitigation Overall Rating:			
Mitigation Controls:	Post-Mitigation hazards rate out as:		
	Likelihood A-E	Severity I-IV	Risk Level
Post Mitigation Overall Rating:			
Success Probability/Benefit Statement:			
Operation Approved by:	Title:	Date:	

HJA-5 4/2009 Optional

Resources and References

Notes

Resources available to you as a Supervisor/Manager

Publications -

- DM 350 – 354 & OPMs
- Bureau Specific Aviation Plan
- Unit Specific Aviation Plan
- Field Reference Guide for Aviation Users
- Aviation Life Support Equipment (handbook)
- Interagency Helicopter Operations Guide (IHOG)
- Interagency Aviation Users Pocket Guide
- Aviation Technical Assistance Directory
- Five Steps To A Safe Flight (orange card)
- Twelve Standard Aviation Questions That Shout “Watch Out!” (blue card)

Online Resources –

- <https://www.doi.gov/aviation>
- <http://www.safecom.gov>
- <http://www.doi.gov>
- <http://www.fs.fed.us/fire/>
- www.iat.gov

Bureau Aviation Personnel

The Interagency Aviation Technical Assistance Directory has contact information for aviation personnel at most of the DOI Bureaus and is updated annually in the spring:

<http://www.nwcg.gov/sites/default/files/products/pms504.pdf>

ADMINISTRATIVE INFORMATION

Project Supervisor:		Phone:	Cell:	Sat:
Alternate Supervisor:		Phone:	Cell:	Sat:
Fixed Wing Manager:		Phone:	Cell:	Sat:
Fixed Wing Manager-Special Use:		Phone:	Cell:	Sat:
Fire Helicopter Manager:		Phone:	Cell:	Sat:
Project Helicopter Manager:		Phone:	Cell:	Sat:
Unit Aviation Officer:		Phone:	Cell:	Sat:
Charge Code:	OAS Billee Code:	<input type="checkbox"/> OAS-23	<input type="checkbox"/> ABS	<input type="checkbox"/> CWN#
				<input type="checkbox"/> ARA#
Aircraft Availability (Per Day):	Aircraft hourly rate:	Fixed Wing Standby rate: x hours=		
RON x personnel =	"Minimum" (Guaranteed) number of hours per day:	Heli-Service Truck Rate:		
Seeder:	Helitorch:	Batch Truck:		
Extended Pilot:	Extended Driver:	Other:		
Total Per Day:	Number of days	Total cost estimate		
Projected Total Cost =				
Vendor:	Vendor Phone:	Vendor Cell:		
Task Order:	Contract:			
N#:	Make and Model:	Color:		
Aircraft Data Card Expiration:	List ALL Missions Aircraft is Carded for:			
Pilot Name:	Pilot Phone #	Pilot Cell #:		
Pilot Card Expiration:	List ALL Missions Pilot is Carded for:			
Driver Name:	Driver Phone #	Driver Cell #		
Aircraft carded: <input type="checkbox"/> Yes		<input type="checkbox"/> No, don't use if not carded!!		Pilot carded for specific mission: <input type="checkbox"/> Yes <input type="checkbox"/> No, don't use if not carded!!

FREQUENCY INFORMATION

RESOURCE TRACKING INFORMATION

Aircraft Home Base Location:	Resource Order #	Flight #	
Ferry Flight Following and tracking	<input type="checkbox"/> Initiate and terminate By Phone:	<input type="checkbox"/> Radio:	
<input type="checkbox"/> FAA VFR with 60 minute check in:	<input type="checkbox"/> FAA IFR:		
Ferry Start Time:	Stop(s):	Stop(s):	Ferry Ending Time:
Scheduling Dispatch Phone:	Contact: Aircraft Desk Notes:		
Destination Dispatch Phone:	Contact: Notes:		
Project Flight Following:	<input type="checkbox"/> Local Agency 15 minute:	<input type="checkbox"/> AFF equipped aircraft:	
Search and Rescue Procedures: Local Aircraft Mishap Response Plan, Local SAR Plan"			

LANDING SITE(S) INFORMATION

Project Start Location:	Runway Length:	Elevation:	Surface:
Destination Location:	Runway Length:	Elevation:	Surface:
Destination Location:	Runway Length:	Elevation:	Surface:
Ending Location:	Runway Length:	Elevation:	Surface:
Helibase or Helispot Information Lat/Long: Public Lands: Private: State:	Location by landmark:	Contact:	Phone:
Helibase or Helispot "approval-to-use" from landowner/manager: <input type="checkbox"/> Yes <input type="checkbox"/> No Agreement No.:			
Fuel Truck Location(s):			

PASSENGER INFORMATION – List all by full names.

Passengers			
Name:	Weight:	Dept Pt:	Destination Pt:
Supervisor name and M-3 Training date:	Phone:		Training Dates (A-100/A-116/A-200):
Name:	Weight:	Dept Pt:	Destination Pt:
Supervisor name and M-3 Training date:	Phone:		Training Dates (A-100/A-116/A-200):
Name:	Weight:	Dept Pt:	Destination Pt:
Supervisor name and M-3 Training date:	Phone:		Training Dates (A-100/A-116/A-200):
Name:	Weight:	Dept Pt:	Destination Pt:
Supervisor name and M-3 Training date:	Phone:		Training Dates (A-100/A-116/A-200):
Name:	Weight:	Dept Pt:	Destination Pt:
Supervisor name and M-3 Training date:	Phone:		Training Dates (A-100/A-116/A-200):
Cargo			
Weight:	CU FT:	Hazardous Mat <input type="checkbox"/> Yes: <input type="checkbox"/> No:	Destination:
Weight:	CU FT:	Hazardous Mat <input type="checkbox"/> Yes: <input type="checkbox"/> No:	Destination:

PPE REQUIREMENTS

Type of flight	Personal Protective Equipment Requirements
<input type="checkbox"/> Fixed wing, point to point	<input type="checkbox"/> Appropriate field attire based on the season, hearing protection recommended
<input type="checkbox"/> Fixed wing, mission flight, 500' above	<input type="checkbox"/> Field attire mandatory, (long natural fiber pants and shirt) PPE recommended
Fixed wing, mission flight, 500" and below (DOI)	<input type="checkbox"/> Full PPE required, Flight Helmet, Fire Resistant Clothing, Leather Boots, Leather or Nomex Gloves.
<input type="checkbox"/> All Helicopter operations	<input type="checkbox"/> Full PPE required, Flight Helmet, Fire Resistant Clothing, Leather Boots, Leather or Nomex Gloves.
<input type="checkbox"/> Overwater or Float Plane Operations	<input type="checkbox"/> Personal Flotation Device (PFD), Have they had A-312 Water Ditching and Survival Training? Date?

WEIGHT AND BALANCE/LOAD CALCULATIONS REQUIREMENTS: 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. Attach actuals.

Time/Date:	Temperature/Altitude:	Allowable Payload HIGE: Allowable Payload HOGE: Allowable Payload HOGE (J):
Time/Date:	Temperature/Altitude:	Allowable Payload HIGE: Allowable Payload HOGE: Allowable Payload HOGE (J):
Time/Date:	Temperature/Altitude:	Allowable Payload HIGE: Allowable Payload HOGE: Allowable Payload HOGE (J):

RISK MANAGEMENT

Risk Management follows a five-step cyclic process that must be integrated into the decision making process at all levels. The five steps are as follows (see IHOG 3-2, for Risk Management Applied):

1. Identify Hazards
2. Assess Hazards
3. Implement Controls (mitigations)
4. Make Risk Decision
5. Supervise

In keeping with the steps above, a thorough review of the completed System Safety Risk Assessments applicable to the planned mission(s) must be conducted and all hazards mitigated in like or appropriate manner. The hazards and mitigations listed in the Aviation Program Risk Assessments are thorough but incomplete. Each project will likely have additional hazards that must be identified, assessed, and mitigated. Then the risks must be weighed against the expected benefit of performing the operation.

Risk Management Instructions: To conduct a complete Risk Analysis for your project: **1.** Review and utilize the applicable System Safety data available at http://www.fs.fed.us/fire/av_safety/Systems_Safety/av_risk_mgt/index.html ; **2.** Implement the mitigations as listed in the System Safety Assessments; **3.** Complete and follow the reminder lists below; and **4.** Conduct your individual analysis of the project following the five steps above and utilizing the Risk Assessment Matrix provided in this document. System Safety has predetermined values, but, as mentioned above, each project will present its own specific hazards that you must identify, mitigate, and manage. **THE LIST BELOW IS NOT THE RISK ANALYSIS FOR THE PROJECT.** It's just reminder checklist for briefings.

Risk Reminder List (check appropriate boxes)

Is there an alternative method that would accomplish the mission more safely?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Is everything approved with clear instructions?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Are communications and flight following established?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
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
Will the mission be conducted at low levels? (Below 500' AGL)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Can the same objective be achieved by flying above 500' AGL?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Are all aerial hazards identified and known to all participants?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
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
Have adequate landing areas been identified and or improved to minimum standards	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Are all agency personnel qualified for the mission?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Is the pilot carded and experienced for the mission to be conducted?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Are pilot flight and duty times compromised?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Is there enough agency personnel to accomplish the mission safely?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA

Will adequate briefings be conducted prior to flight?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Are all involved aware that the pilot has the final authority, but if any passenger feels uncomfortable, that they can decline the flight without fear of reprisal?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
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
Is the aircraft properly carded?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Do all personnel have the required PPE	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Job Hazard Analysis Reminder List (check appropriate boxes)			
Issue		Mitigating Measure	
<input type="checkbox"/> MTR's and MOA's	<input type="checkbox"/> Check routes in advance. Practice risk management.		
<input type="checkbox"/> Private aircraft	<input type="checkbox"/> See and avoid.		
<input type="checkbox"/> Airport traffic	<input type="checkbox"/> Stay in radio contact, sterile cockpit		
<input type="checkbox"/> Weather	<input type="checkbox"/> Use weather advisory. Maintain VFR minimums.		
<input type="checkbox"/> Terrain	<input type="checkbox"/> Maintain separation. Do not place the aircraft in performance related situations.		
<input type="checkbox"/> Low level obstacles	<input type="checkbox"/> Complete a high level recon, no unnecessary low level flight operations.		
<input type="checkbox"/> Unimproved landings	<input type="checkbox"/> Recon LZ. Download on first load.		
<input type="checkbox"/> Doors off helicopter operations	<input type="checkbox"/> Use secondary restraining harness and protected blade raptor type knife. Remove loose items from cabin.		
<input type="checkbox"/> Pilot not familiar with area	<input type="checkbox"/> Supply hazard maps. Complete high level recon prior to low level operations.		
<input type="checkbox"/> Noise, rotor wash	<input type="checkbox"/> Wear ear and eye protection.		
<input type="checkbox"/> Internal and external loads	<input type="checkbox"/> Have trained personnel assigned to the mission. Follow agency policies.		
<input type="checkbox"/> Unplanned aircraft events	<input type="checkbox"/> All personnel equipped with PPE, survival gear and trained in crash procedures.		
<input type="checkbox"/> Hazardous materials	<input type="checkbox"/> Trained personnel will identify, manifest and insure that the pilot is aware.		
<input type="checkbox"/> Non aviation personnel	<input type="checkbox"/> Maintain control, provide through briefings.		
<input type="checkbox"/> Communications	<input type="checkbox"/> Maintain communications at all times, establish backup options and acquire alternate frequencies. Take a handheld FM radio on each flight. Call in prior to landing. If radio contact is lost, climb, check tones, etc. If unable to re-establish contact, return to best suitable landing area and check in via landline.		
<input type="checkbox"/> Overload conditions/CG issues	<input type="checkbox"/> Complete accurate load calculations and or weight and balance.		
<input type="checkbox"/> Winter/cold weather operations	<input type="checkbox"/> Utilize appropriate clothing for conditions, acquire and maintain a survival kit.		
<input type="checkbox"/> Prop/rotor hazards	<input type="checkbox"/> Pilot shall provide a safety briefing; approach and departures shall be away from hazards.		
<input type="checkbox"/> Multiple aircraft operations	<input type="checkbox"/> Provide adequate aerial supervision. Establish and maintain separation, utilize common frequencies.		
<input type="checkbox"/> Aircraft Refueling	<input type="checkbox"/> Refueling is the responsibility of the vendor/pilot. Agency personnel shall not be on board. Aircraft shall be shutdown, unless rapid refueling is approved and requested by agency personnel.		

**Additional Hazard Identification, Assessment, and Controls specific to the project
SYSTEM SAFETY RISK ASSESMENT MATRIX**

	SEVERITY			
LIKELIHOOD	Negligible	Marginal	Critical	Catastrophic
Frequent	Medium	Serious	High	High
Probable	Medium	Serious	High	High
Occasional	Low	Medium	Serious	High
Remote	Low	Medium	Medium	Serious
Improbable	Low	Medium	Medium	Medium

-Steps 1 & 2: Identify and describe the hazards present for this project. Assess the **Likelihood** of an occurrence of each hazard and determine the potential **Severity** of the outcome by referring to the definitions at the System Safety Matrix site. Click on this link: http://www.fs.fed.us/fire/av_safety/Systems_Safety/av_risk_mgt/matrix.pdf and then click the link to the **Risk Assessment Matrix**.

Once you have identified the likelihood and severity, determine the **Risk Level** using the matrix above.

-Step 3: Identify the mitigation controls to follow that will reduce the **Likelihood** of a hazard occurrence. ****Remember**, the severity will likely remain the same as first determined. The mitigations generally only affect the likelihood of an occurrence. Once you have established the mitigations and changed the likelihood, determine the post-mitigation **Risk Level**.

Describe Hazard: Pre-Mitigation hazards rate out as:	Likelihood	Severity	Risk Level
1.			
2.			
3.			
4.			
Mitigation Controls: Post-Mitigation hazards rate out as:	Likelihood	Severity	Risk Level
1.			
2.			
3.			
4.			

Total Risk Assessment Value (The highest risk level identified from the System Safety Assessments and the above determined risks shall be applied as the overall total risk value):

Low Medium Serious High

Project Justification Statement: This project cannot be accomplished by any other means. The area that will be flown has very limited road access primarily in a wild and scenic river corridor. The type of terrain and vast amount of area that needs to be covered makes foot traffic impossible.

Step 4: Make Risk Decision – weigh the risk against the benefit of performing the operation. From the determined overall risk, a determination must be made to conduct the operation as planned, apply further controls that may reduce the overall risk further, or not to perform the operation.

Line Officer Initials: _____

AIRSPACE MANAGEMENT

MTR	Segment	Flight Level	Activity	Time	Time Zone
<input type="checkbox"/> IR:			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input checked="" type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/> IR:			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input checked="" type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/> IR:			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input checked="" type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/> IR:			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input checked="" type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/> VR:			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input checked="" type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/> VR:			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input checked="" type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/> VR:			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input checked="" type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/> VR:			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input checked="" type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/> VR:			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input checked="" type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/> VR:			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input checked="" type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/> VR:			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input checked="" type="checkbox"/> UTC <input type="checkbox"/> MST
MOA information					
<input type="checkbox"/>			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input checked="" type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/>			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input checked="" type="checkbox"/> UTC <input type="checkbox"/> MST
Aerial Refueling Routes					
<input type="checkbox"/>			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/>			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/>			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> MST
<input type="checkbox"/>			<input type="checkbox"/> Hot <input type="checkbox"/> Cold	Start Stop	<input type="checkbox"/> UTC <input type="checkbox"/> MST
MTR/MOA de-confliction procedures: Resource aviation operations will yield to military operations. If an MTR/MOA becomes active, the land management operation will cease during the time the MTR/MOA is active.					
NOTAM (D) to be developed for the project: <input type="checkbox"/> yes <input type="checkbox"/> no					
Dispatch has checked military operations prior to operations <input type="checkbox"/> Yes <input type="checkbox"/> No					

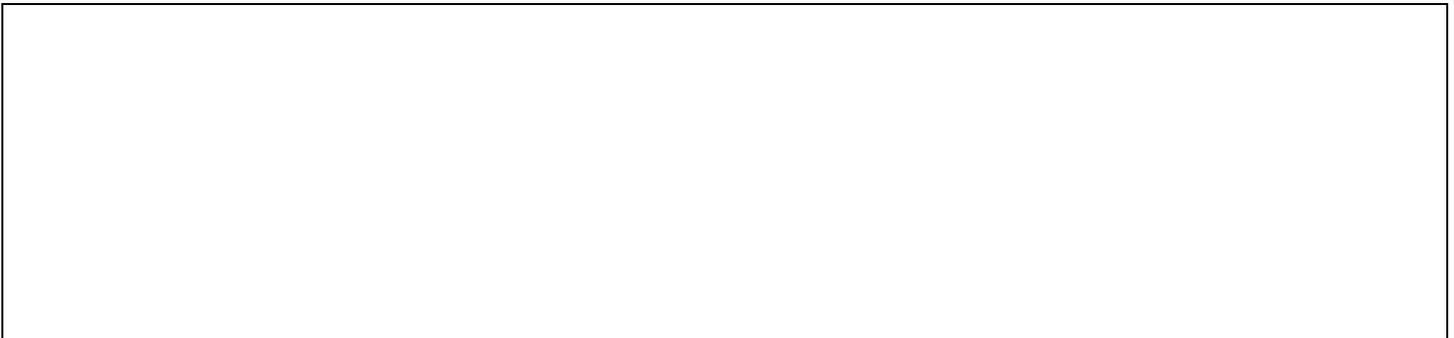
PROJECT MANAGER PRE-OPERATIONAL CHECKLIST

<input type="checkbox"/> Approved and signed project plan	<input type="checkbox"/> Carded pilot	<input type="checkbox"/> Carded Aircraft
<input type="checkbox"/> Qualified Manager, reviewed Training	<input type="checkbox"/> Qualified Crewmembers	<input type="checkbox"/> Hazards Identified
<input type="checkbox"/> Maps of areas/sites	<input type="checkbox"/> Notify Dispatch	<input type="checkbox"/> Weather
<input type="checkbox"/> MTR's MOA's	<input type="checkbox"/> Brief Pilot	<input type="checkbox"/> Brief Passengers
<input type="checkbox"/> PPE	<input type="checkbox"/> Load Calc or Weight and Balance	<input type="checkbox"/> Weights of passengers and equipment
<input type="checkbox"/> Fuel Planning	<input type="checkbox"/> Fuel Truck Locations	<input type="checkbox"/> Permission to land/utilize areas
<input type="checkbox"/> Radio Frequencies / Tones	<input type="checkbox"/> Hobbs Start/End	<input type="checkbox"/> Day/Survival Packs
<input type="checkbox"/> Handheld Radios	<input type="checkbox"/> Satellite Phones	<input type="checkbox"/> Puke Bags

MAP OF PROJECT SITE: Clearly showing the area where the flights will occur. Aerial hazards must be clearly indicated.



WEATHER FORECAST:



POST-BRIEFING PARTICIPANT SIGNATURES:

Aircraft Manager:	Signature	Date:
Pilot:	Signature:	Date:
Other Participants:	Signature:	Date:
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

