

A-100

Basic Aviation Safety



Student Guide



Revised: April 2020

Table of Contents	page
A-100—Basic Aviation Safety	i
Course Overview	i
Course Purpose	i
Target Audience	i
Course Objectives	ii
Course Length.....	ii
Course Materials	iii
Required Student Materials:.....	iii
Appendix D: Electronic References.....	iv
Course Units	v
Unit 0—Welcome and Course Introduction	0.1
Course Title: A-100 Basic Aviation Safety.....	0.1
Class Logistics	0.1
Classmates Introduce Themselves	0.1
Student Guide	0.1
Course Purpose	0.1
Course Objectives.....	0.2
A-100 Target Audience	0.3
Unit 1—Preparing for the Mission	1.1
Preparing for the Mission—Unit Introduction.....	1.1
Unit 1 Objectives	1.1
Defining Bureau/Agency Policies	1.2
Aviation Policy: Code of Federal Regulations (CFRs) & Federal Aviation Regulations (FARs).....	1.3
Action Verbs in Aviation Documents	1.5
Agency/Bureau Policy—DOI and USDA-FS	1.6
Guides, Handbooks, Standards—Procedures/Requirements	1.7
National Agency/Bureau—Aviation Plan	1.9
Regional/State—Aviation Plan	1.10
Unit/Forest/Refuge/Park/Agency—Aviation Plan	1.10
Project/Mission Aviation Safety Plans (PASPs/MASPs)	1.11

Aviation Policy Hierarchy—Agencies/Bureaus	1.13
Mission Types	1.13
Unmanned Aircraft Systems (UAS) Missions	1.14
Point-to-Point Missions	1.15
Special Use Missions	1.17
Interagency Aviation Life Support Equipment (IALSE).....	1.19
Interagency Aviation Life Support Equipment (IALSE)—Scenario 1	1.20
Interagency Aviation Life Support Equipment (IALSE)—Scenario 2	1.22
Interagency Aviation Life Support Equipment (IALSE)—Scenario 3	1.25
Interagency Aviation Life Support Equipment (IALSE)—Scenario 4	1.26
Project/Mission Aviation Safety Plan (PASP/MASP)— 14 Elements	1.28
Project Aviation Safety Plan (PASP)—1. Project/Mission Name and Objectives...	1.28
PASP—2. Justification	1.29
PASP—3. Project/Mission Dates	1.29
PASP—4. Location	1.29
PASP—5. Projected Cost of Aviation Resources.....	1.30
PASP—6. Aircraft.....	1.31
PASP—7. Pilot(s).....	1.34
PASP—8. Participants/Supervision.....	1.35
PASP—9. Communication Plan—Flight Following and Emergency Search and Rescue	1.37
PASP—10. Aerial Hazard Analysis	1.38
PASP—11. Protective Clothing and Equipment.....	1.39
PASP—12. Weight and Balance/Load Calculations.....	1.39
PASP—13. Risk/Hazard Assessment/Safety Management System (SMS).....	1.40
PASP—13. Risk/Hazard Assessment/Safety Management System (SMS) ₂	1.41
PASP—13. Risk/Hazard Assessment/Safety Management System (SMS) ₃	1.44
PASP—14. Signatures.....	1.46
Unit 1 Objectives Review	1.47

Unit 2—Five Steps to a Safe Flight	2.1
Briefings—Unit Introduction	2.1
Unit 2 Objectives	2.1
Aviation Safety Video	2.1
Five Steps to a Safe Flight (orange card)	2.2
Step 1.—Pilot Qualification Card	2.3
Step 1.—Aircraft Data Card	2.5
Step 1.—Fuel Service Vehicle Data Card	2.8
Step 1.—Mechanic Qualification Data Card	2.9
Step 2.—Flight Plan/Flight Following Initiated	2.10
Step 2.—Flight Plan/Flight Following—Beginning & End of Flight	2.13
Step 3.—PPE in Use, When Required	2.14
Step 3.—Personal Protective Equipment (PPE) Video	2.14
Step 3.—PPE—Flight Helmets	2.15
Step 3.—PPE—Fire-Resistant Clothing	2.16
Step 3.—PPE—Gloves	2.16
Step 3.—PPE—Boots	2.17
Step 3.—PPE—Secondary Restraints	2.18
Step 3.—PPE—Anti-Exposure Suits	2.19
Step 3.—PPE—Personal Flotation Devices (PFDs)	2.20
Step 4.—Pilot Briefed on Mission & Flight Hazards	2.21
Step 5.—Crew & Passenger Safety Briefing	2.22
Step 5.—Aircraft Hazards	2.24
Step 5.—Seat Belt & Harness	2.26
Step 5.—Emergency Locator Transmitter (ELT)	2.26
Step 5.—Survival Kit	2.28
Step 5.—First Aid Kit	2.29
Step 5.—Cargo & Gear Security	2.29
Step 5.—Fire Extinguisher	2.29
Step 5.—Fuel & Electrical Shut-off	2.30
Step 5.—Oxygen Equipment	2.30
Step 5.—Emergency Egress	2.30
Step 5.—Smoking	2.31

Refusing a Flight	2.32
Refusing a Flight—Unresolved Safety Hazards	2.34
Twelve Standard Aviation Questions That Shout “Watch Out!”	2.35
Hazard Exercise—Winter Bay Scenario Instruction	2.38
Unit 2 Objectives Review	2.40
Unit 3—Flight Operations	3.1
Flight Operations—Unit Introduction	3.1
Unit 3 Objectives	3.1
Pilot—Aircraft Pre-Flight Assessment	3.2
Pilot—Duty Hours.....	3.3
Pilot Flight Operations and Weather Minimums	3.4
Mechanic Duty Day—Limitations	3.5
Fuel Truck Driver Duty Day—Limitations	3.5
Aircraft Fueling.....	3.6
Passenger/Aircrew Member Responsibilities	3.8
Crew Resource Management (CRM).....	3.10
Indicators of Effective Crew Resource Management (CRM).....	3.11
Passenger and Aircrew Member Responsibilities (CRM).....	3.11
CRM—How to Voice a Concern.....	3.12
Preparing for the Mishap.....	3.13
Personal Survival Kit	3.14
Aircraft Survival Kit.....	3.15
Pilot Declares In-Flight Emergency/Brace Positions	3.16
Aircraft Mishap Response Actions	3.18
After the Aircraft Accident	3.19
Preparing for the Mishap—Exercise.....	3.19
Unit 3 Objectives Review	3.21

Unit 4—Post-Flight Duties	4.1
Post-Flight Duties—Unit Introduction	4.1
Unit 4 Objectives	4.1
Post-Flight Debriefing or After Action Review (AAR).....	4.2
Close Out Flight Plan/Flight Following	4.4
Airport Watch (Aircraft Owners and Pilots Association)	4.5
Aviation Security and Facility Security	4.6
Aircraft Security.....	4.7
Aviation Documentation	4.8
SAFECOM (Safety Communiqué).....	4.9
Unit 4 Objectives Review	4.11
Summary	1
A-100 Basic Aviation Safety—Course Summary.....	summary–1
Course Objectives.....	summary–2
Questions & Course Evaluation	summary–2
Appendix D.1: Winter Bay Cabin Replacement Project	D.1.1
Scenario Instructions	D.1.1
Scenario Background Information	D.1.1
Planned Aviation Mission to Transport Project Workers.....	D.1.1
Key Personnel Involved in the Winter Bay Cabin Replacement Project	D.1.2
Project Events Sequence	D.1.3

A-100—Basic Aviation Safety

Course Overview

Course Purpose

The purpose of this course is to provide you with a foundation of knowledge, skills, and abilities to safely utilize aircraft to accomplish agency missions.

Target Audience

This course is intended for the Department of the Interior (DOI) and USDA's U.S. Department of Agriculture's Forest Service (USDA Forest Service) aviation users—aircrews and passengers—to include:

- Aircrew Member
- Aviation Dispatcher
- Aviation Manager
- Fixed-Wing Flight Manager
- Fixed-Wing Flight Manager (Special Use)
- Flight Follower
- Helicopter Flight Manager (DOI)
- Helicopter Manager (Resource)
- Project Aviation Manager
- UAS Remote Pilot

Note: DOI fleet pilots participate in the A-100 course to understand the level of knowledge and training personnel are provided in this training.

Course Objectives

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

- ❖ Locate aviation policy for your Bureau or Agency
- ❖ Identify the elements required for mission planning
- ❖ List the items for an effective aviation mission briefing
- ❖ Identify the tool that provides the items of a passenger safety briefing
- ❖ Provide examples of why you would refuse a flight
- ❖ Given a scenario, recognize the hazards associated with an aircraft mission
- ❖ Summarize your role in Crew Resource Management (CRM)
- ❖ Identify actions to take during an in-flight emergency
- ❖ Explain the items to consider if you are responding to, or are a survivor of, an aviation accident
- ❖ Summarize the post-flight duties that may need to be completed
- ❖ Describe why a post-flight debriefing is important
- ❖ Describe your responsibilities pertaining to aircraft and facility security
- ❖ Identify the tool utilized for reporting aviation mishaps

Course Length

Total = 6 hours

Course Materials

Required Student Materials:

- Student Guide

[IAT Library—Handbooks, Guides, Standards & Booklets](https://www.iat.gov/library.asp)

(<https://www.iat.gov/library.asp>)

- **Interagency Aviation Life Support Equipment (IALSE) Handbook**
- **All Aviation Safety Cards in a Single .PDF File (to include the following):**
 - OAS-84 Helicopter Passenger Briefing (yellow card)
 - OAS-103 Five Steps to a Safe Flight (orange card)
 - OAS-112 Aviation Operations Checklist
 - OAS-161 Twelve Standard Aviation Questions that Shout “Watch Out!” (light blue card)

Appendix D: Electronic References

[IAT Policy & References](#)

(<https://www.iat.gov/policy.asp>)

- **Interagency Aviation Life Support Equipment (IALSE) Handbook**
- **Interagency Aviation Mishap Response Guide & Checklist**
- **NWCG Standards for Helicopter Operations**
- **OAS-103—Five Steps to a Safe Flight** (orange card)
- **OAS-161—Twelve Standard Aviation Questions That Shout “Watch Out!”** (light blue card)
- **DOI OPM-04—Aviation User Training Program**
- **DOI OPM-06—Aviation Management Plans**
- **DOI OPM-11—DOI Use of Unmanned Aircraft Systems (UAS)**
- **DOI OPM-29—Special Use Activities for Manned Aircraft**
- **DOI OPM-35—Identification of End-Product/Service and Flight Service Procurement**
- **USDA-Forest Service Manual (FSM) 5700**
- **USDA-Forest Service Handbook (FSH) 5709.16**
- **BLM National Aviation Plan**
- **FWS Director’s Memo on Initial Aviation Training—Dated July 30, 2009**
- **NPS-RM60 Aviation Management**
- **Interagency Aviation Training (IAT) Guide**
- **OAS—Special Use Missions**

[IAT Library—Handbooks, Guides, Standards & Booklets](#)

(<https://www.iat.gov/library.asp>)

- **NWCG Standards for Helicopter Operations (NSHO)**
- **Interagency Standards for Fire and Fire Aviation Operations (red book)**
- **Incident Response Pocket Guide**

Appendix D.1: Winter Bay Cabin Replacement Project

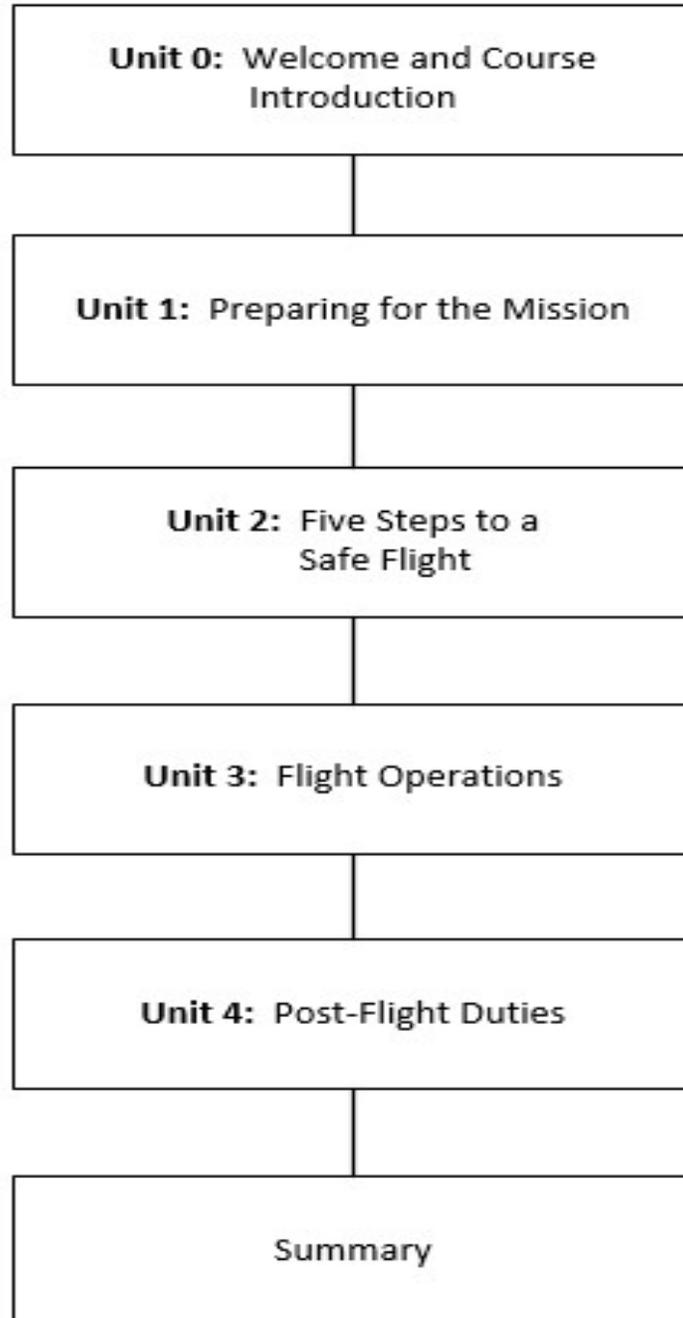
Appendix D.2: PASP—Steens Weeds Spray (Resource Management)

Appendix D.3: PASP—Unmanned Aircraft Systems (UAS)

A-100

Basic Aviation Safety

Course Units

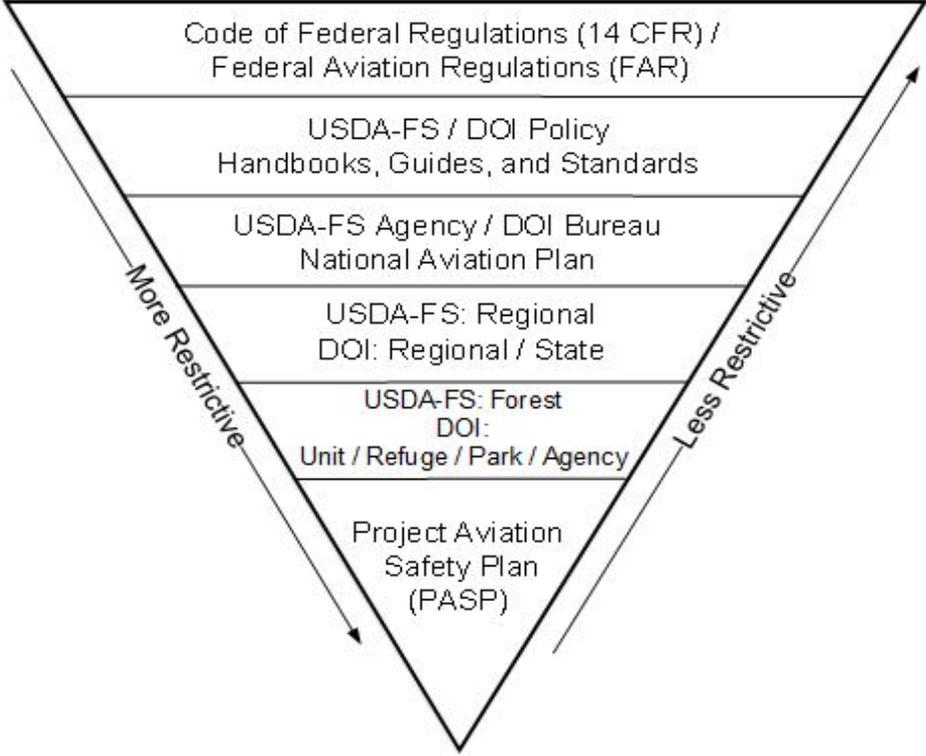


Est. Instruction Time: 30 min.	Unit 0—Welcome and Course Introduction
#1	<p>Course Title: A-100 Basic Aviation Safety</p> <p>Welcome to A-100 Basic aviation Safety.</p>
#2	<p>Class Logistics</p> <p>Review of the landmarks within the training facility and highlights of policies applicable to the training:</p> <ul style="list-style-type: none"> - Cell phone policy - Facilities: restrooms, vending machines, water fountains - Evacuations plan, fire alarm - Computer use - Other concerns, muster location, locations for lunch, etc. - You will be asked to provide feedback at the end of the class
#3 Student Exercise	<p>Classmates Introduce Themselves</p> <p>Participants introduce themselves. Share some of the following information (as time allows):</p> <ul style="list-style-type: none"> • Your name? • Where (what Agency) do you work? • Your position/job title? • What do you hope to learn from this course?
#4	<p>Student Guide</p> <p>The Student Guide is a workbook designed to be a guided, note-taking tool—as well as a source of valuable information and references for review. Participants will be asked to refer to the Student Guide throughout the course.</p>
#5	<p>Course Purpose</p> <p>The purpose of this course is to provide students with information and tools to enable them to accomplish agency aviation missions by making decisions to safely utilize aircraft.</p>

Est. Instruction Time: 30 min.	Unit 0—Welcome and Course Introduction
#6—#8	<p data-bbox="459 289 743 323">Course Objectives</p> <p data-bbox="459 359 1308 392">At the conclusion, of this course, students should be able to:</p> <ul data-bbox="508 428 1403 1499" style="list-style-type: none"><li data-bbox="508 428 1235 462">❖ Locate aviation policy for your Bureau or Agency<li data-bbox="508 497 1263 531">❖ Identify the elements required for mission planning<li data-bbox="508 567 1305 600">❖ List the items for an effective aviation mission briefing<li data-bbox="508 636 1317 705">❖ Identify the tool that provides the items of a passenger safety briefing<li data-bbox="508 741 1260 774">❖ Provide examples of why you would refuse a flight<li data-bbox="508 810 1393 879">❖ Given a scenario, recognize the hazards associated with an aircraft mission<li data-bbox="508 915 1305 984">❖ Summarize your role in Crew Resource Management (CRM)<li data-bbox="508 1020 1289 1054">❖ Identify actions to take during an in-flight emergency<li data-bbox="508 1089 1403 1159">❖ Explain the items to consider if you are responding to, or are a survivor of, an aviation accident<li data-bbox="508 1194 1297 1264">❖ Summarize the post-flight duties that may need to be completed<li data-bbox="508 1299 1240 1333">❖ Describe why a post-flight debriefing is important<li data-bbox="508 1369 1317 1438">❖ Describe your responsibilities pertaining to aircraft and facility security<li data-bbox="508 1474 1300 1507">❖ Identify the tool utilized for reporting aviation mishaps <hr data-bbox="459 1566 1403 1579"/> <p data-bbox="459 1591 532 1625">Note</p> <p data-bbox="459 1629 1328 1698">As each unit is covered, specific objectives for that unit will be addressed.</p> <hr data-bbox="459 1703 1403 1715"/>

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#9	A-100 Target Audience																																																																																																	
<p>YELLOW = OPM-04 identifies five positions which have required training for DOI and other personnel participating in manned aircraft activities. Aircrew member, Aviation Manager, Flight Follower, Line Manager, and Supervisor</p> <p>BOLD/Italics Course Title = Available Online X = Requires Completion Once 3 = Requires initial completion, and every 3 years</p>		<table border="1"> <thead> <tr> <th colspan="11">POSITION</th> </tr> <tr> <th>Course Length (Hours)</th> <th>Aircrew Member</th> <th>Aviation Dispatcher</th> <th>Aviation Manager</th> <th>Fixed-Wing Flight Manager</th> <th>Fixed-Wing Flight Manager—Special Use</th> <th>Flight Follower</th> <th>Helicopter Flight Manager (DOI)</th> <th>Helicopter Manager—Resource</th> <th>Line Manager (DOI)</th> <th>Project Aviation Manager</th> <th>Supervisor (DOI)</th> <th>Supervisor (FS)</th> <th>DOI Remote Pilot (UAS)</th> <th>USDA-FS Remote Pilot (UAS)</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>3</td> <td>3</td> <td>X</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td></td> <td>X</td> <td></td> <td></td> <td>3</td> <td>3</td> </tr> <tr> <td>2</td> <td>3*</td> <td>3*</td> <td>X*</td> <td>3*</td> <td>3*</td> <td></td> <td>3*</td> <td>3*</td> <td></td> <td>3*</td> <td></td> <td></td> <td>X*</td> <td>X*</td> </tr> <tr> <td>2</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td></td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> <tr> <td>8</td> <td>X*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>											POSITION											Course Length (Hours)	Aircrew Member	Aviation Dispatcher	Aviation Manager	Fixed-Wing Flight Manager	Fixed-Wing Flight Manager—Special Use	Flight Follower	Helicopter Flight Manager (DOI)	Helicopter Manager—Resource	Line Manager (DOI)	Project Aviation Manager	Supervisor (DOI)	Supervisor (FS)	DOI Remote Pilot (UAS)	USDA-FS Remote Pilot (UAS)	6	3	3	X	3	3	3	3	3		X			3	3	2	3*	3*	X*	3*	3*		3*	3*		3*			X*	X*	2	3		3	3	3	3	3	8	X*							X													
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<p>Notes</p> <ul style="list-style-type: none"> ▶ New Aircrew members will also have to take the A-200 (online) and possibly the A-110 course to be qualified as an aircrew member. ▶ See the following matrix for A-course requirements for various bureau/agency positions: IAT Position Requirements Matrix (https://www.iat.gov/docs/IAT_Requirements_Matrix.pdf) ▶ A-116 General Awareness Security Training has been incorporated into the A-100 course, so it is no longer a separate A-course requirement. ▶ A-100 frequency of completion—i.e. every three (3) years, or only one time—needs to be addressed. 																																																																																																		
Unit End																																																																																																		

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#10	Preparing for the Mission—Unit Introduction This unit will cover the many aspects that must be considered and included in preparing for a mission: <ul style="list-style-type: none">• Policy—that dictates mission requirements (found in Standards, Guides, and Handbooks)• Aviation Planning—covering and completing the 14 Elements of a Project Aviation Safety Plan (PASP), which involves people, tools, equipment/PPE, calculations, risk assessments, and signatures• Interagency Aviation Life Support Equipment (IALSE)—requirements defined for different types of flights/missions.
#11	Unit 1 Objectives After completing Unit 1, students should be able to: <ul style="list-style-type: none">❖ Locate aviation policy for your Bureau or Agency❖ Identify the elements required for mission planning

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#12	<p>Defining Bureau/Agency Policies</p> <p>Policies of the U.S. Department of the Interior (DOI) and the U.S. Department of Agriculture's Forest Service (USDA-FS) are defined and documented based on the expertise of the agencies as gained through their work in the field and lessons learned. Periodic updates of DOI and USDA-FS policies are made as new, important lessons are learned.</p> <p>Aviation planning begins at the national level for both the DOI and USDA-FS and may be further defined at the regional or state levels. Further planning activities, at the field levels, are also likely to take place for recurring or routine missions within a unit.</p> <p>All DOI special use or USDA-FS non-routine missions require a Project/Mission Aviation Safety Plan (PASP/MASP). The “bottom line” is that every flight should be addressed in a formal plan, regardless of how routine that flight might appear. Consult your Aviation Manager if you do not have a PASP/MASP, access to a PASP/MASP, or are unsure of your agency's/bureau's policy.</p> <p>Note: References to PASP—USDA-FS may utilize Mission Aviation Safety Plan (MASP), per policy update.</p> <p style="text-align: center;">Aviation Policy Hierarchy</p> 

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#13	<p>Aviation Policy: Code of Federal Regulations (CFRs) & Federal Aviation Regulations (FARs)</p> <p>The <i>Code of Federal Regulations (CFRs)</i> is a set of permanent rules that spell out, in detail, how the Executive Branch interprets statutes that have been enacted by Congress, creating the <i>US Code</i>. Congress grants authority to agencies to interpret the law that agencies are entrusted with enforcing.</p> <p>Title 14, of the CFRs, is the set of rules for Aeronautics and Space, which regulates everything that occurs in the airspace. Title 49 CFR regulates Transportation, which affects how we transport hazardous materials (HAZMAT), by aircraft, as well as accident reporting and aircraft security.</p> <p>The Federal Aviation Administration (FAA) has been entrusted with regulating Title 14.</p> <p>The <i>Federal Aviation Regulations (FARs)</i> are rules prescribed by the FAA governing all aviation activities in the United States. The FARs are part of Title 14 of the CFRs.</p> <p><i>Note:</i> This course is <i>NOT</i> going to teach you everything there is to know about Title 14 CFRs. The course <i>IS</i> going to cover the important Title 14 Parts of the CFRs that affect our bureaus and agencies the most.</p>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#13	<p>Aviation Policy: Code of Federal Regulations (CFRs) & Federal Aviation Regulations (FARs)—<i>cont'd.</i></p> <ul style="list-style-type: none"> <p>• 14 CFR, Part 91: General Operating and Flight Rules A Part 91 operator has regulations defined by the U.S. Federal Aviation Administration (FAA) for operations of small non-commercial aircraft within the United States. These regulations set conditions in which the aircraft may operate, such as weather. DOI and USDA-FS adhere to Part 91 for most aircraft operations. All pilots on contract, and under operational control of the DOI/USDA-FS, operate under 14 CFR, Part 91. [Example: per Part 91.119, minimum safe altitudes are provided.]</p> <p>• 14 CFR, Part 135: Commuter and On-Demand Operations Operators of business aircraft who wish to conduct operations for compensation, or hire, are generally certificated under Part 135 of the FARs. As a certificate-holding entity, the operator must comply with a number of FAA requirements regarding areas such as flight operations, maintenance, and training. DOI and USDA-FS follow the maintenance standards of Part 135. All pilots on contract, and under operational control of the DOI/USDA-FS that carry passengers, operate under Part 91 and Part 135. Under Part 135, there is a higher maintenance standard (i.e. 100-hour inspection—as opposed to Part 91 operation, that has an annual maintenance requirement).</p> <p>• 14 CFR, Part 107: Remote Pilot Certificate with Small UAS Rating Current FAA policy is provided in 14 CFR, Part 91, and Part 107, for Unmanned Aircraft Systems (UAS). Both DOI and USDA-FS Remote UAS pilots are required to follow these operational rules.</p> <p>See the following documentation for more in-depth details on DOI and USDA-FS requirements for UAS operations:</p> <ul style="list-style-type: none"> ▶ DOI OPM-11 <i>DOI Use of Unmanned Aircraft Systems (UAS)</i> ▶ FSH 5709.16 §36.7 <i>Small Unmanned Aircraft System Operations</i> and FSM 5713.7 <i>Unmanned Aircraft Systems</i>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#14	<p>Action Verbs in Aviation Documents</p> <p>Aviation operations require regulations, manuals, guides, and checklists to execute and coordinate operations in a safe and effective manner.</p> <p>Where used in manuals, handbooks, or guides—these terms mean the following:</p> <ul style="list-style-type: none">▪ “shall” and “must”: are mandatory (not discretionary)▪ “ought” and “should”: convey mandatory compliance (except for justifiable reasons)▪ “may” and “can”: convey optional compliance

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#15	<p>Agency/Bureau Policy—DOI and USDA-FS</p> <p>It is important for you to know which policy applies to you as a government employee—either under the Department of the Interior (DOI), or the USDA Forest Service (USDA-FS)—and to know how to locate the policy that affects you. It is imperative that you follow your agency’s policy as this is the framework that all aviation operations depend on to best provide for your safety.</p> <ul style="list-style-type: none"> • DOI—Departmental Manuals (DMs) DMs chapters provide a general overview of the aviation program requirements. DM Parts 350 through 353 (Part 354 is reserved) provide management responsibilities, policies, and procedures for utilizing and operating aircraft within the DOI. Approval of DMs occur at the Assistant Secretary’s level. • DOI—Operational Procedures Memorandum (OPMs) OPMs are defined to provide temporary, or interim, Departmental policy directives issued to permit timely dissemination of instructional and/or procedural materials to update, modify, or supplement policy in the DM, such as use of Unmanned Aircraft Systems (UAS)—350 DM 2.2(A). • USDA-FS—Manual (FSM) 5700/ USDA-FS—Handbook (FSH) 5709.16—Flight Operations Handbook The policy of the USDA-FS requires employees to follow the direction in aviation manuals, handbooks, and the aviation guides, as listed in FSM 5706. IAT Policy & References (https://www.iat.gov/policy.asp) <ul style="list-style-type: none"> ▪ Forest Service Manual (FSM) 5700 ▪ USDA Forest Service Handbook (FSH) 5709.16

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#16	<p>Guides, Handbooks, Standards—Procedures/Requirements</p> <ul style="list-style-type: none"> • Handbooks <p>DOI Departmental Handbooks: provide detailed procedures and requirements—for policy established in the Departmental Manuals (350 DM 2 §2.2 B).</p> <p>USDA-FS Handbooks: are the principal source of specialized guidance and instruction for carrying out the direction issued in the Forest Service Manual (FSM).</p> <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ USDA Forest Service Handbook (FSH) 5709.16 • Guides <p>DOI Operational Guides: communicate preferred procedures for a specific aspect of aviation operations. They are <i>not policy</i>—nor are they mandatory at the DOI Departmental level—<i>but may be adopted as such by a bureau</i> (350 DM 2.2.2 D)</p> <p>USDA-FS Guides: are a supplement for the FSM and establishes standards for approval and use of aviation equipment when conducting USDA-FS aviation activities.</p> • Standards <p>Standards are a defined behavior, action, process, or equipment type, agreed upon by the National Wildfire Coordinating Group (NWCG) for wildland fire performance—and is necessary to meet consistent, interagency fire management activities.</p>

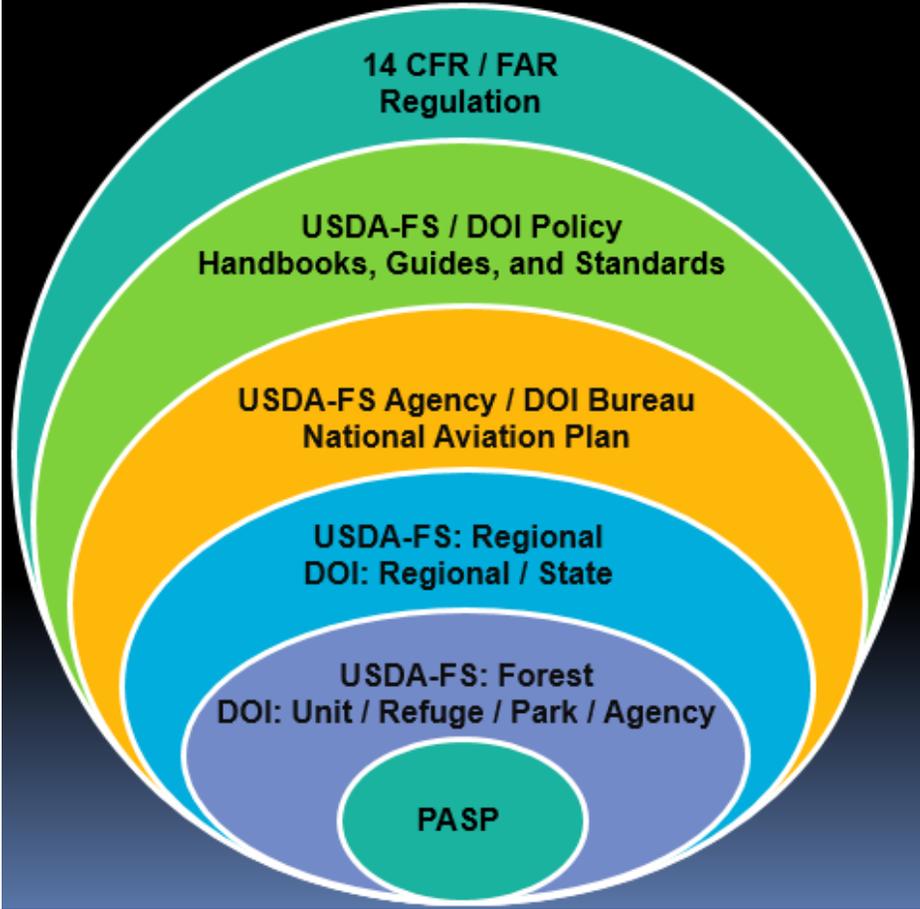
<p>Est. Instruction Time: 2 hours</p>	<p>Unit 1—Preparing for the Mission</p>
<p>#16</p>	<p>Guides, Handbooks, Standards— Procedures/Requirements—cont'd.</p> <hr/> <p>Student Question:</p> <p>What Handbooks, Guides, and Standards are Policy for your agency or bureau?</p> <ul style="list-style-type: none">▪ _____▪ _____▪ _____▪ _____▪ _____ <hr/>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#17-18	<p>National Agency/Bureau—Aviation Plan</p> <p>Each bureau differs in the way that they provide aviation guidance to their agency—some opt to place the bureau policy in their agency manuals, while others create a National Aviation Plan.</p> <p><i>Examples:</i></p> <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <p>USDA-FS</p> <ul style="list-style-type: none"> • Forest Service National Aviation Safety Management Plan <p>DOI Bureaus:</p> <ul style="list-style-type: none"> ▪ DOI OPM-06—Aviation Management Plans (OPM-06 contains the minimum elements for Bureau National Aviation Management Plans) <ul style="list-style-type: none"> • Bureau of Indian Affairs (BIA) <ul style="list-style-type: none"> ○ 57 IAM 1-3 Aviation Management • Bureau of Land Management (BLM) <ul style="list-style-type: none"> ○ BLM National Aviation Plan • Bureau of Reclamation (USBR) <ul style="list-style-type: none"> ○ USBR National Aviation Management Plan • Bureau of Ocean Energy Management (BOEM) <ul style="list-style-type: none"> ○ BOEM National Aviation Management Plan • Bureau of Safety and Environmental Enforcement (BSEE) <ul style="list-style-type: none"> ○ BSEE National Aviation Management Plan • National Park Service (NPS) <ul style="list-style-type: none"> ○ Reference Manual 60 (RM60) Aviation Management • Office of Surface Mining Reclamation and Enforcement (OSMRE) <ul style="list-style-type: none"> ○ OSMRE National Aviation Management Plan (NAMP) • U.S. Fish and Wildlife Service (USFWS) <ul style="list-style-type: none"> ○ Parts 330-339 Aviation Management • U.S. Geological Survey (USGS) <ul style="list-style-type: none"> ○ SM 445-2-H Chapter 27 Aviation Safety

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#19	<p>Regional/State—Aviation Plan</p> <p>Regional/State aviation plans create comprehensive aviation roles and responsibilities, administrative procedures, leaders' intent, authority, and policy to each Unit/Forest/Refuge/Park plan.</p> <p><i>Examples:</i></p> <ul style="list-style-type: none"> • USDA-FS—Regional Aviation Management Plan • BLM—Idaho State Aviation Plan • NPS—Alaska Regional Plan • FWS—Alaska Regional Plan • BIA—Southwest Regional Aviation Plan
#20	<p>Unit/Forest/Refuge/Park/Agency—Aviation Plan</p> <p>Unit/Forest/Refuge/Park/Agency plans are designed to supplement the National Aviation Plan and the State/Regional Aviation Plan—and function as the third tier, within one document. These plans should identify safety procedures and include documented procedures for all aviation operations (352DM1.6, §C.1.b).</p> <p><i>Examples:</i></p> <ul style="list-style-type: none"> • USDA-FS—Malheur Forest Aviation Plan • BLM—Vale District Aviation Plan • NPS—Denali National Park Aviation Plan • FWS—Kenai NWR Aviation Plan • BIA—Crow Agency Aviation Plan <p>The following may be addendums to the Unit/Forest/Refuge/Park Plan/Agency:</p> <ul style="list-style-type: none"> ▪ Aerial Capture, Eradication and Tagging of Animals (ACETA) ▪ Helibase Operating Plan ▪ Single-Engine Airtanker (SEAT) Base Operating Plan ▪ Search and Rescue (SAR)

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#21	<p>Project/Mission Aviation Safety Plans (PASP/MASPs)</p> <p>A Project Aviation Safety Plan (PASP) is a written description of the procedures and methods by which an organization will conduct safe and efficient aviation operations.</p> <p><i>All signed PASPs/MASPs become policy for their specific mission.</i></p> <p>DOI—OPM-06—Aviation Management Plans</p> <p>Project Aviation Safety Plans (PASP) will be developed and documented for all special use & UAS missions. <i>[Special Use Examples: Surveys (horse, wildlife, dam), Vegetation, UAS< Aerial Ignition]</i></p> <p>For those bureaus that perform similar special use aviation missions on a recurring or routine basis, the required PASP can be rolled into a station/unit aviation plan that is reviewed at least annually. In this instance, in place of a PASP, the bureau must have a documented process to capture the unique and special circumstances (<i>Examples: dispatch log, passenger manifest</i>). Project supervisors and management-level project approvers are responsible for ensuring PASPs are completed. The Project Supervisor should work closely with aviation managers in preparing these plans. The level at which a PASP is approved is based on the risk level as determined by the written risk assessment/bureau approved SMS (Safety Management System) within the PASP.</p> <p>Project Aviation Safety Plans will include, at minimum, the 14 elements listed in OPM-6, Appendix 2.</p> <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ DOI OPM-06—Aviation Management Plans (PASP Requirements)

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#21	<p>Project/Mission Aviation Safety Plans (PASPs/MASPs) <i>—cont'd.</i></p> <hr/> <p>USDA-FS—FSM-5711.1—Project/Mission Aviation Safety Plans</p> <p>Prior to commencing non-emergency projects/missions involving the use of aircraft, Regional Directors, Area Director, Forest Supervisors, and Station Directors shall develop and document a Project Aviation Safety Plan (PASP) that includes the 14 Elements of a Project Aviation Safety Plan. See:</p> <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none">▪ Forest Service Manual (FSM) 5700 (§ 5711.1—Project Aviation Safety Plans Requirements)

<p>Est. Instruction Time: 2 hours</p>	<p>Unit 1—Preparing for the Mission</p>
<p>#22</p>	<p>Aviation Policy Hierarchy—Agencies/Bureaus</p>  <p>Policy becomes more restrictive from the FARs, down to the agency national level, then down to the local level.</p> <p>To locate and better understand your agency policy, start with the PASP, and work your way up the hierarchy model, from the local to the national level. Policy shown at the bottom of the hierarchy model is the strictest.</p>
<p>#23</p>	<p>Mission Types</p> <p>Aviation missions are categorized into three basic types:</p> <ul style="list-style-type: none"> • Unmanned Aircraft Systems (UAS) missions • Point-to-Point missions • Special Use missions

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#24	<p>Unmanned Aircraft Systems (UAS) Missions</p> <p>DOI—OPM-11—Use of Unmanned Aircraft Systems (UAS)</p> <p>The purpose of OPM-11 is to provide DOI with policy on the operations and management of DOI-operated UAS.</p> <ul style="list-style-type: none"> • UAS are defined as an aircraft, and the associated elements (including communication links and the components that control the unmanned aircraft), that are required for safe and efficient operation. However, they do require PASPs for all projects and all other DOI and bureau policies apply. • DOI Remote Pilots shall possess an FAA Part 107, Remote Pilot Certificate with Small UAS rating prior to attending A-450 DOI UAS Training course or approved equivalent. DOI Remote Pilots are required to maintain their Remote Pilot certificate as required by FAA. Additional bureau approvals and mission specific training may also apply. Similar to manned aircraft, approved UAS must be purchased through the Interior Business Center, Acquisition Services Directorate (AQD) contracting. See: <ul style="list-style-type: none"> ▪ IAT Policy & References (https://www.iat.gov/policy.asp) <ul style="list-style-type: none"> ▪ DOI OPM-11—DOI Use of Unmanned Aircraft Systems (UAS) <hr/> <p>USDA-FS—FSH 5709.16, 36.7—Small Unmanned Aircraft System Operations</p> <ul style="list-style-type: none"> ▶ Only Agency approved unmanned aircraft systems (UAS) of any size may be used for Forest Service missions. ▶ All UAS operations shall comply with Agency policy for privacy, transparency, reporting, tracking and data management. The National UAS Operations Plan provides operational guidelines and further references to policy. ▶ UAS missions in the Fire Management function will adhere to the PASP or Operations Plan, as applicable. <p>UAS operations in support of Forest Service missions are subject to the approval requirements in FSM 5713.7 and shall meet additional requirements established in the FSM 5713.43.</p>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#25	<p>Point-to-Point Missions</p> <p>Point-to-Point missions are flights that originate at one FAA-designated airport, seaplane base, or permanent helibase (identified in the FAA Airport/Facilities Directory, or FAA Sectional Aeronautical Charts), with the flight route direct to another FAA-designated airport, seaplane base, or permanent helibase.</p> <ul style="list-style-type: none"> • The flight is conducted for the transportation of persons or cargo for administrative purposes, only. • A Point-to-Point flight is conducted at elevations higher than 500 feet above ground level (AGL), except for takeoff and landing. These types of flights are typically referred to as “Administrative Use” flights, which require the aircraft and pilot be approved for Point-to-Point flight. <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ USDA-FS—FSM 5710.5—Point-to-Point Missions <p>Note</p> <p>Permanent Helibase: is a designated, permanent facility for helicopter operations. Permanent helibases should have the facilities and equipment per a careful study should be made of local, state, and federal laws, rules and regulations relating to construction of a permanent helibase. Site selection should provide for adequate approach and departure paths which avoid housing areas, schools, churches, and any other facilities that might be disturbed by low-flying helicopters.</p> <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ NWCG Standards for Helicopter Operations (NSHO)—Ch. 8

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#25	<p>Point-to-Point Missions—<i>cont'd.</i></p> <p>Per National Wildfire Coordinating Group's (NWCG) S-270/Basic Air Operations course, a Permanent Helibase is usually the home base for the helicopter, and includes:</p> <ul style="list-style-type: none">• Adequate fueling facilities• Wind indicators• Signs• Fire extinguishers• Paved helipad• Vehicle parking• Radio and telephone

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#26	<p data-bbox="472 289 797 323">Special Use Missions</p> <p data-bbox="472 342 1354 415">Generally, the FAA does not have pilot qualification standards, regulate, or have oversight for Special Use missions/flights.</p> <p data-bbox="472 432 1057 466"><i>Examples of some Special Use missions:</i></p> <ul data-bbox="516 485 1377 1325" style="list-style-type: none"><li data-bbox="516 485 1154 518">• Low level flight (within 500' of the surface)<li data-bbox="516 537 948 571">• Mountain flying (helicopter)<li data-bbox="516 590 932 623">• Resource reconnaissance<li data-bbox="516 642 850 676">• Fire reconnaissance<li data-bbox="516 695 883 728">• Short-Haul (helicopter)<li data-bbox="516 747 834 781">• Rappel (helicopter)<li data-bbox="516 800 1312 873">• Single-skid, Toe-in, and Hover Exit/Entry Procedures (STEP) Operations (helicopter)<li data-bbox="516 892 1127 926">• External load-short line ~50' (helicopter)<li data-bbox="516 945 1110 978">• External load-longline >50' (helicopter)<li data-bbox="516 997 1105 1031">• Offshore platform landings (helicopter)<li data-bbox="516 1050 786 1083">• Vessel landings<li data-bbox="516 1102 1377 1136">• Wheel operations on unprepared landing areas (airplane)<li data-bbox="516 1155 1377 1188">• Aerial capture, eradication, tagging and animals (ACETA)<li data-bbox="516 1207 1078 1241">• Aerial Ignition (PSD, Helitorch, UAS)<li data-bbox="516 1260 1110 1293">• Aerial Supervision (Lead plane, ATGS)

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#26	<p>Special Use Missions—<i>cont'd.</i></p> <p>DOI—OPM-29—Special Use Activities for Manned Aircraft</p> <p>DOI OPM-29 identifies specific manned, special use activities referred to in 351 DM 1 and establishes definitions, policies, pilot qualifications and PPE requirements for special use activities conducted by the Department of the Interior (DOI). The OPM-29 is applicable to both fleet (agency owned) and contract (vendor aircraft flight under the operational control of DOI) conducting special use activities.</p> <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ OPM-29—Special Use Activities for Manned Aircraft <p>Also see:</p> <ul style="list-style-type: none"> ▪ DOI-OAS Special Use Missions <hr/> <p>USDA-FS—FSH 5710.5—Definitions</p> <p><i>Special Mission Flights:</i> Non-routine flights utilizing aircraft to perform missions which may require only crewmembers, special training, qualifications and/or equipment.</p> <p><i>Examples include (but are not limited to):</i> dropping retardant or water, aerial supervision, low-level flight below 500 feet, mountain flying, reconnaissance, survey, aerial photo, aerial application of other non-fire related chemicals and materials, night vision goggle, night tactical missions, all external loads, smokejumper and cargo delivery, back country airfield operations, and water landings.</p> <p>Special Mission flights do not include point-to-point flights for the transportation of passengers and cargo. See:</p> <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ USDA Forest Service Handbook (FSH) (Definitions: Special Mission Flights) ▪ Forest Service Manual (FSM) 5700 (Chapter 36—Special Missions)

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#27	Interagency Aviation Life Support Equipment (IALSE) <p>This Handbook/Guide establishes standards for approval and use of aviation life support equipment, when conducting Department of the Interior (DOI) aviation activities. It also serves as a supplement of the USDA-FS Manual 5700 and establishes standards for approval and use of aviation life support equipment when conducting Forest Service aviation activities.</p> <p>There are different Personal Protective Equipment (PPE) requirements depending on the type of Special Use flight is being conducted. It is up to each individual boarding an aircraft to know what PPE is required for the flight activity being conducted. The following exercise allows the student to research the required PPE for a particular aviation mission.</p>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#28—#29	<p>Interagency Aviation Life Support Equipment (IALSE)— Scenario 1</p> <p>Scenario 1: You have been told, by your supervisor, that you will fly to Lake Mead National Park (NP) to help with a visitor monitoring program survey, and you will need to bring all your PPE with you.</p> <p>The survey will be flown in a small fixed wing aircraft on floats. The plane will be taking off and landing on the water, operating beyond gliding distance from shore, while flying below 500 feet AGL.</p> <ul style="list-style-type: none"> ▪ What PPE will you need to bring with you for this mission? <p>References:</p> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ IALSE Handbook <hr/> <p>Student Notes</p> <p>Location for Scenario 1 Answers:</p> <ul style="list-style-type: none"> • IALSE: _____ • IALSE: _____ <p>Answers:</p> <ol style="list-style-type: none"> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____

<p>Est. Instruction Time: 2 hours</p>	<p>Unit 1—Preparing for the Mission</p>
<p>#28—#29</p>	<p>Interagency Aviation Life Support Equipment (IALSE)— Scenario 1—<i>cont'd.</i></p> <p>Follow-Up Questions:</p> <ul style="list-style-type: none"> ▪ Can I wear my Black and Decker 2942 helicopter flight helmet on this mission? _____ _____ ▪ Can I wear fire-resistant, chemically treated, cotton clothing on this mission? _____ _____ ▪ Observe what an approved boot looks like. _____ _____ ▪ Can I wear my closed-cell foam canoeing PFD? _____ _____

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#30	<p>Interagency Aviation Life Support Equipment (IALSE)— Scenario 2</p> <p>Scenario 2: You have been instructed, by your supervisor, to teach a Student Conservation Association (SCA) volunteer group that will be taking a flight tomorrow, on how to inspect, don and doff an SPH-5 flight helmet. This instruction should be a “hands-on demonstration”, in front of the group.</p> <ul style="list-style-type: none"> ▪ What resources do you refer to in your instructional demonstration for the SCA group? <p>References:</p> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ IALSE Handbook <p>Other References:</p> <p>Gentex SPH-5 User Manual (https://shop.gentexcorp.com/content/TP0047.pdf)</p> <ul style="list-style-type: none"> ▪ Gentex SPH-5 User Manual <p>Interagency Safety Alert, No. IA 07-01—SPH-5 Flight Helmets (https://www.doi.gov/sites/doi.gov/files/migrated/aviation/safety/upload/IASA_2007-01.pdf)</p> <ul style="list-style-type: none"> ▪ Interagency Aviation Safety Alert—No. IA 07-01 <hr/> <p>Student Notes</p> <p>Location for Scenario 2 Answers (see links above):</p> <ul style="list-style-type: none"> • IALSE: _____ • Gentex SPH-5 User Manual: _____ • Interagency Aviation Safety Alert—No. IA 07-01 _____

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#30	Interagency Aviation Life Support Equipment (IALSE)— Scenario 2—<i>cont'd.</i> <hr/> Follow-Up Question: <ul style="list-style-type: none">▪ What additional training is required by the SCA group prior to flight? <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#31	<p>Interagency Aviation Life Support Equipment (IALSE)— Scenario 3</p> <p>Scenario 3: You are a professional photographer and your supervisor has informed you that you will be taking a helicopter reconnaissance flight to photograph the Panther Swamp Wildlife Refuge (WR), in Mississippi. You will need to bring all the necessary PPE to complete the mission.</p> <p>The mission will require you to fly with the door off and leaning out of the helicopter to take clear photos.</p> <ul style="list-style-type: none"> ▪ What PPE will you need to bring with you for this mission? ▪ Understand how the secondary restraint system works and share that knowledge with your fellow students. <p>References:</p> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ IALSE Handbook <hr style="border: 2px solid blue;"/> <p>Student Notes</p> <p>Location for Scenario 3 Answers:</p> <ul style="list-style-type: none"> • IALSE Handbook: _____ <p>Answers:</p> <ol style="list-style-type: none"> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ <hr style="border: 2px solid blue;"/>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#32	<p>Interagency Aviation Life Support Equipment (IALSE)— Scenario 4</p> <p>Scenario 4: You have been informed by your supervisor that you will be taking part in a USDA-FS whale-counting mission, off the east coast for Maine, in April.</p> <p>The mission will be flown in a multi-engine airplane, with six-seats, the flight will be required to fly 750 to 1000 feet above ground level (AGL) and will be flown over water (temperature) that is 45°F, and the flight is 75 to 150 miles from shore.</p> <p>You are required to gather your required PPE, before arriving for your flight. You are also required to confirm that the appropriate safety gear is onboard the aircraft before departure.</p> <ul style="list-style-type: none"> • What PPE will you be required to bring for your flight? • What required items must be worn on the flight, and in your aircraft, before departing for the mission? <p>Reference:</p> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ IALSE Handbook <hr style="border: 2px solid blue;"/> <p>Student Notes</p> <p>Location for Scenario 4 Answers:</p> <p>IALSE Handbook: <i>determine locations/sections where required PPE are defined for the questions above.</i></p> <p>Answers:</p> <p>1. _____ _____ _____</p> <p>2. _____ _____ _____</p>

<p>Est. Instruction Time: 2 hours</p>	<p>Unit 1—Preparing for the Mission</p>
<p>#32</p>	<p>Interagency Aviation Life Support Equipment (IALSE)— Scenario 4—<i>cont'd.</i></p> <p>Answers:</p> <p>3. _____ _____ _____</p> <p>4. _____ _____ _____</p> <p>5. _____ _____ _____</p> <hr/> <p>Follow-Up Questions:</p> <ul style="list-style-type: none"> • Does this flight require a PFD?? _____ _____ • Can I use a water activated PFD for this flight? _____ _____

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#33</p>	<p>Project/Mission Aviation Safety Plan (PASP/MASP)—14 Elements</p> <p>We will explore the 14 elements of a PASP in-depth in the following slides and explain the requirements for Agency/Bureau mission planning for Special Use and Unmanned Aircraft Systems (UAS) flights.</p> <p>If an element listed in this Appendix does not apply to the project, then the PASP will list that element as not applicable. For example, if the mission does not require protective clothing or equipment, then that section would be listed as “N/A”. (OPM-06).</p> <p><i>Note: Elements from the sample PASP may not be in the exact order listed in DOI—OPM-06, or USDA-FS—5711.1.</i></p> <p>For the best understanding, follow along in one of the <i>sample PASPs</i> provided for this course:</p> <p>Appendix D.2: PASP—Steens Weeds Spray (Resource Management)</p> <p>Appendix D.3: PASP—Unmanned Aircraft Systems (UAS)</p>
<p>#34 “Steens Weeds Spray”</p> <p>#55 “BLM UAS”</p>	<p>Project Aviation Safety Plan (PASP)—1. Project/Mission Name and Objectives</p> <p>A brief description of the planned mission is provided in the Project Name block of the PASP.</p> <p>In the Objective block of the PASP, a brief description of the planned mission objectives is stated.</p> <ul style="list-style-type: none"> • Are the mission objectives attainable?

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#35 “Steens Weeds Spray”</p> <p>#56 “BLM UAS”</p>	<p>PASP—2. Justification</p> <p>The PASP will cover Justification for the flight/mission by indicating 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.</p> <ul style="list-style-type: none"> • Are you using the right tool(s) for the job? (via ground, type of aircraft—helicopter or fixed-wing, or both—make, model) • Is there a better way to complete this project? <hr/> <p>Note <i>The above questions are considered by the Project Manager or Supervisor to determine if utilizing aviation is the correct tool for the job.</i></p> <hr/>
<p>#36 “Steens Weeds Spray”</p> <p>#57 “BLM UAS”</p>	<p>PASP—3. Project/Mission Dates</p> <p>The beginning and end Project Dates are to be defined in the PASP, but they may be approximate if the exact dates of the flight are not yet known at the time the PASP is created.</p>
<p>#37 “Steens Weeds Spray”</p> <p>#58 “BLM UAS”</p>	<p>PASP—4. Location</p> <p>A descriptive Location must be defined in the PASP—and a location and hazard map are also required that clearly shows the area where the flights will occur, for the pilot and crew, for location familiarization. See #10 Aerial Hazard Analysis element below for a map.</p> <p>This section may provide latitude/longitude, driving directions, staging areas, airport, helibase, helispot, and fueling locations, etc.</p>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#38 “Steens Weeds Spray”</p> <p>#59 “BLM UAS”</p>	<p>PASP—5. Projected Cost of Aviation Resources</p> <p>The Projected Cost of Aviation Resources must be defined in the PASP, by entering information such as:</p> <ul style="list-style-type: none"> • Cost code(s) • Projected flight hours cost • Projected miscellaneous expenses (e.g. overnight charges, service truck mileage, etc.) • Total cost of the aviation portion of the project <p>There are many costs that need to be considered:</p> <ul style="list-style-type: none"> • Flight time • Fuel truck • Tie-down fees • Minimum guarantee of availability • Per Diem • Do you have the authorization to spend additional funds not stated on the PASP? If “NO”, consult the project manager.

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#39–42 “Steens Weeds Spray”</p> <p>#60–63 “BLM UAS”</p>	<p>PASP—6. Aircraft</p> <p>If known, identify the following Aircraft information:</p> <ul style="list-style-type: none"> • Vendor or Aircraft Registration Number • Aircraft Type • Aircraft Registration (Data) Card Expiration Date • Mission Types for which the aircraft is approved <p>Vendor aircraft resources list can be found by looking at the DOI OAS Aviation Resource List. Only DOI employees have access to the internet Aviation Resource List. The list can also be obtained by contacting Aviation Acquisitions Directorate (AQD) and requesting the Aviation Resource List.</p> <p>DOI—AQD Aviation Resources List (https://www.doi.gov/aviation/aqd/aviation_resources)</p> <p>USDA-FS personnel contact your aviation contract specialist. UAS will be administered the same as fixed-wing and helicopters.</p>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#39–42 “Steens Weeds Spray”</p> <p>#60–63 “BLM UAS”</p>	<p>PASP—6. Aircraft—<i>cont’d.</i></p> <p>Procurement (Fleet/Contract/Other)</p> <p>There are different methods to request/procure aircraft. UAS are considered aircraft and will be administered the same as fixed-wing and helicopters. All fleet and cooperator aircraft—except for END-Product contracts—must be procured through DOI (AQD), or USDA-FS dispatch center.</p> <p>DOI—Acquisition Services Directorate (AQD) (https://www.doi.gov/aviation/aqd)</p> <p>★ NO aircraft flight time may be purchased on a credit card. ★</p> <p>Fleet Aircraft are owned/leased by the Bureau/Agency. These aircraft are more economical to operate than the vendor aircraft. When in doubt, ask your Aviation Manager.</p> <p>Cooperator Aircraft must have documented approval from the USDA-FS or DOI prior to being used. The authorization should specifically spell out what missions that cooperator aircraft is approved to conduct.</p> <p>Some examples of cooperator aircraft include:</p> <ul style="list-style-type: none"> • State examples: Oregon Department of Forestry or Alaska Division of Forestry—for sharing resources • Military examples: The National Guard—for extraction resources; the Army—for bucket support on fires • Other Federal Agencies examples: Interagency Agreements between DOI and USDA-FS • Academic Institutions examples: Colleges/Universities—that contract aviation to complete research that may benefit the Federal agencies, or on which agency employees may fly • Utilities examples: flying pipelines, or power lines, after or during national disasters • Foreign Government examples: Canada or Mexico—for firefighting

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#39–42 “Steens Weeds Spray”</p> <p>#60–63 “BLM UAS”</p>	<p>PASP—6. Aircraft—cont’d.</p> <p>Vendor Procurement: there are several different types of vendor contracts—these are based upon the user needs for the aviation resource. Information about ordering (manned or unmanned) vendor aircraft, for DOI operations, goes through AQD or your Regional Aviation Manager. USDA-FS users typically order through their local dispatch center.</p> <p>Examples of different types of Vendor Contracts include:</p> <ul style="list-style-type: none"> • Aircraft Rental Agreements (ARA): are agreements that have pre-established pricing, provisions, and pre-accepted/carded aircraft and pilots. As the name implies, <i>ARAs are agreements and are not formal, binding contracts.</i> However, <i>ARAs do become binding on the involved parties</i> once an order for services is placed with a vendor and the vendor has provided written acceptance of an order and/or has begun performing within the scope of the ARA. ARAs are typically utilized for general purpose flight situations (point-to-point transportation, high reconnaissance flights, and some law enforcement, etc.). • Exclusive Use Contract: is generally used to fulfill program needs if aircraft are required to be available continuously for a specified period of time, and immediate reaction time is required. • On-Call (DOI)/Call-When-Needed (USDA-FS): typically, OC/CWN contracts are awarded because experience indicates requirements during the year will be substantial. There are too many variables involved, however, to define the exact requirements—and funds may not currently be available to support funding a guaranteed contract. <p>End-Product contracts are not aircraft flight service contracts. The intent of this type of procurement is for the contractor to supply all personnel and equipment in order to provide a “service” or “end-result”. However, these contracts do not require the government to exercise operational control, participate in any part, or place any government employees, or DOI contracted personnel onboard an aircraft. Many contractors utilize aircraft (including UAS) to meet the performance objectives of End Product contracts for activities such as: animal capture, seeding, spraying, survey, photography, etc. End-Product contracts are administered by the bureau procurement units.</p>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#39–42 “Steens Weeds Spray”</p> <p>#60–63 “BLM UAS”</p>	<p>PASP—6. Aircraft—<i>cont’d.</i></p> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iaat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ OPM-35—Identification of End Product/Service and Flight Service Procurement ▪ OPM-11—DOI Use of Unmanned Aircraft Systems (UAS) ▪ USDA-Forest Service Manual (FSM) 5700
<p>#43 “Steens Weeds Spray”</p> <p>#64 “BLM UAS”</p>	<p>PASP—7. Pilot(s)</p> <p>If known, the Pilot(s) should be identified/named in the PASP, along with the following information on the Pilot(s):</p> <ul style="list-style-type: none"> • Types of aircraft in which the Pilot is qualified • Types of missions for which the Pilot is qualified • Pilot Card expiration date <p>See the DOI Aircraft & Pilot Resources List which provides a listing of available Pilots approved for bureau/agency missions and includes Pilot qualification/currency information. Only DOI employees have access to the internet resources list. The list can also be obtained by contacting AQD and requesting the Aviation Resources list.</p> <p>DOI—AQD Aviation Resources List (https://www.doi.gov/aviation/aqd/aviation_resources)</p>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#44 “Steens Weeds Spray”</p> <p>#65 “BLM UAS”</p>	<p>PASP—8. Participants/Supervision</p> <p>The USDA-FS (element # 1) and DOI (element # 8) have different wording, for this combined element of the PASP, for the purpose of the A-100 course.</p> <p>The PASP must include a list of the following participants and their associated, pertinent information:</p> <ul style="list-style-type: none"> • Identify the qualified Project Aviation Manager (Supervision—USDA-FS) • All individuals/participants involved in the flight • Individuals’ project responsibilities • IAT positions/qualifications, per IAT Position Requirements Matrix—see IAT Guide and OPM-04. [Helicopter Manager–Resource, Helicopter Flight Manager (DOI), Passenger, Fixed-Wing Flight Manager, etc.] • Dates of last aviation training <p>Training Requirements</p> <p>Positions listed in the IAT Guide or OPM-4 require specific skills and knowledge to perform aviation duties and ensure safety. Personnel shall only be assigned to positions in which they have been successfully trained (qualified and current). It is up to the Forest Service and each DOI bureau to determine positions they will utilize, based on organizational needs and mission objectives as identified in agency policy documents.</p> <p>Various aviation positions/titles that require specific skills and knowledge to perform aviation duties and ensure safety, are listed in either, or both, of the following documents:</p> <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ Interagency Aviation Training (IAT) Guide ▪ DOI OPM-04—Aviation User Training Program

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#44 “Steens Weeds Spray”</p> <p>#65 “BLM UAS”</p>	<p>PASP—8. Participants/Supervision—<i>cont’d.</i></p> <hr/> <p>Student Note <i>Review the IAT Guide and/or OPM-04 and ensure you understand how to read the position matrix to determine required aviation training courses individuals must complete, based on their positions/titles, within their respective agency or bureau. Positions can be referenced per the IAT Guide and OPM-04.</i></p> <hr/> <p>Bureau Requirements for A-100 Initial Training require classroom attendance, unless waived. See:</p> <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ NPS-RM60 Aviation Management, Ch. 14.3 ▪ BLM National Aviation Plan, Ch. 6.1.2 ▪ FWS Director’s Memo on Initial Aviation Training —Dated July 30, 2009 <p>Distinguish the difference between duties of Aircrew Members versus duties of Passenger’s:</p> <ul style="list-style-type: none"> • Aircrew Members: <i>“Personnel (not pilot/passenger) required to either be on board the aircraft/or attend to the loading and unloading of passengers and cargo at all landing and takeoffs and ensure that passengers have received a safety briefing prior to all missions. In addition, they perform an active mission function during a flight to ensure the successful outcome of the mission.”</i> (Reference: OPM-04, IAT Guide) • Passengers: Any person aboard an aircraft who does not perform the function of a flight crew member or an aircrew member. (References: DOI 350 DM1 and NWCG Glossary)

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#45–46 “Steens Weeds Spray”</p> <p>#66–67 “BLM UAS”</p>	<p>PASP—9. Communication Plan—Flight Following and Emergency Search and Rescue</p> <p>The USDA-FS and DOI have different wording for this element of the PASP—however, the wording has been combined for the A-100 course.</p> <p>Identify the procedures to be used.</p> <p>Mishap Response Plan</p> <p>Even with proper planning, aviation mishaps can still occur. It is a requirement that agencies/bureaus develop a written Mishap Response Plan, that serves several purposes and should include the following information:</p> <ul style="list-style-type: none"> • It must be specific to the flight/location • It should expedite Search and Rescue (SAR) activities, in the event of a mishap • It should serve as a planning tool • It must be validated annually <p>Confirm that a copy of the Mishap Response Plan is in place <i>before your flight</i> and filed with the following entities:</p> <ul style="list-style-type: none"> • Dispatch • Flight Follower • Your Base of Operations <hr/> <p>Student Note—Optional</p> <p>Review either a local unit copy, or the Interagency Aviation Mishap Response Guide and Checklist—from PMS 503/NFES 2659 via Cache, or print a copy from online:</p> <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ Interagency Aviation Mishap Response Guide and Checklist <hr/>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#47 “Steens Weeds Spray”</p> <p>#68 “BLM UAS”</p>	<p>PASP—10. Aerial Hazard Analysis</p> <p>Prior to flight, an Aerial Hazard Analysis must be completed with an attached Aerial Hazard Map.</p> <p>Prior to any project flight(s), the following shall be accomplished:</p> <ul style="list-style-type: none"> • Provide a briefing and a copy of the aerial hazards map to the pilot • Flights made in confined areas (e.g. deep, narrow canyons) require that a prior ground and/or aerial survey of hazards has been conducted • Planning concerning any Temporary Flight Restrictions (TFRs) and coordination with the Federal Aviation Administration (FAA)—and if appropriate, military authorities <hr/> <p>Student Exercise—Optional</p> <p>Review a hazard map or aeronautical sectional chart. Examine the legend and see how it relates to the hazard map or chart. Find/Identify hazards located on a hazard map/chart.</p> <p>Some items to be aware of on the Aerial Hazard Map and/or an aeronautical sectional chart include:</p> <ul style="list-style-type: none"> • Flight Routes/Areas and Altitudes • Airports • Airspace • Congested Areas on the Surface • Obstructions • Special Hazards • Areas to Avoid for Resource Considerations (nesting, noise, etc.) <p>Aviation Hazard Maps Information (https://www.fs.fed.us/r6/fire/aviation-hazards/) [this is specific to BLM Oregon/Washington and USDA-FS R6, may not be available for all agencies/bureaus]</p> <hr/>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#48 “Steens Weeds Spray”</p> <p>#69 “BLM UAS”</p>	<p>PASP—11. Protective Clothing and Equipment</p> <p>Prior to flight, identify the Personal Protective Equipment (PPE)—protective equipment and clothing—required for each, operation. Survival equipment (e.g. extra water, flotation devices, sleeping bags, etc.), beyond the normal PPE requirements, may also be required.</p>
<p>#49 “Steens Weeds Spray”</p> <p>#70 “BLM UAS”</p>	<p>PASP—12. Weight and Balance/Load Calculations</p> <ul style="list-style-type: none"> • The Pilot(s) is responsible for completing accurate Weight and Balance and Load Calculations for the planned flight. • The helicopter or fixed-wing Manager shall ensure that Manifests and Weight and Balance load calculations are completed daily and notated properly, as appropriate, per the contract and the Federal Aviation Regulations operations specifications. • Trained aviation personnel shall ensure that aircraft scheduled are capable of performing the mission(s) safely and within the capability of the type of aircraft selected. <p>Prior to placing cargo on the aircraft, it should be weighed and labeled. Cargo compartments are limited to the weights specified by the compartment placards.</p> <p><i>Note: For UAS Operations, this element may not be applicable.</i></p>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#50–53 “Steens Weeds Spray”</p> <p>#71–74 “BLM UAS”</p>	<p>PASP—13. Risk/Hazard Assessment/ Safety Management System (SMS)</p> <p>The USDA-FS and DOI have different wording for this element of the PASP—however, the wording has been combined for the A-100 course.</p> <p>Risk/Hazard Assessments can be effectively performed utilizing tools listed in the NWCG Standards for Helicopter Operations (NSHO) and/or agency/bureau-approved Safety Management Systems (SMS).</p> <p>Risk Assessment Tools and Methods</p> <p>Complete a Risk/Hazard Assessment that identifies hazards associated with the operation and the mitigations and controls put in place to reduce or eliminate them. The tools and process for completing this assessment are found in:</p> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ NWCG Standards for Helicopter Operations (NSHO) ▪ Incident Response Pocket Guide—PMS461/NFES 001077 ▪ Interagency Standards for Fire and Fire Aviation Operations—NFES 2724 (Red Book)

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#50–53 “Steens Weeds Spray”</p> <p>#71–74 “BLM UAS”</p>	<p>PASP—13. Risk/Hazard Assessment/ Safety Management System (SMS)₂</p> <p>Risk Management Principles</p> <p>Risk Management is an ongoing process.</p> <p>Four basic decision-making principles must be applied <i>before</i> any anticipated job, task, or mission is performed.</p> <p>1. Accept <i>NO</i> unnecessary risk</p> <p>The most logical choices for accomplishing a mission are those that meet all the mission requirements while exposing personnel and resources to the lowest possible risk.</p> <p>Examples of unnecessary risk include:</p> <ul style="list-style-type: none"> ▪ Conducting a mission for which you are not qualified ▪ Flying lower than necessary to complete the mission ▪ Visual Flight transitioning into Instrument conditions, with neither the skill, qualifications, or equipment required for safe flight ▪ Flying in marginal weather conditions ▪ Deviation from the Flight Plan with no communication or Flight Following capability ▪ Flying with inadequate, or no PPE, or survival gear for the mission <p>2. Make risk decisions at the appropriate level</p> <p>Anyone can make a risk decision. However, the appropriate decision-maker is the person who can allocate the resources to reduce or eliminate the risk and implement controls. The decision-maker must be authorized to accept levels of risk typical of the planned operation (i.e. loss of operational effectiveness, normal wear-and-tear on materiel). He should elevate decisions to the next level in the chain of management upon determining that those controls available to him will not reduce residual risk to an acceptable level.</p>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#50–53 “Steens Weeds Spray”</p> <p>#71–74 “BLM UAS”</p>	<p>PASP—13. Risk/Hazard Assessment/ Safety Management System (SMS)₂—cont’d.</p> <p>2. Make risk decisions at the appropriate level—cont’d.</p> <p>Examples of risk decisions at the appropriate level:</p> <ul style="list-style-type: none"> ▪ Supervisors are responsible to approve the level of risk that their employees can accept ▪ If you don’t know how much risk you are authorized to accept, ASK. ▪ A risk assessment is the tool you can use to quantify the risk. <p>Example of a risk decision responsibility changing: <i>You are asked to complete a mission; however, the Aircraft Manager disagrees with the mission and elevates the decision to the Supervisor. The risk decision responsibility is now at the appropriate level.</i></p> <p>3. Accept risk when benefits outweigh the costs</p> <p>All identified benefits should be compared against all identified costs. Even high-risk endeavors may be undertaken when there is clear knowledge that the sum of the benefits exceeds the sum of the costs. Balancing costs and benefits are a subjective process, and ultimately the balance may have to be arbitrarily determined by the appropriate decision-maker.</p> <p>Examples of weighing risks versus benefits for a flight:</p> <ul style="list-style-type: none"> ▪ Unscheduled off-airport landing to have lunch ▪ Departing in marginal conditions <p>Example of an aircraft accident that occurred: NTSB Identification: LAX97GA325 <i>Marginal conditions; Accident occurred Friday, September 12, 1997 in Sequim, WA. Probable Cause Approval Date: 12/07/1999; Aircraft: Bell 205A-1; registration: N90HJ Injuries: 3 Fatal; 5 Serious.</i></p>

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#50–53 “Steens Weeds Spray”</p> <p>#71–74 “BLM UAS”</p>	<p>PASP—13. Risk/Hazard Assessment/ Safety Management System (SMS)₂—cont’d.</p> <p>4. Integrate risk management throughout the mission, from start-to-finish</p> <p>The Risk management process is a continuous loop, not a one-time event. Risks are more easily assessed and manage in the planning stages of an operation. The later changes are made in the process of planning and executing an operation, the more expensive and time-consuming they will become.</p> <p>Example of risk management start-to-finish:</p> <ul style="list-style-type: none"> ▪ From the time the PASP risk assessment is completed to the day of the flight risk assessment, this process is to include all participants. <p>FAA—System Safety Handbook, Ch. 15 Operational Risk Management (https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/risk_management/ss_handbook/media/Chap15_1200.pdf)</p> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ NWCG Standards for Helicopter Operations (NSHO)

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#50–53 “Steens Weeds Spray”</p> <p>#71–74 “BLM UAS”</p>	<p>PASP—13. Risk/Hazard Assessment/ Safety Management System (SMS)₃</p> <p>Operational Risk Management includes five main process steps (IAMIS—acronym to remember the 5 steps below):</p> <p>1. Identify Hazards</p> <p>A hazard is defined as any real or potential condition that can cause degradation, injury, illness, death, or damage to or loss of equipment or property. Experience, common sense, and specific analytical tools help identify risks.</p> <ul style="list-style-type: none"> • Determine any source(s) of danger <p>2. Assess Risk</p> <p>The assessment step is the application of quantitative and qualitative measures to determine the level of risk associated with specific hazards. This process defines the probability and severity of an accident that could result from the hazards based upon the exposure of humans or assets to the hazards.</p> <ul style="list-style-type: none"> • Consider the likelihood/probability of an event happening, and the severity of the event on the involved personnel or aircraft included in your mission. <p>3. Develop Controls and Make Decisions</p> <p>All risks have three components: probability of occurrence, severity of the hazard, and the exposure of people and equipment to the risk. Effective control measures reduce or eliminate at least one of these. The analysis must consider the overall costs and benefits of remedial actions, providing alternative choices if possible.</p> <p>The decision-maker must choose the best control, or combination of controls, based on the analysis:</p> <ul style="list-style-type: none"> • Determine what measures will mitigate the risk • Decide if the risk is acceptable once controls are in place

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#50–53 “Steens Weeds Spray”</p> <p>#71–74 “BLM UAS”</p>	<p>PASP—13. Risk/Hazard Assessment/ Safety Management System (SMS)₃—cont’d.</p> <p>4. Implement the Controls Defined</p> <p>Management must formulate a plan for applying the controls that have been selected, then provide the time, materials, and personnel needed to put these measures in place.</p> <p>Examples:</p> <ul style="list-style-type: none"> ▪ Personal Protective Equipment (PPE) ▪ Procedure/Standard Operating Procedures (SOP) ▪ Delay the mission <p>5. Supervise and Evaluate the Controls in Place</p> <p>Once controls are in place, the process must be periodically reevaluated to ensure their effectiveness. Workers and managers at every level must fulfill their respective roles to assure that the controls are maintained over time. The risk management process continues throughout the life cycle of the system, mission, or activity.</p> <ul style="list-style-type: none"> • Determine if the controls are working, or if anything has changed that would require the plan to change • If there are changes, then the process would be required to start anew. <hr/> <p>Example of the Risk Management Process:</p> <p>Setting: <i>You are planning to drive to work in your car on a divided two-lane highway. The driving conditions are sunny, dry, and no traffic. The posted speed limit is 55 MPH.</i></p> <p><input type="checkbox"/> How fast would you normally be driving to work, based on these conditions?</p> <p>Step 1—Identify the Hazards</p> <ul style="list-style-type: none"> • What if you encounter icing conditions (black ice), or down-pouring rain, or water laying on the road surface? <p>Step 2—Assess Risk</p> <ul style="list-style-type: none"> • What is the likelihood/probability of having an accident driving in the condition before applying a mitigation? • What would be the severity of the accident?

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
<p>#50–53 “Steens Weeds Spray”</p> <p>#71–74 “BLM UAS”</p>	<p>PASP—13. Risk/Hazard Assessment/ Safety Management System (SMS)₃—cont’d.</p> <p>Step 3—Develop Controls and Make Decisions</p> <ul style="list-style-type: none"> • What are some possible control(s) to reduce the risk? <p>Step 4—Implement the Controls Defined</p> <ul style="list-style-type: none"> • What if you reduced speed? • How fast should you be driving under the conditions of black ice, or down-pouring rain? <p>Step 5—Supervise and Evaluate the Controls in Place</p> <ul style="list-style-type: none"> • Evaluate the speed of 30 MPH to determine if it is safe enough to allow you to drive to work. • What if 30 MPH is still not slow enough to safely drive to work? What do you do next? <p>If interested in additional Risk Management training, see: A-205 Risk Management I and A-305 Risk Management II courses via: IAT Website—Course Catalog (https://www.iat.gov/training/searchcourses.asp)</p>
<p>#54 “Steens Weeds Spray”</p> <p>#75 “BLM UAS”</p>	<p>PASP—14. Signatures</p> <p>The USDA-FS and DOI identify the signature element separately, based on policy.</p> <p>Completed PASPs require Signatures approval by a Line Manager, Regional Aviation Officer—or an alternative, appropriate level of Signature approval, based on the risk assessment, or other bureau requirements.</p> <p>PASP Mission Approvals should ensure:</p> <ul style="list-style-type: none"> • Managers are fully informed of the risks that their employees are taking • Appropriate Management level approval for risk decisions, based on the Risk Matrix • When in doubt, ASK before you fly

Est. Instruction Time: 2 hours	Unit 1—Preparing for the Mission
#76	Unit 1 Objectives Review After completing Unit 1, students should be able to: <ul style="list-style-type: none">❖ Locate aviation policy for your Bureau or Agency❖ Identify the elements required for mission planning
	Unit End

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#77	<p>Briefings—Unit Introduction</p> <p>This unit will cover the Five Steps to a Safe Flight and 12 Standard Aviation Questions that Shout “Watch Out!” that are utilized to promote safety of flight, with consideration for the various aspects of the planned flight/mission and the crewmembers/passengers who plan to participate in the mission.</p> <p>The Five Steps to a Safe Flight are one of the first lines of defense and should start a conversation about the mission you are about to undertake.</p> <p>This unit will also cover two helpful cards that assist aircrew members and passengers in promoting safety of flight:</p> <ul style="list-style-type: none"> ▪ OAS-103—Five Steps to a Safe Flight (orange card) ▪ OAS-161—12 Standard Aviation Questions that Shout “Watch Out!” (blue card) <p>Find both cards at:</p> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ IAT Website— under “Aviation Safety Cards”
#78	<p>Unit 2 Objectives</p> <p>After completing Unit 2, students should be able to:</p> <ul style="list-style-type: none"> ❖ List the items for an effective aviation mission briefing ❖ Identify the tool that provides the items of a passenger safety briefing ❖ Provide examples of why you would refuse a flight ❖ Given a scenario, recognize the hazards associated with an aircraft mission
#79 Video	<p>Aviation Safety Video</p> <p>We will now watch an aviation safety video.</p>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#80	<p data-bbox="467 287 1081 325">Five Steps to a Safe Flight (orange card)</p> <div data-bbox="513 354 1373 982" style="background-color: #f4a460; padding: 10px; border: 1px solid black;"> <p data-bbox="667 384 1214 428" style="text-align: center;">Five Steps to a Safe Flight</p> <ol data-bbox="545 443 1268 659" style="list-style-type: none"> 1. Pilot/Aircraft Data Card - Approved & Current 2. Flight Plan/Flight Following Initiated 3. PPE in Use When Required 4. Pilot Briefed on Mission & Flight Hazards 5. Crew & Passenger Briefing to include: <ul data-bbox="565 680 1308 926" style="list-style-type: none"> - Aircraft Hazards - Seat Belt & Harness - ELT & Survival Kit - First Aid Kit - Gear & Cargo Security (Not Under Seats) - Fire Extinguisher - Fuel & Electrical Shutoff - Oxygen Equipment - Emergency Egress - Smoking <p data-bbox="1338 443 1365 730" style="writing-mode: vertical-rl; text-orientation: mixed; font-size: small;">OAS-103/FS 5700-16 (07/18)</p> </div> <p data-bbox="467 1003 1349 1073">The Five Steps to a Safe Flight (orange card) is available for download to an electronic device, as an Adobe .pdf document:</p> <p data-bbox="467 1094 1263 1171">IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul data-bbox="488 1192 1268 1226" style="list-style-type: none"> ▪ Five Steps to a Safe Flight (OAS-103/FS 5700-16) <p data-bbox="467 1262 1406 1402">The Five Steps to a Safe Flight (orange) card is an excellent tool that lists items required for a safe flight. This card should be reviewed and used as a checklist, to ensure that none of the requirements are missed—<i>prior to participating in a mission/flight</i>.</p> <p data-bbox="467 1423 1417 1493">Items on the orange card should also be considered for Unmanned Aircraft Systems (UAS) flights.</p>

Est. Instruction Time: 1.5 hours **Unit 2—Five Steps to a Safe Flight**

#81–83

Step 1.—Pilot Qualification Card

It is your obligation to see the Pilot Qualification Card and Aircraft Data Card (and mechanic and fuel truck card, if applicable) prior to the mission and confirm the information meets the mission requirements and is in alignment with the Project Aviation Safety Plan (PASP).

- **Pilot Qualification Card (Approved & Current)**—the following items are to be identified by an aircrew member:
 - Pilot Name and ask for photo I.D.
 - Authorized Aircraft or UAS the Pilot is qualified to fly
 - Company Name
 - Approved/Authorized Missions
 - Expiration Date

Examples of Pilot Qualification Cards:

- ▶ **OAS-30A—Interagency Airplane Pilot Qualification Card**
- ▶ **OAS-30B—Interagency Helicopter Pilot Qualification Card**
- ▶ **OAS-30U—UAS Remote Pilot Card**

—review the major items the aircrew member should verify on the card.

USDA INTERAGENCY USDI AIRPLANE PILOT QUALIFICATION CARD		VI. Make & Model	POC	VTN	FTN	ATO Pilot	Wheels	Amphib	Float	Stra
I. Pilot Name: Wendy Pilot		C-182	PIC	JJJ			X		X	X
II. Company: Bozeman Aviation Inc										
III. Expiration Date: 4/30/XXXX										
IV. CARD STATUS <input checked="" type="checkbox"/> Interagency <input type="checkbox"/> DOI Only <input type="checkbox"/> USFS Only <input type="checkbox"/> Initial <input checked="" type="checkbox"/> Renewal <input type="checkbox"/> Re-issue <input type="checkbox"/> Added Authorization		Approved	VII. Authorized Missions		Date Expire	Inspector Info Only				
V. Inspector Comments:			Glider Landings - Stra		4000X	USI	DCI	NSI		
			Low Level (<500 feet AGL)		5000X					
			Mountainous Terrain		NA					
			Off Airport - Wheels		NA					
			Point to Point		NA					
			Reconnaissance		NA					
VI. Issued By: Jim Inspector OAS (Print Name) (Office)										
jim inspector (Signature)					9/25/XXXX (Issue Date)					

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight																																																																																																
#84–86	<p>Step 1.—Aircraft Data Card</p> <ul style="list-style-type: none"> ▪ Aircraft Data Card—(Approved & Current)—the following items are to be identified by an aircrew member: <ul style="list-style-type: none"> • Operator Name • Expiration Date • Registration Number (tail number) • Make, Model, and Series • Authorized Uses <p>Examples of Aircraft Data Cards:</p> <ul style="list-style-type: none"> ▶ OAS-36A—Interagency Data Card—Airplane ▶ FS-5700-21a—Helicopter Data Record ▶ OAS-36B—Helicopter Data Card ▶ OAS-36U CWN—UAS Data Card <p>—review and note the major items an aircrew member should verify on the card.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <table border="1" style="width: 100%; border-collapse: collapse; font-size: 8px;"> <tr> <td colspan="2" style="text-align: left;">OAS-36A V 1.8 10/22/2013</td> <td colspan="2" style="text-align: center;"> AIRPLANE DATA CARD</td> <td colspan="2" style="text-align: right;">AIRCRAFT DATA CARD EXPIRES: 2/20xx</td> </tr> <tr> <td colspan="2" style="text-align: center;"></td> <td colspan="4" style="text-align: center;">OFFICE OF AVIATION SERVICES</td> </tr> <tr> <td colspan="2">OPERATOR: Bozeman Aviation Inc</td> <td colspan="4">MAKE, MODEL AND SERIES: C-186</td> </tr> <tr> <td colspan="2">ADDRESS: 5556 Main Street</td> <td colspan="4">REGISTRATION NO.: N 22222</td> </tr> <tr> <td colspan="2">Anchorage AK 99502</td> <td colspan="4">MFG. SERIAL NO.: 24xxxx46</td> </tr> <tr> <td>PHONE NO.: (907) 666-6666</td> <td>FAX:</td> <td colspan="2">HOBBS / TACH. READING: 2226.2 / 1110.6</td> <td colspan="2">TYPE AIRWORTHINESS CERTIFICATE: Standard</td> </tr> <tr> <td>P.O.C.: Amy Leader</td> <td>PHONE: (907) 666-6666</td> <td colspan="4">OAS CONTACT: DEE Bird Ph: (907) 271-0000 FAX:</td> </tr> <tr> <td colspan="2">COMPANY EMAIL: ALeader@gmail.com</td> <td colspan="4" style="text-align: center;">AUTHORIZED USES:</td> </tr> <tr> <td><input type="checkbox"/> PASSENGER No. Pax: 4 (P)</td> <td><input type="checkbox"/> SMOKE JUMPER (3D)</td> <td colspan="4"></td> </tr> <tr> <td><input type="checkbox"/> CARGO</td> <td><input type="checkbox"/> OTHER: Glaoler Landings</td> <td colspan="4"></td> </tr> <tr> <td><input type="checkbox"/> SINGLE PILOT IFR (W / AUTOPILOT)</td> <td><input type="checkbox"/> OTHER: Reconnaissance</td> <td colspan="4"></td> </tr> <tr> <td><input type="checkbox"/> LOW-LEVEL (P)</td> <td><input type="checkbox"/> OTHER: Off Airport - wheels</td> <td colspan="4"></td> </tr> <tr> <td><input type="checkbox"/> FIRE SURVEILLANCE / RECON (USFS ONLY)</td> <td><input type="checkbox"/> OTHER:</td> <td colspan="4"></td> </tr> <tr> <td><input type="checkbox"/> PARA CARGO (P)</td> <td><input type="checkbox"/> OTHER:</td> <td colspan="4"></td> </tr> <tr> <td>Inspected By: /S/ <i>[Signature]</i></td> <td>Print Name: Jim Inspector</td> <td>Region/Area: OAS - AN</td> <td>Date: 11/02/0xx</td> <td colspan="2"></td> </tr> <tr> <td>Approved By: /S/ <i>[Signature]</i></td> <td>Print Name: Jim Inspector</td> <td>Region/Area: OAS - AN</td> <td>Date: 12/5/20xx</td> <td colspan="2"></td> </tr> </table> </div>	OAS-36A V 1.8 10/22/2013		 AIRPLANE DATA CARD		AIRCRAFT DATA CARD EXPIRES: 2/20xx				OFFICE OF AVIATION SERVICES				OPERATOR: Bozeman Aviation Inc		MAKE, MODEL AND SERIES: C-186				ADDRESS: 5556 Main Street		REGISTRATION NO.: N 22222				Anchorage AK 99502		MFG. SERIAL NO.: 24xxxx46				PHONE NO.: (907) 666-6666	FAX:	HOBBS / TACH. READING: 2226.2 / 1110.6		TYPE AIRWORTHINESS CERTIFICATE: Standard		P.O.C.: Amy Leader	PHONE: (907) 666-6666	OAS CONTACT: DEE Bird Ph: (907) 271-0000 FAX:				COMPANY EMAIL: ALeader@gmail.com		AUTHORIZED USES:				<input type="checkbox"/> PASSENGER No. Pax: 4 (P)	<input type="checkbox"/> SMOKE JUMPER (3D)					<input type="checkbox"/> CARGO	<input type="checkbox"/> OTHER: Glaoler Landings					<input type="checkbox"/> SINGLE PILOT IFR (W / AUTOPILOT)	<input type="checkbox"/> OTHER: Reconnaissance					<input type="checkbox"/> LOW-LEVEL (P)	<input type="checkbox"/> OTHER: Off Airport - wheels					<input type="checkbox"/> FIRE SURVEILLANCE / RECON (USFS ONLY)	<input type="checkbox"/> OTHER:					<input type="checkbox"/> PARA CARGO (P)	<input type="checkbox"/> OTHER:					Inspected By: /S/ <i>[Signature]</i>	Print Name: Jim Inspector	Region/Area: OAS - AN	Date: 11/02/0xx			Approved By: /S/ <i>[Signature]</i>	Print Name: Jim Inspector	Region/Area: OAS - AN	Date: 12/5/20xx		
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Est. Instruction Time: 1.5 hours

Unit 2—Five Steps to a Safe Flight

#84–86

Step 1.—Aircraft Data Card—*cont'd.*

Examples of Aircraft Data Cards:

- ▶ **FS-5700-21a—Helicopter Data Record**
- ▶ **OAS-36B—Helicopter Data Card**

—review and note the major items an aircrew member should verify on the card.

FS-5700-21a, Part 2 (12/2011)
OMB 0596-0015

USDA - Forest Service		1. Contract/Rental Agreement No.		FS#####	
HELICOPTER DATA RECORD <small>(Reference FSH 5709.18) v5.0</small>		2. Item No.			
		3. Designated Base		Bozeman, MT	
		4. Region/Area		Region 1	
SECTION I - Operator & Aircraft Information (Fill in Blanks)					
1. Operator Alaska Rotors Inc		2. Address (Street, City, State & ZIP Code) 222 Main Street Bozeman MT XXXXX			
3. Phone No. XXX XXX XXXX	4. Make and Model AS350 B2	5. FAA Registration No. N####R	6. Manufacturer's Serial No. XXXXXX	7. Hobbs Reading 224.8	
8. Max Gross Weight (Internal) 4961	9. Max Gross Weight (Ext.) 5512	10. No. of Passengers 5	11. Type Fuel Jet A	12. Fuel Flow (CrUIse) 35 G.P.H	
FOR CURRENTLY EQUIPPED WEIGH CHECK WEIGHT & BALANCE DATA IN AIRCRAFT FLIGHT MANUAL					
13. Authorized Uses (Initial appropriate boxes) <small>(Line Through Unapproved Uses)</small>		Expires (Fill in the Blank) 04/20XX <small>(Month/Year)</small>			
a. <input type="checkbox"/> Passenger & Cargo	b. <input type="checkbox"/> Fire Suppression - Interagency	o. <input type="checkbox"/> Approved for Lift Seat Ops		p. <input type="checkbox"/> Approved MEL MMEL Rev No. 0 (D95)	
d. <input type="checkbox"/> Low Level Reconnaissance	i. <input type="checkbox"/> Fire Suppression - Local	q. <input type="checkbox"/> Other		r. <input type="checkbox"/> Other	
c. <input checked="" type="checkbox"/> Cargo Only (Restricted Category)	j. <input checked="" type="checkbox"/> Water/Retardant Bucket	s. <input type="checkbox"/> Other		t. <input type="checkbox"/> Other	
e. <input checked="" type="checkbox"/> External Load (Sling)	k. <input checked="" type="checkbox"/> Fixed Tank Tank No. (0)	u. <input type="checkbox"/> Other		v. <input type="checkbox"/> Other	
f. <input checked="" type="checkbox"/> Rappelling	l. <input type="checkbox"/> Longline/Remote Hook	w. <input type="checkbox"/> Other		x. <input type="checkbox"/> Other	
g. <input checked="" type="checkbox"/> Aerial Ignition	m. <input checked="" type="checkbox"/> Rapid Refuel CCR	y. <input type="checkbox"/> Other		z. <input type="checkbox"/> Other	
h. <input type="checkbox"/> Manager May Ride (Type of ONLY)	n. <input checked="" type="checkbox"/> Air Attack Type()	aa. <input type="checkbox"/> Other		ab. <input type="checkbox"/> Other	
14. Approved By (Signature) <i>John Inspector</i>	15. Title Aircraft Inspector	16. Region R-6	17. Date 04/09/20XX		

electronically signed: Card with electronic signature invalid without date stamp 4.0

OAS-36B V 1.6 10/22/2013		 HELICOPTER DATA CARD		AIRCRAFT DATA CARD EXPIRES: 01/01/2029	
OFFICE OF AVIATION SERVICES		OPERATOR: Portland helicopters		MAKE, MODEL AND SERIES: Bell 206 L-4	
		ADDRESS: 225 rotor drive Redmond OR 97754		REGISTRATION NO. N 34567	
PHONE NO. (503) 875-9674 FAX		MFG. SERIAL NO. 1345987		HOBBS READING 2535.8	
P.O.C.: Kim parka PHONE: (503) 875-6612		TYPE AIRWORTHINESS CERTIFICATE: 552266		OAS CONTACT PH: (907) 271-3700 FAX:	
COMPANY EMAIL: KParka@email.com		AUTHORIZED USES:			
<input checked="" type="checkbox"/> PASSENGER & CARGO (9P)	<input type="checkbox"/> FIRE SUPPRESSION - IA (2A)	<input type="checkbox"/> EXTENDED OVERWATER (5X)			
<input checked="" type="checkbox"/> # PAX SEATS 5	<input type="checkbox"/> FIRE SUPPRESSION - LOCAL (3A)	<input type="checkbox"/> SNOW OPS (4)			
<input type="checkbox"/> CARGO ONLY (9C)	<input type="checkbox"/> AERIAL IGNITION (8)	<input type="checkbox"/> OTHER ACETA			
<input type="checkbox"/> EXT. LOAD (SLING) (1A)	<input type="checkbox"/> WATER BUCKET (3W)	<input type="checkbox"/> OTHER			
<input type="checkbox"/> SHORT HAUL (1H)	<input type="checkbox"/> HELI-TANKER (FIXED TANK) (3R)	<input type="checkbox"/> OTHER			
<input type="checkbox"/> RAPPPELLING (4R)	<input type="checkbox"/> CARGO LETDOWN	<input type="checkbox"/> OTHER			
Inspected By: <i>IS/</i> <i>John Inspector</i> Print Name: John Inspector	Region/Area OAS ANC	Date: 08/16/2019			
Approved By: <i>IS/</i> <i>John Inspector</i> Print Name: John Inspector	Region/Area OAS ANC	Date: 08/16/2019			

Est. Instruction Time: 1.5 hours	<h2 style="margin: 0;">Unit 2—Five Steps to a Safe Flight</h2>																																														
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ADDRESS: 1188 Columbia Way Brighton, WA 12345 PHONE NO.: (555) 555-5555 FAX: _____ P.O.C.: James Flight PHONE: (555) 555-5555 COMPANY EMAIL: james.flight@ACME.com </td> <td colspan="2" style="padding: 2px;"> MAKE, MODEL AND SERIES: Eagle Xray REGISTRATION N# / FAA#: N 107NE / ~GB4N6QSUBS MFG. SERIAL NO.: 12-1569 HOURS/TACH READING TYPE: 7.85 / hrs AIRWORTHINESS CERTIFICATE: FAA / DOD OAS CONTACT: S. 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Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight																															
#87	<p>Step 1.—Fuel Service Vehicle Data Card</p> <p>Some aircraft contracts may require a fuel truck or mechanic to be present during the mission, if so, these individuals and equipment will also be carded.</p> <ul style="list-style-type: none"> ▪ Fuel Service Vehicle Data Card—(Approved & Current)—will only be issued where the vendor is required to provide a fueling vehicle. The following items are to be identified by an aircrew member, on a fuel service vehicle data card: <ul style="list-style-type: none"> • Company Name • License Number • Expiration Date <p>Example:</p> <p>▶ OAS-39B—Fuel Service Vehicle Data Card</p> <p>—review the major items the aircrew member should verify on the card.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>OAS-39B, V 1.8 11/7/2013</p> <p style="text-align: center;">FUEL SERVICE VEHICLE (FSV)</p> <p style="text-align: center;">Office of Aviation Services</p> </td> <td style="width: 50%; vertical-align: top;"> <p>FUEL SERVICE VEHICLE EXPIRES: 3/20XX</p> <p>OAS-68 CONTROL NO: 88201044444447</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>CONTRACT #</th> <th>ITEM #</th> <th>TYPE</th> <th>Expires</th> <th>Base</th> </tr> </thead> <tbody> <tr> <td>D20Cooxxx</td> <td></td> <td>Helicopter</td> <td></td> <td>Bozeman, Mt</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> </td> </tr> <tr> <td style="vertical-align: top;"> <p>OPERATOR Alaska Rotors Inc</p> <p>ADDRESS ### Main Street</p> <p>Bozeman MT XXXXX</p> <p>PHONE (803) 666-6665 FAX</p> <p>P.O.C. David Franks</p> </td> <td style="vertical-align: top;"> <p>TYPE VEHICLE F450</p> <p>Ex-Use Fuel Consumption 1000 gal</p> <p>Ex-Use Hours Required</p> <p>LICENSE NUMBER: ##### STATE: MT</p> <p>UNIT No:</p> </td> </tr> <tr> <td style="vertical-align: top;"> <p>APPROVED BY: (Signature) <i>Jim Inspector</i></p> <p>(Print Name) Jim Inspector</p> </td> <td style="vertical-align: top;"> <p>DATE: 3/20xx</p> <p>REGION/AREA: OAS West</p> </td> </tr> </table> </div>	<p>OAS-39B, V 1.8 11/7/2013</p> <p style="text-align: center;">FUEL SERVICE VEHICLE (FSV)</p> <p style="text-align: center;">Office of Aviation Services</p>	<p>FUEL SERVICE VEHICLE EXPIRES: 3/20XX</p> <p>OAS-68 CONTROL NO: 88201044444447</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>CONTRACT #</th> <th>ITEM #</th> <th>TYPE</th> <th>Expires</th> <th>Base</th> </tr> </thead> <tbody> <tr> <td>D20Cooxxx</td> <td></td> <td>Helicopter</td> <td></td> <td>Bozeman, Mt</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	CONTRACT #	ITEM #	TYPE	Expires	Base	D20Cooxxx		Helicopter		Bozeman, Mt																<p>OPERATOR Alaska Rotors Inc</p> <p>ADDRESS ### Main Street</p> <p>Bozeman MT XXXXX</p> <p>PHONE (803) 666-6665 FAX</p> <p>P.O.C. David Franks</p>	<p>TYPE VEHICLE F450</p> <p>Ex-Use Fuel Consumption 1000 gal</p> <p>Ex-Use Hours Required</p> <p>LICENSE NUMBER: ##### STATE: MT</p> <p>UNIT No:</p>	<p>APPROVED BY: (Signature) <i>Jim Inspector</i></p> <p>(Print Name) Jim Inspector</p>	<p>DATE: 3/20xx</p> <p>REGION/AREA: OAS West</p>
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Est. Instruction Time: 1.5 hours	<h2 style="margin: 0;">Unit 2—Five Steps to a Safe Flight</h2>
<h3 style="margin: 0;">#88</h3>	<h3 style="margin: 0;">Step 1.—Mechanic Qualification Data Card</h3> <ul style="list-style-type: none"> ▪ Mechanic Qualification Data Card—(Approved & Current)—will only be issued for Exclusive-Use (EU) contracts, Call-When-Needed (CWN), or On-Call contracts when a mechanic is required to be on-site with the aircraft. The following items are to be identified by an aircrew member, on the Mechanic’s card: <ul style="list-style-type: none"> • Mechanic’s Name • Aircraft/Airframe Type(s) (on which the Mechanic is qualified to perform maintenance) • Engine Type(s) (on which the Mechanic is qualified to perform maintenance) • Expiration Date <p>Example:</p> <ul style="list-style-type: none"> ▶ OAS-38—Interagency Mechanic Qualification Data Card —review the major items the aircrew member should verify on the card. <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center; font-size: small;">Fold Here</p> </div>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#88	<p>Step 1.—Mechanic Qualification Data Card—<i>cont'd.</i></p> <p>It is your obligation to see the Pilot Qualification Card and Aircraft Data Card (and mechanic and fuel truck card, if applicable) prior to the mission and confirm the information meets the mission requirements and is in alignment with the Project Aviation Safety Plan (PASP).</p> <p>If there is a discrepancy, aircraft physical airworthiness condition (signs of aircraft damage), maintenance, or a question—contact your aviation manager <i>BEFORE</i> you fly. You may also consult with a DOI/USDA-FS approved Pilot/Maintenance Inspector who issued the card.</p>
#89	<p>Step 2.—Flight Plan/Flight Following Initiated</p> <p>Confirm <i>someone</i> knows your location and your flight route—and that person is committed to Flight Following your route during the mission/flight planned.</p> <ul style="list-style-type: none"> ▪ Flight Plan <p>In the United States, pilots should operate within the U. S. federal aviation authority, by filing a Flight Plan with the Federal Aviation Administration (FAA). All Flight Plans shall be filed prior to takeoff, when possible.</p> <p>The Agency/Bureau-approved Flight Plan may be used to accommodate specialized bureau missions. The bureau-approved Flight Plan can also be provided to the Flight Follower, or Dispatch Center, prior to departure with the aircraft planned route or flight path. As a minimum—route of flight, estimated time of arrival (ETA), how an aircraft will be tracked during flight, and response procedures should the aircraft experience a mishap or fail to check-in—must be specified.</p> <p>Flight Planning/Flight Following</p> <p>A written Flight Plan, with no Flight Following, dramatically increases the response time for Search and Rescue (SAR) efforts. It may require more than 5 hours for individuals to check and confirm there is a missing aircraft. Deviation from a Flight Plan only complicates the potential of locating a downed aircraft. By the time SAR efforts locate the aircraft and arrive on scene, an average time of 37 hours has passed.</p>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#89	<p>Step 2.—Flight Plan/Flight Following Initiated—<i>cont'd.</i></p> <ul style="list-style-type: none">▪ Flight Following<p>Aircraft flight activities are monitored, in accordance with DOI/bureau and USDA-FS policies, by utilizing the Flight Following tracking method. This may be accomplished from a Dispatch Center, or at a remote location, to monitor a flight and initiate an aircraft mishap emergency response, if needed.</p><p>The Agency/Bureau requires position reporting to not exceed 1-hour intervals, under normal circumstances. Local minimums may be more restrictive, requiring position reporting every 15 minutes (e.g. Fire missions, etc.)</p><p>As a minimum, an approved Flight Following program must specify actions to be taken (i.e. notify the FAA) in the event of an overdue or missing aircraft. Position reports resulting from the use of an approved Flight Following program must be documented by the receiving office and provide enough information to enable easy location of an overdue or missing aircraft.</p><p>IAT Policy & References—DOI Departmental Manuals (https://www.iat.gov/policy.asp)</p>▪ 351 DM 1.4 A, B—Flight Plans and Flight Following<p>An agency-owned aircraft, and most contracted aircraft, are equipped with satellite-based aircraft tracking hardware compatible with the government's Automated Flight Following (AFF) equipment. As an online, government application, AFF automatically tracks the location and velocity of specially-equipped aircraft and mobile assets and provides this information in near-real-time to Dispatchers, Aviation Managers, and other authorized users. The AFF system complements the Emergency Locator Transmission (ELT) system in that it may provide the <i>only</i> indication of a mishap if the ELT fails to function on impact.</p>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#89	<p>Step 2.—Flight Plan/Flight Following Initiated—cont'd.</p> <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ IALSE Handbook, Ch. 4.8—Automated Flight Following (AFF) ▪ Automated Flight Following (AFF) website <p><i>“The average time from Last Known Position (LKP) to rescue, is 31 hours. Since this is an average, one could be a survivor for a few hours, or a few days. To assure that the LKP is known, as the Pilot, your key survival effort begins by filing a Flight Plan and Flight Following. These are a road map of your in-flight movements and are the cheapest insurance available. The types of Flight Plans filed will greatly affect the time you may have to survive during a search phase.</i></p> <p><i>Flight Plan Average Time from LKP to Rescue:</i></p> <ul style="list-style-type: none"> • <i>Instrument Flight Rules (IFR): 13 hours</i> • <i>Visual Flight Rules (VFR): 37 hours</i> • <i>No Flight Plan: 42 hours</i> <p><i>It is very easy to see how important it is to have a Flight Plan AND Flight Following in place.”</i></p> <p>FAA—Search and Rescue Retrieval Average Times—Re: Flight Plans (https://www.faa.gov/pilots/training/airman_education/topics_of_interest/search_rescue/)</p>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#90	Step 2.—Flight Plan/Flight Following—Beginning & End of Flight Dispatch Flight Follower Information Required: <ul style="list-style-type: none">➤ Beginning of Flight:<ul style="list-style-type: none">• Number of people onboard the aircraft (including pilot)• Fuel on Board (FOB)—expressed in hours: minutes based on duration for specific aircraft• Destination• Estimated Time Enroute (ETE), or Estimated Time of Arrival (ETA)• Confirming positive AFF confirmation➤ End of Flight:<ul style="list-style-type: none">• Length of time on ground—if mission is to be continued• Closing out Flight Plan with FAA flight service station• Communication with Dispatch or Flight Follower that the flight has ended, and the aircraft is on the ground

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#91	<p>Step 3.—PPE in Use, When Required</p> <p>Confirm that each person participating in the mission/flight is wearing the appropriate (required) PPE for the mission—and additional, appropriate (required) survival items for the mission are onboard the aircraft.</p> <ul style="list-style-type: none"> ▪ Interagency—ALSE The Interagency Aviation Life Support Equipment (IALSE) Handbook outlines the minimum requirements for PPE. Users should refer to the IALSE prior to flight to ensure they are utilizing the proper PPE. Supervisors are responsible for evaluating aviation activities and providing employees with appropriate IALSE equipment. Individuals are encouraged to supplement these requirements to better meet the needs of the mission and environment. PPE items can be ordered from the NFES Catalog, even for non-fire agencies. <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ Interagency Aviation Life Support Equipment (IALSE) Handbook
<p>#92 PPE video</p> <hr/> <p>or continue #93–99</p>	<p>Step 3.—Personal Protective Equipment (PPE) Video</p> <p>Now we will watch the Personal Protective Equipment (PPE) video.</p>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#93	<p>Step 3.—PPE—Flight Helmets</p> <ul style="list-style-type: none">▪ Flight Helmets According to the FAA, for general aviation flights, a flight helmet and seatbelt could save 60 percent of the lives involved in an aircraft accident. FAA General Aviation Survival Tips (https://www.faa.gov/news/safety_briefing/2017/media/SE_Topic_17_10.pdf) <p>Flight helmets provide both eye protection and adequate hearing protection when used appropriately. If you are planning on removing your flight helmet anywhere near a running aircraft, make sure you have alternate hearing protection you can utilize. Even a few moments, near a running helicopter, without ear protection, can cause permanent hearing damage.</p> <hr/> <p>Student Note</p> <p>The process to correctly don and doff the flight helmet was covered in Unit 1, Slide #28/Scenario #2.</p> <p>Refer to the following links for the manufacturer’s Flight Helmet User’s Guide, and Interagency Safety Alert, No. IA 07-01/ Dated: April 2007—SPH-5 Flight Helmets:</p> <p>Gentex SPH-5 User Manual (https://shop.gentexcorp.com/content/TP0047.pdf)</p> <p>Interagency Safety Alert, No. IA 07-01—SPH-5 Flight Helmets (https://www.doi.gov/sites/doi.gov/files/migrated/aviation/safety/upload/IASA_2007-01.pdf)</p> <hr/>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#94	<p>Step 3.—PPE—Fire-Resistant Clothing</p> <ul style="list-style-type: none"> ▪ Fire-resistant Clothing Fire-resistant clothing protects the wearer from flash fire burns. The preferred fire-resistant material is an aramid fiber, which is commonly known as “NOMEX”. The actual material may be NOMEX, NOMEX fleece, polyamide, aramid, polybenzimidazole, Kevlar, or blends of these materials. Clothing not containing labels identifying the type of aramid fiber material—either by brand name, or U.S. military standards—are NOT acceptable. These materials, while not <i>fire-proof</i>, are inherently fire-resistant and will char, rather than burn, at about 700°F to 800°F. Treated, or altered cotton fiber materials, are NOT acceptable. <hr/> <p>Student Note Observe the different types of fire-resistant clothing and how approved clothing is labeled.</p> <hr/>
#95	<p>Step 3.—PPE—Gloves</p> <ul style="list-style-type: none"> ▪ All-Leather, or Leather and NOMEX Flight Gloves Flight Gloves (type GS/FRP-2) constructed of a soft leather palm, and stretchable NOMEX fabric for the back, are preferred. These gloves have a long cuff, extending several inches above the wrist, providing total coverage when the flight suit sleeve is properly worn. Gloves should fit snugly to provide maximum finger dexterity for the wearer. All-leather gloves (without synthetic liners) are acceptable if they provide the wearer with wrist coverage and finger dexterity. Newly developed gloves that meet the flame-resistant NOMEX and leather design (conforms to Military Specification MIL-DTL-81188C) are available that are compatible with modern touchscreen devices. These are preferred when touchscreen devices are mission essential. <hr/> <p>Student Note— Observe the different types of approved gloves. Sleeves of a fire-resistant shirt/flight suit must be long enough to reach the first knuckle on the thumb, before securing snugly over the flight gloves at the wrist.</p> <hr/>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#96	<p>Step 3.—PPE—Boots</p> <ul style="list-style-type: none"> ▪ Leather, or Approved Non-Leather Boots Leather, or Approved Non-Leather Boots—boot tops must extend above the ankle and must be constructed so that metal parts, such as shoestring eyes or zippers, do not contact the wearer’s skin. Non-leather boots must be flight-approved, in accordance with U.S. Military specifications for aviation use. Boots made of approved fire-resistant rubber are also an acceptable substitute. ▪ Wildland Fire Boot Standard: Personnel assigned to wildland fires must wear a minimum of 8-inch high, lace type exterior leather work boots with lug melt-resistant soles. The 8-inch height requirement is measured from the bottom of the boot’s heel to the top of the boot. Alaska is exempt from the lug sole requirement. IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp) ▪ Interagency Standards for Fire & Fire Aviation Operations (Redbook), Ch.7 <hr/> <p>Student Note Different boot types may be shown—observe and understand the differences between fire and resource management use.</p> <hr/>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#97	Step 3.—PPE—Secondary Restraints <ul style="list-style-type: none">▪ Secondary Restraints<p>Additional Secondary Restraints are only required when performing certain duties, when the aircraft doors are open or removed, and the aircrew member is conducting specific duties.</p><p>Some missions, where doors are open or removed, may benefit from the use of a secondary restraint, even when a seatbelt is used. If aircrew members will be leaning into the shoulder restraint, performing his/her specific duties, then a secondary restraint provides additional protection in the event that the seat belt release mechanism is inadvertently opened. The harness must be attached to an approved tether and helicopter hard point.</p> <hr/> Student Note <p>Be attentive to the discussion on Secondary Restraints and their correct usage, so you will be familiar with these important safety devices and when they are necessary in an actual aircraft situation.</p> <hr/>

Est. Instruction
Time: 1.5 hours

Unit 2—Five Steps to a Safe Flight

#98

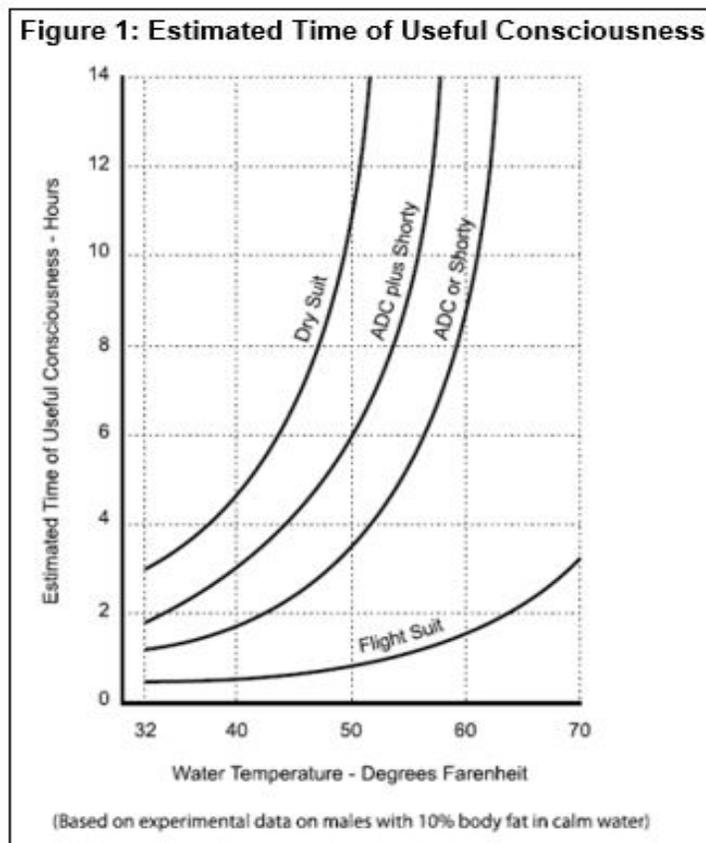
Step 3.—PPE—Anti-Exposure Suits

- **Anti-Exposure Suits**

An anti-exposure garment must be worn in single-engine aircraft, and readily available to occupants of a multi-engine aircraft, when conducting extended overwater flights and when the water temperature is colder than 50°F.

The anti-exposure garment's thermal protection aids in reducing cold shock, by preventing cold water from touching the skin, or creating a thermal barrier warming cold water trapped between the garment and the body. There are several types of anti-exposure garments available, to include survival suits and anti-exposure flight suits.

Figure 1/Estimated Time of Useful Consciousness provides an estimate of the effectiveness of several survival garments at various water temperatures.



Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#99	<p>Step 3.—PPE—Personal Flotation Devices (PFDs)</p> <ul style="list-style-type: none">▪ Personal Flotation Devices (PFDs) Users of PFDs must be briefed on how a PFD is correctly worn, how to inflate it, and procedures to exit the-aircraft during a water ditching event, prior to inflating their PFD. Aircraft occupants must wear inflatable PFDs aboard Agency flights when performing water takeoffs or landings, as follows:<ul style="list-style-type: none">• Single-Engine, Fixed-Wing Aircraft: an inflatable PFD must be worn by all occupants in these aircraft whenever they are operating beyond power-off gliding distance from shore.• Multi-Engine, Fixed-Wing Aircraft: an inflatable PFD must be immediately available to all occupants in these aircraft whenever they are beyond power-off gliding distance from shore.• All Single or Multi-Engine Helicopters: an inflatable PFD must be worn by all occupants in these aircraft whenever they are operating off of or to water, or whenever overwater operations are being performed, including water bucket dipping and snorkeling operations. ★ <i>PFDs must be maintained and inspected according to manufacturer’s instructions.</i> ★ <hr/> <p>Warnings!</p> <ul style="list-style-type: none">• PFDs equipped with an automatic (water-activated) inflation mechanism are <i>prohibited</i>.• Aircraft occupants must <i>NOT</i> inflate PFDs in the aircraft. An occupant wearing an inflated PFD may experience difficulty exiting if the aircraft is overturned or submerged in water. <hr/>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#100	<p>Step 4.—Pilot Briefed on Mission & Flight Hazards</p> <p>Effective Mission Briefings should be interactive and should allow time for questions. The material covered should be relevant to the safe and successful outcome of the mission. All parties involved are a part of the safe outcome of the mission. A copy of the hazards map shall be provided to the pilot prior to any project flight.</p> <p>Elements to be considered for a Mission Briefing are included in the Project Aviation Safety Plan (PASP):</p> <ul style="list-style-type: none"> • Project Name and Objectives • Justification • Project Date(s) • Location • Projected Cost of Aviation Resources • Aircraft • Pilot(s) • Participants/Supervision • Communication Plan, Flight Following, and Emergency Search and Rescue • Aerial Hazards Analysis • Protective Clothing and Equipment • Weight and Balance/Load Calculations • Risk/Hazard Assessment/ Safety Management System (SMS) • Signatures <p>Other topics that should be provided during the Mission Briefing:</p> <ul style="list-style-type: none"> • Weather • Fueling • HAZMAT (Hazardous Materials onboard) • Cargo Loading and Unloading • Any other items essential to the mission

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#101	<p>Step 5.—Crew & Passenger Safety Briefing</p> <p>The Federal Aviation Administration (FAA) requires that each passenger flying aboard an aircraft must receive an oral Passenger Briefing. This briefing must be conducted prior to every flight—regardless of how many times the passenger(s) have received the briefing. In addition to the oral briefing, a supplemental, printed safety card must be carried in the aircraft in locations that are convenient for use by each passenger.</p> <p>Components of the Passenger Safety Briefing provide information that could save lives in the event of an accident.</p> <p>FAA—14 CFR §135.117—Briefing of Passengers Before Flight (https://www.law.cornell.edu/cfr/text/14/135.117)</p> <p>The Federal Aviation Regulations (FAR) 14 CFR 135.117 requires that the following minimum items are included/covered in every oral Passenger Safety Briefing:</p> <ul style="list-style-type: none"> ▪ Smoking ▪ Use of Safety Belts ▪ Placement of Seatbacks—in upright position before takeoff and landing ▪ Location and Means for Opening the Passenger Entry Door and Emergency Exits ▪ Location of Survival Equipment ▪ If flight involves extended Overwater Operation—Ditching Procedures and Use of Required Flotation Equipment ▪ If involved in Operations Above 12,000 feet MSL—Normal and Emergency Use of Oxygen Equipment installed on the aircraft ▪ Location and Operation of Fire Extinguishers ▪ If a Rotorcraft Operation involves Flight Beyond Auto-rotational Distance from Shoreline—Use of Life Preservers, Ditching Procedures and Emergency Exit from aircraft, and Location and Use of Life Rafts

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#101	Step 5.—Crew & Passenger Safety Briefing—<i>cont'd.</i> <hr/> Student Note If a real-life Passenger Safety Briefing from a pilot is not available, the following is an optional, informative Passenger Safety Briefing video (16:24 minutes) available at the following link: Air Safety Institute (AOPA)—Critical Information: The Passenger Safety Briefing (https://www.youtube.com/watch?v=C86am84XMVM) <hr/>

Est. Instruction
Time: 1.5 hours

Unit 2—Five Steps to a Safe Flight

#102

Step 5.—Aircraft Hazards

Five Steps to a Safe Flight

1. Pilot/Aircraft Data Card - Approved & Current
2. Flight Plan/Flight Following Initiated
3. PPE in Use When Required
4. Pilot Briefed on Mission & Flight Hazards
5. Crew & Passenger Briefing to include:
 - Aircraft Hazards
 - Fire Extinguisher
 - Seat Belt & Harness
 - Fuel & Electrical Shutoff
 - ELT & Survival Kit
 - Oxygen Equipment
 - First Aid Kit
 - Emergency Egress
 - Gear & Cargo Security
 - Smoking
 - (Not Under Seats)

OAS-1031FS 5700-16 (07/18)

For **Step 5. Crew and Passenger Briefing**, the pilot or aircrew member should explain the location and use (demonstrate, if available) of each of the items listed.

Aircraft Hazards should include the items specific to the aircraft that will be utilized for your mission.

Examples include:

- **Both Fixed-Wing and Helicopter:**
 - Time Pressures (to accomplish the passenger safety briefing)
- **Fixed-wing Airplane:**
 - Propeller
 - Items Hanging from the Wings
 - Areas on the Wings—where it is safe to walk
 - Active Rudder Pedals & Flight Control Surfaces
 - Touching or Turning the Propeller, when Shut Down

<p>Est. Instruction Time: 1.5 hours</p>	<p>Unit 2—Five Steps to a Safe Flight</p>
<p>#102</p>	<p>Step 5.—Aircraft Hazards—<i>cont'd.</i></p> <div data-bbox="516 352 1377 932" style="border: 1px solid orange; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">Five Steps to a Safe Flight</p> <ol style="list-style-type: none"> 1. Pilot/Aircraft Data Card - Approved & Current 2. Flight Plan/Flight Following Initiated 3. PPE in Use When Required 4. Pilot Briefed on Mission & Flight Hazards 5. Crew & Passenger Briefing to include: <ul style="list-style-type: none"> - Aircraft Hazards - Fire Extinguisher - Seat Belt & Harness - Fuel & Electrical Shutoff - ELT & Survival Kit - Oxygen Equipment - First Aid Kit - Emergency Egress - Gear & Cargo Security - Smoking (Not Under Seats) </div> <p style="text-align: right; font-size: small; margin-right: 10px;">OAS-103JFS 5700-16 (07/18)</p> <p>Aircraft Hazards should include the items specific to the aircraft that will be utilized for your mission.</p> <p><i>Examples include:</i></p> <ul style="list-style-type: none"> • Helicopter: <ul style="list-style-type: none"> ▪ Main Rotor—Height ▪ Tail Rotor—Location & Safe Distance from it ▪ Danger of Departing Uphill ▪ Where to Step & Walk—on or near the helicopter ▪ Active Anti-Torque Pedals & Flight Control Surfaces ▪ Depart within sight of the Pilot(s) or an Aircrew Member

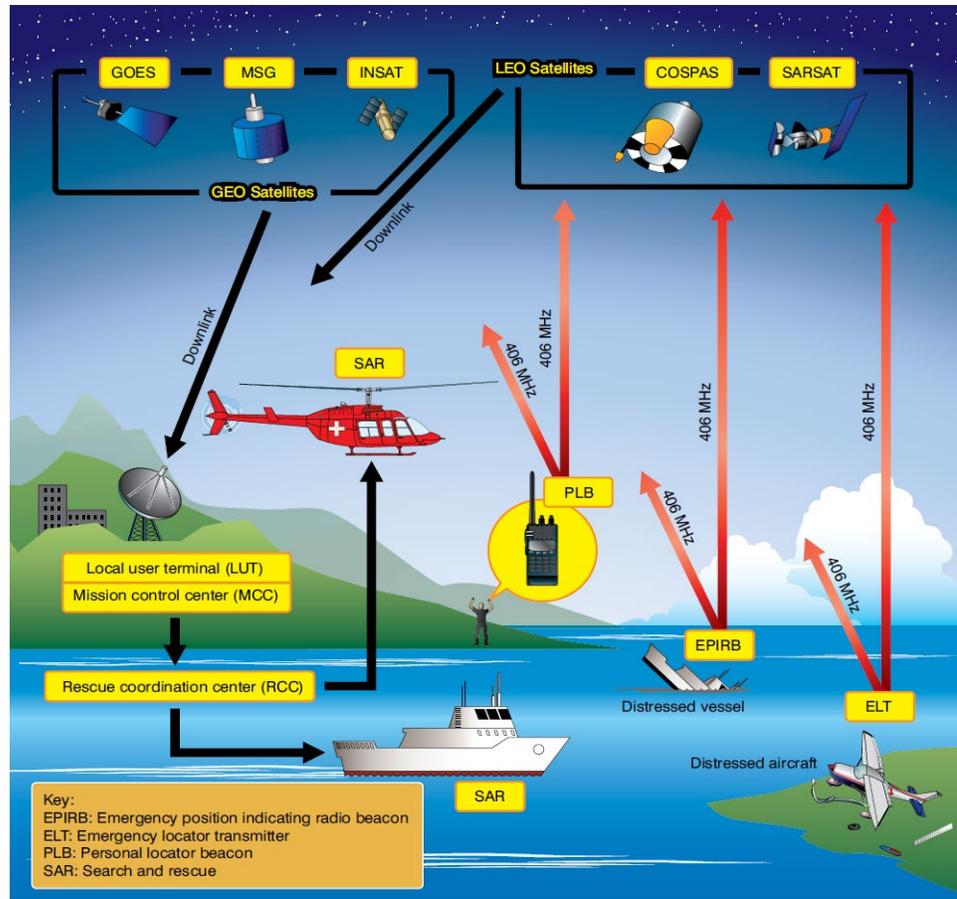
Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#103	<p>Step 5.—Seat Belt & Harness</p> <p><i>“Occupants shall wear Seatbelts and Shoulder Harnesses during all phases of flight, unless there is a valid operational, or safety requirement, that would cause the Pilot-In-Command (PIC) to direct otherwise.”</i></p> <p>IAT Policy & References—DOI Departmental Manuals (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ 351 DM 1—Flight Operations Standards and Procedures/ ¶1.1 G.
#104	<p>Step 5.—Emergency Locator Transmitter (ELT)</p> <p>Emergency Locator Transmitters (ELT) were developed to assist in locating downed aircraft. ELTs may activate automatically, reacting to impact G forces, or can be turned on manually.</p> <p>ELTs must be properly installed in all DOI/USDA-FS airplanes owned or operated on DOI/USDA-FS contracts. All DOI-owned or operated helicopters must, as a minimum, be equipped with 121.5 MHz ELT, which can be activated by a switch in the cockpit, in compliance with TSO-91a. Aircraft performing “extended overwater” missions are additionally required to have a survival-type ELT (ELT/S) attached to their life raft, meeting the requirements of 14 CFR 135.167 and 135.168. The ELT installation must be in accordance with the manufacturer’s instructions and applicable TSOs.</p> <p>The USFS requires TSO C91a or newer ELTs. TSO C-126 ELTs are required for overwater rotorcraft operations per 14 CFT 135.168 and by some contracts. See the applicable procurement document for specific requirements.</p> <p>How ELTs Work</p> <p>The ELT signal (406 MHz) travels via satellite (COSPAS-SARSAT) to a ground receiving station (Local User Terminal (LUT), and it is passed on to the US Mission Control Center (USMCC) and is then sent to the land or sea Rescue Coordination Center (RCC). Search and Rescue efforts are then initiated. The ELT signal can be audibly monitored on the International Air Distress frequency 121.5MHz, commonly referred to as “Guard”.</p>

Est. Instruction
Time: 1.5 hours

Unit 2—Five Steps to a Safe Flight

#104

Step 5.—Emergency Locator Transmitter (ELT)—*cont'd.*



Know the location of the ELT inside the aircraft. It is important to note, that the ELT can be activated accidentally, so use caution if you are loading equipment near where the ELT is affixed inside the aircraft. Some ELTs can be removed from the aircraft—and passengers should be briefed on the proper manual activation of the ELT.

It is very important to ensure that your aircraft's ELT is in good operating condition. The average time required to find a downed aircraft with a functioning ELT is 6.8 hours. Compare that time to 40.7 hours without an operating ELT—the benefits of properly maintaining emergency equipment become obvious.

[FAA Airman Education: Search and Rescue Information](https://www.faa.gov/pilots/training/airman_education/topics_of_interest/search_rescue/)

(https://www.faa.gov/pilots/training/airman_education/topics_of_interest/search_rescue/)

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#104	<p>Step 5.—Emergency Locator Transmitter (ELT)—<i>cont’d.</i></p> <p>The Search and Rescue Satellite Aided Tracking (SARSAT) system is able to detect three types of beacons:</p> <ul style="list-style-type: none"> • Personal Locator Beacons (PLBs) • Emergency Position Indicating Radio Beacons (EPIRBs) • Emergency Locator Transmitters (ELTs) <p>SARSAT U.S. Rescues for: PLBs, EPIRBs, ELTs (https://www.nesdis.noaa.gov/content/sarsat-us-rescues)</p> <hr/> <p>Student Note An optional video that describes how PLBs work may be viewed: How a PLB Product Works—video (https://www.youtube.com/watch?v=8m78j0TleVg)</p> <p><i>Disclaimer: This video specifically describes how a Personal Locator Beacon (PLB) works. A PLB operates essentially the same way as an Emergency Locator Transmitters (ELT). It is also important to note that not all ELTs send your GPS coordinates. This course does not recommend a specific PLB brand—this video is only an example that describes how PLBs operate.</i></p> <hr/>
#105	<p>Step 5.—Survival Kit</p> <p><i>“Aircraft Survival Kits are required for all DOI flight activities other than point-to-point flights, and airplane operations that remain above 500 feet AGL.</i></p> <p><i>Survival Kits are required for all USDA-FS flight activities other than point-to-point flights.</i></p> <p><i>Survival Kits are recommended for all DOI and USDA-FS point-to-point flights.”</i> The Survival Kit contains items that will aid you in surviving until rescue arrives.</p> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ IALSE Handbook—Ch. 3 Survival Equipment/ §3.3 Aircraft Survival Kit (Required)

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#106	<p>Step 5.—First Aid Kit</p> <p><i>“First Aid Kits are required for all Agency flight activities other than point-to-point flights, and airplane operations above 500 feet AGL, but are recommended for all missions.”</i></p> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ IALSE Handbook—Ch. 3 Survival Equipment/ §3.4 Aircraft First Aid Kits (Required)
#107	<p>Step 5.—Cargo & Gear Security</p> <p>Passengers should provide the Pilot(s) with accurate weights of the Cargo and Gear to be loaded onto the aircraft.</p> <p>The Pilot(s) or an approved aircrew member, will place Cargo and Gear in the aircraft and secure them for flight.</p> <p>Nothing should be stored under a passenger seat unless approved in the Aircraft Flight Manual.</p>
#108	<p>Step 5.—Fire Extinguisher</p> <p><i>“Fire Extinguishers must be a hand-held bottle, minimum 2-B:C rating, mounted and accessible to the flight crew when seated. The fire extinguisher must be maintained in accordance with NFPA 10: Standards for Portable Fire Extinguishers or the Contractor’s Part 135 operations specifications.</i></p> <p><i>Aircraft with 10 to 30 passenger seats must be equipped with an additional extinguisher mounted in the passenger compartment.”</i></p> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ IALSE Handbook—Ch. 4 Aircraft Installed IALSE/ §4.5 Fire Extinguishers <p>The aircraft Fire Extinguisher is small in size and used to assist people in getting out of the aircraft, <i>NOT</i> to put out the fire.</p>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#109	<p>Step 5.—Fuel & Electrical Shut-off</p> <p>Knowing how to shut-off the Electrical (Battery) and the Fuel switches in the proper order may prevent a post-crash fire.</p>
#110	<p>Step 5.—Oxygen Equipment</p> <p>FAA Part 91 General Operating and Flight Rules/ §91.211 Supplemental Oxygen (https://www.faa.gov/pilots/safety/pilotsafetybrochures/media/Oxygen_Equipment.pdf)</p> <p>FAA Part 91 General Operating and Flight Rules—regarding Oxygen Equipment—states: “No person may operate a civil aircraft of U.S. registry:</p> <ul style="list-style-type: none"> • <i>At cabin pressure altitudes above 12,500 feet (MSL) up to and including 14,000 feet (MSL) unless the required minimum flight crew is provided with and uses supplemental oxygen for that part of the flight at those altitudes that is of more than 30 minutes duration</i> • <i>At cabin pressure altitudes above 14,000 feet (MSL) unless the required minimum flight crew is provided with and uses supplemental oxygen during the entire flight time at those altitudes, and</i> • <i>At cabin pressure altitudes above 15,000 feet (MSL) unless each occupant of the aircraft is provided with supplemental oxygen.”</i>
#111	<p>Step 5.—Emergency Egress</p> <p><i>“Before each takeoff the pilot in command of an airplane carrying passengers shall ensure that all passengers have been orally briefed on...location and means for opening the passenger entry door and emergency exits.”</i></p> <p>FAA 14 CFR 91.519/ §91.519 Passenger Briefing—¶(a), (3) (https://www.govinfo.gov/content/pkg/CFR-2011-title14-vol2/pdf/CFR-2011-title14-vol2-sec91-519.pdf)</p>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight										
#112	<p>Step 5.—Smoking</p> <p><i>“Before each takeoff, the pilot in command of an airplane carrying passengers shall ensure that all passengers have been orally briefed on...</i></p> <ul style="list-style-type: none"> • <i>Smoking...when, where, and under what conditions smoking is prohibited.”</i> <p>FAA 14 CFR 91.519/ §91.519 Passenger Briefing—¶(a), (1) (https://www.govinfo.gov/content/pkg/CFR-2011-title14-vol2/pdf/CFR-2011-title14-vol2-sec91-519.pdf)</p> <hr/> <p>Student Note An actual Crew and Passenger Safety Briefing should include a review of all the Step 5 items listed on the <i>“Five Steps to a Safe Flight”</i> (orange) card.</p> <div data-bbox="532 905 1354 1247" style="border: 2px solid green; background-color: #f4a460; padding: 10px; border-radius: 15px;"> <p>5. Crew & Passenger Briefing to include:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">- Aircraft Hazards</td> <td style="width: 50%;">- Fire Extinguisher</td> </tr> <tr> <td>- Seat Belt & Harness</td> <td>- Fuel & Electrical Shutoff</td> </tr> <tr> <td>- ELT & Survival Kit</td> <td>- Oxygen Equipment</td> </tr> <tr> <td>- First Aid Kit</td> <td>- Emergency Egress</td> </tr> <tr> <td>- Gear & Cargo Security (Not Under Seats)</td> <td>- Smoking</td> </tr> </table> </div> <hr/>	- Aircraft Hazards	- Fire Extinguisher	- Seat Belt & Harness	- Fuel & Electrical Shutoff	- ELT & Survival Kit	- Oxygen Equipment	- First Aid Kit	- Emergency Egress	- Gear & Cargo Security (Not Under Seats)	- Smoking
- Aircraft Hazards	- Fire Extinguisher										
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- Gear & Cargo Security (Not Under Seats)	- Smoking										

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#113	<p>Refusing a Flight</p> <div data-bbox="592 352 1292 865" style="background-color: #f4a460; padding: 10px; border: 1px solid #f4a460;"> <p style="text-align: center;"><u>Remember!</u></p> <p style="text-align: center;">To report an aircraft accident call: 1-888-4MISHAP (1-888-464-7427)</p> <p>File a SAFECOM to report any condition, observance, act, maintenance problem, or circumstance which has potential to cause an aviation-related accident.</p> <div style="border: 2px solid red; border-radius: 15px; padding: 5px; margin: 5px 0;"> <p>Anyone can refuse or curtail a flight when an unsafe condition may exist.</p> <p>Never let undue pressure (expressed or implied) influence your judgment or decisions. Avoid mistakes, don't hurry!</p> </div> </div> <p>On the back side of the Five Steps to a Safe Flight (orange) card, a Mishap reporting number is provided—and also why you should file a SAFECOM, and Refusing a Flight.</p> <p>Many mishaps that have occurred in the past could have been prevented if someone had recognized and stopped the chain of events that led up to an accident. <i>Everyone</i> involved in aviation—regardless of experience level—has the obligation to stop unsafe actions/situations when they recognize they are underway.</p> <p>Every individual (government and contractor) has the right and obligation to report safety problems affecting his/her safety and has the right to contribute ideas to correct the hazard. When an individual feels an assignment is unsafe, he or she also has the obligation to identify safe alternatives for completing that assignment. Turning down an assignment is one possible outcome of managing risk.</p>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#113	<p>Refusing a Flight—<i>cont'd.</i></p> <p>A “turn down” is a situation where an individual has determined he or she cannot undertake an assignment as given and is unable to negotiate an alternative solution. The turn down of an assignment must be based on assessment of risks and the ability of the individual or organization to control or mitigate those risks. Individuals may turn down a mission when:</p> <ul style="list-style-type: none"> • There is a violation of regulations aviation policy, or safe aviation practices • Aircraft capabilities: performance and/or limitations • Defective, or inappropriate equipment is being used • Pilot and/or Aircrew lack the necessary, training, qualifications, or experience • Airspace congestion, or inadequate management • Environmental conditions make the work unsafe • Communication issues <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ NWCG Standards for Helicopter Operations (NSHO)— Ch. 3 Operational Planning: How to Properly Refuse Risk <p>IASA 16-02—How to Properly Refuse Risk in Aviation (https://www.doi.gov/sites/doi.gov/files/uploads/IASA_2016-02.pdf)</p> <p>External pressures should NOT affect your decision to utilize aviation for completing a mission—the identification of safe alternatives should be considered.</p> <p>Ask yourself what is driving your decision:</p> <ul style="list-style-type: none"> • Management • Peers • Time Constraints • Emergency—feeling of urgency • Media • VIPs • Budget

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#114	<p>Refusing a Flight—Unresolved Safety Hazards</p> <div data-bbox="594 354 1292 865" style="background-color: #f4a460; padding: 10px; border: 1px solid #f4a460;"> <p style="text-align: center;"><u>Remember!</u></p> <p style="text-align: center;">To report an aircraft accident call: 1-888-4MISHAP (1-888-464-7427)</p> <p>File a SAFECOM to report any condition, observance, act, maintenance problem, or circumstance which has potential to cause an aviation-related accident.</p> <div style="border: 2px solid red; border-radius: 15px; padding: 5px; margin: 5px 0;"> <p>Anyone can refuse or curtail a flight when an unsafe condition may exist.</p> <p>Never let undue pressure (expressed or implied) influence your judgment or decisions. Avoid mistakes, don't hurry!</p> </div> </div> <p>If an unresolved safety hazard exists, the individual(s) needs to:</p> <ul style="list-style-type: none"> • Communicate the issue/event/concern immediately to their supervisor, and <i>all involved mission personnel*</i>, that they are turning down the assignment, as given <ul style="list-style-type: none"> * "<i>All involved mission personnel</i>" may include: <ul style="list-style-type: none"> ▪ Project Aviation Manager ▪ Dispatcher ▪ Pilots ▪ Aviation Managers ▪ Other Aircrew Members <p style="text-align: center;"><i>[Note: the above is not an all-inclusive list]</i></p> • Document as appropriate • File an Aviation Safety Communique (SAFECOM)

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#115	<p data-bbox="472 289 1406 321">Twelve Standard Aviation Questions That Shout “Watch Out!”</p> <div data-bbox="594 359 1292 1331" style="border: 1px solid black; padding: 10px;"> <p data-bbox="626 380 1260 438" style="text-align: center;">Twelve Standard Aviation Questions That Shout “Watch Out!”</p> <ol data-bbox="607 449 1276 1142" style="list-style-type: none"> 1. Is this flight necessary? 2. Who is in charge? 3. Are all hazards identified and have you made them known? 4. Should you stop the operation on the flight due to change in conditions? <input type="checkbox"/> Communications <input type="checkbox"/> Weather <input type="checkbox"/> Confusion <input type="checkbox"/> Turbulence <input type="checkbox"/> Personnel <input type="checkbox"/> Conflicting Priorities 5. Is there a better way to do it? 6. Are you driven by an overwhelming sense of urgency? <p data-bbox="1146 800 1276 821" style="text-align: right;">OAS-161 (07/18)</p> <ol data-bbox="607 911 1252 1142" style="list-style-type: none"> 7. Can you justify your actions? 8. Are there other aircraft in the area? 9. Do you have an escape route? 10. Are any rules being broken? 11. Are communications getting tense? 12. Are you deviating from the assigned operations of the flight? <div data-bbox="602 1157 1287 1310" style="border: 2px solid red; border-radius: 15px; padding: 5px; margin-top: 10px;"> <p data-bbox="607 1167 1282 1293">Anyone can refuse or curtail a flight when an unsafe condition may exist. Never let undue pressure (expressed or implied) influence your judgment or decisions. Avoid mistakes, don't hurry!</p> </div> </div> <p data-bbox="472 1367 1268 1446">IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul data-bbox="488 1465 1333 1535" style="list-style-type: none"> ▪ OAS-161—Twelve Standard Aviation Questions That Shout “Watch Out!” (blue card) <p data-bbox="472 1556 1421 1881">Every Aircrew Member, as well as Aviation Managers, should be asking themselves the Twelve Standard Aviation Questions that Shout “Watch Out!”—before and during the flight. The OAS-161 card should be utilized as a checklist to confirm that hazards have been addressed and for Refusal of Flight. If you see something that does not appear quite right, or the hair stands up on the back of your neck, then say something—as you may not be the only one questioning something about the mission/flight situation!</p>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#115	<p>Twelve Standard Aviation Questions That Shout “Watch Out!”—<i>cont’d.</i></p> <hr/> <p>Student Questions to Consider Based on the 12 Standard Aviation Questions That Shout “Watch Out!”—what thoughts you might have in answering these questions:</p> <ol style="list-style-type: none">1. Is the flight necessary? _____ _____2. Who is in charge? _____ _____3. Are all hazards identified and have you made them known? _____ _____4. Should you stop the operation on the flight due to change in conditions? _____ _____5. Is there a better way to do it? What alternatives might you consider instead of an aircraft? _____ _____6. Are you driven by an overwhelming sense of urgency? _____ _____

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#115	<p data-bbox="472 289 1373 359">Twelve Standard Aviation Questions That Shout “Watch Out!”—<i>cont’d.</i></p> <p data-bbox="472 394 1065 426">Student Questions to Consider—<i>cont’d.</i></p> <p data-bbox="521 464 976 495">7. Can you justify your actions?</p> <p data-bbox="548 541 1398 625">_____</p> <p data-bbox="548 615 1398 657">_____</p> <p data-bbox="521 657 1235 741">8. Are there other aircraft in the area? Is the mission airspace confined or congested?</p> <p data-bbox="548 787 1398 871">_____</p> <p data-bbox="548 861 1398 903">_____</p> <p data-bbox="521 903 1003 934">9. Do you have an escape route?</p> <p data-bbox="548 980 1398 1064">_____</p> <p data-bbox="548 1054 1398 1096">_____</p> <p data-bbox="521 1096 967 1127">10. Are any rules being broken?</p> <p data-bbox="548 1173 1398 1257">_____</p> <p data-bbox="548 1247 1398 1289">_____</p> <p data-bbox="521 1289 1065 1320">11. Are communications getting tense?</p> <p data-bbox="548 1367 1398 1451">_____</p> <p data-bbox="548 1440 1398 1482">_____</p> <p data-bbox="521 1482 1349 1514">12. Are you deviating from the assigned operation of flight?</p> <p data-bbox="548 1560 1398 1644">_____</p> <p data-bbox="548 1633 1398 1675">_____</p> <p data-bbox="548 1665 1398 1707">_____</p>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#116 Exercise	<p>Hazard Exercise—Winter Bay Scenario Instruction</p> <p>The background for this exercise/scenario is contained in Appendix D.1—Winter Bay Cabin Replacement Project—consider the following:</p> <ul style="list-style-type: none"> • Identify potential aviation hazards or concerns associated with the aviation mission utilizing the Five Steps to a Safe Flight (orange card) and Twelve Standard Aviation Questions That Shout “Watch Out!” (blue card) • Be prepared to discuss and elaborate on the hazard(s) that have been identified • Will you continue with the aviation mission? If “yes/no” → “why/why not”? • If the flight is refused, what is the turn-down process? <p>If an unresolved safety hazard exists, the individual(s) needs to:</p> <ul style="list-style-type: none"> • Communicate the issue/event/concern immediately to their supervisor, and <i>all involved mission personnel*</i>, that they are turning down the assignment, as given <ul style="list-style-type: none"> * <i>“All involved mission personnel”</i> may include: <ul style="list-style-type: none"> ▪ Project Aviation Manager ▪ Dispatcher ▪ Pilots ▪ Aviation Managers ▪ Other Aircrew Members • Document as appropriate • File an Aviation Safety Communique (SAFECOM) <p><i>(Note: this exercise should take about 35 minutes)</i></p>

<p>Est. Instruction Time: 1.5 hours</p>	<p>Unit 2—Five Steps to a Safe Flight</p>
<p>#116 Exercise</p>	<p>Hazard Exercise—Winter Bay—Discussion & Answers</p> <p>Identify potential aviation hazards or concerns associated with the aviation mission utilizing the Five Steps to a Safe Flight (orange card) and Twelve Standard Aviation Questions That Shout “Watch Out!” (blue card):</p> <ul style="list-style-type: none"> ▶ _____ <p>Will you continue with the aviation mission?</p> <ul style="list-style-type: none"> ▶ _____ <p>If the flight is refused, what is the turn-down process?</p> <ul style="list-style-type: none"> ▶ _____ <p><i>“Anyone can refuse or curtail a flight when an unsafe condition may exist. Never let undue pressures (expressed or implied) influence your judgment or decisions. Avoid mistakes, don’t hurry!”</i></p>

Est. Instruction Time: 1.5 hours	Unit 2—Five Steps to a Safe Flight
#117	Unit 2 Objectives Review After completing this Unit, students should be able to: <ul style="list-style-type: none">❖ List the items for an effective aviation mission briefing❖ Identify the tool that provides the items of a passenger safety briefing❖ Provide examples of why you would refuse a flight❖ Given a scenario, recognize the hazards associated with an aircraft mission
	Unit End

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#118	Flight Operations—Unit Introduction This unit will cover a number of operational safety items that require attention after the flight planning stage has been completed. From the Pilot's pre-flight assessment of the aircraft, through Passenger/Aircrew Member responsibilities, and including how to be prepared in the event of an aircraft mishap—all are important pieces of flight operations safety and awareness.
#119	Unit 3 Objectives After completing Unit 3 students should be able to: <ul style="list-style-type: none">❖ Summarize your role in Crew Resource Management (CRM)❖ Identify actions to take during an in-flight emergency❖ Explain the items to consider if you are responding to, or are a survivor of, an aviation accident

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#120	<p>Pilot—Aircraft Pre-Flight Assessment</p> <p>The visual aircraft pre-flight assessment is an important step in discovering and mitigating potential aircraft flight hazards. During the pre-flight assessment, the Pilot should be provided uninterrupted time to complete the inspection.</p> <p>The purpose of the pre-flight assessment is to ensure that the aircraft meets regulatory airworthiness standards and is in a safe mechanical condition prior to flight. The term “airworthy” means that the aircraft and its component parts meet the aircraft’s type design, or is in an approved altered configuration, and is in a condition for safe operation.</p> <p>The assessment has two parts and involves the Pilot inspecting the aircraft’s airworthiness status (paperwork) and a visual pre-flight inspection of the aircraft. A proper pre-flight assessment should include checking that all control surfaces are solidly attached, as well as items such as the propeller, spinner, landing gear, linkages, etc.</p> <p>Plan adequate time to complete an aircraft pre-flight assessment, as it can take a pilot anywhere from 30 minutes to an hour and a half to complete, based on recent flight history of the aircraft.</p> <p>FAA—Airplane Flying Handbook (FAA-H-8083-3B) Ch. 2 Ground Operations (https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/airplane_handbook/media/04_afh_ch2.pdf)</p>

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#121	<p>Pilot—Duty Hours</p> <p>DOI and USDA-FS have strict rules on Pilot Duty and Flight Hours. As an aircrew member, you are responsible for ensuring that the pilot does <i>not exceed</i> duty limitations hours.</p> <p>Pilot Duty Hours allowed in aircraft are defined in: 351 DM3—Flight Crewmember Policy/ §3.6 ¶A.—Flight and Crew Duty Limitations</p> <ul style="list-style-type: none"> ▪ All flight crewmembers shall have two 24-hour periods of rest (off duty) within any 14 consecutive calendar days. In the conterminous United States, these two 24-hour rest periods shall be 2 calendar days off duty. ▪ Note: Flight crewmembers on large helicopters and all offshore vendor personnel may work 14 consecutive days provided they take 7 calendar days off duty before beginning a new 14-day period. <i>This may apply to BSEE and BOEM vendor pilots.</i> ▪ All flight crewmembers shall have a minimum of 10 consecutive hours of rest (off duty) not to include any pre-flight or post-flight activity prior to any assigned duty period. <p>For single-pilot crews, the following limitations apply:</p> <ul style="list-style-type: none"> ▪ A maximum of 8 hours flight time during any assigned duty period ▪ A maximum of 14 consecutive duty hours during any duty period ▪ A maximum of 42 hours flight time during any consecutive 6-day period. When a pilot acquires 36 or more flight hours in a consecutive 6-day period, the pilot shall be given the following 24-hour period of rest (off duty) and a new 6-day cycle shall begin. In the conterminous United States, this 24-hour rest period shall be 1 calendar day off duty <p>IAT Policy & References—DOI Departmental Manuals (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ 351 DM3—Flight Crewmember Policy/ §3.6 ¶A.—Flight and Crew Duty Limitations

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#122	<p>Pilot Flight Operations and Weather Minimums</p> <p>Flight Operation</p> <p>Vendor flight operations are defined as 30 minutes before the official sunrise, through the day, until 30 minutes after the official sunset. Vendor flight operations are defined in DOI/USDA-FS contracts.</p> <p>Fleet flight operations are prohibited during civil twilight unless authorized. <i>“Civil twilight is the period after sunset, or before sunrise, ending or beginning when the sun is about 6 degrees below the horizon and during which on clear days there is enough light for ordinary outdoor occupations.”</i> (as published in the Air Almanac, converted to local time)</p> <p>USNO Air Almanac—Definition of Civil Twilight (https://aa.usno.navy.mil/faq/docs/RST_defs.php)</p> <p>Weather Minimums</p> <p>Most pilots will have self-imposed weather minimums, as well as the bureaus/agencies may have defined minimum weather restrictions. As an aircrew member, you should abide by these restrictions and speak up if the weather conditions are a concern for you. If you still feel uncomfortable, based on the weather conditions, you should request the pilot to land, or not take the flight.</p> <p>FAA Basic VFR Weather Minimums include the following:</p> <ul style="list-style-type: none"> • Fixed-wing: Class G airspace, Day— 1 statute mile and clear of clouds • Helicopter: Class G airspace, Day— ½ mile and clear of clouds <p>FAA—14 CFR 91/Subpart B, §91.155 Basic VFR Weather Minimums (https://www.govinfo.gov/content/pkg/CFR-2012-title14-vol2/pdf/CFR-2012-title14-vol2-part91.pdf)</p>

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#122	<p>Pilot Flight Operations and Weather Minimums—<i>cont'd.</i></p> <p>Class G airspace is Visual Flight Rules (VFR), uncontrolled. Class G airspace extends from the surface to the base of overlying Class E airspace.</p> <p>The FAA has multiple airspace classes and Class G is the least restrictive of all the airspaces, and each airspace class has its own weather minimums.</p>
#123	<p>Mechanic Duty Day—Limitations</p> <ul style="list-style-type: none"> ▪ 16-hour duty day ▪ <i>“Shall have two 24-hour periods of rest (off duty) within any 14 consecutive calendar days. In the conterminous United States, these two 24-hour rest periods shall be 2 calendar days off duty.”</i> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ NWCG Standards for Helicopter Operations (NSHO)
#124	<p>Fuel Truck Driver Duty Day—Limitations</p> <ul style="list-style-type: none"> ▪ Drive time and rest breaks—only 11 hours’ drive time in a 14-hour drive period <p>49 CFR §395.3—Maximum Driving Time for Property-Carrying Vehicles (https://www.govinfo.gov/content/pkg/CFR-2010-title49-vol5/pdf/CFR-2010-title49-vol5-part395.pdf)</p> <ul style="list-style-type: none"> ▪ <i>“Shall have two 24-hour periods of rest (off duty) within any 14 consecutive calendar days. In the conterminous United States, these two 24-hour rest periods shall be 2 calendar days off duty.”</i> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ NWCG Standards for Helicopter Operations (NSHO)

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#125	<p>Aircraft Fueling</p> <p>NFPA 407—Standard for Aircraft Fuel Servicing (https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=407)</p> <p>The information in this section is consistent with National Fire Protection Association (NFPA) 407—Standard for Aircraft Fuel Servicing and should be used for both vendor and government-operated fueling operations.</p> <p>According to the NWCG Standards for Helicopter Operations (NSHO) fuel spills are often the result of improper or careless operation of fueling equipment and lack of preventive maintenance of the fueling equipment. Close attention on the part of every person responsible for fueling is required to prevent fuel spillage.</p> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ NWCG Standards for Helicopter Operations (NSHO) <ul style="list-style-type: none"> • Aircrew members should ensure that the fuel source and the aircraft fuel requirements match (i.e. Jet fuel is used in jet engines). • The Pilot is personally responsible for ensuring that the proper type and grade of fuel is pumped into the aircraft. • Government employees may assist with the fueling process as long as they are not handling the nozzle during the actual fueling process. • Personnel must maintain a distance of at least 50 feet from the fueling operation until completed, unless the Pilot requests assistance (e.g. turning a barrel pump). • No passengers onboard the aircraft during the fueling process. • No smoking within 50 feet of the fueling process. • Propellers/Rotors stopped—Engines off, unless specifically authorized.

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#125	<p>Aircraft Fueling—cont'd.</p> <ul style="list-style-type: none"> • Fuel container bonded with the aircraft. <i>The reason for using a bonding strap during refueling is that when an electrically, non-conductive fluid, like Jet A or 100LL, is transferred, these liquids build up static electricity that can arc and cause a fire if not dissipated. So, now the standards call for only one cable connecting the aircraft to the refueling vehicle. This ensures that the aircraft and the refueling vehicle are in the same electrical potential when the hose is placed in the filler neck and during the refueling process. This is called “bonding” as opposed to the old grounding method previously used.</i> • Fire Extinguisher available. The refueler fire extinguishers must be placed by the fueler in a position where they will not be in the fueler’s way and where they are not likely to be engulfed if a fire should start (see the Fuel Handling Handbook). The Fire Extinguisher size should be 20 lbs., 40-B:C • Know the Emergency Shutdown location for the fuel pump. All electrical fuel pumping systems will have a shutdown switch to stop the flow of fuel. Aircrew members should be familiar with the location of this switch. <p>All states require reporting of fuel spilled, based on size and location. Aircrew members/passengers should notify a Project Manager and complete a SAFECOM if they witness any fuel spill.</p>

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#126	<p>Passenger/Aircrew Member Responsibilities</p> <p>All personnel on the aircraft manifest must meet the definition of “aircrew member”, “authorized passenger”, “official passenger”, or “qualified non-crew member”. All weights of personnel, cargo, and all hazardous materials (HAZMAT) must be listed on the manifest.</p> <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ NWCG Standards for Helicopter Operations (NSHO) <p>Passengers are any persons aboard an aircraft who do <i>NOT</i> perform the function of a flight crew/pilot or aircrew member. Passengers may be transported in government aircraft only if they meet the definition of an official passenger:</p> <ul style="list-style-type: none"> • Officials and employees of the federal government travelling on official business • Members of Congress and employees of congressional committee staffs whose work relates to the agency’s programs • Non-federal passengers when engaged in missions which enhance accomplishment of an agency program such as personnel of cooperating state, county, or local agencies; representatives of foreign governments; contractor’s representative to include those employed by such agencies; and private citizens <p>As a passenger, or aircrew member, you should always be aware of potential hazards that may cause a problem(s) during a flight. Birds, structures (towers and windmills), transmission/power lines, weather, other aircraft—and animals on a backcountry airstrip (where you are planning to land)—can quickly turn a routine flight into an emergency. Depending on the lighting situation and background, hazards can be obvious or invisible, and change from moment-to-moment.</p>

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#126	<p>Passenger/Aircrew Member Responsibilities—<i>cont'd.</i></p> <p>Any bird, no matter the size, has the potential to cause damage to the aircraft. The turkey vulture is the most damaging, followed by Canada geese and white pelicans—which are all very large birds. Fortunately, only about 15% of all bird strikes result in damage to the aircraft. The force of the impact generally depends on the weight of the bird, the difference in velocity, and the direction at impact. The force increases with velocity, which is why high-speed impacts with aircraft cause considerable damage. Bird strike risk is greatest during the bird migration seasons in spring and fall. More bird strikes occur during fall migrations because large flocks move to wintering areas over a short period of time, whereas spring migrations are slower and more irregular.</p> <p>Structures, transmission/power lines, and other such wires create a serious safety hazard to aircraft in flight. Not all wires and towers are charted, nor can aviation charts keep up with the expanding tower and wires environment. The FARs require the FAA to be notified of any structure taller than 200 feet AGL and an Advisory Circular recommends appropriate marking and/or lighting of any structure which is taller than 200 feet AGL. While a full 360-degree high reconnaissance flight is considered a standard practice for assessing a landing place, or low-level working zone, a tiny wire can quickly pass out of view within seconds. Be sure to look for the structure that supports those wires and be aware of <i>ALL</i> the wires that span between transmission/power lines structures—not all the wires are easily seen until you are in an uncomfortably close proximity to them.</p> <p>If you feel uncomfortable about the weather, you should speak up. The takeaway is: <i>IF YOU SEE SOMETHING, SAY SOMETHING!</i></p>

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#127	<p>Crew Resource Management (CRM)</p> <p><i>“Crew Resource Management (CRM): is the effective use of all available resources: human, hardware, and information...to safely accomplish the mission of flight.”</i></p> <p>FAA's Definition of Crew Resource Management (CRM) (https://blog.globalair.com/post/2018/12/01/Thoughts-on-Crew-Resource-Management)</p> <p>History: Crew Resource Management was developed due to several deadly accidents in the 1970s, including the collision of two 747s that took the lives of 583 people. NASA organized a conference to study the cause of aviation accidents. Following the 1979 conference, United Airlines was the first major air carrier to implement Crew Resource Management (CRM) training.</p> <p>The purpose of CRM is to reduce the number of mishaps through better crew coordination by focusing on: situational awareness, communication skills and assertiveness, teamwork and leadership, task allocation, adaptability, and decision-making based mission analysis—within a framework of Standard Operating Procedures (SOPs).</p> <p>Who do we consider the Crew?</p> <ul style="list-style-type: none"> • Pilots • Aircrew Members • Aviation Managers • Dispatchers • Mechanics • Fuel Truck Drivers • Passengers • Anyone else who is integral to the mission <p>All these individuals, or organizations, play a role by possessing information that may affect the safety of flights. If the crew is not made aware of the information these individual(s) or organizations have, the crew will not be able to make an informed decision if the flight should continue as planned.</p>

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#127	<p>Crew Resource Management (CRM)—<i>cont'd.</i></p> <p><i>Examples of information the flight crew needs to know:</i></p> <ul style="list-style-type: none"> • Fuel Truck Driver puts the wrong fuel into the aircraft. • Mechanic cannot find a wrench after completing routine maintenance. • Dispatcher does <i>NOT</i> inform the crew about another aircraft in the flight area.
#128	<p>Indicators of Effective Crew Resource Management (CRM)</p> <ul style="list-style-type: none"> • Everyone is involved in flight planning • SOPs/Policy are followed • Open communication • Thorough briefings • Everyone knows their roles/responsibilities • Tunnel vision is recognized • Focused on mission • Hazardous attitudes are recognized and mitigated • Continuous risk management <p>Effective CRM is also being “ahead of the curve”—thinking about the next move while doing what needs to be accomplished now.</p> <p>▶ <i>Example: “What if my engine quits? Where can I land?”</i></p>
#129	<p>Passenger and Aircrew Member Responsibilities (CRM)</p> <ul style="list-style-type: none"> • Crewmembers should speak up and state their information persistently until there is a resolution • Question the actions and decisions of others • Seek help when needed • Everyone should be open and non-defensive • <i>IF YOU SEE SOMETHING, SAY SOMETHING!</i>

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#130	<p>CRM—How to Voice a Concern</p> <p>Being assertive means finding the right balance between passivity (not assertive enough) and aggression (angry or hostile behavior). It means having a strong sense of yourself, your value—and it means standing up for yourself, even in the most difficult situations.</p> <p>Being assertive provides each crewmember with a positive way to voice a concern(s) to others. The concern(s) should be expressed in the form of a question, using active verbs, or recommending an action.</p> <p>Example of how to voice a concern:</p> <ol style="list-style-type: none"> 1. Get the attention of the receiver by using his/her first name. 2. State your concern. 3. Offer a solution. 4. Ask for feedback. <p><i>“David, according to the map, it shows that we are headed down the wrong road. I recommend we turn around and go back to the highway. What do you think?”</i></p> <hr/> <p>Other courses on Crew Resource Management include:</p> <ul style="list-style-type: none"> ▪ DOI: A-310—Overview of Crew Resource Management ▪ USDA-FS: N9059—Crew Resource Management—7 Skills <p>Crew Resource Management Courses—DOI/A-310 & USDA-FS/N9059 (https://www.iat.gov/docs/USFS_BP_CRM_A-310_Equivalency_2015_05.pdf)</p>

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#131	<p data-bbox="467 285 849 323">Preparing for the Mishap</p> <p data-bbox="467 338 1421 596">During mission preparation and planning, it is important to consider the worst-case scenario, in the event that the mission is not successful and the aircraft crashes. Proper PPE, Restraints, and Flight Planning will increase your chances of surviving the initial crash. However, it is just as important to be prepared for surviving the post-crash conditions that you might face following an accident. Proper planning is essential if you wish to stay alive.</p> <ul data-bbox="516 625 1421 827" style="list-style-type: none"><li data-bbox="516 625 1421 663">▪ Physical ability and fitness will aid in the survival effort<li data-bbox="516 678 1421 827">▪ Knowledge of survival techniques is an irreplaceable and invaluable resource. Survival equipment is valuable in dealing with mental challenges incurred during the survival situation <p data-bbox="467 842 1421 989">Aircrew members/passengers who routinely operate in remote environments are encouraged to supplement their training with a legitimate survival course. These courses are available from a variety of commercial sources.</p>

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#132	<p data-bbox="472 296 792 327">Personal Survival Kit</p> <p data-bbox="472 348 1349 449">Failing to plan for the environment you operate in can be disastrous. Take the time to obtain the equipment you need to survive.</p> <p data-bbox="472 470 1411 646">Assume you will only get out of the aircraft with what you are carrying on your body. Ensure your Personal Survival Kit is adequate to survive in the environment you will be flying over. At a minimum, each person should carry, on their person, the following, to maximize their chances of survival:</p> <ul data-bbox="516 674 1401 1318" style="list-style-type: none"><li data-bbox="516 674 1344 741">• Fire starter (can be two boxes of matches in waterproof containers, “metal match”, etc.)<li data-bbox="516 762 1146 793">• Laser rescue light, or key chain LED light<li data-bbox="516 814 1078 846">• Tactical flashlight with strobe feature<li data-bbox="516 867 743 898">• Signal mirror<li data-bbox="516 919 667 951">• Whistle<li data-bbox="516 972 1086 1003">• Knife, or tool containing a knife blade<li data-bbox="516 1024 915 1056">• Water purification tablets<li data-bbox="516 1077 924 1108">• Sealing clear plastic bags<li data-bbox="516 1129 1013 1161">• Personal Locator Beacon (PLB)<li data-bbox="516 1182 1401 1249">• 360/720/760 channel VHF-AM radio transceiver, or satellite telephone<li data-bbox="516 1270 716 1302">• Cell phone

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#133	<p>Aircraft Survival Kit</p> <p>If you are fortunate enough to be able to get back into the aircraft after the accident, you will want to retrieve the Aircraft Survival Kit. This Survival Kit (accessibility) will increase your chance of survival until rescue arrives. Each aircraft's minimum Survival Kit will include:</p> <ul style="list-style-type: none"> • Fire starter (can be two boxes of matches in waterproof containers, “metal match”, etc.) • Magnesium fire starter • Signal mirror • Whistle • One knife (includes “multi-tools” with knives) • Wire saw, axe, hatchet, or machete • Nylon rope or parachute cord (50 feet, minimum, 1/8 inch [3mm] thick) • Collapsible water container (Sealing clear plastic bags) • Water purification tablets • Water (one quart per occupant required except when operating over areas without adequate drinking water) • Food (2 days emergency rations per occupant, with a caloric value of 1,000 calories per day.) <p>At least one of the following items will be in the aircraft:</p> <ul style="list-style-type: none"> • Automated Flight Following (AFF) system • Satellite Phone • 406MHz Personal Locator Beacon (PLB) with GPS, or aircraft-mounted 406 MHz ELT • Handheld UHF or VHF radio <p>IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)</p> <ul style="list-style-type: none"> ▪ IALSE—Appendix 1/ ¶1.1—Minimum Aircraft Survival Kit Items

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#134–135	<p data-bbox="472 289 1247 323">Pilot Declares In-Flight Emergency/Brace Positions</p> <p data-bbox="472 342 1373 447">Personnel should be prepared for the event of an in-flight emergency. Some of the actions to take when the Pilot declares the flight emergency include:</p> <ul data-bbox="516 468 1401 1455" style="list-style-type: none"><li data-bbox="516 468 919 501">• Protective clothing in use<ul data-bbox="578 522 987 657" style="list-style-type: none"><li data-bbox="578 522 979 556">▪ Collars up, sleeves down<li data-bbox="578 573 987 606">▪ Flight Helmet visors down<li data-bbox="578 623 769 657">▪ Gloves on<li data-bbox="516 678 846 711">• Seat restraints snug<li data-bbox="516 732 1019 766">• Keep away from aircraft controls<li data-bbox="516 787 1252 858">• Secure loose gear— <i>Loose gear can become missiles unless secured</i><li data-bbox="516 879 1401 1026">• Locate emergency exits— You may not be able to rely on your sense of sight to assist you with getting out of the aircraft due to smoke or water— plan your egress based on this information:<li data-bbox="516 1047 1401 1455">• Consider unlatching the exit door As always, check with your Pilot for procedures, however, most light aircraft call for unlatching the door in the event of an emergency landing, or ditching. Two principle reasons:<ul data-bbox="607 1262 1401 1455" style="list-style-type: none"><li data-bbox="607 1262 1401 1333">▶ Unlatching the door aids in egress from the aircraft— which can be difficult with a jammed door.<li data-bbox="607 1350 1385 1455">▶ Unlatching the door allows better energy absorption of the front part of the fuselage, by permitting the aircraft to crumple better.

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#134–135	<p>Pilot Declares In-Flight Emergency/Brace Positions—<i>cont'd.</i></p> <ul style="list-style-type: none">• Assume the Brace Position—<ul style="list-style-type: none">▶ Fixed-wing operation refer to aircraft safety card, or ask your pilot▶ Helicopter operations <p>Interagency Aviation Safety Alert, No. IASA 13-01—Helicopter Brace for Impact Positions (https://www.doi.gov/sites/doi.gov/files/migrated/aviation/safety/upload/IASA_2013-01.pdf)</p> • WAIT FOR ALL MOTION TO STOP BEFORE EXITING! Don't survive a crash, only to be killed by flying debris, as you depart the aircraft!

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#136	<p>Aircraft Mishap Response Actions</p> <p>Time is extremely critical when responding to a flight emergency. Immediate, positive action is necessary—delayed responses may affect someone’s survival. If you are the person doing the Flight Following, initiate the Mishap Response Plan. Follow the directions line-by-line, to ensure that every step is covered.</p> <p>If you are responding to an aviation accident—or if you are a survivor of an aviation accident—here are some things to consider during rescue operations:</p> <ul style="list-style-type: none">• Evaluate site safety<ul style="list-style-type: none">▪ Flammables▪ Toxic fluids▪ Sharp objects▪ Hazardous cargo▪ Biohazards• Stay clear of smoke• Preserve life<ul style="list-style-type: none">▪ Do whatever is necessary to extricate injured occupants• Extinguish fires• Secure area for investigators• Document and/or photograph the location of any debris• Identify witnesses and get contact information <p>Personnel involved in the recovery, examination, and documentation of aircraft wreckage may be exposed to physical hazards such as hazardous cargo, flammable and toxic fluids, sharp or heavy objects, and disease. It is important to exercise good judgment, use available protective devices and clothing, and use extreme caution when working in the wreckage.</p>

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#137	<p>After the Aircraft Accident</p> <p>If you're in an accident, where you've crashed in a remote location, there are several things to consider:</p> <ul style="list-style-type: none"> • Positive Mental Attitude—odds of survival increase when survivors choose not to lose hope. Survivors need to engage their brains in the survival process. Fear is a normal reaction to the unknown. Fear has a direct bearing on the way we behave—and if not overcome—it can manifest itself as our greatest obstacle to survival. • Positive communication among the survivors—helps maintain a positive attitude. • You may have to become the leader—by lending moral support to injured, or discouraged, fellow survivors. • Attending to essential needs—such as building shelter and a fire, helps keep your mind on positive goals.
#138 Exercise	<p>Preparing for the Mishap—Exercise</p> <p>Stranded on a Mountain—Survival Exercise (http://www.wrha.mb.ca/staff/collaborativecare/files/Resource-TeamExercise-2.pdf)</p> <p>After your small, light aircraft crashes, your group—wearing casual clothing—is stranded on a forested mountain in winter weather (snow-covered, sub-freezing conditions). The crash location is 150 miles from civilization, and you are not sure of your whereabouts—radio contact was lost one hour before you crashed, so the search operation has no precise idea of your location either.</p> <p>The plane is about to burst into flames, and you have only a few moments to gather some items. Aside from the clothes you are wearing, which does not include coats, you have no other items. It is possible that you may be within mobile phone signal range, but unlikely. Your aim is to survive as a group until rescued.</p> <p>From the following list, choose only 10 items that you would take from the plane—after which, the plane and everything inside is destroyed by fire. You have five minutes to select which 10 items to take from the plane.</p>

#138**Exercise****Preparing for the Mishap—Exercise—*cont'd.*****List of items onboard the plane:**

(Select 10 items from the list that you would take from the plane.)

- 1 box of 50 matches
- Roll of polyethylene sheeting 3 feet x 10 feet
- Bottle of brandy
- 1 case of bottled spring water, 1 liter each
- Small toolbox containing hammer, screwdriver set, adjustable wrench, hacksaw, large pen-knife
- Box of distress signal flares
- Small basic first-aid kit containing: bandages, antiseptic ointment, small pair of scissors, and pain-killer tablets
- Mobile phone with battery half-charged
- Transistor radio
- Gallon container full of fresh water
- Box of 36 individual chocolate bars
- Shovel
- Short hand-held axe
- Hand gun with magazine of 20 rounds
- Nylon rope 10 feet long
- Box of 24 individual-sized peanut bags
- Box of tissues
- Laptop computer with unknown battery life
- Inflatable 4-person life raft
- Compass
- Large, full aerosol can of insect killer spray
- Small, half-full aerosol can of air freshener spray
- Notebook and pencil
- Traveling games containing chess, backgammon
- Sewing kit
- Whistle
- Flashlight with a set of spare batteries
- Box of 50, 6-hour candles
- Bag of 6 large blankets

Est. Instruction Time: 1 hour	Unit 3—Flight Operations
#139	Unit 3 Objectives Review After completing Unit 3 students should be able to: <ul style="list-style-type: none">❖ Summarize your role in Crew Resource Management (CRM)❖ Identify actions to take during an in-flight emergency❖ Explain the items to consider if you are responding to, or are a survivor of, an aviation accident
	Unit End

Est. Instruction Time: 1 hour	Unit 4—Post-Flight Duties
#140	Post-Flight Duties—Unit Introduction This unit will cover the many important activities that must occur after the flight/mission is completed. The crew does not just walk away when the flight is done.
#141	Unit 4 Objectives After completing Unit 4 students should be able to: <ul style="list-style-type: none">❖ Summarize the post-flight duties that may need to be completed❖ Describe why a post-flight debriefing is important❖ Describe your responsibilities pertaining to aircraft and facility security❖ Identify the tool utilized for reporting aviation mishaps

Est. Instruction Time: 1 hour	Unit 4—Post-Flight Duties
#142	<p>Post-Flight Debriefing or After Action Review (AAR)</p> <p>A Post-Flight Debriefing or After Action Review is critical to learning from events—both good and bad—that may have occurred during a flight. The AAR should detail the actions of the aircrew members during the assignment. Technical, operational, and human elements of crew performance should be discussed, as appropriate. Both good, and sub-standard performance should be addressed and analyzed. The content of each AAR may vary widely, depending upon the events. Taking a couple of minutes to discuss the following is a good method to use.</p> <p>Subjects discussed or mentioned during an AAR may include the following:</p> <ul style="list-style-type: none">• Technical performance• Techniques used• Planning• Communication of directions, events, changes• Perception of events• Communication• Environmental problems• Stress impacts• Fatigue impacts• Questions and answers• Adapting• Equipment performance• Lessons learned• Procedures adherence• Environmental attributes or changes• Coordination• Attitude impacts• Safety concerns• Roles and Responsibilities• Environmental indicators• Organizational issues or cultural problems

Est. Instruction Time: 1 hour	Unit 4—Post-Flight Duties
#142	<p>Post-Flight Debriefing or After Action Review (AAR)—<i>cont'd.</i></p> <p>In general, an AAR answers these questions:</p> <ul style="list-style-type: none"> • What was planned? • What really happened? • Why did it happen? • What can we do better next time? <p>Some days are more exciting than others, and the AAR should reflect this reality. As a mission leader, you will need to focus the AAR to make it effective.</p> <p>Adjust the content of the AAR to reflect the events of the day—but don't assume nothing happens on a quiet day. A crew can fall down on quiet days as easily as it can on busy days. Low stress can breed complacency. Keep the AAR straight-forward and focused on the task.</p> <p>The climate surrounding a Post-Flight Debrief must be one in which the participants openly and honestly discuss what transpired, in sufficient detail and clarity, so everyone understands what did and did not occur, and why. Most importantly, participants should leave with a strong desire to improve their proficiency.</p> <p>Generally, AARs conducted immediately after the flight/mission provide the best learning. This is the time when most things are still fresh in the mind, both technically and emotionally. Unless the feelings associated with an event are very strong, aircrew members will not retain an emotional memory of it for long.</p> <p>The following are some items to watch out for and keep in mind during AARs:</p> <ul style="list-style-type: none"> • Don't over-analyze the day's events. • Short of a catastrophic problem that really needs to be torn down and examined, discuss only the most important factors and move along. • In some cases, you may need to guide or limit the discussion so that it does not get too deep or convoluted. Don't allow the AAR to bog-down with trivia, or unnecessary details that do not relate to the unit's actions and events. • If nothing happened, don't feel obligated to extract a 30-minute AAR from it.

Est. Instruction Time: 1 hour	Unit 4—Post-Flight Duties
#142	<p>Post-Flight Debriefing or After Action Review (AAR)—<i>cont'd.</i></p> <p>AAR Guidelines</p> <ul style="list-style-type: none"> ▪ A Post-Flight Debrief is performed immediately after the event, when possible, by the personnel involved. ▪ The leader’s role is to ensure skilled facilitation of the Debrief. ▪ Reinforce that respectful disagreement is okay. Keep focused on “what”, <i>not</i> “who”. ▪ Make sure everyone participates. ▪ Document the AAR. ▪ End the Debrief on a positive note. <p>NWCG—After Action Reviews (AAR) Tips and Tactics (https://www.nwcg.gov/wfldp/toolbox/aars#collapse1)</p>
#143	<p>Close Out Flight Plan/Flight Following</p> <p>At the end of the flight, make sure that the pilot closes out their Flight Plan and/or Flight Following.</p> <p>Remember that a Flight Plan and/or Flight Following are a preemptive request for Search and Rescue (SAR). If these items are not closed out, SAR may be initiated. An unnecessary search and rescue event may cost your bureau/agency the Search and Rescue charges.</p>

Est. Instruction Time: 1 hour	Unit 4—Post-Flight Duties
#144	<p>Airport Watch (Aircraft Owners and Pilots Association)</p> <p>AOPA Airport Watch Program is patterned after the Neighborhood Watch anti-crime program.</p> <p>Since September 11, 2001, pilots and others at airports have stepped up their vigilance and reported suspicious activities to authorities through the Aircraft Owners and Pilots Association's (AOPA's) Airport Watch program and an around-the-clock telephone hotline answered by federal authorities [866-GA-SECUR(E) or 1-866-427-3287]</p> <p>Federal and state government, major cities, local municipalities, airports, flight schools, aircraft rental facilities, aircraft maintenance facilities, aircraft owners, pilots, the military, and all levels of law enforcement work together to deploy a multi-layered system of proven security procedures to identify and thwart an act of terror involving a GA aircraft before it occurs. As a community, we will continue to work with all levels of government and all participants to remain ever-vigilant in the protection of our fellow citizens and our nation.</p>

Est. Instruction Time: 1 hour	Unit 4—Post-Flight Duties
#145	<p>Aviation Security and Facility Security</p> <p>Both USDA-FS and DOI require security to be in place for aircraft and facilities. Every employee is responsible for the security of aircraft and facilities by saying something if you see something that does not meet security requirements.</p> <p>Facility Security Plan is put in place by your bureau/agency Aviation Management and will include items like:</p> <ul style="list-style-type: none"> • Access Control (fencing, gates with locks, lighting, signage) • Personnel and Parking Access • Surveillance, monitoring, and site supervision <p><u>DOI Field Reference Guide for Aviation Security for Airport or Other Aviation Facilities (AAF)</u> <u>(https://www.doi.gov/sites/doi.opengov.ibmcloud.com/files/uploads/Field_Reference_Guide_Aviation_Security_2006.pdf)</u></p> <p><u>IAT Policy & References</u> <u>(https://www.iat.gov/policy.asp)</u></p> <ul style="list-style-type: none"> ▪ USDA-FS Handbook (FSH) 5709.16—Flight Operations, Chs. 60 Aviation Security, 61 Physical Security, 62 Agency Security Response Actions

Est. Instruction Time: 1 hour	Unit 4—Post-Flight Duties
#146	<p>Aircraft Security</p> <p>USDA-FS and DOI have the following requirements for Government-owned (fleet) and Contract aircraft security:</p> <p>The pilot is responsible for “locking” and securing the aircraft</p> <ul style="list-style-type: none"> • After hours: aircraft must be properly locked and secured • Aircraft shall be secured in a locked hangar, where available <p>A locking method consists of an anti-theft device on or within the aircraft, devices designed to lock aircraft flight control surfaces when not in use, or lockable devices designed to secure an aircraft to the ground.</p> <p>Locking methods include, but are not limited to: door locks, wheel locks, throttle or mixture lock, tail rotor lock, battery lock, propeller lock, chain or cable, pedal lock, control lock, keyed master power switch.</p> <p>Additional Aircraft Security Requirements</p> <ul style="list-style-type: none"> ▶ USDA-FS Contract Aircraft Statement of Work (SOW) for Contract Aircraft must stipulate that the contractor is responsible to properly secure their aircraft, when not in use. ▶ DOI Government and Contract Aircraft Requires a dual method for securing the aircraft when unattended. DOI examples of unacceptable “Dual-Lock” devices and methods: <ul style="list-style-type: none"> • Locking Aircraft Doors • Fenced or Gated Tie Down Area

Est. Instruction Time: 1 hour	Unit 4—Post-Flight Duties
#146	<p>Aircraft Security—<i>cont'd.</i></p> <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ USDA-FS Aircraft Physical Security Standards—FSH 5709.16.61.1 <p>IAT Policy & References—DOI Departmental Manuals (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ DOI Aircraft Physical Safety Requirements—352 DM 5, ¶5.10, Appendix 2
#147	<p>Aviation Documentation</p> <p>Documentation is a very important part of aviation operations. Requirements depend upon the type of procurement and your level of responsibility per the Project Aviation Safety Plan (PASP).</p> <p>Documentation may include:</p> <ul style="list-style-type: none"> • Flight hours (clock or Hobbs) • Daily availability • Duty hours—pilot, mechanic, driver • Load Calculation (OAS-67/FS 5700-17) and manifest (Interagency Helicopter Passenger/Cargo Manifest, HCM-9) • Daily Diary (provides daily documentation of contract activities, significant occurrences, deficiencies, actions by the contractor or government, etc.) <p>The above types of documentation may be needed to complete the invoice for payment of aviation personnel and aircraft. The required information may be recorded on one of these forms:</p> <ul style="list-style-type: none"> • DOI: AMD-23 Aviation Information Reporting Support (AIRS) • USDA-FS: FS-6500-122 Aviation Business System (ABS) <p>The finalized documentation will need to be received by the Contracting Officer.</p> <p>Not every flight will require all of this to be done.</p> <hr/> <p>Learn more about contracting, payment, and Daily Diaries by attending an A-306 Aviation Contract Administration course.</p>

Est. Instruction Time: 1 hour	Unit 4—Post-Flight Duties
#148–150	<p>SAFECOM (Safety Communiqué)</p> <p>SAFECOM—Talking Points</p> <ul style="list-style-type: none"> ▶ The Aviation Safety Communiqué (SAFECOM) database fulfills the Aviation Mishap Information System (AMIS) requirements for aviation mishap reporting for the Department of the Interior agencies and for the USDA's Forest Service. The system uses the SAFECOM Form to report any condition, observation, act, maintenance problem, or circumstance with personnel, or the aircraft, that has the potential to cause an aviation-related mishap. SAFECOMs may also be used to identify “good acts, events, and circumstances”, as well as unsafe situations. <p>The DOI and USDA-FS use the same process to submit a SAFECOM. Access the SAFECOM site and become familiar with all the options available:</p> <p>IAT Policy & References (https://www.iat.gov/policy.asp)</p> <ul style="list-style-type: none"> ▪ Submit a SAFECOM (on Form AMD-34 or FS 5700-14) ▪ Submit a SAFECOM from Your Mobile Phone/Tablet ▪ SAFECOM Mobile Web App Accident Prevention Bulletin 14-04 <ul style="list-style-type: none"> ▶ SAFECOM reporting can be completed via the online SAFECOM form, or an electronic tablet device, or from your mobile phone. ▶ The SAFECOM system is not intended for initiating punitive actions. ▶ Submitting a SAFECOM is not a substitute for “on-the-spot” correction(s) to a safety concern. It is a tool used to identify, document, track, and correct safety related issues. ▶ A SAFECOM does not replace the requirement for initiating an accident or incident report. ▶ SAFECOMs are an accident prevention tool for everyone associated with the DOI and the USDA's Forest Service aviation operations. Vendors are specifically required, by contract, to participate in SAFECOM reporting.

Est. Instruction Time: 1 hour	Unit 4—Post-Flight Duties
#148–150	<p>SAFECOM (Safety Communiqué)—<i>cont'd.</i></p> <hr/> <p>Student Note View the SAFECOM process, and the SAFECOM Reporting/Searching features at the following locations: SAFECOM Overview Video (https://www.iat.gov/video_module.asp?id=1003)</p> <p>Or to go to the: SAFECOM site—for Reporting/Searching On Aviation-related Concerns (https://www.safecom.gov/)</p> <hr/> <p>SAFECOM site demonstration:</p> <ul style="list-style-type: none"> • From the SAFECOM site: Click on Submit a SAFECOM → click New SAFECOM Submission Explain how to fill out the form and submit it. Aircrew Members can also add photos, if they will help to clarify the details of the SAFECOM being submitted. • You can search the SAFECOM database to gain knowledge about a type of aircraft—even while Aircrew Members are on a flight/mission. The search function also allows you to have access to redacted SAFECOMs: Click on Search SAFECOMs → input/select the information that you want to search on → click Submit button. SAFECOM site—for Reporting/Searching On Aviation-related Concerns (https://www.safecom.gov/)

Est. Instruction Time: 1 hour	Unit 4—Post-Flight Duties
#151	Unit 4 Objectives Review After completing Unit 4 students should be able to: <ul style="list-style-type: none">❖ Summarize the post-flight duties that may need to be completed❖ Describe why a post-flight debriefing is important❖ Describe your responsibilities pertaining to aircraft and facility security❖ Identify the tool utilized for reporting aviation mishaps
	Unit End

Est. Instruction Time: 5 min.	Summary
<p>#152—153</p> <p>Video</p>	<p>A-100 Basic Aviation Safety—Course Summary</p> <p>DOI Aviation Operations Checklist—video (https://www.iat.gov/video_module.asp?id=201)</p> <p>Aviation Operations Checklist</p> <p>The Aviation operations Checklist is a tool available to users to help ensure that all the necessary flight safety items have been addressed. This checklist was developed based on research done in the medical field that showed that a very simple checklist could have major impacts on overall safety. The intent of the checklist is to evolve the Five Steps to a Safe Flight card and the Twelve Standard Aviation Questions that Shout “Watch Out” into a tool that can be used for planning and during operations.</p> <ul style="list-style-type: none"> ▶ Proper and thorough flight planning is key to ensuring a safe flight. ▶ Pilots and aircraft must be approved for the mission. ▶ Briefings/Debriefings must take place. ▶ Risk Management is a constant and ongoing process. ▶ Everyone has the obligation to stop unsafe actions. ▶ Follow the “Five Steps to a Safe Flight” card (OAS-103). ▶ Review the “Twelve Standard Aviation Questions that Shout “Watch Out!”” (OAS-161). ▶ Use the aviation references (handbooks, guides, standards booklets, and aviation safety cards) available at this location: IAT Library—Handbooks, Guides, Standards & Booklets (https://www.iat.gov/library.asp)

Est. Instruction Time: 5 min.	Summary
#154–156	<p>Course Objectives</p> <p>At the conclusion, of this course, students should be able to:</p> <ul style="list-style-type: none"> ❖ Locate aviation policy for your Bureau or Agency ❖ Identify the elements required for mission planning ❖ List the items for an effective aviation mission briefing ❖ Identify the tool that provide the items of a passenger safety briefing ❖ Provide examples of why you would refuse a flight ❖ Given a scenario, recognize the hazards associated with an aircraft mission ❖ Summarize your role in Crew Resource Management (CRM) ❖ Identify actions to take during an in-flight emergency ❖ Explain the items to consider if you are responding to, or are a survivor of, an aviation accident ❖ Summarize the post-flight duties that may need to be completed ❖ Describe why a post-flight debriefing is important ❖ Describe your responsibilities pertaining to aircraft and facility security ❖ Identify the tool utilized for reporting aviation mishaps
#157	<p>Questions & Course Evaluation</p> <ul style="list-style-type: none"> • Do you have any remaining questions? • Please complete the Training Course Evaluation Form (OAS-111)—you will receive course credit via: Interagency Aviation Training (IAT)—Student Transcript (https://www.iat.gov/training)

Appendix D.1: Winter Bay Cabin Replacement Project

Scenario Instructions

- Identify potential aviation hazards or concerns associated with the aviation mission utilizing the **Five Steps to a Safe Flight** (orange card) and **Twelve Standard Aviation Questions That Shout “Watch Out!”** (blue card)
- Be prepared to discuss and elaborate on the hazard(s) that have been identified
- Will you continue with the aviation mission?
- If the flight is refused, what is the turn-down process?

Scenario Background Information

The National Park Service (NPS) purchased a “cabin kit” in 2017, intending to replace the current, insufficient cabin at Winter Bay, on the park’s east boundary and the coastline of the Winter Strait. The purchased cabin kit was placed into storage, awaiting an Environmental Assessment and the signing of a “Finding-of-No-Significant-Impact” (FONSI) document, by the NPS Regional Director, in April 2019. Securing the FONSI document provided approval to begin the Winter Bay Cabin Replacement Project.

The Winter Bay cabin is located in a three-million-acre National Park and Preserve and aircraft are essential in performing park operations. Accessing locations within the park is done almost exclusively utilizing fixed-wing aircraft, by both NPS employees and visitors.

Planned Aviation Mission to Transport Project Workers

A crew of six workers will be transported and deposited at the Winter Bay location, via the NPS fleet aircraft, a de Havilland/DHC-2 Beaver, and the Sun vendor’s Cessna 206—both aircraft types are fitted with floats for water landings.

The project crewmembers will be picked up three weeks later by the Park Service DHC-2 Beaver aircraft.

No Project Aviation Safety Plan (PASP) is required for float plane operations.

Key Personnel Involved in the Winter Bay Cabin Replacement Project

Name	Position	Aviation Qualification
Joe Main	Chief of Maintenance/ Supervisor of the project	No aviation currencies
Annie Helper	Crew Leader/ Maintenance worker	Fixed-wing Flight Manager Special Use Flights—qualified
Mike Chipper	Maintenance worker	Aircrew Member—qualified
Jessica Hammer	Seasonal Maintenance worker	Aircrew Member—qualified
Andy Logger	Seasonal Maintenance worker	Aircrew Member—qualified
Dave Logger	Seasonal worker	Aircrew Member—qualified
You	Seasonal worker	Your current aviation qualifications

Project Events Sequence

Early September

Project Supervisor, Joe Main, has assigned Annie Helper as the Crew Leader for the three-week-long Winter Bay Cabin Replacement Project. Annie, Mike, Jessica, Andy, Dave, and you—will be flown to the Winter Bay location and tasked to do the following:

- Remove the current/old cabin
- Prepare the site for the new cabin
- Receive the cabin kit (on the beach), via a boat-type landing craft
- Construct the new cabin

Sunday, September 17

Annie and Andy fly to Sun City to prepare and load the landing craft that will deliver the new cabin kit and project supplies to Winter Bay. The water borne landing craft will need to arrive at Winter Bay at high tide to allow the cabin kit and supplies to be off-loaded.

Wednesday, September 20

After completion of loading the landing craft, Annie and Andy board Sun vendor's Cessna 206 fixed-wing aircraft, fitted with floats, donned the required Personal Flotation Device (PFD) and depart Sun City headed for Winter Bay.

The four other project members donned their PFDs and departed the NPS Headquarters, near the Tiger Lake area, on the NPS fleet aircraft, a de Havilland/DHC-2 Beaver on floats and arrive at Winter Bay three hours after Annie and Andy.

The project crew spends the first day preparing their camp, while they wait for the landing craft to arrive. The project crew has minimal construction gear on hand, because most of the project construction gear is included on the landing craft.

Friday, September 22

The landing craft arrives in Winter Bay on Friday evening, at high tide. The water depth, however, proved insufficient for the landing craft to reach the beach shoreline. After an hour of repeated attempts to reach the beach shoreline, the landing craft left and returned to Sun City, without depositing the cabin kit and the project supplies in Winter Bay.

Annie Helper contacted the Project Supervisor, Joe Main, via satellite phone, and reported that the cabin kit and supplies could not be delivered as planned—an alternate delivery plan will be necessary. Annie also asked Joe if the NPS fixed-wing, Beaver aircraft, would be available to pick up the work crew. Joe told Annie that he would get back to her with further instructions.

Project Supervisor, Joe, contacted the NPS fleet pilot and was informed that the NPS Beaver aircraft would not be available until Monday (9/25), to retrieve the work crew from Winter Bay. Joe also confirmed that there would be no one in the Dispatch Office during the weekend. Joe contacted Annie and the project team to inform them of this information.

Saturday, September 23—NPS Work Crew at Winter Bay

Annie Helper contacted High-Flying Air Service, Inc., Saturday morning at 0730 hours, to inquire if they had aircraft available that they could dispatch to pick up the six passengers at Winter Bay. High Flying Air Service's dispatcher told Annie that they had two, fixed-wing floats-equipped aircraft that could depart immediately for Winter Bay. Annie requested the flights.

The Flight Plan was for two High-Flying Air Service aircraft to fly from Tiger Lake—located right outside of the NPS Headquarters—to Winter Bay, and pickup six passengers and personal gear, and then return them back to the NPS Headquarters area. The flights, one-way in each direction, should take about 1.2 hours.

Weather Conditions for Saturday, September 23

Tiger Lake Weather Conditions on Departure Were:

- 6 miles visibility
- Variable winds to 4 knots
- Light rain
- Scattered clouds at 2500 feet, and overcast at 3500 feet

Expected Weather

- Cloud ceiling was expected to decrease to 1000 to 1200 feet within the next 3 hours
- Increasing winds expected at 25 to 32 knots

Winter Bay Weather Conditions Were—beginning to deteriorate:

- Cloud ceiling at 150 to 200 feet above ground level (AGL)
- Fog and heavy rain
- Winds at 25 knots, gusting to 35 knots

In the meantime, the six NPS project crewmembers discussed alternative plans in the event the two chartered aircraft did not arrive due to deteriorating weather conditions.

Saturday, September 23—Chartered “High-Flying Air Service Aircraft to Winter Bay

At 0805 hours, High-Flying Air Service dispatched two fixed-wing, floats-equipped aircraft to fly from Tiger Lake to Winter Bay:

- Cessna 206 Stationaire aircraft, piloted by Tom Smith
- De Havilland Beaver aircraft, piloted by Jane Doe

The two aircraft traveled together to the west side of Snowy Pass, where they separated due to weather conditions. Doe (the experienced pilot flying in this area) instructed the Cessna 206 pilot, Smith (who was new to the area), to turn around and fly back to the Tangled River drainage, fly north east up the drainage to Second Shot Pass, then to Rocky Point on the coast, and then to head south, down the coast to Winter Bay.

The Cessna 206 pilot, Smith, changed the course of his aircraft and flew the route described by pilot Doe to Winter Bay. This norther flight route takes approximately 30 minutes longer than flying directly over Snowy Pass to Winter Bay.

Pilot Jane Doe found a break in the clouds and flew the Beaver aircraft over Snowy Pass, directly to Winter Bay, landing at approximately 0920 hours.

Pilot Doe discussed with the work crew how many members, with and without their personal gear, would be able to board the Beaver, based on the aircraft’s load capacity. Due to the weather conditions, there was also uncertainty if pilot Smith, in his Cessna 206, would be able to make it into Winter Bay that day to pick up the remaining work crew members.

NPS project crew members Jessica Hammer, Andy Logger, Dave Logger, and You, boarded the chartered Beaver, accompanied by some personal gear and supplies. The Beaver aircraft did not have the NPS required Personal Flotation Devices (PFDs) and other Personal Protective Equipment (PPE) onboard.

At approximately 0950, Beaver pilot Doe and the four NPS project crew members departed Winter Bay, headed back to Tiger Lake.

At approximately 0955 hours, Cessna 206 pilot Tom Smith, enroute to Winter Bay, makes radio contact with Beaver pilot Doe. Smith briefly discusses deteriorating weather conditions with Doe and informs her about low cloud cover and high winds 10 miles north of their location, indicated by large white caps on the water below.

Doe reported to pilot Smith information regarding the Winter Bay landing conditions and the details of the passengers and gear awaiting transport by pilot Smith.

At approximately 100 hours, pilot Smith lands the Cessna 206 at Winter Bay.

Smith instructs Annie and Mike to hurry up and board the plane because the weather conditions are deteriorating. The plane is quickly loaded with Annie and Mike and their gear, and the Cessna 206 departs Winter Bay.

Ten minutes into the Cessna 206 flight pilot Smith provided the Aircraft Safety Passenger Briefing. No PFDs or other PPE (as required by NPS) were available for the passengers.

Cessna 206 pilot Tom Smith is enroute to Tiger Lake, once again flying the northern coastal route that he flew to Winter Bay. At 1020 hours and 1045 hours Smith attempts to contact Beaver pilot Doe—no radio response is received from pilot Doe.

Pilot Smith lands the Cessna 206 at Tiger Lake at approximately 1125 hours.

The de Havilland/DHC02 Beaver, piloted by Jane Doe, has not yet arrived at the Tiger Lake destination

At approximately 1150 hours Mike Jones, owner of High-Flying Air Service, Inc., contacts NPS Project Supervisor, Joe Main, to notify him that the de Havilland/DHC-2, with four NPS project work crew members onboard, is overdue.

The Instructor and students will now discuss the hazards students have identified in the Winter Bay Cabin Replacement Project scenario.