

# Helicopter Management

## S-372



NFES 1501

**Instructor Guide**  
**MARCH 2009**



## CERTIFICATION STATEMENT

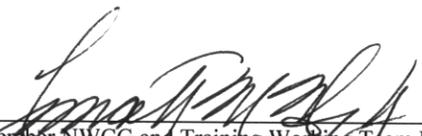
on behalf of the

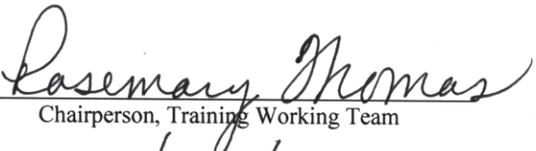
### NATIONAL WILDFIRE COORDINATING GROUP

*The following training material attains the standards prescribed for courses developed under the interagency curriculum established and coordinated by the National Wildfire Coordinating Group. The instruction is certified for interagency use and is known as:*

Helicopter Management, S-372  
Certified at Level I

This product is part of an established NWCG curriculum. It meets the COURSE DEVELOPMENT AND FORMAT STANDARDS – Sixth Edition, 2003 and has received a technical review and a professional edit.

  
\_\_\_\_\_  
Member NWCG and Training Working Team Liaison  
Date 3-19-09

  
\_\_\_\_\_  
Chairperson, Training Working Team  
Date 3/13/09

# Helicopter Management

## S-372

### Instructor Guide

**MARCH 2009**  
**NFES 1501**

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Comments regarding the content of this publication should be directed to:  
National Interagency Fire Center, Fire Training, 3833 S. Development Ave., Boise, Idaho 83705.  
E-mail: [nwgc\\_standards@nifc.blm.gov](mailto:nwgc_standards@nifc.blm.gov).

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Additional copies of this publication may be ordered from National Interagency Fire Center,  
ATTN: Great Basin Cache Supply Office, 3833 South Development Avenue, Boise, Idaho 83705.  
Order NFES 1501.

**NWCG TRAINING WORKING TEAM  
POSITION ON COURSE PRESENTATION AND MATERIALS**

The recommended hours listed in the FMCG are developed by Subject Matter Experts based on their estimation of the time required to present all material needed to adequately teach the unit and course objectives. The hours listed may vary slightly due to factors such as number of students, types and complexity of course activities, and the addition of local materials. NWCG does not approve of course delivery varying greatly from the recommended course hours. Instructors and students are cautioned that in order to be recognized as an NWCG certified course, certain guidelines must be followed:

- Lead instructors are encouraged to enhance course materials to reflect the conditions, resources and policies of the local unit and area as long as the objectives of the course and each unit are not compromised.
- Exercises can be modified to reflect local fuel types, resources and conditions where the student will be likely to fill incident assignments. The objectives and intent of the exercises must remain intact.
- Test questions may be added that reflect any local information that may have been added to the course. However, test questions in the certified course materials should not be deleted to ensure the accurate testing of course and unit objectives.
- Test grades, to determine successful completion of the course, shall be based only on the questions in the certified course materials.

If lead instructors feel that any course materials are inaccurate, that information should be submitted by e-mail to NWCG Fire Training at [nwcg\\_standards@nifc.blm.gov](mailto:nwcg_standards@nifc.blm.gov). Materials submitted will be evaluated and, where and when appropriate, incorporated into the appropriate courses.

**COURSE LENGTH FOR NWCG COURSES**

If a course is available through PMS, the recommended course hours and the “NWCG Position on Course Presentation and Materials” will be adhered to by the course instructors.

- Unit times represent the allotted time to teach the unit and complete the exercises, simulations, and tests.
- Recommended course hours are given to help the students and the course coordinator with planning travel, room reservations, and facilities usage. This represents the time estimated to present the NWCG provided materials including time for breaks, lunch periods, set-up for field exercises or simulations, etc.
- Actual times for both the unit and the course may vary based on number of students, types and complexity of course activities, and the addition of local instructional materials.

If the course is not available through PMS, e.g., L-380, and has been developed using NWCG course criteria, minimum course hour requirements have been established and must be adhered to by the course developer and course instructors.

Course hours for all NWCG courses can be found in the Field Manager’s Course Guide (<http://www.nwcg.gov/pms/training/fmcp.pdf>). If the hours are a minimum versus recommended they will be stated as such.

## **PREFACE**

Helicopter Management, S-372 is a suggested training course in the National Wildfire Coordinating Group (NWCG) wildland and prescribed fire curriculum. It was developed by an interagency group of experts with guidance from NWCG Training under authority of the NWCG. The primary participants in this development effort were:

U.S. FISH AND WILDLIFE SERVICE  
Dianne MacLean – Kenai National Wildlife Refuge

U.S.D.A. FOREST SERVICE  
Jeff Quick – Prescott National Forest

AVIATION MANAGEMENT DIRECTORATE  
Susie Bates – IAT Coordinator

NATIONAL INTERAGENCY FIRE CENTER, FIRE TRAINING  
Rob Navarro, Graphic Artist – NIFC Instructional Media Unit  
Ed Secakuku, Project Leader – NWCG Development Unit

The NWCG appreciates the efforts of these personnel and all those who have contributed to the development of this training product.



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## COURSE INSTRUCTIONS

**This section contains instructions and information essential to the course coordinator and instructors in making an effective presentation. Cadre members must read this section and be thoroughly familiar with course procedures and material prior to presentation.**

### I. INTRODUCTION

Helicopter Management, S-372 is a 28- to 32-hour course designed to meet the training needs of a Helicopter Manager (HMGB) on an incident as outlined in the Wildland Fire Qualification System Guide (PMS 310-1) and the position task book developed for the position.

The Wildland Fire Qualification System Guide provides guidance and a national wildfire standard for establishing minimum training, skills, knowledge, experience, and physical fitness requirements for the participating agencies of the NWCG.

The purpose of this training is to provide students with the knowledge, skills, and abilities to safely and effectively perform the duties of HMGB. Lessons include an introduction to operational leadership, mobilization, arrival at the incident, risk management, safety and tactics, off-line duties, demobilization, and post-incident responsibilities.

Completion of the S-372 course meets the recommended equivalency skill courses for additional interagency aviation position prerequisites. The following Interagency Aviation Training (IAT) A-course curriculums are intergraded and should be credited upon completion of this course by the student's certifying agency:

- A-205, Risk Management I
- A-212, Aircraft Rental Agreement/Blanket Purchase Agreements
- A-218, Aircraft Pre-use Inspection
- A-304, Aircraft Maintenance
- A-307, Aviation and Policy Regulations II
- A-309, Helicopter Flight Manuals

## II. COURSE OBJECTIVES

At the successful completion of this course, students will be able to perform the tasks of a HMGB trainee. Through simulations and exercises, students will obtain skills to competently and safely manage a helicopter to support incident and project helicopter operations.

## III. INSTRUCTOR PREREQUISITES

Refer to the Field Manager's Course Guide (PMS 901-1) for instructor prerequisites specific to this course. This guide is accessible at <http://www.nwcg.gov/pms/training/training.htm>.

This is a 300 level course. In addition to the course specific instructor prerequisites, all instructors are required to have 32 hours of instructor training such as Facilitative Instructor (M-410), or an equivalent course, as stated in the Field Manager's Course Guide.

## IV. INSTRUCTOR PREPARATION

### A. General Information

The training is structured around the student and is designed to be presented in various ways: lecture/discussion format, hands-on training, and group exercises, both in the field as well as the classroom.

Instructors must devote adequate time for their presentations and should draw from their experiences to add realism and credibility to the information provided.

Instructors are encouraged to supplement course materials that are relevant to conditions, resources, and policies of the local unit; however, they must ensure the course and unit objectives are not compromised.

Instructors may add test questions that pertain to any local information covered during the course. However, test questions in the certified course materials cannot be deleted to ensure accurate testing of the course and unit objectives.

The Course Coordinator's Guide (PMS 907) contains general information for presentation of NWCG courses. The course coordinator and instructors should be thoroughly familiar with this guide (online at <http://www.nwcg.gov/pms/training/training.htm>).

#### B. Unit 6 – Pre-Use Inspection Field Exercise

At the end of Unit 6 is an **optional** field exercise. If possible, the course coordinator or lead instructor should arrange for a pilot, helicopter, and service vehicle to be within close proximity to the training facility.

This would be an opportunity for students to complete a hands-on and visual inspection of a helicopter and service vehicle using an inspection form. Having a pilot, helicopter, and service vehicle available for this unit will enhance students learning experience.

### V. COURSE MATERIALS

See Appendix A for course ordering and support information.

#### A. Instructor Guide

The Instructor Guide is designed as a teaching aid to assist instructors in presenting the information. Each unit begins with a unit overview that outlines the lesson's approximate delivery time, objectives, learning strategy, instructional methods, required materials, and evaluation criteria.

The lesson plan for each unit is organized in a two-column format:

- The "Outline" column contains the lesson content that supports the learning objectives. This column also includes questions to ask students, descriptions of exercises, and additional teaching points to supplement information in the text. Notes to the instructor are in **BOLD CAPS**.
- The "Aids & Cues" column lists references (slide numbers, handouts, publications, etc.) that remind instructors to display or refer to specific materials.

B. Course Materials CD-ROM

The CD-ROM contains complete copies of the Instructor Guide, Appendixes, and Student Workbook.

C. Student Workbook

Student Workbooks should be ordered prior to the beginning of the course, one for each student.

D. Interagency Helicopter Operations Guide (IHOG)

The IHOG is required for presentation of this course; it provides basic policy and direction for helicopter operations. Use the most current IHOG available (online at <http://www.nifc.gov/ihog/>).

Instructors will use the IHOG in conjunction with the Instructor Guide to meet course objectives. Students will use the IHOG in conjunction with the Student Workbook.

E. Agenda

A sample agenda is on page 11. It is suggested that the timeframes be removed from the agenda handed out to students. A copy of the agenda can be inserted into the Student Workbook prior to beginning class.

VI. STUDENT TARGET GROUP

This course is required training for all personnel desiring to be qualified as a helicopter manager.

VII. STUDENT PREREQUISITES

Satisfactory performance as a helicopter crewmember (HECM).

## VIII. STUDENT PRE-COURSE WORK

### A. Requirements

The pre-course work is mandatory. To attend the course, students must complete the following A-modules:

- A-103: FAA NOTAM System (when course becomes available)
- A-109: Aviation Radio Use
- A-111: Pay Documents
- A-115: Automated Flight Following
- A-116: General Awareness Security Training
- A-200: Annual Mishap Review Year (at lead instructor's discretion)
- A-206: Aviation Acquisition and Procurement (when course becomes available)
- A-207: Aircraft Flight Scheduling (some modules may be under development and unavailable)

The pre-course work is reviewed with students on the first day of class. **Instructors must be familiar with these A-modules to provide a thorough review.**

### B. Web Site Information

The A-modules are online at the Interagency Aviation Training Web site (<https://www.iat.gov/>) or the National Business Center Aviation Management Directorate Web site (<http://amd.nbc.gov/>).

To receive credit, students must log-on and take a test at the end of each module. After completing the courses, students can enter their information in the student history link on the Web site or print and submit a certificate to the course coordinator.

## IX. COURSE SELECTION LETTER

A sample selection letter is on pages 9 and 10. This letter should explain the pre-course work, class time, date, and location. Refer to the Course Coordinator's Guide for more information on selection letters.

## X. EXAMINATION AND CERTIFICATION

Students must obtain 70% or higher on the final exam (Appendix D) to receive a certificate of completion for this course.

## XI. CADRE MEETINGS

Cadre meetings are an opportunity for instructors to meet, review the material, and discuss concerns with the course coordinator or lead instructor. The meetings are most critical for instructors who do not have previous experience with the course.

After each day's course presentation, a cadre meeting should be held to discuss concerns and progress. At the end of the course, a final cadre meeting should be conducted to evaluate instructor performance and suggest modifications for future courses.

## XII. RECOMMENDED CLASS SIZE

Maximum class size is 30 students. To facilitate exercises, a maximum of five students to one instructor is recommended.

### XIII. SPACE AND CLASSROOM REQUIREMENTS

The classroom should be chosen well in advance of the course. The choice should be based on, but not limited to, the following characteristics:

- Provide adequate area for students and equipment.
- Be free from outside interruptions and interferences.
- Have controlled lighting, good acoustics, and good ventilation.
- Have supportive facilities such as break areas, restrooms, etc.

Refer to the Course Coordinators Guide for more information.

### XIV. COURSE EVALUATION FORMS

Copies of the course evaluation forms are located in Appendix E.

#### A. Unit and Course Evaluation Forms

This is an opportunity for students to comment on the course and the quality of the instruction. These comments should be used to improve future training sessions. Distribute this form as appropriate.

#### B. Training Course Evaluation Forms

This is an opportunity for the course coordinator and instructors to comment on course design. These comments are used by NWCG Training to identify potential problems with courses and as a resource during the course revision process.

## XV. APPENDIXES

### **The following appendix is included in this Instructor Guide:**

- Appendix A – Course Ordering and Support Information

This appendix contains a list of course materials that need to be ordered as well as support material and equipment.

### **The following appendixes are on the S-372 Course Materials CD:**

- Appendix B – PowerPoints

This appendix contains the PowerPoint slides for each unit.

- Appendix C – Handouts

The handouts will need to be duplicated for each student.

- Appendix D – Final Exam and Answer Key

Make one copy of the final exam for each student.

- Appendix E – Course Evaluation Forms

Duplicate these materials for students and instructors.

## **Helicopter Management, S-372** *Selection Letter Example*

Congratulations on being selected to attend Helicopter Management, S-372 to be held at (*location*). The course will begin at (*time, date*), and end at (*time, date*).

The primary emphasis of this course will be to prepare individuals for the position of Helicopter Manager (HMGB).

**The pre-course work is mandatory.** To attend the course, you must complete the following A-modules:

- A-103: FAA NOTAM System (when course becomes available)
- A-109: Aviation Radio Use
- A-111: Pay Documents
- A-115: Automated Flight Following
- A-116: General Awareness Security Training
- A-200: Annual Mishap Review Year (at lead instructor's discretion)
- A-206: Aviation Acquisition and Procurement (when course becomes available)
- A-207: Aircraft Flight Scheduling (some modules may be under development and unavailable)

The courses can be accessed at the following Web sites:

- Interagency Aviation Training: <https://www.iat.gov/>
- National Business Center Aviation Management Directorate: <http://amd.nbc.gov/>

To receive credit, you must logon and take a test at the end of each module. After completing the courses, enter your information in the student history link on the Web site or print and submit a certificate to the course coordinator.

Please bring the following references to class:

- Interagency Helicopter Operations Guide (NFES 1885)  
<http://www.nifc.gov/ihog/>
- Federal Aviation Regulations  
[http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/](http://rgl.faa.gov/Regulatory_and_Guidance_Library/)
- Copy of a Project Aviation Safety Plan (PASP)
- Agency Aviation Policy Manuals for the Forest Service (FSM 5700) and Department of the Interior (DM 350-353)

If you desire to receive a certificate of completion for the course, please do not make travel arrangements to arrive after the scheduled start time or to depart prior to the scheduled course completion time.

In the event you cannot attend the course, please contact the course coordinator prior to the beginning of the class. This allows time for notifying personnel that may be on the waiting list to be contacted to fill the vacancy.

If you have any questions, please contact the course coordinator, *Name, phone number, e-mail.*

**Helicopter Management, S-372**  
***Sample Agenda***

Day 1

0800 Unit 0 – Introduction  
0830 Unit 1 – Aviation Policy  
1030 Unit 2 – Dispatch and Ordering  
1200 Lunch  
1300 Unit 3 – Contract Administration and Pay Documents  
1700 Daily Review/Cadre Meeting

Day 2

0800 Unit 3 – Contract Administration and Pay Documents  
1000 Unit 4 – Flight Manuals  
1200 Lunch  
1300 Unit 5 – Load Calculations  
1600 Unit 6 – Pre-Use Inspections  
1700 Daily Review/Cadre Meeting

Day 3

0800 Unit 6 – Pre-Use Inspections  
1000 Unit 7 – Maintenance  
1230 Lunch  
1330 Unit 8 – Risk Management  
1530 Unit 9 – Operations  
1700 Daily Review/Cadre Meeting

Day 4

0800 Unit 9 – Operations  
0900 Course Review  
1000 Final Exam  
1200 Course Evaluations/Cadre Close-out



## UNIT OVERVIEW

**Course** Helicopter Management, S-372

**Unit** 0 – Introduction

**Time** 30 Minutes

### Objectives

1. Introduce instructors and students.
2. Review course logistics.
3. Present course overview.
4. Discuss course expectations.
5. Review pre-course work.

### Strategy

This unit is an introduction to the course. The instructor will give an overview of the course, discuss course expectations, and review the pre-course work with students.

### Instructional Methods

- Lecture/discussion

### Instructional Aids

- Computer with LCD projector and presentation software
- National, Regional, and Local Area Supplements, Manuals and Policies
- IHOG

### Outline

- I. Welcome and Introductions
- II. Course Logistics
- III. Course Overview
- IV. Course Expectations

## Aids and Cues Codes

The codes in the Aids and Cues column are defined as follows:

IG – Instructor Guide

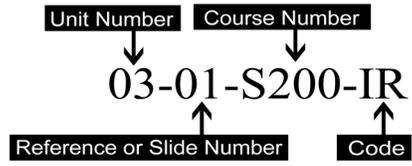
SW – Student Workbook

HO – Handout

IR – Instructor Reference

SR – Student Reference

PPT – PowerPoint



## UNIT PRESENTATION

COURSE: Helicopter Management, S-372

UNIT: 0 – Introduction

OUTLINE	AIDS & CUES
<b>NWCG MISSION STATEMENT SLIDE.</b>	0-1-S372-PPT
<b>COURSE AND UNIT TITLE SLIDE.</b>	0-2-S372-PPT
I. WELCOME AND INTRODUCTIONS	0-3-S372-PPT
<b>HAVE INSTRUCTORS AND STUDENTS PRESENT THE FOLLOWING:</b>	
<ul style="list-style-type: none"><li>• Name and job title</li><li>• Agency, home unit</li><li>• Brief background<ul style="list-style-type: none"><li>– Incident qualification</li><li>– Aviation experience</li></ul></li></ul>	
II. COURSE LOGISTICS	0-4-S372-PPT
<ul style="list-style-type: none"><li>• Breaks – be prompt; return to class at scheduled times</li><li>• Facility – vending machines, drinking fountains, restrooms, telephones, message location</li><li>• Cell phones and pagers should be turned off</li><li>• Smoking policy</li><li>• Agenda</li></ul>	

OUTLINE	AIDS & CUES
<p data-bbox="201 281 652 317">III. COURSE OVERVIEW</p> <p data-bbox="298 367 669 403">A. Course Objectives</p> <p data-bbox="393 453 1071 573">At the successful completion of this course, students will be able to perform the tasks of a Helicopter Manager (HMGB) trainee.</p> <p data-bbox="393 623 1052 789">Through simulations and exercises, students will obtain skills to competently and safely manage a helicopter to support incident and project helicopter operations.</p> <p data-bbox="298 835 695 871">B. Reference Materials</p> <ul data-bbox="393 921 1078 1003" style="list-style-type: none"> <li data-bbox="393 921 1078 1003">• Interagency Helicopter Operations Guide (IHOG)</li> </ul> <p data-bbox="461 1050 1078 1173">The IHOG is the primary job guide for interagency helicopter operations and the primary reference for this course.</p> <ul data-bbox="393 1220 1000 1302" style="list-style-type: none"> <li data-bbox="393 1220 1000 1302">• National, Regional and Local Area Supplements, Manuals, and Policies</li> </ul> <p data-bbox="298 1348 695 1383">C. Student Assessment</p> <p data-bbox="393 1434 1104 1558">Students must obtain 70% or higher on the final exam to receive a certificate of completion for the course.</p>	<p data-bbox="1136 281 1354 317">0-5-S372-PPT</p> <p data-bbox="1136 835 1354 871">0-6-S372-PPT</p> <p data-bbox="1136 1348 1354 1383">0-7-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>D. Unit and Course Evaluation Forms</p> <ul style="list-style-type: none"> <li>• Students will complete a unit evaluation form following each unit.</li> <li>• Students will complete a final course evaluation form at the end of the course.</li> </ul> <p>IV. COURSE EXPECTATIONS</p> <p><b>ASK STUDENTS:</b></p> <p>What are your expectations for this course?</p> <p><b>WRITE THEIR RESPONSES ON A FLIP CHART.</b></p> <p><b>EMPHASIZE:</b></p> <p>Some expectations may be difficult to achieve because:</p> <ul style="list-style-type: none"> <li>• Helicopter managers, and this class, have a tremendous amount of paperwork.</li> <li>• This is not a class in the tactical use of helicopters.</li> </ul> <p>The lists will be reviewed throughout the course to ensure expectations are being met.</p>	<p>0-8-S372-PPT</p>

OUTLINE	AIDS & CUES
<p><b>REVIEW PRE-COURSE WORK:</b></p> <p>As a class, review the modules listed below (the questions and answers are to assist instructors with the review). Encourage student interaction for each question. Students should focus on how the modules relate to the helicopter manager position.</p> <p><u>A-109: Aviation Radio Use</u></p> <ol style="list-style-type: none"> <li>1. As a helicopter manager, what was most informative to you? <b>Responses will vary.</b></li> <li>2. What is the frequency range for VHF-FM? <b>118.0000 – 135.9750</b></li> <li>3. Air-to-air and air-to-ground radio communications can be done on what frequency band? <b>VHF-FM and VHF-AM</b></li> <li>4. What provides control for selection and operation of all installed radio transceivers? <b>Audio Panel</b></li> <li>5. True or False: If a frequency is being used, you can select another at random. <b>False</b></li> </ol>	<p>0-9-S372-PPT</p>

OUTLINE	AIDS & CUES
<p data-bbox="203 283 565 319"><u>A-111: Pay Documents</u></p> <ol data-bbox="203 367 1096 1512" style="list-style-type: none"><li data-bbox="203 367 1096 535">1. What are the FS-6500-122 (ABS) and the AMD-23 forms used for? <b>To document work and pay vendors contracted through the government for use of their aircraft.</b></li><li data-bbox="203 577 1096 745">2. Why is it important to complete a Contract Daily Diary? <b>To document facts and to record significant events as they happen.</b></li><li data-bbox="203 787 1096 871">3. What are some examples of a significant event? <b>Unavailability, maintenance, etc.</b></li><li data-bbox="203 913 1096 1081">4. In the event you don't have a diary form, what can you use? <b>You can make up your own form and use it. The main issue is to document, document, document!</b></li><li data-bbox="203 1123 1096 1249">5. Is the daily diary a legal document? <b>Yes, it can be used in a court of law should any discrepancy arise.</b></li><li data-bbox="203 1291 1096 1512">6. Should you sign your name on these documents? Why? <b>Yes, these are legal documents that ensure the vendor will be paid. By signing your name, you are documenting that services were received by the vendor.</b></li></ol>	

OUTLINE	AIDS & CUES
<p data-bbox="203 283 755 325"><u>A-115: Automated Flight Following</u></p> <ol data-bbox="203 367 1112 1438" style="list-style-type: none"><li data-bbox="203 367 1112 577">1. What is the purpose of the automated flight following (AFF)? <b>To track the location, altitude, course, and speed of an aircraft, and provide real time information to a dispatcher.</b></li><li data-bbox="203 619 1112 829">2. To install an AFF system into an aircraft, you need an AFF kit. What is an AFF kit? <b>The modem/GPS engine controller unit and an antenna for communicating with communication satellite and GPS satellites.</b></li><li data-bbox="203 871 1112 997">3. Once the AFF is installed on an aircraft, what computer program is used to track the aircraft? <b>WebTracker</b></li><li data-bbox="203 1039 1112 1249">4. When tracking an aircraft on WebTracker, what does a red icon mean? <b>It means the satellite has lost signal with the aircraft. It does not mean that the aircraft has crashed, but it could.</b></li><li data-bbox="203 1291 1112 1438">5. What does all of this mean to you as a helicopter manager? <b>Responses will vary.</b></li></ol>	

OUTLINE	AIDS & CUES
<p><u>A-116: General Awareness Security Training</u></p> <ol style="list-style-type: none"> <li>1. Do you need to be concerned about aircraft security while at a helibase on a fire assignment? <b>Yes, aircraft theft can happen anywhere.</b></li> <li>2. What are you watching out for around aircraft? <b>Any suspicious activity; what people are doing (strange behavior, asking questions, gaining access into aircraft, etc.).</b></li> <li>3. What is the “Airport Watch Program”? <b>An airport security program equivalent to a “Neighborhood Watch” where everyone watches out for any suspicious activity.</b></li> <li>4. Who should you report suspicious activity to? <b>Your supervisor; or you can call 911 or 1-866-GA-SECURE.</b></li> <li>5. Other than your name and location, what information should you relay when reporting a suspicious individual? <b>The individual’s height, weight, hair color, scars, tattoos, clothing, their activity, etc.</b></li> <li>6. What are some ways to secure your helicopter? <b>Responses will vary.</b></li> </ol>	

OUTLINE	AIDS & CUES
<p><u>A-200: Annual Mishap Review Year</u></p> <ol style="list-style-type: none"> <li>1. How many reported mishaps were there for the year assigned? <b>Instructor needs to obtain answer from the Web site.</b></li> <li>2. Why is the information in this module important to you as a helicopter manager? <b>Responses will vary.</b></li> <li>3. Is there any common denominator with these mishaps? If so, what? <b>Instructor needs to obtain answer from the Web site.</b></li> </ol> <p><u>A-207: Aircraft Flight Scheduling</u></p> <ol style="list-style-type: none"> <li>1. What is the importance of filing a flight plan? <b>Instructor can answer this based on own experience.</b></li> <li>2. Should a flight plan be followed at all times? <b>Yes, any diversion may prove to be a big mistake should a mishap occur.</b></li> <li>3. True or False: It is not necessary to fill out a flight schedule if you're going to be flight followed by AFF. <b>False. For point to point flights, a flight schedule always needs to be filled out and submitted.</b></li> </ol>	

## UNIT OVERVIEW

**Course** Helicopter Management, S-372

**Unit** 1 – Aviation Policy

**Time** 2 Hours

### Objectives

1. Identify the helicopter manager's responsibility for obtaining and understanding information regarding aviation policy and procedures.
2. Describe the basic structure of the aviation policies of the Department of the Interior and USDA Forest Service.
3. Identify the relationship of agency policies to the Federal Aviation Regulations.
4. Demonstrate ability to navigate the IHOG and develop a working knowledge of chapter content.

### Strategy

This unit addresses the aviation policies of the Forest Service and Department of the Interior. Students will become knowledgeable in all aspects of aviation policy and regulations to perform the duties of a helicopter manager.

**Instructors for this unit should have a thorough knowledge of national aviation policies for the Forest Service and Department of Interior.**

### Instructional Methods

- Lecture/discussion

### Instructional Aids

- Computer with LCD projector and presentation software
- Agency Aviation Policy Manuals for Forest Service (FSM 5700) and Department of the Interior (DM 350-353)
- Federal Aviation Regulations (FARs)
- IHOG

## Exercise

- IHOG exercise (page 1.17)

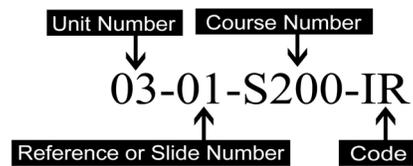
## Outline

- I. Aviation Policies
- II. Manuals, Handbooks, and Guides
- III. Policy Structures
- IV. Interagency Helicopter Operation Guide

## Aids and Cues Codes

The codes in the Aids and Cues column are defined as follows:

IG – Instructor Guide	IR – Instructor Reference
SW – Student Workbook	SR – Student Reference
HO – Handout	PPT – PowerPoint



## UNIT PRESENTATION

COURSE: Helicopter Management, S-372

UNIT: 1 – Aviation Policy

OUTLINE	AIDS & CUES
<b>UNIT TITLE SLIDE.</b>	1-1-S372-PPT
<b>PRESENT UNIT OBJECTIVES.</b>	1-2-S372-PPT 1-3-S372-PPT
I. AVIATION POLICIES	1-4-S372-PPT
A. Why policy?	1-5-S372-PPT
Policy exists to maintain the highest level of safety for agency employees who work in and around aircraft.	
Ignorance of, or noncompliance with policy, regulations, and procedures is perhaps the greatest underlying factor in natural resource agency aircraft accidents.	
B. Why so much?	1-6-S372-PPT
• To provide safe, cost-effective aviation service in support of agency goals and objectives.	
• To coordinate aviation services with those of other agencies and cooperators to meet mutual program goals and objectives.	
• To establish and maintain operating standards, practices, and procedures to prevent aircraft accidents from occurring.	

OUTLINE	AIDS & CUES
<p>C. Policy Implementation</p> <p>Agencies provide “tools” to enable the aviation user to comply with policy and procedures.</p> <p>For example, the “5-Step Card” is a tool; it lists the steps to follow to be in compliance with the basic procedures for aviation use.</p> <p>1. Who is responsible to ensure all policies are being followed when you are the helicopter manager?</p> <p>It is your responsibility to:</p> <ul style="list-style-type: none"> <li>• Obtain accurate information regarding policy and procedures.</li> <li>• Understand the applicable policy and procedures concerning the bureau/agency helicopter you are managing.</li> </ul> <p><b>DISCUSS STUDENTS AGENCY AVIATION POLICY IN RELATION TO INTERAGENCY OPERATIONS.</b></p>	<p>1-7-S372-PPT</p> <p>1-8-S372-PPT</p> <p>1-9-S372-PPT</p>
<p>2. Where can you find the most current policy?</p> <ul style="list-style-type: none"> <li>• Policy is on the internet.</li> <li>• Your local aviation manager.</li> </ul>	<p>1-10-S372-PPT</p>

OUTLINE	AIDS & CUES
II. MANUALS, HANDBOOKS, AND GUIDES	1-11-S372-PPT
A. Manuals  Manuals set general policy statements and responsibilities regarding the agency's aviation management program.	
B. Handbooks <ul style="list-style-type: none"> <li>• Handbooks contain material too specific for inclusion in the agency's manual.               <ul style="list-style-type: none"> <li>– Handbooks must be referenced in the manual</li> <li>– Handbooks are policy</li> <li>– “How to” directions</li> <li>– Training requirements</li> <li>– Performance and equipment specifications</li> </ul> </li> </ul>	1-12-S372-PPT
<ul style="list-style-type: none"> <li>• A manual or handbook supplement adapts or interprets higher level or external directive for national, regional, or local application.               <ul style="list-style-type: none"> <li>– Forest Service (FS): Supplements are color-coded.</li> <li>– Department of Interior (DOI): Agencies within DOI will supplement the Departmental Manual (DM) with their own aviation manuals or handbooks.</li> </ul> </li> </ul>	1-13-S372-PPT

OUTLINE	AIDS & CUES
<p>C. Guides</p> <p>Guides provide guidance and do not necessarily have to be followed. However, bureaus or agencies may incorporate the guide into their manual system as a requirement.</p>	1-14-S372-PPT
<p>D. Other Documents Specific to DOI</p> <p>1. Operational Procedures Memoranda</p> <p>Temporary or interim directives issued to permit the timely dissemination of instructional and procedural material.</p> <p>2. Information Bulletins</p> <p>General interest and non-directive, bear no expiration date, and may be discarded at the discretion of the recipient.</p> <p>3. Operation Guides</p> <p>Non-mandatory, but preferred procedures for a specific aspect of aviation operations.</p>	1-15-S372-PPT
<p>E. Other Documents Specific to FS</p> <ul style="list-style-type: none"> <li>• Interim Directives</li> </ul> <p>An internal directive which modifies previous direction or establishes new direction for a period of up to 18 months.</p>	

OUTLINE	AIDS & CUES
<p>F. Other Documents Common to All Agencies</p> <ul style="list-style-type: none"> <li>• Safety Alerts: <ul style="list-style-type: none"> <li>– Are red-bordered; published on an unscheduled basis.</li> <li>– Contain information regarding aviation safety.</li> <li>– Address operations, maintenance, or publications.</li> </ul> </li> </ul>	1-16-S372-PPT
<p>G. Directive Language</p> <p>Language used to issue direction in agency materials gives clues to your required response; it also helps you understand how binding the directions are.</p> <ol style="list-style-type: none"> <li>1. “Must” and “shall” convey mandatory compliance.</li> <li>2. “Ought” and “should” convey required compliance, except for justifiable reasons.</li> <li>3. “May” and “can” convey optional compliance.</li> </ol>	1-17-S372-PPT
<p>H. Directives Hierarchy</p> <p>When going lower in the structure (national level to the regional/area/state to the local level), directives become <u>more restrictive, never more lenient</u>.</p>	1-18-S372-PPT

OUTLINE	AIDS & CUES
<p>III. POLICY STRUCTURES</p>	<p>1-19-S372-PPT</p>
<p>A. Federal Aviation Regulations (FARs)</p> <p>14 CFR, Federal Aviation Regulations are rules set by the Federal Aviation Administration (FAA) for all pilots to follow in the flight environment.</p>	
<p>1. DOI and FS are technically exempt from all 14 CFR regulations except:</p> <ul style="list-style-type: none"> <li>• Registration (Part 47)</li> <li>• General Operating and Flight Rules (Part 91, sub B)</li> </ul>	<p>1-20-S372-PPT</p>
<p>2. FARs has been incorporated into the main agency manual/handbook system.</p> <ul style="list-style-type: none"> <li>• All of the FARs regulations and guidelines required to be known are already a part of your agency manual.</li> <li>• By incorporating the FARs into aircraft procurement documents, agencies can also mention additional specific requirements, such as: <ul style="list-style-type: none"> <li>– Personal protective equipment (PPE)</li> <li>– Pilot experience minimums.</li> <li>– All other requirements deemed necessary for safe missions.</li> </ul> </li> </ul>	<p>1-21-S372-PPT</p>

OUTLINE	AIDS & CUES
<p data-bbox="298 283 1019 363">B. Pertinent CFR Sections for the Helicopter Manager</p> <p data-bbox="203 411 1105 447"><b>MENTION THE IMPORTANCE OF EACH SECTION.</b></p> <p data-bbox="394 495 1057 573">1. Part 91 – General Operating and Flight Rules</p> <p data-bbox="203 625 1084 747"><b>BRIEFLY EXPLAIN PUBLIC AIRCRAFT VS. CIVIL AND HOW IT IS INTERPRETED (REFERENCE PART 91).</b></p> <ul data-bbox="475 793 1122 1556" style="list-style-type: none"> <li>• 91.119 Minimum Safe Altitude – General</li> <li>• 91.137 Temporary Flight Restrictions in Vicinity of Disaster/Hazard Area</li> <li>• 91.141 Temporary Flight Restrictions for Presidential Events</li> <li>• 91.145 Flight Operations Near Major Sports Events</li> <li>• 91.155 Basic Visual Flight Rules Weather Minimums</li> <li>• 91.107 Use of Safety Belts</li> <li>• 91.131 Restricted Category Aircraft</li> </ul>	<p data-bbox="1154 283 1386 319">1-22-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>2. Part 133 – Rotorcraft External Load Operations</p> <ul style="list-style-type: none"> <li>• 133.31 Emergency Operations</li> <li>• 133.33 Operating Rules</li> <li>• 133.35 Carriage of Persons</li> <li>• 133.45 Operating Limitations</li> </ul> <p>Rules regarding qualifications, training, limitations etc., for external loads.</p>	1-23-S372-PPT
<p>3. Part 135 – Commuter and On-Demand Operations</p> <p>Operating requirements: Commuter and on-demand operations and rules governing persons on board such aircraft.</p>	1-24-S372-PPT
<p>4. Part 137 – Agricultural Aircraft Operations</p> <ul style="list-style-type: none"> <li>• 137.1 Applicability (b) Public Emergency</li> <li>• 137.3 Definition of Terms</li> <li>• Subpart C 137.29 General (e) exemption for helicopters working on forest fires</li> <li>• 137.43 Operations in Controlled Airspace</li> <li>• 137.45 Non-Observance of Airport Traffic Pattern</li> <li>• 137.49 Operations Over Other Than Congested Area</li> </ul>	1-25-S372-PPT

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• 137.51 Operations Over Congested Area – General</li> </ul> <p>Operating an aircraft for the purpose of dispensing any economic poison, plant nourishment, pest control, and plant life.</p> <p>5. These FARs must be complied with regardless of whether we operate under public aircraft.</p>	
<p>C. Acronyms</p> <p>The following acronyms are used for basic flight information and air traffic controller procedures:</p> <ul style="list-style-type: none"> <li>• Notice to Airmen (NOTAM)</li> <li>• Advisory Circulars (AC)</li> <li>• Temporary Flight Restrictions (TFR)</li> <li>• Instrument Flight Rules (IFR)</li> <li>• Visual Flight Rules (VFR)</li> </ul>	1-26-S372-PPT
<p>D. Agency Level Policy Structures</p> <p>Although policy structures seem overwhelming, we have explored the information needed to follow these structures.</p> <p>Think of the structures as a handy reference tool for finding the policy you need.</p>	1-27-S372-PPT

OUTLINE	AIDS & CUES
<p>E. Forest Service Policy Structures</p> <p>1. Forest Service Manual (FSM) 5700 objectives:</p> <ul style="list-style-type: none"> <li>• To manage aviation functions and activities to achieve safe, cost-effective aviation services in support of the Forest Service mission, goals, and objectives.</li> <li>• Coordination of aviation activities and operations with other agencies and cooperators to meet mutually agreed-upon standardized goals and objectives and achieve program efficiencies.</li> </ul> <p>2. Directive hierarchy</p> <p>Remember: With policy, as you move down the structure, directives become more specific, never broader.</p> <p>For example:</p> <p>The FSM 5700 contains broad Forest Service policy, while a handbook such as the Forest Service Handbook 5709.14 “Smokejumper Paracargo,” contains detailed information of specific procedures.</p>	<p>1-28-S372-PPT</p> <p>1-29-S372-PPT</p> <p>1-30-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>3. Supplements</p> <p>Regions and Forests in the Forest Service often supplement national policy in the FSM 5700 Manual and Handbook with more specific regional and local policy.</p> <p>Remember, regional or local levels cannot make policy or procedures less restrictive.</p>	1-31-S372-PPT
<p>F. DOI Policy Structures</p>	1-32-S372-PPT
<p>National Business Center – Aviation Management Directorate (NBC-AMD) has the responsibility of overseeing aviation management in DOI.</p>	1-33-S372-PPT
<p>1. DOI Manual DM 350-354 objectives:</p> <ul style="list-style-type: none"> <li>• Establishes management responsibilities, policies, and procedures for the use and operation of aircraft.</li> <li>• Applicable to all DOI bureaus and offices that use or operate aircraft.</li> </ul>	1-34-S372-PPT
<p>2. Directive hierarchy</p> <p>Remember: With policy, as you move down the structure, directives become more specific, never broader.</p>	1-35-S372-PPT



OUTLINE	AIDS & CUES
<p>Be aware of your unit’s local aviation plan or manual supplement (always check to ensure references are current).</p> <p>Use local expertise (aviation manager, dispatcher). If local expertise does not have an answer, move up the chain until you receive an answer.</p>	1-38-S372-PPT
<p>2. Policy “red flags”</p> <p>Watch for the following red flags when discussing policy or procedures with other aviation users—especially while preparing for a mission or in the field.</p> <ul style="list-style-type: none"> <li>• Someone tells you “<i>I think this is what the policy is.</i>”</li> <li>• Someone tells you “<i>This is what the policy is</i>” but does not have the reference in writing.</li> <li>• You think it would be “<i>easier</i>” to bypass the rules and just “<i>get the job done.</i>”</li> </ul>	1-39-S372-PPT
<p>Remember: Ignorance of, or noncompliance with policy, regulations, and procedures is perhaps the greatest underlying factor in natural resources agency aircraft accidents.</p>	1-40-S372-PPT

OUTLINE	AIDS & CUES
<p data-bbox="203 283 1019 359">IV. INTERAGENCY HELICOPTER OPERATION GUIDE</p> <p data-bbox="203 411 971 531"><b>REFER STUDENTS TO THE IHOG. DISCUSS AREAS OF POLICY REQUIREMENTS VS. RECOMMENDATIONS.</b></p> <p data-bbox="297 581 1062 701">The IHOG was originally developed as a way for various agencies to work together in an interagency environment.</p> <ul data-bbox="297 751 1068 919" style="list-style-type: none"> <li>• Some agencies have adopted it as policy for all helicopter operations.</li> <li>• Other agencies use it as a guide only.</li> </ul> <p data-bbox="203 968 1089 1043"><b>AS A CLASS, REVIEW THE IHOG CHAPTERS AND APPENDIXES (30 MINUTES).</b></p> <p data-bbox="203 1094 1013 1169"><b>ENSURE STUDENTS HAVE A GOOD UNDERSTANDING OF THE IHOG CONTENTS.</b></p>	<p data-bbox="1154 283 1386 317">1-41-S372-PPT</p> <p data-bbox="1154 751 1386 785">1-42-S372-PPT</p> <p data-bbox="1154 968 1386 1087">1-43-S372-PPT thru 1-46-S372-PPT</p>

OUTLINE	AIDS & CUES
<p><b>IHOG EXERCISE.</b></p> <p><u>Purpose:</u> To become familiar with the IHOG by identifying specific information in the chapters and appendixes.</p> <p><u>Format:</u> Groups of 4-5</p> <p><u>Time:</u> 1 hour</p> <p><u>Instructions:</u></p> <ol style="list-style-type: none"> <li>1. Assign each group 2 or 3 chapters of the IHOG to review.</li> <li>2. Have each group select two appendixes they think are important to helicopter managers.</li> <li>3. Tell groups they have 30 minutes to: <ul style="list-style-type: none"> <li>• List five important topics of their assigned chapters.</li> <li>• List the appendixes they selected and why.</li> </ul> </li> <li>4. When finished, have each group present their answers to the class (allow 30 minutes).</li> </ol> <p><b><u>End of Exercise.</u></b></p>	<p>1-47-S372-PPT</p>
<p><b>UNIT 1 REVIEW:</b> Show slides 48 – 53. Have students answer which policy applies to each scenario. Point out the difference in policies for the FS and DOI as they apply. The scenarios and answers are also on pages 1.19 – 1.20.</p>	<p>1-48-S372-PPT thru 1-53-S372-PPT 1-1-S372-IR</p>
<p><b>REVIEW UNIT OBJECTIVES.</b></p>	<p>1-54-S372-PPT 1-55-S372-PPT</p>



## Unit 1 Review

1. Bob is a new employee whose expertise is aerial photography. You, as his supervisor, must ensure he receives appropriate aviation safety training before he takes any flights.

**Department of Interior:**

- **350 DM 1 Appendix 3, D., Mgt. Resp.**
- **OPM 04 Aviation User Program**

**Forest Service:**

- **FSM 5725.04a Responsibility, FSM 5725.06 Training Requirements**

2. Rebecca arranges an aerial recon, via helicopter, of lands being purchased by her agency. Since she will be landing at remote sites, she knows to wear PPE.

**Department of Interior:**

- **351 DM 1.7; ALSE Handbook**

**Forest Service:**

- **FSM 5716.31 Personal Protective Equipment**

3. You hired an aircraft to spray herbicide under an end product contract. The wildlife biologist insists on being onboard to advise the pilot of sensitive areas to avoid. You tell the biologist, "Sorry buddy, find another way to do it."

**Department of Interior:**

- **OPM-35, End Product & 353 DM 1.2.A.(3) Covered Services**

**Forest Service:**

- **FSM 5711.2-End Product Contracts**

4. Ethel's Flying Service wants a government contract. You have to advise Ethel that her pilot with 1200 hours of PIC time under his belt does not have enough time to fly on our contracts.

**Department of Interior:**

- **351 DM 3.3, Vendor Pilot Qualifications**

**Forest Service:**

- **FSH 5709.16.22 Experience Standards**

5. Since you are the only one on your unit who has an aviation background, your supervisor asks you to write an Aircraft Mishap Prevention Plan. You know exactly where to go for guidance!

**Department of Interior:**

- **352 DM 1.9, Aviation Safety Program**

**Forest Service:**

- **FSM 5721, Aviation Safety & Prevention Planning**

6. Ann buys her dream aircraft and plans to use it for official travel as well as the low level mission her program plans to fly for a habitat survey. What do you say to this?

**Department of Interior:**

- **OPM-03, Use of Privately Owned Aircraft & 350 DM 1.7 Transport of Pax; 351 DM 1.7.A. (1) Special Use Activities**

**Forest Service:**

- **FSM 5713.42-FS; Employee Owned Aircraft; FSM 5716.3-Flight Below 500'; FSM 5714.11 & 5709.16.11.26 paragraph 3 Operational Requirements-Pilots**

## UNIT OVERVIEW

**Course** Helicopter Management, S-372

**Unit** 2 – Dispatch and Ordering

**Time** 1½ Hours

### Objectives

1. Identify requirements for manager's kit and pre-dispatch preparedness.
2. Given a resource order/aircraft request form, identify information required for the dispatch.
3. Demonstrate knowledge of the process of “marrying up” modules with aircraft.
4. Identify procedures for aircraft tracking and flight following. Describe the limitations of automated flight following.

### Strategy

This unit provides information that will be beneficial when students accept an assignment as a helicopter manager. Through classroom lecture, students receive instruction on the initial preparedness, being assigned to a module and aircraft, and aircraft tracking.

**The instructor for this unit should be knowledgeable in resource ordering procedures on a regional/area or national level, and familiar with procedures for all risk assignments. This unit can be modified to meet local needs.**

### Instructional Methods

- Lecture/discussion

### Instructional Aids

- Computer with LCD projector and presentation software
- Helicopter Manager kit
- IHOG

**The instructor must provide the following handouts (1 copy per student):**

- Current 1-800 number for NICC Flight Following
- Current GACC phone list
- OMB Circulars: A-76 and A-126 (available online at <http://www.whitehouse.gov/omb/circulars/a126/a126.html>)

**Exercise**

- Helicopter Manager Kit (page 2.4)

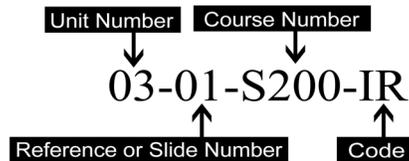
**Outline**

- I. Pre-Dispatch Responsibilities
- II. Module Preparation
- III. Pre-Use Briefing
- IV. Aircraft Resource Ordering
- V. Flight Tracking

**Aids and Cues Codes**

The codes in the Aids and Cues column are defined as follows:

- |                       |                           |
|-----------------------|---------------------------|
| IG – Instructor Guide | IR – Instructor Reference |
| SW – Student Workbook | SR – Student Reference    |
| HO – Handout          | PPT – PowerPoint          |



## UNIT PRESENTATION

COURSE: Helicopter Management, S-372

UNIT: 2 – Dispatch and Ordering

OUTLINE	AIDS & CUES
<b>UNIT TITLE SLIDE.</b>	2-1-S372-PPT
<b>PRESENT UNIT OBJECTIVES.</b>	2-2-S372-PPT 2-3-S372-PPT
<b>HAND OUT OMB CIRCULARS A-76 AND A-126.</b>	
<b>I. PRE-DISPATCH RESPONSIBILITIES</b>	2-4-S372-PPT
<p>Prior to an assignment, you need to be mentally and physically prepared. Make sure you have the following:</p> <ul style="list-style-type: none"><li>• PPE (see IHOG, chapter 9)</li><li>• A current Incident Qualifications Card (red card)</li><li>• Position task book(s)</li><li>• A complete helicopter manager kit</li></ul> <p>Helicopter managers are responsible for assembling and maintaining their kit.</p>	



OUTLINE	AIDS & CUES												
<p>A. Dispatch Ordering Flow Chart</p> <p>Initial attack dispatch places an aircraft resource order locally (they check with cooperators first).</p> <ul style="list-style-type: none"> <li>• If the order is unfilled, it goes to the Geographical Area Coordination Center (GACC).</li> <li>• If the order is still unfilled, it goes to the National Interagency Coordination Center (NICC) in Boise, Idaho.</li> <li>• NICC has the ultimate authority regarding use of aircraft resources.</li> <li>• This cycle returns to the local initial attack dispatch.</li> </ul>	<p>2-6-S372-PPT</p>												
<p>When a helicopter is ordered for any fire assignment, the minimum number of personnel that must be assigned to each helicopter is:</p> <table border="1" data-bbox="284 1260 1096 1438"> <thead> <tr> <th><u>Category</u></th> <th><u>Standard Category</u></th> <th><u>Restricted Category</u></th> </tr> </thead> <tbody> <tr> <td>Type 1</td> <td>Manager plus 4</td> <td>Manager only</td> </tr> <tr> <td>Type 2</td> <td>Manager plus 3</td> <td>Manager only</td> </tr> <tr> <td>Type 3</td> <td>Manager plus 2</td> <td>Manager only</td> </tr> </tbody> </table> <p>In Alaska, the minimum is a manager for all categories (although modules are often assigned).</p>	<u>Category</u>	<u>Standard Category</u>	<u>Restricted Category</u>	Type 1	Manager plus 4	Manager only	Type 2	Manager plus 3	Manager only	Type 3	Manager plus 2	Manager only	<p>2-7-S372-PPT</p>
<u>Category</u>	<u>Standard Category</u>	<u>Restricted Category</u>											
Type 1	Manager plus 4	Manager only											
Type 2	Manager plus 3	Manager only											
Type 3	Manager plus 2	Manager only											
<p>When a fire helicopter is ordered, a manager and module must be ordered at the same time through the dispatch system.</p> <p>A manager must be identified before a Call When Needed (CWN) helicopter can be assigned.</p>	<p>2-8-S372-PPT</p>												

OUTLINE	AIDS & CUES
<p><b>ASK STUDENTS:</b></p> <p>How are aircraft and modules listed and tracked through the dispatch system?</p> <p><b>Answer:</b> Aircraft are an “A” number for exclusive use, and modules are an “O” number for CWN.</p> <p><b>ENSURE STUDENTS UNDERSTAND HOW THE PROCESS WORKS.</b></p> <p>B. Acceptance of Assignment</p> <p>Before leaving your home unit, obtain a copy of the dispatch information or flight order form (Resource Order).</p> <p>1. The resource order will have all pertinent information:</p> <ul style="list-style-type: none"> <li>• Incident Name</li> <li>• Incident Number</li> <li>• Contact Information</li> <li>• Contact Phone Numbers</li> <li>• Flight Following Information</li> <li>• Frequencies</li> <li>• Charge Codes</li> </ul> <p><b>REFER STUDENTS TO THE RESOURCE ORDER FORM EXAMPLES (SW pages 2.11 – 2.12; IG pages 2.15 – 2.16).</b></p>	<p>2-9-S372-PPT</p> <p>2-10-S372-PPT 2-1-S372-IR/SR</p>

OUTLINE	AIDS & CUES
<p>2. Specialized equipment that is essential for the job should be included on your resource order.</p> <ul style="list-style-type: none"> <li>• Laptop</li> <li>• Cell phone, SAT phone</li> <li>• GPS unit</li> </ul> <p>If the items are not included on your resource order and become lost, damaged, or stolen, the incident will not replace them.</p>	2-11-S372-PPT
<p>3. The local unit’s dispatch office may be able to provide you with additional information such as:</p> <ul style="list-style-type: none"> <li>• Briefing packets</li> <li>• Maps</li> <li>• Situation updates</li> <li>• Additional frequencies and contacts</li> </ul>	2-12-S372-PPT
<p>II. MODULE PREPARATION</p> <p>The helicopter manager may or may not know the other module members or where they are from.</p> <p>If possible, make contact prior to dispatch. Verify items like PPE, radio and radio equipment compatibility, and any details to “marrying up.”</p> <p><b>EMPHASIZE:</b></p>	2-13-S372-PPT
<p>“Marrying up” of the helicopter and module should occur at a pre-designated location away from the incident. This is where the module manager completes the pre-use inspection and documentation.</p>	2-14-S372-PPT

OUTLINE	AIDS & CUES
<p>III. PRE-USE BRIEFING</p> <p>When you arrive at the designated location to marry up with the helicopter and module:</p> <ul style="list-style-type: none"> <li>• Gather all helicopter module and aircraft crew information (names, qualifications, resource order numbers, etc.).</li> <li>• Discuss standard operating procedures, what your expectations are, and how you expect the module to perform.</li> <li>• Review the helicopter agreement/contract. <ul style="list-style-type: none"> <li>– Most helicopter agreements/contracts contain standard language, but some may vary between geographical locations.</li> <li>– Know what the contract says to do your pre-use inspections and administer the agreement/contract accordingly.</li> <li>– Review what flight payment document is required.</li> </ul> </li> </ul>	<p>2-15-S372-PPT</p>
<p>IV. AIRCRAFT RESOURCE ORDERING</p> <p>All National CWN contract Type 1 and Type 2 helicopters are ordered through NICC, whether they are needed for fire or resource work.</p> <p>Alaska, however, has Type 1 and Type 2 helicopters available locally (“on-call” contract).</p>	<p>2-16-S372-PPT</p>



OUTLINE	AIDS & CUES
<p>2. Type 3 helicopters are dispatched locally or through GACCs.</p> <ul style="list-style-type: none"> <li>• Orders to NICC for Type 3 are placed with GACCs.</li> <li>• In rare instances, NICC may hire Type 3 helicopters from the AMD source list. If so, NICC will consult with the involved GACC(s) of this intention.</li> </ul>	2-20-S372-PPT
<p>V. FLIGHT TRACKING</p> <p>Flight tracking is a very important function while ferrying from point to point.</p> <p>A. What purpose does flight tracking serve?</p> <ul style="list-style-type: none"> <li>• Safety</li> <li>• Resource utilization</li> <li>• Accurate flight planning</li> <li>• Cost savings</li> </ul>	2-21-S372-PPT
<p>B. NICC will flight track for:</p> <ul style="list-style-type: none"> <li>• All aircraft crossing GACC boundaries that have been ordered by or through NICC.</li> <li>• CWN helicopters during mobilization.</li> <li>• CWN helicopters during demobilization (only if government personnel are onboard).</li> <li>• Exclusive, National, and Type 3 helicopters crossing GACC boundaries.</li> </ul>	2-22-S372-PPT

OUTLINE	AIDS & CUES
<p>C. Procedures for Flight Tracking</p> <ul style="list-style-type: none"> <li>• Flight plan is received from GACC (Exclusive or National).</li> <li>• Flight plan from contractor/vendors/pilots (CWN).</li> <li>• NICC faxes copy of flight plan to the receiving GACC.</li> <li>• NICC relays flight information via telephone to receiving units prior to departure, each stop, and upon arrival at their final destination.</li> </ul>	2-23-S372-PPT
<ul style="list-style-type: none"> <li>• When managers ferry from one location to another outside of their region/area, they need to: <ul style="list-style-type: none"> <li>– Notify NICC with their flight plan, and</li> <li>– Contact the NICC aircraft desk at every fuel or overnight stop along the way (1-800-994-6312).</li> </ul> </li> </ul>	2-24-S372-PPT
<ul style="list-style-type: none"> <li>• Each GACC has their own boundaries for the area they serve. Notify the represented GACC when entering their area.</li> </ul>	2-25-S372-PPT
<p><b>HAND OUT “GACC CONTACT INFORMATION.” HAVE STUDENTS IDENTIFY THEIR GACC AND THE 24-HOUR CONTACT NUMBER.</b></p>	2-26-S372-PPT 2-2-S372-HO
<ul style="list-style-type: none"> <li>• Flight following requirements must be adhered to (according to agency policy) during all point-to-point flights, once on scene, and during all missions.</li> </ul>	2-27-S372-PPT

OUTLINE	AIDS & CUES
<p>D. Automated Flight Following (AFF)</p> <p>AFF is one type of agency flight following that provides dispatch offices much greater detail and accuracy on aircraft location and flight history.</p> <ul style="list-style-type: none"> <li>• AFF can be used to assist flight tracking of most national resources (air tankers, lead planes, helicopters, smokejumper aircraft, etc.)</li> <li>• AFF has its limitations; it does not take the place of a dispatcher or other flight follower.</li> </ul>	<p>2-28-S372-PPT</p> <p>2-29-S372-PPT</p> <p>2-30-S372-PPT</p>
<p>E. Pros and Cons of AFF</p> <p>1. Communications</p> <ul style="list-style-type: none"> <li>• Pros – Reduces the need for a 15 minute verbal check-in, leaving more clear air for other essential communications.</li> <li>• Cons – Complacency; can negatively reduce communication in general.</li> </ul> <p>Communicate prior to mission and attain mutual understanding of local flight following procedures (15 minutes still preferred, or is 30 minutes acceptable?).</p> <p>Ensure good radio communications in the area you are working. Have a good idea of areas with limited or no contact due to terrain features, mission elevation, etc., and relay to dispatch.</p>	

OUTLINE	AIDS & CUES
<p>Pre-identify mission dip sites or landing zones. If possible, communicate on short final to these sites with whoever performs the flight following. Thus, if you turn “RED” on the screen, they will not go into “Rescue Mode.”</p> <p>2. Resources tracking</p> <ul style="list-style-type: none"> <li>• Pros – Relatively “real time” tracking (average 2-minute delay) allows for quicker response to more defined area in case of Search and Rescue of downed aircraft.</li> <li>• Cons – More equipment to purchase, install, and maintain. Also requires a subscription. If the switch is flipped, “Big Brother” knows where you are.</li> <li>• Test AFF unit regularly; make sure all components are connected.</li> </ul> <p>3. Technology (computers, satellites)</p> <ul style="list-style-type: none"> <li>• Pros – Excellent piece of equipment; when operating correctly it makes work easier.</li> <li>• Cons – Requires electricity; does not work after a power outage.</li> </ul>	

OUTLINE	AIDS & CUES
<p>4. Remember:</p> <ul style="list-style-type: none"> <li>• Not all units use AFF.</li> <li>• Not all aircraft have AFF installed.</li> <li>• Don't rely on AFF alone.</li> </ul> <p>AFF installed on the aircraft does not preclude responsibilities for a flight plan!</p> <p><b>ENSURE STUDENTS UNDERSTAND FLIGHT FOLLOWING REQUIREMENTS. DISCUSS ANY ADDITIONAL INFORMATION APPLICABLE TO THE LOCAL AREA OR REGION.</b></p>	<p>2-31-S372-PPT</p>
<p><b>REVIEW UNIT OBJECTIVES.</b></p>	<p>2-32-S372-PPT 2-33-S372-PPT</p>



<b>RESOURCE ORDER</b>		<b>2. Incident / Project Name</b>		<b>3. Incident / Project Order Number</b>		<b>Financial Codes</b>	
<b>AIRCRAFT</b>		Rippin' Fire		CO-GJD-000001			
Initial Date/Time 04/18/05 1142		Frequency Type Air to Air		Resource Assigned Unit ID			
Assigned Frequency 126.475		Base MDM Ute, CO		Resource Assigned			
6. TWN 1N		RNG 2W		SEC 10		8. Incident Base/ Phone Number CO-GJC (Dispatch) 970-257-4800. CO-GJC (Dispatch) Expanded Crews - 970-244-3123, CO-GJC (Dispatch)	
LAT. 39 10 10N		LONG. 108 41 35W		9. Jurisdiction / Agency Western Slope C		10. Ordering Office Grand Junction Air Ce	
11. Aircraft Information		Frequency Type Air to Ground		Reorder Base GJT		Other Aircraft/Hazards (within 1 mile) Powerline-39 10 10 N / 108-41 35 W	
Bearing 237		Contact Name RHL		Assigned Frequency 126.475			
Distance 3		Qty 1		171.550			
19		8		JNC			
231		50		RIL			

Request Number	Ordered Date/Time	From	To	Qty	Resource Requested	Needed Date/Time	Deliver To	From Unit	To Unit	Assigned Date/Time	Resource Assigned Unit ID	Resource Assigned	M/D Ind	Estimated Time of Departure	Estimated Time of Arrival	Released Date	Released To
A-1	04/18/05 1143 MST	CO-GJC (Dispatch) 970-257-4800	CO-GJC	1	Helicopter, Type 3 Standard	04/18/05 1142 MST	Rippin' Fire	CO-GJC	CO-GJC	04/18/05 1203 MST	CO-GJD	Geo-Seas Helicopters, Inc. HELICOPTER-6 TA (N316TA) (CO-GJC)	M	04/18/05 1200 MST	04/18/05 1200 MST		
Travel Mode Special Needs																	
Reporting Instructions																	
A-1.1	04/18/05 1159 MST	CO-GJC (Dispatch) 970-257-4800	CO-GJC	1	HELICOPTER MANAGER, CALL WHEN NEEDED	04/18/05 1142 MST	Rippin' Fire	CO-GJC	CO-GJC	04/18/05 1159 MST	CO-GJD	Johnson, Chad (CO-GJC)	M	04/18/05 1200 MST	04/18/05 1200 MST		
Travel Mode Special Needs																	
Reporting Instructions																	
A-1.2	04/18/05 1159 MST	CO-GJC (Dispatch) 970-257-4800	CO-GJC	1	HELICOPTER CREW MEMBER	04/18/05 1142 MST	Rippin' Fire	CO-GJC	CO-GJC	04/18/05 1159 MST	CO-GJD	Blair, Cody (CO-GJC)	M	04/18/05 1200 MST	04/18/05 1200 MST		
Travel Mode Special Needs																	
Reporting Instructions																	
A-1.3	04/18/05 1159 MST	CO-GJC (Dispatch) 970-257-4800	CO-GJC	1	HELICOPTER CREW MEMBER	04/18/05 1142 MST	Rippin' Fire	CO-GJC	CO-GJC	04/18/05 1159 MST	CO-WRF	Boym, Mala (CO-GJC)	M	04/18/05 1200 MST	04/18/05 1200 MST		
Travel Mode Special Needs																	
Reporting Instructions																	

<b>13. User Documentation</b>	
Req. No. Documentation	Entered By

## UNIT OVERVIEW

<b>Course</b>	Helicopter Management, S-372
<b>Unit</b>	3 – Contract Administration and Pay Documents
<b>Time</b>	8 Hours

### Objectives

1. Demonstrate knowledge of requirements to administer helicopter contracts and procurement agreements.
2. Identify the different types of contracts and when to use each.
3. Identify the differences between AMD-23 and Aviation Business System program to determine how and when to use each.
4. Successfully complete an AMD-23 and use the Aviation Business System.
5. Explain the aircraft rental agreement contract.
6. Explain the on-call contract.
7. Identify user responsibilities, problem areas, and where to find the answers.

### Strategy

This unit gives students experience in forms used by the position, administering helicopter contracts, and processing pay documents for services rendered.

**It is recommended that a contracting officer or contracting officer representative instruct this unit. Instructors who teach the ABS section should thoroughly know the ABS program.**

### Instructional Methods

- Lecture/discussion

### Instructional Aids

- Computer with LCD projector and presentation software
- National Interagency CWN Helicopter Contract (one per student)
- For the ABS Hands-on exercise, each pair of students will need one computer with ABS Disconnect Application loaded

**The cadre will need to provide examples of the following for each student:**

- Regional Type 3 Helicopter Contract
- Helicopter ARA with pertinent supplements
- Current list of names and phone numbers of AMD contacts for contract issues
- Blank copies of AMD-23 forms (US DOI Flight Payment Document)
- Blank copies of Pilot Flight Time and Duty Day Logs

**Exercises**

- Contracting (page 3.29) – **The cadre must develop answers for this exercise using current aircraft “N” number and contract rates, and copies of current CWN contract (Type 1 and Type 2) and ARA.**
- Contract and Pay Scenario 1 (page 3.35)
- ABS Hands-on (page 3.49)

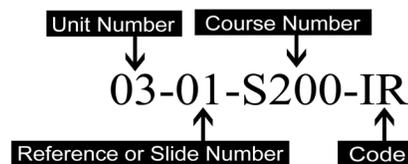
**Outline**

- I. Helicopter Manager Responsibilities
- II. Aviation Contracts
- III. Contract Components
- IV. Interagency CWN Helicopters Contract
- V. Aircraft Rental Agreement
- VI. ARA Source List
- VII. Pay Documents
- VIII. Aviation Business System
- IX. Access to ABS

**Aids and Cues Codes**

The codes in the Aids and Cues column are defined as follows:

- |                       |                           |
|-----------------------|---------------------------|
| IG – Instructor Guide | IR – Instructor Reference |
| SW – Student Workbook | SR – Student Reference    |
| HO – Handout          | PPT – PowerPoint          |



## UNIT PRESENTATION

COURSE: Helicopter Management, S-372

UNIT: 3 – Contract Administration and Pay Documents

OUTLINE	AIDS & CUES
<b>UNIT TITLE SLIDE.</b>	3-1-S372-PPT
<b>PRESENT UNIT OBJECTIVES.</b>	3-2-S372-PPT 3-3-S372-PPT
I. HELICOPTER MANAGER RESPONSIBILITIES	3-4-S372-PPT
Helicopter managers wear many hats and all are equally important.	
<ul style="list-style-type: none"><li>• Safety of personnel and helicopter operations</li><li>• Knowledge of regulations and policies</li><li>• Thorough understanding of aviation contracts</li><li>• Planning, with flexibility to deal with change</li><li>• Technical expertise with equipment and procedures of a particular mission</li><li>• Module leadership</li><li>• Knowledge of aircraft operation and maintenance requirements</li><li>• Problem solving</li><li>• Accountability and documentation</li></ul>	

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Paperwork</li> </ul> <p>Helicopter managers deal with a tremendous amount of paperwork.</p> <p>From day-to-day pay document entries, to documenting the events surrounding an incident, paperwork is an important responsibility of the helicopter manager.</p> <p>Helicopter managers must keep thorough, accurate, and orderly records of the government's business with the assigned aircraft.</p>	3-5-S372-PPT
<p>II. AVIATION CONTRACTS</p> <p>Competent use of the contract has a huge impact on the effectiveness of helicopter operations.</p>	3-6-S372-PPT
<p>A. Types of Contracts</p> <p>Helicopter managers may be assigned to a variety of different contracts:</p> <ul style="list-style-type: none"> <li>• National Call-When-Needed</li> <li>• Regional Type 3 Call-When-Needed</li> <li>• Exclusive Use</li> <li>• Aircraft Rental Agreement</li> <li>• On-Call</li> <li>• Occasionally others</li> </ul> <p>Each type of contract is similar to the other; however, specific provisions may be different.</p>	3-7-S372-PPT
<p>Spend significant time reading each contract. The contents are organized into similar, but not always identical, sections.</p>	3-8-S372-PPT

OUTLINE	AIDS & CUES
<p>Familiarity with this structure will help you find the information needed to operate and document pay for services—no matter which contract you have.</p>	
<p><b>HAND OUT “CONTRACT AUTHORITIES.” BRIEFLY REVIEW THE DUTIES AND RESPONSIBILITIES OF THE POSITIONS.</b></p>	3-1-S372-HO
<p><b>ASK STUDENTS:</b></p>	
<p>Who is the one person that can make changes to the contract?</p>	3-9-S372-PPT
<p>B. “It Depends on the Contract”</p> <p>This phrase will become very familiar to the helicopter manager.</p>	3-10-S372-PPT
<p>Contract questions do not have a set of answers. <b>The only answer is to read the contract; phone the COR or CO if you have questions.</b></p>	
<p>C. Helicopter Manager’s Authority</p> <p>The helicopter manager’s delegated authority is specified in the contract, or in a letter that accompanies the contract/rental agreement being used.</p> <p>Some helicopter managers are the COR for their contract; most are not. Review your agency requirements for COR qualification.</p>	3-11-S372-PPT

OUTLINE	AIDS & CUES
<p>III. CONTRACT COMPONENTS</p> <p><b>EXPLAIN THE SIMILARITIES OF SECTIONS WITH AVIATION CONTRACTS.</b></p> <p>A. Section A - Solicitation/Contract/Order for Commercial Items</p> <p>The first few pages provide the name of the contracting officer, effectiveness dates of the contract, amendments, and table of contents.</p> <p>There may be other forms, checklists, or examples in this section, depending on the contract.</p>	3-12-S372-PPT
<p>B. Section B - Terms, Supplies or Services, and Prices</p> <p>This section describes the basic terms of the contract, such as rates for flight, additional personnel, requirements of aircraft performance, or additional equipment offered.</p> <p>National contracts do not have a section B; those items are found in parts of sections A and C.</p>	3-13-S372-PPT
<p>C. Section C - Description/Specifications/Work Statement</p> <p>This section describes in detail the equipment involved, the authorities of the people involved, and the specifics of the work to be performed.</p> <p>Rates of payment are found in section B, if there is one. How those rates apply, what will be paid for and what won't, is found in section C.</p>	3-14-S372-PPT

OUTLINE	AIDS & CUES
<p>Section C is the largest section in the contract. It provides the “guts of the contract” such as:</p> <ul style="list-style-type: none"> <li>• Everything from pilot duty limitations to maintenance on how the vendor is paid.</li> <li>• Specific guidelines for all aspects of the contracted work to be performed.</li> </ul>	3-15-S372-PPT
<p>Many items vary from contract to contract, but some items are consistent—particularly those that are derived from federal regulation or policy.</p>	3-16-S372-PPT
<p><b>WHEN TEACHING THE FOLLOWING SECTION:</b></p>	
<ul style="list-style-type: none"> <li>• <b>Instructors and students will need to refer to the current Interagency CWN Helicopter Contract.</b></li> <li>• <b>Follow the outline below and briefly explain the information in each section. Do not get too detailed; the intent is for students to be able to refer to the appropriate sections when necessary.</b></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>Hand out “CWN Helicopter Procurement Comparison.”</b></li> </ul>	3-2-S372-HO
<p>IV. INTERAGENCY CWN HELICOPTERS CONTRACT</p> <p>A. Table of Contents</p> <ul style="list-style-type: none"> <li>• Letter to CWN Helicopter Contractors</li> <li>• Flight Use Report Distribution/Instructions</li> <li>• Aircraft Use Report, AMD-23 Instructions</li> </ul>	3-17-S372-PPT

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Flight Use Report, FS-6500-122 Instructions</li> <li>• Flight Following Procedures</li> <li>• Inspection and Approval Information</li> <li>• Helicopter and Service Truck Pre-Use Checklist</li> <li>• Hourly Flight Rates</li> <li>• Additional Contract Rates and Contract Information</li> <li>• Minimum Performance Requirements</li> <li>• Type I Limited Helicopter Information Chart</li> <li>• Type I Standard Helicopter Information Chart</li> <li>• Type II Standard Helicopter Information Chart</li> <li>• Type II Limited Helicopter Information Chart</li> <li>• Current Modifications</li> </ul>	

OUTLINE	AIDS & CUES
<p>B. Section C - Description/Specifications/Work Statement</p> <p>C-1 Scope of Contract</p> <p>C-2 Certifications</p> <p>C-3 Government Furnished Property</p> <p>C-4 Aircraft Requirements</p> <p>C-5 Aircraft Maintenance</p> <p>C-6 Aircraft and Equipment Security</p> <p>C-7 Avionics Requirements</p> <p>C-8 Contractor Furnished Avionics Systems</p> <p>C-9 Avionics Installation and Maintenance Standards</p> <p>C-10 Operations</p> <p>C-11 Contractor's Environmental Responsibilities</p> <p>C-12 Personnel</p> <p>C-13 Conduct and Replacement of Personnel</p> <p>C-14 Suspension and Revocation of Personnel</p> <p>C-15 Substitution of Personnel, Aircraft, and Equipment</p> <p>C-16 Relief Costs</p>	

OUTLINE	AIDS & CUES
<p data-bbox="391 283 992 321">C-17 Flight Hour and Duty Limitations</p> <ul style="list-style-type: none"> <li data-bbox="488 369 1089 489">• Pilot flight time and duty limitations are consistent between DOI/USFS contracts. <ul style="list-style-type: none"> <li data-bbox="545 537 1084 621">– The federal government follows the FARs by policy.</li> <li data-bbox="545 669 1097 753">– The vendor pilot must follow the FARs by law.</li> </ul> </li> <li data-bbox="488 802 1097 1136">• The FARs: <ul style="list-style-type: none"> <li data-bbox="545 884 1084 968">– Limits pilot flight time to a total of 8 hours in a day.</li> <li data-bbox="545 1016 1097 1136">– Limits the pilot to a total of 14 hours in a duty day, including all pre- and post-flight duties.</li> </ul> <p data-bbox="545 1184 1122 1434">These limitations are also found in the contract, along with additional policy that states the government may impose more restrictive flight and duty limitations during periods of high stress/fatigue.</p> </li> <li data-bbox="488 1482 1073 1732">• DOI/USFS policy <p data-bbox="545 1566 1073 1732">Though not derived from FARs, contracts require pilots to have two full days off-duty during any 14-consecutive day period.</p> <p data-bbox="545 1780 1114 1864">It is our policy, but more important, it is in the contract.</p> </li> </ul>	<p data-bbox="1154 369 1390 407">3-18-S372-PPT</p> <p data-bbox="1154 802 1390 837">3-19-S372-PPT</p> <p data-bbox="1154 1482 1390 1520">3-20-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Form HCM 14 (IHOG, Appendix A) <ul style="list-style-type: none"> <li>– Tracks cumulative pilot flight time and duty day.</li> </ul> </li> </ul>	3-21-S372-PPT
<ul style="list-style-type: none"> <li>– The previous five days of flight time are totaled each day.</li> <li>– The sixth day is dropped from total.</li> </ul>	3-22-S372-PPT
<ul style="list-style-type: none"> <li>• “36 in 6” <p>Tracking flight and duty limitations is an ongoing task for helicopter managers.</p> <ul style="list-style-type: none"> <li>– If a pilot flies a total of 36 hours in 6 consecutive days, the next day must be a day off.</li> <li>– No more than 42 hours can be flown in a 6-day period.</li> <li>– Each day off the pilot takes begins a new 6-day period.</li> <li>– Remember: 2 full days off-duty during any 14-consecutive day period.</li> </ul> </li> </ul>	3-23-S372-PPT
<ul style="list-style-type: none"> <li>• Mechanic <ul style="list-style-type: none"> <li>– The mechanic has a 16-hour duty day limitation and also needs 2 days off in 14.</li> </ul> </li> </ul>	3-24-S372-PPT

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>– The flight and duty limitations are one of the consistent features of DOI/USFS helicopter contracts.</li> <li>• Some of the other items are variable. <ul style="list-style-type: none"> <li>Provisions to pay for availability, extended standby, mobilization costs, and overnight costs are examples of items that are quite different from contract to contract.</li> <li>These variable items can cause confusion or disagreements between the company rep (usually the pilot) and the government rep (you).</li> </ul> </li> </ul> <p>C-18 Accident Prevention and Safety</p> <p>C-19 Mishaps</p> <p>C-20 Personal Protective Equipment</p> <p>C-21 Inspection and Acceptance</p> <p>C-22 Pre-Use Inspection Expenses</p> <p>C-23 Re-Inspection Expenses</p> <p>C-24 Inspections During Use</p> <p>C-25 Contract Period and Renewal Options</p> <p>C-26 Authorized Ordering Activities</p> <p>C-27 Ordering Procedures</p> <p>C-28 Point-of-Hire</p>	<p>3-25-S372-PPT</p>

OUTLINE	AIDS & CUES
C-29 Assigned Work Locations	
C-30 Ordered Availability Periods	
C-31 Daily Availability Requirements <ul style="list-style-type: none"> <li>• The contract states when availability begins.               <ul style="list-style-type: none"> <li>– Some contracts are based on arrival time at the incident; however, some contracts (in Alaska for example) start availability from the time the aircraft leaves its base.</li> </ul> </li> </ul>	3-26-S372-PPT
<ul style="list-style-type: none"> <li>• The contract states how to:               <ul style="list-style-type: none"> <li>– Figure pay for availability, such as by the hour or by the quarter-hour.</li> <li>– Deduct for periods of time the aircraft is “unavailable” due to maintenance problems (or a lack of vendor provided fuel), if that is required. Availability depends on the contract.</li> </ul> </li> </ul>	3-27-S372-PPT
<ul style="list-style-type: none"> <li>• An aircraft rental agreement has no daily availability charges; “standby” is paid for the aircraft.               <ul style="list-style-type: none"> <li>– Standby is generally calculated as clock hours minus flight hours.</li> <li>– Standby equal to flight time may be free; check the rental agreement.</li> </ul> </li> </ul>	3-28-S372-PPT

OUTLINE	AIDS & CUES
<p>C-32 Unavailability</p> <ul style="list-style-type: none"> <li>• Don't base application of an item such as unavailability on a previously assigned contract. The current contract may be different.</li> </ul>	<p>3-29-S372-PPT</p>
<p>C-33 Payment for Flight</p>	
<p>C-34 Payment for Availability</p>	
<p>C-35 Payment for Extended Standby</p> <ul style="list-style-type: none"> <li>• We pay for the aircraft to be ready to deploy within a specified amount of time. <ul style="list-style-type: none"> <li>– The contract states how many hours are included in this basic standby period.</li> <li>– The contract may provide for additional pay for hours beyond that time.</li> </ul> </li> </ul>	<p>3-30-S372-PPT</p>
<ul style="list-style-type: none"> <li>• If authorized, this timeframe is called "extended standby." <ul style="list-style-type: none"> <li>– Pay is based on the number of authorized vendor crewmembers involved and paid to the company.</li> <li>– Whatever pay the pilot, mechanic, and fuel vehicle driver receive is between them and their company. Some contracts do not pay extended standby.</li> </ul> </li> </ul>	<p>3-31-S372-PPT</p>

OUTLINE	AIDS & CUES
C-36 Payment for Project Work	
C-37 Reimbursement for Mobilization and Demobilization Costs	
C-38 Ordering/Payment for Additional Personnel	
C-39 Transporting of Relief Crew	
C-40 Ordering Additional Equipment	
C-41 Additional Aircraft	
C-42 Meals	
C-43 Payment for Fuel Servicing Vehicle Mileage	
C-44 Payment for Fuel Transportation	
C-45 Payment for Foam Concentrate	
C-46 Miscellaneous Cost to the Contractor	
C-47 Payment Procedures	
C-48 Government Helicopter Manager Delegation and Authorities	
C-49 Definitions	
C-50 Abbreviations	

OUTLINE	AIDS & CUES
<p>C. Call the COR or CO</p> <p>If serious questions arise over the interpretation of language in the contract or if a change in provisions is proposed, call the COR or CO.</p> <p>You may hear opinions from other helibase personnel, however, <b>the COs interpretation is the one that counts—legally!</b></p> <p>The issue does not have to become a source of conflict. You can call and ask for help together or separately, but make the call.</p>	<p>3-32-S372-PPT</p>
<p>D. Guarantee</p> <p>Rental agreements may have different amounts of “guarantee” hours that are applied if the aircraft is retained beyond 24 hours.</p>	<p>3-33-S372-PPT</p>
<p>E. Overnight Expenses</p> <p>The contract specifies if per diem and lodging expenses are allowed, or whether it is included in the daily availability rate of the aircraft.</p> <p>The contract states whether receipts must be submitted for lodging, or the rate of reimbursement in lieu of a receipt.</p>	<p>3-34-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>F. Other Clauses</p> <p>Many other clauses describe items that vary from contract to contract:</p> <ul style="list-style-type: none"> <li>• Mobilization costs, if allowed.</li> <li>• Equipment provided by both vendor and government.</li> <li>• Fire vs. project work</li> <li>• Relief crew or additional personnel</li> </ul> <p>These are just a few. To correctly apply these contractual provisions, read the contract thoroughly.</p>	<p>3-35-S372-PPT</p>
<p>F. Section C – Exhibits</p> <p>Exhibits may include pre-use checklists, charts, and examples of various forms.</p> <p>This is where the fuel consumption in gallons per hour, model, and weight reduction (or “download”) for each model is found.</p>	<p>3-36-S372-PPT</p>
<p>G. Section D</p> <p>Contains references to federal acquisition regulations that are incorporated into the contract by reference in this section.</p>	<p>3-37-S372-PPT</p>
<p>H. Section E</p> <p>Discusses how the solicitation for contracted services is handled and how performance is evaluated.</p>	<p>3-38-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>I. Supplements</p> <p>Aircraft rental agreements have special equipment and related items listed in supplements.</p> <p>Animal capture is an example of information located in a supplement to the ARA.</p>	3-39-S372-PPT
<p>J. Daily Diary</p> <p>A daily diary should be updated each day for fire and project work.</p> <p>1. Copies</p> <p>The helibase manager will want a copy of all paperwork, including the daily diary, load calculations, manifests, and cost summaries.</p> <p>Keep copies for your reference (and on file) in case it is required in the future.</p>	3-40-S372-PPT
<p>2. Problems</p> <p>Personal expectations can create discomfort with a contractor who is new to you. Patience on both sides can be helpful.</p>	3-41-S372-PPT
<p>Being prepared to address details of the mission (fueling needs, radio frequencies, maps, overnight provisions) often clues a pilot in to your level of situational awareness.</p>	3-42-S372-PPT

OUTLINE	AIDS & CUES
<p>Don't let your safe operation slip into an unworkable or unsafe attitude if it becomes apparent that personnel issues are not going to improve.</p>	3-43-S372-PPT
<p>The technical assistance directory can provide help from aviation managers who know what you are dealing with.</p>	
<p>If personnel issues cannot be resolved, or a contractor performance suffers, the situation should be discussed with the CO.</p>	3-44-S372-PPT
<p>Document in the daily diary any evaluations required by the contract. Read the contract; call the CO or COR if you have questions.</p>	
<p><b>HAND OUT “PRIMARY DIFFERENCES BETWEEN CWN AND EXCLUSIVE-USE HELICOPTERS” AND BRIEFLY REVIEW.</b></p>	3-3-S372-HO
<p>V. AIRCRAFT RENTAL AGREEMENT (ARA)</p>	3-45-S372-PPT
<p>A. 353 DM 2 - Aircraft Rental System</p>	3-46-S372-PPT
<p>All commercial aviation services...shall be acquired through the procurement process of DOIs AMD.</p>	
<p><b>HAND OUT “HELICOPTER ARA WITH PERTINENT SUPPLEMENTS” AND REVIEW THE SECTIONS.</b></p>	

OUTLINE	AIDS & CUES
<p>An ARA is an agreement between the government and the vendor that includes:</p> <ul style="list-style-type: none"> <li>• Section A - Prices</li> <li>• Section B - Aircraft Specifications <ul style="list-style-type: none"> <li>– Description of services</li> </ul> </li> <li>• Section C - Terms and Conditions <ul style="list-style-type: none"> <li>– Inspection/acceptance of vendors</li> <li>– Ordering service</li> <li>– Payment information</li> </ul> </li> </ul> <p>The ARA is not a binding agreement; it is a contract until an order is placed with the vendor and they accept it.</p> <p>The language in both procurement documents is the same; any differences need to be noted.</p> <p><b>ENSURE STUDENTS UNDERSTAND THE LANGUAGE AND TERMINOLOGY.</b></p>	<p>3-47-S372-PPT</p>
<p>B. Responsibilities</p> <ol style="list-style-type: none"> <li>1. Only the contracting officer may: <ul style="list-style-type: none"> <li>• Award</li> <li>• Negotiate (page 21, C 4.1.3)</li> <li>• Obligate</li> <li>• Determine disputes clause</li> <li>• Remedies</li> <li>• Terminate</li> </ul> </li> </ol>	<p>3-48-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>2. Vendor responsibilities:</p> <ul style="list-style-type: none"> <li>• Contact CO if offering more favorable terms such as, pricing, guarantee, standby, etc.</li> <li>• Obtain all required licenses and permits.</li> <li>• Comply with all applicable laws and regulations.</li> <li>• Vendor’s representative (pilot unless otherwise notified).</li> </ul>	<p>3-49-S372-PPT</p>
<p>3. User responsibilities:</p> <ul style="list-style-type: none"> <li>• Ask for aircraft and pilot approval documents.</li> <li>• Complete the AMD-23. <ul style="list-style-type: none"> <li>– Hired and release times are very important.</li> <li>– Less than or greater than 24-hour hire.</li> </ul> </li> <li>• Know if you can sign for services. <ul style="list-style-type: none"> <li>– Only an employee who represents the agency paying for the service can sign off on the AMD-23.</li> </ul> </li> </ul>	<p>3-50-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>4. Ordering official's responsibilities:</p> <ul style="list-style-type: none"> <li>• You must have your bureau's authorization to order aircraft.</li> <li>• You must fill out the Best Value Determination (BVD) record. It is very important to obtain the certification of funds signature.</li> </ul> <p><b>EXPLAIN THE LINES OF AUTHORITY AS THEY RELATE TO ARA ADMINISTRATION.</b></p> <p><b>HAND OUT THE LIST OF CURRENT NAMES AND PHONE NUMBERS OF AMD CONTACTS FOR CONTRACT ISSUES.</b></p>	<p>3-51-S372-PPT</p>
<p>C. How to Order from the ARA Source List</p> <ol style="list-style-type: none"> <li>1. Go to <a href="http://amd.nbc.gov/">http://amd.nbc.gov/</a></li> <li>2. On the left side of the AMD home page under Links/Resources: <ul style="list-style-type: none"> <li>• Click "Aircraft and Pilot Sources"</li> <li>• Read the information under "ATTENTION" then click "Accept"</li> <li>• Read the information under "Who may place and how to place orders against the ARA"</li> <li>• Click "ARA Best Value Determination" and read the instructions on page 2.</li> <li>• Print out the BVD.</li> </ul> </li> </ol>	<p>3-52-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>3. Proceed to “Aircraft Source List” (this will be reviewed later)</p>	
<p>D. Compare at Least Three Vendors</p>	3-53-S372-PPT
<p>1. Put vendor information into the work table to do your price analysis.</p> <ul style="list-style-type: none"> <li>• Determine your vendor choice.</li> <li>• Fill in estimated price and fund certification portion of the record.</li> <li>• Call vendor and offer job.</li> <li>• Record vendor, aircraft tail number, and basis for decision.</li> </ul>	
<p>2. If price is \$2,500 or less:</p> <ul style="list-style-type: none"> <li>• Complete BVD record.</li> <li>• Get certification of funds signature.</li> <li>• Keep this in your aircraft order file (to document that funds were available before you placed the order).</li> </ul>	3-54-S372-PPT
<p>3. If project exceeds \$2,500 but less than \$25,000:</p> <ul style="list-style-type: none"> <li>• Fill out the BVD form per the instructions.</li> <li>• Call vendor and offer the project.</li> </ul>	3-55-S372-PPT

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Document your decision to hire and keep the vendor for three years.</li> <li>• Be prepared to have your BVD record audited by the CO of your Flight Coordination Center (FCC).</li> </ul>	
<p><b>SLIDE 56 SHOWS AN EXAMPLE OF THE FORM.</b></p>	3-56-S372-PPT
<p>4. Project is estimated to exceed \$25,000:</p> <p>\$25,000 is the limit per order under the ARA.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> <li>• Emergency orders – Unusual and compelling circumstances where the government will be unduly harmed if procurement is delayed.</li> <li>• A planned resource mission – Submit an AMD-13, Request for Contract Services, to your FCC.</li> </ul>	3-57-S372-PPT
<p>5. Emergency hire exceeding \$25,000:</p> <p>For emergency hires expected to exceed \$25,000 or an aircraft already hired that reaches \$25,000 due to the emergency:</p> <ul style="list-style-type: none"> <li>• Fill out the emergency hire (red) section of the BVD form.</li> <li>• Fax the form to your FCC that day or as soon as possible for review and approval.</li> </ul>	3-58-S372-PPT

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• The vendor will not be paid unless this form accompanies the AMD-23's for payment.</li> </ul>	
<p><b>SLIDE 59 SHOWS AN EXAMPLE OF THE FORM.</b></p>	<p>3-59-S372-PPT</p>
<p>6. Compare prices; selection may be made on:</p> <ul style="list-style-type: none"> <li>• Lowest priced, technically acceptable for the requirement, or</li> <li>• Best value using a tradeoff analysis process.</li> </ul> <p>Best value means the expected outcome of an acquisition that, in the government's estimation, provides the greatest overall benefit in response to the requirement.</p>	<p>3-60-S372-PPT</p>
<p>7. Best value/tradeoffs</p> <ul style="list-style-type: none"> <li>• Price comparison</li> <li>• Capability of aircraft</li> <li>• Past performance</li> <li>• Work experience</li> <li>• Document your decision on BVD form</li> </ul>	<p>3-61-S372-PPT</p>
<p><b>SLIDES 62 AND 63 SHOW EXAMPLES OF THE FORM.</b></p>	<p>3-62-S372-PPT 3-63-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>VI. ARA SOURCE LIST</p> <p>If you do not have access to the internet, call your local FCC to request a hard copy.</p>	<p>3-64-S372-PPT</p>
<p>A. National Business Center Web site:  <a href="http://amd.nbc.gov/">http://amd.nbc.gov/</a></p> <ul style="list-style-type: none"> <li>• Aircraft rental system</li> <li>• Who may place an order? (<b>a must read</b>)</li> <li>• Aircraft source list</li> </ul>	<p>3-65-S372-PPT  thru  3-70-S372-PPT</p>
<p>B. Rental Agreement</p> <ul style="list-style-type: none"> <li>• Rate per flight hours</li> <li>• Fuel cost</li> <li>• Guarantee hours</li> <li>• Additional amount per flight</li> <li>• Extended standby (over 9 hours)</li> <li>• Subsistence allowance</li> </ul>	<p>3-71-S372-PPT</p>
<p>C. Guarantee Hours</p> <ul style="list-style-type: none"> <li>• Animal Capture, Eradication, and Tagging of Animals (ACETA) on ARA?</li> <li>• Short haul?</li> <li>• Rappel?</li> <li>• Single Engine Air Tankers (SEAT)?</li> </ul>	<p>3-72-S372-PPT  thru  3-75-S372-PPT</p>
<p><b>EXPLAIN COMPUTATION OF STANDBY IF APPLICABLE AND GUARANTEE.</b></p>	

OUTLINE	AIDS & CUES
<p>D. Problems</p> <ul style="list-style-type: none"> <li>• Can we go over \$25,000?</li> <li>• Justification and approval</li> <li>• Prescribed burn?</li> <li>• Projects?</li> </ul>	3-76-S372-PPT
<p>E. Problem Areas</p> <ul style="list-style-type: none"> <li>• Guarantee</li> <li>• Unavailability</li> <li>• Users negotiating in the field</li> <li>• Differences in rates source list/vendor</li> <li>• For pilots concerned about their wages, direct them to the Department of Labor.</li> </ul>	3-77-S372-PPT
<p>F. Billee Codes</p> <p>Must have a current service level agreement with aviation management along with an interagency agreement.</p>	3-78-S372-PPT
<p>G. Numeric Identifiers Established for Each User</p> <ul style="list-style-type: none"> <li>• Allows DOI aviation management to bill</li> <li>• Provide backup detail</li> <li>• Run reports against</li> </ul>	
<p>H. Unauthorized Commitments</p> <ul style="list-style-type: none"> <li>• Aircraft not on source list</li> <li>• Aircraft and/or pilot not carded</li> <li>• No rental agreement in place</li> </ul>	3-79-S372-PPT

OUTLINE	AIDS & CUES
<p>I. Ratification</p> <ul style="list-style-type: none"> <li>• Potential personal liability: <ul style="list-style-type: none"> <li>– Cost of flight.</li> <li>– Requires extensive explanation and documentation.</li> <li>– Administrative costs: \$1,000</li> </ul> </li> </ul>	3-80-S372-PPT
<p>J. Prompt Payment Act</p> <p>1. Unless otherwise set by contract, the standard payment period is 30 days.</p> <ul style="list-style-type: none"> <li>• This means <u>payment is made on the 30th day</u>.</li> <li>• If paid beyond 30 days, the government must pay interest.</li> </ul>	3-81-S372-PPT
<p>2. What if vendor offers discount?</p> <p>Payment date for discount begins on date of pilot signature or last date of flight (whichever is later).</p> <p>If date for discount payment falls on a weekend or holiday, the discount date will be the business day <u>prior</u> to weekend or holiday.</p>	3-82-S372-PPT
<p>Go to <a href="https://www.iat.gov/">https://www.iat.gov/</a> for training on how to complete the Aircraft Use Report, AMD-23 or the USFS Flight Use Report, 6500-122.</p>	3-83-S372-PPT



OUTLINE	AIDS & CUES
<p>VII. PAY DOCUMENTS</p> <p>There are two documents used to document and process aircraft services for payment:</p> <ul style="list-style-type: none"> <li>• AMD-23: A paper-based document used primarily by DOI Agencies.</li> <li>• Aviation Business System (ABS): An electronic document currently used by the USFS.</li> </ul>	<p>3-85-S372-PPT</p>
<p>A. Availability/Unavailability</p> <p>Often confusing, it is helpful to remember that availability is for the day—one whole day. If the aircraft is available all day, record 1.00.</p> <p>Anything less than a whole day will be recorded as a decimal fraction of a day of availability, and the rest as a fraction of a day of unavailability.</p> <p>These two amounts, added together, should equal a total of 1.00.</p>	<p>3-86-S372-PPT</p>
<p>B. Availability/Non-Availability</p> <p>To display on the pay document:</p> <ul style="list-style-type: none"> <li>• Availability is recorded on both the AMD-23 and in ABS as “AV.”</li> <li>• The AMD-23 records unavailability as “UA.”</li> <li>• ABS records non-availability as “NA.”</li> </ul>	<p>3-87-S372-PPT</p>

OUTLINE	AIDS & CUES						
<p>C. Availability/Unavailability (AMD-23) or Non-Availability (ABS)</p> <p>Many contracts state that the amount of availability, rounded to the nearest 15 minutes, will be reduced by 1/56th for each quarter-hour that service is unavailable.</p> <p>Why 1/56th? Because if the contract is based on a 14-hour day, each one of those 14 hours has four quarter-hour blocks of time.</p> <ul style="list-style-type: none"> <li>• 4 quarter-hours multiplied by 14 hours, equals 56.</li> <li>• 56 individual quarter-hour blocks of time to account for.</li> <li>• Use a conversion chart.</li> </ul>	<p>3-88-S372-PPT</p>						
<p><b>REFER STUDENTS TO THE CONVERSION CHART EXAMPLES (SW pages 3.39 - 3.40; IG pages 3.51 - 3.52).</b></p>	<p>3-1-S372-IR/SR</p>						
<p>D. Availability/Unavailability Recorded on AMD-23 as AV/UA</p> <p>For this type of contract, 3 hours 15 minutes of unavailability would translate into 13/56ths, and recorded as:</p> <table data-bbox="391 1562 1096 1686"> <thead> <tr> <th><u>Elapsed Time or Quantity</u></th> <th><u>Pay Item Code</u></th> </tr> </thead> <tbody> <tr> <td>0.77</td> <td>AV</td> </tr> <tr> <td>0.23</td> <td>UA</td> </tr> </tbody> </table>	<u>Elapsed Time or Quantity</u>	<u>Pay Item Code</u>	0.77	AV	0.23	UA	<p>3-89-S372-PPT</p>
<u>Elapsed Time or Quantity</u>	<u>Pay Item Code</u>						
0.77	AV						
0.23	UA						

OUTLINE	AIDS & CUES						
<p>E. Availability/Unavailability (AMD-23) or Non-Availability (ABS)</p> <p>Be aware that contracts differ; some are based on a 14-hour day, some on a 10-hour day.</p> <p>Availability might be reduced by 1/10th for each hour, or by 1/14th for each hour, instead of 1/56th.</p>	3-90-S372-PPT						
<p>F. Availability/Unavailability Recorded on AMD-23 as AV/UA</p> <p>Three hours of unavailability, for a contract based on a 14-hour day, to the nearest hour, would be recorded as:</p> <table data-bbox="389 1008 1096 1134"> <thead> <tr> <th><u>Elapsed Time or Quantity</u></th> <th><u>Pay Item Code</u></th> </tr> </thead> <tbody> <tr> <td>.79</td> <td>AV</td> </tr> <tr> <td>.21</td> <td>UA</td> </tr> </tbody> </table>	<u>Elapsed Time or Quantity</u>	<u>Pay Item Code</u>	.79	AV	.21	UA	3-91-S372-PPT
<u>Elapsed Time or Quantity</u>	<u>Pay Item Code</u>						
.79	AV						
.21	UA						
<p>G. Availability/Unavailability (AMD-23) or Non-Availability (ABS)</p> <p>The AMD-23 and the ABS will show the amount of time for availability/unavailability. Only in ABS will you actually show the dollar amounts of availability/non-availability.</p>	3-92-S372-PPT						

OUTLINE	AIDS & CUES
<p>H. ARA Standby (no availability with an ARA)</p> <p>Scenario: Your aircraft comes on at 0800 a.m. You fly two hours and release the aircraft at 1500. With the ARA you are using, standby is free equal to flight time.</p> <p>How much flight time and standby will you have?</p> <p><b>Answer:</b> You have the aircraft for 7 hours, minus 2 hours of flight time, equals 5 hours standby. Standby is free equal to flight time, so you pay for 3 hours standby.</p> <p>Breaks in service not authorized by the contract would also be deducted from standby time, as would any unavailability.</p>	<p>3-93-S372-PPT</p> <p>3-94-S372-PPT</p>
<p>I. ARA Guarantee</p> <p>Generally applies if aircraft is rented for more than 24-hour period.</p>	<p>3-95-S372-PPT</p>

OUTLINE	AIDS & CUES
<p><b>CLASS REVIEW:</b> Review the basics for AMD-23 by asking students the following questions. The cadre will need to verify answers.</p> <ul style="list-style-type: none"> <li>• How is an elapsed time of 1.4 hours written?</li> <li>• What is the pay item code for ferry time?</li> <li>• What is a billee code and where do you find it?</li> <li>• What is the use code for longline with remote hook?</li> <li>• Do you put anything in the red box below the “elapsed time or quantity” column?</li> <li>• Is the helicopter manager the one to sign?</li> <li>• You move two pax out to a landing zone (LZ). Later you move them back. How many pax are recorded in the payload column for that trip?</li> <li>• You move two pax out for a recon, no landing. How many pax are recorded in the payload column for that trip?</li> </ul> <p><b><u>End of Review.</u></b></p>	<p>3-96-S372-PPT</p>



OUTLINE	AIDS & CUES
VIII. AVIATION BUSINESS SYSTEM (ABS)	3-98-S372-PPT
A. What is ABS?	
<p>ABS is a Web-based application used by the Forest Service to electronically document and process all contract aviation costs currently documented on FS-6500-122 Flight Use Invoice.</p>	
<p>1. ABS is an automated submission of pay documents that provides:</p> <ul style="list-style-type: none"> <li>• Paperless electronic system</li> <li>• Data entry program for electronic tracking and payment</li> <li>• Provides more accurate and prompt payment</li> <li>• Up-to-date report system</li> <li>• Management tool</li> </ul> <p>Budget and Financial Management, Fire and Aviation Management, and Acquisition Management worked jointly on this automated process to streamline the use, tracking, and payment for all aviation resources.</p>	3-99-S372-PPT
<p>2. Advantages</p> <ul style="list-style-type: none"> <li>• One-time data entry</li> <li>• Daily accruals</li> <li>• Create reports</li> <li>• Redundancy</li> <li>• Data consistency</li> </ul>	3-100-S372-PPT

OUTLINE	AIDS & CUES
<p>3. Currently, any Forest Service aviation contract uses ABS:</p> <ul style="list-style-type: none"> <li>• Helicopter Managers</li> <li>• Air Attack</li> <li>• Tanker Base Managers</li> <li>• Forest Health</li> <li>• COs and CORs</li> <li>• Albuquerque Service Center</li> <li>• Contractors</li> </ul>	<p>3-101-S372-PPT</p>
<p>B. Equipment and Training Inventory System (EaTIS)</p> <p>EaTIS is a Web-based, automated application used by federal agencies to execute, manage, and report on pre-season incident procurements.</p> <p>EaTIS provides access to an aviation data entry system for sending information to the ABS for electronic payment data collection.</p> <p>Vendors who use the EaTIS Web site find it a helpful resource for guidance through the process of electronically submitting offer data to the federal government.</p> <p>Pre-season contracting data is inputted by contracting officers:</p> <ul style="list-style-type: none"> <li>• Availability</li> <li>• Availability Rates</li> <li>• Flight Rates</li> <li>• Modification</li> </ul> <p>EaTIS will be replaced by the Virtual Incident Procurement (VIPR) program.</p>	<p>3-102-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>C. Albuquerque Service Center (ASC)</p> <p>All payment documents are submitted to ASC for processing payment.</p> <p>1. The ASC has the responsibility to:</p> <ul style="list-style-type: none"> <li>• Audit vouchers</li> <li>• Certify payment for disbursement</li> </ul> <p>2. When payment documents for incidents are submitted, ASC uses the Incident Business Database (IBDB) program to:</p> <ul style="list-style-type: none"> <li>• Verify job codes for ABS.</li> <li>• Payment process for ABS and other incident payments.</li> </ul>	<p>3-103-S372-PPT</p>
<p>D. Data Entry</p> <p>You are the initial data entry person.</p> <p>ABS is a Web-based system with a disconnected client for remote use.</p> <p>The system requires all contract aviation costs currently tracked on FS-6500-122 Flight Use Invoice to be entered electronically into ABS from the source location (helibase, tanker base, etc.) by aircraft managers or other designated persons.</p>	<p>3-104-S372-PPT</p>

OUTLINE	AIDS & CUES
<p data-bbox="391 283 1015 359">After the initial data has been entered and submitted:</p> <ul style="list-style-type: none"> <li data-bbox="391 411 1057 487">• The appropriate CO or designated COR reviews and approves each invoice.</li> <li data-bbox="391 539 1101 743">• The CO or COR electronically selects approved invoices to be packaged for payment and approves the package using a Personal Identification Number (PIN) to indicate approval.</li> <li data-bbox="391 795 1101 915">• After approval by the CO or COR, the vendor receives notification that a package is ready for approval.</li> <li data-bbox="391 968 1122 1129">• After successful review and application of a PIN by the vendor, the package is submitted to ASC IBDB for final processing of the payment.</li> <li data-bbox="391 1182 1117 1344">• If the vendor requests any changes to the payment package, the CO/COR reviews the changes, accepts or rejects the changes, and sends the results to the vendor.</li> <li data-bbox="391 1396 1078 1472">• The package is then submitted directly to the ASC IBDB for payment.</li> </ul>	<p data-bbox="1154 283 1409 317">3-105-S372-PPT</p>

OUTLINE	AIDS & CUES
<p data-bbox="203 283 581 319">IX. ACCESS TO ABS</p> <p data-bbox="300 367 812 451">To access the ABS program, go to <a href="http://www.fs.fed.us/business/abs">www.fs.fed.us/business/abs</a></p> <p data-bbox="300 493 917 535">The ABS site has different menu options:</p> <ul style="list-style-type: none"> <li data-bbox="308 577 743 619">• ABS Training (Tutorial)</li> <li data-bbox="308 661 925 703">• Frequently Asked Questions (FAQs)</li> <li data-bbox="308 745 685 787">• Disconnected Client</li> <li data-bbox="308 829 576 871">• ABS Reports</li> <li data-bbox="308 913 535 955">• Directions</li> <li data-bbox="308 997 820 1039">• Passwords (e-Authentication) <ul style="list-style-type: none"> <li data-bbox="381 1081 665 1123">– Forest Service</li> <li data-bbox="381 1123 625 1165">– Contractors</li> <li data-bbox="381 1165 738 1207">– Non-Forest Service</li> </ul> </li> <li data-bbox="308 1249 1104 1291">• CO assigned PIN (required for invoice approval)</li> <li data-bbox="308 1333 1120 1606">• Two methods for operating the ABS program: <ul style="list-style-type: none"> <li data-bbox="381 1417 1120 1512">– Disconnected Client (downloaded for remote use)</li> <li data-bbox="381 1543 941 1606">– Web-based application (Internet)</li> </ul> </li> </ul>	<p data-bbox="1153 283 1404 319">3-106-S372-PPT</p> <p data-bbox="1153 1333 1404 1375">3-107-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>A. Disconnected Client (DC)</p> <p>The DC is downloaded from the Internet onto your personal computer.</p>	3-108-S372-PPT
<p>1. Advantage: you can enter data from just about anywhere:</p> <ul style="list-style-type: none"> <li>• Vehicle</li> <li>• Helibase</li> <li>• Hotel</li> <li>• Picnic table</li> <li>• Tree stump</li> <li>• Any other remote location</li> </ul>	3-109-S372-PPT
<p>2. Features to using DC:</p> <ul style="list-style-type: none"> <li>• DC folder</li> <li>• Saves to hard drive</li> <li>• Data entry only</li> <li>• Create several days</li> <li>• Multiple contractors</li> <li>• Multiple air resource managers on one computer</li> </ul>	3-110-S372-PPT

OUTLINE	AIDS & CUES
<p>3. DC logon</p> <p>After you have downloaded the DC version, follow these steps:</p> <ul style="list-style-type: none"> <li>• Open Disconnect Folder (start-up)</li> <li>• Wait for #####ms</li> <li>• Open Internet Explorer</li> <li>• URL:  <a href="http://localhost:8080/aviation/login.do">http://localhost:8080/aviation/login.do</a></li> <li>• Email ID</li> <li>• Password</li> <li>• Log-in</li> </ul>	<p>3-111-S372-PPT</p>
<p>4. Now you should be at the ABS home page. Look at the menu tabs:</p> <ul style="list-style-type: none"> <li>• Home</li> <li>• Create Invoice (Add New Invoice)</li> <li>• View/Modify Invoice</li> <li>• Sync</li> <li>• Help</li> <li>• Sign Out</li> </ul>	<p>3-112-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>5. By selecting “Create Invoice” you can begin entering data:</p> <ul style="list-style-type: none"> <li>• Flight Date</li> <li>• Enter Full or Partial Contract Number</li> <li>• Contract Number</li> <li>• Contract Item Number</li> <li>• Registration/Tail Number</li> </ul>	3-113-S372-PPT
<p>6. After you have entered the initial data:</p> <ul style="list-style-type: none"> <li>• The program will populate an invoice number for that specific flight and vendor.</li> </ul>	3-114-S372-PPT
<ul style="list-style-type: none"> <li>• If needed, you can “Add Flight Legs” to an existing invoice for continuation purposes.</li> <li>• Enter the required data indicated by the red asterisk.</li> </ul>	3-115-S372-PPT
<p>7. View the “Current Flight Leg” screen. From this screen you can enter inputs:</p> <ul style="list-style-type: none"> <li>• View or Modify Flight Leg</li> <li>• Delete Flight Leg</li> <li>• Add Flight Leg</li> <li>• Add or Edit Accounting</li> <li>• Taxes or Fees</li> </ul>	3-116-S372-PPT

OUTLINE	AIDS & CUES
<p>8. Go to the “Add or Edit Accounting” screen.</p> <ul style="list-style-type: none"> <li>• Note: The total charge/credit to any on job code cannot be less than zero.</li> <li>• Enter the required data indicated by the red asterisk.</li> <li>• From the “Additional Charges” screen you can: <ul style="list-style-type: none"> <li>– View/Modify Charge</li> <li>– Delete Charge</li> <li>– Add/Edit Accounting</li> </ul> </li> <li>• Enter the required data indicated by the red asterisk.</li> </ul>	<p>3-117-S372-PPT</p> <p>3-118-S372-PPT</p> <p>3-119-S372-PPT</p>
<p>9. Now that you have entered all the required initial data, an invoice has been created that can be:</p> <ul style="list-style-type: none"> <li>• Delete Invoice</li> <li>• View/Print Invoice</li> <li>• Submit Invoice</li> <li>• View/Add Remarks</li> </ul>	<p>3-120-S372-PPT</p>
<p>10. View the invoice.</p> <ul style="list-style-type: none"> <li>• All the information you entered was automatically converted into a FS-6500-122 Flight Use Invoice.</li> <li>• You can also add any remarks if you wish.</li> </ul>	<p>3-121-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Sync as often as you possibly can! This is to keep the ABS program on your computer up-to-date with the server and to submit your invoice(s).</li> </ul>	<p>3-122-S372-PPT 3-123-S372-PPT</p>
<p>B. Web-Based Application</p> <p>The Web-based application is a program that is run directly from the program (ABS) server via Internet.</p> <p>Access to the system requires all users to have an individual USDA eAuthentication account and password.</p> <p>A secure PIN number will be provided to COs and CORs.</p> <p>Contractors will be issued a PIN number by the CO who administers their contracts.</p> <p>The pin will be required for electronic approval of payment packages.</p> <p>1. Each user must register in ABS the first time they log on.</p>	<p>3-124-S372-PPT</p>
<p>To access the server, log on to the ABS home page: <a href="http://www.fs.fed.us/business/abs">www.fs.fed.us/business/abs</a></p> <ul style="list-style-type: none"> <li>• It is accessed from any Internet connection (home, office, etc.)</li> <li>• Provides the most current information (EaTIS).</li> </ul>	<p>3-125-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>2. The ABS program will have different status:</p> <ul style="list-style-type: none"> <li>• DRAFT – Data Entry/COR Entry Person</li> <li>• SUBMIT – Date Entry Person/COR Entry Person</li> <li>• COR_APPROVED (Web-based only) COR/CO only</li> <li>• SENT_TO_VENDOR (Web-based only) COR/CO only</li> <li>• SENT_TO_PAYMENT (Web-based only) Contractor/COR</li> </ul>	<p>3-126-S372-PPT</p>
<p>3. COR or CO</p> <ul style="list-style-type: none"> <li>• Approve: <ul style="list-style-type: none"> <li>– Reviews all Flight Use Invoices</li> <li>– Approve invoices</li> </ul> </li> <li>• Create package: <ul style="list-style-type: none"> <li>– Electronically select approved invoices to be prepared for packaging</li> </ul> </li> <li>• Send to vendor: <ul style="list-style-type: none"> <li>– Send approved invoices to vendor for review and approval</li> <li>– Can only use Web-based application</li> </ul> </li> </ul>	<p>3-127-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>4. Contractor</p> <ul style="list-style-type: none"> <li>• Email notification</li> <li>• Review Flight Use Invoice</li> <li>• Verify all information is correct</li> <li>• Correct: sent to ASC for payment</li> <li>• Not correct: to the COR/CO for review</li> </ul>	3-128-S372-PPT
<p>5. Contractor modified/COR reviewed</p> <ul style="list-style-type: none"> <li>• Email notification to COR</li> <li>• Review Flight Use Invoice with discrepancy</li> <li>• Approve/reject discrepancy</li> <li>• Approve: sent to ASC for payment</li> <li>• Reject: sent to ASC for payment, contractor can submit a claim to CO</li> </ul>	3-129-S372-PPT
<p>6. Albuquerque Service Center</p> <ul style="list-style-type: none"> <li>• Audit each package</li> <li>• Certifies for payment</li> <li>• Sent to Foundation Financial Information System (FFIS)</li> <li>• FFIS sends to treasury for dispersing payment</li> </ul>	3-130-S372-PPT

OUTLINE	AIDS & CUES
<p>7. Status chain flow</p> <p>Once a draft is complete and submitted:</p> <ul style="list-style-type: none"> <li>• The appropriate CO or designated COR reviews and approves each invoice.</li> <li>• The CO or COR electronically selects approved invoices to be packaged for payment and approves the package using a PIN to indicate approval.</li> <li>• After approval by the CO or COR, the vendor receives notification that a package is ready for approval.</li> <li>• After successful review and application of a PIN by the vendor, the package is submitted to ASC IBDB for final processing of payment.</li> <li>• If the vendor requests any changes to the payment package, the changes are reviewed by the CO/COR, changes are accepted or rejected, and results sent to the vendor. The package is then submitted directly to the ASC IBDB for payment.</li> </ul>	<p>3-131-S372-PPT</p>
<p>8. Call the ABS help desk if you have questions (1-866-224-7677).</p>	<p>3-132-S372-PPT</p>





**CONVERSION CHART – UNAVAILABILITY  
CALL-WHEN-NEEDED MED & HEAVY-LIFT HELICOPTERS  
SINGLE PILOT**

UA	AV	Min. UA	Hrs UA		UA	AV	Min. UA	Hrs UA
0.02	0.98	15	1/56		0.52	0.48	435	29/56
0.04	0.96	30	2/56		0.54	0.46	450	30/56
0.05	0.95	45	3/56		0.55	0.45	465	31/56
0.07	0.93	60	4/56		0.57	0.43	480	32/56
0.09	0.91	75	5/56		0.59	0.41	495	33/56
0.11	0.89	90	6/56		0.61	0.39	510	34/56
0.13	0.88	105	7/56		0.63	0.38	525	35/56
0.14	0.86	120	8/56		0.64	0.36	540	36/56
0.16	0.84	135	9/56		0.66	0.34	555	37/56
0.18	0.82	150	10/56		0.68	0.32	570	38/56
0.20	0.80	165	11/56		0.70	0.30	585	39/56
0.21	0.79	180	12/56		0.71	0.29	600	40/56
0.23	0.77	195	13/56		0.73	0.27	615	41/56
0.25	0.75	210	14/56		0.75	0.25	630	42/56
0.27	0.73	225	15/56		0.77	0.23	645	43/56
0.29	0.71	240	16/56		0.79	0.21	660	44/56
0.30	0.70	255	17/56		0.80	0.20	675	45/56
0.32	0.68	270	18/56		0.82	0.18	690	46/56
0.34	0.66	285	19/56		0.84	0.16	705	47/56
0.36	0.64	300	20/56		0.86	0.14	720	48/56
0.38	0.63	315	21/56		0.88	0.13	735	49/56
0.39	0.61	330	22/56		0.89	0.11	750	50/56
0.41	0.59	345	23/56		0.91	0.09	765	51/56
0.43	0.57	360	24/56		0.93	0.07	780	52/56
0.45	0.55	375	25/56		0.95	0.05	795	53/56
0.46	0.54	390	26/56		0.96	0.04	810	54/56
0.48	0.52	405	27/56		0.98	0.02	825	55/56
0.50	0.50	420	28/56		1.00	0.00	840	56/56

### CONVERSION CHART -UNAVAILABILITY

HOURS UNAVAILABLE	UNITS OF AVAILABILITY	UNITS OF UNAVAILABILITY
0	1.00	0.00
1	.93	.07
2	.86	.14
3	.79	.21
4	.71	.29
5	.64	.36
6	.57	.43
7	.50	.50
8	.43	.57
9	.36	.64
10	.29	.71
11	.21	.79
12	.14	.86
13	.07	.93
14	0.00	1.00

## Exercise: Contract and Pay Scenario 1

On May 23, using Aircraft Rental Agreement XX-ARA-XXXX, you are assigned to an AS 350B2, pilot Pat Ross, owned by Sky High helicopters, P.O. Box xxxx, Coeur D'Alene, Idaho. You are to sling 5,000 lbs. of cabin logs and materials from the "Mile 63" helispot to the remote "Trapper Joe" cabin site on the Little Pend Oreille National Wildlife Refuge. According to the Project Aviation Safety Plan, you have three helicopter crewmembers to assist you – one of them is a trainee helicopter manager.

Jet-A is available at a nearby airstrip, designator SXQ. The project manager intends to save money by having the helicopter fuel at the airstrip instead of ordering a fuel truck. Flight rate is \$1020 per hour. Standby rate is one-half the flight rate and is free equal to flight time. If the helicopter is kept overnight, there is a 3-hour daily guarantee.

Helicopter N190SH meets you at the airstrip (SXQ) at 0800 (the pilot came on at 0630). Meanwhile, the HECM crew is en route to Mile 63 helispot where you will base this operation out of. The pilot tells you that at departure from his base his Hobbs was 452.3 and now reads 453.1. You will fly with him to Mile 63 taking your pack (30 lbs.), remote hook and longline (45 lbs.), four swivels (5 lbs. each), and four woven wire chokers (5 lbs. each). The crew is bringing the fire extinguisher and crash-rescue kit.

List some items you will need to attend to before you depart the airport for the helispot.

- **Card the pilot and aircraft.**
- **Radio frequencies, arrangements for flight following, and maps (helicopter manager kit).**
- **The need for a pre-use inspection and load calc (although this has not yet been covered in class).**

You arrive at the Mile 63 helispot with a Hobbs of 453.6. After briefing, two HECM personnel, each with a 30 lb. pack, will be flown to the Trapper Joe cabin site to prepare to receive loads. Who might you use to supervise the operation at the other end? Upon return from this drop-off, the Hobbs is 453.9.

**The trainee manager might be a good choice to provide oversight at the other end. Receiving the loads can be either the simpler or the more complex end of the sling operation. Assignments should be made considering experience levels of personnel involved. Sling jobs that involve confined areas such as a boat, or do not employ the use of a remote hook, might require that only helicopter managers with complex sling load experience supervise the operation. These items should be reflected in the project aviation safety plan.**

Two loads, each with five logs (160 lbs.), a longline with remote hook (45 lbs.), a choker (5 lbs.), and a swivel (5 lbs.) are flown in when the pilot calls to say he will be shutting down due to a problem with his torque gauge. On shutdown, the time is 1130 and the Hobbs is at 454.7. The company asks to have the helicopter brought back to SXQ to meet a mechanic to deal with the maintenance problem. Use this time to bring your paperwork up to date, particularly the AMD-23 (take 15 minutes). What other paperwork will reflect the day's events?

**A SAFECOM will be required. The daily diary will be needed to document the day's events. Pilot flight time and duty day should be recorded (although for a one-day assignment, this can be accomplished on the daily diary).**

The ship was returned to service by the company's mechanic at 1400; he fuels and arrives back at the helibase at 1500. What more do you need to return the aircraft to contract availability (which, in this case would mean back in standby status)? At what time is the aircraft considered available for use? The Hobbs reads 456.5.

**The approval of a DOI/USFS aviation maintenance inspector is required before the aircraft is returned to contract availability; in this case standby status. If the maintenance specialist approves of the actions taken to correct the deficiency, normally the helicopter would be available retroactively back to the time the company's mechanic returned it to service. However, in this case, the helicopter is not back on site until 1500, so it would not be available for use until 1500. The 3½ hours it is unavailable (1130 - 1500) are rounded up to the nearest hour, on this ARA, and deducted from standby time.**

Two more sets of logs are flown in. Suddenly, a radio message from Trapper Joe indicates a crewmember has been injured and needs to be flown back to your location. It is 1600. The helicopter flies out empty and the individual is flown back to SXQ, where the helicopter shuts down. A coworker meets him to drive him to town and the helicopter fuels. At 1730 the ship flies from SXQ back to your location, receives a hook-up, and leaves for the cabin site with two 35 lb. nets (one 400 lbs. cargo, one 250 lbs. cargo, two 5-lb. swivels and a 5-lb. lead line) along with an internal load of 45 lbs. of tools and 150 lbs. of concrete blocks. The remaining crewmember is retrieved back to Mile 63. The Hobbs now reads 459.2. You will return with the crew in their vehicle. You intend to give him .7 to get back to his home base. In the course of completing paperwork, you realize that some of your flight time for the injury is included in the Hobbs time for the sling work. What might you do?

**The previous trip to the cabin site with logs should give some indication of how much time it took for him to fly a sling load one way. The remaining time for that leg would have been transportation of the injured party to SXQ. The manager should strive to keep all types of missions separate, but if a breakdown of time has to be estimated, be careful that overall time is correct.**

The ship is released at 1900. Will the pilot be off duty within his 14-hour duty day limitation, including ½ hour for post-flight tasks? Complete the AMD 23.

**FARS states the pilot's duty day includes "ground duty of any kind." The pilot came on at 0630, so must be off by 2030 hrs. He has a flight of 0.7 back to CDA, leaving more than enough time to put the aircraft away and complete paperwork. However, it is prudent to note that an additional delay of even 30 minutes at some point during the day would have compromised the ability to meet duty day limitations. It is a good habit to plan some extra "empty" time into the day's schedule as it will almost always be used. Remember to ensure the pilot has a break at some point to eat, etc.**



**Exercise: ABS Hands-on**

**Flight Use Invoice (Helicopter Managers)**

**Scenario #1**

Date: Today

Contract: AG-8371-C-06-9019

Item: 1

A/C: N817MA

**Leg 1: Availability**

User Unit: 0316

Order Type: **PROJECT**

Mission Code: AV-Availability

Incident: Bar Fire

Mission Code: 12 Helitack

Job Code: WFPR1708

Remarks – Aaron Schoolcraft – HELM 505-331-0952

A/V: 0700-2100

**Leg 2: Helitack**

User Unit: 0316

Order Type: **INCIDENT**

Incident: Bar Fire

Origin: TUC

Destination: Bar Fire

Mission Code: 12 Helitack

Job code: WFPR1708

Pilot: Jim Bo

Passengers: 2

Cargo: 200

Starting Hobbs: 900

Ending Hobbs: 900.5

Remarks: Helitack Bar Fire

**Leg 3: Extended Standby**

User Unit: 0316

Order Type: **INCIDENT**

Mission Code: ES – Extended Standby

Incident: Bar Fire

Mission Code: 12 Helitack

Job Code: WFPR1708

Starting Clock: 1800 (Time Zone)

Ending Clock: 2100 (Time Zone)

Remarks – ES for Driver (Tom Jones) and Pilot

**Leg 4: Non-Availability**

User Unit: 0316

Order Type: **PROJECT**

Mission Code: NA-Non-Availability

Incident: Bar Fire

Mission Code: 12 Helitack

Job Code: WFPR1708

Starting Clock: 1300 (Time Zone)

Ending Clock: 1500 (Time Zone)

Remarks: NA for Chip Light

**Additional Charges:**

***Per Diem***

User Unit: 0316

Mission Code: 12 Helitack

Job Code: WFPR1708

Per Diem Look Up: Tucson, Arizona – Pima Co.

People: 2

Remarks: ON-for Driver and Pilot

***Service Truck Mileage***

User Unit: 0316

Mission Code: 12 Helitack

Job Code: WFPR1707

Miles: 250

Remarks: ST – Mileage for Bar Fire

***Charges***

User Unit: 0316

Mission Code: 12 Helitack

Job Code: WFPR1708

Remarks: Tie Down Fees

Total: \$100

**!!!!!!!!!! DELETE INVOICE !!!!!!!!!!!**



**Scenario #2 (Less Information)**

Date: Today

Contract: AG-8371-C-06-9019

Item: 1

A/C: N817MA

**Leg 1: Availability**

User Unit: 0316

Order Type: **PROJECT**

Mission Code: AV-Availability

Job Code: WFPR1708

**Leg 2: Water Drops**

User Unit: 0316

Order Type: **INCIDENT**

Origin: TUC

Destination: Bar Fire

Mission Code: 10 Water Drops

Job Code: WFPR1708

Pilot: Jim Bo

Gallons: 2500

Starting Hobbs: 900.5

Ending Hobbs: 902

**Leg 3: Extended Standby**

User Unit: 0316

Order Type: **INCIDENT**

Mission Code: ES – Extended Standby

Incident: Bar Fire

Mission Code: 12 Helitack

Job Code: WFPR1708

Starting Clock: 1800 (Time Zone)

Ending Clock: 2100 (Time Zone)

**Additional Charges:**

***Per Diem #1***

User Unit: 0316  
Mission Code: 12 Helitack  
Job Code: WFPR1708  
Per Diem Look Up: Tucson, Arizona – Pima Co.  
People: 1

***Per Diem #2***

User Unit: 0316  
Mission Code: 12 Helitack  
Job Code: WFPR1707  
Per Diem Look Up: Conus  
People: 1

***Service Truck Mileage***

User Unit: 0316  
Mission Code: 12 Helitack  
Job Code: WFPR1707  
Miles: 250 WFPR1608 (0156)  
Miles: 150 WFPR1608 (0316)

***Charges:***

User Unit: 0316  
Mission Code: 12 Helitack  
Job Code: WFPR1708  
Total: \$100  
Remarks: Relief Costs

**Additional Entries:**

½ Day AV – Aircraft Departed at 1000

**!!!!!!!!!! DELETE INVOICE !!!!!!!!!!!**

## UNIT OVERVIEW

**Course** Helicopter Management, S-372

**Unit** 4 – Flight Manuals

**Time** 2 Hours

### Objectives

1. Use a helicopter flight manual to reference the following sections: General, Limitations, Emergency Procedures, Normal Procedures, Performance and Supplements.
2. Use the appropriate flight manual section or supplement to determine the information needed to complete a load calculation.

### Strategy

This unit is designed to familiarize students with the information in aircraft flight manuals. It is recommended that a subject matter expert (helicopter pilot) instruct this unit.

### Instructional Methods

- Lecture/discussion

### Instructional Aids

- Computer with LCD projector and presentation software

### The cadre will need to provide examples of the following for each student:

- Performance Charts
- Helicopter Load Calculation books
- Conversion Charts
- Weight and Balance data sheet
- Aircraft Flight Manuals

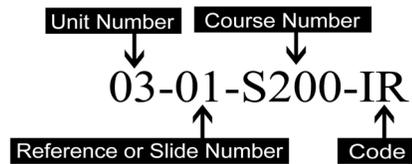
## Outline

- I. Flight Manual Basics
- II. Flight Manual Sections
- III. Flight Manual Supplements

## Aids and Cues Codes

The codes in the Aids and Cues column are defined as follows:

IG – Instructor Guide	IR – Instructor Reference
SW – Student Workbook	SR – Student Reference
HO – Handout	PPT – PowerPoint



## UNIT PRESENTATION

COURSE: Helicopter Management, S-372

UNIT: 4 – Flight Manuals

OUTLINE	AIDS & CUES
<b>UNIT TITLE SLIDE.</b>	4-1-S372-PPT
<b>PRESENT UNIT OBJECTIVES.</b>	4-2-S372-PPT
<b>HAND OUT PERFORMANCE CHARTS, HELICOPTER LOAD CALCULATION BOOKS, CONVERSION CHARTS, WEIGHT AND BALANCE, AND AIRCRAFT FLIGHT MANUALS.</b>	
I. FLIGHT MANUAL BASICS	4-3-S372-PPT
<p>Although flight manuals (FM) are structured differently, they contain the same information.</p> <p>Every helicopter is governed and limited by a respective helicopter flight manual.</p>	
A. Definition	4-4-S372-PPT
<p>Flight manuals are designed to provide pilots with general knowledge of a particular helicopter and information necessary for safe and efficient operation.</p> <p>Some models were issued a Pilot Operating Handbook which served the same purpose.</p>	

OUTLINE	AIDS & CUES
<p>B. Purpose of the Flight Manual</p> <p>Flight Manuals are dictated by certification FAR (Part 27, etc.) and required by 14 CFR 91.9 to be available in aircraft.</p> <p>Flight Manuals provide operators with:</p> <ul style="list-style-type: none"> <li>• FAA mandatory information and procedures</li> <li>• Manufacturer’s recommended procedures</li> <li>• Aircraft operating limitations</li> <li>• Performance planning information</li> <li>• Supplemental information, limitations, and performance</li> </ul>	<p>4-5-S372-PPT</p>
<p>C. Guiding Principles</p> <ul style="list-style-type: none"> <li>• Not all flight manuals are alike; they have different manufacturers and different regulatory requirements (U.S. vs. Foreign).</li> <li>• Each FM specific to one registration number.</li> <li>• Each FM and all supplements must be approved by the regulatory agency (FAA).</li> <li>• Supplements are “mini-manuals” and must be read as a whole.</li> <li>• The FM must be carried aboard the helicopter at all times.</li> </ul>	<p>4-6-S372-PPT</p> <p>4-7-S372-PPT</p>



OUTLINE	AIDS & CUES
<p>II. FLIGHT MANUAL SECTIONS</p> <p>Almost all helicopter flight manuals are divided into different sections such as:</p> <ul style="list-style-type: none"> <li>• Section I – General</li> <li>• Section II – Limitations</li> <li>• Section III – Emergency Procedures</li> <li>• Section IV – Normal Procedures</li> <li>• Section V – Performance and Supplements</li> </ul> <p>One problem encountered in the field is that pilots and managers often read from the wrong page or section in the flight manual.</p> <p>For instance, does it matter if you figure hover ceiling in ground effect with anti-ice on or anti-ice off? Maybe not, but it could at higher-pressure altitudes.</p> <p><b>PROVIDE AN OVERVIEW OF EACH SECTION.</b></p>	<p>4-11-S372-PPT</p>
<p>A. General Section</p> <ul style="list-style-type: none"> <li>• Only found in some flight manuals</li> <li>• Information about the FM itself</li> <li>• Revision procedures and organization</li> <li>• Terminology</li> <li>• Symbols and abbreviations</li> </ul>	<p>4-12-S372-PPT</p>

OUTLINE	AIDS & CUES
<p data-bbox="282 281 672 315">B. Limitations Section</p> <p data-bbox="185 369 1040 531"><b>ENSURE STUDENTS UNDERSTAND HOW TO DETERMINE THE INFORMATION NEEDED FOR COMPLETING A LOAD CALCULATION (THEY COMPLETE LOAD CALCULATIONS IN UNIT 5).</b></p> <p data-bbox="376 581 1073 615">This section is mandatory in all flight manuals.</p> <ol data-bbox="376 665 1114 1898" style="list-style-type: none"> <li data-bbox="376 665 1062 789">1. Basis of certification <ul style="list-style-type: none"> <li data-bbox="464 751 1062 789">• Regulatory part or category is cited</li> </ul> </li> <li data-bbox="376 837 894 1087">2. Types of operation approved <ul style="list-style-type: none"> <li data-bbox="464 926 610 959">• VFR</li> <li data-bbox="464 968 597 1001">• IFR</li> <li data-bbox="464 1010 686 1043">• Day/night</li> <li data-bbox="464 1052 683 1087">• Icing, etc.</li> </ul> </li> <li data-bbox="376 1136 854 1339">3. Flight crew requirements <ul style="list-style-type: none"> <li data-bbox="464 1224 854 1257">• Minimum flight crew</li> <li data-bbox="464 1266 647 1299">• Weight</li> <li data-bbox="464 1308 670 1339">• Location</li> </ul> </li> <li data-bbox="376 1388 943 1421">4. Maximum seating configuration</li> <li data-bbox="376 1472 1386 1728">5. Weight limits <ul style="list-style-type: none"> <li data-bbox="464 1560 1386 1644">• Gross weight limitations (non-jettisonable) <span data-bbox="1149 1560 1386 1596">4-14-S372-PPT</span></li> <li data-bbox="464 1692 1386 1728">• External gross weight (jettisonable) <span data-bbox="1149 1692 1386 1728">4-15-S372-PPT</span></li> </ul> </li> <li data-bbox="376 1776 1386 1898">6. Weight-Altitude-Temperature (WAT) <span data-bbox="1149 1776 1386 1812">4-16-S372-PPT</span> <ul style="list-style-type: none"> <li data-bbox="464 1860 1114 1898">• Take off, landing, and in ground effect</li> </ul> </li> </ol>	<p data-bbox="1149 281 1386 315">4-13-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>7. Other limitations</p> <ul style="list-style-type: none"> <li>• Center of gravity</li> <li>• Airspeed (velocity never to exceed)</li> <li>• Altitude</li> <li>• Ambient air temperature</li> <li>• Maneuvering</li> <li>• Main rotor RPM</li> <li>• Torque</li> <li>• Gas generator RPM</li> <li>• Power turbine RPM</li> <li>• Exhaust gas temperature</li> <li>• Fuel and oil pressure/temperature</li> <li>• Fuel and oil grade requirements</li> <li>• Limitation placards</li> <li>• Instrument limitation markings</li> </ul>	<p>4-17-S372-PPT</p>
<p>C. Normal Operations Section (FAA Approved)</p> <p>1. Flight planning</p> <ul style="list-style-type: none"> <li>• Flight plans</li> <li>• Performance planning</li> <li>• Weight and balance</li> </ul> <p>2. Pre-flight checks</p> <ul style="list-style-type: none"> <li>• Walk around exterior inspection</li> <li>• Checks at each station</li> </ul> <p>3. Pre-start checks</p> <ul style="list-style-type: none"> <li>• Doors</li> <li>• Pax and restraints</li> <li>• Cargo</li> <li>• Controls</li> <li>• Switches</li> </ul>	<p>4-18-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>4. Engine starting <ul style="list-style-type: none"> <li>• Starting sequence</li> </ul> </li> <li>5. Pre-takeoff checks <ul style="list-style-type: none"> <li>• Checking gauges and systems</li> </ul> </li> <li>6. Takeoff <ul style="list-style-type: none"> <li>• Engine RPM (N2)</li> <li>• Height-velocity limitations</li> </ul> </li> <li>7. Other normal procedures <ul style="list-style-type: none"> <li>• Take-off</li> <li>• In-flight operations</li> <li>• Descent, approach and landing</li> <li>• Engine and rotor shutdown</li> <li>• Post-flight procedures</li> <li>• Engine power check procedures</li> </ul> </li> </ul>	<p>4-19-S372-PPT</p>
<ul style="list-style-type: none"> <li>D. Emergency Procedures Section (FAA Approved) <ul style="list-style-type: none"> <li>• Engine fires</li> <li>• Engine failure (autorotation)</li> <li>• Engine re-start procedures</li> <li>• Engine over speed and under speed</li> <li>• Hydraulic failures</li> <li>• Electrical failures</li> <li>• Fuel system failures</li> <li>• Caution and warning systems</li> </ul> </li> </ul>	<p>4-20-S372-PPT</p>



OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>– Out of ground effect (OGE): Hovering without the benefit of the ground effect cushion.</li> <li>– Skid height</li> <li>– Ambient conditions (temp, wind)</li> <li>– Power settings</li> <li>– Equipment kits installed</li> <li>– Accessories on/off</li> <li>• Determine computed gross weight <ul style="list-style-type: none"> <li>– Rate of climb</li> <li>– Noise levels</li> <li>– Engine power assurance check procedures</li> </ul> </li> </ul>	<p>4-24-S372-PPT</p>
<p>III. FLIGHT MANUAL SUPPLEMENTS</p> <p><b>EXPLAIN HOW THE SUPPLEMENT SECTION IS TIED INTO THIS PART OF THE FLIGHT MANUAL. DETERMINE WHICH CHARTS NEED TO BE USED FOR A PARTICULAR AIRCRAFT (HIGH SKID, WITH CARGO HOOK, WITH ANTI-ICE ON, ETC.).</b></p> <p>A. Purpose of Supplements</p> <ul style="list-style-type: none"> <li>• Supplement information to the basic flight manual.</li> <li>• Supplement for optional equipment or approved procedures.</li> </ul>	<p>4-25-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Describes changes in operating procedures, limitations, and performance.</li> <li>• Must be approved by the regulatory agency.</li> <li>• Relationship with supplemental type certificate.</li> <li>• Arranged like the basic flight manual.</li> <li>• Limitations, normal operations, emergency operations and performance sections.</li> <li>• Necessary procedures or data is provided, specific to the equipment installed.</li> <li>• Specific changes in limitations or performance is critical.</li> <li>• May defer to basic flight manual section when no change is required.</li> </ul>	4-26-S372-PPT
<p>B. Load Calculation Form</p> <ul style="list-style-type: none"> <li>• Required by some natural resources agencies.</li> <li>• Critical flight manual information is required to complete load calculations.</li> <li>• Used to ensure that the allowable payload is not exceeded.</li> </ul>	4-27-S372-PPT

OUTLINE	AIDS & CUES
<p>C. Weight and Balance Data Sheet</p> <ul style="list-style-type: none"> <li>• Required by FAR.</li> <li>• Located in maintenance logbook or FM.</li> <li>• Document equipment installation or removal.</li> <li>• Displays current aircraft weight and center of gravity information.</li> </ul>	4-28-S372-PPT
<p>D. Maintenance Log Book</p> <ul style="list-style-type: none"> <li>• Required by FAR.</li> <li>• Documentation of inspections and maintenance performed by mechanics.</li> <li>• All entries must be signed and dated.</li> </ul>	4-29-S372-PPT
<p>E. Supplemental Type Certificate (STC)</p> <p>Definition: Supplements the original type certificate issued. Necessary when the aircraft is altered by modification or installed equipment.</p> <p>1. Examples:</p> <ul style="list-style-type: none"> <li>• Some avionics installations</li> <li>• Rappel brackets</li> <li>• Fixed external equipment (tanks, racks, pods)</li> </ul>	4-30-S372-PPT

OUTLINE	AIDS & CUES
<p>2. STC key information:</p> <ul style="list-style-type: none"> <li>• STC certificate number</li> <li>• Holder's name</li> <li>• FAR part cited</li> <li>• Original type cert number</li> <li>• Make and model(s)</li> <li>• Description</li> <li>• Limitations/conditions</li> <li>• Signature and date</li> <li>• Serial number</li> </ul>	4-31-S372-PPT
<p>F. Remember:</p> <ul style="list-style-type: none"> <li>• Never take the flight manual out of the helicopter without the pilot's approval.</li> <li>• As a module member, you may need to refer to the flight manual for certain information.</li> <li>• Let the pilot know what you want and get their permission before you start reading the manual.</li> <li>• When you get a helicopter you have never worked with before, review the flight manual with the pilot. You will probably learn together.</li> <li>• Use only performance charts found in the flight manual. These are the only approved charts.</li> </ul>	4-32-S372-PPT
<p><b>REVIEW UNIT OBJECTIVES.</b></p>	4-33-S372-PPT

## UNIT OVERVIEW

**Course** Helicopter Management, S-372

**Unit** 5 – Load Calculations

**Time** 3 Hours

### Objectives

1. Describe the use of load calculations and the helicopter manager's role.
2. Identify basic elements of helicopter performance.
3. Accurately complete a load calculation.
4. Identify errors in completed load calculations.

### Strategy

This unit focuses on the importance of accurate load calculations. Students become aware of their responsibility and the consequences of error.

### Instructional Methods

- Lecture/discussion

### Instructional Aids

- Computer with LCD projector and presentation software

### The cadre will need to provide the following for each student:

- Blank load calculation forms, AMD-67/FS 5700-17 (3 per student)
- Blank reference HIGE/HOGE charts for the B3 A-Star (1 per student)
- AS350 B2 A-Star performance charts (1 per student)

### Exercises

- Exercise 1: Load Calculation (pages 5.15 – 5.18)
- Exercise 2: Load Calculation AS350B3 A-Star (pages 5.18 – 5.19)
- Exercise 3: Load Calculation AS350B2 A-Star (pages 5.20 – 5.25)

## Outline

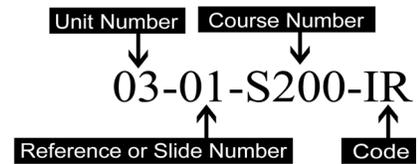
- I. The Use of Load Calculations and the Manager's Role
- II. Basic Elements of Helicopter Performance Planning
- III. Accurately Complete a Load Calculation

## Aids and Cues Codes

The codes in the Aids and Cues column are defined as follows:

IG – Instructor Guide  
SW – Student Workbook  
HO – Handout

IR – Instructor Reference  
SR – Student Reference  
PPT – PowerPoint



## UNIT PRESENTATION

COURSE: Helicopter Management, S-372

UNIT: 5 – Load Calculations

OUTLINE	AIDS & CUES
<b>UNIT TITLE SLIDE.</b>	5-1-S372-PPT
<b>PRESENT UNIT OBJECTIVES.</b>	5-2-S372-PPT
<p>I. THE USE OF LOAD CALCULATIONS AND THE MANAGER’S ROLE</p> <p>The load calculation form was developed by the FS/DOI to help pilots display performance capability and ensure that allowable loads do not exceed limitations.</p> <p>A. Requirements</p> <p>The AMD-67/FS-5700-17 load calculation is required for all helicopter flights conducted on interagency fires (for interagency fires, all participating agencies follow the IHOG).</p> <p>Some agencies use the “load calc” to predict performance on all flights associated with both fire and non-fire helicopter missions.</p> <p>Many accidents have happened that involved aircraft that were operating in conditions that were too high or too hot for the performance capability of the aircraft.</p> <p>If the contract or agency requires a load calculation, you must ask the pilot to complete the interagency load calculation form.</p>	<p>5-3-S372-PPT</p> <p>5-4-S372-PPT</p> <p>5-5-S372-PPT</p> <p>5-6-S372-PPT</p> <p>5-7-S372-PPT 5-8-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>The load calculation helps pilots and users predict helicopter capability within specific parameters. It helps ensure that helicopters are loaded within their limitations.</p>	
<p>The load calculation is reliable only if a power assurance check verifies the health of the engine.</p>	
<p>A power assurance check ensures that the aircraft's engine can perform as indicated in the performance charts.</p>	5-9-S372-PPT
<p><b>EMPHASIZE:</b></p>	
<p>For most models of helicopters, the pilot must complete the power assurance check by going to the appropriate charts in the flight manual.</p>	5-10-S372-PPT
<p>The load calculation, when used in conjunction with a current power assurance check, confirms the aircraft has enough power to perform the mission.</p>	5-11-S372-PPT
<p>B. Manager's Role</p>	5-12-S372-PPT
<p>If load calculations are the pilot's responsibility, why do managers need to be involved?</p>	
<p>A pilot may not do a load calculation often enough to be completely comfortable with the process.</p>	5-13-S372-PPT

OUTLINE	AIDS & CUES
<p>The helicopter manager should be very familiar with the load calculation to ensure accuracy and safely manage critical features of the mission (the allowable load, selection of landing areas, fuel burn, etc.).</p>	<p>5-14-S372-PPT thru 5-17-S372-PPT</p>
<p>II. BASIC ELEMENTS OF HELICOPTER PERFORMANCE PLANNING</p>	<p>5-18-S372-PPT</p>
<p>Being familiar with basic elements of performance will help the manager monitor load calculations even when working with unfamiliar models.</p>	
<p>A. Atmospheric Pressure</p> <p>Atmospheric pressure is the weight of the column of air above you (the pressure varies with the weather).</p>	<p>5-19-S372-PPT</p>
<p>What is being measured in the performance prediction process begins with understanding how atmospheric pressure and altitude relate to air density and aircraft performance.</p>	<p>5-20-S372-PPT</p>
<p>B. Altitude and Air Density</p>	<p>5-21-S372-PPT</p>
<p>Aircraft instruments use changes in atmospheric pressure to measure altitude above a reference point.</p>	<p>5-22-S372-PPT</p>
<p>At sea level, the cool, dense air provides optimum helicopter performance. But at higher altitude, or hotter conditions, the air is less dense and performance is significantly reduced.</p>	<p>5-23-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>To predict what a helicopter can do at different altitudes, air temperatures, and densities, there must be a standard “starting point” to measure against.</p> <p>This starting point is at sea level, on what is called a “standard day.”</p>	5-24-S372-PPT
<p>1. Standard day</p> <p>Standard performance charts for all models of helicopter are measured against what the aircraft was able to do at sea level, as a starting point, with an outside air temperature of 59 degrees Fahrenheit (15° C) and atmospheric pressure of 29.92.</p> <p>From this standard sea level pressure and temperature, the charts display the capability of the aircraft at various altitudes on up.</p>	5-25-S372-PPT
<p>Why does this matter to you?</p> <p>Because once you understand what the performance charts tell the pilot (and you) about the ability of the aircraft to perform under changing conditions, the better you will be able to review the load calculation for accuracy and apply the results to operations in the field.</p>	5-26-S372-PPT

OUTLINE	AIDS & CUES
<p>2. Standard pressure gradient</p> <p>As the air becomes less dense with an increase in altitude, under standard conditions, atmospheric pressure is reduced by about one inch of mercury for each 1000-foot gain in altitude.</p>	5-27-S372-PPT
<p>3. Standard lapse rate</p> <p>There is also a standard loss in temperature, called the “lapse rate” of 2° C (3½° F) for every 1000-foot increase in altitude.</p> <p>Temperature is required as input to the performance chart. With this knowledge, the air temperature at a distant landing area can be estimated until an actual temperature can be obtained.</p>	5-28-S372-PPT
<p>4. Altitude</p> <p>Altitude is also required as input to performance charts. The aircraft’s altimeter reads an increase or decrease in air pressure as an increase or decrease in altitude.</p>	5-29-S372-PPT 5-30-S372-PPT
<p>The altimeter tells how high the aircraft is above whatever pressure setting is dialed into the altimeter’s window.</p>	5-31-S372-PPT

OUTLINE	AIDS & CUES
<p>To navigate and know the altitude of the helicopter in relation to the terrain it is flying over, the pilot obtains an “altimeter setting” from flight service or from airport observations. This tells the pilot the height of the aircraft above sea level.</p>	5-32-S372-PPT
<p>5. Terrain</p> <p>Terrain (elevation) is also measured as height above sea level. If a mountain range is 5000 feet in elevation, pilots know they must fly well above 5000 feet mean sea level indicated on the altimeter, to clear the mountains.</p>	5-33-S372-PPT
<p>The altimeter is adjusted with new settings as the helicopter moves into new areas. The load calc sheet asks for PA, or “pressure altitude.”</p>	5-34-S372-PPT
<p>C. Pressure Altitude</p> <p>What is the difference between pressure altitude and other types of altitude?</p>	5-35-S372-PPT
<p>Pressure altitude is the altitude of the aircraft when the altimeter is set to 29.92, instead of to the current altimeter setting for sea level today.</p>	5-36-S372-PPT 5-37-S372-PPT
<p>Why? Because the performance given in the charts was based on the aircraft’s height above 29.92, which in standard conditions is at sea level.</p>	5-38-S372-PPT

OUTLINE	AIDS & CUES
<p>Today, the pressure plane of 29.92 might be at a very different level than sea level. We want to know how the helicopter will perform compared to how it performed in the charts.</p> <p>If you do not have the PA, the next best setting to use is the elevation from the map (of the place you are taking off, landing, or otherwise holding a hover in).</p> <p>Obtain an accurate PA as soon as possible, as it might impact your performance—especially at high altitudes or on hot days.</p> <p>D. Outside Air Temperature (OAT)</p> <p>True ambient air temperature at any given altitude. Usually measured in Celsius (C).</p>	<p>5-39-S372-PPT</p>
<p>III. ACCURATELY COMPLETE A LOAD CALCULATION</p> <p>Understanding the following terms and components of performance prediction will make the load calculation process easier to grasp and apply.</p>	<p>5-40-S372-PPT</p>
<p><b>HAND OUT A LOAD CALCULATION FORM.</b></p> <p>A. Empty Weight</p> <p>The weight of the helicopter (found in the flight manual, weight and balance section) including fixed equipment, unusable fuel, undrained oil, and hydraulic fluid.</p>	<p>5-41-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>B. Equipped Weight</p> <p>The empty weight plus the weight of lubricants and any equipment required by the mission or contract.</p>	5-42-S372-PPT
<p>C. Operating Weight</p> <p>Add equipped weight, weight of flight crew, and weight of fuel (use 7 lbs. per gallon for fuel weight) to obtain the operating weight of the helicopter.</p>	5-43-S372-PPT
<p>D. Computed Gross Weight</p> <p>Pilots use the hover ceiling performance charts to obtain the computed gross weight (which is entered on line 7b of the load calculation form).</p>	5-44-S372-PPT
<p>Reduces maximum gross weight (the most the aircraft can safely weigh) to the weight allowed for the temperature and pressure altitude at which the aircraft may operate in situations that require the most power, such as take-offs and landings.</p>	5-45-S372-PPT
<p>Take-off, landing, or external load work involves holding a hover that requires more power than cruise flight.</p>	5-46-S372-PPT
<p>E. Supplemental Equipment</p> <p>Supplemental equipment will have a “supplement” in the flight manual.</p> <p>An example is the sand filter on the A-Star helicopter.</p>	5-47-S372-PPT

OUTLINE	AIDS & CUES
<p>In some instances, this can affect the load calculation through supplemental charts that provide additional weight or temperature restrictions.</p> <p>Ask the pilot about supplemental equipment.</p>	
<p>F. Weight Reduction (download)</p> <p>A fixed weight that differs for each make and model of helicopter.</p> <p>This reduces the total allowed weight of the aircraft, and provides an increased margin of performance capability and safety.</p> <p>Intent is to reduce, or “download” from the performance (computed gross weight) of the aircraft which gives an adjusted weight.</p> <p>The amount of reduction for each model of aircraft is found in the contract.</p>	5-48-S372-PPT
<p>G. Adjusted Weight</p> <p>Subtract the computed gross weight from the weight reduction; the <u>adjusted weight</u> is recorded in line 9.</p>	5-49-S372-PPT
<p>H. Selected Weight</p> <p>Line 9 is the adjusted weight, having been through the “computation” of the performance charts, and with the download subtracted, if appropriate.</p>	5-50-S372-PPT

OUTLINE	AIDS & CUES
<p>Line 10 is the gross (total) weight limitation of the helicopter for that situation (jettisonable or non-jettisonable).</p>	
<p>Choose whichever is less: line 9 (adjusted weight) or line 10 (the limitation) and enter in line 11.</p>	
<p>I. Gross Weight Limit</p>	5-51-S372-PPT
<p>The gross weight limit of a helicopter (also called maximum gross weight) is a <u>limitation</u> on how much the helicopter can weigh.</p>	5-52-S372-PPT
<p>A limitation to the operation of an aircraft, found in the flight manual, must never be exceeded.</p>	5-53-S372-PPT
<p><b>EXPLAIN SLIDES 54 – 56 USING THE FOLLOWING INFORMATION:</b></p>	
<ul style="list-style-type: none"> <li>• <b>Slide 54</b> shows a maximum weight limitation for a non-jettisonable load for an A-Star B2. For this model of helicopter, the non-jettisonable gross weight limitation is a “structural” limitation, not a limitation to the performance capability of the engine.</li> </ul>	5-54-S372-PPT
<ul style="list-style-type: none"> <li>• <b>Slide 55</b> shows the jettisonable load maximum weight limitation, however, is the maximum weight that the aircraft can sustain in the air, and is the limit of its performance capability.</li> </ul>	5-55-S372-PPT
<ul style="list-style-type: none"> <li>• <b>Slide 56</b> shows how these limitations are entered into line 10 of the form.</li> </ul>	5-56-S372-PPT

OUTLINE	AIDS & CUES
<p><b>ASK STUDENTS:</b></p> <p>Why can some models of helicopters weigh more in the air than on the ground?</p> <p>The A-Star, Lama, and some other models can lift more than they can safely support during a landing.</p> <p>When would you encounter this?</p> <p>This might be encountered as a helicopter flies external cargo on a long line and is hooked up without having to land.</p> <p>Remember, ground effect can decrease the amount of power required for a helicopter to hold a hover.</p> <p>For many models, the chart for hover ceiling IGE assumes that if you are in ground effect, you are landing.</p> <p>Because of this assumption, the IGE performance chart may stop at structural limitations.</p>	<p>5-57-S372-PPT</p>
<p><b>EXPLAIN SLIDES 58 – 60 USING THE FOLLOWING INFORMATION:</b></p> <ul style="list-style-type: none"> <li>• <b>Slide 58:</b> For the A-Star and some other models, the charts assume the helicopter is landing when HIGE is used, so the IGE chart stops at the structural limit (of landing).</li> </ul>	<p>5-58-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• <b>Slide 59:</b> The heavy red line represents the maximum the helicopter can weigh with a non-jettisonable load (4,961 lbs). We cannot see the full performance capability of the engine because the chart stops at the structural limitation.</li> </ul>	5-59-S372-PPT
<ul style="list-style-type: none"> <li>• <b>Slide 60:</b> Maximum gross weight sitting on the skids: 4,961 lbs.</li> </ul>	5-60-S372-PPT
<p><b>EXPLAIN SLIDES 61 – 62 USING THE FOLLOWING INFORMATION:</b></p>	
<ul style="list-style-type: none"> <li>• <b>Slide 61:</b> The HOGE chart assumes that if you are holding a HOGE, you might not be landing.</li> </ul>	5-61-S372-PPT
<ul style="list-style-type: none"> <li>• <b>Slide 62:</b> In this chart we can see beyond the “skid limit” to the full performance capability of the helicopter, which in the case of the B2 A-Star is a maximum weight of 5,512 lbs. (the solid red line furthest right).</li> </ul>	5-62-S372-PPT
<p><b>ASK STUDENTS:</b></p>	
<p>Which chart is the most conservative?</p>	
<p>Remember, OGE requires more power. Even though the OGE chart looks at all of the performance, it is more conservative.</p>	5-63-S372-PPT
<p>This is because computed gross weight will be less with the OGE than the IGE chart at the same altitude and temperature.</p>	
<p>Unless the site is known to be HIGE, the OGE chart should be used.</p>	
<p>The maximum gross weight limit of the B2 A-Star helicopter, when in the air, is 5,512 lbs.</p>	5-64-S372-PPT

OUTLINE	AIDS & CUES
<p><b>EXERCISE 1: Load Calculation</b></p> <p><u>Purpose:</u> To familiarize students with completing a load calculation form.</p> <p><u>Format:</u> Class exercise</p> <p><u>Time:</u> 10 minutes</p> <p><u>Materials (1 per student):</u></p> <ul style="list-style-type: none"> <li>• Blank load calculation forms</li> </ul> <p><u>Instructions:</u></p> <ol style="list-style-type: none"> <li>1. Hand out the blank load calculation forms.</li> <li>2. Use slides 66 – 85 and the exercise information below to facilitate the exercise.</li> <li>3. Read through the information with students, show the slides, and answer questions.</li> </ol> <p><u>Exercise Information:</u></p>	<p>5-65-S372-PPT</p>
<p><b>Show slide 66.</b> Instruct students to complete the top portion of the form, line by line, exactly as shown. The form requires the model of the helicopter as well as the tail number. Each helicopter will have a load calculation done specifically for it, and good for that helicopter only. Record pilot's name and name of mission. Date and time are important. The time indicates time of day the mission is taking place. There might be one for morning conditions and another for hotter conditions in the afternoon.</p> <p><b>Ask students:</b> A new load calculation is done each day. Why?</p>	<p>5-66-S372-PPT</p>

OUTLINE	AIDS & CUES
<p><b>Answer:</b> Because even if you are working in the same temperature and elevation each day, the pressure altitude may be different. Daily load calculations help ensure that thought is given to changing conditions and changing weights (such as new flight crew) as well as daily attention to accuracy.</p>	
<p><b>Show slide 67.</b> Record the departure location, pressure altitude, and outside air temperature. The same for the destination, if known. Two boxes are next to the outside air temperature on lines 1 and 2. Check the box that represents the most restrictive situation, in terms of altitude and temperature, and the computed gross weight it yields. If temperature is unknown, estimate using the standard lapse rate of minus 2° centigrade for every 1,000-foot increase in altitude. Use elevation in place of pressure altitude, but verify PA when visiting the site.</p>	5-67-S372-PPT
<p><b>Emphasize:</b> A new load calculation must be done for every 1,000-foot change in altitude or 5° C change in temperature. This information can be found in the load calculation booklet as well as chapter 7 of the IHOG.</p>	
<p><b>Show slide 68.</b> In this section, enter the helicopter equipped weight, weight of the flight crew, and the fuel. Use 7 lbs. for every gallon of Jet-A or Jet-B fuel. These three items form a “unit” and are added together for the operating weight.</p> <p><b>Ask students:</b> What do you have for an operating weight?</p>	5-68-S372-PPT
<p><b>Show slide 69 for the answer:</b> 3,820 lbs.</p>	5-69-S372-PPT
<p><b>Show slide 70.</b> In block 7a, enter the number of the chart or supplement that is being used.</p>	5-70-S372-PPT
<p><b>Show slide 71.</b> Move to line 7b for computed gross weight. For this, the pilot must go to the charts.</p>	5-71-S372-PPT

OUTLINE	AIDS & CUES
<b>Show slide 72.</b> Go into the HIGE chart at 6200' pressure altitude. The destination PA.	5-72-S372-PPT
<b>Show slide 73.</b> Use a straight edge to come across to temperature 26C. The destination temperature.	5-73-S372-PPT
<b>Show slide 74.</b> At this intersecting point, come straight down to obtain the computed gross weight.	5-74-S372-PPT
<b>Show slide 75.</b> 4,880 lbs. is the HIGE computed gross weight. Depending on how you read the intersecting lines, your answer may be slightly different (but not more than a few pounds either way).	5-75-S372-PPT
<b>Show slide 76.</b> Repeat this process using the OGE hover ceiling chart.	5-76-S372-PPT
<b>Show slide 77.</b> You should have roughly 4,550. Ask if you are not sure where this number came from.	5-77-S372-PPT
<b>Show slides 78 and 79.</b> Apply the weight reduction (found in the contract). For the A-Star B2, it is 160 lbs.	5-78-S372-PPT 5-79-S372-PPT
<b>Emphasize:</b> While the download is not required for jettisonable loads, it is optional for a jettisonable load if the pilot feels that conditions or circumstances warrant it.	
<b>Show slide 80.</b> Subtract the weight reduction from the computed gross weight. This “adjusts” your computed gross weight to reflect the download.	5-80-S372-PPT
<b>Show slide 81.</b> You should now have an adjusted weight of 4,720 lbs. for non-jettisonable HIGE; 4,390 lbs. for non-jettisonable HOGE; and 4,550 lbs. for jettisonable HOGE.	5-81-S372-PPT
<b>Show slide 82 and ask students:</b> Where does the gross weight limit come from? <b>Answer:</b> From the “limitations” section of the flight manual.	5-82-S372-PPT

OUTLINE	AIDS & CUES
<p><b>Show slide 83.</b> For line 11, the weight you select will always be the lowest of either line 9 (the adjusted weight) or line 10 (gross weight limit). In this case, the adjusted weight was less than the gross weight limit, so that becomes the “selected weight.”</p>	5-83-S372-PPT
<p><b>Show slide 84.</b> The operating weight of 3,820 lbs. is brought in to line 12 and subtracted from the selected weight.</p>	5-84-S372-PPT
<p><b>Show slide 85.</b> In simplistic terms, we are subtracting what <i>we do</i> weigh from what <i>we could</i> weigh, and the result is our “allowable payload” – what we can now put onboard the aircraft.</p>	5-85-S372-PPT
<p><b><u>End of Exercise 1.</u></b></p>	
<p><b>EXERCISE 2: Load Calculation AS350 B3 A-Star</b></p>	5-86-S372-PPT
<p><u>Purpose:</u> Students complete a load calculation form.</p>	
<p><u>Format:</u> Students work individually.</p>	
<p><u>Time:</u> 15 minutes</p>	
<p><u>Materials (1 per student):</u></p> <ul style="list-style-type: none"> <li>• Blank load calculation forms</li> <li>• Blank reference HIGE/HOGE charts for the B3 A-Star</li> </ul>	
<p><u>Instructions:</u></p>	
<p>1. Hand out the exercise materials.</p>	
<p>2. Facilitate the exercise using slides 87 – 89.</p>	
<p>3. Students will use the inputs listed below to complete the load calculation form.</p>	

OUTLINE	AIDS & CUES
<p><u>Inputs:</u></p> <ul style="list-style-type: none"> <li>• AS350 B3 equipped weight: 2985 lbs</li> <li>• Pilot Hal Copter weight: 200 lbs</li> <li>• Departure: 6500 ft, 25° C</li> <li>• Destination: 8000 ft, 20° C</li> <li>• 75 gallons fuel</li> <li>• Skid limit: 4961</li> <li>• Jettisonable limit: 6173</li> <li>• Weight reduction: 175 lbs</li> </ul> <p><u>Exercise Information:</u></p> <p><b>Show slide 87.</b> The HIGE chart shows a computed gross weight of 4,961 lbs.</p> <p><b>Show slide 88.</b> The HOGE chart gives us just 4,900 lbs. We take the 175 lb. weight reduction for the non-jettisonable loads.</p> <p><b>Ask students:</b> What numbers did you come up with?</p> <p><b>Show slide 89 for answers.</b> Notice that the B3 A-Star has a much higher gross weight limit for jettisonable loads than the B2 A-Star has. Hazardous materials check-off is confirmed, and both the pilot and manager must sign to complete the load calculation.</p> <p><b><u>End of Exercise 2.</u></b></p>	<p>5-87-S372-PPT</p> <p>5-88-S372-PPT</p> <p>5-89-S372-PPT</p>

OUTLINE	AIDS & CUES
<p><b>EXERCISE 3: Load Calculation</b></p> <p><u>Purpose:</u> To give students experience in completing a load calculation form with complicated information.</p> <p><u>Format:</u> Students work individually.</p> <p><u>Time:</u> 15 minutes</p> <p><u>Materials (1 per student):</u></p> <ul style="list-style-type: none"> <li>• Blank load calculation forms</li> <li>• AS350 B2 A-Star performance charts</li> </ul> <p><u>Instructions:</u></p> <ol style="list-style-type: none"> <li>1. Hand out the exercise materials.</li> <li>2. Use slides 90 – 107 and the exercise information below. Instructor should facilitate the exercise by showing the slides, reading the information, and answering questions as they arise. Students should complete the form as much as they can before moving on to the next slide.</li> </ol> <p><u>Exercise Information:</u></p> <p><b>Ask students:</b> According to the load calculation on <b>slide 90</b>, what model of aircraft is being used for this exercise? Students should fill in everything through line 6.</p>	<p>5-90-S372-PPT</p>
<p><b>Show slide 91.</b> As we discuss the remaining steps, you may notice something different from the previous examples.</p> <p><b>Ask students:</b> What did you get for HIGE?</p>	<p>5-91-S372-PPT</p>
<p><b>Show slide 92 for answer:</b> 4,961 lbs.</p> <p><b>Ask students:</b> Why?</p>	<p>5-92-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>Students should say they could not go any further on the chart before they hit the gross weight limit; in this case, a structural “skid limit.”</p>	
<p><b>Show slide 93:</b> The OGE chart is close – use your straight edge carefully to hit the appropriate points on the chart. Students should perceive that the computed gross weight arrived at on the OGE chart is higher than the IGE chart. Students should have 4,990 lbs. (or something close to it).</p>	5-93-S372-PPT
<p><b>Show slide 94 and ask students:</b> Why is the OGE higher than the IGE? Is this right?</p>	5-94-S372-PPT
<p><b>Show slide 95 for answer:</b> The weight reduction is subtracted from the performance capability, the computed gross weight. The OGE chart doesn’t stop at the take-off and landing limitation. The weight reduction, or “download” gives an extra margin of safety; the intent is to subtract that amount of weight from what the helicopter is capable of.</p>	5-95-S372-PPT
<p><b>Show slide 96:</b> Subtract the download as appropriate to obtain the adjusted weights shown.</p>	5-96-S372-PPT
<p><b>Show slide 97:</b> Enter the gross weight limit.</p>	5-97-S372-PPT
<p><b>Show slide 98:</b> Select the appropriate weight.</p>	5-98-S372-PPT
<p><b>Show slide 99:</b> On line 12 the operating weight comes in again from line 6...the completed load calculation.</p>	5-99-S372-PPT
<p><b>Ask students:</b> Do you understand why, in this case, the OGE number came out higher than the IGE number?</p>	
<p><b>Show slide 100:</b> Would you be right in using the OGE computed gross weight? Why or why not?</p>	5-100-S372-PPT

OUTLINE	AIDS & CUES
<p><b>Show slides 101 and 102:</b> If we go to a new landing site where ground effect is not known, should we consider it HIGE or HOGE?</p> <p>HOGE is the correct answer, because the chart is more conservative than the HIGE, because there is no ground effect to reduce the amount of power required to hold a hover.</p>	<p>5-101-S372-PPT 5-102-S372-PPT</p>
<p><b>Show slide 103:</b> At the same altitude and temperature, the OGE chart will display the ability to hold a hover with proportionately less weight than the IGE chart, because it takes more power.</p>	<p>5-103-S372-PPT</p>
<p><b>Allow students 10 minutes to read the following references:</b></p> <ul style="list-style-type: none"> <li>• Information Bulletin No. 03-01 (SW page 5.13; IG page 5.27). This verifies that when operating at low altitudes and cool temperatures, it is fine to use the OGE chart for IGE performance.</li> <li>• Bell 212 Helicopter Load Calculations Safety Alert (SW pages 5.15 – 5.16; IG pages 5.29 - 5.30).</li> </ul>	<p>5-1-S372-IR/SR 5-2-S372-IR/SR</p>
<p><b>Show slides 104 and 105:</b> Different models of helicopter may present slight differences in doing a load calculation. The Bell 212, for example, uses a WAT chart to find the gross weight limit for line 10 of the load calculation. This limitation is not structural, and it varies with altitude and temperature, but it is the limitation just the same.</p> <p>The pilot uses the WAT chart before going to the hover ceiling performance charts. Ask if you are not sure where the pilot obtained the limitation or computed gross weight for any model of helicopter. The pilot should show you in the flight manual.</p>	<p>5-104-S372-PPT 5-105-S372-PPT</p>

OUTLINE	AIDS & CUES
<p><b>Show slide 106 and ask students:</b> What’s wrong with this load calculation? Allow students 10 minutes to study this slide and make a list of any mistakes they find. Emphasize that one of their primary responsibilities is to review load calculations for accuracy.</p> <p><b>Discuss possible answers:</b></p> <ol style="list-style-type: none"> <li>1. Box in either line 1 or line 2 showing the most restrictive conditions is not checked.</li> <li>2. The weight of fuel was calculated incorrectly with 6 lbs/gallon, should have been 7 lbs/gallon.</li> <li>3. No download was applied to HOGE.</li> <li>4. Math error on HOGE-J.</li> <li>5. Payload too much for HIGE/HOGE.</li> <li>6. There are no signatures.</li> <li>7. Hazardous Materials box not checked.</li> </ol> <p><u>Additional items:</u></p> <p>How many gallons an hour does the AS 350B2 A-Star burn? Look in your contract. How much fuel is required as a reserve?</p> <p>Do you have enough fuel at this point to accomplish anything? What will you need after the pilot fuel’s the aircraft?</p> <p>Students should find in the respective contracts that the A-Star B2 burns an average of 48 gallons/hour.</p>	<p>5-106-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>The contract should tell them a 30-minute reserve is required. FARs requires at least a 20-minute fuel reserve.</p> <p>Students should see that there is not enough fuel on board, and that they will need a new load calculation when the aircraft is fueled.</p> <p>Does the flight crew weight of 170 lbs. total include pilot's gear?</p> <p>Be sure to ask the weight of any pilot gear because emergency day pack, etc., is not accounted for anywhere else if it isn't accounted for in the flight crew weight.</p> <p><b>Show slide 107 and ask students:</b> What's wrong with this load calculation? Have students study this slide and find the mistakes.</p> <p><b>Discuss possible answers:</b></p> <ol style="list-style-type: none"> <li>1. Box not checked for most restrictive situation.</li> <li>2. The adjusted weight from HIGE was taken for use as the computed gross weight for HOGC. This actually happened because pilot did not think it looked right to have the HOGC higher than the HIGE computed gross weight.</li> <li>3. Payload is over the allowable.</li> <li>4. No hazmat check-off.</li> <li>5. No signatures.</li> </ol> <p>Ask about supplemental equipment. Asking may jog the pilot's memory that there has been a recent change in equipment, a supplemental chart that is needed, etc.</p>	<p>5-107-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>Practice doing load calculations in theoretical situations and you will be better able to review them for accuracy in the field.</p>	<p>5-108-S372-PPT</p>
<p><b><u>End of Exercise 3.</u></b></p>	
<p><b>REVIEW UNIT OBJECTIVES.</b></p>	<p>5-109-S372-PPT</p>





**United States Department of the Interior**  
**National Business Center**  
**Office of Aircraft Services**  
300 E. Mallard Drive, Ste. 200  
Boise, ID 83706-3991



In reply refer to: 113A2

March 24, 2003

**OAS INFORMATION BULLETIN NO. 03-01**

To: All DOI Aviation Operations  
From: Michael A. Martin, Acting Director, OAS  
Subject: Clarification of Helicopter Load Calculation Method

The Department of the Interior is providing clarification of the helicopter load calculation method. This clarification is specific to HIGE non-jettisonable load operations and the OAS-67, Helicopter Load Calculation, item 7 of the specific instructions which states:

COMPUTED GROSS WEIGHT - Obtain weight from A/C Hover-in-Ground-Effect (HIGE) Chart using External Load Chart if available. Sling load missions and adverse terrain or adverse weather, etc., flights will be computed from A/C Hover-Out-of-Ground-Effect (HOGE) charts.

**NOTE: DO NOT** use performance charts from any source other than that specific (by registration) helicopter's approved rotorcraft flight manual.

The intent of the above language is to use the performance chart that shows the best performance to determine the computed gross weight. In some aircraft, the HIGE charts stop at the maximum internal gross weight limit (commonly known as a "skid limit"), while the HOGE charts extend to the maximum external gross weight limit. If you limit HIGE operations by the use of only HIGE charts, you may not be taking advantage of the best performance before applying the weight reduction. It is perfectly acceptable to use a HOGE chart to determine the best performance for either HIGE or HOGE operations (the opposite is not true). The HOGE chart is more restrictive but is generally expanded to the external load limit of the aircraft. The use of the HOGE chart to determine computed gross weight will generally only be an advantage at temperatures below 30 °C and 4,000 feet pressure altitude.

Example: An AS-350B2 at 3,000 feet pressure altitude and 30 °C using the HIGE chart reveals a computed gross weight of 4,961 lb. Applying the weight reduction of 160 lb leaves a selected weight of 4,801 lb. Using the HOGE chart for the same conditions reveals a computed gross weight of 5,114 lb. Applying the weight reduction of 160 lb leaves a selected weight of 4,954 lb. This is a difference of an additional 153 lb using the performance calculation from the HOGE chart.

**Under no circumstances shall the maximum internal gross weight limit be exceeded with a non-jettisonable load.**



Michael A. Martin, Acting Director



UNITED STATES DEPARTMENT OF THE INTERIOR  
OFFICE OF AIRCRAFT SERVICES  
**SAFETY ALERT**

**No. 02-01**

**April 26, 2002**

**Subject:**  
Bell 212 Helicopter Load Calculations

**Area of Concern:**  
Helicopter Operations

**Distribution:**  
All DOI Aviation Operations

**Discussion:** Recently there have been inquiries from the field regarding the proper procedures and proper performance charts and limitations used in the completion of the Helicopter Load Calculation for the Bell 212. Additionally, procedures for performance planning for the Helicopter Load Calculation with the availability of the Bell 212's Increased Takeoff Horsepower Supplement (Flight Manual Supplement FMS-29) and Increased Weight Altitude Temperature Limit Supplement (FMS-35) has further confused the issue of proper completion of the Helicopter Load Calculation process.

The following information should help clarify the procedures for completing the Helicopter Load Calculation for this helicopter and its enhanced performance supplement kits. The information and instructions are valid for both the Department of the Interior and Department of Agriculture operations.

The Helicopter Load Calculation process is an Interagency (OAS or USFS) planning document. It is a requirement of those agencies to assist in safe flight operations. It is not a Federal Aviation Regulation requirement and it is not a helicopter manufacturer's requirement. The process was instituted by both agencies in 1981 to ensure that proper performance planning was being done during natural resource helicopter missions.

**Instructions:** The following are instructions regarding the proper completion of the Helicopter Load Calculation for the basic Bell 212 (reference the Bell 212 Rotorcraft Flight Manual FM-1, Revision 3, 01 May 1998) with Cargo Hook Flight Manual Supplement (FMS-3, Revision 1, 12 September 1997) kit option. Additionally, procedures for the completion of the Load Calculation process with the Bell 212 Increased Takeoff Horsepower Supplement upgrade kit (FMS-29, Reissue, 14 August 1995) and the Bell 212 Increased Weight Altitude Temperature Limit Supplement upgrade kit (FMS-35, 22 March 1996) are included.

Specific instructions, per the Interagency Helicopter Operations Guide, for completing the Load Calculation form for all models of helicopters can be found on the inside covers of the Helicopter Load Calculation booklets of forms FS-5700-17 and OAS-67.

**Lines 1-6:** Self-explanatory.

**Line 7:** For both HIGE and HOGЕ columns use external cargo charts. *Do not use Weight-Altitude-Temperature charts found in the Limitation Section.*

For the basic Bell 212 use Flight Manual Supplement FMS-3, Cargo Hook Figure 4-1 IGE Takeoff Power (Heater Off), page 7 and Figure 4-2 OGE Takeoff Power (Heater Off), pages 13 and 14.

For the Increased Takeoff Horsepower option version use Flight Manual Supplement FMS-29, subsection labeled External Cargo, Figure 4-5 IGE Takeoff Power (Heater Off), page 30 and Figure 4-5 OGE Takeoff Power (Heater Off), pages 26 and 27.

For the Increased Weight Altitude Temperature Limit (FMS-35) option version use Flight Manual Supplement FMS-29, subsection labeled External Cargo, Figure 4-5 IGE Takeoff Power (Heater Off), page 30 and Figure 4-5 OGE Takeoff Power (Heater Off), pages 26 and 27. **Note:** The use of FMS-29 is due to FMS-35 not having any External Cargo charts and a FMS-35 version has the FMS-29 kit installed.

**Line 8:** Use the 390 pound fixed weight reduction for all versions of the Bell 212.

**Line 9:** Self-explanatory.

**Line 10:** Use the Weight-Altitude-Temperature chart found in Section 1, Limitations, of the Bell 212 Rotorcraft Flight Manual.

For the basic Bell 212 use the Rotorcraft Flight Manual (FM-1) Section 1, Limitations, Figure 1-1, Weight-Altitude-Temperature chart, page 1-11.

For the Increased Takeoff Horsepower option version use the Rotorcraft Flight Manual (FM-1) Section 1, Limitations, Figure 1-1, Weight-Altitude-Temperature chart, page 1-11. *There is no WAT chart in FMS-29 therefore revert back to basic manual (FM-1).*

For the Increased Weight Altitude Temperature Limit option version use the Flight Manual Supplement FMS-35, Section 1, Limitations, Figure 1-1, WAT chart, page 2.

**Line 11:** Make the decision as to whether mission load is jettisonable or nonjettisonable and then whether it will be a HIGE or HOGЕ operation. Then follow the instructions for Line 11 on the inside cover of the Helicopter Load Calculation booklet (FS-5700-17 or OAS-67).

**Lines 12-16:** Self-explanatory.

For further detailed information see the attachment located at <http://www.aviation.fs.fed.us/library/alerts/attachment.pdf> or if you have any further questions regarding this process contact Morgan Mills, National Helicopter Standardization Pilot, U.S. Forest Service, NIFC at (208) 387-5614. Simultaneous distribution of this aviation safety alert is being made by the U.S. Forest Service.

  
Robert Galloway  
Aviation Safety Manager

## UNIT OVERVIEW

**Course** Helicopter Management, S-372

**Unit** 6 – Pre-Use Inspections

**Time** 3 Hours

### Objectives

1. Identify elements of a pre-use inspection on a helicopter and fuel service vehicle.
2. Identify and complete pre-use recordkeeping forms.

### Strategy

Students learn the importance of pre-use inspections. An **optional** field exercise is located at the end of this unit; it requires a pilot, helicopter, and service vehicle. If the field exercise is conducted, students complete a hands-on and visual inspection of the helicopter and service vehicle using an inspection form. Procedures, policy, qualifications, forms, and aircraft condition are also covered.

**NOTE: Having a pilot, helicopter, and service vehicle available will enhance students learning experience.**

### Instructional Methods

- Lecture/discussion

### Instructional Aids

- Computer with LCD projector, presentation software, and **Internet access**
- Pilot, helicopter, and service vehicle (if available)
- Aviation Transport of Hazardous Materials Handbook
- DOT Emergency Response Guide
- Interagency Helicopter Operations Guide (IHOG)

**The instructor must provide handouts of the following for each student:**

- CWN Manager Forms Kit
- HCM forms from the IHOG forms package

## Optional Field Exercise

- Pre-Use Inspection (see page 6.18)

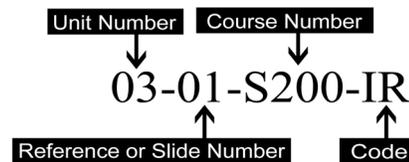
## Outline

- I. Why Inspect?
- II. Pre-Use Inspection Process
- III. Pre-Use Inspections
- IV. Helicopter Condition
- V. Required Equipment Inspection
- VI. Fuel Service Vehicle Inspection
- VII. Summary

## Aids and Cues Codes

The codes in the Aids and Cues column are defined as follows:

IG – Instructor Guide	IR – Instructor Reference
SW – Student Workbook	SR – Student Reference
HO – Handout	PPT – PowerPoint



## UNIT PRESENTATION

COURSE: Helicopter Management, S-372

UNIT: 6 – Pre-Use Inspections

OUTLINE	AIDS & CUES
<b>UNIT TITLE SLIDE.</b>	6-1-S372-PPT
<b>PRESENT UNIT OBJECTIVES.</b>	6-2-S372-PPT
I. WHY INSPECT?	6-3-S372-PPT
A. Quality Assurance	
DOI and USDA Forest Service recognize the need for aviation quality assurance; they each accept the other's carding.	
• FAA limits their oversight to point-to-point flights (Part 135), external load (Part 133), and agriculture application (Part 137) flight operations.	
• Natural Resource Flight Operations has unique training and qualification requirements.	6-4-S372-PPT
• DOI and USDA have special equipment and mission requirements that go well beyond any FAA oversight.	

OUTLINE	AIDS & CUES
<p data-bbox="298 283 787 319">B. CWN Manager Forms Kit</p> <p data-bbox="391 369 1062 447">As part of the process, the vendor companies and pilots complete these forms:</p> <p data-bbox="203 497 854 533"><b>HAND OUT COPIES OF THE FORMS:</b></p> <ul data-bbox="391 583 1094 961" style="list-style-type: none"> <li data-bbox="391 583 873 619">• AMD 68 Inspection Report</li> <li data-bbox="391 667 1019 703">• AMD AR-31 Pilot Verification Form</li> <li data-bbox="391 751 1073 829">• AMD 64D Personnel Data Info and Pilot Carding</li> <li data-bbox="391 877 1094 961">• AMD 69/USFS 5700 Pilot Evaluation and Quality Check</li> </ul> <p data-bbox="298 1010 699 1045">C. Contract/Agreement</p> <ul data-bbox="391 1096 1089 1600" style="list-style-type: none"> <li data-bbox="391 1096 1089 1215">• Review the helicopter contract/agreement with the company representative, usually the pilot.</li> <li data-bbox="391 1264 992 1383">• Take time to read it—most contain standard language, but there can be dramatic regional differences.</li> <li data-bbox="391 1432 1065 1600">• To complete pre-use inspections and administer the contract accordingly, you need to know what is stated in the contract/agreement.</li> </ul>	<p data-bbox="1138 1010 1354 1045">6-5-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>II. PRE-USE INSPECTION PROCESS</p>	6-6-S372-PPT
<p>Initial inspections of aircraft and pilots are conducted by qualified maintenance and pilot inspectors using a standard process from the Forest Service and Aviation Management.</p>	
<p>After a comprehensive inspection to ensure vendor personnel and equipment meet contract specifications, a card is issued.</p>	6-7-S372-PPT
<p>A. Inspection Requirements</p> <p>Procurement document compliance – different standards for different missions:</p> <ul style="list-style-type: none"> <li>• Point-to-point</li> <li>• Wildland fire</li> <li>• Mountain</li> </ul>	6-8-S372-PPT
<p>B. Special Equipment</p> <ul style="list-style-type: none"> <li>• Interagency fire</li> <li>• Off shore flight operations</li> <li>• ACETA</li> <li>• Aerial ignition</li> <li>• Rappel</li> <li>• Short haul</li> </ul>	6-9-S372-PPT
<p>C. Special Piloting Skills</p> <ul style="list-style-type: none"> <li>• Water bucket operations</li> <li>• Longline</li> <li>• Rappel/short haul</li> <li>• Mountain flying</li> <li>• Aerial ignition</li> <li>• Shipboard landings</li> </ul>	6-10-S372-PPT

OUTLINE	AIDS & CUES
<p>D. Unique Support Equipment</p> <ul style="list-style-type: none"> <li>• White strobe lights</li> <li>• Painted rotor blades</li> <li>• High skids</li> <li>• FM radios</li> <li>• Extended baggage compartments</li> <li>• Animal tracking antennas</li> <li>• Aircraft floats</li> </ul>	6-11-S372-PPT
<p>III. PRE-USE INSPECTIONS</p> <p>Pre-use inspections of the aircraft and fuel service vehicle are done to enforce contract compliance. All parties are required to comply with the contract.</p> <p>The pre-use inspection sets the tone for your future relationship with the contractor.</p>	6-12-S372-PPT
<p>A. Pre-Use Checklist</p> <p>Use the pre-use checklist to ensure contract conditions are being met.</p>	6-13-S372-PPT
<p><b>HAND OUT THE PRE-USE INSPECTION FORM.</b></p>	6-1-S372-HO
<p>1. Review the following items with the pilot and mechanic (these items should be noted in the aircraft maintenance log):</p> <ul style="list-style-type: none"> <li>• Approval cards and duty logs</li> <li>• Aircraft and maintenance logs</li> <li>• Additional equipment</li> <li>• Fuel servicing vehicle</li> </ul>	6-14-S372-PPT

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Aircraft flight log</li> <li>• Pilot flight time/duty day log</li> <li>• Driver time duty day log</li> <li>• Mechanic duty day log</li> <li>• Aircraft fuel facility inspection log</li> <li>• Aircraft current equipped weight</li> </ul> <p><b>Note:</b> Recreational or personal flying doesn't count against pilot flight time.</p>	6-15-S372-PPT
<p>2. With the pilot and mechanic, identify what type of inspection program the aircraft is under and document (Progressive Maintenance Schedule, 50- or 100-hour inspection, etc.).</p> <ul style="list-style-type: none"> <li>• Have power assurance checks been completed? If so, how often and when was the last one completed? Are they being graphed?</li> <li>• Any entries on major component changes, or components due, or coming due for inspection? If so, keep air operations (or whoever you are working for) informed.</li> </ul> <p>Stay informed on time remaining on any maintenance requirements or inspections coming due and duration of the maintenance or inspection process.</p>	6-16-S372-PPT

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"><li>• Any noted entries of aircraft damage? If so, document on the checklist or in the daily diary.</li></ul> <p>3. Review the aircraft and fuel service vehicle data cards.</p> <p>It is important to check the vendor name, aircraft registration and vehicle license number, and expiration dates.</p> <p>4. Review pilot and mechanic qualifications.</p> <p>Is the pilot authorized to perform any maintenance? Chip light inspections? Is it in writing?</p>	

OUTLINE	AIDS & CUES
<p><b>CLASS DISCUSSION: Aircraft Maintenance Log Review</b></p> <p><u>Tell students:</u> The log page shown on <b>slide 17</b> is an example of good maintenance entries (the areas blacked out were done for privacy).</p> <p><u>Ask students:</u> From all the information on this log page, what should you note?</p> <p><u>Students should note:</u></p> <ul style="list-style-type: none"> <li>• First chip light on aircraft total time 2330.6. Pilot checks plug and returns aircraft to service (this varies according to company operations manual).</li> <li>• Second chip light at aircraft total time 2331.1. Mechanic replaces #1 bearing and bearing seal. Replaced filter and cleaned screens. Drained, flushed and reserviced oil system. Cleaned all chip plugs. Ran aircraft for thirty minutes (no chip light). Drained, flushed and re-serviced oil system again. Rechecked chip detectors and oil filter. No defects, leaks or chips noted.</li> <li>• Mechanic enters squawk, “power check required.” Pilot accomplishes test flight and power check at aircraft total time 2331.3. Power check is a +13.</li> <li>• Mechanic enters requirement for 50-hour inspection of oil system in accordance with Rolls Royce Maintenance Manual at aircraft total time 2351.1.</li> </ul> <p><b><u>End of Discussion.</u></b></p>	<p>6-17-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>B. Check Cards</p>	<p>6-18-S372-PPT</p>
<ul style="list-style-type: none"> <li>• Aircraft Data Card</li> </ul>	<p>6-19-S372-PPT</p>
<ul style="list-style-type: none"> <li>• Pilot Qualifications Card</li> </ul>	<p>6-20-S372-PPT</p>
<ul style="list-style-type: none"> <li>• Mechanic Qualifications Card (if required by contract)</li> </ul>	
<ul style="list-style-type: none"> <li>• Service Vehicle Data Card</li> </ul>	
<p><b>EMPHASIZE THE IMPORTANCE OF CHECKING QUALIFICATIONS AND EXPIRATION DATES.</b></p>	<p>6-21-S372-PPT</p>
<ul style="list-style-type: none"> <li>• Verify if the aircraft and pilot are carded for the missions intended.</li> <li>• Verify if the mechanic is carded for the aircraft. <ul style="list-style-type: none"> <li>– The mechanic must be carded for the aircraft on a Forest Service contract.</li> <li>– DOI does not require the mechanic to be carded.</li> </ul> </li> </ul>	
<p>What missions are planned? Is longline initialed with a vertical reference check? Is the medical certificate still current?</p>	
<p>Some pilots work as relief for multiple companies and must possess a card for each.</p>	
<p><b>ASK STUDENTS WHERE THEY CAN FIND THIS INFORMATION (BY PHYSICALLY LOOKING ON THE CARD).</b></p>	

OUTLINE	AIDS & CUES
<p>C. Helicopter Manager Responsibilities</p> <ul style="list-style-type: none"> <li>• Ensure that all required equipment is installed on the aircraft and the appropriate cards are valid for the pilot and service vehicle truck since the date of issue.</li> <li>• Keep the Aircraft Contract Daily Diary current. This needs to occur on the first day and continue until released.</li> <li>• Complete the Helicopter Information Sheet as soon as you marry up with an aircraft.</li> </ul>	6-22-S372-PPT
<p><b>REFER STUDENTS TO THE IHOG (APPENDIX A, HELICOPTER MANAGEMENT FORMS AND CHECKLISTS).</b></p>	IHOG
<ul style="list-style-type: none"> <li>• Helicopter managers use the following forms regularly:</li> </ul> <p><b>HAND OUT COPIES OF THE FORMS AND EXPLAIN HOW TO USE THEM. ENSURE STUDENTS UNDERSTAND THE PROPER USE OF THE FORMS.</b></p> <ul style="list-style-type: none"> <li>– Pre-Use Inspection Form (HCM-2)</li> <li>– Helicopter Information Sheet (HCM-6)</li> <li>– Pilot Flight Time/Duty Day Cumulative Log (HCM-12)</li> <li>– Mechanic Duty Day Cumulative Log (HCM-14)</li> <li>– Fuel Service Vehicle Fuel Quality Control Log (vendor provided)</li> </ul>	6-23-S372-PPT

OUTLINE	AIDS & CUES
<p>IV. HELICOPTER CONDITION</p> <p>A thorough walk-around inspection of the aircraft is necessary to complete the helicopter pre-use checklist.</p> <p>This helps verify that the aircraft is in compliance with contract/agreement requirements.</p> <p>A. Documentation</p> <p>Regardless of how insignificant damage may seem, document any finding on the pre-use checklist or in your Aircraft Daily Diaries.</p> <p>The only proof the aircraft was damaged prior to arrival is the documentation you provide.</p> <p>B. Compliance</p> <p>Remember, if the aircraft is not in compliance with the contract/agreement, it cannot be used until compliance has been met.</p> <p>Contact a maintenance inspector if you have questions.</p> <ul style="list-style-type: none"> <li>• Are the seatbelts faded and worn? Can you read the manufacturer's information label? Are the required shoulder harnesses available?</li> </ul> <p><b>Seatbelt Note:</b> Shoulder harnesses (either single- or double-strap) for each aft cabin occupant are required for all DOI and USFS helicopters. Shoulder harness straps and lap belts shall fasten with a single-point, metal to metal, quick-release mechanism.</p>	<p>6-24-S372-PPT</p> <p>6-25-S372-PPT thru 6-30-S372-PPT</p> <p>6-31-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Is high skid gear required? Is closed circuit or splash fueling authorized at the government's request in the contract? Is the proper equipment available?</li> <li>• Pilot proficiency with the required equipment is part of the contract/ agreement.</li> </ul> <p>As a manager, you need to know how to use this equipment.</p> <p>Ask the pilot to show you how to program and operate the radios and GPS unit.</p> <p>Most pilots prefer to program their own equipment, but you also need to understand how to work them.</p> <p>Most contracts require the FM radio to be narrowband capable. Confirm your frequencies!!</p> <p>You need to know what DATUM (WGS 84, NAD 83, NAD 27) is set up (and the local standard) on the GPS unit, and what coordinate system is being used for the incident.</p> <p>Is an FM auxiliary cable available and is it compatible with your handheld radio?</p> <ul style="list-style-type: none"> <li>• The co-pilots controls have three parts.</li> </ul> <p>In a Type 3 helicopter, the cyclic and collective must be removed. The tail rotor pedals can still be installed but must be disabled.</p>	<p>6-32-S372-PPT thru 6-34-S372-PPT</p>

OUTLINE	AIDS & CUES
<p style="text-align: center;">For the Type 2, only a helicopter crewmember or helicopter manager that has been authorized and trained “to occupy a position of pilot controls” can occupy the seat when the controls are in place.</p>	
<p>V. REQUIRED EQUIPMENT INSPECTION</p> <ul style="list-style-type: none"> <li>• Current contract must be in the aircraft</li> <li>• Hazmat Guide with current exemption</li> <li>• Pilot personal flotation device (PFD)/survival and first aid kits</li> <li>• Flight manual with performance charts</li> <li>• Pilot proficiency with required equipment <ul style="list-style-type: none"> <li>– Radio systems</li> <li>– GPS</li> <li>– Load calculations</li> <li>– Performance charts</li> </ul> </li> <li>• The pilot is required to have a PFD when conducting flight operations beyond power off gliding distance to shore.</li> </ul>	6-35-S372-PPT
<ul style="list-style-type: none"> <li>• Survival and first aid kit and an emergency locating transmitter (ELT) are also required. <ul style="list-style-type: none"> <li>– Make sure that these are physically located in the aircraft and the contents meet the requirements in the contract/agreement.</li> <li>– When accessible, check the date on the ELT battery to ensure it is current.</li> </ul> </li> </ul>	6-36-S372-PPT

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Where would you find the aircraft's current weight? <ul style="list-style-type: none"> <li>– The most current weight used is found in the weight and balance section of the flight manual.</li> </ul> </li> <li>• When should turbine engine power assurance checks be done? <ul style="list-style-type: none"> <li>– Shall be done on the first day of operation, and there after every 10 hours of flight.</li> <li>– Ideally, when you first marry up with the ship.</li> <li>– Have the pilot prepare a load calculation.</li> </ul> </li> </ul>	<p>6-37-S372-PPT</p>
<p>VI. FUEL SERVICE VEHICLE INSPECTION</p> <p>Upon completion of the helicopter inspection, conduct a thorough walk around of the fuel service vehicle.</p> <p>Again, use the pre-use inspection form!</p> <p>The vehicle is required to have specific equipment to meet both DOT regulations and contract requirements.</p>	<p>6-38-S372-PPT</p>
<p>Check the following:</p> <ul style="list-style-type: none"> <li>• Fuel truck card and expiration</li> <li>• Fuel quality log</li> <li>• Spare fuel filter and “O” ring</li> <li>• Filter change date (placard)</li> </ul>	<p>6-39-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Absorbent material for spills</li> <li>• Ensure it has a current card as well as the items identified in the contract/agreement and resource order.</li> <li>• License plate number on card matches that on vehicle and on resource order.</li> <li>• Expiration date</li> <li>• The pre-use inspection form is not always all inclusive; make sure you refer to the contract/agreement for what is required.</li> <li>• Ask for the fuel quality control log – this is required to be maintained in the service vehicle. <ul style="list-style-type: none"> <li>– Ensure all inspections required by the agreement/contract are being complied with.</li> <li>– There should be an entry for each day they are operating under the agreement/contract.</li> </ul> </li> <li>• Are two extinguishers available, one on each side, and are they current? Inspect annually.</li> <li>• Ensure the filter has been changed within the last 12 months or in accordance to the manufacturer’s schedule.</li> <li>• Verify that a spare fuel filter is on the vehicle along with manufacturer instructions on the proper way to change out the filter. These instructions need to be somewhere in the vehicle.</li> </ul>	<p>6-40-S372-PPT</p> <p>6-41-S372-PPT</p> <p>6-42-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Ensure the fuel filter has been changed in accordance to the procurement document and that it has a placard on the fuel filter housing with the date.</li> </ul>	6-43-S372-PPT
<ul style="list-style-type: none"> <li>• Ensure the vehicle has the required DOT placards and that the fuel type and “No Smoking” has a minimum of 3-inch lettering.</li> </ul>	6-44-S372-PPT
<ul style="list-style-type: none"> <li>• Is there a screen on the nozzle?</li> </ul>	6-45-S372-PPT
<ul style="list-style-type: none"> <li>• Are the bonding cable and clips in good repair?</li> </ul>	6-46-S372-PPT
<ul style="list-style-type: none"> <li>• Is the fuel being inspected daily? Any notes about water or sediment?</li> </ul>	
<ul style="list-style-type: none"> <li>• Ensure there is enough absorbent material to contain a 5-gallon spill.</li> </ul>	
<p>VII. SUMMARY</p>	6-47-S372-PPT
<ul style="list-style-type: none"> <li>• As a helicopter manager, completion of the pre-use inspection is critical.</li> </ul>	
<ul style="list-style-type: none"> <li>• The inspectors see a snapshot, you see the whole picture.</li> </ul>	
<ul style="list-style-type: none"> <li>• If you have questions contact your DOI AM and USFS inspectors.</li> </ul>	
<ul style="list-style-type: none"> <li>• Submit SAFECOMs. It is the only tool we have to track trends.</li> </ul>	
<ul style="list-style-type: none"> <li>• Remember: If it doesn’t meet the contract specifications, don’t use it.</li> </ul>	6-48-S372-PPT

OUTLINE	AIDS & CUES
<p><b>SHOW VIDEO: A-218 Aircraft Pre-Use Inspection</b></p> <p>The video is online at <a href="https://www.iat.gov/training/modules/a218/index.html">https://www.iat.gov/training/modules/a218/index.html</a>. Have students refer to their pre-use inspection form as they view the video. When the video ends, ask students if they have any questions.</p> <p><b>OPTIONAL FIELD EXERCISE: Pre-Use Inspection</b></p> <p>If a pilot, helicopter, and service vehicle are available, have students complete a hands-on and visual inspection of the helicopter and service vehicle using an inspection form. Encourage students to ask the pilot questions.</p>	<p>6-49-S372-PPT</p>
<p><b>REVIEW UNIT OBJECTIVES.</b></p>	<p>6-50-S372-PPT</p>

## UNIT OVERVIEW

**Course** Helicopter Management, S-372

**Unit** 7 – Helicopter Maintenance

**Time** 2 Hours

### Objectives

1. Describe the pilot's responsibilities with helicopter maintenance.
2. State the purpose of a maintenance inspector's role in contracting.
3. Describe the helicopter manager's role with regard to helicopter maintenance.
4. List three items that should be examined in the aircraft's maintenance logbook prior to utilization of the aircraft by government personnel.
5. Given an unscheduled maintenance issue, explain who to notify and the process of returning the aircraft to contract availability.

### Strategy

Students learn all aspects of helicopter maintenance including helicopter manager's responsibilities, policies, airworthiness of aircraft, contacts, and unscheduled maintenance. **It is strongly suggested that an aircraft inspector instruct this unit.**

### Instructional Methods

- Lecture/discussion

### Instructional Aids

- Computer with LCD projector and presentation software
- IHOG

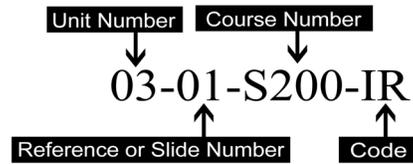
## Outline

- I. 14 CFR Part 1 Maintenance
- II. Pilot's Role/Responsibility
- III. DOI/USFS Maintenance Specialist Duties
- IV. Impact

## Aids and Cues Codes

The codes in the Aids and Cues column are defined as follows:

IG – Instructor Guide	IR – Instructor Reference
SW – Student Workbook	SR – Student Reference
HO – Handout	PPT – PowerPoint



## UNIT PRESENTATION

COURSE: Helicopter Management, S-372

UNIT: 7 – Helicopter Maintenance

OUTLINE	AIDS & CUES
<b>UNIT TITLE SLIDE.</b>	7-1-S372-PPT
<b>PRESENT UNIT OBJECTIVES.</b>	7-2-S372-PPT 7-3-S372-PPT
I. 14 CFR PART 1 – MAINTENANCE	7-4-S372-PPT
A. Maintenance includes:	
• Inspection	
• Overhaul	
• Repair	
• Preservation	
• Replacement of parts	
B. Part 91.3	7-5-S372-PPT
The owner or pilot of an aircraft is primarily responsible for maintaining the aircraft in an airworthy condition.	

OUTLINE	AIDS & CUES
II. PILOT'S ROLE/RESPONSIBILITY	7-6-S372-PPT
A. Documentation of Problems <ul style="list-style-type: none"> <li>• Pilots <u>must</u> write up any maintenance discrepancies in the aircraft logbook.</li> <li>• A mechanic must clear any discrepancies and the pilot will then sign off.</li> <li>• A DOI/USFS agency maintenance specialist must also be notified and may wish to speak to the pilot or mechanic.</li> <li>• A SAFECOM must be completed and may include information or comments from the pilot.</li> <li>• Some maintenance items require the aircraft to be run up; some require the aircraft to be flown before the discrepancy can be cleared.</li> <li>• The pilot will make an entry in the log that the event has been accomplished.</li> </ul>	7-7-S372-PPT
B. Daily Pre-flight Checks <ul style="list-style-type: none"> <li>• It is the pilot's responsibility to ensure a daily preflight is performed on the aircraft.</li> <li>• Give the pilot uninterrupted time to do the preflight. This is not the time to be loading the aircraft and planning out the mission.</li> <li>• On some helicopters, these inspections are performed by a mechanic and are entered into the aircraft records.</li> </ul>	7-8-S372-PPT

OUTLINE	AIDS & CUES
<p>C. Airworthy</p> <p>In conformance with its type design or properly altered condition and in a condition for safe flight.</p>	<p>7-9-S372-PPT</p>
<p>1. Is it airworthy?</p> <ul style="list-style-type: none"> <li>• Logbook entries for inspection</li> <li>• Correction of discrepancies</li> <li>• Deferred maintenance discrepancies</li> </ul>	<p>7-10-S372-PPT</p>
<p>2. Deferred maintenance items are:</p> <ul style="list-style-type: none"> <li>• Generally not on the minimum equipment list; therefore, may not have to be corrected immediately.</li> <li>• Documented in the aircraft's maintenance log book.</li> <li>• Corrected and signed off on within a specified timeframe.</li> </ul>	<p>7-11-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>D. Safe for Flight?</p> <p>During pre-flight, the pilot checks for acceptable wear.</p> <p>91.7(b) The pilot in command of a Civil Aircraft is responsible for determining whether that aircraft is in a condition for safe flight.</p>	7-12-S372-PPT
<p>E. Power Checks</p> <p>A power assurance check shall be accomplished on the first day of operation and thereafter within each 10-hour interval of contracted flight operation (unless prohibited by environmental factors such as weather, smoke).</p> <p>Each helicopter manufacturer has a different method for performing power checks; have pilot explain the correct procedure using the flight manual.</p>	7-13-S372-PPT
<ol style="list-style-type: none"> <li>1. Trend and HIT checks are NOT power assurance checks.</li> <li>2. Document power assurance check information on IHOG form HCM-4.</li> </ol> <p>Chart definitions include:</p> <ul style="list-style-type: none"> <li>• OAT: Outside Air Temperature</li> <li>• N1: Gas producer speed</li> <li>• N2: Engine RPM</li> </ul>	7-14-S372-PPT

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• TDT/TOT/TPT/ITT/EGT/MGT: Engine temperature</li> <li>• EPR: Engine Pressure Ratio</li> <li>• Correction factor: A value related to Tail Pipe Temperature (TPT) on some aircraft such as Lama and Alouette.</li> <li>• Chart reading: Temperature value, percent of RPM or torque found on performance charts.</li> <li>• Margin difference: The difference between the aircraft performance and chart reading.</li> </ul> <p>3. Allow time for pilot to consult power assurance charts in flight manual and chart the results in order to visualize trends.</p> <p>4. Some models such as the AS 350B3 A-Star produce an immediate power assurance check result from a digital engine computer.</p>	
<p>Some helicopters identify power assurance checks as “Correct” or “Incorrect.”</p> <p>An “Incorrect” status check is an aircraft that is not considered airworthy and is unavailable until corrected.</p>	7-15-S372-PPT



OUTLINE	AIDS & CUES
<p>A. Inspectors make decisions based on:</p> <ul style="list-style-type: none"> <li>• Contract requirements</li> <li>• Inspector’s experience</li> <li>• Contractor’s ability and attitude</li> </ul>	7-20-S372-PPT
<p>B. What about the FAA?</p> <ol style="list-style-type: none"> <li>1. Certifies companies and their operating/maintenance programs.</li> <li>2. Sets minimum requirements for: <ul style="list-style-type: none"> <li>• Personnel qualifications</li> <li>• Training</li> <li>• Company organization</li> <li>• Operating specifications</li> <li>• Maintenance and inspection program</li> </ul> </li> </ol>	7-21-S372-PPT
<ol style="list-style-type: none"> <li>3. Return to service <ul style="list-style-type: none"> <li>• Return to service is FAA terminology!</li> <li>• The approval for returning to service is the mechanic’s responsibility.</li> <li>• Returning the aircraft to contract availability is a DOI/USFS maintenance inspector’s responsibility.</li> </ul> </li> </ol>	7-22-S372-PPT

OUTLINE	AIDS & CUES
<p>C. What are your duties?</p> <p>1. Understand your responsibilities within the contract and agency/bureau policy.</p> <ul style="list-style-type: none"> <li>• Facilitate maintenance through awareness and planning.</li> <li>• Report your findings to safety (SAFECOM) and DOI/USFS maintenance inspectors.</li> </ul>	<p>7-23-S372-PPT</p>
<p>2. Your aircraft is broken, what do you do?</p> <ul style="list-style-type: none"> <li>• Call a USFS/DOI maintenance inspector.</li> <li>• Make sure vendor and maintenance inspector are in communication, if necessary.</li> <li>• Document all communications.</li> <li>• Do not continue with operations until maintenance inspector gives approval.</li> <li>• Once approval has been given, notify vendor.</li> </ul>	<p>7-24-S372-PPT</p>



OUTLINE	AIDS & CUES
<p>4. Expect to see the following entries in logbook:</p> <ul style="list-style-type: none"> <li>• A/C inspected and found airworthy for daily use.</li> <li>• 100 hr inspection c/w (complied with) IAW (in accordance with) maintenance manual and all S/B (service bulletins) c/w. Aircraft is airworthy.</li> <li>• Next scheduled maintenance due.</li> <li>• Any discrepancies and corrections.</li> <li>• All entries have date, time, license number, signature, and next due date if applicable.</li> </ul>	<p>7-27-S372-PPT</p>
<p><b>SLIDE 28 SHOWS A MAINTENANCE LOG BOOK EXAMPLE.</b></p>	<p>7-28-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>IV. IMPACT</p> <p>Your actions affect others who are depending on you. What are your decisions and actions based on?</p>	<p>7-29-S372-PPT</p>
<p>A. Identify Maintenance Problems</p> <ul style="list-style-type: none"> <li>• Understand the basic scheduled maintenance program for your aircraft.</li> <li>• Phase inspection – Approved Aircraft Inspection Program (AAIP)</li> <li>• 100 hr/annual</li> <li>• Daily (all aircraft)</li> </ul>	<p>7-30-S372-PPT</p>
<ul style="list-style-type: none"> <li>• When is it standard operating procedure (SOP)?</li> <li>• Any unscheduled maintenance is not the norm!</li> </ul> <p>You need to know – Ask. If you have a concern, contact the maintenance specialist.</p>	<p>7-31-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>B.    Unscheduled Maintenance</p> <p>Sooner or later you will experience unscheduled maintenance with an aircraft.</p> <ul style="list-style-type: none"> <li>•    Chip lights (engine, transmission, tail rotor)</li> <li>•    Blade strikes (main and tail rotor)</li> <li>•    Broken plexiglass</li> <li>•    Cut seatbelts</li> <li>•    Door failure</li> <li>•    Radio problems</li> </ul> <p>Items that seem small may come back to haunt you in the form of a claim from the contractor.</p>	<p>7-32-S372-PPT</p>
<p>C.    Procedures for Unscheduled Maintenance</p> <ul style="list-style-type: none"> <li>•    Notify helibase or project manager when the aircraft becomes unavailable.</li> <li>•    For any unscheduled maintenance, contact DOI/USFS maintenance specialist ASAP.</li> <li>•    Contact maintenance specialist when problem is corrected in order to return aircraft to contract availability.</li> </ul>	<p>7-33-S372-PPT</p>
<ul style="list-style-type: none"> <li>•    File a SAFECOM.</li> <li>•    Notify management when aircraft has been returned to contract availability by maintenance specialist (AMD/FS).</li> <li>•    Complete daily diary.</li> </ul>	<p>7-34-S372-PPT</p>





## UNIT OVERVIEW

**Course** Helicopter Management, S-372

**Unit** 8 – Risk Management

**Time** 2 Hours

### Objectives

1. Identify risk factors to manage risk within acceptable limits.
2. Given a scenario, complete a risk assessment matrix to determine the appropriate management level for a Go-No-Go decision.

### Strategy

Students identify the risks and hazards of helicopter operations and how to eliminate or mitigate the situation. Through classroom lecture and using an analysis checklist for completing a risk assessment matrix, students gain knowledge of proper risk management.

### Instructional Methods

- Lecture/discussion

### Instructional Aids

- Computer with LCD projector and presentation software
- IHOG

### Exercise

- Risk Assessment (page 8.16)

### Outline

- I. Risk Management and Risk Assessment
- II. Five Steps to Risk Management
- III. Four Principles of Risk

## Aids and Cues Codes

The codes in the Aids and Cues column are defined as follows:

IG – Instructor Guide

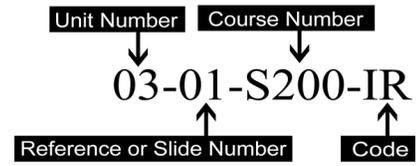
SW – Student Workbook

HO – Handout

IR – Instructor Reference

SR – Student Reference

PPT – PowerPoint



## UNIT PRESENTATION

COURSE: Helicopter Management, S-372

UNIT: 8 – Risk Management

OUTLINE	AIDS & CUES
<b>UNIT TITLE SLIDE.</b>	8-1-S372-PPT
<b>PRESENT UNIT OBJECTIVES.</b>	8-2-S372-PPT
<b>REFER STUDENTS TO “ATTITUDE – AN OUTLINE FOR SAFETY” (SW pages 8.19 – 8.23; IG pages 8.23 – 8.27). STUDENTS CAN READ IT NOW OR AFTER CLASS.</b>	8-1-S372-IR/SR
I. Risk Management and risk assessment  The terms “risk management” and “risk assessment” are often use synonymously, when in fact, they are different.	8-3-S372-PPT
A. Risk Management  Risk management enables personnel at all levels to do exactly what the term implies—manage risks.  The term is best applied generically, as individuals are confronted by training risks, fiscal risks, and safety risks.  Safety risk management, however, is a specific type of risk management.	8-4-S372-PPT

OUTLINE	AIDS & CUES
<p>This section examines safety risk management as it applies to helicopter and helibase operations.</p>	
<p>Alternative methods, such as performance of the mission by ground, should always be considered.</p>	8-5-S372-PPT
<p>In accordance with FARs, the pilot always retains final authority for the operation when safety of the aircraft and occupants is a factor.</p>	
<p>Hazards might not be limited to the performance of the flight, but may include hazards to personnel if the flight is not performed.</p>	
<p>Risk management is a five-step cyclic process that is easily integrated into the decisionmaking process at all levels.</p>	8-6-S372-PPT
<p>1. Degree of risk</p>	8-7-S372-PPT
<p>Any flight mission has a degree of risk which varies from 0% risk (no flight activity is conducted) to 100% (aircraft and/or personnel experience a mishap).</p>	
<p style="text-align: center;">Risk Continuum</p> <p>0%  -----&gt;-----&gt;-----&gt;  100%  (no flight activity) (accident occurs)</p>	



OUTLINE	AIDS & CUES
<p data-bbox="282 281 634 317">B. Risk Assessment</p> <p data-bbox="375 369 1081 449">Risk assessment is part of the risk management process and can range from simple to complex.</p> <p data-bbox="375 497 1053 659">Assessing risk causes personnel to identify hazards, analyze the degree of risk associated with each, and place hazards in perspective relative to the mission or task at hand.</p> <p data-bbox="375 709 1073 831">One can then arrive at a decision of whether or not to perform a flight mission. Any risk management decision is a subjective process.</p> <p data-bbox="375 882 1013 1043">Risk assessment should be conducted by individuals best qualified by training and experience to evaluate a proposed flight or operation, such as:</p> <ul data-bbox="380 1094 989 1339" style="list-style-type: none"> <li data-bbox="380 1094 989 1129">• Helicopter or project flight manager</li> <li data-bbox="380 1136 989 1171">• Helibase/airbase manager</li> <li data-bbox="380 1178 989 1213">• Dispatcher</li> <li data-bbox="380 1220 989 1255">• Unit aviation manager</li> <li data-bbox="380 1262 989 1297">• Line manager</li> <li data-bbox="380 1304 989 1339">• Pilot</li> </ul> <p data-bbox="375 1390 1110 1512">Ultimately, it is the pilot who has the authority to decline missions considered to be excessively hazardous.</p> <p data-bbox="375 1562 1013 1724">Risk management decisions are always the prerogative of line management. The risk assessment process assures that these are informed decisions.</p> <p data-bbox="375 1774 1068 1854">Logically, one cannot identify the risk without first determining what the hazards are.</p>	<p data-bbox="1149 281 1382 317">8-11-S372-PPT</p> <p data-bbox="1149 882 1382 917">8-12-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>II. FIVE STEPS TO RISK MANAGEMENT</p>	<p>8-13-S372-PPT</p>
<ul style="list-style-type: none"> <li>• Identification of Hazards</li> <li>• Assessment of Hazards</li> <li>• Make a Risk Decision</li> <li>• Implementing Controls</li> <li>• Supervision</li> </ul>	
<p>A. Step One – Identification of Hazards</p> <p>The hazards are the potential sources of danger that could be encountered while performing a task or mission.</p>	<p>8-14-S372-PPT</p>
<p>1. Factors that determine hazards:</p> <ul style="list-style-type: none"> <li>• Weather</li> <li>• Time of flight</li> <li>• Terrain</li> <li>• Equipment</li> <li>• Training and proficiency level of personnel</li> </ul>	<p>8-15-S372-PPT</p>
<p>After researching over 75,000 industrial accidents, William Herbert Heinrich concluded that for every accident, there was an average of 300 “events” or “hazards” that could have forewarned people of the accident.</p>	<p>8-16-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>2. What is a hazard?</p> <p>Any real or potential condition that can cause:</p> <ul style="list-style-type: none"> <li>• Mission degradation</li> <li>• Injury, illness, or death to personnel</li> <li>• Damage to or loss of equipment or property</li> </ul> <p>There could be other less obvious hazards that would become apparent during planning.</p> <p>The helicopter manager, the pilot, other participants in the flight, and, if assigned, the helibase manager should all seek to identify potential hazards before the operation.</p>	<p>8-17-S372-PPT</p>
<p>3. The 4 M's risk factors</p> <p>Risk factors can generally be divided into four categories:</p> <ul style="list-style-type: none"> <li>• Man (generic)</li> <li>• Machine</li> <li>• Medium (environment)</li> <li>• Method</li> </ul>	<p>8-18-S372-PPT</p>
<p>Risk can be reduced significantly by examining each of these elements.</p>	<p>8-19-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>Requirements can then be met (such as pilot/aircraft carding) or hazards can be mitigated (high-level reconnaissance prior to descent to low-level).</p>	
<p><b>REFER STUDENTS TO THE RISK ANALYSIS 4 M'S CHART IN THE IHOG, CHAPTER 3, CHART 3-1.</b></p>	<p>IHOG</p>
<p>a. Man</p> <ul style="list-style-type: none"> <li>• Crew experience <ul style="list-style-type: none"> <li>– Flight experience and proficiency</li> <li>– Knowledge</li> </ul> </li> <li>• Crew composition <ul style="list-style-type: none"> <li>– Knowledge of each other</li> <li>– Cohesiveness</li> <li>– Changes to the crew</li> </ul> </li> <li>• Fitness for flight <ul style="list-style-type: none"> <li>– Physical state</li> <li>– Mental state</li> </ul> </li> <li>• Attitudes and behavior <ul style="list-style-type: none"> <li>– Contribute to high risk</li> <li>– Friendliness towards contractor</li> </ul> </li> </ul>	<p>8-20-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>b. Machine</p> <ul style="list-style-type: none"> <li>• Capabilities and limitations</li> <li>• Certification</li> <li>• Reliability</li> <li>• Support</li> <li>• Special equipment</li> </ul>	8-21-S372-PPT
<p>c. Medium</p> <ul style="list-style-type: none"> <li>• Climatic environment</li> <li>• Operational environment</li> <li>• Hygienic environment</li> <li>• Supervision</li> <li>• Cultural norms <ul style="list-style-type: none"> <li>– National</li> <li>– Organizational</li> <li>– Professional</li> </ul> </li> </ul>	8-22-S372-PPT
<p>d. Method</p> <ul style="list-style-type: none"> <li>• Mission objectives</li> <li>• Alternatives</li> <li>• Time requirements <ul style="list-style-type: none"> <li>– Information availability and accuracy</li> <li>– Planning</li> <li>– Accomplishment</li> </ul> </li> <li>• Complexity of the task</li> <li>• Standards, procedures, and controls</li> <li>• Resources available</li> </ul>	8-23-S372-PPT

OUTLINE	AIDS & CUES
<p>B. Step Two – Assessment of Hazards</p>	<p>8-24-S372-PPT</p>
<p>Each hazard is analyzed to determine: 1) the effect on personnel and equipment if the hazard is encountered, and 2) the probability the hazard will be encountered.</p>	<p>8-25-S372-PPT</p>
<p>1. Effect: If the hazard is encountered during a flight mission or aviation operation, the effect may be:</p> <ul style="list-style-type: none"> <li>• Catastrophic: Death or serious injury; system/equipment loss (aircraft or ground accident).</li> <li>• Critical: Serious injury; damage to equipment.</li> <li>• Moderate: Mission can be accomplished, though there may be adverse effects on mission efficiency (extra cost, delays, etc.)</li> <li>• Negligible: No effect on mission accomplishment.</li> </ul>	<p>8-26-S372-PPT</p>
<p>2. Probability: The probability of encountering the hazard during the flight mission or operation may be:</p> <ul style="list-style-type: none"> <li>• Frequent: May be continuously or often encountered during each mission.</li> <li>• Likely: May be encountered several times during the course of many missions.</li> </ul>	<p>8-27-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Occasional: May be encountered sporadically during the course of many missions.</li> <li>• Seldom: May be encountered infrequently, but chances are remote.</li> <li>• Unlikely: May be encountered only rarely; chances are possible, but improbable.</li> </ul> <p>3. Risk levels: This step concludes with a risk assessment that describes the risk associated with each of the hazards individually, then the risk associated with the combined hazards.</p> <p>The result is a quantification of the risk associated with the operation: Extremely High, High, Medium, or Low.</p> <ul style="list-style-type: none"> <li>• <b>Extremely High:</b> Risk is so high that it is probable the mission cannot be accomplished without an accident, loss of life, or serious injury. Hazards cannot be mitigated effectively.</li> <li>• <b>High:</b> Risk is high enough that there is uncertainty as to whether the mission can be accomplished without an accident, loss of life, or serious injury. Hazards may or may not be able to be mitigated.</li> <li>• <b>Medium:</b> Degree of risk is such that it is fairly certain the mission can be accomplished safely. Hazards exist, but can be mitigated.</li> </ul>	<p>8-28-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• <b>Low:</b> Little or no impact on mission accomplishment. Hazards are those normally associated with flight (possibility of bird strike, mechanical malfunction, etc.).</li> </ul> <p>Exercising judgment on how to eliminate or reduce hazards to lessen the overall risk is inherent in the risk assessment process.</p> <p>4. How do you determine the hazard?</p> <ul style="list-style-type: none"> <li>• Determine the severity, probability and exposure with EACH hazard.</li> <li>• Determine the risk associated with the COMBINED hazards.</li> </ul> <p>An initial assessment may indicate that the risk level is unacceptable (extremely high or high).</p> <p>Once controls are implemented, the risk level may drop to a more acceptable level (medium or low).</p>	<p>8-29-S372-PPT</p>
<p>C. Step Three – Making a Risk Decision</p> <p>Personnel are expected to weigh the risk against the benefits of performing an operation. Be aware that the mentality, even during non-emergency operations, may be mission-oriented (get-the-job-done).</p> <p>This attitude, on the part of government representatives, may encourage some pilots to take unnecessary risks to satisfy the customer (the government). It is to be avoided at all costs.</p>	<p>8-30-S372-PPT</p> <p>8-31-S372-PPT</p> <p>8-32-S372-PPT</p>

OUTLINE	AIDS & CUES
<p><b>REFER STUDENTS TO THE RISK ASSESSMENT MATRIX (SW PAGE 8.25; IG PAGE 8.29).</b></p> <p><b>SLIDE 33 ILLUSTRATES THE MATRIX.</b></p> <p>A thorough review of the generic elements of a risk analysis in the 4M's chart (when applied to the risk assessment matrix chart and coupled with the completion of the more specific checklists discussed elsewhere) will determine if the mission can be conducted safely, if it must be delayed or modified, or if it cannot be accomplished with a reasonable degree of safety assurance.</p> <p>During mission planning, risk decisions should be made at a level of command that corresponds to the degree of risk.</p> <p>The pilot or helicopter manager will have the authority to decline the mission in question.</p> <p>The helicopter manager, with concurrence from the pilot, will have final decision to proceed with the mission. Thus, guidance should be established as to who makes which risk decisions.</p> <p>For example, high-risk decisions where the safety of the aircraft must be weighed against the potential for exposure of unprotected crews to severe weather, must be balanced.</p> <p>Such a high-risk decision should be elevated through the chain-of-command to the highest level of decisionmaking responsibility (for example, to the operations section chief for fire or to the line manager for project missions).</p>	<p>8-2-S372-IR/SR</p> <p>8-33-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>Medium-risk decisions should be elevated to a lower level (for example, to the air operations branch director or project aviation manager level).</p> <p>Low-risk decisions can usually be made at the helibase manager or helicopter manager level. Refer to the risk assessment matrix chart for guidance.</p> <ul style="list-style-type: none"> <li>• Risk decision tips: <ul style="list-style-type: none"> <li>– Involve operational personnel, especially those likely to be directly impacted by the risk decision.</li> <li>– Apply redundant risk controls when practical and cost effective.</li> <li>– Make risk decisions when the benefit outweighs the cost.</li> </ul> </li> </ul>	<p>8-34-S372-PPT</p>
<p><b>SLIDE 35 IS AN EXAMPLE OF A HIGH RATING USING THE RISK ASSESSMENT MATRIX.</b></p>	<p>8-35-S372-PPT</p>



OUTLINE	AIDS & CUES
<p>D. Step Four – Implementing Controls</p>	<p>8-37-S372-PPT</p>
<p>Included in this step is supervisory action to reduce or eliminate hazards.</p>	<p>8-38-S372-PPT</p>
<p>Controls may be as substantial as writing a special-use plan or as simple as conducting a short safety briefing.</p>	
<p>Once the controls are implemented, the manager should reassess the individual and combined hazards to ensure that risks have been mitigated to fall with an acceptable level of safety.</p>	<p>8-39-S372-PPT</p>
<p>1. Incorporate selected controls into:</p> <ul style="list-style-type: none"> <li>• Standard Operating Procedures</li> <li>• Project Aviation Safety Plans (PASP)</li> <li>• Briefings – who will do what when?</li> <li>• Training</li> <li>• Communicate controls to the lowest level</li> </ul>	<p>8-40-S372-PPT</p>
<p>2. What are controls?</p> <ul style="list-style-type: none"> <li>• Engineering</li> <li>• Distance</li> <li>• Restrict/limit</li> <li>• Guard/control</li> <li>• Time</li> <li>• Training/education</li> </ul>	<p>8-41-S372-PPT</p>

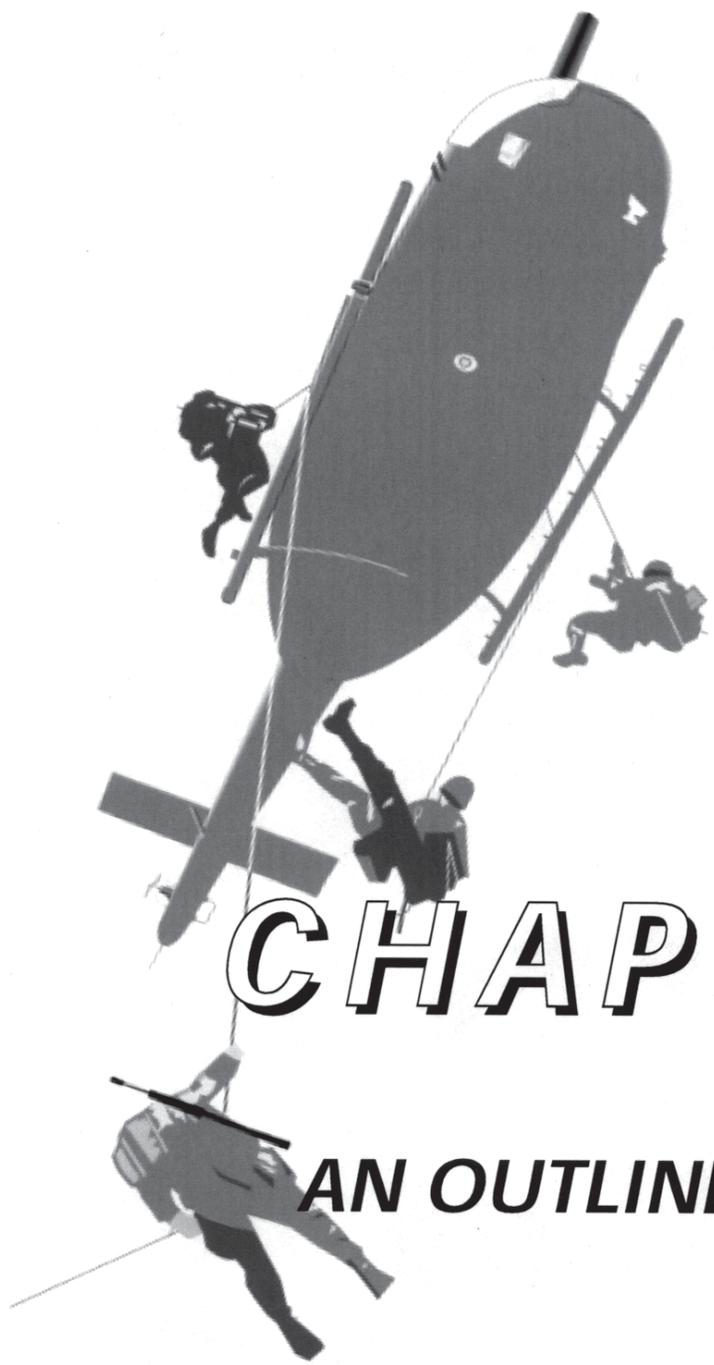
OUTLINE	AIDS & CUES
<p>3. Although many steps can be taken to reduce risk during the flight planning process, the following measures must be taken while in-flight to reduce the risk.</p> <ul style="list-style-type: none"> <li>• Look for hazards and alert the pilot.</li> <li>• Stay above 500 feet AGL whenever possible.</li> <li>• Do not fly during poor visibility (one-half mile minimum visibility).</li> <li>• Perform a high-level reconnaissance before descending below 500 feet AGL.</li> </ul>	<p>8-42-S372-PPT</p>
<p>E. Step Five – Supervision</p> <p>In this step, supervision goes beyond ensuring that people do what is expected of them.</p>	<p>8-43-S372-PPT</p>
<p>It includes follow-up during and after a mission to ensure all went according to plan, reevaluating the plan, or making adjustments as required to accommodate unforeseen issues, and incorporating lessons learned for future use.</p> <p>Nightly debriefings at the helibase are a good example of this additional supervision and follow-up.</p>	<p>8-44-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Supervision tips: <ul style="list-style-type: none"> <li>– Brief – Ensure personnel know what they should do.</li> <li>– Follow up – People are doing what is expected.</li> <li>– Update and evaluate the plan continually.</li> <li>– Adjust or make changes as unforeseen issues arise.</li> <li>– Debrief after mission is completed.</li> <li>– Incorporate lessons learned for future use.</li> </ul> </li> </ul>	8-45-S372-PPT
<p>III. FOUR PRINCIPLES OF RISK</p> <ul style="list-style-type: none"> <li>• Accept no unnecessary risk.</li> <li>• Make risk decisions at the appropriate level.</li> <li>• Accept risk when benefits outweigh cost.</li> <li>• Integrate risk management at all planning levels.</li> </ul>	8-46-S372-PPT
<p>Performing risk assessment is limited by the amount of time available for planning and requires flexibility and judgment by both pilots and air operations supervisors.</p>	8-47-S372-PPT

OUTLINE	AIDS & CUES
<p>Risk assessments can be divided into three categories according to time element:</p> <p>A. Rapid Risk Assessment</p> <p>This type of assessment is required when planning time is minimal.</p> <p>For example, situations involving high-risk hazards associated with not flying (such as crews getting hypothermia if not supplied) as well as with flying.</p> <p>Search and rescue missions also fall in this category.</p> <p>Encountering unexpected winds at a helispot is another common occurrence. The pilot must rapidly assess the risk and determine whether to land, attempt to land at another spot farther from the objective, or abort the mission and return to base.</p>	<p>8-48-S372-PPT</p>
<p>Note that “rapid” does not mean “hasty” or “uninformed.”</p>	<p>8-49-S372-PPT</p>
<p><b>REFER STUDENTS TO THE IHOG, EXHIBIT 3-4 FOR AN EXAMPLE OF A RAPID RISK ASSESSMENT.</b></p>	<p>IHOG</p>

OUTLINE	AIDS & CUES
<p>B. Deliberate Risk Assessment</p> <p>This type is used when planning time permits.</p> <p>It involves systematic risk identification, evaluation, consideration of control options and risk decisionmaking, implementation of controls, and supervision.</p> <p>Note that all of these may be applied to rapid risk assessment; however, the timeframe in which the rapid examination is performed is extremely compressed by the urgency of the situation.</p>	<p>8-50-S372-PPT</p>
<p>This type of risk assessment should be performed by:</p> <ul style="list-style-type: none"> <li>• Air operations branch director in completing the ICS-220.</li> <li>• Helibase manager in briefing personnel and discussing intended missions.</li> <li>• Project personnel when planning a flight mission days or weeks in advance.</li> </ul> <p>For example, if a wild horse and burro specialist knows a census must be performed in a certain area at a specific time of year, there is ample time to identify and evaluate hazards, develop and implement controls, and supervise preparations for the mission.</p>	<p>8-51-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>C. In-Depth Risk Assessment</p> <p>This type should be used in instances where new technology is being proposed, when risks appear high, and time and resources allow thorough assessment.</p> <p>Risk assessment at this level requires more sophisticated techniques and professional reviews.</p> <p>An example would be testing and implementation of a new aerial firing device (for example, helitorch), new external load methods (for example, longlining), or new method of personnel delivery (for example, rappelling).</p> <p>In this case, handbooks and operating procedures must also be developed or revised.</p>	<p>8-52-S372-PPT</p>
<p><b>REFER STUDENTS TO CHAPTER 3 OF THE IHOG (OPERATIONAL PLANNING) AND DISCUSS.</b></p>	<p>IHOG</p>
<p><b>SLIDE 53 SHOWS RISK MANAGEMENT REFERENCES.</b></p>	<p>8-53-S372-PPT</p>
<p>“Accidents do not occur because people gamble and lose, they occur because people do not believe that the accident that is about to occur is at all possible.”</p> <p style="text-align: right;">Willem Albert Wagenaar</p>	<p>8-54-S372-PPT</p>
<p><b>REVIEW UNIT OBJECTIVES.</b></p>	<p>8-55-S372-PPT</p>
<p><b>UNIT QUIZ:</b> Refer students to the quiz (SW pages 8.29 – 8.32; IG pages 8.33 – 8.36). Allow 10 minutes to complete. Review answers in class.</p>	<p>8-56-S372-PPT 8-4-S372-IR/SR</p>



# **CHAPTER 1**

## **ATTITUDE— AN OUTLINE FOR SAFETY**

## INTRODUCTION

The thoughts outlined in this document are not original but extracted from some of the best known aviation writers and psychologists in the industry. Their thoughts and findings have been combined in a format that will be useful to the casual user of aviation resources, as well as the professional pilot who daily must make decisions regarding safety in the demanding and complex operations we call resource aviation. Some of the sources of these combined thoughts will be listed at the end of this commentary.

In today's modern vocabulary the word "**Attitude**" usually strikes a negative cord. When you hear: "He has an **attitude**" it is assumed to be negative. Webster defines **attitude** as: the manner of acting, feeling, or thinking that shows one's disposition, opinion, etc.; as a threatening attitude, an attitude of entreaty. Today's connotation of attitude is suffering a modern malady known as 'bad press'!

Personality traits and attitudes have a fundamental influence on the way our lives are conducted at home and at work. They determine the way we are judged by others and we often become identified by them. Personality traits are acquired very early in life. They are deep-seated characteristics which are stable and very resistant to change. They may be reflected in aggression, ambition, dominance or creativity and are often situation related. These traits should not be confused with attitudes. The selection of a profession is usually driven by personality traits. How one adapts to that selection is highly influenced by attitudes which are developed and changed through life experiences.

Attitudes describe likes and dislikes. An attitude can be seen as a learned tendency to respond favorably or unfavorably to people, decisions and situations. It is a predisposition to respond in a certain way. An opinion is a verbal expression of an attitude or belief, and is one means by which others may become aware of your "attitude".

It has been established that those involved in most accidents attributable to inadequate human performance probably, at the time of the accident, had the capacity to have performed effectively, yet did not do so. Their personal performance was influenced by factors other than the possession of technical skills. It could have been that the person involved, felt so confident that they could short-cut a standard procedure or avoid consistent use of a checklist—or that **their** interpretation of leadership was dominance—or that in difficult situations they should assume most of the tasks themselves—or that the urgency of the mission justified by-passing established procedures. The pilot and the users of Resource Aviation must combine their skills, knowledge, and experiences to form a positive working machine with a combined and demonstrated **attitude of safety**.

Hazardous Attitudes (example of bad press) and corresponding Antidotes are outlined on the following page.

## HAZARDOUS ATTITUDES vs CURATIVE ANTIDOTES

### ATTITUDE

### ANTIDOTE

#### ANTI-AUTHORITY

"Regulations are for someone else."

"Follow the rules. They are usually right"

#### IMPULSIVELY

"I must act now, there's no time!"

"Not so fast. Think first."

#### INVULNERABILITY

"It won't happen to me."

"It could happen to me."

#### MACHO

"I'll show you. I can do it."

"Taking chances is foolish."

#### RESIGNATION

"What's the use?"

"I'm not helpless, I can make a difference."

So much for negative attitudes, let's focus on how to embrace **positive** attitudes. While both positive and negative attitudes are considered "highly contagious" we are far more receptive to good vibes than to those that afford us discomfort. We are in a highly specialized, one of a kind environment. Our daily survival depends upon how we respond to situations that are constantly changing. We live on the edge of the next challenge, and our lives are filled with anxieties. We are an entire organization of mission driven personalities complexly interwoven and inter-dependent upon each other for our survival. The decisions we make, and the way in which we make them, have a trickle down effect on everyone assigned to the mission. One of the basic human needs we have is the need to be accepted by our peers. Each of you is important beyond measure. Each is an integral part of the mission and as such, each has a responsibility toward the success and safety of that mission. We must abide by the rules laid down through experience and probability. We must follow procedures which are sometimes boring and repetitive and, if we are to achieve success, we must do it through an attitude and demonstration of safety.

Equal to, if not above the "Book Rules", are the rules by which we conduct our daily activities with each other. This daily association when tempered with a **positive attitude** can produce more pro-active aviation safety results than any other effort.

A trendy little book authored by Robert Fulghum is titled: *All I Really Need to Know, I Learned in Kindergarten*. He simplifies our daily efforts with such statements as "Don't throw sand.— share your toys, play fair, say your sorry when you hurt somebody, eat your vegetables, get your rest, enjoy your friends—enjoy your solitude— laugh a lot—continue to listen—continue to learn—" All simple little one liners that outline a positive attitude. It is highly infectious, very effective and most refreshing reading. Fulghum tells us that all the important things in life are attainable, and the first step towards acquiring them is to maintain a **positive attitude**. It has been proven that this positive attitude reflects itself vividly in the safety records of organizations that promote **individual responsibility knit tightly with group concern**. All members function as a team, and each assumes personal responsibility for their own performance. In a helicopter

operation, the pilot and the Helitack personnel function as a single unit. Through **Communication, Motivation, Reinforcement and Example**, each becomes part of the whole and the mission is completed successfully and safely.

Thoughts to consider in any aviation operation:

1. You are now in charge of a sacred trust, the safety of human lives.
2. You must not let undue pressure (expressed or implied) influence your judgment during the performance of this sacred trust.
3. You must be able to develop a team in which members must participate and contribute to the safety of the operation.
4. You must delete "false pride, calculated risk, real world, and good enough for Government work" from your professional vocabulary.
5. You will not be criticized or stigmatized for any decision you make which will ensure added safety to an operation.
6. You must not let your actions instill the attitude of competition between co-workers. This attitude may hinder performance and may compromise the safety of the mission.

If you can view this very serious business to which you are currently dedicating your lives as though each person within the organization is dependent upon the decision **you** make, then you will become the corner stone of the Aviation Safety Program. This is, without question, the greatest contribution you can make towards evoking **an attitude of safety!**

## HUMAN FACTORS

**H**uman Factors is about people. It is about people in their working and living environments. It is about their relationship with machines, equipment, procedures, standardization, and the environment in which we live in. Human Factors is also the "bottomless pit" into which 80% of aviation accidents fall. Human Factors is about our lives and how we choose to live them. The concern of this document is to identify, in terms of safety, how this most important condition can be made to work to our benefit. In doing so, we will also be made aware of its snares and warning signals.

There are many factors which may influence a person's overall attitude to the job. These include, amongst others, financial rewards, work colleagues, working environment, and the nature of the task itself. The extent to which these factors apply an influence depend on each person's own preference and values.

Studies done in recent years placed JOB SATISFACTION second only to family. The Forest Service has always viewed its members as family. Further, each discipline within the Forest Service is somewhat clannish and protective of its extended family. Those of us who have chosen to be part of Fire and Aviation live in a "perceived" very small world. We are the only ones there! This is the choice we have made, and once made, we rarely challenge our decision. This is most important work, every aspect, every detail, every decision. There is no margin for error, yet error does happen. It is a fact of life.

For the purpose of this document and its message of Aviation Safety, each reader is to be considered a leader. **Everyone** must assume **leadership** in matters of safety.

## **CHARACTERISTICS OF A "LEADER" AS RELATED TO SAFETY**

**T**here are four important characteristics which a leader appears to possess: motivation, reinforcement, example, and communication.

### **Motivation**

One of the primary tasks is motivating the members of the group. This can be done by emphasizing the objectives of the operation or activity and clarifying the targets or goals which should be achieved. For instance, a helicopter manager, in briefing passengers prior to a flight can make this routine and often rote requirement come alive by pointing out the rewards versus the consequences. Whoever is doing that briefing is at that time, a leader! The passengers can be motivated to want to hear the entire briefing and to abide by the checklist items to the letter.

### **Reinforcement**

A second way leadership can be applied is by modifying habits and behavior by reinforcement. This same crewmember could apply positive reinforcement by making a favorable comment about the passengers conduct at the end of the flight.

### **Example**

The third principle which the leader should apply is the demonstration of the desired goals and behaviors by example. Each day those of us in aviation interface with people who are not experienced at being in and around our environment. A good leader should be able to demonstrate by example the optimum behavior and precautions necessary to outsiders and those unfamiliar with aircraft operations. A common aspect of behavior in which influence by example of a leader is effective, is in connection with uniform or clothing standards and demeanor. If someone on the flight crew is without the proper clothing, it must be expected that others will follow the demonstrated behavior if the problem is not corrected at once.

### **Communication**

The fourth and probably the most important quality is communication. One must be willing and able to communicate and do it at all levels.

While safety is everyone's business and as such, becomes everyone's responsibility, the point of emphasizing these four principles to you is that pilots are placed in a natural leadership role as aircraft commanders. Understanding this, you are in a unique position to influence the behavior of others. Finally, human factors are as varied as the individuals being affected by them, we try to minimize the effects by establishing guidelines compatible with the mission. The goal of all Aviation Accident Prevention Programs is an axiom.

**Goal:** To reduce Aviation Accident occurrences.

**Purpose:** To preserve human and material resources through identification and prevention of hazards. Hazards are defined as the causes of damage and injury.

**Objective:** To minimize human exposure to hazards and implement effective management techniques.



Chart 3-2: Risk Assessment Matrix			HAZARD PROBABILITY				
			Frequent A	Likely B	Occasional C	Seldom D	Unlikely E
EFFECT	Catastrophic	I	Extremely High	High		Medium	
	Critical	II	High	High	Medium		
	Moderate	III	High	Medium			
	Negligible	IV	Medium				Low

### RISK ASSESSMENT WORKSHEET

Assess the risks involved with the proposed operation. Use additional sheets if necessary.

Assignment:	Date:
-------------	-------

Describe Hazard:	Probability (A-E)	Effect (I-IV)	Risk Level
1.			
2.			
3.			
4.			
5.			
6.			
Mitigation Controls:	Probability (A-E)	Effect (I-IV)	Risk Level
1.			
2.			
3.			
4.			
5.			
6.			
Operation Approved by:	Title:	Date:	



## **Risk Assessment Exercise**

Scenario 1: You will be taking a recon this evening. Your flight will be in a single engine helicopter and the estimated time of departure is 1830. You wanted to leave earlier, but the helicopter and pilot have been flying for another agency most of the day, and can't get to you until then.

You need to gather your information by tomorrow. You estimate that your flight could take as long as two hours. The flight involves mapping a spot fire with a GPS unit and will require flying at altitudes below 500 feet. When the aircraft lands to pick you up, the pilot (who you have not met) waves to you to board the aircraft.

Concerns:

Scenario 2: You are the helicopter manager for a CWN type 3 helicopter. You have two crewmembers: one has three years of exclusive use experience and is qualified in longline operations and the other is minimally qualified and has no longline experience. The pilot and helicopter are carded for longline operations.

Your module has been ordered to a large incident. On arrival, the helibase manager briefs you and the pilot. The fire is active and all aircraft are committed. There is a priority for several longline missions. The helibase manager requests that your module accomplish these tasks. Your fuel tender is one hour out and the longline is on the fuel truck. You have radio contact with the truck and his position is known. How might you accomplish your tasks?

Your first longline load goes out. When the helicopter returns, the pilot informs you that he is not comfortable flying the longline missions at this time. One of your crewmembers hears part of the conversation and begins telling the pilot of his experience with other pilots and that it should be easy to finish the job. At the same time, the helibase manager contacts you and says he needs the rest of the loads out **now!** How do you analyze this situation?

Concerns:

## UNIT QUIZ

1. What is risk management?
  - a. A continuous systematic process of identifying and controlling risk.
  - b. A five-step cyclic process integrated into the decisionmaking process.**
  - c. Detects hazards by assessing and implanting a mission plan.
  - d. Any risk that cannot be controlled.
  
2. The risk assessment process is?
  - a. Identifying hazards, analyze the degree of risk, and place hazards in perspective relative to the mission at hand.**
  - b. Part of the risk management process.
  - c. Determining which hazards pose the most risk for a planned task or mission.
  - d. The same as the risk management process but focuses on the mission objective.
  
3. The risk assessment process should be completed by?
  - a. The unit aviation manager and line officer.
  - b. The helicopter or project flight manager.
  - c. Individuals best qualified by training and experience.
  - d. All the above.**

4. What factors are use to determine hazards?
  - a. Time, temperature, wind direction, relative humidity, and dew point.
  - b. Personnel, mission, resources, and type of aircraft.
  - c. Weather, time of flight, terrain, equipment, training and proficiency level of personnel.**
  - d. Mission objective, crew attitude, pilots flight time, and time of day.
  
5. How are the 4 M's risk factors used to implement risk management?
  - a. By identifying the mission, mishaps, monitor, and management effects of each hazards of risk.
  - b. By the interaction between man, media, mission and management that reduces risk.
  - c. By examining the elements of man, machine, medium and method, risk can be reduced significantly.**
  - d. By an operation plan that focuses on man, militia, mishaps and management that affect the go-no-go decision.
  
6. What level of risk management is most often used daily to address hazards before the actual mission?
  - a. Strategic
  - b. Generic
  - c. Deliberate**
  - d. Time Critical

7. What are the different risk levels?
- a. Effect, Catastrophic, Critical, and Negligible
  - b. Frequent, Likely, Occasional, and Unlikely
  - c. **Extremely High, High, Medium, and Low**
  - d. All the above
8. What are the five steps of risk management in correct order:
- a.
    - 1) Assess hazards
    - 2) Identification of hazards
    - 3) Analyze controls
    - 4) Implement risk controls
    - 5) Analyze risk control measures
  - b.
    - 1) Identify man-made hazards
    - 2) Assess machines
    - 3) Analyze media controls
    - 4) Get management approval
    - 5) Supervise
  - c.
    - 1) **Identification of hazards**
    - 2) **Assessment of hazards**
    - 3) **Make a risk decision**
    - 4) **Implementing controls**
    - 5) **Supervision**
  - d.
    - 1) Identify hazards
    - 2) Assess hazards
    - 3) Make control decisions
    - 4) Implement risk controls
    - 5) Analyze supervision

9. What are the four principles of risk?
- a.
    1. Develop and execute a mission plan
    2. Eliminate all risk from know hazards
    3. Evaluate the overall mission outcome
    4. Complete by having a closing briefing
  - b.
    - 1. Accept no unnecessary risk**
    - 2. Make risk decisions at the appropriate level**
    - 3. Accept risk when benefits outweigh cost**
    - 4. Integrate risk management at all planning levels**
  - c.
    1. Make sure hazards are mitigated
    2. Inform all crew members of the mitigations
    3. Keep management informed of the hazards encountered
    4. Follow-up with lessons learn issues
  - d.
    1. Complete a risk analysis
    2. Mitigate any known risk of the mission
    3. Accept the mission only after a risk assessment has been completed
    4. Review all risk mitigation for effectiveness
10. The probability of encountering a hazard during the flight mission or operation may be:
- a. Frequent
  - b. Likely
  - c. Occasional
  - d. Seldom to Unlikely
  - e. **All the above**

## UNIT OVERVIEW

**Course** Helicopter Management, S-372

**Unit** 9 – Operations

**Time** 3 Hours

### Objectives

1. Identify relevant information to conduct a mission briefing with module and pilot.
2. Given a specific mission, determine mission requirements and agency required equipment necessary to perform safe, effective, and efficient helicopter operations.

### Strategy

This unit addresses the responsibilities and procedures to follow for safe helicopter operations beginning with planning before the operation through debriefing after the operation.

### Instructional Methods

- Lecture/discussion

### Instructional Aids

- Computer with LCD projector and presentation software
- Aviation Transportation of Hazardous Materials Guide/Handbook
- Overdue, Mission or Crashed Aircraft Procedures/Guide for the Geographical Area

### Exercises

- Debriefing exercise (pages 9.28 – 9.30)
- Operations exercise (pages 9.35 – 9.36)

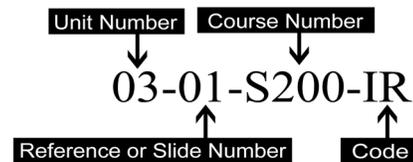
## Outline

- I. Duties and Responsibilities
- II. Mission Readiness
- III. Transport
- IV. Water Dropping Operation
- V. Medevac
- VI. Pilot and Crew Monitoring Evaluation
- VII. Refueling Operations
- VIII. SAFECOMs
- IX. Communications
- X. Flight Following

## Aids and Cues Codes

The codes in the Aids and Cues column are defined as follows:

IG – Instructor Guide	IR – Instructor Reference
SW – Student Workbook	SR – Student Reference
HO – Handout	PPT – PowerPoint



## UNIT PRESENTATION

COURSE: Helicopter Management, S-372

UNIT: 9 – Operations

OUTLINE	AIDS & CUES
<b>UNIT TITLE SLIDE.</b>	9-1-S372-PPT
<b>PRESENT UNIT OBJECTIVES.</b>	9-2-S372-PPT
<b>I. DUTIES AND RESPONSIBILITIES</b>  Duties and responsibilities regarding administrative requirements were addressed in previous units. This unit discusses operational responsibilities.  Operational duties as a helicopter manager require flexibility. Numerous people want you to accomplish something and they always want it done right now.  It may seem like you are being pulled in many directions at the same time. Be willing to accommodate changing priorities to meet the needs of the user. Delegate tasks to help you in the long run.	
<b>A. Planning</b>  1. A successful operation begins with a thorough plan and is required by agency/bureau policies. <ul style="list-style-type: none"><li>• Project Aviation Safety Plan (PASP)</li><li>• Special Mission Operations Plan</li><li>• Incident Action Plan (IAP)</li></ul>	9-3-S372-PPT

OUTLINE	AIDS & CUES
<p>2. Value of aviation safety plans:</p> <ul style="list-style-type: none"> <li>• Standard procedures, so everyone involved knows what is required.</li> <li>• Enables others to fill in efficiently when aviation positions are vacant.</li> <li>• Important orientation tool for new people.</li> <li>• Increases safety by outlining the proper way to accomplish objectives.</li> <li>• Requires line officer approval.</li> </ul>	<p>9-4-S372-PPT</p>
<p>B. Briefings</p> <p>1. Initial briefing</p> <p>Upon arrival on the incident/project:</p> <ul style="list-style-type: none"> <li>• Receive a briefing on what type of mission you need to accomplish.</li> <li>• Obtain copy of IAP or PASP.</li> <li>• What are the objectives of the mission?</li> <li>• What is the status of the project/incident? Will you be there for one day or 14 days?</li> <li>• What is current and predicted weather (evening thunderstorms, red flag days, etc.)?</li> </ul>	<p>9-5-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Are there safety issues you need to be aware of (military training routes, ridgelines with downdrafts, powerlines, towers, etc.)?</li> <li>• Obtain a current flight hazard map.</li> <li>• How can you and your module assist in the management or operations of the base?</li> <li>• Radio frequencies to be used.</li> <li>• Obtain maps of the area.</li> <li>• Account and billing information.</li> </ul>	
<p>2. Module briefing</p> <p>Once you receive your initial briefing, you need to brief your module.</p> <p>Remember, your module includes the helicopter crew persons, the pilot, fuel service vehicle driver, and mechanic.</p> <p>They all need to be informed with the same information you have received.</p> <ul style="list-style-type: none"> <li>• Mission assignments</li> <li>• Objectives</li> <li>• Incident status</li> <li>• Weather</li> <li>• Safety issues</li> </ul>	<p>9-6-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>3. Debriefing</p> <ul style="list-style-type: none"> <li>• Feedback from pilot</li> <li>• Communications</li> <li>• Mission successes/problems</li> <li>• Hazards identified</li> <li>• Briefing on next operational period</li> </ul>	9-7-S372-PPT
<p>4. Module capabilities and limitations</p> <ul style="list-style-type: none"> <li>• Qualifications</li> <li>• Experience</li> <li>• Special skills <ul style="list-style-type: none"> <li>– EMT?</li> <li>– IC?</li> </ul> </li> <li>• Special needs?</li> </ul>	9-8-S372-PPT
<p>II. MISSION READINESS</p> <p>After you complete the briefings with the module, prepare for your assigned missions.</p> <p>During your initial briefing, you should have received or written down any scheduled or anticipated mission assignments.</p> <p>A. Aircraft</p> <p>Ensure the aircraft is configured and ready to accomplish the mission.</p>	9-9-S372-PPT

OUTLINE	AIDS & CUES
<p>Contractual and agreement requirements require the pilot to have a:</p> <ol style="list-style-type: none"> <li>1. Fire shelter: <ul style="list-style-type: none"> <li>• The pilot must be briefed in the proper use of the fire shelter.</li> </ul> </li> <li>2. Personal Floatation Device (PFD): <ul style="list-style-type: none"> <li>• The contract/agreement requires the pilot to wear a PFD during dipping operations.</li> <li>• Reference the contract to see what conditions require a PFD.</li> </ul> </li> </ol> <p>B. Crew</p> <p>Make assignments to your crew so they understand what you require them to do.</p> <p>C. Equipment</p> <p>Have all the necessary and required equipment to perform the mission within agency requirements:</p> <ul style="list-style-type: none"> <li>• Support kit</li> <li>• Radios</li> <li>• Crash and rescue kits</li> </ul> <p>Pre-weigh items as much as possible.</p>	

OUTLINE	AIDS & CUES
<p data-bbox="285 283 620 317">D. Reconnaissance</p> <p data-bbox="381 369 1075 449">When completing reconnaissance missions, be aware of the following issues:</p> <ul style="list-style-type: none"> <li data-bbox="381 499 1096 1814"> <p data-bbox="381 499 526 533">• PPE:</p> <ul style="list-style-type: none"> <li data-bbox="451 583 1036 663">– Do you have enough to supply someone who shows up without it?</li> <li data-bbox="451 709 1029 789">– Who is exempt from wearing PPE, etc.?</li> </ul> </li> <li data-bbox="381 840 1055 961">• What kind of equipment is being transported on this recon (IR equipment, hazardous materials, etc.)?</li> <li data-bbox="381 1012 1084 1814"> <p data-bbox="381 1012 1052 1087">• Is the appropriate aircraft being used for the mission?</p> <ul style="list-style-type: none"> <li data-bbox="451 1138 1084 1260">– For example, two people are flying on this recon. Why use a medium aircraft if a light is available?</li> </ul> </li> <li data-bbox="381 1310 1096 1814"> <p data-bbox="381 1310 1084 1432">• Are the passengers necessary for the mission or are you exposing individuals to an unnecessary risk?</p> <ul style="list-style-type: none"> <li data-bbox="451 1482 1096 1604">– It is your responsibility to question this and make it known if they are unnecessary passengers.</li> <li data-bbox="451 1654 1068 1814">– A higher authority may overrule you, but if you voice your concerns then someone else accepts the responsibility.</li> </ul> </li> </ul>	<p data-bbox="1127 283 1360 317">9-10-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Have you and the pilot been briefed on the mission profile? Is it appropriate or is there a better way of accomplishing the mission?</li> <li>• Are there any scheduling problems that need to be dealt with to complete the mission at the desired time?</li> <li>• Do you have proper communications for the mission? <ul style="list-style-type: none"> <li>– If different radio contacts have to be made, are these frequencies programmed into the aircraft radio?</li> <li>– Who are the contacts and where are they located, etc.?</li> </ul> </li> <li>• PLAN the mission, then BRIEF the mission with all individuals concerned, and then FLY the mission.</li> <li>• What are your agency requirements for the use of the co-pilot position in aircraft with dual controls (medium helicopters)?</li> </ul>	
<p>E. Initial Attack/Response</p> <p>Although initial attack is a fire term, it can be viewed as the first response whether it is fire, search and rescue, or any other mission where you must be ready to respond on short notice.</p>	<p>9-11-S372-PPT</p>

OUTLINE	AIDS & CUES
<p data-bbox="381 283 1088 367">You may be asked to perform initial attack missions that present additional considerations:</p> <ul data-bbox="381 409 1055 1344" style="list-style-type: none"><li data-bbox="381 409 511 451">• PPE</li><li data-bbox="381 493 714 535">• Mission briefings</li><li data-bbox="381 577 1055 924">• Mission preparedness – When preparing for the mission, do pre-manifesting:<ul data-bbox="446 703 1055 924" style="list-style-type: none"><li data-bbox="446 703 1055 787">– Have appropriate equipment (tools, fireline gear)</li><li data-bbox="446 829 1055 924">– Nomex clothing (not flight suits for fireline construction, etc.)</li></ul></li><li data-bbox="381 966 706 1008">• Who is in charge</li><li data-bbox="381 1050 706 1092">• Communications</li><li data-bbox="381 1134 706 1176">• Aircraft assigned</li><li data-bbox="381 1218 787 1260">• Appropriate maps, etc.</li><li data-bbox="381 1302 576 1344">• Hazards</li></ul> <p data-bbox="186 1386 1088 1606"><b>SOME TOPICS IN THE NEXT SECTION WERE PREVIOUSLY PRESENTED; THEREFORE, DO NOT COVER IN DETAIL. HOWEVER, THOROUGHLY REVIEW STAGING, LOADING, UNLOADING, AND PASSENGER CARGO.</b></p>	

OUTLINE	AIDS & CUES
<p>III. TRANSPORT</p> <p>A. Passenger Transport</p> <ul style="list-style-type: none"> <li>• PPE</li> <li>• Mission profile</li> <li>• Briefing</li> <li>• Passenger cargo</li> <li>• Staging</li> <li>• Hazardous materials</li> <li>• Necessary equipment</li> <li>• Loading</li> <li>• Unloading</li> </ul>	<p>9-12-S372-PPT</p>
<p>B. Cargo Transport</p> <p>No matter what the project/incident is, you have to deal with transportation of cargo issues:</p> <ul style="list-style-type: none"> <li>• PPE</li> <li>• Briefings</li> <li>• Appropriate equipment such as longline, swivels, nets, tape, scales, etc. (any special equipment necessary to complete the mission)</li> <li>• Rigging techniques (are there special techniques that require special training?)</li> <li>• Aircraft capability</li> <li>• Hazardous materials issues (transporting fuel with food, explosives, etc.)</li> </ul>	<p>9-13-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>Think backhaul; think of hauling trash or personnel back to the base of operations instead of deadheading back.</p>	
<p><b>SHOW SLIDES 14 AND 15 AND ASK STUDENTS, “WHAT COULD GO WRONG?”</b></p>	<p>9-14-S372-PPT 9-15-S372-PPT</p>
<p>Plan ahead and modify your plan if loads don't fly safely.</p>	
<p>IV. WATER DROPPING OPERATIONS</p>	<p>9-16-S372-PPT</p>
<p>A. Briefing</p>	
<p>During water dropping operations, ensure:</p>	
<ul style="list-style-type: none"> <li>• Pilot has been thoroughly briefed on the mission.</li> <li>• Any hazards associated with the dip site and drop site are addressed.</li> <li>• Bucket capacity does not exceed the allowable payload documented on the load calculation.</li> </ul>	
<p>B. Operational Checks</p>	
<p>Prior to departing the base of operations, ensure:</p>	
<ul style="list-style-type: none"> <li>• All operational checks are complete.</li> <li>• The bucket and electrical systems are functioning properly.</li> </ul>	

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• The length of lines and bucket are in compliance with the procurement document.</li> </ul> <p>C. Dip Site Monitor</p> <p>If possible, it is recommended that a dip monitor be located at the dip site.</p> <p>There have been a number of accidents during a dip cycle. The dip site monitor can assist the pilot and request additional help if needed (don't forget to pick up the people at end of shift).</p> <p>Some geographical areas require a dip monitor; be prepared if the geographical area you are in requires one.</p> <p>D. Communications</p> <p>Verify and provide the pilot with proper frequencies and points of contact they will be working with.</p> <p>Ensure the dip site monitor has the proper air to ground frequency, and an additional frequency and point of contact in the event of an emergency at the dip site.</p> <p>E. Environmental Concerns</p> <p>Many areas around the country have restrictions on using any type of chemicals in and around lakes and streams.</p> <p>You must have approval to use foam or any other retardant chemicals in these areas.</p>	

OUTLINE	AIDS & CUES
<p>F. Heli-Mopping</p> <p>Should be discouraged. The pilot is placed in an environment where risk is very high and effectiveness and efficiency is very low.</p> <p>G. Performance</p> <p>We need to monitor the performance of aircraft, pilots, crew people and fuel service personnel.</p> <p>Pay specific attention to their effectiveness and watch for fatigue.</p> <p>Provide adequate rest for the pilot during continuous external load missions.</p>	
<p><b>DISCUSS SLIDES 17 AND 18.</b></p>	<p>9-17-S372-PPT 9-18-S372-PPT</p>
<p>V. MEDEVAC</p>	<p>9-19-S372-PPT</p>
<p><b>REFER STUDENTS TO THE IHOG (APPENDIX B EXHIBIT B-17, HBM-12, HELICOPTER AMBULANCE REQUEST INFORMATION FORM).</b></p>	<p>IHOG</p>
<p>Regardless of the operation, plan for medical evacuation in the event of an accident. Although you may only be working with one aircraft, be sure to address the following.</p> <p>A. Plan</p> <ul style="list-style-type: none"> <li>• Do you have an aircraft crash, search and rescue plan?</li> <li>• Is it current and up to date?</li> </ul>	

OUTLINE	AIDS & CUES
<p>B. PPE</p> <p>Provide PPE to non-agency personnel such as:</p> <ul style="list-style-type: none"> <li>• EMTs</li> <li>• Victims</li> <li>• Other medical personnel</li> </ul> <p>C. Aircraft Management vs. Mission Accomplishment</p> <ul style="list-style-type: none"> <li>• Don't get mission oriented; the EMTs and medical personnel are responsible for that.</li> <li>• Your mission is to manage the aircraft and risk so that others do not become victims.</li> </ul> <p>D. Appropriate Aircraft</p> <p>Numerous aircraft are used in resource management.</p> <p>If multiple helicopters are available (or one designed for medevac operations), consider using one as the primary platform in an emergency situation.</p> <p>At times you will not have this luxury.</p> <p>As soon as you know your aircraft is assigned as the primary medevac helicopter, consider:</p> <ul style="list-style-type: none"> <li>• Mission briefings</li> <li>• Equipment briefings – How will the equipment in the aircraft be secured? All medical equipment must be secured inside the cabin.</li> </ul>	

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Backup aircraft – If your aircraft is committed to some other mission, who is the backup and are they briefed?</li> <li>• Medical personnel – Have all medical personnel been briefed on the roles and responsibilities of crew and about the aircraft safety procedures?</li> </ul> <p style="margin-left: 40px;">As soon as you are designated the medevac helicopter, provide medical personnel with a good safety briefing on the primary aircraft and the backup aircraft.</p>	
<p>VI. PILOT AND CREW MONITORING EVALUATION</p> <p>A. Fatigue</p> <p style="margin-left: 40px;">This plays a big part in our day-to-day operations, especially during long duration projects.</p> <p style="margin-left: 40px;">Watch out for indicators of fatigue. If you sense the pilot or your module personnel are getting fatigued, allow for rest periods.</p> <p>B. Nutrition</p> <p style="margin-left: 40px;">Be sure your pilot and module personnel take time to eat meals and drink plenty of fluids.</p>	<p>9-20-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>C. Stress</p> <p>Many situations can lead to stress whether necessary or unnecessary.</p> <p>We work in an environment that can be very demanding and at times very stressful. Watch for indicators and allow for breaks.</p> <p>D. Situational Awareness</p> <p>Be aware of what is going on in your operations.</p> <p>Pay attention to your module – if they are lax and uninterested, stop and take time to address any concerns you have.</p> <p><b>REFER STUDENTS TO THE PILOT AND MECHANIC DUTY LOGS (IHOG APPENDIX A, EXHIBIT A-17 AND A-19) AND REVIEW. ENSURE STUDENTS UNDERSTAND HOW TO USE THEM.</b></p> <p>E. Flight and Duty</p> <p>Manage pilot, mechanic, and crew duty. Duty limitations are in our agreements and contracts and we need to adhere to them.</p> <p>The agreements and contracts also state that we can stop operations and give the contractor personnel shorter duty days if they seem fatigued.</p> <p>Make sure your crewmembers have plenty of rest between duty days.</p>	<p>IHOG</p>

F. Limitations

Don't exceed aircraft limitations, whether gross weight limits or wind limits – be more conservative.

**ASK STUDENTS WHAT THE WIND LIMITATIONS ARE FOR POINT-TO-POINT FLIGHTS AND FOR SPECIAL USE FLIGHTS FOR TYPE 1, 2, AND 3 HELICOPTERS.**

9-21-S372-PPT

Flight Above Ground Level	Flight permitted in winds less than/ Maximum Gust Spread (knots per hour)		
	TYPE 1	TYPE 2	TYPE 3
MORE THAN 500' AGL	50/NA	50/NA	50/NA
LESS THAN 500' AGL	40/15	40/15	30/15

VII. REFUELING OPERATIONS

9-22-S372-PPT

A. Fueling Areas

Select fueling areas away from other flying traffic, congested areas, traffic areas, and environmentally sensitive areas (lakes, streams, rivers, etc.).

B. Fuel Management

**REFER STUDENTS TO THE FUEL QUALITY CONTROL LOG (IHOG, APPENDIX A, HCM-3) AND REVIEW.**

IHOG

Specific requirements under the agreement/  
contract:

OUTLINE	AIDS & CUES
<ol style="list-style-type: none"> <li>1. Eight hour minimum <p>The contract/agreement may require that the vendor have 8 hours of fuel per day.</p> <p>Ensure there is plenty of fuel for the next duty period. Don't get caught short.</p> </li> <li>2. Fuel quality control, procedures <p>Monitor fueling operations to ensure that proper environmental concerns are being addressed.</p> <p>Some areas have strict restrictions regarding fueling operations on agency lands. Know and adhere to these restrictions.</p> <p>Do not locate fueling area in or near water sources. Remote fueling situations or government fueling operations may require special considerations and training (refer to IHOG or Fueling Handbook).</p> </li> <li>3. The fuel service vehicle driver is part of your module and they need to be briefed.</li> </ol>	
<p>C. Special Operations</p> <ol style="list-style-type: none"> <li>1. Aerial ignition</li> <li>2. Seeding</li> <li>3. Spraying</li> <li>4. Law enforcement</li> </ol>	<p>9-23-S372-PPT thru 9-29-S372-PPT</p>

OUTLINE	AIDS & CUES
5. Search and rescue	
6. Animal capture, eradication	
7. PPE  When involved in these operations, ensure PPE requirements are being adhered to.	
8. Briefings  Provide briefings to all individuals involved with the operations.	
9. Qualifications and carding  Persons working in these types of special operations must be trained and approved. The aircraft and pilot also need to be approved for these missions.	
10. Appropriate aircraft  Provide input to ensure the aircraft being used is the appropriate aircraft for the mission (high elevations with high temperatures).	
11. Risk management  It is the responsibility of everyone to mitigate risk. As a manager it is a joint responsibility – you and the pilot are responsible to ensure risk is kept to a minimum.	

OUTLINE	AIDS & CUES
<p>Examples:</p> <ul style="list-style-type: none"> <li>• Weather - Don't fly into known weather, stop operations during windy conditions, etc.</li> <li>• Firearms - Transport firearms in accordance with the Transportation of Hazardous Materials Guide/ Handbook. If firearms don't need to be loaded, unload them.</li> <li>• PFD - When conducting over water missions, follow the requirements as outlined in IHOG and ALSE handbook.</li> <li>• Canines - Must be transported in accordance with IHOG.</li> </ul>	
<p>12. Project Aviation Safety Plan</p> <p>If the mission requires a PASP, be sure you have a copy and brief all personnel associated with the mission.</p>	<p>9-30-S372-PPT</p>
<ul style="list-style-type: none"> <li>• Examples of specific PASP: <ul style="list-style-type: none"> <li>– Aerial ignition</li> <li>– Seeding or spraying</li> <li>– Complex external load operations</li> <li>– Any mission not covered by the Unit Aviation Plan</li> </ul> </li> </ul>	<p>9-31-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• Examples of special mission operations plan: <ul style="list-style-type: none"> <li>– SAR</li> <li>– ACETA</li> <li>– Short haul</li> <li>– Hoist</li> <li>– STEP</li> <li>– Law enforcement</li> <li>– Military operations</li> </ul> </li> </ul>	9-32-S372-PPT
<p>VIII. SAFECOMS</p> <p>The Aviation Safety Communique (SAFECOM) database fulfills the Aviation Mishap Information System (AMIS) requirements for aviation mishap reporting for DOI agencies and the Forest Service.</p> <p>Categories of reports include incidents, hazards, maintenance, and airspace.</p>	9-33-S372-PPT
<p>The system uses the SAFECOM Form AMD-34/FS-5700-14 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.</p> <p>The SAFECOM system is <b>not</b> intended for initiating punitive actions.</p>	9-34-S372-PPT

OUTLINE	AIDS & CUES
<p>Submitting a SAFECOM is <b>not</b> 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.</p> <p>A SAFECOM <b>does not</b> replace the requirement for initiating an accident or incident report.</p> <p>SAFECOMS are an accident prevention tool for everyone associated with aviation operations. Vendors are specifically required by contract to participate.</p> <p>The following instructions and helpful hints are intended to make the process of submitting a SAFECOM as easy as possible.</p> <p>If you need assistance, please call the Forest Service at (208) 387-5285 or the Aviation Management Directorate, Aviation Safety at (208) 433-5070.</p> <p>After the completion and submission of your SAFECOM, your data will be stored in a central database that is shared on an interagency basis. Therefore, you only have to submit one SAFECOM per event.</p>	
<p><b>HAND OUT COPIES OF THE SAFECOM FORM. AS A CLASS, USE THE FOLLOWING INSTRUCTIONS TO COMPLETE THE FORM (USE ANY INFORMATION YOU CHOOSE):</b></p>	<p>9-1-S372-HO</p>
<p>The <b>Reported By</b> section is associated with the person submitting the SAFECOM. All of these fields are optional. However, this contact information is extremely helpful if it becomes necessary to follow-up with the submitter on a particular issue.</p>	<p>9-35-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>This section asks for the name of the person reporting the event, their contact information, and the organization they work for.</p> <p>SAFECOMS may be submitted anonymously. If you choose to submit your name or any other information in this section, it will not appear on the SAFECOM that is available to the general public.</p> <p>The <b>Event</b> section asks for the "when" and "where" in addition to damage or injuries. Enter the <b>Date</b> in the <b>mm/dd/yyyy</b> format, and then enter the <b>Time</b> using the 24-hour time format <b>hhmm</b>.</p> <p>Note that the date is a required field and both the date and time fields will only accept numeric characters.</p> <p>Were there any <b>Injuries</b>? <b>Yes</b> or <b>No</b>. If you select <b>Yes</b>, please explain in the narrative. Was there any <b>Damage</b>? <b>Yes</b> or <b>No</b>. If you select <b>Yes</b>, please explain in the narrative.</p> <p>The next three selections identify the Agency, Region or State for USDI and the Unit that had operational control of the mission at the time of the event.</p> <p>These selections determine which organization(s) will receive initial notification that a SAFECOM has been entered into the database.</p> <p>From the drop down table select the <b>Agency</b>.</p> <p>From the next drop down table, select the <b>Region</b> for USFS or <b>State</b> for USDI.</p>	<p>9-36-S372-PPT</p>

Next, select the **Unit** from the drop down table if it applies.

In the **Location** field, enter the airport, name of the fire, or latitude and longitude.

The final field in this section is the **State**, which applies to the state where the event occurred. Note that the **State** field is a required entry. For example:

**Agency:** Bureau of Land Mgt      **Region:** Alaska State Office      **Unit:** Not available  
**Agency:** Forest Service          **Region:** Region 2                      **Unit:** San Juan NF

The **Mission** section asks for information that describes the mission at the time of the event.

9-37-S372-PPT

In the **Type** field, use the drop down table to make a selection that best describes the mission that was being performed.

Use the **Other** field if you need to further identify the mission or if nothing is available from the drop down table that actually describes the mission.

In the **Procurement** field, enter how the aircraft you were using was procured from the drop down table.

Use the **Other** field to further identify procurement if necessary.

Under **Persons Onboard**, enter the total number of people on the aircraft, which includes the pilot(s), all flight crew personnel, and passengers.

Was the mission **Special Use**, **Yes** or **No**? Many of our missions are special use. In fact, almost all fire missions are considered special use as well as animal counting, herding, eradication, etc.

OUTLINE	AIDS & CUES
<p>Were there <b>Hazardous Materials</b> onboard, <b>Yes</b> or <b>No</b>?</p> <p>In <b>Departure Point</b>, enter where you departed from, for example an airport or helibase.</p> <p>Under <b>Destination</b>, enter the intended destination, which could be an airport, fire name or helispot.</p> <p>The <b>Aircraft</b> section generally applies to the aircraft you are using. However, in the event of an airspace intrusion, conflict or near mid-air, enter as much information as possible about the other aircraft.</p> <p>If there are multiple aircraft involved, list the other aircraft in the narrative section.</p> <p>In the <b>Type</b> field, enter the aircraft type from the drop down table.</p> <p>In the <b>Tail #</b> field, enter the tail number of the aircraft beginning with <b>N</b> for US registered and <b>C</b> for Canadian registered aircraft.</p> <p>Please do not enter the Tanker, Jumper, or Helicopter number unless that is all you have.</p> <p>In the <b>Manufacturer</b> field, select the manufacturer from the drop down table.</p> <p>In the <b>Model</b> field, enter the model number without any spaces or hyphens (for example, 206L3, DC6, PB4Y2).</p> <p>In the <b>Owner/Operator</b> field, enter the name of the agency if the aircraft is an agency fleet aircraft (USFS, USDI, etc.) or the name of the vendor operating the aircraft if it is contracted.</p>	<p>9-38-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>In the <b>Pilot</b> field enter the pilot's name, first name then last name.</p>	
<p>In the <b>Narrative</b> section give a brief description of the event with the facts and outcome of the event. Elaborate on any previous blocks above as necessary.</p>	9-39-S372-PPT
<p>In the <b>Corrective Action</b> section give a brief description of the corrective action that was taken in an effort to prevent the event from reoccurring.</p>	9-40-S372-PPT
<p>Remember, submitting a SAFECOM is not a substitute for resolving the problem and taking on the spot corrective action.</p>	
<p>SAFECOMS often get the attention of senior management. However, minor or repetitive issues may only be used for tracking and trending purposes and generating <b>Safety Alerts</b> for prevention purposes.</p>	
<p>Press the <b>Review</b> SAFECOM button.</p>	
<p>From the Review page, follow the directions at the top of the page to change, print, and finally to <b>Submit</b> your SAFECOM.</p>	
<p>While you may choose to file a SAFECOM anonymously, under normal circumstances the SAFECOM should be routed through the local unit aviation officer or faxed to Aviation Management Directorate, Aviation Safety at (208) 433-5007 or USFS at (208) 387-5735, ATTN: SAFETY (can also be entered online at <a href="http://www.safecom.gov">www.safecom.gov</a>).</p>	9-41-S372-PPT
<p>Contact AMD at (208)433-5070 or USFS at (208)387-5285 to report problems with the SAFECOM database.</p>	

OUTLINE	AIDS & CUES
<p><b>DEBRIEFING EXERCISE.</b></p> <p><u>Purpose:</u> This exercise will expose students to a real case scenario that they could experience as helicopter managers. The objective is to make safe decisions involving aircraft and module.</p> <p><u>Format:</u> Small groups</p> <p><u>Time:</u> 25 minutes</p> <p><u>Instructions:</u></p> <ol style="list-style-type: none"> <li>1. Instruct students to read the scenario. Answer any questions the groups may have concerning the scenario (5 minutes).</li> <li>2. Allow groups approximately 10 minutes to prepare their response to the scenario. Emphasize that the scenario has enough information for them to make common sense decisions on how to best handle the incident.</li> <li>3. Allow 10 minutes for students to present their solutions to the class. As groups present their solutions, ensure they identify the issues listed in the answer key.</li> </ol> <p><u>Scenario:</u></p> <p>This scenario involves a major earthquake that takes place in the San Francisco Bay area. There are numerous structural and wildland fires burning. Damaged and blocked roads are impeding vehicle access. Aircraft are extensively used to respond to incidents. Your helicopter and module have been assigned to respond to a wildland fire. Upon arriving at the fire you observe an overturned tank truck with leaking material and a two-acre fire off the roadway. Two people are observed at the site and appear to be injured.</p>	<p>9-42-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>The IC for your fire (along with other responding ground units) is several miles from the site and cannot reach the area due to trees blocking the road. The IC requests that you take suppression action on the fire.</p> <p><b><u>Answer key:</u></b></p> <ul style="list-style-type: none"> <li>• <b>Earthquake in major metropolitan area.</b></li> <li>• <b>Significant damage to infrastructure.</b></li> <li>• <b>Little or no immediate support/direction from Incident Management Teams.</b></li> <li>• <b>Overtaxed emergency services.</b></li> <li>• <b>Possibility of working with a local resource or agency unfamiliar with CWN helicopters and modules.</b></li> <li>• <b>Module and aircraft dealing with a situation outside normal wildland fire environment/experience.</b></li> <li>• <b>Lack of clear direction may tempt manager to forego standard safety direction.</b></li> <li>• <b>Recognize HAZMAT potential and threat to aircraft and crew, don't go into scene.</b></li> <li>• <b>Advise IC of status regarding the incident.</b></li> <li>• <b>Use module to remove trees from road with saws.</b></li> <li>• <b>Transport key persons like HAZMAT/IC/Medics nearby. Move supplies and equipment to site.</b></li> <li>• <b>Recon for incident. Stay upwind and keep distance. Fire is low priority until HAZMAT and injured parties are secured.</b></li> </ul>	

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• <b>HAZMAT not trained or equipped for incident.</b></li> <li>• <b>Unknown status of truck contents.</b></li> <li>• <b>First responder strategy; deny and isolate.</b></li> <li>• <b>Suggest better use of aircraft and module.</b></li> </ul> <p><b><u>End of Exercise.</u></b></p>	
<p>IX. COMMUNICATIONS</p>	<p>9-43-S372-PPT</p>
<p>A. Fire Traffic Area (FTA)</p>	<p>9-44-S372-PPT</p>
<p>For fire helicopter responding to incident, be aware of FTA requirements.</p>	
<p>The FTA was developed by aerial firefighting personnel to provide a standardized initial attack airspace structure to enhance air traffic separation for all aircraft over wildland fire (or other) incidents.</p>	<p>9-45-S372-PPT</p>
<p>Although the FTA was designed for wildland firefighting incidents, the structure and communications requirements are patterned after Class D airspace with some specific differences.</p>	<p>9-46-S372-PPT</p>
<p>Communicate clearance, if you cannot comply, land or go home.</p>	



OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• If radio contact cannot be established, pilots should maintain VFR, hold on the 7nm arc from the fire, with left turn orbits around the fire.</li> </ul>	9-49-S372-PPT
<p>2. Profile</p> <p>The air tactical group supervisor (ATGS) platform will maintain 1000 feet vertical separation above the air tanker orbit altitude.</p> <p>The normal ATGS direction of orbit is right turns around the fire.</p>	9-50-S372-PPT
<p>3. Helicopters</p> <p>Fly assigned altitudes and routes.</p>	9-51-S372-PPT
<p>4. Three C's</p> <ul style="list-style-type: none"> <li>• Communications – established.</li> <li>• Clearance – received and understood.</li> <li>• Comply – comply with the clearance.</li> </ul> <p>If you cannot comply, remain clear of the FTA until you receive an amended clearance you can comply with.</p>	9-52-S372-PPT

OUTLINE	AIDS & CUES
<p data-bbox="289 283 617 325">B. Large Incidents</p> <p data-bbox="381 367 966 493">Large incidents often have airspace requirements and TFRs that exceed the dimensions of the FTA.</p> <p data-bbox="381 535 998 661">In this case, initial points (geographical landmarks) are used in conjunction with transition routes to and from the incident.</p> <p data-bbox="381 703 1088 871">No communications – Do not assume that all arriving aircraft have been briefed on the initial points. If they have, they also may not have departed from the closest air tanker base.</p> <p data-bbox="381 913 1055 1081">Arriving aircraft from other geographic areas may possibly fly over your operations area to reach the initial points or the original initial attack latitude and longitude.</p>	<p data-bbox="1128 283 1364 325">9-53-S372-PPT</p> <p data-bbox="1128 703 1364 745">9-54-S372-PPT</p>
<p data-bbox="289 1134 609 1176">C. Sterile Cockpit</p> <p data-bbox="381 1218 1096 1344">Regardless of the type of airspace you are going into, you must maintain sterile cockpit procedures during approach and departure.</p> <p data-bbox="381 1386 1071 1512">This is not only true for airports, but for all takeoffs and landings – especially where there is other air traffic.</p>	<p data-bbox="1128 1134 1364 1176">9-55-S372-PPT</p>
<p data-bbox="381 1564 779 1606">Sterile cockpit procedures:</p> <ul data-bbox="381 1648 1079 1774" style="list-style-type: none"> <li>• Within a 5-mile radius of an airport, communications within the aircraft should not be conducted.</li> </ul>	<p data-bbox="1128 1564 1364 1606">9-56-S372-PPT</p>

OUTLINE	AIDS & CUES
<ul style="list-style-type: none"> <li>• It is important for the pilot to listen for other air traffic in the landing area, and for other direction from the airport or air traffic controller.</li> <li>• Unless you need to inform the pilot of other aircraft or hazards, do not distract them from their takeoff or approach within the 5-mile radius.</li> </ul>	<p>9-57-S372-PPT</p>
<p>X. FLIGHT FOLLOWING</p> <p>It is in your best interest to have someone know your location in the event of an emergency.</p> <p>A. Communication Requirements</p> <p>During any special use operation, some agencies are required to check in every 15 minutes.</p> <ol style="list-style-type: none"> <li>1. Techniques <ul style="list-style-type: none"> <li>Radio, agency vs. FAA, and visual.</li> </ul> </li> <li>2. For point-to-point and special use missions, do one of the following: <ul style="list-style-type: none"> <li>• File an FAA IFR flight plan.</li> <li>• FAA VFR with radio check into the FAA.</li> <li>• Flight follow with your agency via radio or satellite.</li> <li>• Ensure you have provided for after hours flight following.</li> </ul> </li> </ol>	<p>9-58-S372-PPT</p>

OUTLINE	AIDS & CUES
<p>B. Aircraft Overdue, Missing or Crashed Procedures</p> <p>Upon arrival at the project or incident, ask for a copy of the local Aviation Mishap Response Guide.</p> <p>The guide should have current points of contact in the event of an aircraft accident, and current information on the nearest hospitals.</p>	
<p><b>OPERATIONS EXERCISE.</b></p> <p><u>Purpose:</u> This is a continuation of the Unit 3 Contract and Pay Scenario 1 exercise. Students will use the information from that exercise to complete and assemble a final packet of required paperwork as documentation.</p> <p><u>Format:</u> Small groups</p> <p><u>Time:</u> 1 hour</p> <p><u>Materials:</u></p> <ul style="list-style-type: none"> <li>• 9-1-S372-HO (enough copies for each student)</li> <li>• Calculators</li> <li>• Envelopes</li> </ul> <p><b>Note:</b> Instructors need to create a passenger/cargo manifest answer sheet for the third manifest request in this exercise.</p> <p><u>Instructions:</u></p>	<p>9-59-S372-PPT</p>
<ol style="list-style-type: none"> <li>1. Refer students to the exercise (SW pages 9.27 – 9.38; IG pages 9.37 – 9.48).</li> <li>2. Provide students with the handouts.</li> </ol>	<p>9-1-S372-IR/SR</p> <p>9-1-S372-HO</p>

OUTLINE	AIDS & CUES
<p>3. Students will use the AMD 23 and PASP from the Contract and Pay Scenario 1 exercise in Unit 3 to complete the forms.</p> <p>4. Students may use a calculator.</p> <p>5. Upon completion of the exercise, review answers in class. <b>Hand out the passenger/cargo manifest answer sheet for the third manifest request (created by instructors).</b></p> <p>6. Address any questions students may have.</p> <p>7. Have students submit their completed documentation in an envelope (with their name on the front).</p>	
<p><b><u>End of Exercise.</u></b></p>	
<p><b>REVIEW UNIT OBJECTIVES.</b></p>	<p>9-60-S372-PPT</p>
<p><b>HAVE STUDENTS COMPLETE A COURSE EVALUATION FORM.</b></p>	<p>9-61-S372-PPT</p>
<p><b>HAND OUT THE FINAL EXAM. ALLOW 1 HOUR TO COMPLETE.</b></p>	

## Operations Exercise

On May 23, using Aircraft Rental Agreement XX-ARA-XXXX, you are assigned to an AS 350B2, pilot Pat Ross, owned by Sky High Helicopters, P.O. Box xxxx, Coeur D'Alene, Idaho. You are to sling 2,000 lbs. of cabin logs and materials from the "Mile 63" helispot to the remote "Trapper Joe" cabin site on the Little Pend Oreille National Wildlife Refuge.

According to the Project Aviation Safety Plan, you have three helicopter crewmembers to assist you; one of them, Susie Green, is a trainee helicopter manager. Jet-A is available at a nearby airstrip, designator SXQ. The project manager intends to save money by having the helicopter fuel at the airstrip instead of ordering a fuel truck.

The B2 A-Star burns 48 gallons an hour and has a 143 gallon tank. Fuel weight will be figured at 7 lbs. per gallon. Flight rate is \$1020 per hour. Standby rate is one-half the flight rate and is free equal to flight time. If the helicopter is kept overnight, there is a 3-hour daily guarantee.

List at least seven items of information you should get to the pilot prior to the day of this mission.

### **Possible answers:**

- 1. Location of all LZs.**
- 2. Frequencies and instructions for flight following during ferry from/to home base.**
- 3. General overview of project, a copy of the PASP if possible.**
- 4. How tall are trees/obstacles; how long a line is needed; what distance will the loads be flown?**
- 5. Fueling situation.**
- 6. Name of helicopter manager or contact.**
- 7. Provide company with after-hours flight following contact.**
- 8. Arrangements for weather communication prior to go-no-go decision, if necessary.**
- 9. Verify the type of contract or rental agreement being used, if necessary**

Helicopter N190SH meets you at the airstrip (SXQ) at 0800 (the pilot came on at 0630). The temperature is 25° C (69° F). Meanwhile, the HECM crew is en route to Mile 63 helispot that you will base this operation out of.

The pilot tells you his Hobbs meter at departure from his base was 452.3 and it now reads 453.1. He came on duty at 0630. You will fly with him to Mile 63 and take your 30 lb. pack, 45 lb. remote hook and longline, four 5-lb. swivels, and four woven wire chokers, rated for vertical lifting, weighing 5 lbs. each. The crew is bringing the fire extinguisher, a lead line, and crash-rescue kit.

You will need a load calculation. One is provided by the pilot for this exercise. Review it and, if correct, sign. Include in your packet of documentation.

In Unit 6 you completed a pre-use inspection form (either during the video or during the field exercise). Though the model of helicopter may not have been an AS350 B2, include the inspection sheet in your packet of documentation.

All loads require a manifest. For the purpose of this exercise, two manifests have been completed for you.

List all items you need to attend to before you depart the airport for the helispot.

**Possible answers:**

- 1. Card pilot and aircraft.**
- 2. Obtain load calc from pilot.**
- 3. Pre-use inspection, including external load equipment. Obtain beginning Hobbs meter reading.**
- 4. Cargo weighed, preferably ahead of time, and marked for easy manifesting.**
- 5. Manifest all cargo and self according to load calc and amount of fuel on board.**
- 6. Briefing from pilot to manager.**
- 7. Briefing from manager to pilot.**
- 8. Maps, photos**
- 9. Check frequencies with radio check.**
- 10. Flight or obstacle hazards in the area, hazard map.**
- 11. Hazardous materials, if any.**

The pilot fuels the aircraft to 90% (129 gallons). En route to Mile 63, you ask for a Power Assurance Check and record the numbers.

List all items you need to attend to before you begin work out of Mile 63.

**Possible answers:**

- 1. Introductions, names of contact for Trapper Joe site.**
- 2. Pilot consults flight manual to complete the Power Assurance Check.**
- 3. Briefing of HECM crew, including PPE, emergency procedures, frequencies and whether or how back-haul of chokers/swivels will be needed and/or accomplished.**
- 4. Pilot may wish to inspect rigging method for loads of logs.**
- 5. Check helicopter cargo hook and remote hook release.**
- 6. Station fire extinguisher and crash rescue kit.**
- 7. Manifest Trapper Joe Crew.**

You arrive at the Mile 63 helispot with a Hobbs of 453.6. After briefing, two HECM personnel, each with a 30 lb. pack, will be flown to the Trapper Joe cabin site to prepare to receive loads.

Who might you use to supervise the operation at the other end?

**Answer:**

**Since the log loads will be set down and released with no likely need for further interaction, other than communication, the trainee helicopter manager should be able to provide appropriate oversight at the receiving end.**

What has the fuel burn been since you left SXQ? How does this affect your allowable? For the purpose of this exercise, a manifest has been completed for the above. Check to make sure it is correct; make corrections as necessary.

**Answer:**

**Flight time since fueling has been 0.5 hours. The A-Star burns 48 gallons an hour, so has burned 24 gallons so far. This increases the allowable by 168 lbs and is documented at the top of the manifest sheet. Crewmember weights are provided in the PASP.**

Upon return from this drop-off, the Hobbs is 453.9.

A load of 5 logs (160 lbs. each) is choked together. To prevent slippage, a spike is driven into the outer edge of each log above the choker; the opposite ends are ratchet strapped together.

For the purpose of this exercise, a manifest has been completed for the following sling loads of logs. Check to make sure it is correct; make corrections as necessary.

Two loads, each with a 45 lb. longline with remote hook, a 5-lb. choker and a 5-lb. swivel, are flown in when the pilot calls to say he will be shutting down upon arrival at Mile 63 due to a problem with his torque gauge. The time on shutdown is 11:30 a.m. and the Hobbs is at 454.7. The company asks to have the helicopter brought back to SXQ to meet a mechanic to deal with the maintenance problem.

Who must you notify?

**Answer:**

**You must notify a DOI maintenance inspector and the project manager that there may be a delay.**

Use this time to bring your paperwork up to date, particularly the AMD-23 (take 15 minutes). What other paperwork would reflect the day's events?

**Answer:**

**A SAFECOM regarding the maintenance problem, a pilot flight and duty log, and a daily diary (especially note the maintenance problem, the correction, and DOI inspector's time of approval).**

The ship was returned to service by the company's mechanic at 1400, fuels, and arrives back at the helibase at 1500.

What more do you need to return the aircraft to contract availability (which, in this case would mean back in standby status)? At what time is the aircraft considered available for use? The Hobbs reads 456.5.

**Answer:**

**A DOI maintenance inspector must approve the corrective action taken and return the aircraft to contract availability. Normally, the aircraft would be available (back in standby status) retroactively to the time the mechanic returned it to service. In this case, the helicopter was not on site until 1500, so it is unavailable until 1500 hrs.**

The temperature is now 30° C at Mile 63, and 22 C at Trapper Joe. With the increase in temperature, what is required?

**Answer:**

**A new load calc is required with the increase of 5 degrees.**

The pilot provides the necessary paperwork. Review and, if you concur, sign. The pilot has fueled the aircraft to a 90% fuel load (129 gallons). The wind has increased to 15 knots. Two more sets of logs are flown in. Suddenly, a radio message from Trapper Joe indicates a crewmember (Todd Fod) has been injured and needs to be flown back to your location. It is 1600. The helicopter flies out empty and the individual is flown back to SXQ, where the helicopter shuts down, a coworker meets him to drive him into town and the helicopter fuels to 90%.

At 1730 the ship flies from SXQ to your location, receives a hook-up, and leaves for the cabin site with two 35 lb. nets (one 400 lbs. cargo, one 250 lbs. cargo, two 5-lb. swivels, and a 5-lb. lead line) along with an internal load of 45 lbs. of tools and 150 lbs. of concrete blocks. Complete a manifest for this load.

The remaining crewmember is retrieved back to Mile 63. The Hobbs now reads 459.2. You will return with the crew in their vehicle. You intend to give him .7 to get back to his home base.

In the course of completing paperwork, you realize that some of your flight time for the injury is included in the Hobbs time for the sling work. What might you do?

**Answer:**

**Base an estimate of breakdown of time spent in each mission on time frames for external loads and flights without external loads made earlier. The total amount of flight time remains unchanged.**

The ship is released at 1900. Will he need fuel to fly back to Coeur D'Alene? Will the pilot be off duty within his 14-hour duty day limitation, including ½ hour for post-flight tasks?

**Possible answer:**

**The ship will not need fuel to fly back to Coeur D'Alene. He will have flown a total of 1.7 since his last fuel to 90% (129 gallons). He will burn a total of 82 gallons, leaving more than enough for a 30-minute reserve.**

**The pilot came on at 0630, and so must be off by 2030 hrs. He has a flight of 0.7 back to Coeur D'Alene, leaving more than enough time to put the aircraft away and complete paperwork. However, it is prudent to note that an additional delay of even 30 minutes at some point during the day would have compromised our ability to meet duty day limitations. It is a good habit to plan some extra "empty" time into the day's schedule. It will almost always be used. Remember to ensure the pilot has a break at some point to eat, etc.**

Complete all remaining paperwork and file in your documentation packet. Review the contents of your packet with class.

<b>INTERAGENCY HELICOPTER CALCULATION</b> 5700-17 (11/03)		<b>LOAD</b> OAS-67/FS	<b>MODEL AS350B2</b>	
			<b>N# 190SH</b>	
<b>PILOT(S)</b>	Patt Ross		<b>DATE 05/23/XX</b>	
<b>MISSION</b>	Cabin Sling			
1	<b>DEPARTURE</b>	850 PA	OAT 25C	<input type="checkbox"/>
2	<b>DESTINATION</b>	4800 PA	OAT 17C	<input checked="" type="checkbox"/>
3	<b>HELICOPTER EQUIPPED WEIGHT</b>		2990	
4	<b>FLIGHT CREW WEIGHT</b>		200	
5	<b>FUEL WT</b> ( <u>129</u> gallons X <u>7</u> lbs per gal)		903	
6	<b>OPERATING WEIGHT</b> (3 + 4 + 5)		4093	
		<b>Non-Jettisonable</b>		<b>Jettisonable</b>
		<b>HIGE</b>	<b>HOGE</b>	<b>HOGE- J</b>
7a	<b>PERFORMANCE REF</b> (List page/chart from FM)	SUP 14 p6	Sup 14 p7	Sup 14 p7
7b	<b>COMP GROSS WT</b> (FM Performance Section)	4961	5080	5080
8	<b>WT REDUCTION</b> (Req for all Non-Jettisonable)	160	160	
9	<b>ADJUSTED WEIGHT</b> (7b minus 8)	4801	4920	5080
10	<b>GROSS WT LIMIT</b> (FM Limitations Section)	4961	4961	5512
11	<b>SELECTED WEIGHT</b> ( <u>Lowest</u> of 9 or 10)	4801	4920	5080
12	<b>OPERATING WEIGHT</b> (From Line 6)	4093	4093	4093
13	<b>ALLOWABLE PAYLOAD</b> (11 minus 12)	708	827	987
14	<b>PASSENGERS/CARGO MANIFEST</b>			
15 <b>ACTUAL PAYLOAD</b> (Total of all weights listed in Item 14) Line 15 must not exceed Line 13 for the intended mission.				
PILOT SIGNATURE <i>Patt Ross</i>		HazMat		
MGR SIGNATURE		Yes ___ No <u>X</u>		

INTERAGENCY HELICOPTER LOAD CALCULATION OAS-67/FS 5700-17 (11/03)		MODEL AS350B2	
		N# 190SH	
PILOT(S)	Patt Ross	DATE 05/23/XX	
MISSION	Cabin Sling		
1	DEPARTURE	850 PA	OAT 30C <input type="checkbox"/>
2	DESTINATION	4800 PA	OAT 22C <input checked="" type="checkbox"/>
3	HELICOPTER EQUIPPED WEIGHT		2990
4	FLIGHT CREW WEIGHT		200
5	FUEL WT ( <u>129</u> gallons X <u>7</u> lbs per gal)		903
6	OPERATING WEIGHT (3 + 4 + 5)		4093
		Non-Jettisonable	
		HIGE	HOGE
		Jettisonable	
		HOGE- J	
7a	PERFORMANCE REF (List page/chart from FM)	SUP 14 p6	Sup 14 p7
7b	COMP GROSS WT (FM Performance Section)	4961	4900
8	WT REDUCTION (Req for all Non-Jettisonable)	160	160
9	ADJUSTED WEIGHT (7b minus 8)	4801	4740
10	GROSS WT LIMIT (FM Limitations Section)	4961	4961
11	SELECTED WEIGHT (Lowest of 9 or 10)	4801	4740
12	OPERATING WEIGHT (From Line 6)	4093	4093
13	ALLOWABLE PAYLOAD (11 minus 12)	708	647
14	PASSENGERS/CARGO MANIFEST		
15	ACTUAL PAYLOAD (Total of all weights listed in Item 14) Line 15 must not exceed Line 13 for the intended mission.		
PILOT SIGNATURE <i>Patt Ross</i>		HazMat	
MGR SIGNATURE		Yes ___ No <u>X</u>	







REPORTED BY (optional)

Name: Jonny Doe  
 E-Mail:  
 Phone: 509-260-XXXX  
 Cell Phone:  
 Pager:  
 Organization: Fish & Wildlife Service (FWS)  
 Date Submitted: 05/23/XX : Org-Other  
 Date Submitted: 4/24/2007

EVENT

Date: 05/23/ Local Time: 1130 Injuries: No Damage: No  
*mm / dd / yyyy 24 hour clock*  
 Operational Control: Location: Little Pend Oreille NWR  
 Agency: Fish & Wildlife Service (FWS) Airport, City, Lat/Long, or Fire Name  
 Region: State: Washington  
 Unit:  
 Refresh Unit Menu

MISSION

Type: External Load (Longline) (Non-Fire) Other:  
 Procurement: Rental Other:  
 Persons Onboard: 1 Special Use: Yes Hazardous Materials: No  
 Departure Point: Mile 63 Helispot Destination: Remote cabin site

AIRCRAFT

Type: Helicopter Tail #: N190SH Manufacturer: Aerospatiale Model: AS350 B2  
 Owner/Operator: Sky High helicopter Pilot: Pat Ross

NARRATIVE (A brief explanation of the event)

1130 Pilot landed with report of torque guage malfunction. Ship flew to SXQ airstrip to meet mechanic for maintenance. maintenance specialist XXXXXXX was notified at 1140. Mechanic returned aircraft to service at 1400. Maintenance inspector approval at 1405. Aircraft back to mile 63 at 1500 hrs. Flew remainder of day, no problems.

CORRECTIVE ACTION (What was done to correct the problem)

Maintenance Inspector XXXXXX notified. Mechanic flown in to repair. Test flights performed, Maintenance inspector approval at 1405.

**AIRCRAFT CONTRACT DAILY DIARY**

PAGE 1 OF 1  
DATE: 5-23-XX

1. CONTRACTOR Sky High 2. CONTRACT NO. / ITEM NO. XX-ARA-XXXX 3. HOME BASE CIDA 4. CURRENT LOCATION OF AIRCRAFT Little Bend Overly NWR  
 4. AIRCRAFT NO. AND MAKE/MODEL N190SH/AS350 B2 5. GOVT. REPRESENTATIVE ON SITE Jenny Doe 6. CONTRACTOR REP. ON SITE Pat Ross  
 7. PILOT(S) ON DUTY Pat Ross ( ) REGULAR ( ) RELIEF 8. MECHANIC(S) ON DUTY ( ) REGULAR ( ) RELIEF 9. DRIVER ON DUTY ( ) REGULAR ( ) RELIEF

10. WEATHER Ptly cldy-wind 11. FUEL PRICE \_\_\_\_\_ 12. OTHER AIRCRAFT ON BASE \_\_\_\_\_

13. STANDBY AVAILABILITY: BEGIN: 0800 END: 1900 TOTAL: 0

14. EXTENDED AVAILABILITY: BEGIN: \_\_\_\_\_ END: \_\_\_\_\_ TOTAL: \_\_\_\_\_

15. SERVICE TRUCK MILEAGE BEGIN: \_\_\_\_\_ END: \_\_\_\_\_ TOTAL: \_\_\_\_\_

16. WORK ORDER ISSUED (Include Suspend/Resume) \_\_\_\_\_ 17. INCIDENT/HAZARD REPORT(S) ISSUED?  
 YES (Attach Copy) ( ) NO

18. LIST MATERIALS FURNISHED TO JOB SITE (Furnished By: G - Govt; C - Contractor; S - Subcontractor)			19. LIST EQUIPMENT ON SITE (Furnished By: G - Govt; C - Contractor; S - Subcontractor)		
Item	Hours Used	Furnished By	Item	Hours Used	Furnished By

20. MAINTENANCE PERFORMED/POWER TREND COMPLETED/ REASONS FOR ANY UNAVAILABILITY:  
Power Assurance check acceptable.  
Helicopter unavailable from 1130 am until 1500

21. NARRATIVE REPORT (Include Problems Encountered, Official Visits or Inspections, Etc; Attach Additional Sheets As Necessary):  
Pilot on duty 0630. Met helicopter at SXQ  
at 0800. Flew 3 pax and 1885 lbs cargo.  
At 1130 aircraft became unavailable  
due to reported problem with torque gauge.  
Mechanic met helicopter at SXQ, returned to  
Service at 1400. Maintenance Inspector — approved  
actions taken, at 1405. Helicopter back on site at  
1500. Flew 2 more pax, including medic of  
injured crewmember. Flew 2745 lbs cargo. Released  
Ship at 1900 hrs.

22. MISCELLANEOUS COSTS (eg, Rental Cars, Airline Tickets) WHICH WILL BE BILLED TO GOVT. AT A LATER DATE: \_\_\_\_\_

23. SIGNATURE: Jenny Doe 24. TITLE: Helicopter Manager  
 DISTRIBUTION: ORIGINAL: PI (DOI) OR COR (FS) YELLOW: CO/ACO PINK: AIR OFFICER - LOCAL (FS) OR STATE/AREA (DOI)