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## Chapter 16 Aviation Operations and Resources

### **Purpose and Scope**

Aviation resources are one of a number of tools available to accomplish fire related land management objectives.

Aviation use must be prioritized based on management objectives and probability of success.

The effect of aviation resources on a fire is directly proportional to the speed at which the resource(s) can initially engage the fire, the effective capacity of the aircraft, and the deployment of ground resources.

These factors are magnified by flexibility in prioritization, mobility, positioning, and utilization of the versatility of many types of aircraft.

Risk management is a necessary requirement for the use of any aviation resource. The risk management process must include risk to ground resources, and the risk of not performing the mission, as well as the risk to the aircrew.

### **Organizational Responsibilities**

#### **National Office**

##### **Department of Interior (DOI)**

##### **Office of Aviation Services (OAS)**

The Office of Aviation Services (OAS) is responsible for the coordination of aviation policy development and maintenance management within the agencies of the Department of the Interior (DOI). OAS has no operational responsibility. OAS provides aviation safety program oversight, accident investigation, and inspection/approval of aircraft and pilots for DOI agencies.

##### **Bureau of Land Management (BLM)**

National Aviation Office (NAO) - NAO develops BLM policy, procedures, and standards. It also maintains functional oversight, and facilitates interagency coordination for all aviation activities. The principal goals are safety and cost-effectiveness. The NAO supports BLM aviation activities and missions. This includes fire suppression, through strategic program guidance, managing aviation programs of national scope, coordination with OAS, and interagency partners. The Fire and Aviation Directorate has the responsibility and authority, after consultation with State Fire Management Officers, for funding and acquisition of all fire aircraft, prioritizing the allocation of BLM aircraft on a Bureau wide basis, and approving State Office requests to acquire supplemental

1 aircraft resources. Refer to *BLM National Aviation Plan and Manual 9400* for  
2 aviation policy and guides. (Refer to 112 DM 12 for a list of responsibilities.)

3

#### 4 **Forest Service (FS)**

5 The FS has responsibility for all aspects of its aviation program, including  
6 aviation policy development, aircraft acquisition, and maintenance management.  
7 In addition, the FS has operational responsibility including development of  
8 aviation procedures and standards, as well as functional oversight of aviation  
9 assets and facilities, accident investigation, and aircraft and pilot inspection.

10

11 The Assistant Director (AD), Aviation, is responsible to the Director of Fire and  
12 Aviation Management for the management and supervision of the National  
13 Headquarters Office in Washington DC, and the detached Aviation Unit in  
14 Boise. The AD, Aviation provides leadership, support and coordination for  
15 national and regional aviation programs and operations. (Refer to FSM 5704.22  
16 for list of responsibilities.)

17

18 The Branch Chief, Aviation Operations reports to the AD, Aviation, and is  
19 responsible for national aviation operational management and oversight.

20

21 The Branch Chief, Standardization and QA reports to the AD, Aviation, and is  
22 responsible for standardization and approval of agency and contract pilots.

23

24 The Branch Chief, Airworthiness and QA reports to the AD, Aviation, and is  
25 responsible for national aircraft airworthiness and maintenance program  
26 management and oversight.

27

28 The Branch Chief, Aviation Risk Management reports to the AD, Risk  
29 Management and Training and is responsible for the national aviation safety and  
30 risk management program and oversight.

31

#### 32 **State/Regional Office**

- 33 • *BLM - State FMOs are responsible for providing oversight for aircraft*  
34 *hosted in their state. State FMOs have the authority and responsibility to*  
35 *approve, with National Office concurrence, acquisition of supplemental*  
36 *aircraft resources within their state. State FMOs have the authority to*  
37 *prioritize the allocation, pre-positioning and movement of all aircraft*  
38 *assigned to the BLM within their state. State Offices will coordinate with*  
39 *the National Office on movement of their aircraft outside of their State. A*  
40 *State Aviation Manager (SAM) is located in each state office. SAMs are*  
41 *delegated as the Contracting Officers Representative (COR) for all*  
42 *exclusive use aircraft hosted by their state. SAMs implement aviation*  
43 *program objectives and directives to support the agency mission and state*  
44 *objectives. A state aviation plan is required to outline the state aviation*  
45 *program objectives and to identify state specific policy and procedures.*

- 1 • **NPS/FWS** - A Regional Aviation Manager (RAM) is designated for each  
2 Region. RAMs implement aviation program objectives and directives to  
3 support the agency mission and Region objectives. Several Regions have  
4 additional support staff, and/or pilots assigned to support aircraft  
5 operations and to provide technical expertise. A Regional aviation  
6 operations and management plan is required to outline the Region's  
7 aviation program objectives and to identify Region-specific policy and  
8 procedures.
- 9 • **FS** - Regional Aviation Officers (RAOs) are responsible for directing and  
10 managing Regional aviation programs in accordance with the National and  
11 Regional Aviation Management Plans, and applicable agency policy  
12 direction. (Refer to FSM 5700 and FSH 5709.16 for list of responsibilities).  
13 RAOs report to Director of Fire and Aviation for their specific Region.  
14 Regional Aviation Safety Managers (RASMs) are responsible for aviation  
15 safety in their respective Regions, and work closely with the RAO to ensure  
16 aviation safety is an organizational priority (refer to FSM 5700 and FSH  
17 5709.16 for list of responsibilities). Most Regions have additional aviation  
18 technical specialists and pilots who help manage and oversee the Regional  
19 aviation programs. Most Regions also have Aviation Maintenance  
20 Inspectors, Fixed-wing Program Managers, Helicopter Program Managers,  
21 Helicopter Operations Specialists, Inspector Pilots, etc.

22

### 23 **Local Office**

24 Some areas have interagency aviation programs that utilize an Aviation Manager  
25 for multiple units. Duties are similar as other local level managers.

- 26 • **BLM** - Unit Aviation Managers (UAMs) serve as the focal point for the  
27 Unit Aviation Program by providing technical expertise and management of  
28 aviation resources to support Field Office/District programs. Field/District  
29 Offices are responsible for hosting, supporting, providing daily  
30 management, and dispatching all aircraft assigned to their unit.  
31 Field/District Offices have the authority to request additional resources; to  
32 establish priorities, and make assignments for all aircraft assigned to the  
33 BLM within their unit or zone.
- 34 • **NPS** - Organizational responsibility refer to DO-60, RM-60.
- 35 • **FS** - Unit Aviation Officers (UAOs)/Forest Aviation Officers (FAOs) have  
36 the responsibility for aviation activities at the local level, including aviation  
37 mission planning, risk management and safety, supervision, and evaluation.  
38 UAOs/FAOs assist Line Officers with risk assessment/management and cost  
39 analysis. (Refer to FSH 5709.16\_10.42)

40

### 41 **Aviation Information Resources**

42

43 Aviation reference guides and aids for agency aviation management are listed  
44 for policy, guidance, and specific procedural requirements.

- 45 • **BLM** - 9400 Manual Appendix I, National Aviation Plan (NAP) and  
46 applicable aviation guides as referenced in the NAP.

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- 1 • *FWS - Service Manual 330-339, Aviation Management and IHOG.*
- 2 • *NPS - RM-60 Aviation Management Reference Manual and IHOG & IASG.*
- 3 • *FS - FSM 5700, FSH 5709.16 and applicable aviation guides when*
- 4 *approved by Fire Director as referenced in policy.*

5  
6 Safety alerts, operational alerts, instruction memoranda, information bulletins,  
7 incident reports, and other guidance or information are issued as needed.

8  
9 An up-to-date library with aviation policy and procedural references will be  
10 maintained at all permanent aviation bases, dispatch, and aviation management  
11 offices.

### 12 **Aviation Safety**

13  
14  
15 The FS and the BLM have adopted Safety Management Systems (SMS) as the  
16 foundation to our aviation safety program. The four pillars of SMS are Safety  
17 Policy, Safety Risk Management, Safety Assurance, and Safety Promotion.  
18 SMS is the standard for aviation safety set by the International Civil Aviation  
19 Organization (ICAO) and the Federal Aviation Administration (FAA).

20  
21 SMS focuses on:

- 22 • Emphasis on proactive risk management;
- 23 • Promotes a “Just” culture;
- 24 • Addresses systemic safety concerns;
- 25 • Holds the organization accountable;
- 26 • Identifies “What” so we can manage the manageable; and
- 27 • Communicates the “Why” so the culture can learn from mistakes.

28  
29 The intent of SMS is to improve the aviation culture by increasing hazard  
30 identification, reduce risk-taking behavior, learn from mistakes, and correct  
31 procedures before a mishap occurs rather than after the accident. More  
32 information on SMS is available at the Wildland Fire Lessons Learned Center  
33 under the Lessons Learned link at [www.wildfirelessons.net](http://www.wildfirelessons.net). Additionally, the  
34 current approved US Forest Service Aviation SMS Guide is available at  
35 [www.fs.fed.us/fire/av\\_safety/](http://www.fs.fed.us/fire/av_safety/)

### 36 **Risk Assessment and Risk Management**

37  
38 The use of risk management will help to ensure a safe and successful operation.  
39 Risk is the probability that an event will occur. Assessing risk identifies the  
40 hazard, the associated risk, and places the hazard in relationship to the mission.  
41 A decision to conduct a mission requires weighing the risk against the benefit of  
42 the mission and deciding whether the risks are acceptable.

43  
44 Aviation missions always have some degree of risk. The four sources of hazards  
45 are methods, medium, man, and machine. Managing risk is a 5-step process:

- 1 1. Identify hazards associated with all specified and implied tasks for the  
2 mission.
- 3 2. Assess hazards to determine potential of occurrence and severity of  
4 consequences.
- 5 3. Develop controls to mitigate or remove risk, and make decisions based on  
6 accepting the least risk for the best benefit.
- 7 4. Implement controls - (1) education controls, (2) physical controls, and (3)  
8 avoidance controls.
- 9 5. Supervise and Evaluate - enforce standards and continuously re-evaluate  
10 their effectiveness in reducing or removing risk. Ensure that controls are  
11 communicated, implemented, and enforced.

### 13 **How to Properly Refuse Risk (Aviation)**

14 Every individual (government and contracted employees) has the right and  
15 obligation to report safety problems affecting his or her safety and has the right  
16 to contribute ideas to correct the hazard. In return, supervisors are expected to  
17 give these concerns and ideas serious consideration. When an individual feels  
18 an assignment is unsafe, he or she also has the obligation to identify, to the  
19 degree possible, safe alternatives for completing that assignment. Turning down  
20 an assignment is one possible outcome of managing risk.

21  
22 A “turn down” is a situation where an individual has determined he or she  
23 cannot undertake an assignment as given and is unable to negotiate an  
24 alternative solution. The turn down of an assignment must be based on  
25 assessment of risks and the ability of the individual or organization to control or  
26 mitigate those risks. Individuals may turn down an assignment because of  
27 safety reasons when:

- 28 • There is a violation of regulated safe aviation practices;
- 29 • Environmental conditions make the work unsafe; or
- 30 • They lack the necessary qualifications or experience.

31  
32 Individuals will directly inform their supervisor that they are turning down the  
33 assignment as given. The most appropriate means of documented turn down  
34 criteria is using the Aviation Watch Out Situations (*IRPG*).

35  
36 Supervisors will notify the Air Operations Branch Director (AOBD) or unit  
37 aviation leadership immediately upon being informed of a turn down. If there is  
38 no AOBD, notification shall go to the appropriate Section Chief, the Incident  
39 Commander or local fire and aviation staff. Proper handling of turn downs  
40 provides accountability for decisions and initiates communication of safety  
41 concerns within the incident organization.

42  
43 If the assignment has been turned down previously and the supervisor asks  
44 another resource to perform the assignment, he or she is responsible to inform  
45 the new resource that the assignment had been turned down and the reasons  
46 why. Furthermore, personnel need to realize that a “turn down” does not stop

1 the completion of the assigned operation. The “turn down” protocol is an  
2 integral element that improves the effective management of risk, for it provides  
3 timely identification of hazards within the chain of command, raises risk  
4 awareness for both leaders and subordinates, and promotes accountability.

5  
6 If an unresolved safety hazard exists the individual needs to communicate the  
7 issue/event/concern immediately to his or her supervisor and document as  
8 appropriate.

### 9 10 **Aviation Safety Support**

11  
12 During high levels of aviation activity it is advisable to request an Aviation  
13 Safety and Technical Assistance Team (ASTAT). An ASTAT’s purpose is to  
14 enhance risk management, and assist and review aviation operations on wildland  
15 fires. An ASTAT should be requested through the agency chain of command  
16 and operate under a Delegation of Authority from the appropriate State/Regional  
17 Aviation Manager(s) or Multi Agency Coordinating Group. Formal written  
18 reports shall be provided to the appropriate manager(s) as outlined at the in-  
19 brief. A team should consist of the following:

- 20 • Aviation Safety Manager;
- 21 • Operations Specialist (helicopter and/or fixed wing);
- 22 • Pilot Inspector;
- 23 • Maintenance Inspector (optional); and
- 24 • Avionics Inspector (optional).

### 25 26 **Aviation Safety Briefing**

27 Every passenger must receive a briefing prior to each flight. The briefing is the  
28 responsibility of the Pilot in Command (PIC) but may be conducted by the pilot,  
29 flight manager, helicopter manager, fixed-wing base manager, or an individual  
30 with the required training to conduct an aviation safety briefing. The pilot  
31 should also receive a mission briefing from the government aircraft manager.  
32 Refer to the *IRPG* and *IHOG* Chapter 10.

### 33 34 **Aviation Hazard**

35 An aviation hazard is any condition, act, or circumstance that compromises the  
36 safety of personnel engaged in aviation operations. Pilots, flight crew personnel,  
37 aviation managers, incident air operations personnel, and passengers are  
38 responsible for hazard identification and mitigation. Aviation hazards may  
39 include but are not limited to the following:

- 40 • Deviations from policy, procedures, regulations, and instructions;
- 41 • Improper hazardous materials handling and/or transport;
- 42 • Airspace conflicts/flight following deviation;
- 43 • Deviation from planned operations;
- 44 • Failure to utilize PPE or Aviation Life Support Equipment (ALSE);
- 45 • Failure to meet qualification standards or training requirement;

- 1 • Extreme environmental conditions;
- 2 • Improper ground operations;
- 3 • Improper pilot procedures;
- 4 • Fuel contamination; and
- 5 • Unsafe actions by pilot, air crew, passengers, or support personnel.

6  
7 Aviation hazards also exist in the form of wires, low-flying aircraft, and  
8 obstacles protruding beyond normal surface features. Each office will post,  
9 maintain, and annually update a "Known Aerial Hazard Map" for the local  
10 geographic area where aircraft are operated, regardless of agency jurisdiction.  
11 This map will be posted and used to brief flight crews. Unit Aviation Managers  
12 are responsible for ensuring the development and updating of Known Aerial  
13 Hazard Maps (IHOG).

14

#### 15 **Aerial Applications of Wildland Fire Chemical Safety**

16 Chapter 12 contains information concerning the aerial application of wildland  
17 fire chemicals.

18

### 19 **SAFECOM**

20

21 The DOI and the FS have an incident/hazard reporting form called The Aviation  
22 Safety Communiqué (SAFECOM). The database, available at  
23 <https://www.safecom.gov/> fulfills the Aviation Mishap Information System  
24 (AMIS) requirements for aviation mishap reporting for the DOI agencies and the  
25 FS. Categories of reports include: Accidents, Airspace, Hazards, Incidents,  
26 Maintenance, Mishap Prevention, and Kudos. The system uses the SAFECOM  
27 Form OAS-34 or FS-5700-14 to report any condition, observation, act,  
28 maintenance problem, or circumstance with personnel or aircraft that has the  
29 potential to cause an aviation-related mishap. The SAFECOM system is not  
30 intended for initiating punitive actions. Submitting a SAFECOM is not a  
31 substitute for "on-the-spot" correction(s) to a safety concern. It is a tool used to  
32 identify, document, track, and correct safety related issues. A SAFECOM does  
33 not replace the requirement for initiating an accident or incident report.  
34 Any individual (including vendors/cooperators) with knowledge of an  
35 incident/hazard should complete a SAFECOM. The SAFECOM form,  
36 including attachments and pictures, should be entered directly on the internet at  
37 <https://www.safecom.gov/> or faxed to the Department of the Interior's Office of  
38 Aviation Services, Aviation Safety (208)433-5069 or to the FS at (208) 387-  
39 5735 ATTN: SAFETY. Electronic cc copies are automatically forwarded to the  
40 National, Regional, State, and Unit Aviation Managers.

41

42 The agency with operational control of the aircraft at the time of the  
43 hazard/incident/accident is responsible for completing the SAFECOM and  
44 submitting it through agency channels.

45

46

**1 Aircraft Incidents/Accidents**

2  
3 Notification to the FS or OAS and DOI agency Aviation Safety Managers is  
4 required for any aircraft mishap involving damage or injury. Use the hotline  
5 (888) 464-7427 or the most expeditious means possible. Initiate the appropriate  
6 unit Aviation Mishap Response Plan.

**8 Low-level Flight Operations**

9  
10 The only fixed-wing aircraft missions authorized for low-level fire operations  
11 are:

- 12 • Smokejumper/Para-cargo;
- 13 • Aerial Supervision Module (ASM) and Lead/Air Tanker Coordinator  
14 (ATCO) operations; and
- 15 • Retardant, water, and foam application.

**17 Operational Procedures:**

- 18 • A high-level recon will be made prior to low-level flight operations.
- 19 • All flights below 500 feet will be contained to the area of operation.
- 20 • PPE is required for all fixed-wing, low-level flights. Helmets are not  
21 required for multi-engine airtanker crews, smokejumper pilots, and ASM  
22 flight/aircrew members.

**24 Congested Area Flight Operations**

25  
26 Airtankers can drop retardant in congested areas under DOI authority given in  
27 *FAR Part 137*.

28  
29 FS authority is granted under exemption 392, from *FAR 91.119* as referenced in  
30 *FSM 5714*. When such operations are necessary, they may be authorized subject  
31 to these limitations:

- 32 • Airtanker operations in congested areas may be conducted at the request of  
33 the city, rural fire department, county, state, or federal fire suppression  
34 agency;
- 35 • An ASM/Lead/ATCO is ordered to coordinate aerial operations;
- 36 • The air traffic control facility responsible for the airspace is notified prior to  
37 or as soon as possible after the beginning of the operation;
- 38 • A positive communication link must be established between the ASM or  
39 Lead/ATCO, airtanker pilot(s), and the responsible fire suppression agency  
40 official; and
- 41 • The IC for the responsible fire agency or designee will advise the  
42 ASM/leadplane/airtanker that all non-essential people and movable property  
43 have been cleared prior to commencing retardant drops.

44  
45



## 1 **Airspace Coordination**

2

3 The Interagency Airspace Program is an aviation safety program designed to  
4 enhance aviation safety and reduce the risk of a mid-air collision. Guidance for  
5 this program is found in the *Interagency Airspace Coordination Guide (IACG)*,  
6 which has been adopted as policy by the DOI and FS. It is located at  
7 [www.airspacecoordination.net](http://www.airspacecoordination.net). Additional guidance may be found in the  
8 *National Interagency Mobilization Guide* and supplemented by local  
9 Mobilization Guides.

10

11 Some state and FS units have Memorandums of Understanding (MOUs) with  
12 local military airspace authorities for airspace coordination. Briefings from Unit  
13 Aviation Managers/Officers (UAM/UAO) are crucial to ensure that any local  
14 airspace information is coordinated before flight.

15

16 All firefighting aircraft are required to have operative transponders and will use  
17 a national firefighting transponder code of 1255 when engaged in, or traveling  
18 to, firefighting operations (excluding ferry flights), unless given a discrete code  
19 by Air Traffic Control (ATC).

20

21 Additional coordination information can be found by contacting:

- 22 • **BLM** - *State Aviation Managers, National Airspace Program Manager*
- 23 • **NPS** - *Regional Aviation Managers*
- 24 • **FS** - *Regional Aviation Officers, National Airspace Program Manager*
- 25 • **FWS** - *National Aviation Safety and Operations*

26

### 27 **Flight Request and Approval**

- 28 • **BLM** –*Reference the BLM National Aviation Plan, Chapter 3, available at:*  
29 *<http://www.blm.gov/mifc/st/en/prog/fire/Aviation/Administration.html>*
- 30 • **NPS** - *Reference RM 60, Appendix 3 & 4.*
- 31 • **FS** - *Refer to FSM 5711.3 for administrative use, FSM 5705 for point-to-*  
32 *point and mission use for types of FS flights.*

33

### 34 **Point-to-Point Flights**

35 A “Point-to-point” flight is one that originates at one developed airport or  
36 permanent helibase and flies directly to another developed airport or permanent  
37 helibase with the sole purpose of transporting personnel or cargo (this term does  
38 not apply to flights with a scheduled air carrier on a seat fare basis). These types  
39 of flights are often referred to as “administrative” flights and only require the  
40 aircraft and pilot to be carded and approved for point-to-point flight. A point-to-  
41 point flight is conducted higher than 500 feet above ground level (AGL).

42

43 Agency policy requires designating a Flight Manager for point-to-point flights  
44 transporting personnel. The Flight Manager is a government employee that is  
45 responsible for coordinating, managing, and supervising flight operations. The  
46 Flight Manager is not required to be on board for most flights. For those flights

1 that have multiple legs or are complex in nature a Flight Manager should attend  
2 the entire flight. The Flight Manager will meet the qualification standard for the  
3 level of mission assigned as set forth in the *Interagency Aviation Training Guide*  
4 (IAT).

- 5 • **BLM** –Reference the *BLM National Aviation Plan, Chapter 3*, available at:  
6 <http://www.blm.gov/mifc/st/en/prog/fre/Aviation/Administration.html>
- 7 • **NPS** - Reference *RM-60, Appendix 3* for agency specific policy.
- 8 • **FS** - Refer to *FSM 5711.3* for administrative use, *FSM 5705* for point-to-  
9 point and mission use for types of FS flights.

10

### 11 **Mission Flights**

12 Mission flights are defined as flights not meeting the definition of point-to-point  
13 flight. A mission flight requires work to be performed in the air (retardant or  
14 water delivery, fire reconnaissance, smokejumper delivery), or through a  
15 combination of ground and aerial work (delivery of personnel and/or cargo from  
16 helibases to helispots or unimproved landing sites, rappelling or cargo let-down,  
17 horse herding).

- 18 • PPE is required for any fixed wing mission flight conducted below  
19 500' AGL. Flight helmets are not required for multi-engine airtanker crews,  
20 smokejumper pilots and ASM flight/aircrew members.
- 21 • Required attire for ATGS and fire reconnaissance are:
  - 22 ○ Leather shoes or boots; and
  - 23 ○ Natural fiber shirt, full length cotton or nomex pants, or flight suit.
- 24 • The use of full PPE is required for all helicopter flights (point to point and  
25 mission) and associated ground operations. The specific items to be worn  
26 are dependent on the type of flight, the function an individual is performing,  
27 or the ground operation being conducted. Refer to the tables in Chapter 9 of  
28 the IHOG for specific requirements.
- 29 • All personnel will meet training and qualification standards required for the  
30 mission.
- 31 • Agency FM radio capability is required for all mission flights.
- 32 • All passengers must be authorized and all personnel onboard must be  
33 essential to the mission.

34

35 Mission flights for fixed-wing aircraft include but are not limited to the  
36 following:

- 37 • Water or retardant application;
- 38 • Parachute delivery of personnel or cargo;
- 39 • Airtanker coordinator operations; and
- 40 • Takeoff or landing requiring special techniques due to hazardous terrain,  
41 obstacles, or surface conditions

42

43 Mission helicopter flights include but are not limited to the following:

- 44 • Flights conducted within 500 feet AGL;
- 45 • Water or retardant application;

- 1 • Helicopter coordinator and ATGS operations;
- 2 • Aerial ignition activities;
- 3 • External load operations;
- 4 • Rappelling;
- 5 • Takeoff or landing requiring special techniques due to hazardous terrain,
- 6 obstacles, pinnacles, or surface conditions;
- 7 • Free-fall cargo; and
- 8 • Fire reconnaissance.

#### 10 **Flight-Following All Aircraft**

11  
12 Flight-Following is mandatory for all flights. Refer to the *National Interagency*  
13 *Mobilization Guide* for specific direction.

- 14 • Agency FM radio capability is required for all mission flights.
- 15 • For mission flights, there are two types of Agency Flight Following:  
16 Automated Flight Following (AFF) and radio check-in. AFF is the preferred  
17 method of agency flight following. If the aircraft and flight following office  
18 have AFF capability, it shall be utilized. Periodic radio transmissions are  
19 acceptable when utilizing AFF. Reference the AFF procedures section of  
20 the *National Interagency Mobilization Guide* for more information.
- 21 • All dispatch centers designated for fire support shall have the ability to  
22 monitor AFF as well as the capability to transmit and receive “National  
23 Flight Following” and “Air Guard”
- 24 • If AFF becomes inoperable the aircraft will normally remain available for  
25 service, utilizing radio/voice system for flight following. Each occurrence  
26 must be evaluated individually and decided by the COR/CO.
- 27 • Helicopters conducting Mission Flights shall check-in prior to and  
28 immediately after each takeoff/landing per IHOG 4.II.E.2

#### 30 **Sterile Cockpit All Aircraft**

31  
32 Sterile cockpit rules apply within a 5-mile radius of the airport. The flight crew  
33 will not perform radio or cockpit communication during that time that is not  
34 directly related to safe flight of the aircraft from taxi to 5 miles out and from 5  
35 miles out until clearing the active runway. This would consist of reading  
36 checklists, communication with Air Traffic Control (ATC), Flight Service  
37 Stations, Unicom, or other aircraft with the intent of ensuring separation or  
38 complying with ATC requirements. Communications by passengers or air crew  
39 members can be accomplished when the audio panels can be isolated and do not  
40 interfere with flight operations of the flight crew.

41  
42 **Exception:** When conducting firefighting missions within 5 miles of an  
43 uncontrolled airport, maintain sterile cockpit until departing the traffic pattern  
44 and reaching final altitude. Monitor CTAF frequency if feasible while engaged  
45 in firefighting activities. Monitor CTAF as soon as practical upon leaving the

1 fire and returning to the uncontrolled airport. When conducting firefighting  
2 missions within Class B, C, or D airspace, notify dispatch that ATC  
3 communications will have priority over dispatch communications.

#### 4 **Interagency Interim Flight and Duty Limitations/Aviation Stand Downs**

6  
7 Aviation stand downs are a means to find time, in an otherwise demanding flight  
8 schedule, to reflect on core aviation safety values. In this context, aviation stand  
9 downs refer to an administrative decision to keep tactical aviation resources on  
10 the ground through all or part of their normal duty day or days.

11  
12 Interim flight and duty limitations are a method to manage pilot and crew  
13 fatigue by reducing the length of the duty day or increasing the number of days  
14 off in the normal duty day cycle. During extended periods of high flight  
15 activity, fatigue must be mitigated by fire and aviation managers.

16  
17 Aviation stand downs and interim flight and duty day limitations can be  
18 implemented at the Geographic Area or National level. In either case, the  
19 procedure for implementation is the same. Requests for implementation of  
20 flight and duty limitations, or proposed stand down parameters, will be made  
21 through the National Aviation Office through which it originated.

#### 22 23 **Interim Flight and Duty Limitations Implementation**

24 During extended periods of a high level of flight activity or maximum 14-hour  
25 days, fatigue factors must be taken into consideration by Fire and Aviation  
26 Managers. Phase 2 and/or Phase 3 Duty Limitations will be implemented for  
27 specific Geographic Area's Aviation resources. The minimum scope of  
28 operation should be by Geographic Area, i.e., Northwest, Great Basin, etc.

29  
30 Decisions and procedures for implementation will be made on a coordinated,  
31 interagency basis, involving the GACC, NICC, and National Aviation  
32 Representatives at NIFC and Aviation Contracting Officers. Details of the  
33 proposal will be formalized and coordinated with other affected agencies and  
34 implemented through the National Multi Agency Coordinating Group (NMAC).

#### 35 36 **Phase 1 - Standard Flight and Duty Limitations (Abbreviated Summary):**

- 37 • Fourteen (14) hour maximum duty day;
- 38 • Eight (8) hours maximum daily flight time for mission flights;
- 39 • Ten (10) hours for point-to-point, with a two (2) pilot crew;
- 40 • Maximum cumulative flight hours of thirty-six (36) hours, up to forty-two  
41 (42) hours in six (6) days; and
- 42 • Minimum of ten (10) hours uninterrupted time off (rest) between duty  
43 periods.

44  
45 This does not diminish the authority or obligation of any individual COR  
46 (Contracting Officer Representative) or Aviation Manager to impose shorter

1 duty days or additional days off at any time for any flight crew members for  
2 fatigue. This is currently provided for in agency direction and contract  
3 specifications.

4

5 **Phase 2 - Interim Duty Limitations**

6 When Phase 2 is activated, pilots shall adhere to the flight and day-off  
7 limitations prescribed in Phase 1 and the duty limitations defined under Phase 2.

8

9 Each flight crew member shall be given an additional day off each fourteen (14)  
10 day period. Crews on a twelve (12) and two (2) schedule shall have three (3)  
11 consecutive days off (11 and 3). Flight crews on six (6) and one (1) schedules  
12 shall work an alternating weekly schedule of five (5) days on, two (2) days off,  
13 then six (6) days on and one (1) day off.

14

15 Aircraft fixed daily rates and special rates, when applicable, shall continue to  
16 accrue during the extra day off. Contractors may provide additional approved  
17 crews to maximize utilization of their aircraft. All costs associated with  
18 providing the additional crew will be at the contractor's expense, unless the  
19 additional crew is requested by the Government.

20

21 **Phase 3 - Interim Duty Limitations**

22 When Phase 3 is activated, pilots shall adhere to the flight limitations of Phase 1  
23 (standard), the additional day off of Phase 2, and the limitations defined under  
24 Phase 3.

25

26 Flight crew members shall have a minimum of twelve (12) consecutive hours of  
27 uninterrupted rest (off duty) during each duty day cycle. The standard duty day  
28 shall be no longer than twelve (12) hours, except a crew duty day extension shall  
29 not exceed a cumulative fourteen (14) hour duty day. The next flight crew rest  
30 period shall then be adjusted to equal the extended duty day, i.e., thirteen (13)  
31 hour duty day, thirteen (13) hours rest; fourteen (14) hour duty day, fourteen  
32 (14) hours rest. Extended duty day applies only to completion of a mission. In  
33 no case may standby be extended beyond the twelve (12) hour duty day.

34

35 Double crews (two (2) complete flight crews assigned to an aircraft), augmented  
36 flight crews (an additional pilot-in-command assigned to an aircraft), and  
37 aircraft crews that work a rotating schedule, i.e., two (2) days on, one (1) day  
38 off, seven (7) days on, seven (7) days off, or twelve (12) days on, twelve (12)  
39 days off, may be exempted from Phase 2 Limitations upon verification that their  
40 scheduling and duty cycles meet or exceed the provisions of Paragraph a. of  
41 Phase 2 and Phase 1 Limitations.

42

43 Exemptions of Phase 3 provisions may be requested through the local Aviation  
44 Manager or COR, but must be approved by the FS RAO or DOI Area Aviation  
45 Manager.

46

## 1 Aviation Assets

2

3 Typical agency aviation assets include: Helitack or Rappel, Aerial Supervision  
4 (ATGS, Lead, and ASM), Large (multi-engine) Airtankers, Very Large  
5 Airtankers (VLATs), Single Engine Airtankers (SEATs), and Smokejumpers.

- 6 • **BLM** - All BLM acquired aircraft (exclusive use, On-Call, and CWN) are  
7 available to move to areas of greatest Bureau need, thereby maximizing  
8 efficiency and effectiveness. Specific authorities and responsibilities for  
9 Field/State and National Offices are outlined earlier in this chapter.  
10 Offices are expected to adhere to procedures established in the National  
11 Aviation Plan for both acquisition and use reporting.

12

## 13 Helitack

14

15 Helitack crews perform suppression and support operations to accomplish fire  
16 and resource management objectives.

17

### 18 Organization - Crew Size

- 19 • **BLM**- The standard BLM exclusive-use helitack crew size for a Type 3  
20 helicopter is a minimum of seven personnel (supervisor, assistant, squad  
21 boss, and four crew members). The standard BLM exclusive-use helitack  
22 crew size for a Type 2 helicopter is a minimum of ten personnel (supervisor,  
23 assistant, squad boss, and seven crewmembers). BLM helicopters operated  
24 in Alaska need only be staffed with a qualified Helicopter Manager  
25 (HMGB).
- 26 • **NPS** - Helicopter exclusive-use modules will consist of a minimum of 8 fire  
27 funded personnel. The NPS regions may establish larger crew size and  
28 standards for their exclusive use helicopter crews based on the need for an  
29 all hazard component (Fire, SAR, Law Enforcement, and EMT). Exception  
30 to minimum helicopter crew staffing standards must be approved by the  
31 National Aviation Office. NPS helicopters operated in Alaska need only be  
32 staffed with a qualified Helicopter Manager (HMGB).
- 33 • **FS** - Regions may establish minimum crew size and standards for their  
34 exclusive use helitack crews. Experience requirements for exclusive-use  
35 helicopter positions are listed in FSH 5109.17, Chapter 40.

36

### 37 Operational Procedures

38 The *Interagency Helicopter Operations Guide* (IHOG) NFES 1885 is policy for  
39 helicopter operations.

40

### 41 Communication

42 The helitack crew standard is one handheld programmable multi-channel FM  
43 radio per every two crew persons, and one multi-channel VHF-AM  
44 programmable radio in the primary helitack crew (chase) truck. Each helitack  
45 crew (chase) vehicle will have a programmable VHF-FM mobile radio. Each

1 permanent helibase will have a permanent programmable FM radio base station  
 2 and should be provided a VHF-AM base station radio.

3

4 **Transportation**

5 Dedicated vehicles with adequate storage and security will be provided for  
 6 helitack crews. The required Gross Vehicle Weight (GVW) of the vehicle will  
 7 be dependent upon the volume of equipment carried on the truck and the number  
 8 of helitack crewmembers assigned to the crew.

- 9 • **BLM** - *Minimum vehicle configuration for a seven person crew will consist*  
 10 *of one Class 661 Helitack Support Vehicle and one Class 156, 6-Pack*  
 11 *pickup or Class 166 carryall.*

12

13 **Training and Experience Requirements**

14 All helitack members will meet fire qualifications as prescribed by the *National*  
 15 *Wildfire Coordinating Group (NWCG) 310-1* and their agency manual  
 16 requirements. The following chart establishes experience and training  
 17 requirements for FS, BLM, NPS, and FWS Exclusive Use, Fire Helicopter Crew  
 18 Positions.

19

20 Non-Exclusive Use HECM’s and HMGB’s should also meet the following  
 21 currency requirements.

22

Exclusive Use Fire Helicopter Position Prerequisites			
POSITION <sup>1</sup>	MINIMUM PREREQUISITE EXPERIENCE <sup>2</sup>	MINIMUM REQUIRED TRAINING <sup>3</sup>	CURRENCY REQUIREMENTS
Fire Helicopter Crew Supervisor	One season <sup>4</sup> as an Assistant Fire Helicopter Crew Supervisor, ICT4, HMGB, HEB2		RT-372 <sup>5</sup> RT-130 A-110 <sup>6</sup>
Assistant Fire Helicopter Crew Supervisor	One season as a Fire Helicopter Squad Boss, ICT4, HMGB, HEB2 (T)	I-200, S-215, S-234, S-260, S-270	RT-372 <sup>5</sup> RT-130 A-110 <sup>6</sup>
Fire Helicopter Squad Boss	One season as a Fire Helicopter Crewmember, FFT1, ICT5	S-211, S-212	RT-130 A-110 <sup>6</sup>
Fire Helicopter Crewmember	One season as a FFT2, HECM Taskbook	S-271, A-110	RT-130 A-110 <sup>6</sup>

23 <sup>1</sup> All Exclusive use Fire Helicopter positions require an arduous fitness  
 24 rating.

25 <sup>2</sup> Minimum experience and qualifications required prior to performing in  
 26 the Exclusive use position. Each level must have met the experience and  
 27 qualification requirements of the previous level(s).

<sup>3</sup> Minimum training required to perform in the position. Each level must have met the training requirements of the previous level(s).

<sup>4</sup> A “season” is continuous employment in a primary wildland fire position for a period of 90 days or more.

<sup>5</sup> After completing S-372, must attend Interagency Helicopter Manager Workshop (RT-372) within three years and every three years thereafter.

- *FS- 5109.17\_27.1 requires biennial attendance after certification for the position occurs.*

<sup>6</sup>A-110 is required every three years.

**Note:** Exceptions to the above position standards and staffing levels may be granted on a case-by-case basis by the BLM National Aviation Office, NPS Regional Office, FWS Regional Office, or FS Regional Office as appropriate.

- Some positions may be designated as COR/Alternate-COR. If so, see individual Agency COR training & currency requirements.
- Fire Helicopter Managers (HMGB) are fully qualified to perform all the duties associated with Resource Helicopter Manager.

### Helicopter Rappel & Cargo Let-Down

Any rappel or cargo let-down programs must be approved by the appropriate agency national headquarters.

- *BLM - BLM personnel involved in an Interagency Rappel Program must have SAM approval.*
- *NPS - Approval is required by the National Office.*
- *FS - Approval is required by the National Office.*

All rappel and cargo let-down operations will follow the *Interagency Helicopter Rappel Guide (IHRG)*, as policy. Any exemption to the guide must be requested by the program through the state/region for approval by the National Aviation Office (BLM), or Director of Fire and Aviation (FS).

### Aerial Ignition

*The Interagency Aerial Ignition Guide (IAIG)* is policy for all aerial ignition activities.

### Fire Chemical Avoidance Areas

National Forest lands may have mapped avoidance areas for Threatened, Endangered, Proposed, Candidate, or Sensitive species and waterways that are excluded from aerially applied wildland fire chemicals. Pilots, aerial supervision personnel, and others affiliated with ordering and delivering aerially applied wildland fire chemicals should inquire prior to initial dispatch for any Forest Service fire to determine if mapped avoidance areas are located on National Forest lands within or near the fire area to ensure wildland fire chemicals will not enter an avoidance area.



1 Maps are available at  
2 [http://apps.fs.fed.us/ArcGIS/rest/services/edw\\_external/edw\\_AerialFireRetardantAvoidanceAreas\\_01/MapServer](http://apps.fs.fed.us/ArcGIS/rest/services/edw_external/edw_AerialFireRetardantAvoidanceAreas_01/MapServer).

4  
5 Misapplication into these areas shall be reported. See Chapter 12 (Suppression  
6 Chemicals and Delivery Systems) for more details.

### 8 **Aerial Supervision**

9  
10 Aerial supervision resources will be dispatched when available to  
11 initial/extended attack incidents in order to enhance safety, effectiveness, and  
12 efficiency of aerial/ground operations.

13  
14 When aerial supervision resources (ATGS, Lead, or ASM) are collocated with  
15 airtankers, they should be launched together to maximize the safety of the flight  
16 crews, the efficiency of chemical delivery, and the effectiveness of the fire  
17 chemical.

18  
19 Incidents with three or more aircraft over/assigned to them should also have  
20 aerial supervision in the form of ATGS or ASM. A BLM spotter (senior  
21 smokejumper in charge of smokejumper missions) may coordinate airspace over  
22 a fire until a qualified ATGS arrives.

23  
24 Policy dictates additional aerial supervision requirements which are referenced  
25 in the *Interagency Aerial Supervision Guide* (NFES 2544).

### 27 **Air Tactical Group Supervisor (ATGS)**

28  
29 The ATGS manages incident airspace and controls incident air traffic. Specific  
30 duties and responsibilities are outlined in the *Fireline Handbook (PMS 410-1)*  
31 and the *Interagency Aerial Supervision Guide*. The ATGS reports to the Air  
32 Operations Branch Director (AOBD), or in the absence of the AOBD, to the  
33 Operations Section Chief (OSC), or in the absence of the OSC, to the IC.

34  
35 The following attire is required for all interagency ATGS operations:

- 36 • Leather shoes or boots; and
- 37 • Natural fiber shirt, full-length cotton or nomex pants, or flight suit.

### 39 **Operational Considerations**

- 40 • Relief aerial supervision should be ordered for sustained operations to  
41 ensure continuous coverage over an incident.
- 42 • Personnel who are performing aerial reconnaissance and detection will not  
43 perform aerial supervision duties unless they are fully qualified as an  
44 ATGS.
- 45 • Air tactical aircraft must meet the avionics typing requirements listed in the  
46 *Interagency Aerial Supervision Guide* and the pilot must be carded to

- 1 perform the air tactical mission. Rotor-wing pilots are not required to be  
2 carded for air tactical missions.
- 3 • Ground resources will maintain consistent communication with aerial  
4 supervision in order to maximize the safety, effectiveness, and efficiency of  
5 aerial operations.

6

### 7 **Leadplane**

8

9 A leadplane is a national shared resource. The *Interagency Aerial Supervision*  
10 *Guide* is agency policy and is available online at  
11 [http://www.blm.gov/nifc/st/en/prog/fire/Aviation/aerial\\_supervision.html](http://www.blm.gov/nifc/st/en/prog/fire/Aviation/aerial_supervision.html).

12

13 Agency policy requires an ASM/or Lead/ATCO to be on order prior to aerial  
14 applications over a congested area. Operations may proceed before the ASM/or  
15 Lead/ATCO arrives, if communications are established with on-site resources,  
16 authorization is granted from the IC, and the line is cleared prior to commencing  
17 water/chemical application operations.

18

### 19 **Aerial Supervision Module (ASM)**

20

21 The Aerial Supervision Module is crewed with both a Lead/ATCO qualified Air  
22 Tactical Pilot (ATP) and an Air Tactical Supervisor (ATS). These individuals  
23 are specifically trained to operate together as a team. The resource is primarily  
24 designed for providing both functions (Lead/ATCO and Air Attack)  
25 simultaneously from the same aircraft, but can also provide single role service,  
26 as well.

27

28 The Air Tactical Pilot is primarily responsible for aircraft coordination over the  
29 incident. The ATS develops strategy in conjunction with the Operations Section  
30 Chief.

- 31 • **BLM/FWS/NPS-** *The Interagency Aerial Supervision Guide is policy for*  
32 *BLM, FWS and NPS. The Interagency Aerial Supervision Guide is*  
33 *available online at [HTTP://www.nwcg.gov/pms/pubs/pms505.pdf](http://www.nwcg.gov/pms/pubs/pms505.pdf)*

34

### 35 **Operational Considerations**

36 The ASM is a shared national resource. Any operation that limits the national  
37 resource status must be approved by the agency program manager. Aerial or  
38 incident complexity and environmental considerations will dictate when the  
39 ASM ceases low level operations. The ASM flight crew has the responsibility  
40 to determine when the complexity level of the incident exceeds the capability to  
41 perform both ATGS and leadplane functions from one aircraft. The crew will  
42 request additional supervision resources, or modify the operation to maintain  
43 mission safety and efficiency.

44

45

46

1 **Policy**

2 Only those individuals certified and authorized by the BLM- National Aviation  
3 Office or the FS- Branch Chief Standardization and QA will function as an Air  
4 Tactical Supervisor (ATS) in an ASM mission profile.

5  
6 **Aerial Supervision Module Program Training and Qualifications**

7 Training and qualification requirements for ASM crewmembers are defined in  
8 the *Interagency Aerial Supervision Guide* (NFES 2544).

9  
10 **Reconnaissance or Patrol flights**

11  
12 The purpose of aerial reconnaissance or detection flights is to locate and relay  
13 fire information to fire management. In addition to detecting, mapping, and  
14 sizing up new fires, this resource may be utilized to provide ground resources  
15 with intelligence on fire behavior, provide recommendations to the IC when  
16 appropriate, and describe access routes into and out of fire areas for responding  
17 units. Only qualified Aerial Supervisors (ATGS, ASM, HLCO and  
18 Lead/ATCO) are authorized to coordinate incident airspace operations and give  
19 direction to aviation assets. Flights with a “Recon, Detection, or Patrol”  
20 designation should communicate with tactical aircraft only to announce location,  
21 altitude and to relay their departure direction and altitude from the incident.

22  
23 **Airtankers**

24  
25 Airtankers are a national resource. Geographic areas administering these  
26 aircraft will make them available for initial attack and extended attack fires on a  
27 priority basis. The GACC will ensure that all support functions (e.g. dispatch  
28 centers and tanker bases) are adequately staffed and maintained to support the  
29 mobilization of aircraft during normal and extended hours.

30  
31 For aviation safety and policy concerning wildland fire chemicals see chapter 12  
32 (Suppression Chemicals and Delivery Systems).

33  
34 Airtankers are operated by commercial vendors in accordance with FAR Part  
35 137. The management of Large Airtankers is governed by:

- 36 • **BLM** - *The requirements of the DM and BLM Manual 9400*  
37 • **FS** - *FS operates Large Airtankers under the Grant of Exemption 392A as*  
38 *referenced in FSM 5714.*

39  
40 **Categories**

41 Airtanker types are distinguished by their load capacity:

- 42 • Very Large Air Tankers (VLAT)- more than 10,000 gallons.  
43 • Type 1 - 3,000 to 9,999 gallons.  
44 • Type 2 - 1,800 to 2,999 gallons.  
45 • Type 3 - 800 to 1,799 gallons (includes single engine air tankers, and CL-  
46 215/415 Water Scoopers).

- 1 • Type 4 – less than 800 gallons (single engine airtankers).  
2

### 3 **Airtanker Base Operations** 4

5 Certain parameters for the operation of airtankers are agency-specific. For  
6 dispatch procedures, limitations, and times, refer to geographic area  
7 mobilization guides and the *Interagency Airtanker Base Operations Guide*  
8 (*IATBOG*).  
9

### 10 **Airtanker Base Personnel**

11 There is identified training for the positions at airtanker bases; the *Interagency*  
12 *Airtanker Base Operations Guide (IATBOG)* contains a chart of required  
13 training for each position. It is critical that reload bases are prepared and staffed  
14 during periods of moderate or high fire activity at the base. All personnel  
15 conducting airtanker base operations should review the *IATBOG* and have it  
16 available.  
17

### 18 **Startup/Cutoff Time for Multi Engine Airtankers**

19 Refer to the *Interagency Aerial Supervision Guide* (NFES 2544).  
20

### 21 **Single Engine Airtankers** 22

#### 23 **Single Engine Airtanker (SEAT) Operations, Procedures, and Safety**

24 The *Interagency SEAT Operating Guide (ISOG)* (NFES #1844) defines  
25 operating standards and is policy for both the DOI and FS.  
26

#### 27 **SEAT Manager Position**

28 In order to ensure adherence to contract regulations, safety requirements, and  
29 fiscal accountability, a qualified SEAT Manager (SEMG) will be assigned to  
30 each operating location. The SEMG's duties and responsibilities are outlined in  
31 the *ISOG*. To maintain incident qualifications currency a SEAT Manager is  
32 required to attend RT-273 every three years. Elements and criteria of RT-273  
33 can be found in the *Field Managers Course Guide*, PMS 901-1.  
34

#### 35 **Operational Procedures**

36 Using SEATs in conjunction with other aircraft over an incident is standard  
37 practice. Agency or geographical area mobilization guides may specify  
38 additional procedures and limitations.  
39

40 Depending on location, operator, and availability, SEATs are capable of  
41 dropping suppressants, water, or approved chemical retardants. Because of the  
42 load capacities of the SEATs (500 to 800 gallons), quick turn-around times  
43 should be a prime consideration. SEATs are capable of taking off and landing  
44 on dirt, gravel, or grass strips (pilot must be involved in selection of the site); a  
45 support vehicle reduces turn-around times.  
46

1 Reloading at established airtanker bases or reload bases is authorized. (SEAT  
2 operators carry the required couplings). All BLM and FS Airtanker base  
3 operating plans will permit SEAT loading in conjunction with large airtankers.  
4

#### 5 **Smokejumper Pilots**

6  
7 The *Interagency Smokejumper Pilot Operations Guide (ISPOG)* serves as policy  
8 for smokejumper pilot qualifications, training, and operations.  
9

#### 10 **Military or National Guard Helicopters and Pilots**

11  
12 The *Military Use Handbook (NFES 2175)* will be used when planning or  
13 conducting aviation operations involving regular military aircraft. Ordering  
14 military resources is done through the National Interagency Coordination Center  
15 (NICC); National Guard resources are utilized through local or state  
16 Memorandum of Understanding (MOU).  
17

#### 18 **Modular Airborne Fire Fighting System (MAFFS)**

19  
20 The *MAFFS Operating Plan* (available from the National Interagency  
21 Coordination Center) will be used when planning or conducting aviation  
22 operations involving MAFFS military aircraft. Ordering MAFFS is done  
23 through the National Interagency Coordination Center (NICC); MAFFS are  
24 utilized through a national agreement (see the *National Interagency*  
25 *Mobilization Guide*). Several states have the ability to activate MAFFS through  
26 separate agreements that do not require ordering through NICC.