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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**

##### **DOI**

##### **Aviation Management Directorate (AMD)**

The Aviation Management Directorate of the National Business Center is responsible for the coordination of aviation policy development, aircraft acquisition, financial services, and maintenance management within the agencies of the Department of the Interior (DOI). AMD has no operational responsibility. AMD 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 AMD, and interagency partners. The Fire and Aviation Directorate has the responsibility and authority, after consultation with State FMOs, 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 aircraft resources.

1 Refer to *BLM National Aviation Plan and Manual 9400* for aviation policy and  
2 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, 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 The Branch Chief, Aviation Operations reports to the AD, Aviation, and is  
18 responsible for national aviation operational management and oversight.

19

20 The Branch Chief, Airworthiness reports to the AD, Aviation and is responsible  
21 for national aircraft worthiness and maintenance program management and  
22 oversight.

23

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

27

#### 28 **State/Regional Office**

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

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

### 18 Local Office

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

### 36 Aviation Information Resources

- 37  
38 Aviation reference guides and aids for agency aviation management are listed  
39 for policy, guidance, and specific procedural requirements.
- 40 • **BLM - 9400 Manual Appendix I, National Aviation Plan, State and Unit**  
41 **Aviation Plans** (In all cases DOI policy Department Manuals [DMs],  
42 **Operational Procedural Memoranda [OPMs], and BLM policy will take**  
43 **precedence.**) IHOG, ISOG and Interagency Aerial Supervision Guide  
44 (IASG).
  - 45 • **FWS - Service Manual 330-339, Aviation Management and IHOG.**
  - 46 • **NPS - RM-60 Aviation Management Reference Manual and IHOG & IASG.**

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- 1 • *FS - FSM 5700, FSH 5709.16 and applicable aviation guides as referenced*  
2 *in policy.*  
3  
4 Safety alerts, operational alerts, instruction memoranda, information bulletins,  
5 incident reports, and other guidance or information are issued as needed.  
6  
7 An up-to-date library with aviation policy and procedural references will be  
8 maintained at all permanent aviation bases, dispatch, and aviation management  
9 offices.

## 11 **Aviation Safety**

12  
13 The FS and the BLM have adopted Safety Management Systems (SMS) as the  
14 foundation to our aviation safety program. The four pillars of SMS are Safety  
15 Policy, Safety Risk Management, Safety Assurance and Safety Promotion. SMS  
16 is the standard for safety set by the International Civil Aviation Organization  
17 (ICAO) and the Federal Aviation Administration (FAA).

18  
19 SMS focuses on:

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

26  
27 The intent of SMS is to improve the aviation culture by increasing hazard  
28 identification, reduce risk taking behavior, learn from mistakes and correct  
29 procedures before a mishap occurs rather than after the accident. More  
30 information on SMS is available at the Wildland Fire Lessons Learned Center  
31 under the Lessons Learned in Link at [wildfirelessons.net](http://wildfirelessons.net)

## 33 **Risk Assessment and Risk Management**

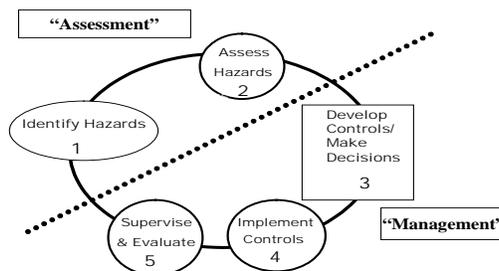
34 The use of Risk Management will help to ensure a safe and successful operation.  
35 Risk is the probability that an event will occur. Assessing risk identifies the  
36 hazard, the associated risk, and places the hazard in relationship to the mission.  
37 A decision to conduct a mission requires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

39  
40 Aviation missions always have some degree of risk. The four sources of hazards  
41 are methods, medium, man, and machine. Managing risk is a 5-step process:

- 42 • Identify hazards associated with all specified and implied tasks for the  
43 mission.
- 44 • Assess hazards to determine potential of occurrence and severity of  
45 consequences.

- 1 • Develop controls to mitigate or remove risk, and make decisions based on
- 2 accepting the least risk for the best benefit.
- 3 • Implement controls - (1) education controls, (2) physical controls, and (3)
- 4 avoidance controls.
- 5 • Supervise and Evaluate - enforce standards and continuously re-evaluate
- 6 their effectiveness in reducing or removing risk. Ensure that controls are
- 7 communicated, implemented, and enforced.
- 8

THE RISK MANAGEMENT PROCESS



9

10 **How to Properly Refuse Risk (Aviation)**

11 Every individual (government and contracted employees) have the right and

12 obligation to report safety problems affecting his or her safety and has the right

13 to contribute ideas to correct the hazard. In return, supervisors are expected to

14 give these concerns and ideas serious consideration. When an individual feels

15 an assignment is unsafe, he or she also has the obligation to identify, to the

16 degree possible, safe alternatives for completing that assignment. Turning down

17 an assignment is one possible outcome of managing risk.

18

19 A “turn down” is a situation where an individual has determined he or she

20 cannot undertake an assignment as given and is unable to negotiate an

21 alternative solution. The turn down of an assignment must be based on

22 assessment of risks and the ability of the individual or organization to control or

23 mitigate those risks. Individuals may turn down an assignment because of

24 safety reasons when:

- 25 • There is a violation of regulated safe aviation practices.
- 26 • Environmental conditions make the work unsafe.
- 27 • They lack the necessary qualifications or experience.

28

29 Individuals will directly inform their supervisor that they are turning down the

30 assignment as given. The most appropriate means of documented turn down

31 criteria is using the Aviation Watch Out Situations (page 52IRPG).

32

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

7  
8 If the assignment has been turned down previously and the supervisor asks  
9 another resource to perform the assignment, he or she is responsible to inform  
10 the new resource that the assignment had been turned down and the reasons  
11 why. Furthermore, personnel need to realize that a “turn down” does not stop  
12 the completion of the assigned operation. The “turn down” protocol is an  
13 integral element that improves the effective management of risk, for it provides  
14 timely identification of hazards within the chain of command, raises risk  
15 awareness for both leaders and subordinates, and promotes accountability.

16  
17 If an unresolved safety hazard exists the individual needs to communicate the  
18 issue/event/concern immediately to his or her supervisor and document as  
19 appropriate.

20

### 21 **Aviation Safety Support**

22

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

- 31 • Aviation Safety Manager
- 32 • Operations Specialist (helicopter and/or fixed wing)
- 33 • Pilot Inspector
- 34 • Maintenance Inspector (optional)
- 35 • Avionics Inspector (optional)

36

### 37 **Aviation Safety Briefing**

38 Every passenger must receive a briefing prior to each flight. The briefing is the  
39 responsibility of the Pilot in Command (PIC) but may be conducted by the pilot,  
40 flight manager, helicopter manager, fixed-wing base manager, or an individual  
41 with the required training to conduct an aviation safety briefing. The pilot  
42 should also receive a mission briefing from the government aircraft manager  
43 Refer to the *Incident Response Pocket Guide (IRPG)* and *IHOG* Chapter 10.

44

45

46

**1 Aviation Hazard**

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

- 7 • Deviations from policy, procedures, regulations, and instructions.
- 8 • Improper hazardous materials handling and/or transport.
- 9 • Airspace conflicts/flight following deviation.
- 10 • Deviation from planned operations.
- 11 • Failure to utilize PPE or Aviation Life Support Equipment (ALSE).
- 12 • Failure to meet qualification standards or training requirements
- 13 • Extreme environmental conditions.
- 14 • Improper ground operations.
- 15 • Improper pilot procedures.
- 16 • Fuel contamination.
- 17 • Unsafe actions by pilot, air crew, passengers, or support personnel.

18  
19 Aviation hazards also exist in the form of wires, low-flying aircraft, and  
20 obstacles protruding beyond normal surface features. Each office will post,  
21 maintain, and annually update a "Known Aerial Hazard Map" for the local  
22 geographic area where aircraft are operated, regardless of agency jurisdiction.  
23 This map will be posted and used to brief flight crews. Unit Aviation Managers  
24 are responsible for ensuring the development and updating of Known Aerial;  
25 Hazard Maps (IHOG Ch 3.V.J.1.c page 3-20)

**27 Aerial Applications of Wildland Fire Chemical Safety**

28 Chapter 12 contains information concerning the aerial application of wildland  
29 fire chemicals.

**31 SAFECOM**

32  
33 The DOI and the FS have an incident/hazard reporting form called The Aviation  
34 Safety Communiqué (SAFECOM). The database, available at  
35 <https://www.safecom.gov/> fulfills the Aviation Mishap Information System  
36 (AMIS) requirements for aviation mishap reporting for the DOI agencies and the  
37 FS. Categories of reports include: Accidents, Airspace, Hazards, Incidents,  
38 Maintenance, Mishap Prevention and Kudos. The system uses the SAFECOM  
39 Form AMD-34 or FS-5700-14 to report any condition, observation, act,  
40 maintenance problem, or circumstance with personnel or aircraft that has the  
41 potential to cause an aviation-related mishap. The SAFECOM system is not  
42 intended for initiating punitive actions. Submitting a SAFECOM is not a  
43 substitute for "on-the-spot" correction(s) to a safety concern. It is a tool used to  
44 identify, document, track and correct safety related issues. A SAFECOM does  
45 not replace the requirement for initiating an accident or incident report.

1 Any individual (including cooperators) with knowledge of an incident/hazard  
2 should complete a SAFECOM. The SAFECOM form should be entered directly  
3 on the internet at <https://www.safecom.gov/> or can be faxed to the Department  
4 of the Interior's Aviation Management Directorate, Aviation Safety (208)433-  
5 5069 or to the FS at (208) 387-5735 ATTN: SAFETY. Electronic cc copies are  
6 automatically forwarded to the National, Regional, State, and Unit Aviation  
7 Managers.

8  
9 The agency with operational control of the aircraft at the time of the  
10 hazard/incident/accident is responsible for completing the SAFECOM and  
11 submitting it through agency channels.

### 12 **Aircraft Incidents/Accidents**

13  
14  
15 Notification to the FS or AMD and DOI agency Aviation Safety Managers is  
16 required for any aircraft mishap involving damage or injury. Use the hotline  
17 (888) 464-7427 or the most expeditious means possible. Initiate the appropriate  
18 unit Aviation Mishap Response Plan.

### 19 **Low-level Flight Operations**

20  
21  
22 The only fixed-wing aircraft missions authorized for low-level fire operations  
23 are:

- 24 • Para-cargo.
- 25 • Aerial Supervision Module (ASM) and Lead/ATCO operations.
- 26 • Retardant, water and foam application.

#### 27 **Operational Procedures:**

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

### 33 **Congested Area Flight Operations**

34  
35  
36  
37 Airtankers can drop retardant in congested areas under DOI authority given in  
38 *FAR Part 137*. FS authority is granted under exemption 392, from *FAR 91.119*  
39 *as referenced in FSM 5714*. When such operations are necessary, they may be  
40 authorized subject to these limitations:

- 41 • Airtanker operations in congested areas may be conducted at the request of  
42 the city, rural fire department, county, state, or federal fire suppression  
43 agency.
- 44 • An ASM/Lead/ATCO is ordered to coordinate aerial operations.

- 1 • The air traffic control facility responsible for the airspace is notified prior to  
2 or as soon as possible after the beginning of the operation.
- 3 • A positive communication link must be established between the aerial  
4 supervision module ASM or Lead/ATCO, airtanker pilot(s), and the  
5 responsible fire suppression agency official.
- 6 • The IC for the responsible fire agency or designee will advise the  
7 ASM/leadplane/airtanker that all non-essential people and movable property  
8 have been cleared prior to commencing retardant drops.

### 10 **Airspace Coordination**

11  
12 The Interagency Airspace Program is an aviation safety program designed to  
13 enhance aviation safety and reduce the risk of a mid-air collision. Guidance for  
14 this program is found in the *Interagency Airspace Coordination Guide (IACG)*,  
15 which has been adopted as policy by the DOI and FS. Additional guidance may  
16 be found in the *National Interagency Mobilization Guide* and supplemented by  
17 local Mobilization Guides.

18 [www.airspacecoordination.net](http://www.airspacecoordination.net) or <http://airspace.nifc.gov/>

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

24  
25 Flight planning and Temporary Flight Restriction (TFR) information on World  
26 Aeronautical, Sectional and Global Navigational Charts has been made available  
27 at the National Interagency Airspace System website <http://airspace.nifc.gov>. A  
28 tactical chart with TFR specific information with incident names, frequencies  
29 and altitudes are available. These charts can be found at  
30 <http://airspace.nifc.gov/mapping/nifc/index.cfm>

31 Additional references can be found by contacting:

- 32 • **BLM** - *State Aviation Managers, National Airspace Program Manager*
- 33 • **NPS** - *Regional Aviation Managers*
- 34 • **FS** - *Regional Aviation Officers*
- 35 • **FWS** - *National Aviation Safety and Operations*

### 37 **Flight Request and Approval**

- 38 • **BLM** – *Reference the BLM National Aviation Plan, Chapter 3, available at:*  
39 *<http://www.blm.gov/style/medialib/blm/nifc/aviation/administration.Par.394>*  
40 *84.File.dat/NAP.pdf*
- 41 • **NPS** - *Reference RM 60, Appendix 3 & 4.*
- 42 • **FS** - *Refer to FSM 5711.3 for administrative use, FSM 5705 for point-to-*  
43 *point and mission use for types of FS flights.*

44  
45

### 1 Point-to-Point Flights

2 Point-to-point flights originate at one developed airport or permanent helibase,  
3 with the direct flight to another developed airport or permanent helibase. These  
4 flights require approved pilots, aircrew, and aircraft.

- 5 • A point-to point flight shall be conducted higher than 500 feet above ground  
6 level (AGL).

7  
8 Agency policy requires designating a Flight Manager for point-to-point flights  
9 transporting personnel. The Flight Manager is a government employee that is  
10 responsible for coordinating, managing and supervising flight operations. The  
11 Flight Manager is not required to be on board for most flights. For those flights  
12 that have multiple legs or are complex in nature a Flight Manager should attend  
13 the entire flight. The Flight Manager will meet the qualification standard for the  
14 level of mission assigned as set forth in the *Interagency Aviation Training Guide*  
15 (IAT).

- 16 • **BLM** –Reference the *BLM National Aviation Plan, Chapter 3, available at:*  
17 *<http://www.blm.gov/style/medialib/blm/nifc/aviation/administration.Par.394>*  
18 *84.File.dat/NAP.pdf*
- 19 • **NPS** - Reference *RM-60, Appendix 3 for agency specific policy.*
- 20 • **FS** - Refer to *FSM 5711.3 for administrative use, FSM 5705 for point-to-*  
21 *point and mission use for types of FS flights.*

### 23 Mission Flights

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

- 30 • PPE is required for any fixed wing mission flight conducted below  
31 500' AGL. Flight helmets are not required for multi-engine airtanker crews,  
32 smokejumper pilots and ASM flight/aircrew members.
- 33 • Required attire for ATGS and fire reconnaissance are:
  - 34 ➤ Leather shoes or boots
  - 35 ➤ Natural fiber shirt, full length cotton or nomex pants, or flight suit
- 36 • The use of PPE is required for all helicopter flight (point to point and  
37 mission) and associated ground operations. The specific items to be worn  
38 are dependent on the type of flight, the function an individual is performing,  
39 or the ground operation being conducted. Refer to the tables in Chapter 9 of  
40 the IHOG for specific requirements.
- 41 • All personnel will meet training and qualification standards required for the  
42 mission.
- 43 • Agency FM radio capability is required for all mission flights.
- 44 • All passengers must be authorized and all personnel onboard must be  
45 essential to the mission.

- 1 Mission flights for fixed-wing aircraft include but are not limited to the  
2 following:
- 3 • Water or retardant application
  - 4 • Parachute delivery of personnel or cargo
  - 5 • Airtanker coordinator operations
  - 6 • Takeoff or landing requiring special techniques due to hazardous terrain,  
7 obstacles, or surface conditions

- 8
- 9 Mission helicopter flights include but are not limited to the following:
- 10 • Flights conducted within 500 feet AGL
  - 11 • Water or retardant application
  - 12 • Helicopter coordinator and ATGS operations
  - 13 • Aerial ignition activities
  - 14 • External load operations
  - 15 • Rappelling
  - 16 • Takeoff or landing requiring special techniques due to hazardous terrain,  
17 obstacles, pinnacles, or surface conditions
  - 18 • Free-fall cargo
  - 19 • Fire reconnaissance

### 21 **Flight-Following All Aircraft**

22

23 Flight-Following is mandatory for all flights. Refer to the *National Interagency*  
24 *Mobilization Guide* for specific direction.

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

### 41 **Sterile Cockpit All Aircraft**

42

43 Sterile cockpit rules apply within a 5-mile radius of the airport. The flight crew  
44 will perform no radio or cockpit communication during that time that is not  
45 directly related to safe flight of the aircraft from taxi to 5 miles out and from 5

1 miles out until clearing the active runway. This would consist of reading  
2 checklists, communication with Air Traffic Control (ATC), Flight Service  
3 Stations, Unicom, or other aircraft with the intent of ensuring separation or  
4 complying with ATC requirements. Communications by passengers or air crew  
5 members can be accomplished when the audio panels can be isolated and do not  
6 interfere with flight operations of the flight crew.

7  
8 **Exception:** When conducting firefighting missions within 5 miles of an  
9 uncontrolled airport, maintain sterile cockpit until departing the traffic pattern  
10 and reaching final altitude. Monitor CTAF frequency if feasible while engaged  
11 in firefighting activities. Monitor CTAF as soon as practical upon leaving the  
12 fire and returning to the uncontrolled airport. When conducting firefighting  
13 missions within Class B, C, or D airspace, notify dispatch that ATC  
14 communications will have priority over dispatch communications.

## 16 Interagency Interim Flight and Duty Limitations

### 18 Phase 1 - Standard Flight and Duty Limitations (Abbreviated Summary)

- 19 • Fourteen (14) hour maximum duty day
- 20 • Eight (8) hours maximum daily flight time for mission flights
- 21 • Ten (10) hours for point-to-point, with a two (2) pilot crew
- 22 • Maximum cumulative flight hours of thirty-six (36) hours, up to forty-two  
23 (42) hours in six (6) days
- 24 • Minimum of ten (10) hours uninterrupted time off (rest) between duty  
25 periods

26  
27 This does not diminish the authority or obligation of any individual COR  
28 (Contracting Officer Representative) or Aviation Manager to impose shorter  
29 duty days or additional days off at any time for any flight crew members for  
30 fatigue. This is currently provided for in agency direction and contract  
31 specifications.

### 33 Interim Flight and Duty Limitations Implementation

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

39  
40 Implementation decisions will be made on a coordinated, interagency basis,  
41 involving the GACC, NICC, NMAC and National Aviation Representatives at  
42 NIFC.

43  
44 Official notification of implementation should be made by the FS Regional  
45 Aviation Officer (RAO) and DOI Aviation Managers through the GACC and,

1 for broader scope implementations, by National Aviation Management through  
2 NIFC.

3

4 **Phase 2 - Interim Duty Limitations**

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

7

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

13

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

19

20 **Phase 3 - Interim Duty Limitations**

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

24

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

33

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

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

44

45

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, Single Engine  
5 Airtankers, and Smokejumpers.

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

12

13

## 14 Helitack

15

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

18

### 19 Organization - Crew Size

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

38

### 39 Operational Procedures

40 The Interagency Helicopter Operations Guide (IHOG) NFES 1885 is policy for  
41 helicopter operations.

42

### 43 Communication

44 The helitack crew standard is one handheld programmable multi-channel FM  
45 radio per every 2 crew persons, and one multi-channel VHF-AM programmable  
46 radio in the primary helitack crew (chase) truck. Each helitack crew (chase)

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

4  
 5 **Transportation**

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

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

13  
 14 **Training and Experience Requirements**

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

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

23

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>
Assistant Fire Helicopter Crew Supervisor	One season as a Fire Helicopter Squad Boss, ICT4, HMGB, HEB2 (T)	I-200, S-200, S-215, S-230, S-234, S-260, S-270, S-290, S-371, S-372	RT-372 <sup>5</sup>
Fire Helicopter Squad Boss	One season as a Fire Helicopter Crewmember, FFT1, ICT5	S-131, S-133, S-211, S-212	
Fire Helicopter Crewmember	One season as a FFT2, HECM(T)	I-100, S-130, S-190, S-271	

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

- 1 <sup>2</sup> Minimum experience and qualifications required prior to performing in the  
2 Exclusive use position. Each level must have met the experience requirements of  
3 the previous level(s).
- 4 <sup>3</sup> Minimum training required to perform in the position. Each level must have  
5 met the training requirements of the previous level(s).
- 6 <sup>4</sup> A “season” is continuous employment in a primary wildland fire position for a  
7 period of 90 days or more.
- 8 <sup>5</sup> After completing S-372, must attend Interagency Helicopter Manager  
9 Workshop (RT-372) within three years and every three years thereafter.
- 10 • *FS- 5109.17\_27.1 requires biennial attendance after certification for the*  
11 *position occurs.*
- 12 **Note:** Exceptions to the above position standards and staffing levels may be  
13 granted, on a case-by-case basis by the BLM National Aviation Office, NPS  
14 Regional Office FWS Regional Office, or FS Regional Office as appropriate.
- 15 • Some positions may be designated as COR/Alternate-COR. If so, see  
16 individual Agency COR training & currency requirements.
- 17 • Fire Helicopter Managers (HMGB) are fully qualified to perform all the  
18 duties associated with Resource Helicopter Manager.

### 20 Helicopter Rappel & Cargo Let-Down

- 21 Any rappel or cargo let-down programs must be approved by the appropriate  
22 agency national headquarters.
- 23 • *BLM - BLM personnel involved in an Interagency Rappel Program must*  
24 *have SAM approval.*
- 25 • *NPS - Approval is required by the National Office.*
- 26 • *FS - Approval is required by the National Office.*

27  
28 All rappel and cargo let-down operations will follow the *Interagency Helicopter*  
29 *Rappel Guide (IHRG)*, as policy. Any exemption to the guide must be by the  
30 program through the state/region for approval by the National Aviation Office  
31 (BLM), or Director of Fire and Aviation (FS).

### 33 Aerial Ignition

34  
35 *The Interagency Aerial Ignition Guide (IAIG)* is policy for all aerial ignition  
36 activities.

### 38 Aerial Supervision

- 39  
40 Aerial supervision resources will be dispatched when available to  
41 initial/extended attack incidents in order to enhance safety, effectiveness, and  
42 efficiency of aerial/ground operations.
- 43  
44 When aerial supervision resources (ATGS, Lead, or ASM) are collocated with  
45 Airtankers, they should be launched together to maximize the safety of the flight

1 crews, the efficiency of chemical delivery, and the effectiveness of the fire  
2 chemical.

3

4 Incidents with three or more aircraft over/assigned to them should also have  
5 aerial supervision in the form of ATGS or ASM.

6

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

9

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

11

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

17

18 The following attire is required for all interagency ATGS operations:

- 19 • Leather shoes or boots
- 20 • Natural fiber shirt, full length cotton or nomex pants or flight suit.

21

### 22 **Operational Considerations**

- 23 • Relief aerial supervision should be ordered for sustained operations to  
24 ensure continuous coverage over an incident.
- 25 • Personnel who are performing aerial reconnaissance and detection will not  
26 perform aerial supervision duties unless they are fully qualified as an  
27 ATGS.
- 28 • Air tactical aircraft must meet the avionics typing requirements listed in the  
29 *Interagency Aerial Supervision Guide* and the pilot must be carded to  
30 perform the air tactical mission. Rotor-wing pilots are not required to be  
31 carded for air tactical missions.
- 32 • Ground resources will maintain consistent communication with Aerial  
33 Supervision in order to maximize the safety, effectiveness, and efficiency of  
34 aerial operations.

35

### 36 **Leadplane**

37

38 A leadplane is a national resource. The *Interagency Aerial Supervision Guide* is  
39 agency policy and is available online at  
40 [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).

41

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

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**16-17**

**Aerial Supervision Module (ASM)**

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

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

- **BLM** - *The Interagency Aerial Supervision Guide is policy for BLM. The Interagency Aerial Supervision Guide is available online at [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)*

**Operational Considerations**

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

**Policy**

Only those individuals certified and authorized by the BLM - National Aviation Office, or the FS - National Aviation Operations Officer, will function as an Air Tactical Supervisor (ATS) in an ASM mission profile.

**Aerial Supervision Module Program Training and Qualifications**

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

**Reconnaissance or Patrol flights**

The purpose of aerial reconnaissance or detection flights is to locate and relay fire information to fire management. In addition to detecting, mapping and sizing up new fires, this resource may be utilized to provide ground resources with intelligence on fire behavior, provide recommendations to the IC when appropriate, and describe access routes into and out of fire areas for responding units. Only qualified Aerial Supervisors (ATGS, ASM, HLCO and Lead/ATCO) are authorized to coordinate incident airspace operations and give direction to aviation assets. Flights with a "Recon, Detection or Patrol"

1 designation should communicate with tactical aircraft only to announce location,  
2 altitude and to relay their departure direction and altitude from the incident.

3

#### 4 **Large (Multi-engine) Airtankers**

5

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

11

12 For aviation safety and policy concerning wildland fire chemicals see chapter 12  
13 (Suppression Chemicals and Delivery Systems)

14

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

- 17 • *BLM - The requirements of the DM and BLM Manual 9400*
- 18 • *FS - FS operates Large Airtankers under FSM 5703 and Grant of*  
19 *Exemption 392 as referenced in FSM 5714.*

20

#### 21 **Categories**

22 Airtanker types are distinguished by their retardant load:

- 23 • Type 1 - 3,000 gallons
- 24 • Type 2 - 1,800 to 2,999 gallons
- 25 • Type 3 - 800 to 1,799 gallons
- 26 • Type 4 - 799 gallons (single engine airtankers)

27

#### 28 **Airtanker Base Operations**

29

30 Certain parameters for the operation of airtankers are agency-specific. For  
31 dispatch procedures, limitations, and times, refer to geographic area  
32 mobilization guides and the *Interagency Airtanker Base Operations Guide*  
33 (*IATBOG*).

34

#### 35 **Airtanker Base Personnel**

36 There is identified training for the positions at airtanker bases; the *IATBOG*  
37 contains a chart of required training for each position. It is critical that reload  
38 bases are prepared and staffed during periods of moderate or high fire activity at  
39 the base. All personnel conducting airtanker base operations should review the  
40 *IATBOG* and have it available.

41

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

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

44

45

46

**1 Single Engine Airtankers**

2

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

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

6

**7 SEAT Manager Position**

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

14

**15 Operational Procedures**

16 Using SEATs in conjunction with other aircraft over an incident is standard  
17 practice. Agency or geographical area mobilization guides may specify  
18 additional procedures and limitations.

19

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

26

27 Reloading at established airtanker bases or reload bases is authorized. (SEAT  
28 operators carry the required couplings). All BLM and FS Airtanker base  
29 operating plans will permit SEAT loading in conjunction with Large Airtankers.

30

**31 Smokejumper Pilots**

32

33 The *Interagency Smokejumper Pilot Operations Guide (ISPOG)* serves as policy  
34 for smokejumper pilots' qualifications, training and operations.

35

**36 Military or National Guard Aircraft and Pilots**

37

38 The *Military Use Handbook (NFES 2175)* will be used when planning or  
39 conducting aviation operations involving regular military aircraft. Ordering  
40 military resources is done through National Interagency Coordination Center  
41 (NICC); National Guard resources are utilized through local or state  
42 Memorandum of Understanding (MOU).

43