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## Chapter 16 Aviation Operations/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. 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, aircraft, pilot inspection and approval 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 National Aviation Officer (NAO) is responsible to the Director of Fire and  
12 Aviation Management (Aviation) for the management and supervision of the  
13 National Headquarters Office in Washington DC, and the detached Boise  
14 Aviation Unit. The NAO provides leadership, support and coordination for  
15 national and regional aviation programs and operations. (Refer to FSM 5704.22  
16 for list of responsibilities.) The National Aviation Operations Officer (NAOO)  
17 reports to the NAO, and oversees the detached Boise Aviation Unit, and is  
18 responsible for all operational aspects of the aviation program.

19

#### 20 **State/Regional Office**

- 21 • *BLM - State FMOs are responsible for providing oversight for aircraft*  
22 *hosted in their state. State FMOs have the authority and responsibility to*  
23 *approve, with National Office concurrence, acquisition of supplemental*  
24 *aircraft resources within their state. State FMOs have the authority to*  
25 *prioritize the allocation, pre-positioning and movement of all aircraft*  
26 *assigned to the BLM within their state. State Offices will coordinate with*  
27 *the National Office on movement of their aircraft outside of their State. A*  
28 *State Aviation Manager (SAM) is located in each state office. SAMs are*  
29 *delegated as the Contracting Officers Representative (COR) for all*  
30 *exclusive use aircraft hosted by their state. SAMs implement aviation*  
31 *program objectives and directives to support the agency mission and state*  
32 *objectives. A state aviation plan is required to outline the state aviation*  
33 *program objectives and to identify state specific policy and procedures.*
- 34 • *NPS/FWS - A Regional Aviation Manager (RAM) is located in each*  
35 *regional office. RAMs implement aviation program objectives and*  
36 *directives to support the agency mission and region objectives. Several*  
37 *regions have additional support staff, and/or pilots assigned to support*  
38 *aircraft operations and to provide technical expertise. A regional aviation*  
39 *operations and management plan is required to outline the region's aviation*  
40 *program objectives and to identify region-specific policy and procedures.*
- 41 • *FS - Regional Aviation Officers (RAOs) are responsible for directing and*  
42 *managing Regional aviation programs in accordance with the National and*  
43 *Regional Aviation Management Plans, and applicable agency policy*  
44 *direction. (Refer to FSM 5720.47c for list of responsibilities.). RAOs report*  
45 *to Director of Fire and Aviation for their specific Region. Regional*  
46 *Aviation Safety Managers (RASMs) are responsible for aviation safety in*

1        *their respective Regions, and work closely with the RAO to ensure aviation*  
2        *safety is an organizational priority. Most Regions have additional aviation*  
3        *technical experts and pilots who help manage and oversee the Regional*  
4        *aviation programs. Most Regions also have Aviation Maintenance*  
5        *Inspectors, Airtanker Program Managers, Helicopter Program Managers,*  
6        *Helicopter Operations Specialists, Inspector Pilots, etc.*

#### 8 **Local Office**

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

- 11 • **BLM** - *Unit Aviation Managers (UAMs) serve as the focal point for the*  
12 *Unit Aviation Program by providing technical expertise and management of*  
13 *aviation resources to support Field Office/District programs. Field/District*  
14 *Offices are responsible for hosting, supporting, providing daily*  
15 *management, and dispatching all aircraft assigned to their unit.*  
16 *Field/District Offices have the authority to request additional resources; to*  
17 *establish priorities, and make assignments for all aircraft assigned to the*  
18 *BLM within their unit or zone.*
- 19 • **NPS** - *Organizational responsibility refer to DO-60, RM-60.*
- 20 • **FS** - *Unit Aviation Officers (UAOs)/Forest Aviation Officers (FAOs) have*  
21 *the responsibility for aviation activities at the local level, including aviation*  
22 *mission planning, safety measures, supervision, and evaluation.*  
23 *UAOs/FAOs assist Line Officers with risk assessment/management and*  
24 *cost analysis. (Refer to FSH 5709.16\_10.42)*

#### 26 **Aviation Information Resources**

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

- 29 • **BLM** - *9400 Manual Appendix 1, National Aviation Plan, State and Unit*  
30 *Aviation Plans (In all cases DOI policy Department Manuals [DMs],*  
31 *Operational Procedural Memoranda [OPMs], and BLM policy will take*  
32 *precedence.) IHOG, ISOG and Interagency Aerial Supervision Guide*  
33 *(IASG).*
- 34 • **FWS** - *Service Manual 330-339, Aviation Management and IHOG.*
- 35 • **NPS** - *RM-60 Aviation Management Reference Manual and IHOG &*  
36 *IASG.*
- 37 • **FS** - *FSM 5700, ISMOG, FSH 5709.16 and IHOG & IASG.*

39 Safety alerts, operational alerts, instruction memoranda, information bulletins,  
40 incident reports, and other guidance or information are issued as needed.

42 An up-to-date library with aviation policy and procedural references will be  
43 maintained at all permanent aviation bases, dispatch, and aviation management  
44 offices.

**1 Aviation Safety**

2 The FS and the BLM have adopted Safety Management Systems (SMS) as the  
3 foundation to our aviation safety program. The four pillars of SMS are Safety  
4 Policy, Safety Risk Management, Safety Assurance and Safety Promotion. SMS  
5 is the standard for safety set by the International Civil Aviation Organization  
6 (ICAO) and the Federal Aviation Administration (FAA).

7  
8 SMS will promote the transition from the traditional approach to aviation safety  
9 which:

- 10 • Reacts to undesirable events
- 11 • Focused on compliance
- 12 • Culture of blame and individual accountability
- 13 • Addresses only known safety concerns
- 14 • Identifies who, so we know who to punish

15  
16 To the contemporary approach that is:

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

23  
24 The intent of SMS is to improve the aviation culture by increasing hazard  
25 identification, reduce risk taking behavior, learn from mistakes and correct  
26 procedures before a mishap occurs rather than after the accident. More  
27 information on SMS is available at the Wildland Fire Lessons Learned Center  
28 under the Lessons Learned in Link. [WWW.wildfirelessons.net](http://WWW.wildfirelessons.net)

**30 Risk Assessment and Risk Management**

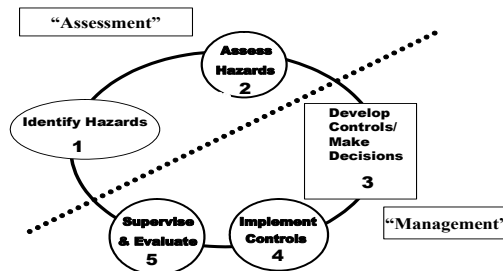
31 The use of Risk Management will help to ensure a safe and successful operation.  
32 Risk is the probability that an event will occur. Assessing risk identifies the  
33 hazard, the associated risk, and places the hazard in relationship to the mission.  
34 A decision to conduct a mission requires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

36  
37 Aviation missions always have some degree of risk. The four sources of hazards  
38 are methods, medium, man, and machine. Managing risk is a 5-step process:

- 39 • Identify hazards associated with all specified and implied tasks for the  
40 mission.
- 41 • Assess hazards to determine potential of occurrence and severity of  
42 consequences.
- 43 • Develop controls to mitigate or remove risk, and make decisions based on  
44 accepting the least risk for the best benefit.

- 1 • Implement controls - (1) education controls, (2) physical controls, and (3) avoidance controls.
- 2
- 3 • Supervise and Evaluate - enforce standards and continuously re-evaluate their effectiveness in reducing or removing risk. Ensure that controls are communicated, implemented, and enforced.
- 4
- 5
- 6

THE RISK MANAGEMENT PROCESS



7

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

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

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

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

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

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

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

15 an assignment is one possible outcome of managing risk.

16

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

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

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

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

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

22 safety reasons when:

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

26

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

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

29 criteria is using the Aviation Watch Out Situations (page 46 *IRPG*).

30

31 Supervisor will notify the Air Operations Branch Director (AOBD) immediately

32 upon being informed of a turn down. If there is no AOBD, notification shall go

33 to the appropriate Section Chief, the Incident Commander or local aviation staff.

1 Proper handling of turn downs provides accountability for decisions and initiates  
2 communication of safety concerns within the incident organization.

3

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

12

13 If an unresolved safety hazard exists the individual needs to communicate the  
14 issue/event/concern immediately to his or her supervisor and document as  
15 appropriate.

16

### 17 **Aviation Safety Support**

18 During high levels of aviation activity it is advisable to request a Safety and  
19 Technical Assistance Team (STAT). A STAT’s purpose is to assist and review  
20 helicopter and/or fixed wing operations on wildland fires. They should be  
21 requested through the agency chain of command and operate under a Delegation  
22 of Authority from the appropriate State/Regional Aviation Manager(s) or Multi  
23 Agency Coordinating Group. Formal written reports will be provided to the  
24 appropriate manager(s) as outlined at the in-brief. A team should consist of the  
25 following:

26

- Aviation Safety Manager
- Operations Specialist (helicopter and/or fixed wing)
- Pilot Inspector
- Maintenance Inspector (optional)
- Avionics Inspector (optional)

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**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)

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

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

**29 SAFECOM**

30  
31 The DOI and the FS have an incident/hazard reporting form called The Aviation  
32 Safety Communiqué (SAFECOM). The database, available at  
33 <https://www.safecom.gov/> fulfills the Aviation Mishap Information System  
34 (AMIS) requirements for aviation mishap reporting for the DOI agencies and the  
35 FS. Categories of reports include: Accidents, Airspace, Hazards, Incidents,  
36 Maintenance, Mishap Prevention and Kudos. The system uses the SAFECOM  
37 Form OAS-34 or FS-5700-14 to report any condition, observation, act,  
38 maintenance problem, or circumstance with personnel or aircraft that has the  
39 potential to cause an aviation-related mishap. The SAFECOM system is not  
40 intended for initiating punitive actions. Submitting a SAFECOM is not a  
41 substitute for "on-the-spot" correction(s) to a safety concern. It is a tool used to  
42 identify, document, track and correct safety related issues. A SAFECOM does  
43 not replace the requirement for initiating an accident or incident report.  
44  
45

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 Interiors 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, and 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 Notify FS or AMD and DOI agency Aviation Safety Managers of any aircraft  
14 mishap involving damage or injury. Use the hotline (888) 464-7427 or the most  
15 expeditious means possible. Initiate the appropriate unit Aviation Mishap  
16 Response Plan.

### 17 **Aviation Assets**

18  
19 Typical agency aviation assets are: Helitack and Rappel crews, Smokejumpers,  
20 Large Airtankers, Single Engine Air Tankers, Water Scoopers, Helitankers, Air  
21 Attack, Aerial Supervision Modules, Lead Planes, Airtanker Bases, SEAT  
22 Bases, Helibases, Smokejumper Bases.

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

### 29 **Interagency Interim Flight and Duty Limitations**

30  
31 **Phase 1 - Standard Flight and Duty Limitations (Abbreviated Summary)**

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

39  
40 This does not diminish the authority or obligation of any individual COR  
41 (Contracting Officer Representative) or Aviation Manager to impose shorter  
42 duty days or additional days off at any time for any flight crew members for  
43 fatigue. This is currently provided for in agency direction and contract  
44 specifications.

45  
46



1 **Interim Flight and Duty Limitations Implementation**

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

7

8 Implementation decisions will be made on a coordinated, interagency basis,  
9 involving the GACC, NICC, NMAC and National Aviation Representatives at  
10 NIFC.

11

12 Official notification of implementation should be made by the FS Regional  
13 Aviation Officer (RAO) and DOI Aviation Managers through the GACC and,  
14 for broader scope implementations, by National Aviation Management through  
15 NIFC.

16

17 **Phase 2 - Interim Duty Limitations**

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

20

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

26

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

32

33 **Phase 3 - Interim Duty Limitations**

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

37

38 Flight crew members shall have a minimum of twelve (12) consecutive hours of  
39 uninterrupted rest (off duty) during each duty day cycle. The standard duty day  
40 shall be no longer than twelve (12) hours, except a crew duty day extension shall  
41 not exceed a cumulative fourteen (14) hour duty day. The next flight crew rest  
42 period shall then be adjusted to equal the extended duty day, i.e., thirteen (13)  
43 hour duty day, thirteen (13) hours rest; fourteen (14) hour duty day, fourteen  
44 (14) hours rest. Extended duty day applies only to completion of a mission. In  
45 no case may standby be extended beyond the twelve (12) hour duty day.

46

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

8

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

12

### 13 **Helitack**

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

16

### 17 **Organization - Crew Size**

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

33

### 34 **Operational Procedures**

35 The Interagency Helicopter Operations Guide (IHOG) is policy for helicopter  
36 operations.

- 37 • **FWS** - *IHOG does not serve as policy for natural resource missions.*

38

### 39 **Communication**

40 The helitack crew standard is one handheld programmable multi-channel FM  
41 radio per every 2 crew persons, and one multi-channel VHF-AM programmable  
42 radio in the primary helitack crew (chase) truck. Each helitack crew (chase)  
43 vehicle will have a programmable VHF-FM mobile radio. Each permanent  
44 helibase will have a permanent programmable FM radio base station and should  
45 be provided a VHF-AM base station radio.

46

1 **Transportation**

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

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

10 **Training and Experience Requirements**

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

16  
 17 Non-Exclusive Use HECM’s and HMGB’s should also meet the following  
 18 currency requirements.

19

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 Leader, 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 Leader	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 Taskbook	I-100, S-130, S-190, S-271	

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

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

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

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

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

5 <sup>6</sup> Must receive S-271 or serve as S-271 instructor, once every three years.

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

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

13

#### 14 **Helicopter Rappel & Cargo Let-Down**

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

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

21

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

25

#### 26 **Aerial Ignition**

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

29

#### 30 **Airtankers**

31 Airtankers are a national resource. Geographic areas administering these aircraft  
32 will make them available for initial attack and extended attack fires on a priority  
33 basis. All airtanker services are obtained through the contracting process  
34 (except the MAFFS, which are military aviation assets and used to supplement  
35 the contract fleet when needed).

36

37 For aviation safety and policy concerning wildland fire chemicals see chapter 12  
38 (Wildland Fire Chemical Policy and Use)

39

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

- 42 • *BLM - The requirements of the DM' and BLM Manual 9400*
- 43 • *FS - FS operates Large Airtankers under FSM 5703 and Grant of*  
44 *Exemption 392 as referenced in FSM 5714.*

45

46

**1 Categories**

2 Airtanker types are distinguished by their retardant load:

- 3 • Type 1 - 3,000 gallons
- 4 • Type 2 - 1,800 to 2,999 gallons
- 5 • Type 3 - 800 to 1,799 gallons
- 6 • Type 4 - 799 gallons (single engine airtankers)

7

**8 Airtanker Base Operations**

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

13

**14 Airtanker Base Personnel**

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

20

**21 Startup/Cutoff Time for Multi Engine Airtankers**

22 These limitations apply to the time the aircraft arrives over the fire.

- 23 • Normally airtankers shall be dispatched to arrive over the fire not earlier  
24 than 30 minutes after official sunrise and not later than 30 minutes before  
25 official sunset.
- 26 • Airtankers may be dispatched to arrive over a fire as early as 30 minutes  
27 prior to official sunrise, or 30 minutes after official sunset, provided:
  - 28 ➤ A qualified ATGS, ASM1, or ATCO is on the scene; and
  - 29 ➤ Has determined visibility and other safety factors are suitable for  
30 dropping retardant; and
  - 31 ➤ Notifies the appropriate dispatcher of this determination.
- 32 • An airtanker, crewed by an initial attack-rated captain, may be dispatched to  
33 arrive over a fire without aerial supervision provided the airtanker's arrival  
34 and drop activities are conducted between 30 minutes after official sunrise  
35 and 30 minutes before official sunset in the lower 48 states. In Alaska, an  
36 airtanker pilot will not drop retardant during periods outside civil twilight.

37

**38 Single Engine Airtankers**

39

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

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

43

**44 SEAT Manager Position**

45 In order to ensure adherence to contract regulations, safety requirements, and  
46 fiscal accountability, a qualified SEAT Manager (SEMG) will be assigned to

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1 each operating location. The SEMG's duties and responsibilities are outlined in  
2 the *ISOG*. To maintain incident qualifications currency a SEAT Manager is  
3 required to attend RT-273 every three years. Elements and criteria of RT-273  
4 can be found in the *Field Managers Course Guide*, PMS 901-1.

5

#### 6 **Operational Procedures**

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

10

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

17

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

21

#### 22 **Communication**

23 All SEATs must have two VHF-AM and one VHF-FM (programmable) multi-  
24 channel radios. (See contract specifications.)

25

#### 26 **Aerial Supervision**

27 Aerial supervision resources will be dispatched, when available, for initial and  
28 extended attack to enhance efficiency and safety of ground and aerial operations.  
29 During initial response operations, aerial supervision priority order with regard  
30 to safety and efficiency are as follows:

- 31 • ASM
- 32 • ATGS
- 33 • ATCO (Leadplane)
- 34 • HLCO Helicopter Coordinator
- 35 • Smokejumper Spotter
- 36 • HMGB (Helicopter Manager)

37

38 If aerial operations continue beyond initial response, an ASM, ATGS, or  
39 Lead/ATCO will be ordered. Aerial supervision response will be commensurate  
40 with expected complexity.

41

#### 42 **Reconnaissance or Patrol flights**

43 The purpose of aerial reconnaissance or detection flights is to locate and relay  
44 fire information to fire management. In addition to detecting, mapping and  
45 sizing up new fires, this resource may be utilized to provide ground resources  
46 with intelligence on fire behavior, provide recommendations to the IC when

1 appropriate, and describe access routes into and out of fire areas for responding  
2 units. Only qualified Aerial Supervisors (ATGS, ASM, HLCO and  
3 Lead/ATCO) are authorized to coordinate incident airspace operations and give  
4 direction to aviation assets. Flights with a “Recon, Detection or Patrol”  
5 designation should communicate with tactical aircraft only to announce location,  
6 altitude and to relay their departure direction and altitude from the incident.

7

#### 8 **Low-level Flight Operations**

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

- 11 • Para-cargo.
- 12 • Aerial Supervision Module (ASM) and Lead/ATCO operations.
- 13 • Retardant, water and foam application.

14

#### 15 **Operational Procedures:**

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

21

#### 22 **Congested Area Flight Operations**

23 Airtankers can drop retardant in congested areas under DOI authority given in  
24 *FAR Part 137*. FS authority is granted under exemption 392, from *FAR 91.119*  
25 *as referenced in FSM 5714*. When such operations are necessary, they may be  
26 authorized subject to these limitations:

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

39

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

41 The Aerial Supervision Module is crewed with both a Lead/ATCO qualified Air  
42 Tactical Pilot (ATP) and an Air Tactical Supervisor (ATS). These individuals  
43 are specifically trained to operate together as a team. The resource is primarily  
44 designed for providing both functions (Lead/ATCO and Air Attack)

- 1 simultaneously from the same aircraft, but can also provide single role service,  
2 as well.  
3  
4 The Air Tactical Pilot is primarily responsible for aircraft coordination over the  
5 incident. The ATS develops strategy in conjunction with the Operations Section  
6 Chief.
- 7 • **BLM** - *The Interagency Aerial Supervision Guide is policy for BLM. The*  
8 *Interagency Aerial Supervision Guide is available online at*  
9 *[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)*

#### 11 **Operational Considerations**

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

#### 21 **Policy**

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

#### 26 **Aerial Supervision Module Program Training and Qualifications**

27 Training and qualification requirements for ASM crewmembers are defined in  
28 the *Interagency Aerial Supervision Guide*.

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

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

36  
37 The following PPE is required for all interagency ATGS operations:

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

#### 41 **Operational Considerations**

- 42 • Relief aerial supervision should be ordered for sustained operations to  
43 ensure continuous coverage over an incident.
- 44 • Personnel who are performing aerial reconnaissance and detection will not  
45 perform aerial supervision duties unless they are fully qualified as an  
46 ATGS.



- 1 • Air tactical aircraft must meet the avionics typing requirements listed in the
- 2 Interagency Aerial Supervision Guide and the pilot must be carded to
- 3 perform the air tactical mission.
- 4 • Ground resources will maintain consistent communication with Aerial
- 5 Supervision in order to maximize the safety, effectiveness, and efficiency of
- 6 aerial operations.

#### 8 **Leadplane**

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

#### 18 **Smokejumper Pilots**

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

#### 22 **Airspace Coordination**

23 The Interagency Airspace Program is an aviation safety program designed to  
24 enhance aviation safety and reduce the risk of a mid-air collision. Guidance for  
25 this program is found in the *Interagency Airspace Coordination Guide (IACG)*,  
26 which has been adopted as policy by the DOI and FS. Additional guidance may  
27 be found in the *National Interagency Mobilization Guide* and supplemented by  
28 local Mobilization Guides.  
29 <http://www.fs.fed.us/r6/fire/aviation/airspace/web/guide/index.html>.

31 All firefighting aircraft are required to have operative transponders and will use  
32 a setting of 1255 when engaged in, or traveling to, firefighting operations  
33 (excluding ferry flights), unless given a discrete code by Air Traffic Control  
34 (ATC).

35  
36 Flight planning and Temporary Flight Restriction (TFR) information on World  
37 Aeronautical, Sectional and Global Navigational Charts has been made available  
38 at the National Interagency Airspace System website <http://airspace.nifc.gov>.  
39 TFRs are updated every 30 minutes during normal business hours 7 days a  
40 week. A tactical chart with TFR specific information with incident names,  
41 frequencies and altitudes are available. These charts can be found at  
42 <http://airspace.nifc.gov/mapping/nifc/index.cfm>

43 Additional references can be found by contacting:

- 44 • **BLM** - *State Aviation Managers, Regional Airspace Coordinator and the*  
45 *BLM National Aviation Office Airspace Coordinator.*
- 46 • **NPS** - *Regional Aviation Managers*

- 1 • *FS - Regional Aviation Safety Officers, Regional Airspace Coordinators*
- 2 *and the FS Airspace Program Manager.*
- 3 • *FWS - National Aviation Safety and Operations*

#### 4 5 **Flight Request and Approval**

- 6 • *BLM - The 9400-1a, Aircraft Flight Request/Schedule Form, will be used*
- 7 *for approval and flight planning. This form will be completed between the*
- 8 *aircraft dispatcher and flight manager for flights not requested on a Fire*
- 9 *Resource Order. The fixed-wing or helicopter manager will use this form to*
- 10 *brief the pilot on the mission.*
- 11 • *NPS - Reference RM 60, Appendix 3 & 4.*
- 12 • *FS - Refer to FSM 5700 for administrative use, FSM 5705 for point-to-*
- 13 *point and mission use for types of FS flights. All non tactical flights require*
- 14 *a flight schedule to be completed with a flight following method identified*
- 15 *prior to departure; with information passed to all responsible dispatch*
- 16 *centers.*

17  
18 **Point-to-point flights** typically originate at one developed airport or permanent  
19 helibase, with the direct flight to another developed airport or permanent  
20 helibase. These flights require approved pilots, aircrew, and aircraft.

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

23  
24 Agency policy requires designating a Flight Manager for point-to-point flights  
25 transporting personnel. The Flight Manager is a government employee that is  
26 responsible for coordinating, managing and supervising flight operations. The  
27 Flight Manager is not required to be on board for most flights. For those flights  
28 that have multiple legs or are complex in nature a Flight Manager should attend  
29 the entire flight. The Flight Manager will meet the qualification standard for the  
30 level of mission assigned as set forth in the *Interagency Aviation Training Guide*  
31 *(IAT).*

- 32 • *BLM - All agency flights shall be approved using an aircraft request/flight*
- 33 *schedule, USDI form 9400-1a. This form is used to authorize, plan and brief*
- 34 *the pilot on non-fire flights.*
- 35 • *NPS - Reference RM-60, Appendix 3 for agency specific policy.*
- 36 • *FS - Refer to FSM 5710.5 for administrative use, FSM 5705 for point-to-*
- 37 *point and mission use for types of FS flights.*

#### 38 39 **Mission Flights**

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

- 1 • PPE is required for any fixed wing mission flight conducted below within
- 2 500' AGL. Flight helmets are not required for multi-engine airtanker crews,
- 3 smokejumper pilots and ASM flight/aircrew members.
- 4 • The use of PPE is required for all helicopter flight (point to point and
- 5 mission) and associated ground operations. The specific items to be worn
- 6 are dependent on the type of flight, the function an individual is performing,
- 7 or the ground operation being conducted. Refer to the tables in Chapter 9 of
- 8 the IHOG for specific requirements.
- 9 • All personnel will meet training and qualification standards required for the
- 10 mission.
- 11 • Agency FM radio capability is required for all mission flights.
- 12 • All passengers must be authorized and all personnel onboard must be
- 13 essential to the mission.

14  
15 Mission flights for fixed-wing aircraft include but are not limited to the  
16 following:

- 17 • Water or retardant application
- 18 • Parachute delivery of personnel or cargo
- 19 • Airtanker coordinator operations
- 20 • Takeoff or landing requiring special techniques due to hazardous terrain,
- 21 obstacles, or surface conditions

22  
23 PPE requirements for fire reconnaissance are:

- 24 • Leather shoes or boots
- 25 • Natural fiber shirt, full length cotton or nomex pants or flight suit

26  
27 Mission helicopter flights include but are not limited to the following:

- 28 • Flights conducted within 500 feet AGL
- 29 • Water or retardant application
- 30 • Helicopter coordinator and ATGS operations
- 31 • Aerial ignition activities
- 32 • External load operations
- 33 • Rappelling
- 34 • Takeoff or landing requiring special techniques due to hazardous terrain,
- 35 obstacles, pinnacles, or surface conditions
- 36 • Free-fall cargo
- 37 • Fire reconnaissance

### 38 39 **Flight-Following All Aircraft**

40 Flight-Following is mandatory for all flights. The pilot has the responsibility to  
41 determine which flight following procedure is to be utilized. Mission Flights are  
42 required to utilize agency flight following radio or automated flight following  
43 (AFF). Point-to-point, non-mission flights can utilize Agency or FAA flight  
44 following. Refer to the *National Interagency Mobilization Guide*, section 24.3  
45 for specific direction.

- 1 • Aircraft Managers, Pilots and Dispatchers are responsible for coordinating  
2 and confirming the method of flight following to be utilized.
- 3 • Flight-following reports from the aircraft are the responsibility of the pilot-  
4 in-command (PIC) in accordance with 14 CFR.
- 5 • All dispatch centers designated for fire support shall have the ability to  
6 monitor AFF as well as the capability to transmit and receive “National  
7 Flight Following” and “Air Guard”
- 8 • If AFF becomes inoperable the aircraft will normally remain available for  
9 service, utilizing radio/voice system for flight following. Each occurrence  
10 must be evaluated individually and decided by the COR/CO.
- 11 • The default standard for lower-48 interagency fire operations is for all  
12 aircraft to maintain positive radio contact with 15 minute check-ins.
- 13 • Agency FM radio capability is required for all mission flights.
- 14 • Periodic radio transmissions are acceptable when utilizing AFF.
- 15 • Helicopters conducting Mission Flights shall check-in prior to and  
16 immediately after each takeoff/landing per IHOG 4.II.E.2
- 17 • Aircraft operating under certain contracts may not be required to be  
18 equipped with AFF and/or FM radios. Consult the appropriate procurement  
19 document for the aircraft in question to determine applicability.
- 20 • Violation of flight-following standards requires submission of a  
21 SAFECOM.

### 22 23 **Sterile Cockpit All Aircraft**

24 Sterile cockpit rules apply within a 5-mile radius of the airport. The flight crew  
25 will perform no radio or cockpit communication during that time that is not  
26 directly related to safe flight of the aircraft from taxi to 5 miles out and from 5  
27 miles out until clearing the active runway. This would consist of reading  
28 checklists, communication with Air Traffic Control (ATC), Flight Service  
29 Stations, Unicom, or other aircraft with the intent of ensuring separation or  
30 complying with ATC requirements. Communications by passengers or air crew  
31 members can be accomplished when the audio panels can be isolated and do not  
32 interfere with flight operations of the flight crew.

33  
34 **Exception:** When conducting firefighting missions within 5 miles of an  
35 uncontrolled airport, maintain sterile cockpit until departing the traffic pattern  
36 and reaching final altitude. Monitor CTAF frequency if feasible while engaged  
37 in firefighting activities. Monitor CTAF as soon as practical upon leaving the  
38 fire and returning to the uncontrolled airport. When conducting firefighting  
39 missions within Class B, C, or D airspace, notify dispatch that ATC  
40 communications will have priority over dispatch communications.