

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46

Chapter 16 Aviation Operations and Resources

Purpose and Scope

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

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

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

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

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

Organizational Responsibilities

National Office

Department of Interior (DOI)

Office of Aviation Services (OAS)

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

Bureau of Land Management (BLM)

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

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

3

4 **Forest Service (FS)**

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

10

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

17

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

20

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

23

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

27

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

31

32 **State/Regional Office**

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

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

22

23 Local Office

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

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

40

41 Aviation Information Resources

42

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

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

Release Date: January 2014

16-3

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

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

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

12 **Aviation Safety**

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

20
21 SMS focuses on:

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

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

36 **Risk Assessment and Risk Management**

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

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

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

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

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

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

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

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

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

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

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

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

9 **Aviation Safety Support**

11 **Aviation Safety Assistance Team (ASAT)**

12 During high levels of aviation activity, it is advisable to request an Aviation
13 Safety Assistance Team (ASAT). An ASAT’s purpose is to enhance risk
14 management, efficiency, effectiveness, and provide technical assistance while
15 reviewing aviation operations. If an ASAT cannot be filled internally, the
16 request may be placed with NICC through established ordering channels using
17 individual overhead requests. An ASAT should operate under a Delegation of
18 Authority from the appropriate State/Regional Aviation Manager(s) or Multi
19 Agency Coordinating Group. Formal written reports shall be provided to
20 appropriate manager(s) as outlined at the in-brief. A team should be developed
21 to fit the need of the requesting unit and may consist of the following:

- 22 • Aviation Safety Manager;
- 23 • Operations Specialist (helicopter and/or fixed wing);
- 24 • Pilot Inspector;
- 25 • Maintenance Inspector (optional);
- 26 • Avionics Inspector (optional); and
- 27 • Aircraft Dispatcher (optional).

29 **Aviation Safety Briefing**

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

37 **Aviation Hazard**

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

- 43 • Deviations from policy, procedures, regulations, and instructions;
- 44 • Improper hazardous materials handling and/or transport;

- 1 • Airspace conflicts/flight following deviation;
- 2 • Deviation from planned operations;
- 3 • Failure to utilize PPE or Aviation Life Support Equipment (ALSE);
- 4 • Failure to meet qualification standards or training requirement;
- 5 • Extreme environmental conditions;
- 6 • Improper ground operations;
- 7 • Improper pilot procedures;
- 8 • Fuel contamination; and
- 9 • Unsafe actions by pilot, air crew, passengers, or support personnel.

10

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

18

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

20 Chapter 12 contains information concerning the aerial application of wildland
21 fire chemicals.

22

23 **SAFECOM**

24

25 The DOI and the FS have an incident/hazard reporting form called The Aviation
26 Safety Communiqué (SAFECOM). The database, available at
27 <https://www.safecom.gov/>, fulfills the Aviation Mishap Information System
28 (AMIS) requirements for aviation mishap reporting for the DOI agencies and the
29 FS. Categories of reports include: Accidents, Airspace, Hazards, Incidents,
30 Maintenance, Mishap Prevention, and Kudos. The system uses the SAFECOM
31 Form OAS-34 or FS-5700-14 to report any condition, observation, act,
32 maintenance problem, or circumstance with personnel or aircraft that has the
33 potential to cause an aviation-related mishap. The SAFECOM system is not
34 intended for initiating punitive actions. Submitting a SAFECOM is not a
35 substitute for "on-the-spot" correction(s) to a safety concern. It is a tool used to
36 identify, document, track, and correct safety related issues. A SAFECOM does
37 not replace the requirement for initiating an accident or incident report.
38 Any individual (including vendors/cooperators) with knowledge of an
39 incident/hazard should complete a SAFECOM. The SAFECOM form,
40 including attachments and pictures, should be entered directly on the internet at
41 <https://www.safecom.gov/> or faxed to the Department of the Interior's Office of
42 Aviation Services, Aviation Safety (208)433-5069 or to the FS at (208) 387-
43 5735 ATTN: SAFETY. Electronic cc copies are automatically forwarded to the
44 National, Regional, State, and Unit Aviation Managers.

45

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

4 5 **Aircraft Incidents/Accidents**

6
7 Notification to the FS or OAS and DOI agency Aviation Safety Managers is
8 required for any aircraft mishap involving damage or injury. Use the hotline
9 (888) 464-7427 or the most expeditious means possible. Initiate the appropriate
10 unit Aviation Mishap Response Plan.

11 12 **Low-level Flight Operations**

13
14 The only fixed-wing aircraft missions authorized for low-level fire operations
15 are:

- 16 • Smokejumper/Para-cargo;
- 17 • Aerial Supervision Module (ASM) and Lead operations; and
- 18 • Retardant, water, and foam application.

19 20 **Operational Procedures:**

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

26 27 **Congested Area Flight Operations**

28
29 Airtankers can drop retardant in congested areas under DOI authority given in
30 *FAR Part 137*.

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

- 35 • Airtanker operations in congested areas may be conducted at the request of
36 the city, rural fire department, county, state, or federal fire suppression
37 agency;
- 38 • An ASM/Lead/ATCO is ordered to coordinate aerial operations;
- 39 • The air traffic control facility responsible for the airspace is notified prior to
40 or as soon as possible after the beginning of the operation;
- 41 • A positive communication link must be established between the ASM or
42 Lead/ATCO, airtanker pilot(s), and the responsible fire suppression agency
43 official; and

- 1 • The IC for the responsible fire agency or designee will advise the
2 ASM/leadplane/airtanker that all non-essential people and movable property
3 have been cleared prior to commencing retardant drops.
4

5 **Airspace Coordination**

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

14
15 Some state and FS units have Memorandums of Understanding (MOUs) with
16 local military airspace authorities for airspace coordination. Briefings from Unit
17 Aviation Managers/Officers (UAM/UAO) are crucial to ensure that any local
18 airspace information is coordinated before flight.
19

20 All firefighting aircraft are required to have operative transponders and will use
21 a national firefighting transponder code of 1255 when engaged in, or traveling
22 to, firefighting operations (excluding ferry flights), unless given a discrete code
23 by Air Traffic Control (ATC).
24

25 Additional coordination information can be found by contacting:

- 26 • **BLM** - *State Aviation Managers, National Airspace Program Manager*
27 • **NPS** - *Regional Aviation Managers*
28 • **FS** - *Regional Aviation Officers, National Airspace Program Manager*
29 • **FWS** - *National Aviation Safety and Operations*
30

31 **Flight Request and Approval**

- 32 • **BLM** –*Reference the BLM National Aviation Plan, Chapter 3, available at:*
33 *<http://www.blm.gov/mifc/st/en/prog/fire/Aviation/Administration.html>*
34 • **NPS** - *Reference RM 60, Appendix 3 & 4.*
35 • **FS** - *Refer to FSM 5711.3 for administrative use, FSM 5705 for point-to-*
36 *point and mission use for types of FS flights.*
37

38 **Point-to-Point Flights**

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

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

- 9 • **BLM** –Reference the *BLM National Aviation Plan, Chapter 3*, available at:
10 <http://www.blm.gov/nifc/st/en/prog/fire/Aviation/avlibrary.html>
- 11 • **NPS** - Reference *RM-60, Appendix 3* for agency specific policy.
- 12 • **FS** - Refer to *FSM 5711.3* for administrative use, *FSM 5705* for point-to-
13 point and mission use for types of FS flights.

15 **Mission Flights**

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

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

38
39 Mission flights for fixed-wing aircraft include but are not limited to the
40 following:

- 41 • Water or retardant application;
- 42 • Parachute delivery of personnel or cargo;
- 43 • Airtanker coordinator operations; and
- 44 • Takeoff or landing requiring special techniques due to hazardous terrain,
45 obstacles, or surface conditions

- 1 Mission helicopter flights include but are not limited to the following:
- 2 • Flights conducted within 500 feet AGL;
 - 3 • Water or retardant application;
 - 4 • Helicopter coordinator and ATGS operations;
 - 5 • Aerial ignition activities;
 - 6 • External load operations;
 - 7 • Rappelling;
 - 8 • Takeoff or landing requiring special techniques due to hazardous terrain,
 - 9 obstacles, pinnacles, or surface conditions;
 - 10 • Free-fall cargo; and
 - 11 • Fire reconnaissance.

12

13 **Flight-Following All Aircraft**

14

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

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

32

33 **Sterile Cockpit All Aircraft**

34

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

44

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

8

9 **Interagency Interim Flight and Duty Limitations/Aviation Stand Downs**

10

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

15

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

20

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

26

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

32

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

- 41 ● Fourteen (14) hour maximum duty day;
- 42 ● Eight (8) hours maximum daily flight time for mission flights;
- 43 ● Ten (10) hours for point-to-point, with a two (2) pilot crew;
- 44 ● Maximum cumulative flight hours of thirty-six (36) hours, up to forty-two
45 (42) hours in six (6) days; and

- 1 • Minimum of ten (10) hours uninterrupted time off (rest) between duty
2 periods.

3
4 This does not diminish the authority or obligation of any individual COR
5 (Contracting Officer Representative) or Aviation Manager to impose shorter
6 duty days or additional days off at any time for any flight crew members for
7 fatigue. This is currently provided for in agency direction and contract
8 specifications.

9
10 **Phase 2 - Interim Duty Limitations**

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

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

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

25
26 **Phase 3 - Interim Duty Limitations**

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

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

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

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

5 **Aviation Assets**

6
7 Typical agency aviation assets include: Helitack or Rappel, Aerial Supervision
8 (ATGS, Lead, and ASM), Large (multi-engine) Airtankers, Very Large
9 Airtankers (VLATs), Single Engine Airtankers (SEATs), and Smokejumpers.

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

17 **Helitack**

18
19 Helitack crews perform suppression and support operations to accomplish fire
20 and resource management objectives.

22 **Organization - Crew Size**

- 23 • **BLM** - The standard BLM exclusive-use helitack crew size for a Type 3
24 helicopter is a minimum of seven personnel (supervisor, assistant, squad
25 boss, and four crew members). The standard BLM exclusive-use helitack
26 crew size for a Type 2 helicopter is a minimum of ten personnel (supervisor,
27 assistant, squad boss, and seven crewmembers). BLM helicopters operated
28 in Alaska need only be staffed with a qualified Helicopter Manager
29 (HMGB).
- 30 • **NPS** - Helicopter exclusive-use modules will consist of a minimum of 8 fire
31 funded personnel. The NPS regions may establish larger crew size and
32 standards for their exclusive use helicopter crews based on the need for an
33 all hazard component (Fire, SAR, Law Enforcement, and EMT). Exception
34 to minimum helicopter crew staffing standards must be approved by the
35 National Aviation Office. NPS helicopters operated in Alaska need only be
36 staffed with a qualified Helicopter Manager (HMGB).
- 37 • **FS** - Regions may establish minimum crew size and standards for their
38 exclusive use helitack crews. Experience requirements for exclusive-use
39 helicopter positions are listed in FAQG, Chapter 4.

41 **Operational Procedures**

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

1 **Communication**

2 The helitack crew standard is one handheld programmable multi-channel FM
 3 radio per every two crew persons, and one multi-channel VHF-AM
 4 programmable radio in the primary helitack crew (chase) truck. Each helitack
 5 crew (chase) vehicle will have a programmable VHF-FM mobile radio. Each
 6 permanent helibase will have a permanent programmable FM radio base station
 7 and should be provided a VHF-AM base station radio.

8
 9 **Transportation**

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

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

17
 18 **Training and Experience Requirements**

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

24
 25 Non-Exclusive Use HECM’s and HMGB’s should also meet the following
 26 currency requirements.

27

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

- 1 ¹ All Exclusive use Fire Helicopter positions require an arduous fitness
2 rating.
3 ² Minimum experience and qualifications required prior to performing in
4 the Exclusive use position. Each level must have met the experience and
5 qualification requirements of the previous level(s).
6 ³ Minimum training required to perform in the position. Each level must
7 have met the training requirements of the previous level(s).
8 ⁴ A “season” is continuous employment in a primary wildland fire position
9 for a period of 90 days or more.
10 ⁵ After completing S-372, must attend Interagency Helicopter Manager
11 Workshop (RT-372) within three years and every three years thereafter.
12 ⁶A-110 is required every three years.

13
14 **Note:** Exceptions to the above position standards and staffing levels may be
15 granted on a case-by-case basis by the BLM National Aviation Office, NPS
16 Regional Office, FWS Regional Office, or FS Regional Office as appropriate.

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

21 22 **Helicopter Rappel & Cargo Let-Down**

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

- 25 • **BLM** - *BLM personnel involved in an Interagency Rappel Program must*
26 *have SFMO approval.*
- 27 • **NPS** - *Approval is required by the National Office.*
- 28 • **FS** - *Approval is required by the National Office.*

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

34 35 **Aerial Ignition**

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

39 40 **Fire Chemical Avoidance Areas**

41
42 See Chapter 12 (Suppression Chemicals and Delivery Systems) for guidance.
43
44
45
46

1 Aerial Supervision Principles for ATGS, ASM, and Lead

2

3 The response speed of aerial supervision resources contributes greatly to
4 established aggressive initial attack doctrine and should be utilized accordingly.

5

6 Aerial supervision resources will be dispatched when available to
7 initial/extended attack incidents in order to enhance safety, effectiveness, and
8 efficiency of aerial/ground operations.

9

10 When aerial supervision resources are collocated with airtankers, they should be
11 launched together to maximize the safety, effectiveness, and efficiency of
12 incident operations.

13

14 Incidents with three or more aircraft over/assigned to them should also have
15 aerial supervision in the form of ATGS or ASM. A qualified smokejumper
16 spotter (senior smokejumper in charge of smokejumper missions) may
17 coordinate airspace over a fire until a qualified ATGS arrives.

18

19 Operational Procedures and Policy

20 The *Interagency Aerial Supervision Guide* (IASG, PMS 505) provides
21 operational procedures for all aerial supervision resources. The IASG and
22 additional aerial supervision forms are maintained online at the NWCG website:
23 <http://www.nwcg.gov/pms/pubs/pms505/index.htm>.

24

25 The *Wildland Fire Qualifications System Guide* (PMS 310-1) provides training,
26 qualification, and currency standards.

27

28 The IASG contains additional requirements and is policy for the BLM, BIA,
29 FWS, and NPS.

30

31 Air Tactical Group Supervisor (ATGS)

32

33 The ATGS coordinates incident airspace and manages incident air traffic. The
34 ATGS is an airborne firefighter who coordinates, assigns, and evaluates the use
35 of aerial resources in support of incident objectives. Specific duties and
36 responsibilities are outlined in the *Wildland Fire Incident Management Field
37 Guide* (PMS-210) and the *Interagency Aerial Supervision Guide*.

38

39 Program Management

40 The ATGS program is managed at the national level through program managers.
41 Interagency operational and programmatic oversight is performed at the
42 Geographic Area level through ATGS Cadre, a sub-group of the Interagency
43 Aerial Supervision Subcommittee (IASS). An ATGS Cadre member is
44 designated in each Geographic Area.

45

46

1 Training

2 Classroom training is completed as per the PMS 310-1.

3

4 Field (flight) training assignments are coordinated and prioritized by the
5 Geographic Area Training Representatives and ATGS Cadre, and is
6 implemented based on a national interagency trainee priority list.

7

8 National interagency ATGS training aircraft have been identified and are
9 utilized for the sole purpose of ATGS flight training.

10

11 Operational Considerations

- 12 • Ground resources will maintain consistent communication with aerial
13 supervision to maximize the safety, effectiveness, and efficiency of aerial
14 operations.
- 15 • Relief aerial supervision should be ordered for sustained operations to
16 ensure continuous coverage over an incident.
- 17 • Personnel who are performing aerial reconnaissance and detection will not
18 perform aerial supervision duties unless they are fully qualified as an
19 ATGS.
- 20 • ATGS aircraft must meet the aircraft/avionics typing requirements listed in
21 the IASG and the pilot must be carded to perform the air tactical mission.
22 Rotor-wing pilots are not required to be carded for air tactical missions.

23

24 The following PPE is required for all interagency ATGS operations:

- 25 • Leather shoes or boots; and
- 26 • Natural fiber shirt, full-length cotton or flame-resistant pants, or flight suit.

27

28 Leadplane

29

30 A leadplane is a national shared resource.

31

32 Agency policy requires an ASM or Lead/ATCO to be on order prior to aerial
33 retardant/suppressant delivery over a congested area. Operations may proceed
34 before the ASM or Lead/ATCO arrives if communications are established with
35 on-site resources, authorization is granted from the IC, and the line is cleared
36 prior to commencing aerial application operations.

37

38 Aerial Supervision Module (ASM)

39

40 The ASM is a national shared resource.

41

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

- 1 The ATP is primarily responsible for aircraft coordination over the incident.
- 2 The ATS develops strategy and implements tactical plans through coordination
- 3 with the IC or designee.

4

5 **Operational Considerations**

- 6 Any operation that limits the national resource availability must be approved by
- 7 the agency program manager.

8

- 9 Aerial or incident complexity and environmental considerations will dictate
- 10 when the ASM ceases low-level operations. The ASM flight crew has the
- 11 responsibility to determine when the complexity level of the incident exceeds
- 12 the capability to perform both ATGS and leadplane functions from one aircraft.
- 13 The crew will request additional supervision resources, or modify the operation
- 14 to maintain mission safety and efficiency.

15

16 **Policy**

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

20

21 **Aerial Supervision Module Program Training and Qualifications**

- 22 Training and qualification requirements for ASM crewmembers are defined in
- 23 the *IASG*.

24

25 **Reconnaissance or Patrol flights**

26

- 27 The purpose of aerial reconnaissance or detection flights is to locate and relay
- 28 fire information to fire management. In addition to detecting, mapping, and
- 29 sizing up new fires, this resource may be utilized to provide ground resources
- 30 with intelligence on fire behavior, provide recommendations to the IC when
- 31 appropriate, and describe access routes into and out of fire areas for responding
- 32 units. Only qualified Aerial Supervisors (ATGS, ASM, HLCO and
- 33 Lead/ATCO) are authorized to coordinate incident airspace operations and give
- 34 direction to aviation assets. Flights with a "Recon, Detection, or Patrol"
- 35 designation should communicate with tactical aircraft only to announce location,
- 36 altitude and to relay their departure direction and altitude from the incident.

37

38 **Airtankers**

39

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

45

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

3

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

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

9

10 **Categories**

11 Airtanker types are distinguished by their load capacity:

- 12 • Very Large Air Tankers (VLAT) – 8,000 gallons or more.
- 13 • Type 1 - 3,000 to 7,999 gallons.
- 14 • Type 2 - 1,800 to 2,999 gallons.
- 15 • Type 3 - 800 to 1,799 gallons (includes single engine airtankers, and CL-
16 215/415 Water Scoopers).
- 17 • Type 4 – up to 799 gallons (single engine airtankers).

18

19 **Airtanker Base Operations**

20

21 Certain parameters for the operation of airtankers are agency-specific. For
22 dispatch procedures, limitations, and times, refer to geographic area
23 mobilization guides and the *Interagency Airtanker Base Operations Guide*
24 (IABOG).

25

26 **Airtanker Base Personnel**

27 There is identified training for the positions at airtanker bases; the *Interagency*
28 *Airtanker Base Operations Guide* (IABOG) contains a chart of required training
29 for each position. It is critical that reload bases are prepared and staffed during
30 periods of moderate or high fire activity at the base. All personnel conducting
31 airtanker base operations should review the IABOG and have it available.

32

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

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

35

36 **Single Engine Airtankers**

37

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

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

41

42 **SEAT Manager Position**

43 The SEAT Manager (SEMG) duties and responsibilities are outlined in the
44 ISOG. SEMGs ensure adherence to contract regulations, safety requirements,
45 and fiscal accountability.

46

1 Operational Procedures

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

5
6 Depending on location, operator, and availability, SEATs are capable of
7 dropping suppressants, water, or approved chemical retardants. Because of the
8 load capacities of the SEATs (500 to 800 gallons), quick turn-around times
9 should be a prime consideration.

10
11 SEAT operations at established airtanker bases or reload bases are authorized.
12 All BLM and FS Airtanker base operating plans will permit SEAT loading in
13 conjunction with large airtankers.

14
15 Smokejumper Pilots

16
17 The *Interagency Smokejumper Pilot Operations Guide (ISPOG)* serves as policy
18 for smokejumper pilot qualifications, training, and operations.

19

20 Military or National Guard Helicopters and Pilots

21

22 The *Military Use Handbook (NFES 2175)* will be used when planning or
23 conducting aviation operations involving regular military aircraft. Ordering
24 military resources is done through the National Interagency Coordination Center
25 (NICC); National Guard resources are utilized through local or state
26 Memorandum of Understanding (MOU).

27

28 Modular Airborne Fire Fighting System (MAFFS)

29

30 The *MAFFS Operating Plan* (available from the National Interagency
31 Coordination Center) will be used when planning or conducting aviation
32 operations involving MAFFS military aircraft. Ordering MAFFS is done
33 through the National Interagency Coordination Center (NICC); MAFFS are
34 utilized through a national agreement (see the *National Interagency*
35 *Mobilization Guide*). Several states have the ability to activate MAFFS through
36 separate agreements that do not require ordering through NICC.