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

11

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

20

21 **State/Regional Office**

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

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

9 **Local Office**

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

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

27 **Aviation Information Resources**

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

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

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

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

1
2 **Aviation Safety**
3 The [USFSFS](#) and the BLM have adopted Safety Management Systems (SMS) as
4 the foundation to our aviation safety program. The four pillars of SMS are
5 Safety Policy, Safety Risk Management, Safety Assurance and Safety
6 Promotion. SMS is the standard for safety set by the International Civil
7 Aviation Organization (ICAO) and the Federal Aviation Administration (FAA).

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

- 11 • Reacts to undesirable events
- 12 • Focused on compliance
- 13 • Culture of blame and individual accountability
- 14 • Addresses only ~~known~~ [known](#) safety concerns
- 15 • Identifies who, so we know who to punish

16
17 To the contemporary approach that is:

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

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

30 **Risk Assessment and Risk Management**

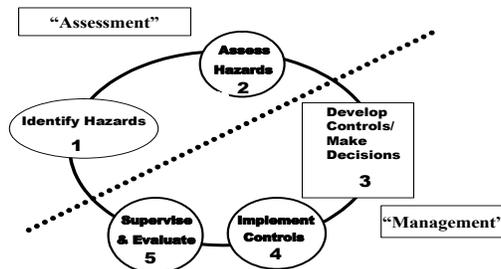
31 The use of Risk Management will help to ensure a safe and successful operation.
32 Risk is the probability that an event will occur. Assessing risk identifies the
33 hazard, the associated risk, and places the hazard in relationship to the mission.
34 A decision to conduct a mission requires weighing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

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

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

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

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

- 26 • Aviation Safety Manager
- 27 • Operations Specialist (helicopter and/or fixed wing)
- 28 • Pilot Inspector
- 29 • Maintenance Inspector (optional)
- 30 • Avionics Inspector (optional)

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

32 The *Military Use Handbook (NFES 2175)* will be used when planning or
33 conducting aviation operations involving regular military aircraft. Ordering
34 military resources is done through National Interagency Coordination Center
35 (NICC); National Guard resources are utilized through local or state
36 Memorandum of Understanding (MOU).
37

38 **Aviation Safety Briefing**

39 Every passenger must receive a briefing prior to each flight. The briefing is the
40 responsibility of the Pilot in Command (PIC) but may be conducted by the pilot,
41 flight manager, helicopter manager, fixed-wing base manager, or an individual
42 with the required training to conduct an aviation safety briefing. The pilot
43 should also receive a mission briefing from the government aircraft manager
44 Refer to the *Incident Response Pocket Guide (IRPG)* and *IHOG* Chapter 10.
45
46

1 Aviation Hazard

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

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

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

27 Aerial Applications of Wildland Fire Chemical Safety

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

31 SAFECOM

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

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

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

13 **Aircraft Incidents/Accidents**

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

18 **Aviation Assets**

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

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

30 **Interagency Interim Flight and Duty Limitations**

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

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

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
2 **Interim Flight and Duty Limitations Implementation**
3 During extended periods of a high level of flight activity or maximum 14-hour
4 days, fatigue factors must be taken into consideration by Fire and Aviation
5 Managers. Phase 2 and/or Phase 3 Duty Limitations will be implemented for
6 specific Geographic Area's Aviation resources. The minimum scope of
7 operation should be by Geographic Area, i.e., Northwest, Great Basin, etc.
8
9 Implementation decisions will be made on a coordinated, interagency basis,
10 involving the GACC, NICC, NMAC and National Aviation Representatives at
11 NIFC.
12
13 Official notification of implementation should be made by the FS Regional
14 Aviation Officer (RAO) and DOI Aviation Managers through the GACC and,
15 for broader scope implementations, by National Aviation Management through
16 NIFC.

17
18 **Phase 2 - Interim Duty Limitations**

19 When Phase 2 is activated, pilots shall adhere to the flight and day-off
20 limitations prescribed in Phase 1 and the duty limitations defined under Phase 2.
21
22 Each flight crew member shall be given an additional day off each fourteen (14)
23 day period. Crews on a twelve (12) and two (2) schedule shall have three (3)
24 consecutive days off (11 and 3). Flight crews on six (6) and one (1) schedules
25 shall work an alternating weekly schedule of five (5) days on, two (2) days off,
26 then six (6) days on and one (1) day off.

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

33
34 **Phase 3 - Interim Duty Limitations**

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

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

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

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

13 14 **Helitack**

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

17 18 **Organization - Crew Size**

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

35 36 **Operational Procedures**

37 The Interagency Helicopter Operations Guide (IHOG) is policy for helicopter
38 operations.

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

40 41 **Communication**

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

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

3

4 **Transportation**

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

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

12

13 **Training and Experience Requirements**

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

19

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

22

| Exclusive Use Fire Helicopter Position PerquisitesPrerequisites | | | |
|--|---|--|-----------------------|
| 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 |
| 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 ⁵ |
| Fire Helicopter Squad Leader | One season as a Fire Helicopter Crewmember, FFT1, ICT5 | S-131, S-133, S-211, S-212 | S-274 ⁶ |
| Fire Helicopter Crewmember | One season as a FFT2, HECM Taskbook | I-100, S-130, S-190, S-271 | S-274 ⁶ |

23 ¹ All Exclusive use Fire Helicopter positions require an arduous fitness rating.

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

1 ³ Minimum training required to perform in the position. Each level must have
2 met the training requirements of the previous level(s).

3 ⁴ A “season” is continuous employment ~~on~~ in a full-time primary wildland fire
4 helicopter crew position for a period of 90 days or more.

5 ⁵ After completing S-372, must attend Interagency Helicopter Manager
6 Workshop (RT-372) in three years and every three years thereafter.

7 ⁶ Must receive S-271 or serve as S-271 instructor, once every three years.

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

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

15 **Helicopter Rappel & Cargo Let-Down**

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

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

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

27 **Aerial Ignition**

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

30 **Airtankers**

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

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

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

- 44 • **BLM** - *The requirements of the DM’ and BLM Manual 9400*
- 45 • **FS** - ~~Forest Service~~ **FS** *operates Large Airtankers under FSM 5703 and*
46 *Grant of Exemption 392 as referenced in FSM 5714.*

1

2

3 Categories

4 Airtanker types are distinguished by their retardant load:

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

9

10 Airtanker Base Operations

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

15

16 Airtanker Base Personnel

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

22

23 Startup/Cutoff Time for Multi Engine Airtankers

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

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

39

40 Single Engine Airtankers

41

42 Single Engine Airtanker (SEAT) Operations, Procedures and Safety

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

45

46 SEAT Manager Position

Release Date: January 2010

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

8 **Operational Procedures**

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

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

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

25 **Communication**

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

29 **Aerial Supervision**

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

- 34 • ASM
- 35 • ATGS
- 36 • ATCO (Leadplane)
- 37 • HLCO Helicopter Coordinator
- 38 • Smokejumper Spotter
- 39 • HMGB (Helicopter Manager)

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

45 **Reconnaissance or Patrol flights**

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

11

12 **Low-level Flight Operations**

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

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

18

19 **Operational Procedures:**

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

25

26 **Congested Area Flight Operations**

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

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

43

44 **Aerial Supervision Module (ASM)**

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

7
8 The Air Tactical Pilot is primarily responsible for aircraft coordination over the
9 incident. The ATS develops strategy in conjunction with the Operations Section
10 Chief.

- 11 • **BLM** - *The Interagency Aerial Supervision Guide is policy for BLM. The*
12 *Interagency Aerial Supervision Guide is available online at*
13 *http://www.blm.gov/nifc/st/en/prog/fire/Aviation/aerial_supervision.html*

14 15 **Operational Considerations**

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

24 25 **Policy**

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

29 30 **Aerial Supervision Module Program Training and Qualifications**

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

33 34 **Air Tactical Group Supervisor (ATGS)**

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

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

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

43 44 45 **Operational Considerations**

- 1 • Relief aerial supervision should be ordered for sustained operations to
2 ensure continuous coverage over an incident.
- 3 • Personnel who are performing aerial reconnaissance and detection will not
4 perform aerial supervision duties unless they are fully qualified as an
5 ATGS.
- 6 • Air tactical aircraft must meet the avionics typing requirements listed in the
7 Interagency Aerial Supervision Guide and the pilot must be carded to
8 perform the air tactical mission.
- 9 • Ground resources will maintain consistent communication with Aerial
10 Supervision in order to maximize the safety, effectiveness, and efficiency of
11 aerial operations.

12 13 **Leadplane**

14 A leadplane is a national resource. The *Interagency Aerial Supervision Guide* is
15 agency policy and is available online at
16 http://www.blm.gov/nifc/st/en/prog/fire/Aviation/aerial_supervision.html.
17 Agency policy requires an ASM/or Lead/ATCO to be on order prior to aerial
18 applications over a congested area. Operations may proceed before the ASM/or
19 Lead/ATCO arrives, if communications are established with on-site resources,
20 authorization is granted from the IC, and the line is cleared prior to commencing
21 water/chemical application operations.

22 23 **Smokejumper Pilots**

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

26 27 **Airspace Coordination**

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

35
36 All firefighting aircraft are required to have operative transponders and will use
37 a setting of 1255 when engaged in, or traveling to, firefighting operations
38 (excluding ferry flights), unless given a discrete code by Air Traffic Control
39 (ATC).

40
41 Flight planning and Temporary Flight Restriction (TFR) information on World
42 Aeronautical, Sectional and Global Navigational Charts has been made available
43 at the National Interagency Airspace System website <http://airspace.nifc.gov>.
44 TFRs are updated every 30 minutes during normal business hours 7 days a
45 week. A tactical chart with TFR specific information with incident names,

1 frequencies and altitudes are available. These charts can be found at

2 <http://airspace.nifc.gov/mapping/nifc/index.cfm>

3 Additional references can be found by contacting:

- 4 • **BLM** - *State Aviation Managers, Regional Airspace Coordinator and the*
5 *BLM National Aviation Office Airspace Coordinator.*
- 6 • **NPS** - *Regional Aviation Managers*
- 7 • **FS** - *Regional Aviation Safety Officers, Regional Airspace Coordinators*
8 *and the FS Airspace Program Manager.*
- 9 • **FWS** - *National Aviation Safety and Operations*

10

11 **Flight Request and Approval**

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

23

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

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

29

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

- 38 • **BLM** - *All agency flights shall be approved using an aircraft request/flight*
39 *schedule, USDI form 9400-1a. This form is used to authorize, plan and brief*
40 *the pilot on non-fire flights.*
- 41 • **NPS** - *Reference RM-60, Appendix 3 for agency specific policy.*
- 42 • **FS** - *Refer to FSM 5710.5 for administrative use, FSM 5705 for point-to-*
43 *point and mission use for types of ~~Forest Service~~FS flights.*

44

45 **Mission Flights**

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

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

21
22 Mission flights for fixed-wing aircraft include but are not limited to the
23 following:

- 24 • Water or retardant application
- 25 • Parachute delivery of personnel or cargo
- 26 • Airtanker coordinator operations
- 27 • Takeoff or landing requiring special techniques due to hazardous terrain,
28 obstacles, or surface conditions

29
30 PPE requirements for fire reconnaissance are:

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

33
34 Mission helicopter flights include but are not limited to the following:

- 35 • Flights conducted within 500 feet AGL
- 36 • Water or retardant application
- 37 • Helicopter coordinator and ATGS operations
- 38 • Aerial ignition activities
- 39 • External load operations
- 40 • Rappelling
- 41 • Takeoff or landing requiring special techniques due to hazardous terrain,
42 obstacles, pinnacles, or surface conditions
- 43 • Free-fall cargo
- 44 • Fire reconnaissance

45

1 Flight-Following All Aircraft

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

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

30 Sterile Cockpit All Aircraft

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

40
41 **Exception:** When conducting firefighting missions within 5 miles of an
42 uncontrolled airport, maintain sterile cockpit until departing the traffic pattern
43 and reaching final altitude. Monitor CTAF frequency if feasible while engaged
44 in firefighting activities. Monitor CTAF as soon as practical upon leaving the
45 fire and returning to the uncontrolled airport. When conducting firefighting

- 1 missions within Class B, C, or D airspace, notify dispatch that ATC
- 2 communications will have priority over dispatch communications.