Chapter – 7
Aviation Operations

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

Office of Aviation Services (OAS)

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

National Aviation Program

The BIA, Wildland Fire and Aviation Management program develops Bureau policy, procedures, and standards, and maintains functional oversight and interagency coordination for all aviation activities. The BIA-NIFC office has established two Inter-Regional Aviation Management Offices to provide technical aviation expertise support for Regional, Agency, and field offices. Each of these offices supports Bureau Regions across geographic boundaries. Each of the Inter-Regional offices is staffed by an IRAM and an AOS, both of which are available to provide support for any Region.

The primary goals of each of these positions are to promote aviation safety and cost-effectiveness. The BIA-NIFC NAO supports Bureau aviation activities and missions, including fire suppression, through strategic program guidance, managing aviation programs of national scope, coordination with OAS, and interagency partners. National Office of Fire and Aviation Management (OF&A) has the responsibility and authority, after consultation with Regional FMO's, for funding and acquisition of all fire aircraft, prioritizing the allocation of BIA aircraft on a Bureau wide basis, and approving Regional Office requests to acquire supplemental aircraft resources.

Refer to Indian Affairs Manual; Part 57 for further information on bureau aviation policy and procedures. (Refer to 112 DM 12 for a list of responsibilities.)

Regional Office Level

Regional FMO's are responsible for providing oversight for aircraft hosted in their region. Regional FMO's have the authority and responsibility to approve, with National Office concurrence, acquisition of supplemental aircraft resources within their region. Regional FMO's have the authority to prioritize the allocation, pre-positioning and movement of all aircraft assigned to the BIA within their region. Regional Offices will coordinate with the National Office on movement of their aircraft outside of their region.

Regional Aviation Managers (RAM) are associated with every BIA Region. They implement aviation program objectives and directives to support the BIA mission and each Region's goals. Some Regions may have additional support staff assigned to support aircraft operations and to provide technical expertise. A Regional Aviation Management Plan is required to outline goals of the Region's aviation program and to identify policy and procedures specific to that Region.

Important Note: A Region is not generally authorized to supplement this policy with more restrictive policy or procedures than the national policy, unless the policy or procedure is approved by the National Aviation Office.

Agency/Field Office Level

Agency, Field Managers and staff manage their programs as necessary to conduct their aviation operations safely. Agency Aviation Managers (AAM's) serve as the focal point for the Agency Aviation Program by providing technical expertise and management of aviation resources to support Agency programs. While many agencies have aviation management as a

collateral duty, during periods of intense aviation (i.e.; wildland fire support) activity it is still absolutely critical that aviation oversight be maintained. Assistance from the Regional office, cooperators, resource ordering, Aviation Safety Assistance Team's (ASTAT), are all resources that should be considered when other duties interfere or compete with effective aviation management. Agencies are responsible for hosting, supporting, providing daily management, and dispatching all aircraft assigned to their unit. Agencies have the authority to request additional resources, establish priorities, and make assignments for all aircraft assigned to the BIA within their agency.

AAM's have the responsibility for aviation activities at the local level, including aviation mission planning, risk management and safety, supervision, and evaluation. AAM's assist Line Officers with risk assessment/ management and cost analysis.

All Tribal and agency offices utilizing aircraft should have a current and approved aviation management plan on file.

Aviation Information Resources

There is a significant amount of aviation reference materials available to BIA aviation managers and users. DOI, Bureau and interagency manuals, handbooks, and guides provide both broad policy guidance and specific procedural requirements. Note: In all cases Departmental policy (DM's, OPM's, and bureau policy) will take precedence.

Reference Materials

The DOI 350-354 DM, OPM (Aviation Policy), IAM part 57 (Aviation Management) are the umbrella documents for aviation policy and operations within the Bureau.

The BIA has adopted the *Interagency Helicopter Operations Guide* (IHOG) as its standard for helicopter operations. Wording in the IHOG denotes mandatory, required except for justifiable reasons, and optional compliance. "Must" and "Shall" mean mandatory; "ought" and "should" mean required unless justified; and "may" and 'can" mean recommended.

It is the responsibility of aviation managers and associated personnel (pilots, dispatcher, fire manages, etc.) to obtain necessary policy and guidance documents and become familiar with their contents.

Aviation Managers will act as the focal point to receive and disseminate; safety alerts, instruction memoranda, information bulletins, incident reports, and other guidance or information as the need arises.

Regional and local aviation managers must maintain an up-to-date reference library with all aviation policy and procedural references.

A library with current aviation policy and procedural references will be maintained at all permanent aviation bases, dispatch, and aviation management offices.

Aviation Safety

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

SMS focuses on:
- Emphasis on proactive risk management;
- Promotes a “just” culture;
- Addresses systemic safety concerns;
- Holds the organization accountable;
- Identifies “what” so we can manage the manageable; and
- Communicates the “why” so the culture can learn from mistakes.

The intent of SMS is to improve the aviation culture by increasing hazard identification, reduce risk taking behavior, learn from mistakes and correct procedures before a mishap occurs rather than after the accident.

Duties of Aviation Safety are shared by the NAPM and IRAM’s while the position of Bureau Aviation Safety Manager is vacant.

Risk Assessment and Risk Management

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

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

1. Identify hazards associated with all specified and implied tasks for the mission.

2. Assess hazards to determine potential of occurrence and severity of consequences.

3. Develop controls to mitigate or remove risk, and make decisions based on accepting the least risk for the best benefit.

4. Implement controls - (1) education controls; (2) physical controls; and (3) avoidance controls.

5. Supervise and evaluate - enforce standards and continuously re-evaluate their effectiveness in reducing or removing risk. Ensure that controls are communicated, implemented, and enforced.

How to Properly Refuse Risk (Aviation)

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

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

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

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

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

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

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

Aviation Safety Support

During high aviation activity as in wildfire suppression activity, it is advisable to request, through the BIA Regional and/or National Aviation Office, an ASTAT for helicopter or fixed-wing operations. An ASTAT’s purpose is to enhance risk management, and assist and review aviation operations on wildland fires. They should be requested through the agency chain of command and operates under a DOA from the appropriate National/Regional Aviation Manager(s) or Multi Agency Coordinating Group. Formal written reports will be provided to the appropriate manager(s) as outlined during the in-briefing. An ASTAT may include the following positions:

- Aviation Safety Manager
- Operations Specialist
- Pilot Inspector
- Maintenance Inspector (optional)
- Avionics Inspector (optional)

ASTAT members will be identified by the IRAM or the National Aviation Program Manager and resource ordered by the region or agency.

Aviation Safety Briefing

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

Aviation Hazard

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

- Deviations from policy, procedures, regulations, and instructions;
- Improper hazardous materials handling and/or transport;
- Airspace conflicts/flight following deviation;
- Deviation from planned operations;
- Failure to utilize PPE or ALSE;
- Failure to meet qualification standards or training requirement;
- Extreme environmental conditions;
- Improper ground operations;
- Improper pilot procedures;
- Fuel contamination; and
- Unsafe actions by pilot, air crew, passengers, or support personnel.

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

Aerial Applications of Wildland Fire Chemical Safety

Chapter 12 of the *Interagency Standards for Fire and Fire Aviation Operations* (Red Book) contains information concerning the aerial application of wildland fire chemicals.

SAFECOM

The DOI and the BIA have an incident/hazard reporting form called SAFECOM. The database, available at **https://www.safecom.gov/,** fulfills the AMIS requirements for aviation mishap reporting for DOI agencies. Categories of reports include: accidents, airspace, hazards, incidents, maintenance, mishap prevention, and kudos. The system uses the SAFECOM Form OAS-34 to report any condition, observation, act, maintenance problem, or circumstance with personnel or aircraft that has the potential to cause an aviation-related mishap. The SAFECOM system is not intended for initiating punitive actions. Submitting a SAFECOM is not a substitute for "on-the-spot" correction(s) to a safety concern. It is a tool used to identify, document, track, and correct safety related issues. A SAFECOM does not replace the requirement for initiating an accident or incident report.

Any individual (including vendors/cooperators) with knowledge of an incident/hazard should complete a SAFECOM. The SAFECOM form, including attachments and pictures, should be entered directly on the internet at **https://www.safecom.gov/** or faxed to the Department of the Interior's Office of Aviation Services, Aviation Safety (208)433-5069 ATTN: SAFETY. Electronic cc copies are automatically forwarded to the National, Regional, State, and Unit Aviation Managers.

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

Aircraft Incidents/Accidents

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

Low-level Flight Operations

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

- Smokejumper/Para-cargo;
- ASM and Lead/ATCO operations; and
- Retardant, water, and foam application.

Operational Procedures

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

Congested Area Flight Operations

Airtankers can drop retardant in congested areas under DOI authority given in *FAR Part 137*. When such operations are necessary, they may be authorized subject to these limitations:

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

Airspace Coordination

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

Some State and FS units have MOU's with local military airspace authorities for airspace coordination. Briefings from AAM's are crucial to ensure that any local airspace information is coordinated before flight.

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

Additional coordination information can be found in the *National Aviation Plan Chapter 8*.

Flight Request and Approval

Bureau flights will be requested and documented using the process defined in the Regional or Agency Aviation Plans. As a minimum flight management procedures will follow the *National Mobilization Guide Chapter 20, Flight Management Procedures.* The BLM *Aircraft Flight Request/Schedule (9400-1A)* form is one example which may be used.

Point-to-Point Flights

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

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

Mission Flights

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

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

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

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

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

- Flights conducted within 500 feet AGL;
- Water or retardant application;
- Helicopter coordinator and ATGS operations;
- Aerial ignition activities;
- External load operations;
- Rappelling;
- Takeoff or landing requiring special techniques due to hazardous terrain, obstacles, pinnacles, or surface conditions;
- Free-fall cargo; and
- Fire reconnaissance.

Flight-Following All Aircraft

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

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

Sterile Cockpit All Aircraft

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

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

Interagency Interim Flight and Duty Limitations/Aviation Stand Downs

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

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

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

Interim Flight and Duty Limitations Implementation

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

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

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

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

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

Phase 2 - Interim Duty Limitations

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

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

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

Phase 3 - Interim Duty Limitations

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

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

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

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

Aviation Assets

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

- ***All BIA acquired aircraft (exclusive use, On-Call, and CWN) are available to move to areas of greatest Bureau need, thereby maximizing efficiency and effectiveness. Specific authorities and responsibilities for Agency/Regional and National Offices are outlined earlier in this chapter. Offices are expected to adhere to procedures established in the National Aviation Plan for acquisition, use and reporting.***

Helitack

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

Organization - Crew Size

The standard exclusive-use helitack crew size for a Type 3 helicopter is a minimum of seven personnel (supervisor, assistant, squad boss, and four crew members).

Daily staffing shall comply with the *IHOG Ch. 2, Chart 2-4, Minimum Daily staffing Requirements for Fire Helicopters.*

Operational Procedures

The IHOG NFES 1885 is policy for helicopter operations.

Communication

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

Transportation

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

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

Training and Experience Requirements

All helitack members will meet fire qualifications as prescribed by the *National Wildfire Coordinating Group (NWCG) 310-1* and agency manual requirements. ***Appendix 7-3*** is a chart which establishes experience and training requirements for Exclusive Use, Fire Helicopter Crew Positions.

Exception to these minimum crew staffing standards must be approved by the National Aviation Program Manager.

Physical Fitness Standards

Helitack personnel must meet the physical fitness requirements for arduous assignments. It is recommended they meet the fitness requirements typical of a Type 1 crew.

Helicopter Rappel & Cargo Let-Down

Any rappel or cargo let-down programs must be approved by the National Aviation Program Manager.

Personnel involved in an Interagency Rappel Program must have RAM approval.

All rappel and cargo let-down operations will follow the *Interagency Helicopter Rappel Guide*, as policy. Any exemption to the guide must be requested by the program through the region for approval by the National Aviation Office.

Aerial Ignition

The Interagency Aerial Ignition Guide is policy for all aerial ignition activities.

Fire Chemical Avoidance Areas

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

Aerial Supervision

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

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

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

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

Air Tactical Group Supervisor (ATGS)

The ATGS manages incident airspace and controls incident air traffic. Specific duties and responsibilities are outlined in the *Fireline Handbook (PMS 410-1)* and the *Interagency Aerial Supervision Guide*. The ATGS reports to the AOBD, or in the absence of the AOBD, to the OSC, or in the absence of the OSC, to the IC.

The following attire is required for all interagency ATGS operations:

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

Operational Considerations

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

Leadplane

A leadplane is a national shared resource. The *Interagency Aerial Supervision Guide* is agency policy and is available online at **http://www.blm.gov/nifc/st/en/prog/fire/Aviation/aerial_supervision.html.**

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

Aerial Supervision Module (ASM)

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

The ATP is primarily responsible for aircraft coordination over the incident. The ATS develops strategy in conjunction with the OSC.

The Interagency Aerial Supervision Guide is policy for BIA. *The Interagency Aerial Supervision Guide is available online at* **http://www.nwcg.gov/pms/pubs/pms505.pdf.**

Operational Considerations

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

Policy

Only those individuals certified and authorized by the BIA-National Aviation Office will function as an ATS in an ASM mission profile.

Aerial Supervision Module Program Training and Qualifications

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

Reconnaissance or Patrol Flights

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

Airtankers

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

For aviation safety and policy concerning wildland fire chemicals see *Interagency Standards for Fire and Fire Aviation Operations (Red Book) Chapter 12 (Suppression Chemicals and Delivery Systems).*

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

- *The requirements of the DM, IAM 57and National Aviation plan.*

Categories

Airtanker types are distinguished by their load capacity:

- Very Large Air Tankers (VLAT)- more than 10,000 gallons.
- Type 1 - 3,000 to 9,999 gallons.
- Type 2 - 1,800 to 2,999 gallons.
- Type 3 - 800 to 1,799 gallons (includes single engine air tankers, and CL-215/415 Water Scoopers).
- Type 4 – less than 800 gallons (single engine airtankers).

Airtanker Base Operations

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

Airtanker Base Personnel

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

Startup/Cutoff Time for Multi Engine Airtankers

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

Single Engine Airtankers

Single Engine Airtanker (SEAT) Operations, Procedures, and Safety
The *Interagency SEAT Operating Guide (*ISOG*)* (NFES #1844) defines operating standards and is policy for both the DOI and FS.

SEAT Manager Position

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

Operational Procedures

Using SEAT's in conjunction with other aircraft over an incident is standard practice. Agency or geographical area mobilization guides may specify additional procedures and limitations.

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

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

Smokejumper Pilots

The *Interagency Smokejumper Pilot Operations Guide* serves as policy for smokejumper pilot qualifications, training, and operations.

Military or National Guard Helicopters and Pilots

The *Military Use Handbook (NFES 2175)* will be used when planning or conducting aviation operations involving regular military aircraft. Ordering military resources is done through the NICC.

National Guard resources are utilized through local or State MOU with the USFS State and Private Forestry. BIA use of National Guard resources requires additional approval by the NAO and OAS.

Modular Airborne Fire Fighting System (MAFFS)

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

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APPENDIX 7-1
Aerial Supervision

Situation	Lead/ATCO/ ASM1	Ref	ATGS	Ref
Air tanker not IA rated	Required	1		
MAFFS	Required	1		
Retardant drops in congested areas	Order	1	May use if no Lead/ATCO/ ASM1	
Level 2 rated SEAT operating over an incident with more than one (1) other tactical aircraft on scene	Required if no ATGS	1	Required if no Lead/ATCO/ ASM1	1
Foreign Government air tankers	Required if no ATGS	1	Required if no Lead/ATCO/ ASM1	1
Retardant drops conducted between 30 minutes prior to and 30 minutes after sunrise, or 30 minutes prior to sunset to 30 minutes after sunset	Required if no ATGS	1, 2	Required if no Lead/ATCO/ ASM1	1, 2
4 or more air tankers assigned	Order	1	Order	1
2 or more helicopters with 2 or more air tankers over an incident	Order	1	Order	1
Periods of marginal weather, poor visibility or turbulence	Order	1	Order	1
2 or more air tankers over an incident	Order	1	Order if no Lead/ATCO/ ASM1	3
When requested by air tanker or ATGS	Required	1	Required	
Smokejumper or paracargo aircraft with 2 or more air tankers over an incident	Order if no ATGS	1	Order if no Lead/ATCO/ ASM1	1, 4
Incident has two or more branches			Order	1, 4

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APPENDIX 7-2
SAFECOM

SAFECOM AVIATION SAFETY COMMUNIQUE	Reported By (Optional) Name E-Mail Phone Cell Phone Pager Organization Date

EVENT			
Date	Local Time	Injuries?	Damage?
Location	State		
Agency Involved		Other	

MISSION	
Type	Other
Procurement	Other
Persons Onboard Special Use?	Hazardous Materials Onboard?
Departure Point	Destination

AIRCRAFT		
Tail Number	Manufacturer	Model
Owner/Operator		Pilot

NARRATIVE (Please provide a brief explanation of the event.)

CORRECTIVE ACTIONS

Submit Instructions:

1. Review and correct entries
2. Select a Send to Agency
3. STOP!! If you want a copy of this Safecom you must Print NOW.
   To Print this Safecom, use the Print button on your web browser.
4. LASTLY press the Submit button.

Clear Form Send to Agency: Submit

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APPENDIX 7-3
BIA Exclusive Use Fire Helicopter Module Positions

Position[1]	Experience Required[2]	Training Required[3]	Recurrent Training Required[7]	Target Training[3]		Target Quals[4]
Fire Helicopter Crew Supervisor[8] FHCS	HMGB ICT4 HEB2		RT-372[5] A-219 A-110 COR[7 8]	S-300 S-390 S-378 L-380 L-381		ICT3 HEB1 HLCO ASGS
Fire Helicopter Assistant Crew Supervisor FHAS	HMGB ICT4	S-371[7]	RT-372[5] A-219 A0110	I-300 S-381 COR[7 8] L-380		HEB2 ICT3 COR[8]
Fire Helicopter SquadLeader FHSL	FFT1 ICT5 HECM	S-290	S-271[6] A-219 A-110	I-200 S-200 S-215 S-230 S-234	S-260 S-270 S-371 S-372 COR L-280	DECK ICT4 HMGB HEB2(T)
Fire Helicopter Senior Firefighter FHSF	FFT1 HECM	S-290	S-271[6] A-219 A-110			ICT5 ABRO TLOC
Fire Helicopter Crew Member FHCM	FFT2			S-131 S-133 S-271[6 7] A-110	A-219 S-211 S-212 S-290	HECM FFT1 ABRO TLOC

Exclusive Use Helicopter Position Footnotes:

1) All exclusive use fire helicopter positions require an arduous rating and RT-130 annually.
2) Minimum experience and qualification required prior to performing in the exclusive use position. Task books must be completed and entered in IQCS.
3) Recommended training, which augments the current position or prepares for advancement.
4) Recommended qualifications, which augments the current position or prepares for advancement.
5) After completing S-372, must attend an Interagency Helicopter Manager Workshop (RT-372) once every three years.

6) After completing S-271, must receive helicopter operations refresher and /or serve as S-271 instructor annually.
7) A condition of employment is required in order to meet NWCG position and/or training currency as identified by the Hiring Official and specified in an Individual Development Plan.
8) FHCS acts as Contracting Officer's Representative (COR), FHAS acts as Project Inspector (PI) for the Exclusive Use Helicopter Contract and meets DOI and BIA Acquisition Management certification requirements.