Chapter 16
Aviation Operations and Resources

Purpose and Scope
Aviation resources are one of a number of tools available to accomplish fire-related land management objectives.
Aviation use must be prioritized based on management objectives and probability of success.
The effect of aviation resources on a fire is directly proportional to the speed at which the resource(s) can initially engage the fire, the effective capacity of the aircraft, and the deployment of ground resources.
These factors are magnified by flexibility in prioritization, mobility, positioning, and utilization of the versatility of many types of aircraft.
In addition to the priorities listed in the National Interagency Mobilization Guide, chapter 10 under headings “Total Mobility” and “Priorities”, mobilization of aircraft should be based on optimizing the use of exclusive-use contracted aircraft. Call-when-needed aircraft will be the last ordered and the first released. The exception to this is use for initial action response and capability.
Risk management is a necessary requirement for the use of any aviation resource. The risk management process must include risk to ground resources, and the risk of not performing the mission, as well as the risk to the aircrew.

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

Bureau of Land Management (BLM)
National Aviation Office (NAO) – The NAO develops BLM policy, procedures, and standards. It also maintains functional oversight, and facilitates interagency coordination for all aviation activities. The principal goals are safety and cost-effectiveness. The NAO supports BLM aviation activities and missions. This includes fire suppression, through strategic program guidance, managing aviation programs of national scope, coordination with OAS, and interagency partners. The Fire and Aviation Directorate has the responsibility and authority, after consultation with state fire management officers, for funding and acquisition of all fire aircraft, prioritizing the allocation of BLM aircraft on a bureau-wide basis, and approving state office requests to acquire supplemental
aircraft resources. Refer to BLM National Aviation Plan and Manual 9400 for aviation policy and guides. Refer to 112 DM 12 for a list of responsibilities.

**National Park Service (NPS)**
The Branch of Aviation develops NPS policy, procedures, and standards for all fire and non-fire aviation activities. This includes providing guidance on fire suppression, as well as standardizing aviation programs at the national level, coordinating with OAS and interagency partners. The Branch of Aviation also has responsibility for operational execution of the aviation program. The branch ensures personnel receive aviation training, provides internal training for fleet pilots, has responsibility for quality assurance and quality control of park aviation programs and provides fiscal analysis to determine numbers and types of aircraft for the bureau.

**Bureau of Indian Affairs (BIA)**
The NAO is responsible for supporting all BIA aviation programs through an active and professional aviation organization that:

- Develops and coordinates efficient aviation policy and management processes;
- Provides guidance for aviation programmatic and operational risk management;
- Leads aviation safety assurance and promotion programs;
- Provides aircraft acquisition support as specified by Indian Affairs management objectives; and
- Develops and promotes a skilled aviation management workforce.

**National Office – U.S. Department of Agriculture Forest Service (FS)**
The FS has responsibility for all aspects of its aviation program, including aviation policy and budget development, aircraft acquisition, aircraft operations, aviation safety and risk management, budget, pilot standardization, and airworthiness. In addition, the FS has operational responsibility for functional oversight of aviation assets and facilities, operational coordination and utilization, accident investigation, and aircraft and pilot inspection.

The assistant director (AD), aviation, is responsible to the director of fire and aviation management for the management and supervision of the national headquarters office in Washington, D.C., and the national office in Boise. The AD, aviation provides leadership, support and coordination for national and regional aviation programs and operations. Refer to FSM 5704 for list of responsibilities.

The branch chief, aviation operations reports to the AD, aviation, and is responsible for national aviation operational management and oversight. This operational management and oversight includes authority to provide direction to coordination centers regarding the mobilization and reassignment of USDA contracted national aviation resources. The branch chief may also delegate this authority to national aircraft coordinators or the FS aviation duty officer (ADO).
The branch chief, pilot standardization reports to the AD, aviation, and is responsible for pilot and aircrew standardization and approval of agency and contracted pilot personnel.

The branch chief, airworthiness reports to the AD, aviation, and is responsible for national aircraft airworthiness and maintenance program management and oversight.

The branch chief, aviation business operations reports to the AD, aviation and is responsible for policy maintenance and development, budget development, and planning.

The aviation strategic planner reports to the AD, aviation and is responsible for strategic planning and reporting.

The branch chief, aviation safety management systems reports to the AD aviation, and is responsible for oversight, coordination and direction of aviation safety management system functions.

State/Regional Office

- **BLM** – State FMOs are responsible for providing oversight for aircraft hosted in their state. State FMOs have the authority and responsibility to approve, with national office concurrence, acquisition of supplemental aircraft resources within their state. State FMOs have the authority to prioritize the allocation, pre-positioning and movement of all aircraft assigned to the BLM within their state. State offices will coordinate with the national office on movement of their aircraft outside of their state. A state aviation manager (SAM) is located in each state office. SAMs are delegated as the contracting officers representative (COR) for all exclusive use aircraft hosted by their state. SAMs implement aviation program objectives and directives to support the agency mission and state objectives. A state aviation plan is required to outline the state aviation program objectives and to identify state-specific policy and procedures.

- **NPS** – A regional aviation manager (RAM) is designated for each region. RAMs oversee the tactical execution of their region’s aviation programs, provide technical expertise and aviation safety oversight of the parks in their geographic area. RAMs observe regional aviation activities and provide liaison with the national branch of aviation and other agencies as appropriate. A regional aviation operations and management plan is required to outline the region’s aviation program objectives and to identify region-specific policy and procedures.

- **FWS** – A regional aviation manager (RAM) is designated for each region. RAMs implement aviation program objectives and directives to support the agency mission and region objectives. Several regions have additional support staff, and/or pilots assigned to support aircraft operations and to provide technical expertise. A regional aviation operations and management plan is required to outline the region’s aviation program objectives and to identify region-specific policy and procedures.
FS – Regional aviation officers (RAOs) are responsible for directing and managing regional aviation programs in accordance with the national and regional aviation management plans, and applicable agency policy direction. (Refer to FSM 5700 and FSH 5709.16 for list of responsibilities). RAOs report to director of fire and aviation for their specific region. Regional aviation safety managers (RASMs) are responsible for aviation safety in their respective regions, and work closely with the RAO to ensure aviation safety is an organizational priority (refer to FSM 5700 and FSH 5709.16 for list of responsibilities). Most regions have additional aviation technical specialists and pilots who help manage and oversee the regional aviation programs. Most regions also have aviation maintenance inspectors, fixed-wing program managers, helicopter program managers, helicopter operations specialists, inspector pilots, etc.

BIA –
- Provides oversight and approval of the acquisition and use of BIA aircraft within their region;
- Has the authority to prioritize the allocation, reallocation, pre-positioning and movement of all aircraft assigned to the BIA within their region. All movements will be coordinated with the NAO;
- Manages and provides oversight of all BIA aircraft assigned to the region;
- Coordinates with agencies, geographical coordination centers, NAO aircraft coordinators on aviation resources assigned to their region;
- Ensures all region assigned aviation resources are effectively utilized as efficient BIA resources;
- Delegates or designates the RAM, who ensures appropriate aviation roles and positions are filled by qualified personnel;
- Ensures all aviation employees meet DOI and BIA training requirements; and
- Ensures Inter-agency Agreement (IAA) between region and Office of Aviation Services (OAS) Acquisition Services Directorate (ASD) is valid and in force. Coordinate modifications to IAA as projects and missions dictate.

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

BLM – Unit aviation managers (UAMs) serve as the focal point for the unit aviation program by providing technical expertise and management of aviation resources to support field office/district programs. Field/district offices are responsible for hosting, supporting, providing daily management, and dispatching all aircraft assigned to their unit. Field/district offices have the authority to request additional resources; to establish priorities, and make assignments for all aircraft assigned to the BLM within their unit or zone.
• **NPS** – Unit or park aviation managers have the responsibility to provide aviation expertise and management of aviation resources at each park unit. Organizational responsibility refer to DO-60, RM-60.

• **FS** – Unit aviation officers (UAOs)/forest aviation officers (FAOs) have the responsibility for aviation activities at the local level, including aviation mission planning, risk management and safety, supervision, and evaluation. UAOs/FAOs assist line officers with risk assessment/management and cost analysis. Refer to FSM 5700 Zero Code for a list of responsibilities.

• **BIA** – The AAM/UAM manages the unit aviation program by providing technical and management direction of aviation resources to support Agency programs. The AAM/UAM has functional responsibility in the following areas:
  - The AAM/UAM is authorized to provide for daily management of all aviation resources;
  - Ensures agency flight compliance with USDI/BIA/region and agency policies and regulations;
  - Develop and implement the agency/unit aviation management plan, as well as specific operating plans for other aviation programs (i.e., helitack, SEAT, and aerial supervision);
  - Ensures completion of the Project Aviation Safety Plan (PASP) with appropriate approvals/briefing of line officer;
  - Ensures that appropriate training is provided to aviation users and supervisors. Monitors aviation training compliance for the Agency/Unit;
  - Designates and assigns an alternate aviation manager when needed;
  - Ensures that visiting aircrews have received flight crew briefing/aviation orientation and guides;
  - Confirms DOI/BIA/OMB requirements are met and completes the cost analysis requirements and schedules the flight with a qualified vendor;
  - Ensures the accuracy of the Aircraft Use Report. Processes and maintains copies and records documenting the flight as required by the DOI manual;
  - Confirms that a qualified flight manager is assigned to all project/resource flights;
  - Is responsible for the distribution and use of the Aviation Boundary Plan/Checklist if one is in place;
  - Ensures Agency/Unit Aviation Security Plan is current and implemented in accordance with DOI policy;
  - May serve as the COR for BIA exclusive use aircraft on their agency/unit if aircraft manager is not current or qualified as such;
  - Authorized to order approved aircraft utilizing agency procurement documents and procedures. Also establish priorities and allocate all aircraft assigned to the BIA within their unit or zone; and
  - Maintains an up to date aviation reference library with all applicable aviation policy and procedural references.
Aviation Information Resources

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

- **BLM** – 9400 Manual appendix 1, National Aviation Plan (NAP) and applicable aviation guides as referenced in the NAP.
- **FS** – FSM 5700, FSH 5709.16 and applicable aviation guides when approved by the agency and referenced in policy.
- **BIA** – BIA National Aviation Plan (NAP) and applicable aviation guides as referenced in the NAP.

Safety alerts, operational alerts, instruction memoranda, information bulletins, incident reports, and other guidance or information are issued as needed. An up-to-date library with aviation policy and procedural references will be maintained at all permanent aviation bases, dispatch, and aviation management offices.

Aviation Safety

The FS, BLM, and BIA have adopted Safety Management Systems (SMS) as the foundation for the aviation safety program. The four pillars of SMS are Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion. SMS is the standard for aviation 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. Additionally, the current approved US Forest Service Aviation SMS Guide is available at https://www.fs.fed.us/managing-land/fire.

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.

- **FS** – FSM 5700. Employees shall use an operational risk management process to evaluate the risk and hazards prior to every flight.

**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 (IRPG).

Supervisors will notify the air operations branch director (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

Aviation Safety and Technical Assistance Team (ASTAT)

During high levels of aviation activity, it is advisable to request an Aviation
Safety and Technical Assistance Team (ASTAT). An ASTAT’s purpose is to
enhance risk management, efficiency, effectiveness, and provide technical
assistance while reviewing aviation operations. If an ASTAT cannot be filled
internally, the request may be placed with NICC through established ordering
channels using individual overhead requests. An ASTAT should operate under a
delegation of authority from the appropriate state/regional aviation manager(s)
or Multi Agency Coordinating Group. If requested by the home unit/region,
formal written reports will be provided to appropriate manager(s) as outlined at
the in-brief. A team should be developed to fit the need of the requesting unit
and may consist of the following:

• Aviation safety manager;
• Operations specialist (helicopter and/or fixed wing);
• Pilot inspector;
• Maintenance inspector;
• Avionics inspector (optional); and
• Aircraft dispatcher (optional).

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 NWCG Standards for Helicopter Operations.

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 Aviation Life Support Equipment (ALSE);
• Failure to meet qualification standards or training requirement;
• Extreme environmental conditions;
• Improper hazardous materials handling and/or transport;
• Deviation from planned operations;
• Failure to utilize PPE or Aviation Life Support Equipment (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 (NWCG Standards for Helicopter Operations).

Aerial Applications of Wildland Fire Chemical Safety
Chapter 12 contains information concerning the aerial application of wildland fire chemicals.

SAFECOM

The DOI and the FS have an incident/hazard reporting form called The Aviation Safety Communiqué (SAFECOM). The database, available at https://www.safecom.gov/, fulfills the Aviation Mishap Information System (AMIS) requirements for aviation mishap reporting for the DOI agencies and the FS. Categories of reports include: Accidents, Airspace, Hazards, Incidents, Maintenance, Mishap Prevention, and Kudos. The system uses the SAFECOM Form OAS-34 or FS-5700-14 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 contact the OAS or FS representative listed on the SAFECOM “About” page at https://www.safecom.gov/about. 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 FS or OAS and DOI 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.

### Unmanned Aircraft Systems

#### UAS Incursion Reporting Protocol
- Fire personnel should immediately notify the ATGS if overhead, aircraft over the incident, the IC and dispatch. Dispatch should report all unauthorized UAS or drone activity immediately via SAFECOM (https://www.safecom.gov/) and to the Federal Aviation Administration.

  Reporting key points:
  - Report UAS information (location, color, size, altitude, flight pattern), if known.
  - Dispatch centers should report incursions to the nearest Air Route Traffic Control Center (ARTCC) or follow geographic area protocol.

#### Policy
- UAS fire operations shall be conducted under the provisions of the NWCG Standards for Fire Unmanned Aircraft Systems Operations (PMS 515).
- When UAS are flown for USFS/DOI work or benefit, Federal Aviation Administration (FAA), USFS, and DOI regulations apply.
- All aircraft (to include UAS) purchase, lease, or acquisition must follow department procurement policy and procedures.
- All aircraft and pilots employed by the USFS or DOI agencies shall be credentialed in accordance with departmental policy.
- UAS flights under USFS operational control must adhere to USFS policy and regulations regarding their use. Guidance can be found in FSM 5700 Zero Code, the USFS National Aviation Safety and Management Plan and at https://www.fs.fed.us/managing-land/fire/aviation/uas.
- UAS flights under DOI operational control must adhere to DOI and agency specific policy and regulations regarding their use. Guidance can be found in the Departmental Manual, Parts 350-353, and Operational Procedures Memorandum 11 at https://www.doi.gov/aviation/library/opm.
- UAS procured/owned/operated by cooperating agencies (state, local, and International) may be utilized on federally-managed fires when cooperative agreements are in place and the aircraft and pilot have been approved by letter nationally or regionally.
- UAS flights conducted by non-participatory entities (e.g., media) must adhere to FAA regulations.
• A Special Government Interest Waiver (SGI) must be issued for beyond
visual line of sight (BVLOS) operations within a TFR. SGI requests shall be
routed through the UAS Coordinator at 208-387-5335.

Personnel
• Four UAS positions are listed in the PMS 310-1:
  ○ Unmanned aircraft system pilot (UASP)
  ○ Unmanned aircraft system, data specialist (UASD)
  ○ Unmanned aircraft system, manager (UASM)
  ○ Unmanned aircraft system, module leader (UASL)

Crew Composition
• UAS operations are typically conducted under a crew (module) concept.
• Typical module configuration:
  ○ Agency operated systems (Type 3 or 4): UASP and UASD
  ○ Contract systems (Type 1 or 2): UASM and UASD
  ○ Span of control for multiple UAS operations on the same incident can
    be mitigated with UASL.

Ordering
• UAS personnel are ordered through established dispatch channels.
• Agency-owned UAS should be designated by make, model, and call sign in
  the “Special Needs” section of the resource order.
• Federally contracted exclusive use and CWN UAS are national resources.
  Geographic areas utilizing them will make them available for fires on a
  priority basis.

Operations
• UAS flight crews utilize established procedures (e.g., Fire Traffic Area) for
  coordinating flights with aerial supervision/on-scene aircraft.
• Large UAS (typically type 1 and 2) will launch and recover from a “Launch
  and Recovery Zone” which should be designated on incident aviation
  planning maps.
• Small (typically type 4) UAS are fireline portable and flights will be
  conducted through established procedures.

Key Points
• UAS is an effective tool for situational awareness and data collection.
  Determine the data objective before ordering the resource and flying the
  mission.
• UAS ICS types are listed in the NWCG Standards for Fire Unmanned
  Aircraft Systems Operations (PMS 515).
• UAS training, aircraft, sensors, and capabilities are listed on the Interagency
  Fire UAS Subcommittee website (see below).
• Personally owned UAS or model aircraft must not be used by federal
  agencies or their employees for interagency fire use.
• Individuals who are determined to have interfered with wildland fire operations may be subject to civil penalties and criminal prosecution.

**Additional Information**


- **FAA** – https://www.faa.gov/uas
- **DOI** – https://www.doi.gov/aviation/uas
- **BLM** – https://uas.nifc.gov/
- **FS** – https://www.fs.fed.us/managing-land/fire/aviation/uas

**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. The *NWCG Standards for Airspace Coordination* (https://www.nwcg.gov/publications/520) provides direction and procedures for airspace coordination. Additional guidance may be found in the *National Interagency Mobilization Guide* and supplemented by local mobilization guides.

- **FS** – Refer to FSH 5709.16, chapter 30 for additional airspace information.

An airspace coordinator (ASCO) should be ordered when incident aviation activity is widespread and involves a number of complex TFRs, complex airspace is involved, or difficult airspace conflict resolutions exist with various agencies.

Airspace deconfliction is performed for both emergency and non-emergency aviation activities.

Some BLM, BIA, state and FS units have memorandums of understanding (MOUs) with local military airspace authorities for airspace coordination. Briefings from unit aviation managers/officers (UAM/UAO) 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 at: https://www.nwcg.gov/committees/interagency-airspace-subcommittee. See “Roster” for agency members. Additional airspace coordination can be found by contacting:

- **BLM** – State aviation managers, national airspace program manager
- **NPS** – Regional aviation managers
- **FWS** – National aviation safety specialist
- **FS** – National airspace program manager
- **BIA** – Regional aviation managers
Flight Request and Approval

- **NPS** – Reference RM 60, appendix 3 and 4.
- **FS** – Refer to FSM 5709.16, chapter 30 for all flights.

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 above ground level (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).

- **FS** – Refer to FSH 5709.16 chapter 30 and the Forest Service Administrative Use of Aircraft Desk Reference.
- **BIA** – Reference the BIA National Aviation Plan.

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; short-haul; single-skid, toe-in, and hover exit/entry (STEP) procedures; hoist).

- **PPE** is required for any fixed wing mission flight conducted below 500’ AGL.
  - **DOI** – Flight helmets may not be required for multi-engine airtanker crews, smokejumper pilots and Leadplane/ASM flight/aircrew members. Note: DOI requires a helmet for all special use missions 500 feet and below unless a waiver is obtained per the ALSE Handbook. Refer to agency aviation policy to determine if ALSE waivers are in place for your specific mission.
  - **FS** – USFS does not require flight helmets for fixed wing special use missions.
- Reference ALSE Handbook for all PPE requirements for special use flights.
• 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.
  ○ FS – Special Use Mission Flight is any flight that is not point-to-point. Special use mission flights require special pilot endorsements, flight evaluations, training, and/or specialized aircraft equipment. For all special use mission flights, all pilots and aircraft must be specifically approved in writing for that flight.

Mission flights for fixed-wing aircraft include but are not limited to the following:
• Water or retardant application;
• Parachute delivery of personnel or cargo;
• Leadplane/ASM/air tanker operations;
• Takeoff or landing requiring special techniques due to hazardous terrain, obstacles, or surface conditions; and
• Aerial supervision.

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 to include STEP – (Single Skid/Toe-In/Exit-Entry Procedure);
• Free-fall cargo;
• Fire reconnaissance;
• Short-haul operations; and
• Night helicopter operations.

**Low-level Flight Operations**

The only fixed-wing aircraft missions authorized for low-level fire operations are:
• Smokejumper/para-cargo;
• Aerial supervision module (ASM) and lead operations; and
• Aerial dispensing of retardant, water enhancers and water.

**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.
Congested Area Flight Operations

Airtankers can drop retardant in congested areas under DOI authority given in 14 CFR Part 137.

FS authority is granted under exemption 392, from 14 CFR Part 91.119 as referenced in FSH 5709.16, chapter 30. 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 city, rural fire department, county, state, or federal fire suppression agency;
- An ASM/leadplane 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 leadplane, 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.

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 NWCG Standards for Helicopter Operations.

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.

<table>
<thead>
<tr>
<th>Interagency Interim Flight and Duty Limitations/Aviation Stand Downs</th>
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</table>
| 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. |
| 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). |

**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, e.g., Northwest, Great Basin.

Interim flight and duty limitations are written to apply to federal contract
resources. States may apply them if they so choose. The interim flight and duty
limitations can apply to agency pilots, but additional days off must be
coordinated with the agency pilot’s supervisor and must follow federal pay and
leave regulations.
Phase 1 – Standard Flight and Duty Limitations (Abbreviated Summary)

- 14-hour maximum duty day;
- 8 hours maximum daily flight time for mission flights;
- 10 hours for point-to-point, with a 2 pilot crew;
- A maximum of 42 hours flight time during any consecutive 6-day period.
  - When a pilot acquires 36 or more flight hours in a consecutive 6-day period, the pilot shall be given the following day off. A new 6-day cycle shall begin upon return from any day off;
- Minimum of 10 hours uninterrupted time off (rest) between duty periods; and
- Two days off within any 14-day period.

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/maintenance crew members for fatigue. This authority is currently provided for in agency direction and contract specifications. Aviation managers should consider the following actions:

- Any tactical aircraft flight crew member (air tanker, helicopter, ASM/leadplane, SEAT or air attack) may request an additional day off in conjunction with their normally scheduled day(s) off.
- The additional day off may be granted when requested. Flight crews are encouraged to honestly assess their fatigue level and request an additional day off if they believe it is needed.
- Aircraft availability will be paid when this occurs regardless of whether a relief crew is provided or not.
- When an additional day off is granted, document this in the remarks section of the aircraft payment document.
- In order to assure sufficient coverage, additional days off will need to be coordinated within the currently assigned GACC and communicated to national aviation managers. Coordinate with your aviation managers, contracting officers and dispatch organizations to implement these actions.

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 14-day period. Crews on a 12-and-2 schedule shall have 3 consecutive days off (11-and-3). Flight crews on 6-and-1 schedules shall work an alternating weekly schedule of 5 days on, 2 days off, then 6 days on and one 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 12 consecutive hours of uninterrupted rest (off duty) during each duty day cycle. The standard duty day shall be no longer than 12 hours, except a crew duty day extension shall not exceed a cumulative 14-hour duty day. The next flight crew rest period shall then be adjusted to equal the extended duty day; i.e., 13-hour duty day, 13 hours rest; 14-hour duty day, 14 hours rest. Extended duty day applies only to completion of a mission. In no case may standby be extended beyond the 12-hour duty day.

Double crews (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., 2 days on, 1 day off, 7 days on, 7 days off, or 12 days on, 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, short-haul, aerial supervision (ATGS, HLCO, leadplane, and ASM), large (multi-engine) airtankers, very large airtankers (VLATs), single engine airtankers (SEATs), and smokejumpers.

- **BLM** – All BLM 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 field/state and national offices are outlined earlier in this chapter. Offices are expected to adhere to procedures established in the BLM National Aviation Plan for both acquisition and use reporting.

- **BLM** – Awaiting a resource order should not be allowed to affect the response time for initial attack mobilization. Initial attack aircraft may be launched to new incidents with just the location, bearing, distance and flight following frequency. All other pertinent information will be provided to aircrews while en route. See the BLM National Aviation Plan, 3.17.1, for additional information.

- **NPS** – All NPS fire funded aircraft (fleet, 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 park, regional and national offices are outlined earlier in this chapter.
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- **FS** – All FS aircraft (agency-owned, exclusive use, leased and CWN) are available to move to areas of greatest agency need, thereby maximizing efficiency and effectiveness. Forest Service units are expected to adhere to procedures established in policy for acquisition and use reporting.

- **BIA** – 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 regional/agencies and national offices are outlined in the National Aviation Plan for both acquisition and use reporting.

**Helitack**

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

**Organization – Crew Size**

- **BLM** – The minimum crew size for a BLM exclusive-use Type 3 helicopter is seven personnel. The minimum crew size for a BLM exclusive-use Type 2 helicopter is ten personnel. All BLM exclusive-use crews will consist of key positions including; supervisor, assistant, squad boss, and crew members. The BLM states may establish larger crew size and standards for their exclusive use helicopter crews based on program need. Any increase in crew size will be documented in the respective state aviation plan. BLM helicopters operated in Alaska need only be staffed with a qualified helicopter manager (HMGB).

- **NPS** – Helicopter exclusive-use modules will consist of a minimum of eight fire funded personnel. The NPS regions may establish larger crew size and standards for their exclusive use helicopter crews based on the need for an all hazard component (Fire, SAR, law enforcement, and EMT). Exception to minimum helicopter crew staffing standards must be approved by the National Aviation Office. NPS helicopters operated in Alaska need only be staffed with a qualified helicopter manager (HMGB).

- **FS** – Exclusive use helitack crew sizes will satisfy the FSM 5700, chapter 30, Helicopter Minimum Staffing requirements. At such time national crew size standards are established, the applicable national standard must be satisfied. Any deviation from the standard and the reason for the deviation must be found acceptable to the branch chief of aviation operations. Experience requirements for exclusive-use helicopter positions are listed in FSFAQG, chapter 4.

- **BIA** – All helicopter personnel responsibilities are outlined in the NWCG Standards for Helicopter Operations. CWN helitack training and currency requirements are contained in the PMS 310-1. Each region hosting exclusive-use helicopters is responsible for providing essential management, overhead, equipment, facilities and the resources necessary to fully support the helitack crew. Host regions are encouraged to increase helitack crew size minimum requirements to enhance operational efficiency. Recommended minimum staffing levels:
Operational Procedures

The NWCG Standards for Helicopter Operations (PMS 510) is policy for helicopter operations.

Helibase

All helibases with two or more helicopters used for fire operations will have a helibase manager (HEBM) assigned and follow standards outlined in the NWCG Standards 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 (GVW) 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.

• BLM/BIA – Minimum vehicle configuration for a seven person crew will consist of one Class 661 Helitack Support Vehicle and one Class 156 or Class 166 vehicle.

Training and Experience Requirements

All helitack members will meet fire qualifications as prescribed by the PMS 310-1 and their agency manual requirements. The following chart establishes experience and training requirements for FS, BLM, NPS, FWS, and BIA exclusive use, fire helicopter crew positions.

• BIA – Follows the guidance put forth in the National Aviation Plan in regards to Fire Helicopter Position Standards.

## Exclusive Use Fire Helicopter Position Prerequisites

<table>
<thead>
<tr>
<th>Position</th>
<th>Minimum Prerequisite Experience</th>
<th>Minimum Required Training</th>
<th>Currency Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Helicopter Crew Supervisor</td>
<td>One season as an assistant fire helicopter crew supervisor, ICT4, HMGB, HEBM</td>
<td></td>
<td>RT-372&lt;sup&gt;5&lt;/sup&gt; RT-130</td>
</tr>
<tr>
<td>Assistant Fire Helicopter Crew Supervisor</td>
<td>One season as a fire helicopter squad boss, ICT4, HMGB, HEBM(T)</td>
<td>ICS-200, S-215, S-219, S-260, S-270</td>
<td>RT-372&lt;sup&gt;5&lt;/sup&gt; RT-130</td>
</tr>
<tr>
<td>Fire Helicopter Squad Boss</td>
<td>One season as a fire helicopter crewmember, FFT1, ICT5</td>
<td>S-211, S-212</td>
<td>RT-130</td>
</tr>
<tr>
<td>Fire Helicopter Crewmember</td>
<td>One season as a FFT2, HECM Task Book</td>
<td>S-271</td>
<td>RT-130</td>
</tr>
</tbody>
</table>

<sup>1</sup> All exclusive use fire helicopter positions require an arduous fitness rating.

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

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

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

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

### Note

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

- Some positions may be designated as COR/Alternate-COR. If so, see individual agency COR training and currency requirements.
- Fire helicopter managers (HMGB) are fully qualified to perform all the duties associated with resource helicopter manager.

### Helicopter Rappel and Cargo Let-Down

BLM/NPS/BIA rappel and cargo let-down operations will follow the *Interagency Helicopter Rappel Guide* (IHRG). FS rappel programs will follow the *National Rappel Operations Guide* (NROG). Any exemption to the identified guides must be requested by the program through the state/region for approval by the National Aviation Office (BLM/NPS/BIA), or director of fire and aviation (FS).

- **BLM** – BLM personnel involved in an interagency rappel program must have SFMO approval.
- **NPS/BIA** – Approval is required by the national office.
- **FS** – Approval is required by the national office.

All rappel and cargo let-down operations will follow the *Interagency Helicopter Rappel Guide* (IHRG), as policy. Any exemption to the guide must be requested.
by the program through the state/region for approval by the national aviation
office (BLM/NPS), or director of fire and aviation (FS).

Single-Skid, Toe-In, and Hover Exit/Entry (STEP)
Any STEP program must be approved by the appropriate agency national office.
- **BLM** – BLM STEP protocols are outlined in the BLM National Aviation
  Plan.
- **NPS** – NPS STEP protocols are outlined in the NPS RM-60.

Short-Haul for Wildland Fire
Any short-haul for wildland fire program must be approved by the appropriate
agency national office.

Short-Haul
To transport one or more persons suspended beneath a helicopter. Short-haul
includes insertion or extraction of firefighters, medical technicians or rescuers
for suppression operations and medical rescues. Missions may include extraction
of personnel from areas where a ground-based approach or evacuation would
expose rescuers, firefighters, injured or ill personnel to greater risk.

All emergency medical short-haul programs must be approved by the
appropriate agency national headquarters.
- **NPS/FS/BIA** – National office approval is required.

All short-haul operations will comply with the following policy:
- **FS** – Emergency Medical Short-Haul Operations Plan (EMSHOP).

Exemptions to the policy must be requested by the program through the regional
office for approval by the National Aviation Office (NPS) or director of fire and
aviation (FS).

Aerial Ignition
The **NWCG Standards for Aerial Ignition** (PMS 501) is policy for all aerial
ignition activities.

Fire Chemical Avoidance Areas
See chapter 12 (Suppression Chemicals and Delivery Systems) for guidance.

Aerial Supervision Principles for ATGS, HLCO, ASM, and Leadplane
The response speed of aerial supervision resources contributes greatly to
established aggressive initial attack doctrine and should be utilized accordingly.
Exclusive use (agency-owned or contracted) air tactical group supervisor
(ATGS) and helicopter coordinator (HLCO) resources are geographic area
(GACC) shared resources. These resources are part of a national response
framework and are located at bases that provide the best strategic advantage for
incident response within their zone in direct support of the air tanker and
helicopter fleets. The GACC’s coordinate with their agencies to ensure response capabilities are commensurate to environmental conditions and provide support to the National Interagency Coordination Center for national priorities. Agency program managers (national/regional) work with coordination centers to provide expertise and make recommendations that support fire preparedness and suppression objectives for their agency and when available, their cooperators.

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 are co-located with airtankers, they will be dispatched together (ATGS, ASM, leadplane and HLCO) to maximize the safety, effectiveness, and efficiency of incident operations unless the required aerial supervision is currently on scene of the incident.

Incidents with three or more aircraft flying missions at the same time must have aerial supervision in the form of ATGS, ASM/leadplane or HLCO ordered by the unit maintaining operational control (operations may be continued while the aerial supervisor is en route to the incident or operations can be continued if the resource is not available and assigned resources are notified). During times of aerial supervision absence, aircraft shall coordinate with each other to implement tasks and objectives as prioritized by the official in charge (i.e., incident commander or operations). A qualified smokejumper spotter (senior smokejumper in charge of smokejumper missions), rappel spotter, or short-haul spotter may coordinate their respected operations with on-scene aircraft over a fire until qualified aerial supervision arrives.

See NWCG Standards for Aerial Supervision, page 34, table 1 for incident aerial supervision requirements.


Operational Procedures and Policy
The NWCG Standards for Aerial Supervision (PMS 505) provides operational procedures for all aerial supervision resources. The NWCG Standards for Aerial Supervision and additional aerial supervision forms are maintained online at the NWCG website https://www.nwcg.gov/publications/505.

The NWCG Standards for Wildland Fire Position Qualifications (PMS 310-1) provides training, qualification, and currency standards.

The NWCG Standards for Aerial Supervision contains additional requirements and is policy for the BLM, NPS, FWS, FS and BIA.

Air Tactical Group Supervisor (ATGS)

The ATGS coordinates incident airspace and manages incident air traffic. The ATGS is an airborne firefighter who coordinates, assigns, and evaluates the use of aerial resources in support of incident objectives. Specific duties and
responsibilities are outlined in the *NWCG Standards for Aerial Supervision* (PMS 505).

**Program Management**

The air attack program is managed at the national level by agency program managers. The National Interagency Aviation Committee (NIAC) provides guidance through the Interagency Aerial Supervision Subcommittee (IASS), which authorizes an agency program manager/ATGS GACC representative to provide operational and programmatic oversight at the geographic area level.

**Training**

Classroom training is completed as per the PMS 310-1. Field (flight) training assignments are coordinated and prioritized by the geographic area training representatives and agency program manager/ATGS GACC representatives. National interagency ATGS training aircraft have been identified and are utilized for the sole purpose of ATGS flight training.

**Operational Considerations**

- Ground resources will maintain consistent communication on assigned air to ground frequencies with aerial supervision to maximize the safety, effectiveness, and efficiency of aerial operations.
- 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.
- ATGS aircraft must meet the aircraft/avionics typing requirements listed in the *NWCG Standards for Aerial Supervision* 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.

**Aerial Supervision Module and Leadplane**

The aerial supervision module (ASM) and leadplane (LP) are national shared resources.

The ASM is crewed with both a leadplane pilot (LPIL) and an air tactical supervisor (AITS). These individuals are specifically trained to operate together as a team. The resource is primarily designed for providing both functions (leadplane pilot and ATGS) simultaneously from the same aircraft, but can also provide single role service.

The leadplane is staffed with a single pilot and provides coordination with fixed wing airtankers and water scooping aircraft.

**Operational Considerations**

Any operation that limits the national resource availability 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 authorized by the BLM–National Aviation Office/FS–branch chief pilot standardization/state aviation official and approved by the regional aviation officer/BLM state aviation manager/state aviation official will be certified to function as an air tactical supervisor (AITS).

**Aerial Supervision Module Program Training and Qualifications**

Training and qualification requirements for ASM crewmembers are defined in the *NWCG Standards for Aerial Supervision*.

**Aerial Supervision Coordination**

National coordination and management of ASM and LP resources are required to ensure national coverage and capability. The Forest Service Aerial Supervision Program Manager and Forest Service Fixed-wing Coordinator manage aerial supervision staffing, aircraft readiness and availability, capability, and response with pilots, aerial supervisors, regional aviation staff, Bureau of Land Management National Aviation Office staff, and the National Interagency Coordination Center.

**Reconnaissance or Patrol Flights**

The purpose of aerial reconnaissance or detection flights is to locate and relay fire information to management. In addition to detecting, mapping, and providing fire size up, this resource may be utilized to provide ground resources with intelligence on fire behavior, to the IC when appropriate, and describe access routes into and out of fire areas for responding units. Only qualified aerial supervisors (ATGS, AITS, HLCO and LPIL) 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**

Federally contracted airtankers are national resources. Geographic areas administering these aircraft will make them available for initial attack and extended attack fires on a priority basis regardless of GACC boundaries. Early-ups for large fire support can have a significant effect on the resource availability late in the day. NICC must be included in this discussion. The rationale for use of airtankers prior to normal start times for large fire support must include obtainable incident objectives in support of ground resources.
Host GACCs will check with NICC prior to releasing flight crews on Type 1
and Type 2 airtankers and VLATs for the day when those resources are not
being used within the host area, and could be utilized elsewhere for emerging or
ongoing fire activity.

Large airtankers are primarily used for initial attack and are initial attack capable
without leadplane/ASM supervision. Very large airtankers are primarily used for
large fire support and require leadplane/ASM supervision to be on scene prior to
arriving on the fire.

additional direction regarding staffing and maintenance of support functions to
mobilize national resources.

For aviation safety and policy concerning wildland fire chemicals see chapter
12, Suppression Chemicals and Delivery Systems.

Federal airtankers are owned and operated by commercial vendors. Some states
may contract for commercially-owned airtankers, own airtankers or order
airtankers through Compacts either state-to-state or state-to-Canadian Province.
The management of airtankers is governed by:

- **BLM** – The requirements of the DM, BLM NAP, and BLM Manual 9400.
- **FS** – Airtankers operate in accordance with 14 CFR Part 137, specific
  contracts, Grants of Exemption, Forest Service Manual (5700) and
  Handbook (5709.16) and the Forest Service Standards for Airtanker
  Operations.
- **BIA** – The requirements of the DM and BIA NAP.

Airtanker Types

Airtankers are typed according to their load capacity

- Very Large Air Tankers (VLAT) – 8,000 gallons or more
- Type 1 – 3,000 to 4,999 gallons
- Type 2 – 1,800 to 2,999 gallons
- Type 3 – 800 to 1,799 gallons
- Type 4 – up to 799 gallons

Very Large Airtankers (VLATs)

VLATs have some unique operational considerations including low-level
supervision, terrain, airtanker base ramp operations and operations in the Fire
Traffic Area (FTA).

- The leadplane or ASM must be on scene prior to dispatching the VLAT.
- VLATs may be used on fires to augment Type 1, Type 2 and Type 3
  airtankers, but not as a replacement.
- Aerial supervision (leadplane or aerial supervision module) is required by
  contract and interagency policy for VLATs while dropping retardant.
• VLATs are less maneuverable than large airtankers and should be used in
  less challenging terrain that affords better maneuverability and effectiveness
  for dispensing.
• VLATs minimum drop height is 250 feet above the ground or canopy cover
  whichever is higher. Generally, drop heights should increase when using
  higher coverage levels.
• VLATs require considerable more space and clearance from other aircraft
  within the FTA and more time to set up for drops.
• Airtanker bases approved for VLATs are listed in the NWCG Airtanker
  Base Directory.

State of Alaska Airtankers
Airtankers under contract to the State of Alaska may be mobilized to the lower
48 as approved cooperator aircraft. Prior to mobilization to the lower 48,
ordering agencies should confirm that current cooperator letters are in place for
the requested aircraft and pilots permitting operations in the lower 48 states.
• FS – Convair 580 airtankers are not approved for use on Forest Service
  protected lands.

International Airtankers and Water Scoopers
International airtankers and scoopers can be activated through the agreements,
NIFC/other fire coordination center or authority or through compacts (U.S.
State-to-Canadian Province).
Other international airtankers and water scoopers may operate individually like
U.S. airtankers and scoopers.
• NIFC-ordered Canadian/international aircraft – Aircraft ordered through the
  National Interagency Fire Center agreement with the foreign country may
  be used on federal lands if the aircraft have been inspected and approved by
  USDA Forest Service letter.
• Compact-ordered aircraft – Aircraft and flight crews ordered through U.S.
  State to Canadian Province compacts will be considered non-federally
  approved cooperator aircraft unless they have been previously inspected and
  approved by the USDA Forest Service/Department of the Interior.

The standard operating procedure for the Canadian or international airtankers
and water scoopers is as follows:
• If the pilot is not initial attack rated, the Canadian or international airtankers
  or water scoopers must be supervised by a Bird Dog or U.S. ASM/leadplane
  or ATGS.
• Canadian Bird Dogs may provide low level target identification runs
  (“show me” pass) for either Canadian, international or U.S.-contracted
  airtankers.
• Canadian Bird Dogs are not authorized to “lead” U.S. federally-contracted
  airtankers or other international airtankers.
• Canadian Bird Dogs can perform the functions of an ATGS once approved by the U.S. ordering agency.
• U.S. ASM/leadplanes are authorized to “lead” Canadian and international airtankers.
• Canadian airtankers and water scoopers typically operate as a “group” with Canadian Bird Dogs as part of their operational model.
• Bird dogs have a Canadian air attack officer (AAO) on board and function similar to a U.S. ASM.

**Airtanker Rotation**
The federal national airtanker fleet includes a mix of Exclusive Use (EU), Call When Needed (CWN)/On-Call Type 1 and Type 2 airtankers (large airtankers/LATs), very large airtankers (VLATs), or single engine airtankers (SEATs). To ensure consistent utilization, rotation, and management of the national airtanker fleet, the following is interagency direction for the management of airtanker rotation and supplements direction contained in *NWCG Standards for Airtanker Base Operations (SABO)* (PMS 508).

All LATs, VLATs and SEATs (including federally-approved cooperator and Canadian and other international airtankers) operating from the same base shall be dispatched in rotation based on the type of airtanker requested on a first in/first out basis regardless of contract type (EU, CWN/On-Call or Forest Service owned) or the location of the incident.

First in/first out also applies to airtankers that are requested for a load/return. When an incident requires multiple loads of retardant, aerial supervisors/incident commanders will notify the appropriate dispatch center of the need for additional retardant and any operational retardant delivery requirements. To ensure timely and effective retardant delivery, dispatch will order the next available airtanker in rotation if an airtanker that meets the requirement of the request is available and located at the load and return airtanker base.

**Exceptions**

1. Airtankers that do not have an initial attack (IA) rated pilot-in-command will not be dispatched to a fire unless a leadplane or aerial supervision module (ASM) is on scene upon the arrival of the airtanker.
2. Incident commanders/aerial supervision requests a specific type of resource (e.g., VLAT, LAT, or SEAT).
3. On-scene aerial supervision determines that the use of a specific make/model airtanker is not effective based on factors such as risk, maneuverability in terrain, and/or effectiveness.
4. The next airtanker in rotation has an operating restriction at the base where it is being assigned. Operating restrictions may include fuel and retardant availability, airtanker base or airport restrictions, significant downloading of fuel or retardant based on performance, daylight remaining, or distance to the incident is not considered effective.
5. Repositioning of an airtanker closer to where their maintenance crews or supplies are available. The National Interagency Coordination Center (NICC) will facilitate in coordination with the geographic area coordination center (GACC).

6. A benefit to the government would be realized by changing the rotation. This will be facilitated by the GACC or NICC with consideration to days off, mission requirements, and/or anticipated need.

7. Airtankers are returning after day(s) off. Upon returning to availability from days off, these airtankers will be at the end of the rotation at the airtanker base. Airtankers that work a seven day schedule retain their position in the rotation.

8. MAFFS, NICC-ordered state cooperators, and NICC-ordered international airtankers will begin rotation at that base after the contracted and FS owned airtanker(s) at the beginning of each day.

9. Water scoopers will not be included in airtanker base rotations.

Rotation of State Airtankers

Rotation of state resources on state incidents at a state airtanker base is established by their agency.

In cases where federally-approved state airtankers are operated in conjunction with federally-contracted airtankers on an incident primarily on federal lands, the state airtankers are added to the rotation after the federal airtankers at the beginning of each day.

Additional Information

Forest Service/DOI contracted airtankers, when assigned to incidents managed by other agencies or state cooperators remain under the direction of the contracting agency. Forest Service and DOI Contracted airtankers are bound only by their contract and will be treated fairly and equitably during their assignment with other federal or state agencies.

Airtanker Payloads

Loading Type 2, Type 1 or VLAT airtankers with water or dropping water operationally shall not occur unless the Forest Service National Airtanker Program Manager has been notified. Use of water operationally from these airtankers will require the following prior to notification:

- Use of retardant is restricted by the fire management plan (FMP) for the unit requesting the approval to use water. A copy of the section of the FMP restricting use of retardant shall be provided to the airtanker program manager with the notification.

  - Prior to ordering an airtanker, the receiving unit should request the appropriate water aerial dispensing aircraft, such as a water scooper or helicopter.

During pre or post season fires, loading airtankers with water may be necessary when the nearest airtanker base may not be operational and capable of loading
retardant. Once an airtanker base is operational and can load retardant, use of water shall cease.

Use of water enhancers (gels) is strictly prohibited in Type 2, Type 1 or VLAT airtankers contracted by the USDA Forest Service.

**Large and Very Large Airtanker Coordination**

National coordination and management of Forest Service contracted airtankers is required to ensure there is airtanker coverage, response, and capability nationwide. The Forest Service Airtanker Program Manager and Forest Service Fixed-wing Coordinator coordinate and manage airtanker readiness and availability, capability, and response with vendors, national aviation staff, and the National Interagency Coordination Center.

**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 *NWCG Standards for Airtanker Base Operations* (*SABO*).

All permanent, CWN and temporary bases will have an Airtanker Base Operations Plan (ABOP), and a qualified airtanker base manager (ATBM) prior to operations out of the airtanker base airport. All personnel conducting airtanker base operations should review the *SABO* and have it available. ATBMs are authorized to manage single engine airtankers (SEAT), the ATBM should review the *NWCG Standards for Airtanker Base Operations* (*SABO*) and have it available. Both large airtankers as well as SEATs have applicable aircraft contracts that will be available for reference, as well as the National Long-Term Fire Retardant Contract.

Regions, states, and GACC shall coordinate airtanker base activation and closing dates with the appropriate agency airtanker base specialist to ensure national airtanker response and capability is maintained.

- **FS** – National job codes for airtanker base early activation or late closing is available to support national response and capability.

**Loading Operations**

Forest Service contracted airtankers and Modular Airborne Firefighting System (MAFFS) airtankers shall be loaded using a Mass Flow Meter to measure the payload in pounds. Refer to the *Forest Service Airtanker Operations Plan* for more information.

https://www.fs.fed.us/managing-land/fire/aviation/publications

**Airtanker Base Personnel**

There is identified training for the positions at airtanker bases; the *SABO* contains descriptions of airtanker base support positions and their roles and responsibilities. The *NWCG Standards for Wildland Fire Position Qualifications* (PMS 310-1) lists required training for these positions.
The ATBM provides supervision and coordination of airtanker base operations. The ATBM may report to the local aviation manager and/or incident aviation manager.

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

Refer to the *NWCG Standards for Aerial Supervision* (PMS 505).

### Single Engine Airtankers

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

The *NWCG Standards for Airtanker Base Operations* (SABO) (PMS 508) defines operating standards and is policy for both the DOI and FS. All permanent and temporary SEAT bases will have a SEAT Base Operating Plan, and a qualified single engine airtanker manager (SEMG) or ATBM prior to operations out of the SEAT base airport.

**Single Engine Airtanker Manager Position**

The SEMG duties and responsibilities are outlined in the *NWCG Standards for Airtanker Base Operations* (SABO) (PMS 508). The PMS 310-1 lists required training for the SEMG position, ATBM position, and other base support positions. SEMG’s may also refer to the *NWCG Standards for Airtanker Base Operations* (SABO) for base support duties and responsibilities.

The SEMG provides supervision and coordination of SEAT base operations and base support personnel. The SEMG may report to the local aviation manager, incident aviation manager, or ATBM if applicable. SEMG’s assist in ensuring adherence to contract regulations, safety and policy requirements, and fiscal accountability.

**Operational Procedures**

Using SEATs 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, SEATs are capable of dropping suppressants, water, or approved chemical retardants. Because of the load capacities of the SEATs (500 to 800 gallons), quick turn-around times should be a prime consideration.

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

### Multi-Engine Water Scoopers

Forest Service contracted exclusive use and CWN multi-engine water scoopers are national resources. Geographic areas administering these aircraft will make them available for initial attack and extended attack fires on a priority basis. Generally, a water scooper manager will be assigned by the Forest Service.
National Aviation Office. The manager will be on site to coordinate water
scooper operations, logistics and water body assessment.

Forest Service multi-engine water scoopers, by contract, shall not use retardant,
foam or gels.

Smokejumper Pilots

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

Helicopters

Helicopter Types
The minimum specifications for the typing of helicopters are by useful load,
passenger seats, water or retardant carrying capability and maximum gross

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
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<tr>
<td>Useful load at 59°F at sea level</td>
<td>5,000 pounds</td>
<td>2,500 pounds</td>
<td>1,200 pounds</td>
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<tr>
<td>Passenger seats</td>
<td>15 or more</td>
<td>9-14</td>
<td>4-8</td>
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<tr>
<td>Retardant or water carrying capability</td>
<td>700 gallons</td>
<td>300 gallons</td>
<td>100 gallons</td>
</tr>
<tr>
<td>Maximum gross takeoff/landing weight</td>
<td>12,501+ pounds</td>
<td>6,000-12,500</td>
<td>up to 6,000</td>
</tr>
</tbody>
</table>

The National Interagency Mobilization Guide, chapter 50, contains additional
direction regarding staffing and maintenance support functions to mobilize
national resources. For aviation safety and policy concerning wildland fire
chemicals (water enhancers, retardants and foams), reference
https://www.fs.fed.us/rm/fire/wfcs/. Other helicopter information can be found
in the NWCG Standards for Helicopter Operations (PMS 510) at

- FS – The use of fire chemicals mixed with on board injection or blending
  systems is not permitted on Forest Service contracted aircraft. Water
  enhancers may be mixed and loaded from ground-based equipment when
demand-mixed through a proportioner; or batch mixed to the qualified mix
  ratio in a separate tank, then transferred into a dip tank. Compliance with
  the Forest Service Qualified Product List
  (https://www.fs.fed.us/rm/fire/wfcs/) to include qualified required mix
  ratios, is mandatory.

Military or National Guard Helicopters and Pilots

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

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.

Cooperator Aircraft

Cooperator contracted aircraft also on an existing federal contract with federal
aircraft and pilot cards may be utilized on federally-protected lands when
cooperative agreements are in place and the aircraft have been approved by
USDA Forest Service/Department of the Interior letter.

Cooperator exclusive use contracted aircraft not on an existing federal contract
may be considered for approval on a case-by-case basis when cooperative
agreements are in place. Approval will be by USDA Forest Service/Department
of the Interior letter.

Cooperator-owned or -operated aircraft may be utilized on federally-managed
fires when cooperative agreements are in place and the aircraft have been
approved by USDA Forest Service/Department of the Interior letter. Cooperator-
owned or -operated aircraft meeting requirements of the NWCG Standards for
Interagency Cooperator Type 2 and Type 3 Helicopters or other applicable
NWCG standards may be utilized on federally-protected lands when cooperative
agreements are in place and the aircraft have been approved by USDA Forest
Service/Department of the Interior letter.

All cooperator aircraft used on federally-protected lands must be approved by
USDA Forest Service/Department of the Interior letter.

Utilization of approved Cooperator aircraft shall be limited based on 49 United
States Code §40125.

• All approved Cooperator aircraft used on federally-managed fires shall be
released when federal aircraft become reasonably available.

• The use of Cooperator aircraft must involve a “significant and imminent
threat to life or property” documented daily on the Cooperator Aircraft Use
Validation Worksheet (National Interagency Mobilization Guide, chapter
80 Forms) to document the justification for aircraft utilization.

Non-Federally Approved Cooperator Aircraft

Cooperator exclusive use contracted aircraft not on an existing federal contract
may be considered for approval on a case-by-case basis when cooperative
agreements are in place.
The following conditions apply for non-federally approved aircraft:

- No federal employees are allowed to ride on board the aircraft.
- No federal employee may be assigned to a position that exercises contractual control.
- Federal personnel may load retardant at federal airtanker bases, regardless of jurisdiction.
- Federal personnel may provide aerial supervision (ATGS, ASM, HLCO, leadplane) under existing standard procedures and agreements.
- They remain under state operational control regardless of the agency affiliation of the firefighters directing the aircraft on an incident with state jurisdiction.
- They are approved to interact with federal dispatch personnel as long as the aircraft remains under the operational control of the state or for safety reasons.

Under emergency circumstances, where human life is immediately at risk by wildland fire on lands under federal protection, a federal line officer can approve the use of non-federally approved aircraft. This exemption must only take place when sufficient federal firefighting aircraft are not readily available to meet the emergency need. Federal line officers are encouraged to consult with their agency aviation management personnel to aid in decision-making.

As exemptions are exercised, they must be documented by the approving federal line officer in accordance with their agencies guidance to include submitting a SAFECOM (https://www.safecom.gov/) within 24 hours.