

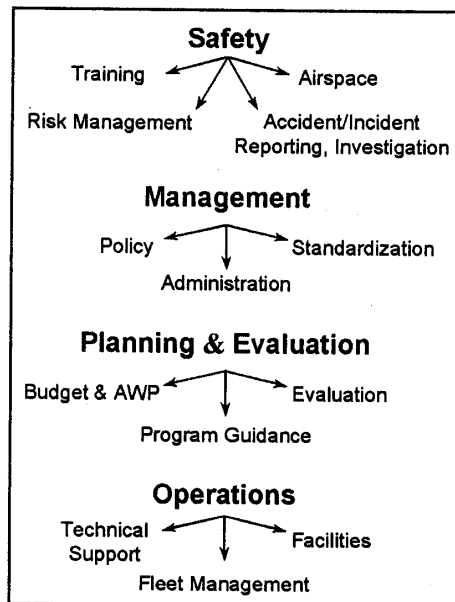
Chapter - 8 Aviation Operations

A. Introduction

Aviation managers have leadership responsibility for resource missions that use aircraft. Standard and prerequisite qualifications ensure that aviation services are practical, low risk, and benefit the Bureau of Indian Affairs (BIA) and the public.

Clear direction and good management practices can reduce risks inherent to aviation missions. Aviation program success increases with planning, high standards, training, and commitment to safety for each mission.

The four major emphases of aviation management are safety, management, planning and evaluation, and operations. Refer to the chart for an illustration of these component and their sub-components.



B. Roles and Responsibilities

1. Aviation Management Directorate

Aviation Management Directorate - The Aviation Management Directorate (AMD), of the National Business Center, is responsible for aviation policy development, aircraft acquisition, financial services, and maintenance management within the agencies of the Department of the Interior (DOI). AMD has no operational responsibility. AMD provides aviation safety program oversight, accident investigation, aircraft, pilot inspection and approval for DOI use.

2. National Office Level

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-National Interagency Fire Center (NIFC) office has established two Inter-Regional aviation management offices to provide technical aviation expertise support for Regional, Agency, and other field offices. Each of these offices is assigned specific BIA Regions for primary support. Each of the Inter-Regional offices is staffed by an inter-Regional Aviation manager (IRAM) and an Aviation Operations Specialist (AOS), both of which are available to provide support for any Region. In addition, there is a National Safety and Training Manager specifically assigned to support aviation activities. The primary goals of each of these positions are safety and cost-effectiveness. The BIA-NIFC office promotes accident prevention efforts and supports Bureau functions and missions, including fire suppression. Refer to *Indian Affairs Manual; Part 57* for further information on aviation policy and procedures.

3. Regional Office Level

- a. Regional aviation program managers 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 operations management plan is required to outline goals of the Region's aviation program and to identify policy and procedures specific to that Region.
- b. 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 Director, Branch of Fire Management.

4. Local Level

Field managers, staff and manage their programs as necessary to conduct their aviation operations safely. 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 programs. While many field offices have aviation management as a collateral duty, during periods of intense wildfire activity, it is still absolutely critical that aviation oversight be maintained. Assistance from the Regional office, cooperators, resource ordering assistance, Aviation Safety Assistance Team (ASTAT), are all resources that should be considered when other duties interfere with aviation management. Field/District Offices are responsible for hosting, supporting, providing daily management, and dispatching all aircraft assigned to their unit. Field Offices have the authority to request additional resources, establish priorities, and make assignments for all aircraft assigned to the BIA within their unit or zone. All local offices utilizing aircraft should have an aviation management plan on file.

C. Aviation Information Resources

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

1. Reference Materials

- a. 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.
- b. Regional and local aviation managers must maintain an up-to-date reference library with all aviation policy and procedural references.
- c. Tactical aircraft bases and other fire users of aviation resources (e.g., air tactical group supervisors) should maintain those applicable portions of the overall aviation reference library.

D. Aviation Safety

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.

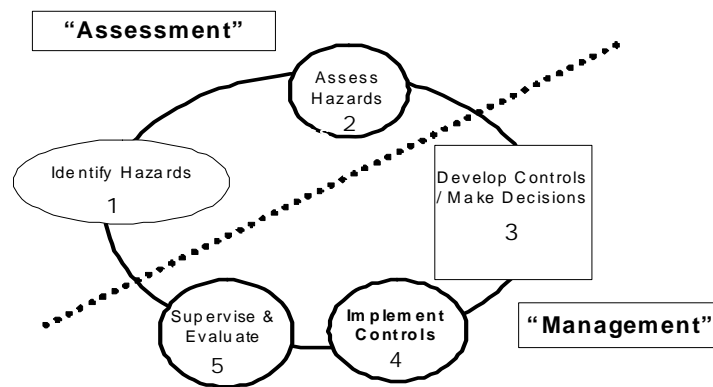
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A decision to conduct a mission requires weighing the risk against the benefit of the mission and deciding whether the risks are acceptable.

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:

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

THE RISK MANAGEMENT PROCESS



1. Aviation Safety Assistance

During high aviation activity as in wildfire suppression activity, it is advisable to request, through the BIA Regional and National aviation offices, an ASTAT for helicopter or fixed-wing operations. They should be requested through the agency chain of command and operate under a Delegation of Authority 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.

- a. An ASTAT may include the following positions:
 - Aviation Safety Manager
 - Operations Technician
 - Pilot Inspector
 - Maintenance Inspector (optional)
 - Avionics Inspector (optional)
- b. ASTAT members will be identified by the IRAM or the National Aviation Program Manager, and resource ordered to the area.

2. Aviation Watch Out Situations

- a. Risk Management
 - As part of risk management, especially during high wildfire activity, each aviation manager and employee should ask the following questions:
 - 1) Is the flight necessary?
 - 2) Who is in Charge?
 - 3) Are all hazards identified and have you made them known?
 - 4) Should the operation or flight be stopped due to change in conditions?
 - 5) Communications?
 - 6) Confusion?
 - 7) Personnel?
 - 8) Weather, Turbulence?
 - 9) Conflicting priorities?
 - 10) Is there a better way to do it?
 - 11) Are you driven by the task and a sense of urgency?
 - 12) Can you justify your actions?
 - 13) Are other aircraft in the area?
 - 14) Does the pilot accept the mission?
 - 15) Are any guidelines being ignored or policies being broken?
 - 16) Are communications getting tense?
 - 17) Are you deviating from the assigned operation or flight?

3. Mission Planning/Hazard Mitigation

- a. Pre-flight Planning
 - Pre-flight planning will reduce inherent risks to any aviation mission to acceptable levels. During flight planning and scheduling, at a minimum, the following must be addressed:

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- 1) Completion/submission of the aircraft flight request/schedule.
- 2) Cost Analysis.
- 3) Assessment and mitigation of hazards.
- 4) Selection of aircraft.
- 5) Scheduling of aircraft with vendors or agency pilots.
- 6) Pilot and aircraft approvals checked.
- 7) Pre-flight briefings.

4. Aircraft and Pilot Carding

- a. AMD is responsible for procurement, approval, and carding of pilots and aircraft used and paid for by BIA. With the exception of life-threatening situations or undercover law enforcement missions, personnel shall not fly with pilots or in aircraft that have not been approved (carded). Note that some state agency aircraft and pilots are approved by either the AMD or the USDA Forest Service. These pilots may or may not carry a card, but they must have a letter of approval.
- b. The BIA may use aircraft carded by the USDA Forest Service for exclusive use and Call-When-Needed (CWN) flight services.
- c. For aircraft carding, contact the BIA IRAM or the AMD.
- d. Dispatchers or aviation managers are responsible for verifying pilot and aircraft carding during mission planning and aircraft procurement. Prior to any flight, it is the responsibility of the helicopter manager, flight manager, or employee to check for pilot and aircraft cards or letters of approval.
- e. Field personnel have no authority to suspend or revoke a pilot's card. Only the agency contracting officer or other agency-designated officials may suspend or revoke a card. However, other individuals (e.g., helicopter managers, helibase managers) can suspend operations that are being conducted improperly.

5. Use of Military or National Guard aircraft and pilots

The *Military Use Handbook*, (NFES 2175) should be used when planning or conducting aviation operations involving military aircraft. All ordering of military assets is done through the National Interagency Coordination Center (NICC); all ordering of National Guard assets is done through the governor of the state that owns the Guard resources.

6. Aviation Safety Briefing

Every passenger will receive a briefing prior to each flight. The briefing may be conducted by the pilot, flight manager, helicopter manager, fixed-wing base manager, or an individual with the required training and experience to conduct an aviation safety briefing. For Briefing procedures, refer to the *Incident Response Pocket Guide (IRPG)* and IHO Chapter 10.

7. Low-level Flight and Congested Area Operations

Note: When referring to retardant dropping in congested areas, the terms airtanker coordinator, leadplane pilot, air tactical pilot, air tactical group supervisor, and aerial supervision module (ASM) all mean the same thing.

- a. Aircraft engaged in fire retardant or water drops may operate without regard for the following requirements, provided the deviation is limited to fire operations for cargo dropping, and leadplane operations associated with the aerial application of water, fire suppression, or retardants are conducted by or for DOI.
 - A thorough air survey for obstacles, and check for air conditions in each operating area, shall be made prior to low-level flight operations.
 - All flights below 500 feet shall be confined to immediate areas being treated or where operational requirements make such low-level flight essential.
 - All aircraft must follow planned flight course.
 - Low-level flight operations must be under VFR conditions and during daylight hours – ½ hour before sunrise to ½ hour after sunset. (See local sunrise/sunset chart for actual times)
 - Prior clearance must be obtained from the appropriate air traffic controller before any flight can be made in a controlled air space.
 - Pilot will avoid creating any hazard to passengers or to persons or property on the ground.
- b. Airtankers can drop retardant in congested areas during emergencies under the authority given by the Federal Aviation Administration (FAA). Dropping fire retardant in congested areas shall be avoided in normal situations. Where such operations are

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considered necessary, depending on special circumstances, they may be authorized subject to these special limitations:

- Airtanker operations in congested areas may be conducted at the special request of the responsible agency (city, rural fire department, county, state or federal fire suppression agency)
 - A qualified airtanker coordinator (leadplane pilot/air tactical pilot) will be ordered immediately on identification of the congested area and will directly supervise all airtanker drops.
 - The FAA office (air traffic control center, tower, or flight service station) responsible for airspace control in the vicinity of proposed airtanker operations will be notified prior to or as soon as possible after the beginning of the operation, and the appropriate airspace restriction must be requested by the responsible fire agency prior to or as soon as possible after beginning airtanker operations. (Request all temporary flight restrictions from the ATC, but notify local tower and FSS)
 - No operation shall be conducted until a positive communication link has been established between the airtanker coordinator or ASM (Air Attack), airtanker pilot(s), and the official directly supervising fire suppression for the responsible fire suppression agency.
 - The official supervising fire suppression for the responsible fire agency or designee shall advise the Air Attack that all non-essential people and movable property has been cleared from the area to be treated by airtankers prior to commencing airtanker operations.
 - The Air Attack shall be personally satisfied that no non-essential people or movable property will be placed in hazard by the proposed airtanker operation prior to ordering any airtanker drops.
 - The first retardant pass of each series (repeated retardant drops using the same pattern) shall be preceded by a dry run flow on the same pattern as the planned retardant drops.
- c. Temporary Flight Restriction protocols are published in the *Interagency Airspace Coordination Guide (IACG)* referenced in section K.4 of this chapter.

E. Aviation Hazards

1. Definition

An aviation hazard is any condition, act, or set of circumstances that compromises the safety of personnel engaged in aviation activities.

All aviation personnel are responsible for hazard identification and mitigation. This includes pilots, flight crew personnel, aviation managers, incident air operations personnel, and passengers. Pilots, flight crew personnel, aviation managers, incident air operations personnel, and passengers are responsible for hazard identification and mitigation. Aviation hazards include 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 requirements.
- Extreme environmental conditions.
- Improper ground operations.
- Improper pilot procedures.
- Fuel contamination.
- Unsafe actions by pilot, air crew, passengers, or support personnel.

2. Aerial Hazards

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 Ch 3.V.J.1.c page 3-20).

F. Aircraft Incident/Accidents

1. Incidents

- a. An aircraft "incident" results in damage which meets less than serious criteria, or in an injury not requiring medical attention (first-aid only). Examples of incidents are:
 - Damage to aircraft (less than accident criteria).
 - Forced landing necessitated by failure of engines, systems, or components.
 - Precautionary landing necessitated by apparent impending failure of engines, systems or components, or incapacitation of the flight crew.
 - Aircraft ground mishap (in which there is no intent to fly).
 - Ground damage to aircraft (damage is incurred requiring repair or replacement before flight).
 - Near mid-air collision (when airborne aircraft encroaches within 500 feet of another airborne aircraft, or a pilot or crew member determines that a collision hazard existed).

2. SAFECOM - Incident/Hazard/ Maintenance Deficiency Reporting

- a. The DOI bureaus and USDA Forest Service have adopted a common incident/hazard reporting form called the SAFECOM (Safety Communiqué), see **Appendix 8-1**.
- b. The local aviation management staff or designed individual is responsible for immediate completion and transmittal of the form. In their absence, any responsible agency individual with knowledge of the accident should make the report. This form is routed immediately to AMD, the Agency's headquarters office, Regional Aviation Manager, and National Aviation Safety Manager.
- c. The report shall be forwarded by electronic mail or telefax to the national aviation manager within 72 hours after occurrence. Notify AMD and BIA aviation safety managers whenever an aircraft mishap involved damage or injury. Use the hot line or the most expeditious means possible. Call 1-888-464-7427. An electronic

version of the SAFECOM form can be accessed at the following web site: <http://www.safecom.gov>.

- d. The objectives of the form are:
- To report any damage or injury (less than accident criteria) and any condition, act, observance, maintenance deficiency or circumstance which has potential to cause an aviation-related accident.
 - To document all aviation hazards and incidents.
 - To perform trend analyses for short or long term changes in policy and procedures, identify areas needing training, etc.
 - To provide accountability for aviation mission participants and employee safety.
- e. Responsibility
- It is the responsibility of any individual (including contractors) who observes or who is involved in an aviation mishap to report the occurrence immediately to local aviation management staff. The local aviation manager is responsible for reviewing the report and forwarding it through agency channels. Within 48 hours after an aircraft incident, aviation hazard, or maintenance deficiency, the local aviation manager or participant in the flight shall complete and submit the SAFECOM form. Timely reporting is essential in problem identification and accident prevention.
 - The agency with operational control of the aircraft at the time of the occurrence is responsible for completion of the SAFECOM and to submit it through its agency channels.

3. Accidents

The definition of aircraft “accident” is lengthy and fairly technical. An investigation team will make the final determination as to classification. In general, if an occurrence was more serious than those described under the definition of “incident” above, then the occurrence should be treated as an accident.

G. Air Operations

The DOI DM 350-354 DM and *Indian Affairs Manual (IAM) Part 57, Aviation Management* are the umbrella documents for aviation policy and operations in the Bureau. It is the responsibility of aviation managers and associated personnel (pilots, dispatchers, fire managers, etc.) to obtain necessary documents and become familiar with their contents.

1. Interagency Interim Flight and Duty Limitations

- a. 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.
 - 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 at their discretion, as is currently provided for in agency direction and contract specifications.

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.

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

Official notification of implementation should be made by the Regional Aviation managers through the GACC and, for broader scope implementations, by National Aviation Management through NIFC.

b. 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.

c. 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 based on Paragraph b. of Phase 3 provisions may be requested through the local Aviation Manager or COR, but must be approved by the Inter-regional Aviation Manager.

2. Helicopter Operations

The Interagency Helicopter Operations Guide (IHOG) is policy for helicopter operations whether in support of wildland fire or natural resource missions, and provides guidance for helitack and helicopter operations.

a. PPE Requirements

As stated in the IHOG, for firefighters “the only acceptable situation where a hard hat may be substituted for a flight helmet is as follows: passenger transportation between an established, managed helispot/helibase and an established, managed helispot/helibase.” Firefighters in this case are defined as hand crews being shuttled to and from camp primarily on project type fires. All other firefighters, e.g., initial attack (IA) helitack crews, miscellaneous fire overhead, for recon and scouting, will be required to wear full PPE, including a flight helmet.

b. Helicopter Rappel and Cargo Let-Down

The *Interagency Heli-Rappel Guide* (IHRG) is the reference for helicopter rappel and cargo let-down operations; all rappel and cargo let-down operations must be in compliance with the IHRG, reviewed by the National Aviation Program Manager and approved by Director, Branch of Fire Management.

c. Aerial Ignition

The *Interagency Aerial Ignition Guide* (IAIG) is the reference for all aerial ignition activities. All Aerial Ignition operations must be in compliance with the IAIG, reviewed by the Regional Aviation Program Manager and approved by the appropriate Line Officer.

These guides (IHOG, IHRG, and IAIG) were developed to: define and standardize national interagency operating procedures for all helicopter operations, both fire and non-fire; facilitate the exchange of personnel from other agencies during periods of high fire activity (through standardization); provide a common interagency approach in the government’s relationship with helicopter contractors; provide checklists, operational requirements, and special instructions for personnel at helibases; and provide a framework within which each government helibase with contract helicopters can provide supplemental site-specific guidance.

3. Helitack

Helitack crews provide highly trained and skilled personnel to perform suppression and support operations on IA, extended attack, and large wildfires, and to manage helicopter operations in order to accomplish resource management objectives.

a. Policy

The BIA has adopted the IHOG as its standard for 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 optional.

b. Organization

The standard helitack configuration is a module of seven crew personnel. Daily operations shall always meet the minimum staffing of a Helicopter manager and two qualified crewmen.

- Individual crew structure is based on the following positions, with career status positions based on local need.
 - 1) Fire Helicopter Crew Supervisor (FHCS-PFT)
 - 2) Assistant Fire Helicopter Crew Supervisor (FHAS-PST)
 - 3) Fire Helicopter Squad Leader (FHSL-PST/SEA)
 - 4) Fire Helicopter Crew Member (FHCM-SEA)

Exception to these minimum crew staffing standards must be exempted by the National Aviation Office.

c. Safety

Helitack crews provide safe and efficient aviation services in support of bureau and Interagency goals and objectives. All helitack crews will consider risk and take appropriate action in order to fight fire safely. Tactical decisions will be made in accordance with the 10 Standard Fire Orders, 18 Watch Out Situations, and principles of LCES. Personnel involved in helicopter operations must follow rules, regulations, and mandates specified by the FAA, OAS, BIA, and other contractual and operational procedures identified in the IHOG.

A continual risk assessment will be made during helitack and aviation missions. For further information on the risk assessment and management process, see the IHOG, Chpt. 3.

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d. Training, Qualifications and Experience

The primary helitack crew mission is to fight fire; therefore, all members will meet minimum fire qualifications as prescribed by the National Wildfire Coordinating Group (NWCG) *Wildland Fire Qualifications System Guide* (PMS 310-1). In addition, personnel will meet the Bureau training and experience requirements for each position, see **Appendix 8-2**.

e. Physical Fitness Standards

Helitack personnel must meet the physical fitness requirements for arduous assignments. It is recommended that helitack crews meet the fitness requirements of a Type I Crew.

f. Operational Procedures

- The IHOG specifies how helicopter operations should be conducted, whether in support of wildland fire or natural resource missions, and provides guidance for bureau helitack and helicopter operations. The IHOG serves as the interagency standards for operations, and has been adopted by the BIA, as well as other agencies.
- Exclusive-use Type 3 helicopters and helitack crews are controlled and dispatched locally by the administrative unit.
- Type 2 helicopters and helitack crews may be categorized as either national or local resources. As national resources, they are available for assignment when ordered by NICC, unless otherwise already committed.
- When aircraft are re-assigned to another location the respective GACC will be notified and coordinated with by the local unit. All movement will be conducted in accordance with local geographic area Aircraft Mobilization/ Demobilization guidelines. Under no circumstances will an aircraft be moved without a resource order.
- Recommended and required equipment for helitack crews and helicopters changes frequently. Consult the IHOG (Chapter 9) and the terms of the contract as appropriate, if uncertain about requirements.

g. Communications

The helitack crew standard is one handheld programmable multi-channel FM radio per every 2 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.

h. Transportation

Due to both the amount and cost of cost of the specialized equipment required for the helitack operation, a dedicated vehicle(s) with adequate storage and security will be provided for helitack crews. The required gross vehicle weight (GVW) of the vehicle(s) will be dependent upon the size class of the helicopter and the number of helitack crew members. The recommended minimum vehicle compliment for a seven person crew will consist of one Class 661 Helitack Support Vehicle and one Class 156, six passenger pickup or Class 166 carryall.

H. Air Tankers

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. All airtanker services are obtained through the contracting process (except the MAFFS, which are military aviation assets and used to supplement the contract fleet when needed).

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

1. FS - Forest Service operates Large Airtankers under FSM 5703 and Grant of Exemption 392 as referenced in FSM 5714.
2. BLM - the requirements of the DM' and BLM Manual 9400

1. Airtanker Base Personnel

The IATBOG identifies a generic table of organization and recommended staffing level for airtanker bases. This guide also describes the duties of various positions used at airtanker bases. There is currently no identified training for the positions at airtanker bases; however, the IATBOG contains a chart identifying recommended training for each position. It is also critical that reload bases staff up commensurate with the need during periods of moderate or high wildfire activity at the base.

2. Airtanker Categories

Airtankers are typed by the size of retardant load that they can carry.

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

3. Qualifications

Airtanker crews fall into two categories: IA qualified, and IA candidates.

- a. IA Qualified: Means the crew may drop retardant on arrival at a fire without aerial supervision. This does not negate the requirements for a lead plane, if ordering agency policies, terrain, or congested areas dictate otherwise.
- b. IA Candidate: Refers to a crew that is in the process of acquiring the experience, training, and prerequisite drop-but in the interim requires aerial supervision.

4. Tanker Bases & Reload Facilities

- a. Tanker bases may be Type 1 bases, meaning they have tankers assigned there, or reload facilities. They may be contract bases or operated on Force Account, and may be operated by the Bureau of Land Management (BLM), USDA Forest Service, or state agencies. Types of retardant (dry powder, liquid concentrate, etc.) will vary with locations.
- b. The fleet provides a mix of capabilities and availability. Certain parameters for the operation of airtankers are agency-specific. For dispatch procedures and limitations, startup/cutoff times, specific requirements for Air Tactical Group Supervisor (ATGS) or Airtanker Coordinator (ATCO), and other operational considerations, refer to geographic area mobilization guides and the *Interagency Airtanker Base Operations Guide* (IATBOG).

5. Airtanker Base Operations

- a. Large airtankers are procured under national contracts. The management of these resources are governed by the requirements of the IAM Part 57 and the IATBOG. Airtankers are operated by commercial vendors in accordance with *Federal Acquisition Regulations (FAR) Part 137*.
- b. The IATBOG is the reference for all airtanker base operations. This guide defines and standardizes national interagency operating procedures at all airtanker bases; facilitates the exchange of personnel from other agencies during periods of high fire activity

(through standardization); provides a common interagency approach in the government's relationship with airtanker and retardant contractors; provide checklists, orientation outlines, and special instructions for personnel at airtanker bases; and provides a framework within which each airtanker base can provide supplemental site-specific guidance.

- c. All personnel conducting airtanker base operations should know the IATBOG and have it available.
- d. Startup/Cutoff Times

The startup/cutoff times are as outlined in the *Interagency Leadplane Operations Guide (ILOG)*. These limitations apply to the time the aircraft arrives over the fire.

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

6. Canadian Airtankers

Use of Canadian airtankers is approved under DOI policy if that aircraft is working under an agreement between the BIA and Canada or one of our cooperators and Canada. If questions arise, contact an IRAM or the BIA-NIFC office.

I. Single Engine Airtanker (SEAT) Operations, Procedures and Safety

Single Engine Airtankers (SEATs) are an effective, efficient and safe BIA fire suppression tool that are not a national resource and can, with proper planning, be obtained on a local basis. Even though these aircraft have been effectively used on extended attack wildfires, they are most effective when included as an integral part of the IA strategy.

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

1. SEAT Manager Position

In order to ensure adherence to contract regulations, safety requirements, and fiscal accountability, a qualified SEAT Manager (SEMG) will be assigned to each operating location. The SEMG's duties and responsibilities are outlined in the ISOG.

2. 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 (400 to 800 gallons), quick turn-around times should be a prime consideration. SEATs 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 Forest Service Airtanker base operating plans will permit SEAT loading in conjunction with Large Airtankers.

2. Communications

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

J. Leadplane Operations

Leadplanes are national resources responsible for the tactical deployment of airtankers over an incident. Leadplane pilots evaluate flight hazards, visibility, wind, storm activity, turbulence, terrain, and other factors to ensure aerial suppression operations are conducted safely and efficiently. Congested airspace, populated areas, and the limited maneuverability of large airtankers all contribute to the need for leadplanes.

1. Policy

- a. The ILOG is adopted by the Wildland Fire and Aviation Management program as operating procedures for BIA. Unless for reasons of safety, and deviation from the policies and procedures contained in the ILOG must be approved in writing by the Director, Branch of Fire Management.
- b. The only approved fixed wing, low-level operation below 500 feet for fire suppression activities are leadplane, ASM, and paracargo missions with approved pilots, aircraft and aircrew.
- c. The ILOG is the reference standard for leadplane operations. This guide was developed to define and standardize national interagency operating procedures for leadplanes; facilitate the exchange of personnel for other agencies during periods of high fire activity (through standardization); and provide checklists, orientation outlines, and special instructions for leadplane pilots.
- d. All personnel conducting or involved in leadplane operations (e.g., ATGSs) should know the ILOG and have it available.
- e. A leadplane is required when:
 - The airtanker pilot is not initial attack rated
 - MAFFS C-130 airtankers are assigned to the incident
 - When foreign government airtankers are being used
 - When two or more airtankers are over the incident, a leadplane or ASM must be on order.
 - When the airtanker flight crew requests a leadplane

2. Operating Practices

There are a number of techniques used by leadplanes. The three most frequent are:

- a. The leadplanes orbits the fire at 1,000 feet above ground level and directs the airtankers by radio. The high level technique affords

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better visibility of both the ground and air operations, but radio exchanges are often time consuming, which is costly.

- b. The leadplanes perform a low-level “show me” pass with the airtanker observing from a higher vantage orbit. In this manner the leadplane can switch positions with the airtanker and observe the drop from a higher vantage point.
- c. The leadplane performs a low-level “follow me” pass, simulating the airtanker run, and identified the target for the airtanker captain by radio or a smoke trail. The leadplane pilot also confirms if there are firefighting personnel or others in the proposed drop area, and if so, notifies the ATGS or incident commander (IC) so ground resources can be warned or moved.

3. Operational Considerations

- a. Some operating practices are specific by agency as follows:
 - USDA Forest Service
 - 1) Require leadplanes to be ordered when two or more airtankers are over the incident.
 - 2) For operations over congested areas, USDA Forest Service policy is that air operations be conducted under an FAA Grant of Exemption No. 392, from FAR 91.119.
 - BIA
 - 1) Require aerial supervision to be on order when more than two aircraft are actually over the incident.
 - 2) The BIA does not require leadplanes to operate SEATs. The “more than two aircraft” standard for requiring aerial tactical supervision can be met with an ATGS.
- b. Aerial Supervision Modules

Some of the leadplanes will carry an ATGS. In those instances, the leadplane may perform both the leadplane and ATGS missions. This combination of the leadplane pilot and ATGS is an Aerial Supervision Module 1 (ASM-1). Additional training is required for an ASM to be fielded operationally.

Situation	Lead/ATCO/ASM1	Ref	ATGS	Ref
Airtanker 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 airtankers.	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 airtankers assigned.	Order	1	Order	1
2 or more helicopters with 2 or more airtankers over an incident.	Order	1	Order	1
Periods of marginal weather, poor visibility or turbulence.	Order	1	Order	1
2 or more airtankers over an incident.	Order	1	Order if no Lead/ATCO/ASM1.	3
When requested by airtanker or ATGS	Required	1	Required	
Smokejumper or paracargo aircraft with 2 or more airtankers 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

K. Air Tactical Operations

The ATGS provides direction, coordination, and supervision to aerial suppression resources—from initial attack to project fires. The ATGS ensures safe and effective air operations to support ground operations, monitors fire behavior, and provides aerial oversight and guidance for firefighters. The minimum Red Card qualifications for an ATGS is Division Supervisor. Although not required, it is highly recommended that ATGS candidates have an aviation background. The transponder code for tactical fire aircraft, on a mission, is 1255.

1. Policy

- a. Aerial supervision is required to be on order when operations are conducted over congested areas. An ATGS, ASM, or ATCO is required for aerial supervision.
- b. Aerial supervision over an incident is recommended when there are more than two aircraft or a mix of aircraft over the incident at the same time. An ASM, ATGS, ATCO (Leadplane), or smokejumper spotter (during smokejumper operations), is recommended for aerial supervision.
- c. During initial response operations the aerial supervision, in priority order with regard to safety and efficiency, is as follows:
 - ASM
 - ATGS
 - ATCO (Leadplane)
 - Smokejumper spotter
 - Helicopter manager
 - If aerial operations will continue beyond initial response, an ASM, ATGS or ATCO will be ordered. Aerial supervision response will be commensurate with expected complexity.
- d. The only approved fixed-wing, low-level operations for fire suppression activities are leadplane, ASM, and paracargo dropping missions. These missions will be conducted with approved and qualified pilots, aircraft, and aircrew. PPE is required for all fixed-wing, low-level flights. Helmets are not required for smokejumpers pilots and ASM flight/aircrew members.
- e. PPE (flight suit or fire shirt and pants, gloves, and boots) is recommended, but not required for fire reconnaissance and air tactical missions; these missions are not low level.
- f. Fire aircraft will use transponder settings of 1255 when over incident or not in controlled airspace.

2. Organization

- a. ATGS
 - The ATGS is an identified position in the ICS, with training and qualifications prescribed by the NWCG 310-1. The ATGS is a tactical position with two subordinate specialty positions to assist when required - ATCO and Helicopter Coordinator (HLCO). The ATCO, commonly called a leadplane pilot, deals

with fixed-wing retardant aircraft, while the HLCO deals with tactical coordination and airspace management for rotary wing aircraft. Some geographic areas and agencies have full time ATGS personnel, while the majority of field units rely on a qualified local person or order the position through the coordination system to perform the job.

b. Operational Procedures

- Currently there are four operational modes for ATGSs
 - 1) ASM-1 - The ATGS is in the aircraft with a qualified leadplane pilot. In this module, the ATGS and ATCO missions are combined, with low-level “follow me” and “show me” passes performed as well as the command and control function of the ATGS. ASM Crew Resource Management, and ground and flight familiarization in aircraft type and with avionics is required prior to an ATGS becoming operational in this module. Leadplane pilots and qualified air tactical personnel are responsible for familiarization. Currently only BIA, Alaska State Department of Forestry, and designated USDA Forest Service ATGS are authorized to be on the aircraft, if low-level flight is anticipated. Other ATGS personnel are not authorized to be part of this module. Authorization for other agency personnel to operate in this module must be initiated by the requesting agency and approved by the BIA Aviation Program Manager. Aerial or incident complexity and environmental conditions will dictate when the module ceases low-level operations. The ASM-1 is a national resource.
 - 2) The ATGS is in a contracted, CWN, or Aircraft Rental Agreement (ARA) fixed-wing aircraft in orbit over the incident. This is not a low-level flight scenario; it will always occur above 500 AGL. Pilot/aircraft carding requirements must be met, and PPE is recommended.
 - 3) The ATGS is in a contracted, CWN, or ARA rotary wing aircraft. This mode of operation occurs most often on Type 1 or Type 2 incidents. (Refer to Chapter 13, Aviation Operations)
 - 4) The ATGS is on the ground with a vantage point of the entire incident. Generally only used due to an aircraft shortage, it is effective when the entire area can be viewed from the ground and the ATGS has VHF-AM and VHF-FM radio communication capability. Helicopter coordination has been used extensively in this manner.

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- Any aircraft selected should have as a minimum of two 720 channel VHF-AM radios and one programmable VHF-FM with stand alone guard; the pilot will be carded to perform the air tactical mission. Handheld VHF-FM radios are not acceptable as the only VHF-FM.

3. Operational Considerations

- a. A relief ATGS and aircraft should be ordered for sustained operations to ensure continuous coverage over an incident.
- b. Personnel who are performing aerial reconnaissance and detection should not perform tactical duties unless they are fully qualified as an ATGS.

4. 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 and USDA Forest Service. Additional guidance may be found in the National Interagency Mobilization Guide and supplemented by local Mobilization Guides.

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

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

Additional references can be found by contacting:

- a. Regional Aviation Manager
- b. Inter-regional Aviation Manager
- c. GACC Airspace Coordinator

Regional Aviation Managers are the primary contacts for airspace management issues.

L. Flight Management/Flight Following

1. Policy

- a. All flights will have a flight plan with aircraft and passenger information.
- b. Special use flight plans require approval by the immediate supervisor and final approval by the appropriate line manager.
- c. Bureau policy requires designating a fixed-wing manager for each point-to-point flight transporting personnel.
- d. Flight following is the responsibility of the scheduling office and will remain so until transferred through a documented, positive hand-off. Flight-following reports from the aircraft are the responsibility of the pilot-in-command (PIC) in accordance with 14 CFR. Violation of flight following standards requires submission of the SAFECOM per the Departmental Manual.
- e. For tactical aircraft that cross dispatch area geographic boundaries, the receiving unit is responsible to confirm arrival of the aircraft via telephone to the receiving GACC.
- f. National Flight Following Frequency is 168.650

2. Types of Flights – Fire & Fire Support

- a. There are two basic types of flights: Point-to-point and special use. Point-to-point flights typically originate at one developed airport or permanent helibase, with the direct flight to another developed airport or permanent helibase. Point-to-point flights are conducted solely for the purpose of transportation of personnel or cargo, and do not involve special use flight.
- b. Special use flights are defined by exclusion as all flights not meeting the definition of point-to-point flight. As such, special use flight requires work to be performed in the air (e.g. retardant or water delivery and fire reconnaissance), or through a combination of ground and aerial work (e.g., delivery of personnel and/or cargo from helibases to helispots or unimproved landing sites, rappelling or cargo letdown, horse herding).
- c. Special use flights inherently require greater planning due to the greater number of hazards and consequent higher degree of risk commonly involved in non-point-to-point flights. These special use flights require approved pilots, air crew, and aircraft.

- d. A point-to-point flight is conducted at greater than 500 feet above ground level (AGL) with no descent at any time below 500 feet AGL. By exclusion, all other flights are special use.

3. End Product Flights

Some activities requiring the use of aircraft, such as aerial reseeding, photography, BAER projects, chemical application and others, may be accomplished under an End Product Agreement, acquired through conventional Tribal or BIA procurement or contract administration. This requires no specific aviation oversight, as the result of the operation is the product and the agency is not responsible for flight operations. However, in the event that aviation services are acquired through the AMD the activity is, by definition, a full service aviation contract and is subject to all the oversight required of any other flight activity, to include the risk assessment and approval process, a project aviation plan, and operational oversight by qualified aviation management personnel.

If an aviation service is requested through AMD, it shall be requested and approved through the appropriate IRAM and administered by a qualified Contracting Officers Representative (COR).

4. Flight Manager Responsibilities for Fixed-wing Aircraft Point-to-point Flights

- a. Check pilot card to ensure qualifications are current for aircraft type.
- b. Check aircraft card to ensure that aircraft is current and approved for mission.
- c. Flight plan/flight following: filed with FAA or Agency, facilitate as needed. (Filing, opening, and closing the FAA flight plan is the responsibility of the pilot.) National Flight Following Frequency is 168.650.
- d. Brief pilot on flight routine/mission objective.
- e. Pilot briefing to passengers.
- f. Ensure passengers have received and understand briefing; all personnel on board are either crew members, or authorized or official passengers.

- g. Check fiscal documents; ensure flight payment paperwork is accurate and, if BIA is paying for the flight that the aircraft is under some type of procurement document and all signatures secured.

5. Tactical/Special Use Flights - Fixed Wing

- a. Tactical missions are aircraft operations associated with IA of wildfires and large wildfire support. The fixed-wing or helicopter manager will brief the pilot, and is responsible for the welfare of the Bureau/Tribal employee(s) while on the mission. All SEAT dispatches will be backed up by a resource order.
- b. PPE is required for a special-use mission.
- c. All personnel will meet training and qualification standards required for the mission.
- d. Special-use-flight
 - Includes the following flight missions:
 - 1) Flights conducted within 500 feet AGL
 - 2) Water or retardant application
 - 3) Parachute delivery of cargo
 - 4) ATGS operations
 - 5) Airtanker coordinator operations
 - 6) Takeoff or landing requiring special techniques due to hazardous terrain, obstacles, pinnacles, or surface conditions.
 - 7) Fire reconnaissance (precision recon)


6. Tactical/Special Use Flights - Helicopters

- a. All dispatches of contract or CWN helicopters for initial attack or other tactical missions will be backed up by a resource order.
- b. Special-use helicopter flights
 - Includes the following:
 - 1) Flights conducted within 500 feet AGL.
 - 2) Water or retardant application.
 - 3) Helicopter coordinator and air tactical group supervisor operations.
 - 4) Aerial ignition activities
 - 5) External load operations
 - 6) Night vision goggle operations

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- 7) Hoversite/autosurvey
 - 8) Rappelling
 - 9) Aerial capture, eradication, and tagging of animals
 - 10) Offshore vessel or platform landings
 - 11) Toe-in, single-skid and step-out landings (prior authorization or exemption required).
 - 12) Takeoff or landing requiring special techniques due to hazardous terrain, obstacles, pinnacles, or surface conditions.
 - 13) Free-fall cargo
- c. The use of PPE is required for both helicopter flight missions and ground operations. The specific items to be worn are dependent on either the type of flight, the function an individual is performing, or the type of ground operation being conducted. Refer to the tables in Chapter 9 of the IHOG for specific requirements.

**APPENDIX 8-1
SAFECOM**

		Reported By <i>(Optional)</i>	
		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	

**APPENDIX 8-2
BIA Exclusive Use Helicopter Module Positions**

Position¹	Minimum Prerequisite Experience²	Minimum Required Training³	Currency Requirements	Target Training⁴	Target Quals.⁵
Fire Helicopter Crew Supervisor FHCS	1) One Season ⁶ as an FHAS 2) HMGR 3) ICT4 4) HEB2	I-300 S-381 or L-380	RT-372 ⁷	S-300 S-390 J-375 S-378	ICT3 HEB1 ASGS HLCO
Fire Helicopter Assistant Crew Supervisor FHAS	1) One Season ⁶ as an FHSL 2) HMGR 3) ICT4 4) HEB2(T)	I-200 S-200 S-215 S-230 S-234 S-260 S-270 S-290 S-371 COR	RT-372 ⁷	I-300 S-381 or L-380	ICT3 HEB2
Fire Helicopter Squad Leader FHSL	1) One Season ⁶ as an FHCM 2) FFT1 3) ICT5	S-131 S-133 S-211 S-212 S-281	S-271 ⁸	I-200 S-200 S-215 S-230 S-234 S-260 S-270 S-290 S-372 S-371	ICT4 HMGR HELB DECK
Fire Helicopter Crewmember FHCM	1) One Season ⁶ as an FFT2 2) HECM Taskbook	I-100 S-130 S-190 S-271	S-271 ⁸	S-131 S-133 S-211 S-212 S-281	FFT1 ICT5 ABRO HESM
Helicopter Longline Hooker HELH	1) FFT2	A-219			

Exclusive Use Helicopter Position Footnotes:

- 1) **All Exclusive Use Fire Helicopter positions require an arduous fitness rating.**
- 2) Minimum experience and qualifications required prior to performing in the Exclusive Use position. **Task books must be completed.**
- 3) Minimum training required to perform in the position. Each level must have met the training requirements of the previous level(s).
- 4) Additional training, which augments the current position or prepares the individual for advancement.
- 5) Additional qualifications, which augment the current position or prepares the individual for advancement.
- 6) A “**season**” is continuous employment on a full time Wildland fire crew for a period of 90 days or more.
- 7) After completing S-372 must attend the Interagency Helicopter Manager Workshop (RT-372) once every three years.
- 8) Must receive S-271 or serve as S-271 instructor once every three years.

Note: Exceptions to the above position standards may be granted, on a case-by-case basis, by the BIA National Aviation Office.

Note: Some positions may be designated as COR/Alternate-COR. If so, see individual Agency COR training & currency requirements.