Pilot handbook

Alberta Wildfire 2026

Alberta

Pilot Handbook | Forestry, and Parks

Contents

Contact Information

Forestry Area Offices

Office Location	Email	Phone Number
Calgary	calgary.wfops@gov.ab.ca	403-297-8800
Edson	wf.wfops-edsn@gov.ab.ca	780-723-8527
Fort McMurray	mcmurray.wfops@gov.ab.ca	780-743-7125
Grande Prairie	grande.wfops@gov.ab.ca	780-538-5560
High Level	high.wfops@gov.ab.ca	780-926-3761
Lac La Biche	labiche.wfops@gov.ab.ca	780-623-5388
Peace River	peace.wfops@gov.ab.ca	780-624-6190
Rocky Mountain House	rocky.wfops@gov.ab.ca	403-845-8272
Slave Lake	slave.wfops@gov.ab.ca	780-849-7428
Whitecourt	whitecourt.wfops@gov.ab.ca	780-778-7153

Alberta Wildfire Coordination Centre

Office Location	Email	Phone Number
Edmonton	AWCC@gov.ab.ca	780-415-6460

Introduction

The purpose of this handbook is to give companies and pilots working for Alberta Wildfire Management an insight into how conducts business. Basic information on policies, procedures, and incident command system are provided in this handbook.

Wildfire Management is within the Ministry of Forestry, Parks, and Tourism and is responsible for wildfire service, operations, prevention, wildfire information and community programs for approximately 52.9% of the province (349,726 square kilometres).

To help with safeguarding our forests, Alberta has a legislated Forest Protection Area (FPA) within the Ministry and is responsible for wildfire suppression. The FPA has been divided into 10 Forest Areas (each with their own Fire Centre/Radio Room) as listed below:

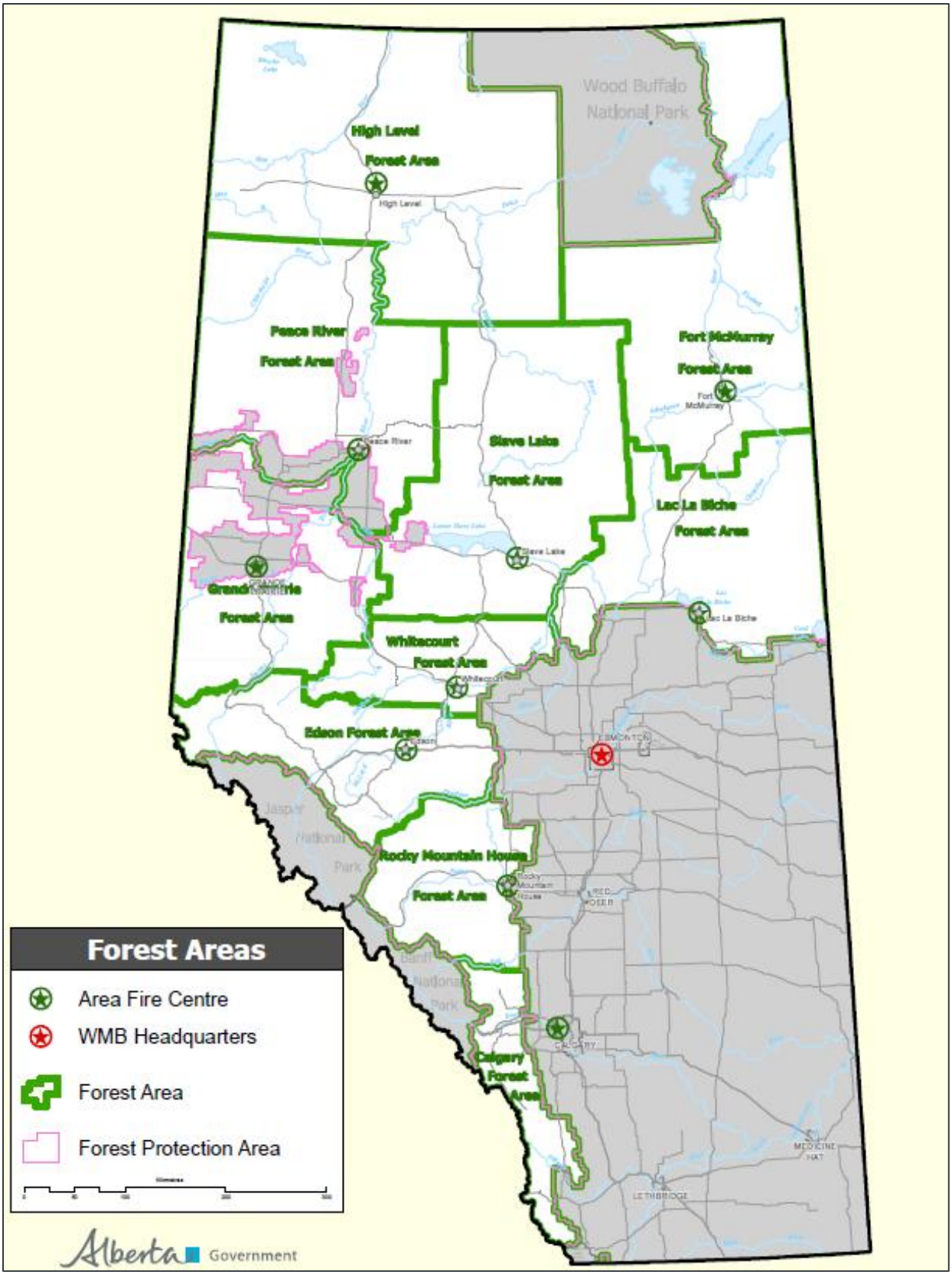
- Calgary Forest Area
- Fort McMurray Forest Area
- High Level Forest Area
- Peace River Forest Area
- Slave Lake Forest Area
- Edson Forest Area
- Grande Prairie Forest Area
- Lac La Biche Forest Area
- Rocky Mountain House Forest Area
- Whitecourt Forest Area

The Forest Area Manager coordinates and monitors all forest pre-suppression and suppression activities within the Area.

The key strategy used to protect the land and forest resources is the safe, rapid, and aggressive initial attack of all fires in the province. It is important that the aircraft pilot is well trained, competent and has a well-maintained aircraft. In addition to wildfire operations, aircraft are also used for other resource management projects.

Each Forest Area is responsible for the management of wildfires within their designated area. The Alberta Wildfire Coordination Centre (AWCC) is located at the Wildfire Management Headquarters in Edmonton and for coordinates resources between the Forest Areas, sets Provincial Priorities, oversees polices, and completes audits on wildfire programs.

Forest Area Administrative Boundaries Map



Incident Command System

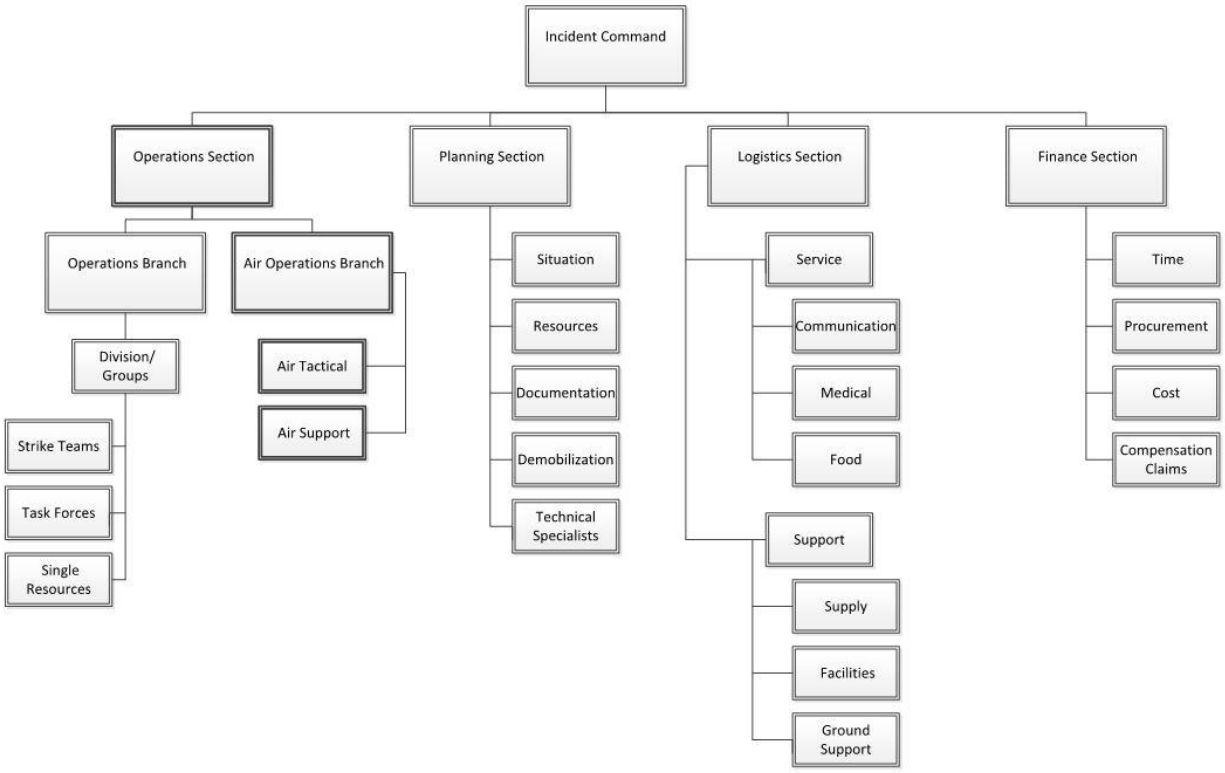
The Alberta Forest Operations Branch Incident Command Organization is based on the Canadian Incident Command System (ICS) and is used to manage all wildfire emergencies and prescribed fire events.

The ICS organizational structure is specifically designed to meet the complexity and demands of single or multiple emergencies or complex planned events.

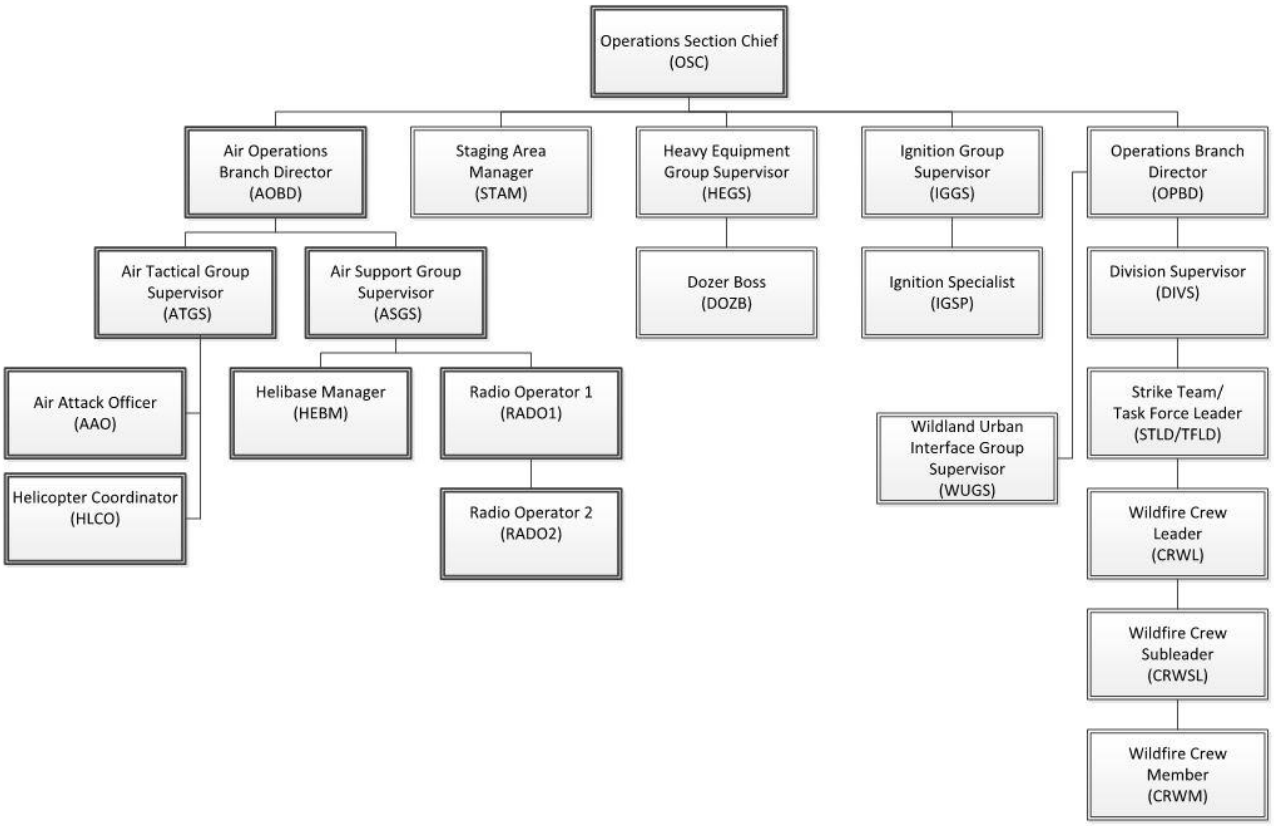
The Incident Command System is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure with responsibility for the management of assigned resources to effectively accomplish stated objectives pertaining to an incident.

Five (5) basic sections are used in forming an incident: Command, Operations, Planning, Logistics, and Finance. On smaller incidents all positions may not be activated, and persons may be assigned the duties and responsibilities held by other positions. Aircraft will typically report to the Operations Section on an incident and the Air Operations Branch, if activated.

Incident Command Organization Structure Chart



Operations Section Organization Chart



Role of the Air Operations Branch

The Operations Section Chief may establish an Air Operations Branch when the complexity of air operations requires additional support or when the incident requires mixing tactical and logistical utilization of helicopters and other aircraft.

The number of personnel needed to perform the major functions and responsibilities assigned to the Air Operations Branch will vary based on the size and complexity of the incident. The general responsibilities of the key positions in the Air Operations Branch are as follows:

Air Operations Branch Director (AOBD)
The Air Operations Branch Director position is deployed on large and/or complex incidents. The AOBD is responsible for:

- Overseeing all aircraft operations on the incident.
- Ensuring appropriate incident air support facilities are in place.
- Coordinating tactical, logistical, and other uses of incident aircraft.
- Ensuring appropriate airspace management procedures are in place.
- Ensuring safe and efficient use of aircraft resources.

A pilot's day-to-day interactions with the AOBD may be limited when air support staff such as the Air Support Group Supervisor, Helibase Manager, and Helicopter Coordinator are deployed on an incident.

Air Support Group Supervisor (ASGS)
The Air Support Group Supervisor is deployed on mid to large-scale incidents with several aircraft. The ASGS is responsible for:

- Managing and coordinating all air support facilities.

- Briefing new aircrews on the facilities and their assignments.
- Coordinating and communicating aircraft assignments.
- Ensuring air traffic control plans are established/communicated.

Helibase Manager (HEBM)
The Helibase Manager is responsible for managing and supervising all activities and resources at their assigned helibase. The HEBM should be the first point of contact for the pilot for any issues surrounding:

- Fueling
- Helibase layout
- Dust and debris issues or concerns
- Engineering maintenance support and security.

The Air Support Group Supervisor and the Helibase Manager are most commonly the air operations branch positions that a pilot will interact the most with on an incident.

Loadmaster (LOAD)
During highly complex helibase operations, it may be necessary to activate a Loadmaster. The LOAD is responsible for:

- Loading and unloading personnel and cargo safely.
- Ensuring all passengers receive pre-flight briefings.
- Supervising manifesting of personnel and cargo.
- Coordinating efficient movement of personnel and cargo.
- Coordinating sling loads

Wildfire Radio Operator (RADO)
The Radio Operator is supervised by the ASGS and is responsible for:

- Facilitating communications among assigned helicopters (constant communication) helibases and air operations staff.
- Maintaining a log of all aircraft movements and manifests
- Assisting with helicopter timekeeping and utilization tracking

Helicopter Coordinator (HLCO)
The Helicopter Coordinator is responsible for:

- Managing and coordinating aerial firefighting helicopters.
- Briefing pilots on tactical missions and procedures.
- Identifying and prioritize suppression targets.
- Assisting with initial scouting/ assessment of water sources.
- Coordinating with other Provincial staff and resources including ground personnel and airtankers.

The HLCO position plays an integral role in managing airspace over an incident. Wildfire Management is working to train HLCOs in airspace management to ensure the safety of all aircraft in the vicinity. The primary airspace management responsibilities of the HLCO are as follows:

- HLCOs are qualified to assign altitudes to “stack” other aircraft and give entrance/exit instructions.
- The HLCO will inform the other aircraft of the appropriate altimeter setting, their position and what altitude the Helicopter Coordinator aircraft is maintaining.

Each pilot in command on the incident is responsible to see and be seen and may only be assigned altitudes and entrance/exit instructions by a qualified HLCO, Air Attack Officer or Air Tactical Group Supervisor that is managing the airspace.

Air Attack Officer (AAO)

Each airtanker group has an assigned “birddog” aircraft that carries an Air Attack Officer (AAO) and a birddog pilot. The AAO is responsible for:

- Coordinating air attack operations on wildfires.
- Ensuring aerial operations are conducted in an effective, efficient, and safe manner.
- Managing the airspace over the wildfire to ensure the safety of all aircraft in the vicinity.

Air Tactical Group Supervisor (ATGS)

When two (2) birddog aircraft are on a fire, one (1) birddog may assume the Air Tactical Group Supervisor (ATGS) role. Once an ATGS is established, that birddog team will be responsible for managing the airspace for the fire. The ATGS will maintain a high-altitude orbit while the tactical birddog will remain 1,000 ft. Above Ground Level (AGL)and continue to work with the airtankers working the fire. The ATGS will be identified as “Air Attack” and either the wildfire number or a geographical identifier. For example: Air Attack Fire 31 or Round Hill Air Attack. Once ATGS has been established it will be announced on the Air Advisory and Forest Area Firenet Frequencies.

Firedrive

Wildfire Management has made file sharing services available to all aircraft companies with a casual charter agreement. Firedrive (https://firedrive.gov.ab.ca) allows companies to access a digital copy of the pilot handbook, helicopter rates, geo-referenced Adobe map (.Pdf), the FP183 Forestry Division Radio Guide, reference materials, and other important electronic forms. These materials are available for download and pilots using electronic devices in the field are encouraged to make use of this site. For mobile devices, there is a mobile app which provides a far superior experience for mobile users. The app is called **Synology Drive** that can be found in the app store.

The login username and password are distributed to the company primary contact on an annual basis by April 1st.

Files and documents on this site are not to be distributed beyond those individuals participating or assisting in wildfire operations.

Aircraft Hiring and Requirements

Definitions

Availability

For a helicopter to be considered “available” the aircraft must be available to depart from the indicated location within one (1) hour of hire notification.

Forestry Projects

Forestry projects are operations related to and in support of wildfire suppression, presuppression, reclamation, lookout tower servicing, timber management, forest health, etc.

Suitability is determined by the following considerations:

1. Aircraft type, capability, and pilot qualifications;
2. Forest Area Operator (Rotation list will be used);
3. Forest Area knowledge and familiarity with Agriculture and Forestry policies and procedures; and
4. Proximity to point of hire.

Forest Area Operator (FAO) is an approved aircraft company with an established base located within the Forest Area/Mutual Aid zone with aircraft on location and a base maintained year round. A base is further defined as a permanent facility capable of indoor aircraft storage, maintenance, and fueling of the designated aircraft types. To be considered a FAO, the aircraft company must be established in the Forest Area/Mutual Aid Zone for a minimum of one (1) year after the Forest Area inspection. The aircraft company must contact the Forest Area advising them of the intent of establishing FAO status. A Forest Area representative(s) will inspect the facility(s) to confirm if the company meets the criteria mentioned above. Once the inspection is completed and approved by the Forest Area, the one (1) year period will commence.

Forest Area Operators must provide the Forest Area with a list of aircraft types and quantities that are designated as FAO aircraft at the beginning of the fire season (April 1st) of each year. An aircraft company may only list an aircraft with one (1) Forest Area. If an operator fails to maintain a base or fulfill the criteria outlined above the FAO status may be revoked at the discretion of the Province.

Hiring Authority

Forest Area
A Forest Area will hire on a casual basis those aircraft companies situated within the Forest Area boundaries.

Alberta Wildfire Coordination Centre
The Alberta Wildfire Coordination Centre will hire upon request from the Forest Area(s) or Edmonton, those aircraft companies situated outside the requesting Forest Area boundaries or outside of Alberta.

Note: Aircraft companies must have a Casual Charter Agreement in place to be eligible for hire. Only those companies with a Transport Canada issued approved Air Operator Certificate are eligible for a Casual Charter Agreement with the Ministry. Wildfire Management conducts aircraft company safety reviews with new Casual Charter Agreements and periodically thereafter.

Hiring Priority

Wildfire Management first determines the best aircraft type or classification for the job and any other specific pilot competencies required. Hiring priorities are as follows for:

Light, intermediate, and medium helicopters
1. Long-term contract aircraft of required capability; and
2. Available aircraft based on:
    i. Suitability; and
    ii. Dispatch time stamp

Heavy helicopters
1. Suitability; and
2. Dispatch time stamp.

Releasing

The intent of this procedure is to meet the needs of the operation while finding an equitable balance for aircraft companies.

When releasing helicopters from presuppression or wildfires, each is considered an individual project (e.g., presuppression is one (1) project, *WF-060 is one (1) project, *WF-090 is one (1) project). Helicopters are not replaced from one (1) project to another.

Within each project, helicopters are released as follows:

1. Aircraft requesting to be released for other work or limited time commitment.
2. Casually hired aircraft based on least suitability for the work required.
3. Long-term contract aircraft.

Aircraft Substitution

Alberta Forestry Operations will no longer be allowing substitutions for casual charter contracts.

Aircrew Changes

If an aircraft company wishes to replace or substitute any member of the aircrew, they must:

- Notify the Forest Area 48 hours in advance of any replacement or substitution; and
- Provide updated contact information for any new aircrew.

Wildfire Management must approve pilot competencies prior to the replacement of any pilots.

All costs or expenses related to replacing or substituting aircrew shall be borne by the aircraft company.

Hiring

Availability
Aircraft position tracking data will be used to determine aircraft location and availability in conjunction with a spreadsheet maintained by the AWCC.

When an aircraft is off contract but **available** for hire the air carrier must:

- Turn on permissions for Alberta Wildfire to view the aircrafts position data
- Email wf.AircraftHiring@gov.ab.ca with availability updates including:
  - Company name
  - Registration
  - Model
  - Location
  - Open or limited availability
  - Contact name and phone #

When an aircraft is off contract and **not available** for hire the air carrier must:

- Email wf.AircraftHiring@gov.ab.ca with availability updates

If the air carrier fails to turn on permissions for Alberta Wildfire to see an available aircraft's position data or fails to send email updates it could result in an aircraft not being hired.

False Information
If it is found that the aircraft company is intentionally providing false information, reprimands to the aircraft company such as a verbal warning, a letter of warning, suspension of hire, or termination of all or some of their contracts may result. Letters of warning, suspensions, or contract terminations will be sent from the Manager of Wildfire Response.

Unserviceable Aircraft

Unserviceable means the aircraft, pilot, or engineer are not in condition to perform, fails to perform, or is unavailable to perform during the alert/standby period as defined in "Flight Crew Statuses" or work assignment period specified in the daily Incidence Action Plan (IAP) or Forest Area daily operations plan. Casual hired aircraft unserviceable for more than one (1) operational period may be released. Daily minimum hours shall be adjusted when the helicopter is unserviceable for a portion of the operational period and shall not apply if the helicopter is unserviceable for the duration of the operational period.

When reporting unserviceable aircraft these procedures must be followed:

- Advise the Forest Area (or ASGS) immediately of unserviceable casual charter aircraft;
- Ensure unserviceable time is entered on your mobile flight report for that day.
- Ensure the alert period is completed to allow for accurate adjustment(s) to any daily standby penalty charges; and

- Advise the Forest Area when aircraft is serviceable again and record it on the Mobile Flight Report for that day.
- If the Mode C Transponder is not functioning, the aircraft will be marked as unserviceable

Note: Inoperable radios constitutes an unserviceable aircraft. Depending on the aircraft unserviceable reason, an Aviation Occurrence Report (FP1) may need to be completed.

Minimum Equipment Requirements

Required – Beyond Transport Canada Requirements

1. Transport Canada approved, VHF-AM transceiver, operating in the 118.0 – 136.0 MHz frequency range, with 25 KHz spacing with the ability to monitor **two** (2) separate frequencies.

2. One (1) Project 25 (P25) Compliant Transport Canada approved VHF-FM transceiver capable of programming and retaining 99 or more channels of operating on 138.0 – 174.0 MHz transmit-and-receive with full access to CTCSS sub-audible tones, Network Access Codes (NAC) and be switchable by the operator to any of the 32 standard CTCSS tones or one (1) of the 4096 NAC codes and capable of narrow banding and a minimum of one (1) guard channel. All radios must be useable by the pilot with a “push to talk” button on the cyclic.

3. Intercom communications with a minimum of one (1) headset per passenger seat for light and intermediate helicopters. A minimum of one (1) headset for each front seat and four (4) headsets for the rear seats in medium helicopters. All headsets are to be “David Clark” equivalent in quality.

4. Light, intermediate, and medium helicopters must have the ability to independently receive and transmit simultaneously from the pilot and co-pilot positions on any of the radio systems.

5. Functioning Hobbs meter or satellite tracker calibrated to show readings in hours and tenths of hours that is activated by flight or full power ground hover. Helicopters without Hobbs meters may be hired, however, a method of determining accurate flight time such as reviewed pilot logbook, satellite data, or helibase manager records, must be used for billing. Aircraft with an unserviceable Hobbs meter will require review and recording of the Pilot logbook for validation of all flight hours. Alternative devices to the standard Hobbs meter will be permitted if they provide an audit function that will record individual flight airtime and a cumulative tally of airtime for the helicopter.

6. All helicopters shall have one (1) GPS unit mounted in a central position between the pilot and co-pilot station. GPS units are mounted and in a position that does not impede the passenger view from the co-pilot seat. Preferably with degree decimal minute (DMD) as the standard display.

7. Functioning mode C transponder which **must always be turned on**.

8. Always equipped with functioning Emergency Locator Transmitter (ELT) compliant with the ‘406’ ELT approved by Transport Canada.

9. Near real time tracking device that can provide position, speed and heading in a standard format “AFF” (automated flight following) at a minimum of every 2-minutes as described in this document.

10. Transport Canada approved shoulder harnesses for all passenger seats, except heavy helicopters equipped with “airline style” seats.

11. Portable electric refuelling gear.

12. All helicopters must have upper surfaces of the main rotor blades painted in solid or alternating color patterns with high visibility paint. Acceptable colors are white, black, yellow, red, and orange.

13. Self-cocking, automatic locking cargo hook with both manual and electrical release.

14. Sleeping bag and sleeping gear for each flight crew member.

15. Preferred to have a multi-purpose mobile computing device (IOS or Android "smartphone" or tablet) equipped with a mapping application (such as but not limited to ForeFlight or Avenza Maps) capable of reading geospatial Adobe files (.Pdf) and mounted to be used in a hands-free way.

16. Preferred to have ADSB in and out connected to a multifunctional display visible from both the pilot and copilot positions.

Wildfire Operations – Required

- Helicopters (except for the R22 and R44) must come with an approved water bucket having a volume suitable to the operational performance for that helicopter type.
- For helicopters with a 270 Imperial gallon or greater capacity bucket, the bucket is to be foam capable.
- Intermediate, medium, and heavy helicopters must come with at least one (1) long line of at least 100 feet with remote hook and be equipped for vertical reference capabilities.
- Minimum of two (2) cargo nets of appropriate size for the aircraft and two (2) lanyards.
- Cabin area cargo nets or restraints for medium and heavy helicopter side facing seating/cargo area.

Specialty Operations
Any speciality operations may require other equipment and will be identified at the time of hire.

Tracking Device Requirements for Wildfire Management Operations
Tracking systems are mandatory for all helicopters and fixed wing. This does not apply to commercial airline flights and charter fixed wing flights for passenger moves.

The satellite system must meet the USAFF XML data specification and either push the data to a Wildfire Management server or allow Wildfire Management services to pull the data from its data server. The tracking system will comply with the following:

- Must be Automated Flight Following (AFF) compliant.
- Must be connected to the aircraft power source.
- Installed in such a manner that the GPS and Satellite antennas have maximum vertical exposure to ensure connectivity with the satellites.
- Installed and approved via an Engineering Order (EO), Limited Supplemental Type Approval (LSTA), or a Supplemental Type Certificate (STC).
- Secured in such a manner that in the event of a firm landing it will not become dislodged and pose a risk to cabin crew.

Note: The Electronic Serial Number (ESN) and/ or the International Mobile Equipment Identity (IMEI) number must be provided to the Alberta Wildfire Coordination Centre in Edmonton for entry into the tracking system.

The service providers listed below are set up in the Wildfire Management tracking system:

- Outerlink
- Guardian
- Bluesky
- LatitudeService
- SkyTrac

- SkyConnect
- SpiderTracks
- SolaraRDDI
- TrooTrax
- V2Track
- TracPlus

Any additional providers not listed must be set up prior to fire season. Contact the Alberta Wildfire Coordination Centre before March 15th each year to add a service provider.

Note: An inoperable tracking system may constitute an unserviceable aircraft depending on the project and length of time the system is inoperable.

Accounts and Expenses

General

Since the the 2025 season, Alberta Wildfire has introduced a new electronic flight report called the Mobile Fight Report. This report will be completed and submitted daily, with verification by the Forest Area. A copy of the completed flight report will also be sent to the pilot to forward to their company for invoicing.
In rare situations where an electronic submission is not possible, the paper version of the Daily Flight Report (A0-02) may still be used. In those cases:

- The green copy is left at the Forest Area office or incident location.
- The white and yellow copies are retained by the aircraft company.
- The aircraft company must submit a copy of the Daily Flight Report along with the invoice for payment. If submitting by email, a scanned copy is acceptable.

Invoices for flights hired by the Province must be directed to Aircraft Accounts. The Government of Alberta Mobile Flight Report will be the basis for payment made. Timely and accurate documentation supports the department's requirement for record keeping and allows for prompt payment to aircraft companies.

Note: Any changes to the flight report after it has been submitted must be approved by the Forest Area that the flight occurred in. Any invoices with unapproved changes to the vendor copy of the flight report that do not match the original flight report will not be processed.

Annual Fleet List and Insurance

By January 15th of each year, the Air Operations Section of Wildfire Management will email a current fleet list to all aircraft companies with a valid casual charter contract. This fleet list will include all aircraft that Wildfire Management has on file for each aircraft company. Companies are required to review, and if the fleet list is correct, must sign, date, and send back to the Air Operations Section. If any updates or changes need to be made to the fleet list, companies are required to make those adjustments and send back to the Air Operations Section who will then review and make any necessary adjustments and return for date and signature.

All finalized fleet lists are to be returned to the Air Operations Section by March 31st of the current year. Any updates to the fleet list throughout the season must be done prior to hire. Any invoicing discrepancies will reference the signed fleet list. Failure to return a signed fleet list by March 31st of the current year will result in Wildfire Management defaulting to the most recent fleet list on file, in turn generating payment for the aircraft on file.

To maintain an active contract, aircraft companies are required to supply a copy of their current insurance certificate to Aircraft Accounts.

Mobile Flight Report

The user manual and instructions for the Mobile Flight Report process is available on the Firedrive.

- Mobile Flight Reports are the basis of payment and the audit trail document. The following information if applicable must be filled out on the flight report.
- Flight Date
- Vendor Name
- A/C Type
- A/C Registration
- Aircraft Registration Substitution (if applicable)
- Departure and Down for the Night Location
- Total Flight time according to Meter Reading or Satellite Tracker, Start and Finish and Difference (if aircraft has no meter, an explanation must be provided)
- Purpose of Flight
- Fire # / Project Code (if applicable)
- Crew Type (if applicable)
- Any landing Fees to be charged
- Comments
- Supplied by Vendor or GOA Fuel, number of litres and cost per litre
- Pilot(s) and Engineer(s) Names
- Flight Verification
  - Pilot Signature and Pilot Name
  - **Note:** All eligible expenses and fuel supplied by the aircraft company must be recorded on the Mobile Flight Report . If these charges are not recorded on the Mobile Flight Report, payment for these charges will not be honored.
  - Verification and Approval Process

Once a pilot completes and submits a Mobile Flight Report it is automatically sent to the Forest Area they are working in for approval. The Forest Area will review the flight report and approve it if there are no discrepencies. Once it is approved they will enter it into the system and a copy of the finalized flight report will be sent to the pilot who submitted it. It is up to the piot to send that copy to their company for invoicing purposes.

*Any changes that need to be made after submission will need to be directed through the Forest Area the report was submitted to.

Daily Minimum Hours

Daily minimum hours are the number of hours per day, if any, that may be guaranteed to an aircraft company. Payments for Charter Periods* shall be based on the helicopter type provided and the applicable rates specified in the current Alberta Helicopter Rate Schedule. The Alberta Helicopter Rate Schedule is reviewed on an annual basis and distributed to the Contractor. For each Charter Period, the Contractor shall be entitled to payment for actual flight time and, if applicable, for any unused Daily Minimum Hours at the specified Hourly Rate. The hiring details for the Charter Period will identify if Daily Minimums Hours are not applicable.
To ensure efficient and accurate billing, **casual charter periods will be reset every 30 days** for aircraft hired under casual charter arrangements that extend beyond a single month.

Daily minimum hours for all types and classes are as follows:

1) For fire suppression, presuppression and project work (e.g., tower service, fuel moves, forest health, timber management, etc.) the Daily Minimum Hours shall be:

a) Three (3) hours when the Daily Work Period is less than 6.0 hours,
b) Four (4) hours when the Daily Work Period is 6.0 or more hours,
c) All other flights will be only for flight hours as specified at the time of hire

(2) Daily Minimum Hours shall be averaged over the term of each Charter Period.
(3) Daily Minimum Hours shall not apply if the pilot or engineer is notified that the helicopter is released 30 minutes or more prior to the assigned "stand to" time.
(4) Daily Minimum Hours shall not apply for ferry time days. Ferry time flight hours shall be included in the total flight hours of the charter period.
(5) Daily minimum hours shall be determined by Wildfire Management for very short-term flying projects and late-day hire for suppression or man-up.
(6) Daily Minimum Hours shall be adjusted when the helicopter is unserviceable for a portion of the Daily Work Period and shall not apply if the helicopter is unserviceable for the duration of the Daily Work Period.

**Daily Work Period is the daily helicopter commitment and refers to the time the helicopter is committed to the project from the time of initial takeoff or start of standby period (whichever is earlier) to completion of the last flight or end of standby period (whichever is later).

*Charter Period means the period of time for which the Contractor supplies a helicopter for the exclusive use of the Province at the request of the Province from initial hire until it is released. If the basing location is changed to a different Forest Area, a new charter period will begin. The Charter Period is an open-ended hire with no guarantee of the number of Daily Work Periods.

Flying Time

Payments for helicopters shall be based on the aircraft type provided and the applicable rates specified in the current Alberta Rotor Wing Rate Schedule.
When determining the duration of a flight, fractions of an hour are rounded to the nearest multiple of six minutes and expressed as decimals of an hour.

0 - 2 min = 0.0	21 - 26 min = 0.4	45 - 50 min = 0.8
3 - 8 min = 0.1	27 - 32 min = 0.5	51 - 56 min = 0.9
9 - 14 min = 0.2	33 - 38 min = 0.6	57 - 60 min = 1.0
15 - 20 min = 0.3	39 - 44 min = 0.7	

Point of Hire and Ferry Time

The actual point of hire and any ferry time may be negotiated at the time of hire. For aircraft positioned outside Alberta, ferry time will be paid one (1) way from point of hire to the required work location. Ferry time may be paid to return to the point of hire outside of Alberta and will be negotiated at the time of hire. Daily Minimum Hours shall not apply for ferry time days. Flight hours for ferry time must be on the flight report for the day the flight takes place. If the aircraft ferries and works the same day, ferry time can be added to that day's flight report.

Note: If the aircraft is repositioned, ferry time will be paid back to the original required work location if ferry time is not being paid to return to the point of hire outside of Alberta. For example, if the aircraft is hired from outside of Alberta to work in Whitecourt and the helicopter is moved to Slave Lake, ferry time is paid back to Whitecourt but not back to the point of hire outside of Alberta.

Fuel Expenses

Wildfire Management makes every attempt to supply aviation fuel located at Wildfire Management maintained fuel caches. While hired, companies are expected to use Wildfire Management fuel when supplied. There may be times when the Duty Officer or divisional representative may request the aircraft company to supply fuel. When an aircraft company is requested to supply fuel and/or oil, the number of litres must be shown on the Mobile Flight Report. If not reflected on the Mobile Flight Report or the aircraft company supplies fuel and/or oil without being requested to, payment for these charges may not be honoured.

Aircraft companies are expected to:

- Report for a hire with adequate fuel and leave at the end of a hire fueled up; and
- Use Wildfire Management supplied fuel when available.

When helicopters are released from the charter period, the Province shall honour invoices for fuel that was utilized from departure from the point of hire up to and including return to the point of hire.

Landing Fees

Any landing fees incurred while working for the Province will be reimbursed with the submission of a receipt. To avoid delay in payment for flight time and expenses, landing fees can be invoiced separately. All landing fees must be recorded on the Mobile Flight Report. If the landing fees are not recorded on the Daily Flight Report, payment for these charges will not be honored.

Flight Crew Meals, Accommodations, and Transportation

Subsistence expenses, including meals, accommodation, and vehicle rental for all aircraft crew, are no longer eligible for reimbursement. Under the 2025-2028 Casual Charter Contract, these costs are now incorporated into an all-inclusive hourly rate..

Accommodations

The Canadian Aviation Regulations (CARs) defines suitable accommodation as:
"a single-occupancy bedroom that is subject to a minimal level of noise, is well ventilated and has facilities to control the levels of temperature and light or, where such a bedroom is not available, an accommodation that is suitable for the site and season, is subject to a minimal level of noise and provides adequate comfort and protection from the elements"

In remote locations, such as temporary firebases or camps, the Province will attempt to provide suitable accommodations for aircrew. If Alberta Wildfire is unable to supply accommodations, the aircraft company will be responsible for arranging them; however, these costs will not be reimbursable under the 2025-2028 Casual Charter Agreement. Furthermore, any additional costs incurred, such as extended flight time, due to aircrew declining provided suitable accommodations will not be covered.

Note: Pilots should be prepared to overnight in temporary camp accommodations such as sleeper trailers in remote locations. Bedding is not provided in camp accommodations therefore the pilot is required to come prepared with toiletries and sleeping gear suitable for the season.

Transportation

Wildfire Management does not provide pilots and engineers with Government or Government leased vehicles when hired for contract or charter.

Alberta Government Payment Schedule

1. A separate invoice must be submitted for each aircraft registration. Invoices must be submitted to the Forest Operations Branch Headquarter Aircraft Accounts in a timely fashion. A suggested guideline is that invoices should be submitted to the AWCC on the 15th and 30th of each month.

2. Any unused daily minimum hours are to be invoiced at the end of the Charter Period.

3. The Province is not responsible for any claims not covered by a valid tariff.

4. The Mobile Flight Report cannot be changed after authorized personnel have certified it. If changes are required, the Forest Area that the flight took place in must authorize any changes.

5. A Mobile Flight Report submitted without Government authorization will be returned to the aircraft company.

Appropriate documentation to support claims for miscellaneous claims must accompany the Mobile Flight Report when submitting invoices for payment. All invoice documentation may be scanned and emailed to the Aircraft Accounts Section at: wf.awhq-aircraftaccts@gov.ab.ca

Alternatively, documents may be mailed to:

ATTN: AIRCRAFT ACCOUNTS UNIT
WILDFIRE MANAGEMENT BRANCH
J.G. O' Donoghue Building
Suite 100, 7000 – 113 Street
Edmonton, Alberta T6H 5T6

The Pilot

Fixed Wing Aircraft Pilot Qualifications

On an annual basis, all fixed wing pilots must complete the **Alberta Wildfire Pilot Orientation online course** through the Hinton Training Centre. Registration instructions for the Alberta Wildfire Pilot Orientation course are available on the Firedrive. All fixed wing pilots require the following:

- Current Fixed Wing Transport Canada Commercial or Airline Transport Pilots License.
- Current Pilot Competency Check (PCC) while operating VFR and a current Pilot Proficiency Check (PPC) when operating IFR.
- Meet the following qualifications, experience, and training level for the following aircraft types:

(a) Twin Turbine and PC-12 (or single engine turbine over 5,000kg):
- 2000 hours total time including:
  - 500 hours multi engine, fixed wing aircraft; and
  - 500 hours pilot in command, fixed wing aircraft.

(b) Multi-Engine and Single Engine Turbine Aircraft (Under 5,800kg) Caravan, Turbine Otter, and Turbine Beaver:
- 1200 total time including:
  - 100 hours multi-engine or 100 Single Engine Turbine, as applicable;
  - 200 hours pilot in command; and
  - 1000 hours total time if operating under IFR (Captain only).

(c) Single-Engine Piston Aircraft:
- 600 hours total time including:
  - 200 hours pilot in command

Helicopter Pilot Qualifications

On an annual basis, all helicopter pilots must complete the **Alberta Wildfire Pilot Orientation online course** through the Hinton Training Centre. Registration instructions for the Alberta Wildfire Pilot Orientation course are available on the Firedrive. All helicopter pilots must meet the competencies outlined in the Helicopter Association of Canada (HAC) endorsed *Pilot Competencies for Helicopter Wildfire Operations – Guidelines and Best Practices, Amendment #1*. Helicopter pilots must meet the specific competencies or equivalent for the following operations:

Wildfire Operations
A competent pilot in wildfire operations requires:

- General wildfire operations knowledge.
- Mountain flying when operating in Grande Prairie, Edson, Rocky Mountain House, and Calgary Forest Areas.
- External load – shortline (horizontal reference) or longline (vertical reference).
- Water bucketing/tanking.
- Hover exit.
- Confined area/landing operations.
- Low visibility flight (Minimum 500 hours pilot in command).

Wildfire Support
A competent pilot in wildfire support requires:

- General wildfire operations knowledge.
- Mountain flying when operating in Grande Prairie, Edson, Rocky Mountain House, and Calgary Forest Areas.
- Knowledge of CLAWR and Oilsands airspace for the Lac La Biche and Fort McMurray Forest Areas
- External load – shortline (horizontal reference) or longline (vertical reference).
- Confined area operations.

- Low visibility flight (minimum 500 Hours pilot in command).

Helitorch Operations
A competent pilot in helitorch operations requires:

- General wildfire operations knowledge.
- Mountain flying when operating in Grande Prairie, Edson, Rocky Mountain House, and Calgary Forest Areas.
- External load – shortline (horizontal reference) or longline (vertical reference).
- Water bucketing/tanking.
- Aerial Ignition Device (AID) and Drip Torching.
- Confined area operations.
- Low visibility flight (minimum 500 Hours pilot in command).

Helicopter Pilot Mentoring Program

To help reduce helicopter pilot shortages and increase exposure to wildfire operations, the Wildfire Management will allow a second pilot who does not meet the HAC competencies for Wildfire Operations and Wildfire Support to fly on wildfires under the supervision of a mentoring pilot. The low time pilot will be given the opportunity to gain experience and hours flying on wildfire operations. The second low time pilot will be approved on a case-by-case basis for certain operations and under the following conditions:

- A formal request must be made to the Province's Provincial Aircraft Coordinator. The aircraft company must describe the low time pilot's experience (including hours PIC), the competencies they intend to work on and the mentoring pilot's experience. Approval for low time pilots will be on a case-by-case basis at the discretion of the Provincial Aircraft Coordinator and the Forest Area managing the wildfire.
- The second low time pilot must be supervised for every flight by an experienced mentoring pilot that meets all the required competencies.
- The second low time pilot would not be permitted to fly with any passengers on board the helicopter.
- The second low time pilot would be at no cost to the Wildfire Management. Daily fee, travel, meals, and accommodations would be the responsibility of the aircraft company. In remote base camps when space allows, meals and accommodations may be provided by the Alberta Government.
- Integrating the second low time pilot into operations would need to be as little disruptive as possible

Pilot Responsibility

Pilots are legally responsible for the safety of passengers and cargo on board the aircraft and have the final say on loading of the aircraft, whether a flight proceeds or is terminated. Pilots must:

- File flight plans as required in CARs.
- Report all hazards, incidents, and accidents.
- Determine the suitability of weather conditions for a flight.
- Determine if and where landings can be made safely.
- Ensure maintenance is carried out with minimum impact to Provincial operations.
- Monitor assigned radio frequencies while in flight.
- Check and report position.
- Complete and submit all paperwork at the completion of each workday.
- Report unserviceable aircraft immediately to the Forest Area.
- Immediately relay any deviations from a flight plan or passenger manifest immediately to the flight watch station.
- Ensure all flight and load calculations have been completed as per the requirements of CARs.
- Supervise all refuelling to ensure the procedures are followed including the established amount, type and quality of fuel used.
- **Pilot in Command and Passengers have the right to refuse flight**

Briefing of Passengers by Pilot
Pre-flight briefing (commonly referred to as Safety Briefing) of passengers is required as part of safe and efficient aircraft operations.

The safety briefing shall consist of an oral briefing provided by a flight crewmember or by audio or audio-visual means and include the following information as applicable to the aircraft, aircraft configuration, equipment, and operation:

- Prior to boarding, procedures for embarking and disembarking when engines are running, and rotors are running.
- When and how carry-on baggage and cargo is to be loaded, secured, and unloaded.
- Fastening, unfastening, tightening and general use of safety belts or safety harnesses.
- The proper positioning of seats for take-off and landing.
- The location of normal and emergency exits, how they are marked and how they operate.
- The requirement to obey flight crew instructions.
- The location, access to and use of emergency equipment, including the emergency location transmitter, fire extinguisher, life preservers, life rafts, survival equipment and first aid kit.
- Aircraft evacuation procedures, water-ditching procedures, procedures if the aircraft is configured with external fixtures, and egress procedures in the event of a rollover.

Where no additional persons have embarked for subsequent take-off on the same day, the take-off briefing may be omitted provided a crewmember has certified that all carry-on baggage and cargo is properly stowed, safety belts and harnesses are properly fastened, and seats properly positioned. The safety briefing need not be provided if the pilot in command has ensured that the person has completed a currently valid training program covering the safety briefing requirements for the aircraft. In addition to the proceeding, CARs require the following points are to be addressed where applicable:

- Danger zones, approaching and departing a running aircraft.
- Operating doors and external compartments.
- Helipad requirements and securing equipment.
- Carrying equipment around the aircraft.
- Aircraft allowable weight and fuel duration.
- Personnel protective equipment requirements around an aircraft.
- Smoking restrictions.

Briefing of Pilot

The Forest Area or Incident Management Team is responsible for providing briefings to each pilot new to the Forest Area or incident. Once hired, the briefing will cover the following:

- Terms and conditions of hire.
- Instructions on completing Mobile Flight Report.
- Radio use, frequencies, and flight following procedures.
- Use of maps and explanation of Alberta Third System of Survey.
- Location of fuel caches and refueling procedures.
- Work assignment, projects, presuppression, or fire reporting structure.
- Maintenance logistical support (Lights, generator, etc.).

Respectful Workplace Expectations

The Government of Alberta is committed to ensuring a strong, inclusive, healthy, and respectful workplace that is free of harassment, violence, and discrimination. The Government of Alberta will not tolerate harassment or violence in the workplace from anyone and is committed to eliminating and doing everything reasonably practicable to prevent this inappropriate and unacceptable behavior. Pilots are expected to be familiar with the contents of the respectful workplace policy for the government of Alberta prior to hire. The pdf is available online.

Radio Use, Airspace Management, and Flight Following

The Forest Protection Radio Guide (FP 183) lists all Forest Area frequencies, stations, channels and VHF/FM and VHF/AM frequency allocations. The most current version will be sent to aircraft companies on an annual basis. A pocket size copy of the Radio Guide is available upon request at Forest Area offices. There are two (2) sets of VHF-FM frequencies used in Alberta:

1. The Firenet radio system is a provincial VHG repeater network specifically designed for wildfire in Alberta. It consists of 96 remote repeater sites that carry radio transmissions via satellite links. In the Firenet system, analog channels range in numbers from 201-269. The digital P25 compliant channels range in numbers from 301-329.
2. Fireline channels operate on a simplex system, analog channels range in numbers from 1-50. The digital P25 compliant channels range in numbers from 401-443.

FM Radio Power Settings: VHF FM radios are to be operated on LO (1 watt) transmit power. This is required to minimize opening repeaters. If HI (10 watt) required, reselect radio transmit power to LO power after use.

For a Letter of Authority to operate on the Firenet system please send requests to firenet@gov.ab.ca

Aircraft are expected to arrive for hire with all applicable radio frequencies programmed into their radio. Every pilot must ensure they understand the wildfire management radio procedures prior to commencement of the flight.
If any aircraft loses the ability to communicate with a designated radio station via air to air or air to ground, the aircraft is considered unserviceable and shall be removed from service until the radios are operational.

Class F Airspace Management

Wildfire Management has been assigned several VHF-AM frequencies from Innovation Science Economic Development Canada (ISED). The allocation of these frequencies is managed by the communication section of the Wildfire Management Branch. Three (3) frequencies have been allocated to be used for initial attack (operations during the first day of the wildfire). The following radio frequencies to be used for initial attack:

- 129.800 MHZ (Primary)
- 128.950 MHZ (Secondary)
- 130.750 MHZ (Alternate), North of 53° only and below 3,500 feet AGL

Two (2) frequencies have been allocated for sustained action (operations in the second or concurrent days of the wildfire). The following radio frequencies are to be used for sustained action:

- 122.650MHZ, South Primary Sustained Action (South of 53°)
- 130.175 MHZ, North Primary Sustained Action (North of 53° only and below 3,500 feet AGL)

The use of the air-to-air advisory frequencies is restricted to aircraft flight coordination/movement only. All other communications (e.g., to discuss tactics, logistics, etc.) are to be done on the assigned VHF FM frequency (Firenet and / or Fireline frequencies). If there are multiple initial attack wildfires or sustained action wildfires in the same geographical area and the air advisory frequency is too congested, the airspace manager will determine the requirement to assign an alternate air advisory and will communicate it to the Radio Room.

The birddog team (birddog pilot and Air Attack Officer), HLCO, or ATGS act as the airspace manager over an incident. The Air Attack Officer will issue air space management instructions to non-airtanker aircraft on an established air advisory frequency. Management of an airtanker aircraft in the zone will be performed over an assigned bombing frequency.

When two (2) birddog aircraft are on a fire, one (1) birddog may assume the ATGS role. The ATGS will be identified as “Air Attack” and either the Wildfire number or a geographical identifier. For example: Air Attack Fire 31 or Round Hill Air Attack. This resource will not use their birddog aircraft identification number/call sign. The operational birddog will use their birddog call sign (e.g., Birddog 55).

Class F Airspace Clearance Procedures

The following procedures apply to birddog aircraft and helicopters. While transiting to and from wildfires outside Class F airspaces, aircraft are expected to monitor the enroute frequency 126.700 MHz and the assigned air advisory frequency if possible.

- For initial attack, the primary air advisory frequency is 129.800 MHz unless advised of an alternate.
- For sustained action, the primary air advisory frequency is 130.175 MHz North of 53° latitude and 122.650 MHz South of 53° latitude unless advised of an alternate.
- Ensure your transponder is on squawk code 1200 or as assigned by ATC.

Approaching Class F Airspace with No Known Aircraft at the Wildfire

If no known aircraft are at the wildfire, make an advisory call five (5) minutes back on the assigned air advisory frequency, communicating your registration/call sign, fire number, altitude, direction of approach, intentions, and frequencies monitoring.

Approaching Class F Airspace with No Airspace Manager

If there is no airspace manager (ATGS, birddog or HLCO), all inbound aircraft will contact any known aircraft five (5) minutes back from the wildfire on the assigned air advisory frequency. If no response, remain outside the restricted Fire Traffic Area (5 nautical miles) and advise the Forest Area Dispatch. Confirm the assigned air advisory frequency and aircraft registrations with the Fire Centre. Do not proceed inbound until positive communications have been established.

All aircraft operating within an unmanaged Fire Traffic Area will broadcast their movements and maintain their own separation using the assigned air advisory frequency.

Approaching Class F Airspace with an Airspace Manager

If an airspace manager (ATGS, birddog or HLCO) is activated, all aircraft must call the airspace manager a minimum of five (5) minutes back from the wildfire on the assigned air advisory frequency. If no response, remain outside the Fire Traffic Area (5 nautical miles) and advise the Forest Area Dispatch. Confirm the assigned air advisory frequency and aircraft registrations with the Fire Centre. Do not proceed inbound until communications are established.

The Airspace Manager will require:

- Your aircraft registration/callsign
- Your location (distance in NM), direction of approach, altitude.
- Your intentions over the fire.

Example: “Birddog 132, this is ABC on air advisory…5 minutes back from the west, 3500 feet…I would like to drop off my crew off at the tail of the fire”

The Airspace Manager will provide:

- An altimeter setting.
- Entry clearance and/or holding instructions.
- Information on other aircraft on scene.

When operating within the Fire Traffic Area with an airspace manager (ATGS, birddog, or HLCO), all aircraft shall contact the airspace manager on the assigned air advisory for clearance instructions into or out of the Fire Traffic Area before they lift off or deviate from an approved task.

Flight Plans and Flight Monitoring

Flight Following and Flight Plans

All aircraft flying for the Province and non-ministry flights carrying Provincial employees on related business (oil, gas, and timber inspections where company provides aircraft) must file a flight plan or flight itinerary as follows:

- Flight itinerary with flight following radio watch;
- Flight itinerary without flight following radio watch; or
- Visual Flight Rules (VFR) or Instrument Flight Rules (IFR) flight plan. Any flight designated as IFR must file an IFR flight plan with NAV Canada.

When flying within a Forest Area, the appropriate Fire Centre Radio Room will be open, and it is the required method for flight following for flights within or between Forest Areas. Exceptions are permitted for high altitude IR scanning flights. Alterations in the planned mission or itinerary must be immediately conveyed to the flight watch station/person.

The above does not apply to commercially scheduled flights (e.g., Air Canada, WestJet etc.)

Flight Itinerary with Flight Following Radio Watch

- Flight following will be provided by a combination of direct radio contact between the aircraft, radio, and the use of the Province's automated flight following program (Dispatch).
- If connectivity does not allow for flight following to be completed through Dispatch, a verbal 30-minute check-in over the radio will be required
- Aircraft will report all movements such as take offs, landings, passenger manifests, weights, destinations, and deviations to the Fire Centre Radio Room, over the radio.
- Fire Centres providing coverage for a flight will remain open until the flight is officially handed off to the next Fire Centre enroute.
- Any person providing radio watch for an aircraft shall initiate radio contact with the aircraft:
  - When the aircraft has not reported a position for over six (6) minutes through the Dispatch system.
  - If the estimated arrival time has been exceeded by 30 minutes.
  - When longer check-in periods have been arranged and the check-in time is exceeded by, 50%, or 30 minutes whichever is shorter.
  - Any time any aircraft makes any type of distress call.

All written station logs shall be retained for a period of at least two (2) years and may be made available upon request.

Flight Itinerary without Flight Following Radio Watch

This type of flight watch is not encouraged and is to be used only when a staffed Radio Room is not available, or the aircraft is not equipped to communicate with the Radio Room. The person initiating the flight must:

- Designate a person to be responsible for their flight itinerary and closing the flight plan. This includes providing them with departure time, flight path, planned stops, and a manifest of all passengers and return time;
- The designated person must remain available until the flight is closed;
- Upon completion of the flight, the flight initiator must contact the designated person to close the flight plan; and
- The designated person must be aware of the missing aircraft procedures within the Forestry Division OHS Incident Reference Guide and implement them if the estimated arrival time is exceeded by 30 minutes.

The pilot in command must:

- Be advised of the name and means of contacting the person responsible for closing the flight itinerary; and
- Upon completion of the flight, contact the person responsible for closing the flight plan within 30 minutes of the intended arrival time of the aircraft.

When individuals responsible for closing the flight plan believe the aircraft is missing and has not closed the flight itinerary within 30 minutes of its planned arrival time, they must initiate the procedure for a Missing Aircraft as detailed in the Forestry Division OHS Incident Reference Guide.

Operation Safety and Procedures

Flight Management General Restrictions and Requirements

The following restrictions/requirements apply to all flights except regular commercially scheduled flights (e.g., Air Canada, WestJet, etc.)

- No fixed wing or helicopter reconnaissance flights in temperatures below -30 °C.
- No one shall operate an aircraft, or direct an aircraft to be operated, in an unsafe manner.
- Any person on physician prescribed medication will ensure they have sufficient medication on their person for three (3) days.
- Based on the nature of the activity, environment and assessed risks, individuals shall be attired to spend a minimum of 24 hours in the “bush”.
- A briefing will be held between the aircrew and passenger(s) describing the nature of the flight and expectations of the aircrew to ensure that the mission and expectations are clearly understood.
- The minimum Transport Canada survival equipment onboard the aircraft.

Daylight Flying Under Visual Flight Rules (VFR)

When aircraft are working for Wildfire Management, they will operate under daylight VFR unless the pilot is qualified and current on IFR procedures and the type of aircraft in use.

The air carrier must be approved by Transport Canada to operate the multi-engine aircraft under IFR and night VFR conditions. The following rules and definitions CARs 101.01 will apply:

Day: The period of time beginning one half hour before sunrise and ending one half-hour after sunset and in respect of any place where the sun does not rise or set daily, the period during which the centre of the sun’s disc is less than six degrees below the horizon.

Night: The period of time beginning one half hour after sunset and ending one half hour before sunrise and in respect of any place where the sun does not rise or set daily, the period during which the centre of the sun’s disc is more than six degrees below the horizon.

Note: Subject to satisfactory visibility and atmospheric conditions set forth in Part VI of CARs, aircraft flying under VFR on projects for Wildfire Management may fly between the hours one half hour before sunrise and one-half hour after sunset. Outside this time, the aircraft must be on the ground. Wildfire Management uses the National Research Council of Canada’s sunrise/sunset calculator (https://nrc.canada.ca/en/research-development/products-services/software-applications/sun-calculator). In the interest of flight safety (e.g., duty days), Wildfire Management will not use morning and evening twilight calculations for any operations.

Minimum Meteorological Conditions for VFR Flight

For aircraft operating at less than 1,000 feet AGL in uncontrolled airspace:

- Fixed wing aircraft must have flight visibility of not less than two (2) miles, except if otherwise authorized in an air operator certificate.
- Helicopters must have a flight visibility of not less than one (1) mile. Helicopters may operate at a reduced VFR visibility limit of 1/2 mile for human emergencies only (life threatening medical incident or imminent danger).

Flights with helicopters in visibility less than one (1) mile are to be the exception not the standard. VFR flights over the top of cloud or smoke layers is not permitted. Any cases of perceived or real pressure to fly in unsafe flight visibilities should be reported. Minimum flight visibilities are to be determined by the pilot in command. The accepted standard to determine visibility is as follows:

1) Set aircraft ground speed to 60 knots per hour
2) Pick a feature that you can make out in the distance
3) Determine how many seconds it takes to reach the feature
4) Divide the number of seconds by 60 to get the visibility in miles

Example: a feature takes 120 seconds to reach; this would indicate the visibility is 2 nautical miles

Pilot's Duty Day

A pilot's duty day is restricted by CARs. This duty period is 14 hours in any 24 consecutive hours.

A pilot's duty day starts when a pilot:

- Reports for a flight.
- Reports for standby that has a reporting time of one hour or less.
- Performs any duty required by the aircraft company.
- Performs any duty designated by the Minister of Transport.

A pilot's duty day ends when:

- The engine is turned off at the end of the final flight.
- Any required paperwork is completed.
- Any pilot performed maintenance is completed.
- At the end of a predetermined standby period, whichever is later.

Note: Travel, food, and hygiene are not included in the duty day.

Mandatory Rest Periods

All pilots must have, excluding meal breaks, a minimum of eight (8) hours of prone rest between the end of one (1) duty period and the start of the next.

Before starting the next duty day, the pilot must be given sufficient time to allow for eight (8) hours of prone rest, travel to and from the workplace, meal breaks, and personal hygiene.

Flight Hour Limitations

Wildfire Management's standard maximum daily flying times are as follows:

Maximum Daily Flight Time

To ensure safety, the Province has established a maximum of 10 hours any pilot may fly within their duty period. This requirement was implemented to reduce fatigue and ensure every pilot has the required nutrition and personal breaks each day. The Province may add additional restrictions for ongoing operations to reduce pilot fatigue and ensure an increased level of safety during operations.

Suppression and Presuppression Assignments

- Ten hours maximum for the first three (3) days of continuous activity, and
- Eight (8) hours maximum for every consecutive day thereafter.
- The Forest Area Duty Officer, Incident Commander or the Air Operations Branch Director may allow a pilot who has been flying to start the first of their ten-hour days providing:
  - Pilot has been on continuous 'light duty' such as presuppression, day basing, or flying patrols, and
  - In the previous three (3) days pilot has flown less than four (4) hours per day.

To reset to a 10-hour day, the pilot must not fly for a 24-hour period.

General Duty Assignment

Pilots involved in moving crews from airport to airport or for out of province basing, may fly a maximum of 10 hours per day.

Flight Crew Alert Statuses

Flight crew alert statuses are each set for the following day by the Forest Area Duty Officer after the afternoon weather forecast. The alert status for presuppression helicopters is:

- Five (5) minutes
- Ten (10) minutes
- Thirty (30) minutes
- Sixty (60) minutes
- Project Status (PS)

The expectation is that skids will lift off within the assigned alert status time.

Day Base
Aircraft are moved to an alternate base for the day. This is usually done after 1100 hours for anticipated fire action or support. Normally the aircraft will return to their home base unless prevented by fire activity or weather conditions.

Low Level Operations (<500 feet AGL)

The following are operating procedures for activities that do not have a specific set of procedures like those developed for Fire Bombing, Aerial Ignition and Hover Exit.

General
The aircraft company, pilot and aircraft will be qualified by Transport Canada for 702 Aerial Work. Flight crew are to be fully engaged in “flying the aircraft” and not be distracted by other work being done. Wherever possible, the Province’s staff should operate radios on Forestry assigned frequencies, including telemetry receivers. The pilot can monitor these radios if the cockpit workload permits. Except were specifically permitted in CARs sections 602.12-602.16, no flights over the built-up area of a community shall be conducted at altitudes below 1,000 feet AGL. A hazard and risk assessment is to be done for the specific task undertaken requiring low-level operations including the need for the flight and alternate means of accomplishing the task identified.

Helicopters
The flight profile should remain at an altitude of at least 300 feet AGL and remain in the safe operating areas of the Height/Velocity (HV) chart specific to the helicopter in use. If the mission requires the flight profile to go below 300 feet AGL or into the “unsafe” portion of the HV curve, the exposure time is to be minimized and:

- Only essential crew are allowed on the aircraft.
- If working over open water, the pilot must brief personnel on the specific emergency procedures to follow, including ditching procedures and egress from the aircraft.
- A hazard and risk analysis shall be completed to identify any extra safety equipment and/or training required by the Province’s staff or contractors (e.g., flight helmets and flotation devices, water egress training, etc.).
- Winds must be less than 75 km/hr or wind gusts less than 30 km/hr above the sustained wind speed.
- A power check must be done prior to entering the HV curve. There shall be sufficient torque to maintain the aircraft in a hover for five (5) minutes without exceeding the manufacturer’s temperature or torque limits and have full tail rotor authority.

Fixed Wing
Except for a wings level pass, the flight profile shall remain at an altitude of at least 300 feet AGL. The maximum angle of bank while operating below 500 feet AGL shall be 30 degrees. Other than take offs and landings, at no time shall the flight profile go below the adjacent tree canopy. In level flight, the indicated forward airspeed must not drop below 1.3 times the configured stall speed. If the aircraft will be in a turn, the airspeed must be maintained at 1.5 times the stall speed or higher.

Standard Airmanship – Cruising Altitudes

All aircraft operating within the fire zone will be assigned corridors and approach/departure altitudes by the airspace manager. Outside the control zone, aircraft are required to cruise at the appropriate Visual Flight Regulation (VFR) altitudes listed below:

VFR Cruising Altitudes (Above 3,000ft. AGL)

Heading	Altitude
Westerly Track (180° - 359°)	Even Altitude + 500ft.
Easterly Track (000° – 179°)	Odd Altitude + 500ft.

Altimeter Settings

To ensure proper vertical separation, it is critical that all aircraft use the same altimeter setting. Vertical separation between aircraft over an incident is only 500 feet. All aircraft need to adjust their altimeters as barometric pressures change; altimeter settings are considered current up to 90 minutes. Typically, all pilots will set their altimeters on the ground where the specific elevation is known (e.g., airport, lookout site, base camp, etc.). If an altimeter setting is changed during an operational period, it is imperative that all aircraft over the incident receive and acknowledge the new setting. A standard altimeter setting will **not** be used on a wildfire incident.

For initial attack, the first birddog or HLCO aircraft arriving on the location, will establish the altimeter setting for all other incoming aircraft. They must communicate this setting to all other pilots already over the location and all aircraft as they arrive. If there is no birddog or HLCO, the first helicopter on the fire will establish the altimeter setting.

Passenger/Cargo Manifest (FP249)

Helicopter Load Calculations

The purpose of carrying out helicopter aircraft load calculations is to ensure that the aircraft can carry a specified load to an identified elevation at a given density altitude. The load calculation must be completed daily for all helicopter flights prior to the start of operations. For repetitive flights, one (1) calculation is valid between like points of similar elevation if weather conditions do not change, and loads do not exceed that which was authorized by the calculation for the initial flight. The passenger manifest and weights must be communicated, verbally, to the flight following Radio Room upon departure. Responsibility for completion of load calculations is as follows:

Pilot Responsibilities

The pilot is responsible for completing the load calculation correctly using proper performance chart information as per the aircraft company's Operation Manual, CARs, and the Commercial Air Service Standards. The pilot is responsible for computing the allowable payload.
When operationally feasible, the Passenger/Cargo Manifest (FP249) must be used to record passenger manifest and cargo weights.

The pilot must enter the following weights (in pounds) on the FP249:

- Maximum internal gross weight of the aircraft.
- Aircraft empty operational weight.
- Pilot and personal kit weight.
- Fuel weight.
- Remaining available payload.

Note 1: Empty operational weight includes the complete equipped weight of the aircraft with no fuel on board. This includes but is not limited to the weight of the bucket, longline, survival kit, refuelling gear, radios, etc.

Note 2: Remaining available payload must be based on aircraft performance, the least favorable predicted density altitude based on the highest temperature and operational altitude to be encountered for the day and comply with weight and balance limits.

Province's Responsibilities

Passenger and cargo weights (for internal and external loads) must be supplied to the pilot for approval prior to every flight. When operationally feasible, Passenger/Cargo Manifest (FP249) must be used to record passenger manifest and cargo weights and consider the following:

- The pilot must first provide the Province's representative with the usable load weight for the aircraft, by completing the pilot section of the FP249.
- The Province's representative will then complete the remainder of FP249 ensuring the total weight is lower than the pilot supplied usable load weight.
- Both the pilot and the Province's representative must sign the FP249 before departure to certify that the information is complete and accurate to the best of their knowledge.

NOTE: If an FP249 cannot be used, the Province's representative will verbally provide the passenger cargo weights for approval by the pilot prior to departure. Personnel must frequently confirm their seat weight on a scale, to be as accurate possible. When operationally feasible, all equipment being loaded onto an aircraft will be weighed prior to loading and weights recorded on a FP249. If a scale is not available, or operationally feasible, estimated weights provided in the FP249 can be used.

Completed FP249s must be submitted to the Fire Centre and retained for at least two (2) years.

Refueling Operations

The following procedures must be followed during refuelling operations:

- Smoking on any airport ramp is prohibited during refuelling operations.
- Open flames on aircraft fuel servicing ramps, aprons, or any other fuelling operation site where aircraft fuelling is being carried out by or on behalf of Wildfire Management, or within 50 feet (15 meters) of any portable or field fuelling operation and fuelling equipment is prohibited.
- No person operating an aircraft shall permit it to be refuelled if passengers are on board, embarking or disembarking.
- During refuelling operations, the proper type and size of fire extinguishers must be available for use close to the operation.
- The aircraft engines must either be shut down or the approved hot refuelling procedures followed.
- The pilot in command must ensure the aircraft has the appropriate fuel and the required amount for the planned flight.

Refuelling personnel are to follow the guidelines listed below:

- Never leave any fuel nozzle unattended.
- Never tie or wedge the nozzle trigger in an open position.
- Full attention is to be devoted to the refuelling operation.
- Check the amount of fuel in the tank frequently to prevent overfilling.
- Either hand or power-operated pumps shall be used when aircraft are refuelled from drums and pouring, or gravity flow is not permitted.
- Avoid kinks and short loops in the fuelling hose.
- As soon as leakage or spillage from the fuel-servicing equipment is noted, stop the flow of fuel immediately.
- Fuelling operations shall be suspended where there are lightning flashes in the immediate vicinity of the fuelling operation site.

Refuelling aircraft can be carried out from:

- Commercial outlets
- Wildfire Management underground tanks
- Wildfire Management bowsers
- Contract portable fuelling systems/bowsers for field operations
- Wildfire Management drums (purchased fuel)

Although Wildfire Management makes every attempt to keep fuel clean and current, pilots should always check the fuel to make sure it is the appropriate type for the aircraft and is free from foreign material. Wildfire Management personnel have no authority to refill drums from bulk aviation fuel sources. Due to the liabilities involved, Wildfire Management will not do this for any operations. Pilots can refuse to accept fuel from unsealed or improperly sealed drums and damaged drums. Pilots may

use fuel from their own source if requested to do so by the Forest Area Duty Officer or designate and fuel amounts will be recorded on the Mobile Flight Report. Wildfire Management will reimburse fuel charges incurred, providing supporting documentation is attached (legitimate invoices).

Fuel spills are often the result of improper or careless operation of fuelling equipment and poor maintenance of the mechanical fuelling equipment. To prevent fuel spillage, caution is required on the part of every person responsible for fuelling equipment.

Note: As per the current Alberta Fire Code, when the loss of a flammable liquid or combustible liquid occurs from a spill or leak, the aircraft company shall ensure that:

- Appropriate action is taken to recover escaped liquid, prevent it from escaping the site where possible, and to remove or treat the contaminated soil.
- The fire department and the authority having jurisdiction are notified if the quantity of liquid spilled or leaked:
  - Exceeds 50 litres in aggregate, or
  - Is sufficient to cause sheen on nearby surface water.

Hot Refueling

Hot refuelling aircraft on Wildfire Management projects will be allowed only if:

- There are no passengers on board, embarking or disembarking,
- The pilot's seat is occupied by a person who is competent in controlling the aircraft.
- There is a visual link between the pilot and the refueler. A third person may be required to act as a visual link if the filler neck is on the opposite side from the pilot.
- Refuelling is carried out by a trained aircraft company engineer and/or a person who is trained and certified in refuelling aircraft as per the CAN/CSA Standard for Storage, Handling and Dispensing Fuels at Aerodromes.
- The Province does not pay flight time for hot refuelling.

Helicopter External Load Operations

- Forestry staff require a briefing by the pilot on external load operations, long line use, hooking and unhooking external loads.
- Small or lightweight items that have the potential to be blown from or fall through the cargo net shall not be transported by external load.
- Sling loads shall not be lifted from or onto a vehicle.
- Items of high value (garden tractors, ATVs) can be carried in a cargo net when internal load transport is not available.
- Aircraft with an external load shall not overfly other aircraft and shall not be assigned an altitude above other aircraft in the fire traffic area.

Ground Running of Engines during External Load Operations

Another person must be present to act as loadmaster for the pilot, or the pilot must shut down the helicopter before exiting the aircraft to hook up/release operations, when the following situations occur:

- The hook up and release takes place at a site where there are people present who are not involved in the operation.
- There are other helicopters using the same site for landings and departures at the same time.
- The operation occurs near Wildfire Management facilities, both permanent and temporary (line and fire base camps).

Aircraft on Wildfire Management projects will only be allowed to carry out load hook up and release operations with the engine running and the pilot's seat unoccupied when none of the above noted situations occur.

Flights with Passengers and External Loads

External loads (sling or other) are governed by CARs. Carrying passengers is permitted only under the following five (5) scenarios.

Bucket Operations

For initial attack or sustained action, Incident Command personnel on board medium helicopters may be permitted only during bucket operations. The pilot and the aircraft company must be certified to conduct this operation as per CARs section 702.16

and CARs Standard 722.20(2). When Wildfire Management staff are onboard an aircraft during bucket operations, they are required to wear a personal flotation device.

Wildfire Operations
Aircraft companies may carry persons other than the flight crew if:

- The aircraft company is authorized to do so in their Air Operation Certificate.
- The person has received a safety briefing by the pilot as per the CARs Standard 722.23
- The person being carried is involved in wildfire suppression activities.

Aerial Ignition on Wildfires
Aerial ignition operations shall be conducted in accordance with the Alberta Ignition Manual. At a minimum, pilots conducting aerial ignition operations must meet the Helicopter Association of Canada competency for Aerial Ignition Device (AID) and Drip Torching.

Aircraft approved for ignition operations are AS 350B3, Bell 206 L4, EC130 and Bell 407 helicopter. The AS 350B2, FX2, AS355N, AS355NP and D2 are conditionally approved if no alternate is available, and the fuel load is reduced. Local conditions and the environment around the wildfire must be considered to assess the suitability of any aircraft while conducting this operation.

Transporting Wildlife
Provincial staff are considered essential crew if they are required to monitor the condition of an animal during flight.

Helicopters Equipped with Dual Controls for External Load Operations
- Passengers must receive a pilot briefing before occupying a seat with dual controls.
- It is at the discretion of the pilot in command to allow passengers to occupy the front seat with dual controls installed.

Entering or Leaving a Hovering Helicopter in Flight

Hover exit training is part of the regular training for Helitack and Unit Crews. Only a certified instructor can carry out basic hover-exit training. All certified hover exit personnel must maintain certification as outlined in the Hover Exit/Freeboard Training Guide. The Canadian Interagency Forest Fire Centre (CIFFC) Manual defines a hover as:

“A hover is a state in which the helicopter is under power, and the pilot must manipulate the flight controls to maintain a stable attitude. This could be free of, or in partial contact with a grounded surface.”

For Wildfire Management operations, a hover exit is only permitted if it allows the person performing the hover exit to have contact with both the ground and the helicopter.

Helicopter Company Compliance and Pilot Qualifications
The Helicopter Company offering this service to Wildfire Management will:

- Provide a pilot that meets the Helicopter Association of Canada’s pilot competency for Hover Exit.
- Satisfy CARs 602.25 and 702.19 requirements and have an amended air operations manual with a detailed procedure for emplaning/deplaning in flight.
- Produce an approved amendment to their Air Operations Manual if requested by the Province.
- Conduct a full and complete briefing prior to commencing the hover exit/entry.

Emergency Helicopter Boarding in a Hover

The reloading of personnel and equipment into a hovering helicopter is an exception rather than a standard practice.

Hover loading of personnel and equipment may be authorized provided:
- Personnel have been trained in the manoeuvre.
- The pilot and crew leader agree on the sequence of events.
- The site is acceptable to the pilot.

- The equipment must be bundled/packaged in an acceptable manner and capable of hand-to-hand transfer if it is to occupy cabin space.
- The helicopter must be capable of exiting the pick-up area with an out-of-ground effect power reserve with the anticipated load. The pick-up site will be prepared to provide rotor clearances for the helicopter and sure footing for the personnel.
- Personnel and pre-packed equipment will be pre-sited before helicopter arrival and equipment is to be secured.

Reloading sequences are the reverse order of exit. Emphasis will be on the smooth initial transfer of weight on the skid. Smooth crew movement control is vital as the weight of the aircraft increases. Crew leader (first in) will establish pilot/crew contact as soon as possible after boarding and will control the reloading by use of hand signals.

Hover Exit Conditions and Limitations

- Conducted only by trained personnel.
- Conducted only where the trained personnel can transfer their weight from the helicopter to the ground smoothly and gradually, rather than jump or drop to the ground.
- Conducted with an acceptable power and fuel reserve required maintaining hover out of ground effect at the set-out/pick-up site.
- Must have “hot” (hands free) intercom capability between pilot and crew leader.
- Must have doors, which either can be removed prior to exit or safely opened in flight.
- Skids and exiting area must be unobstructed.
- Sliding/folding doors and removable doorposts must be secured.

Open Door Aerial Work

Open door aerial work is any work that is conducted by the Province’s staff when the aircraft is no longer in contact with the ground and a door on the aircraft is not secured. Open door aerial work should only be conducted when no other reasonable options exist. Activities included in the open-door aerial work include but are not limited to animal capture, cargo deployment, infrared scanning, etc.

Operations such as Aerial Ignition and Hover Exit that have specific operating procedures are exempt from this. If open door work needs to be conducted, the exposure should be minimized by only having the door open or off when required.

On the Skid or Moving Around Inside the Aircraft
If the open-door aerial work to be conducted requires the passenger to be free of the lap and shoulder restraints of the helicopter, then the passenger must be provided a fall harness and restraint device. The harness and restraint device are to be provided by the aircraft company. The aircraft company must ensure the device is maintained and utilized in accordance with Transport Canada approvals.

Seated and Secured Inside the Aircraft
For activities that do not require the passengers to undo their seat belts, but where there is a risk of accidental release of the lap belt, the Province will provide the approved fall restraint system. This system is a secondary restraint device in the event the quick release seatbelt becomes unfastened. The seatbelt must be always worn properly. The device must be attached to aircraft structure as recommended by the aircraft’s aircrew. Visual inspections shall be conducted on the harness the day of the use, prior to being utilized, and recorded on the harness equipment inspection log. If any component of the system fails the inspection, the system cannot be used. The completed inspection log is to be kept with the fall restraint device and all the lanyards during use and when stored.

Airspace Restriction/Notice to Airman (NOTAM)

As per Section 601.15 of Canadian Aviation Regulation Standards:

No person shall operate an aircraft:
(a) over a forest fire area, or any area located within five nautical miles of a forest fire area, at an altitude less than 3,000 feet above ground level; or
(b) in any air space described in a NOTAM issued pursuant to Section 601.16.

This is an automatic airspace flight restriction for any forest fire. NO advisory to pilots is given; it is expected that all pilots are aware of this requirement.

Personnel must be aware of this restriction as it applies to ALL aircraft not working on the fire at the request of appropriate fire control agency. Any aircraft found within the restricted area must be reported to Transport Canada for possible investigation and sanctions.

As per section 601.16 of CARs, Wildfire Management can request further airspace restrictions.

- An advisory NOTAM - an informal NOTAM that is requested via a local NAV Canada office to be given as an advisory to local pilots. No amendment to the normal restricted airspace is given.
- A NOTAM - a formal Notice to Airman that may only be issued by Transport Canada. These NOTAM's may include additional area outside the automatic restricted area and/or additional airspace above the fire.

Safety Considerations for Working in the Cold Lake Air Weapons Range (CLAWR)

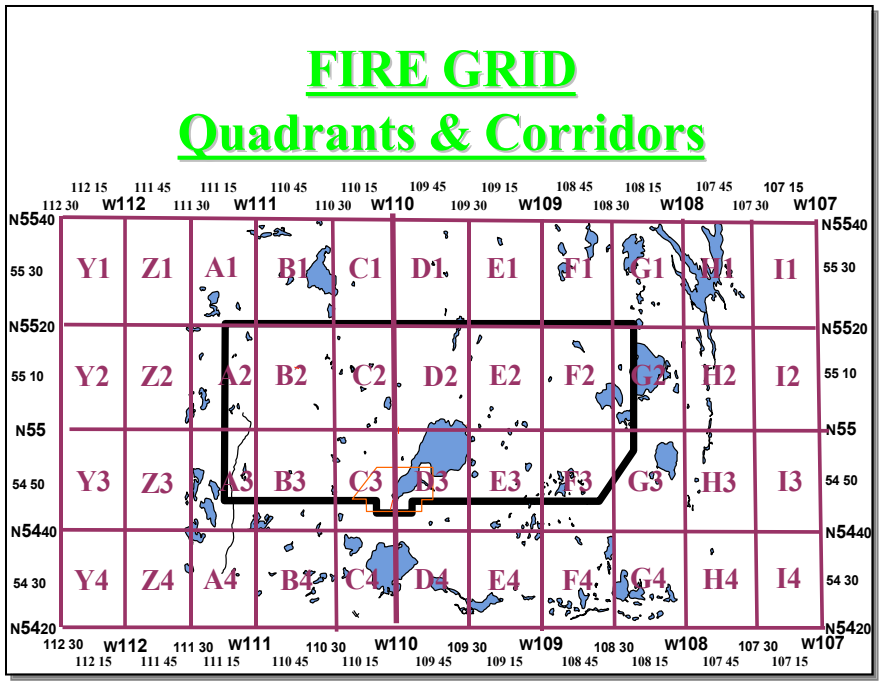
The Cold Lake Air Weapons Range (CLAWR) poses some unique hazards.

This Area is not open to hunting and a person can expect a higher frequency of bear encounters here. The Air Force conducts live training exercises and access to and movement within the CLAWR is strictly controlled. It is an active weapons range, which might have:

- Unexploded ordnance (bombs and rockets).
- Practice bombs that may contain acid marking charges - used to generate smoke to see where the practice round landed.
- Lasers - CLAWR often has pilots using lasers mounted to the aircraft for targeting with laser-guided munitions. These lasers are powerful enough to cause blindness.
- Radar emitters - used to simulate enemy tracking or targeting radars. These give off large levels of radiation in the immediate area of the emitter.

Contact the Lac La Biche Fire Centre before entry. The Lac La Biche Duty Officer will contact range control for access permission. If possible, a CLAWR grid map should be obtained. Under no circumstances are aircraft to proceed into the range without clearance. Upon clearance by the Duty Officer, the pilot will contact the tower at Cold Lake. The Lac La Biche Fire Radio Room will supply a current frequency. Aircraft are required to have their transponder always turned on and squawk code 1276 in the range. At the north end of the range contact may be difficult, it may be necessary to climb up several thousand feet to establish contact. If you are unable to contact the tower, contact the Lac La Biche Radio Room and they will notify the tower by phone. Do not proceed into the CLAWR until you have confirmed that Cold Lake Tower has been notified.

Cold Lake Air Weapons Range (CLAWR) Map



Alberta Fort McMurray Oil Sands Class E Airspaces

The development of the oil sands in Northeastern Alberta has resulted in increased air traffic in the areas north and south of Fort McMurray. NAV CANADA completed aeronautical studies to review the communication and airspace requirements for areas north and south of Fort McMurray. The result of the studies was the establishment of two (2) Class E airspaces known as North Oil Sands ATF Area and South Athabasca Oil Sands.

North Oil sands ATF Area

The North Oil sands ATF Area encompasses three (3) aerodromes in relatively proximity to each other – Fort Mackay/Horizon, Fort Mackay/Firebag and Fort Murray/Mildred Lake. The North Oil Sands air traffic advisory frequency 123.5 MHz is to be used before entering and within the Class E airspace. See the current Canadian Flight Supplement for full details.

South Athabasca Oil Sands Area

The South Athabasca Oil Sands Area encompasses four (4) aerodromes in relatively proximity to each other – Primrose, Kirby Lake, Christina Lake, and Conklin. The South Athabasca Oil Sands air traffic frequency 123.025 MHz is to be used before entering and within the Class E airspace. See the current Canadian Flight Supplement for full details.

Transportation of Dangerous Goods

All staff must adhere to the current Canadian Transportation of Dangerous Goods Act and Regulations. If the pilot in command does not load or directly supervise the loading of the dangerous goods, the person who loads and secures the dangerous goods will give the pilot in command a written list of the following information for each of the dangerous goods:

- Shipping name
- UN number and class
- Gross mass
- In the case of explosives, the net explosives quantity

All pilots and/or flight crew accepting dangerous goods aboard their aircraft must have dangerous goods training and carry a valid certification card on their person. Certification for transporting dangerous goods by air is valid for two (2) years.

Casual charter contract aircraft companies must provide letters from Transport Canada:

- Indicating they have an approved TDG training program.
- Indicating an approved chapter on TDG in the aircraft company's operations manual.

Considerations for Shipping Propane Tanks
One-hundred-pound bottles of propane or smaller can be shipped by helicopter or fixed wing if the above requirements are met.

Considerations for Shipping 365 Liter Propane Tanks:
- The pilot must have a current Transportation of Dangerous Goods Certificate on their person. Before hooking up and moving any propane tanks, full or empty, the following checks must be performed:
  - The pilot must be informed of the dangerous goods to be carried, in writing on proper shipping documentation.
  - The pilot must receive a copy of the Permit for Equivalent Level of Safety.
  - Check for correct attachment of the cradle and harness to the tank.
  - Check for defects such as stripped or cracked bolts, frayed, or bent wires on the cables, and bent or cracked load ring, and Check for damaged valves and gauges and that the tank has a protective collar or cap.

Note: All shipping documents must be kept on record for a minimum of two (2) years. All training records must be kept on file for two (2) years following the certificate's expiration date.

Pepper Spray
Personnel must inform the pilot of the presence of pepper spray in the cargo. Any pilot has the right to refuse to transport pepper spray. For air transport, pepper spray (aerosol containers) must be placed in separate sealed PVC containers with proper labelling and placed in:

- An external basket or cage that is not part of the fuselage.
- the baggage compartment in the tail boom.
- A baggage compartment with external access only that is within the aircraft fuselage.

Pepper spray is not permitted in the passenger cabin of any aircraft.

Remotely Piloted Aircraft Systems (RPAS)

Remotely Piloted Aircraft Systems (RPAS) operations will be evaluated and approved on a case-by-case basis. RPAS operations will be approved at a Provincial level and must comply with all applicable legislation/regulations. In the event of a RPAS airspace incursion over a wildfire incident, the following procedures shall be followed:

- De-conflict the affected airspace by grounding any incident helicopters and fixed wing aircraft that may be impacted by the incursion. Maintain one (1) assessment helicopter or fixed wing overhead the affected airspace. This assessment aircraft will perform three (3) functions, in order of priority:

  1. Act as a lookout to ensure the continued safety of ground operations that may have been affected by the exclusion of aerial suppression efforts.
  2. If safe to do so, maintain visual contact of the RPAS and assist ground resources in locating the RPAS operator.
  3. Determine when the airspace is made safe to resume normal operations.

- A ground-based search for the RPAS operator will be initiated. If contact is made, Wildfire Management staff will notify them that they are illegally operating a RPAS in restricted airspace, request them to cease their operations immediately, document their name, and contact information for submission to the Alberta Wildfire Coordination Centre.
- A RPAS airspace incursion is considered an aviation incident. The Alberta Wildfire Coordination Centre will report all RPAS airspace incursions to Transport Canada.

Aquatic Invasive Species (AIS) Prevention

To prevent the spread of Aquatic Invasive Species (AIS) into Alberta from other jurisdictions, any skimmer airtanker imported or returning from export into Alberta will proceed to an airtanker base designated by the Provincial Aircraft Coordinator for

decontamination. Any imported Helicopters or Alberta Helicopters returning from out of Province must ensure their buckets are washed as per the Aviation Decontamination Procedures prior to being utilised in any Alberta water bodies.

The Canadian Food Inspection Agency has declared the Bow River watershed “infected” with whirling disease and the remaining areas in the province of Alberta as a “buffer zone”. Whirling disease causes mortality and deformities in salmonid fish including trout and whitefish. The movement of fish, mud, and water can spread whirling disease between water bodies. To prevent the spread of whirling disease from infected areas, whenever possible, avoid operating from known or high-risk (Red Zone in map) whirling disease watercourses. If operating in the infected areas is unavoidable:

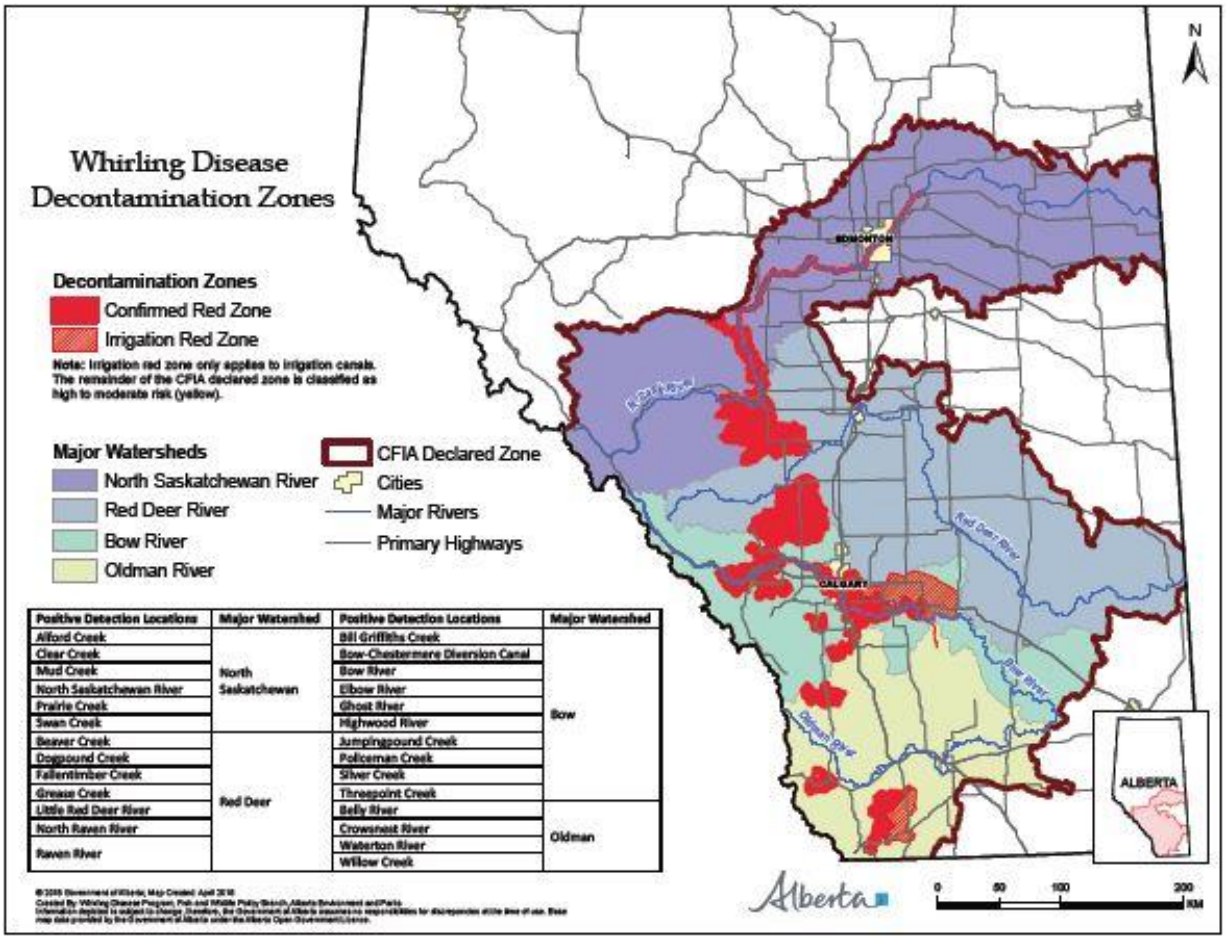
- Avoid dipping or scooping water from multiple water sources within the same operational period to minimize cross-contamination of water sources.
- If possible, use water dipped from the same drainage that it will be dropped in.
- Use deeper (blue) water whenever possible. Avoid areas that will intake mud or plants.
- Switch out a contaminated helicopter bucket with a clean bucket before moving to a new water source. Alternating used (possibly contaminated) helicopter buckets with spare (clean) buckets can save time and increase efficiency, as the first bucket can be decontaminated while the second bucket is being used.
- Helicopter snorkels do not need to be primed, with source water, so there is no risk of residual tank water entering a water source during drafting operations.
- Helicopter snorkel ends and foot valves that encounter untreated water must be decontaminated.

If contamination of equipment with raw water or mud/plants is unavoidable, follow the Aviation Decontamination Procedures.

Aviation Decontamination Procedures

- Chemicals such as bleach and quaternary ammonium compounds do not meet corrosion requirements for aluminum and **shall not** be used on aircraft fuselages or water delivery components such as helicopter buckets and foot valves.
- Visually inspect aircraft surfaces (i.e., floats, tanks, intakes, water buckets, snorkels) daily, during maintenance, and after every water dropping mission.
- Remove visible plants and mud from external surfaces.
- Decontaminate all exposed surfaces by power washing with hot water (≥90°C) for 5-10 sec (up to 5 minutes preferred) before moving to new water sources.
- If a helicopter bucket has a butyl (rubber) valve seal, avoid prolonged application of hot water spray to the seal to prevent softening of this vulnerable material.
- Allow all surfaces to thoroughly dry.
- If drying is not possible for a quick turnaround, carry spare, clean gear to switch out with wet gear.

Whirling Disease Infection Map



Positive Detection Locations	Major Watershed	Positive Detection Locations	Major Watershed
Alford Creek	North Saskatchewan	Bill Griffiths Creek	Bow
Clear Creek		Bow-Chestermere Diversion Canal	
Mud Creek		Bow River	
North Saskatchewan River		Elbow River	
Prairie Creek		Ghost River	
Swan Creek		Highwood River	
Beaver Creek	Red Deer	Jumpingpound Creek	
Dogpound Creek		Policeman Creek	
Fallentimber Creek		Silver Creek	
Grease Creek		Threepoint Creek	
Little Red Deer River		Belly River	Oldman
North Raven River		Crowsnest River	
Raven River		Waterton River	
		Willow Creek	

Fur and Game Farm Operations

Aviation noise caused by helicopters and fixed wing aircraft flying at low altitudes can cause serious economic losses to the farming industry. Pilots working for the Province shall avoid over flying these farms below 2,000 feet AGL, and where possible, no closer than one (1) mile horizontal. Any aircraft operating under the jurisdiction of the Province must be made aware of area restrictions and legal land locations of Fur Farms and Game Farms. These locations shall be identified on maps in all Forest Area operations rooms and airtanker bases. Locations shall be provided to incoming casual chartered aircraft as part of the briefing package and to all incoming contract airtanker groups and/or helicopters.

Aviation Occurrence Response and Reporting

The Province uses the Transport Canada Aviation Occurrence definitions as described in the current edition of the “Aeronautical Information Manual”. In addition, any contravention of Wildfire Management Standard Operating Procedures and Business Rules will be considered an Aviation Occurrence.

Aviation Accidents, Incidents, Hazards, Missing Aircraft

In the event of an aviation occurrence while on hire with the Province, the procedures in the Forestry Division OHS Incident Reference Guide must be followed. The OHS Incident Reference Guide outlines procedures on:

- Reporting contacts and timelines that must be followed,
- Whether an investigation is required and who conducts it,
- Paperwork requirements and timelines that must be followed, and
- Process for follow-up after an accident or incident.

Procedures for Reporting Aviation Occurrences

All aviation near misses/hazards, accidents, incidents, and cautions are to be submitted electronically on the Aviation Occurrence Report (FP1). The FP1 should be completed within 24 hours of the occurrence and submitted to the Forest Area Fire Centre. Depending on the occurrence type, additional paperwork such as the Mobile Flight Report may need to be completed.

The aviation occurrence reporting system is not meant to be a punitive process for reporting near misses/hazards, accidents, incidents, and cautions. Wildfire Management encourages timely, open, and transparent reporting. Follow up and corrective actions will be carried out as required.

Aviation Accidents
When any aircraft working for the Province is involved in an accident it must be reported immediately (within 15 minutes) to the Forest Area Duty Officer, Incident Commander, or Supervisor. The FP1 should be completed within 24 hours of the occurrence and submitted to the Forest Area or wildfire. The following must be ensured when responding to an accident:

- Always ensure the safety of yourself, crew and public.
- Never mention any names of persons involved over the radio.
- Never mention aircraft company name or aircraft registration over the radio.
- Use plain language over the radio to describe your assessment of the situation and resource requirements.

Missing Aircraft
An aircraft is considered overdue when it has missed its expected check-in time. For example:

- Pilot informs aircraft landing for 2 hours, but after 2 hours, there is no communication from the aircraft.

An aircraft is considered missing when:

- The check-in has been missed and has exceeded another 30 minutes;
- Overdue aircraft procedures have been initiated and no aircraft found; or
- Anytime any aircraft makes any type of distress call.

Note: When an aircraft is reported missing, it is considered to have been involved in a reportable accident.

As soon as it becomes obvious an aircraft is missing, attempts shall be made to communicate with it on all frequencies in current use within the Forest Area of operation. All contacts and attempts shall be recorded fully in the dispatch log and the Forest Area Duty Officer will be notified immediately. In the event an aircraft is determined to be missing, the office providing the flight radio monitoring shall ensure the following are notified:

- Forest Area and Alberta Wildfire Coordination Centre Duty Officers,
- An air traffic control crew, a flight service station, community aerodrome radio station, or rescue co-ordination centre, and
- Aircraft Company owning the missing aircraft.

Aviation Incident
When any aircraft working for the Province is involved in an incident it must be reported immediately (within 60 minutes) to the Forest Area Duty Officer, Incident Commander, or Supervisor. The FP1 should be completed within 24 hours of the occurrence and submitted to the Forest Area or Wildfire.

Near Miss/Hazard Reporting
When any aircraft working for the Province is involved in a near miss or discovers a hazard, it must report immediately (within the day of operation) to the Forest Area Duty Officer, Incident Commander, or Supervisor. The FP1 should be completed within 24 hours of the occurrence and submitted to the Forest Area or Wildfire.

New FP1 Process

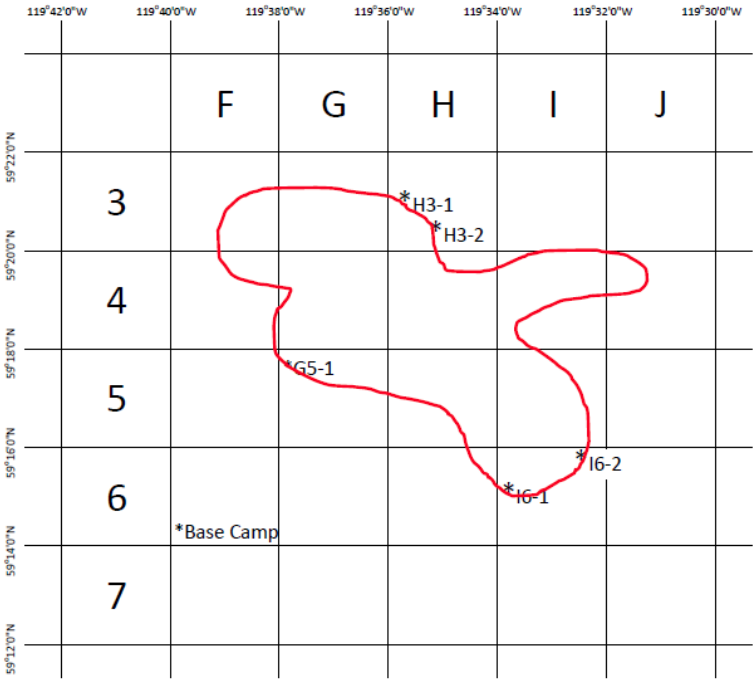
Starting in 2026 , FP1s will be entered through the Sodales system in 1GX to align with the provinces OHS incident reporting procedures. Filling out the old form will be accepted until we transition to the new system.

Appendices

Alphanumeric Wildfire Incident Maps

Wildfire maps produced by the Wildfire Management use a simple alphanumeric grid numbering system for both feature reference and helipad numbering and provide GPS coordinates. The alphanumeric grid is a coordinate system that uses letters on the horizontal axis ascending from west to east and numbers on the vertical axis ascending from north to south. The alphanumeric grid system allows for quick reference because the feature or helipad name references the location, which in an emergency becomes very important.

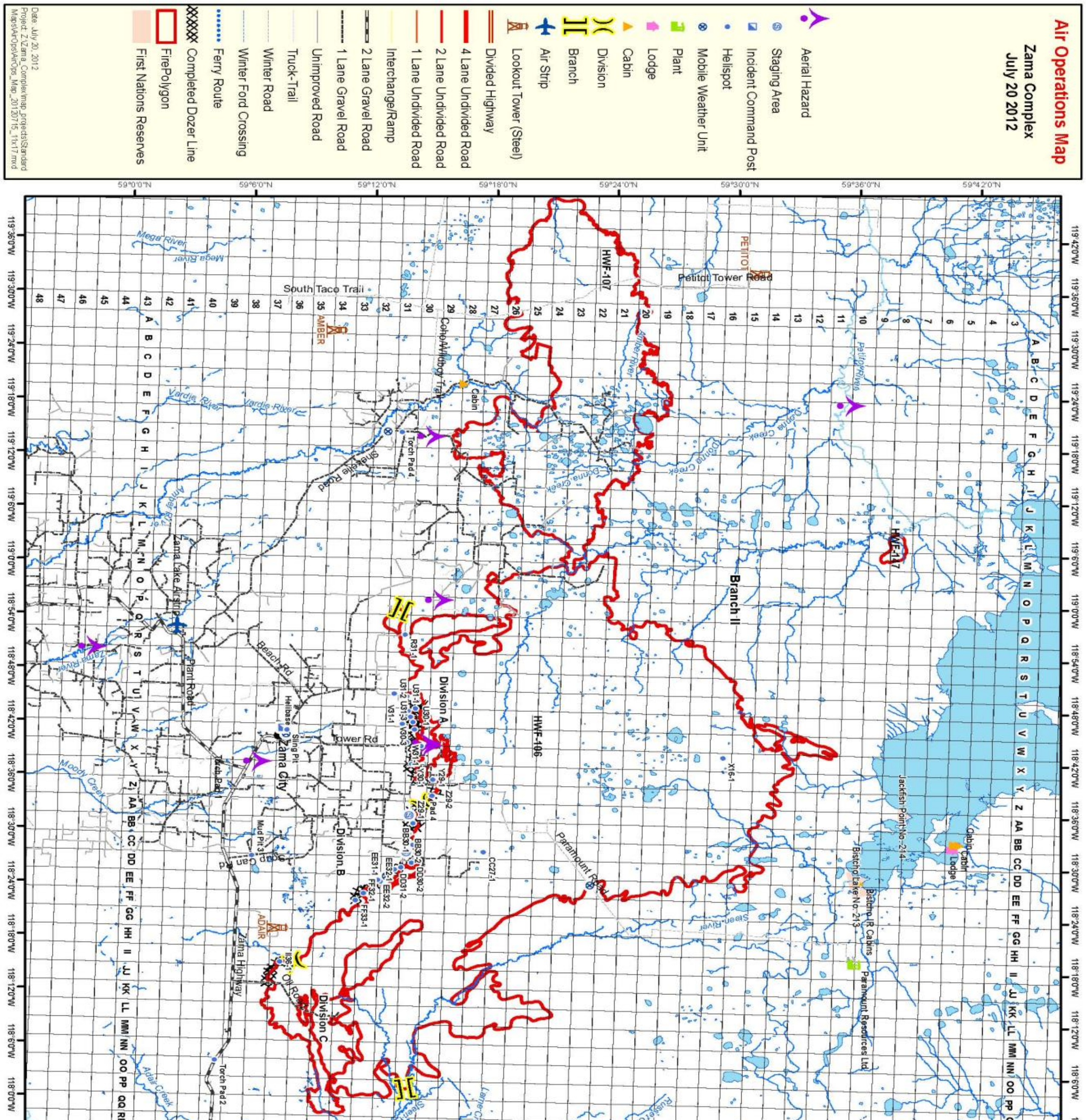
Features are given a name and have a corresponding grid reference (combination of letter and number) and GPS coordinates. Helipads are named by their grid reference and assigned a dash number. The dash number is used to differentiate between two (2) or more helipads in the same grid. The dash numbers assigned are based on the order in which the helipads were created. In the example below, two (2) helipads were created in grid H3. The first helipad was assigned the pad number H3-1 while the second was assigned pad name H3-2.



GPS Locations

Label or Name	Grid Number	Latitude	Longitude
Base Camp	F6	59° 14.225' N	119° 39.900' W
G5-1	G5	59° 17.500' N	119° 37.500' W
H3-1	H3	59° 21.255' N	119° 35.600' W
H3-2	H3	59° 20.755' N	119° 35.200' W
I6-1	I6	59° 15.100' N	119° 33.890' W
I6-2	I6	59° 15.800' N	119° 32.420' W

Air Operations Map Using the Alphanumeric Grid System

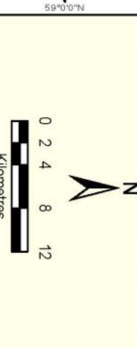


GPS Locations

Locations updated using Aircraft Coordinates

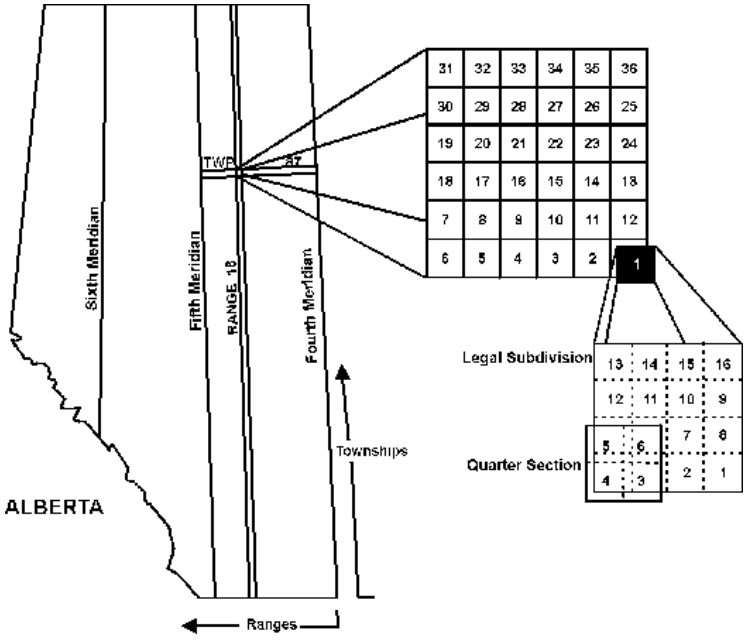
July 20, 2012

Label	GRID_NO	Latitude	Longitude
Microwave Tower	W30	59° 16.115' N	118° 41.380' W
CC27-1	CC27	59° 19.617' N	118° 29.333' W
X16-1	X16	59° 31.217' N	118° 41.233' W
RAWS	W36	59° 9.463' N	118° 41.719' W
ICP	W36	59° 9.260' N	118° 42.374' W
Petitot (143 ft)	E11	59° 36.000' N	119° 22.084' W
Rainbow Lake (118 ft)	S45	58° 59.250' N	118° 50.434' W
Meander River (295 ft)	38	59° 8.267' N	117° 37.700' W
Torch Pad 3	SS39	59° 7.147' N	117° 54.587' W
Torch Pad 2	OO39	59° 6.859' N	118° 4.663' W
DD30-1	DD30	59° 16.219' N	118° 28.068' W
V31-1	V31	59° 15.191' N	118° 43.420' W
V31-2	V31	59° 15.363' N	118° 44.498' W
Communications Tower	Y38	59° 7.801' N	118° 38.446' W
Rain Gauge	G32	59° 13.473' N	119° 16.336' W
V30-1	V30	59° 15.444' N	118° 44.910' W
DD31-1	DD31	59° 15.564' N	118° 27.236' W
DD31-2	DD31	59° 15.259' N	118° 26.972' W
DD30-2	DD30	59° 16.073' N	118° 27.800' W
CC30-1	CC30	59° 16.098' N	118° 29.794' W
EE31-1	EE31	59° 14.868' N	118° 26.153' W
AA30-1	AA30	59° 16.506' N	118° 34.334' W
Helibase	W36	59° 9.329' N	118° 42.437' W
Rain Gauge	EE22	59° 24.993' N	118° 26.123' W
Rain Gauge	EE31	59° 14.868' N	118° 26.153' W
V30-2	V30	59° 15.579' N	118° 44.244' W
V30-3	V30	59° 15.711' N	118° 43.685' W
Communication Tower	P30	59° 16.304' N	118° 57.557' W
BB30-1	BB30	59° 16.034' N	118° 32.263' W
BB30-2	BB30	59° 15.881' N	118° 31.093' W
Mud Pit 3	DD37	59° 8.135' N	118° 27.834' W
Torch Pad 4	G31	59° 14.194' N	119° 16.365' W
Tower	G30	59° 15.331' N	119° 15.956' W
EE32-1	EE32	59° 14.585' N	118° 25.499' W
FF32-1	FF32	59° 13.779' N	118° 24.111' W
EE32-2	EE32	59° 14.456' N	118° 25.686' W
Bravo Staging 2	AA30	59° 15.820' N	118° 33.140' W
BB30-3	BB30	59° 15.848' N	118° 31.050' W
Bravo Staging 1	CC30	59° 15.775' N	118° 28.933' W
FF33-1	FF33	59° 13.410' N	118° 23.314' W
W30-1	W30	59° 15.826' N	118° 42.865' W
V30-4	V30	59° 15.789' N	118° 45.196' W
R31-1	R31	59° 15.049' N	118° 53.501' W
U31-2	U31	59° 14.704' N	118° 46.782' W
U31-3	U31	59° 15.265' N	118° 46.554' W
Sling Pit	W36	59° 9.487' N	118° 42.154' W
U31-1	U31	59° 15.342' N	118° 46.555' W
W31-1	W31	59° 15.474' N	118° 41.349' W
Microwave Tower	X30	59° 16.214' N	118° 41.045' W
Y30-1	Y30	59° 15.798' N	118° 38.928' W
Y29-1	Y29	59° 16.895' N	118° 37.273' W
Z29-1	Z29	59° 16.897' N	118° 35.438' W
Z29-2	Z29	59° 17.278' N	118° 36.633' W
Rain Guage	X30	59° 16.198' N	118° 41.009' W
Pad 4	Z30	59° 16.538' N	118° 35.263' W
U30-1	U30	59° 15.892' N	118° 46.019' W
II36-1	II36	59° 9.832' N	118° 16.015' W



Alberta Third System of Survey

Maps produced and used by Wildfire Management emphasise the Township Grid System as the major reference system. Compared with the Latitude-Longitude System, which denotes a point at the intersection of two lines, the Township Grid System denotes an area of known size located in a certain position.

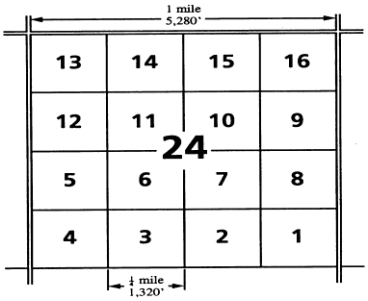


Subdivision

The smallest regular unit of land in Alberta is a Legal Subdivision (abbreviated LS or LSD). This unit is square, being one-quarter mile (0.4 km) in length and width, containing 40 ac. (16.2 ha, 1 acre = 43,560 sq. ft. or 4,047 m2).

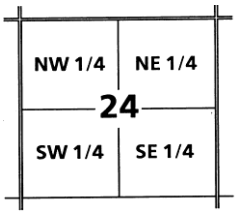
Section

Sixteen Legal Subdivisions make up one Section (abbreviated SEC), the key unit of the Township Grid System. It is a square measuring 1-mile at each side and containing approximately 640 ac. (259 ha).



Quarter Section

Four Legal Subdivisions form 1-quarter Section. These are identified as NE¼, NW¼, SE¼, and SW¼.



Township
A Township is a square with 6 mi. sides and contains 36 sections (abbreviated Twp.). The numbering starts in the SE corner of the Township. The area of a Township is that of 36 sq. mi. (57.9 km2) plus the width and length of the road allowances.

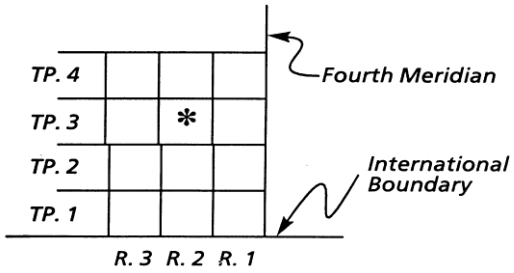
31	32	33	34	35	36
30	29	28	27	26	25
19	20	21	22	23	24
18	17	16	15	14	13
7	8	9	10	11	12
6	5	4	3	2	1

A Township strip runs in an east-west direction. Starting at the United States border, parallel strips 6 miles wide are numbered consecutively from the south to the north. Strip #1 borders the United States, while strip #126 borders the Northwest Territories. Each strip constitutes a series of Township squares.

Road Allowance
A standard Government Road Allowance, 66 ft. (20 m) in width, is left between Sections. Section boundaries that are not Road Allowances are called “Blind Lines”. Road Allowances are provided after each mile in an east-west direction, i.e., five north-south road allowances within the Township in a north-south direction, with three Blind Lines forming the remaining Section boundaries.

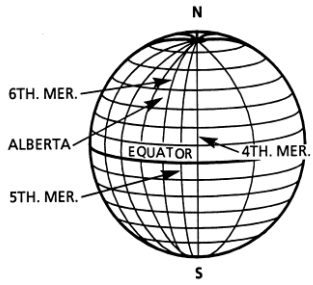
Township Range
Each Township is identified by two numbers, which indicate its position geographically. These are Township number and Range number.

The Range (abbreviated Rge.) numbering starts immediately west of a Meridian and increases in 6 miles Blocks (one township) as it goes west. Thus, the Township marked with an * in the diagram below is numbered Township 3, Range 2 West of the Fourth Meridian or in short form, Twp. 3, Rge. 2, W4M.



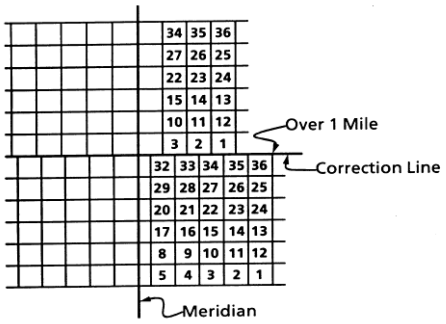
Meridian
The line from the North Pole to the South Pole by the shortest route is called a Meridian. These lines are used as basic starting points for distances measured east and west. In Canada, these meridians have been arbitrarily numbered from 1 to 6. The first (“principle”) Meridian is located just west of Winnipeg; the second is on the Saskatchewan-Manitoba border; the third is in Saskatchewan; the fourth on the Alberta-Saskatchewan border; the fifth runs through Stony Plain, Alberta, and the sixth through a point just east of the town site of Jasper.

Ranges are always referred to as being west of one of these Meridians and the Range numbering resumes with “1" west of each Meridian.



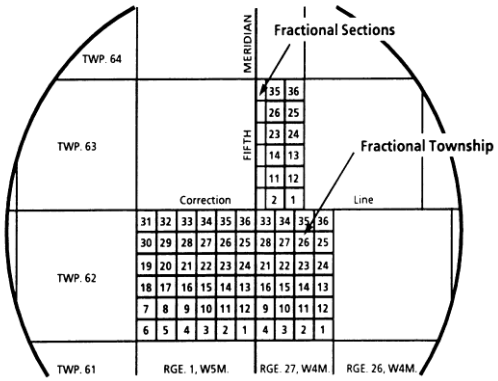
Correction Lines

Townships are always slightly tapered towards the north because the earth is round. Around Edmonton, this tapering means that the south of the Township is about 65 ft. wider than the northern boundary. Sections at the northern boundary of a Township are about 10 ft. narrower than those at the southern boundary of the same Township. To prevent this convergence from becoming too great, a break is made every four Townships. This break is called a Correction Line and is not, as may be supposed, the result of the surveyor's error. Note that the jog at the Correction Line becomes greater the further west you move from the Meridian. Just east of the next Meridian to the west, this jog is greater than 1 mi.



Fractional Townships and Fractional Sections

At the Meridian, all Townships are cut off to the straight, geographic north-south line and a fresh start is made. This results in fractional Townships and fractional Sections.



Finding a Location Based on a Legal Description
When a legal description is received over the radio, the reverse procedure for transmitting is followed to find it on the map:

1. Find the Meridian.
2. Find the Township at the intersection of the Range column and the Township strip.
3. Find the Section with the Township template.
4. Find the quarter Section or Legal Subdivision.

For example, suppose you are told to proceed to LSD 8 of Section 10, Twp. 24, Rge. 8 W5M. First, you would locate the fifth Meridian. The location you want will be west of this Meridian. Next, locate the Range by using the Range numbers that are usually located horizontally along the top and bottom of the map. Then locate the Township (Township numbers are usually located vertically along the sides of the map). Finally, locate the Section number, then the Legal Subdivision.

Fireline equipment weight

	Lbs.	Kgs.
Axe Single bit, standard fireline	5	2.3
Bag		
Backpack, water, (empty) c/w handspray pump	7	3.2
Batteries (144 per box)	8.33	3.8
Batteries (576 per box)	34	15.4
Bladder		
Water, slingable, 60 gallons	10	4.5
Water, slingable, 110 gallons	12	5.5
Water, slingable, 300 gallons	35	15.9
Bottle		
Propane, 20 pounds, full	45	20.5
Propane, 40 pounds, full	90	40.9
Propane, 100 pounds, full	180	81.8
Propane, camp stove model empty-full wts.	1.05-2.0	0.48-0.91
Coveralls Nomex, Yellow	2.55	1.16
Can		
Gas, plastic, 5 gallons, full	46	20.9
Gas, plastic, 5 gallons, empty	2	0.9
Gas/Oil, plastic, Combination, 21/2 gallon full	23.4	10.6
Gas/Oil, plastic, Combination, 21/2 gallon empty	2.7	1.2
Chainsaws Three different bars sizes		
16”	18	8.2
18”	18.25	8.28
20”	18.36	8.33
Chainsaw Oil 4-liter jug	8	3.6

Chainsaw pack	3	1.4
Drink Bottles		
Gatorade / PowerAde		
710ml bottle	1.5	0.68
12 pack	18	8.2
24 pack	36	16.3
Water		
1 Liter bottle	2.26	1.1
Case of 12	27.2	12.3
500 ml Bottle	1.2	0.54
	Lbs.	Kgs.
12 pack	14.4	6.5
24 pack	28.8	13.1
5-gallon bottle / full	50	22.7
Fire Foam Concentrate		
Pail, 5 gallons, full	46	20.9
Drum, 45 gallons, full	480	218.2
Fuel and Barrel		
Jet A	423	192.3
Jet B	410	186.4
AV GAS	381	173.2
Diesel	558	254
Unleaded	384	175
Full Propane Pig	850	386.4
Empty Drum	50	23
Empty Propane Pig	275	125
Fusee’s		
single fuse	0.52	0.23
Case of 72	42	19.1

Heater		
Airtight, 18-inch c/w 6 section stove pipe	26.5	12.1
Airtight, 24-inch c/w 6 section stove pipe	26.5	12.1
NOTE: use same weight for both stove sizes		
Hose		
Fire, 5/8" (dry) per 50 feet	1.2	0.5
Fire, 1" (dry) per 100 feet	9	4.1
Fire, 1 1/2" (dry) per 100 feet *	13.5-16.25	6.1-7.4
Suction, 1 1/2" Draftex	4	1.8
Suction, 2", Draftex	5	2.3
Suction, 2", Rubber	15	6.8
Bagged Hose 4/bag c/w hose bag and carton	61	27.7
* Hose Dry/Wet 13.5 to 16.25 Lbs. variation due to the type of lining inside the hose.		
Note: Add approx. 2 lbs. / roll to be added for wet hose		
Kit		
First Aid, Personal, ‘P’	0.4	0.18
First Aid, Type 2	2.33	1.1
First Aid, Type 3	Lbs. 4.25	Kgs. 1.9
Camp Maintenance	10	4.5
Chainsaw w/o saw	25	11.4
Crash, Rescue	24	10.9
Comms, unit c/w 4 radios	14	6.4
Dozer Boss	25	11.3
Pump, BB4, w/o pump	37	16.8
Pump, Floto, w/o pump	28	12.7
Pump, Mark III, w/o pump	54	24.5
Pump, Mini-Mark/Shindawa, w/o pump	29	13.2
Sprinkler System	80	36.3
Sprinkler Mini	35	15.9

Water truck	6.5	2.9
Machete	1.9	0.9
MRE's – Box	36	16.3
Polythene Plastic		
Clear, 4 mil, 100-foot roll	22	10
Power Plant		
300 watts	50	22.7
500 watts	57	25.9
1 KW	215	97.7
3.5 KW	200	90.9
Pulaski	5.5	2.5
Pump And Engine		
BB4	180	81.8
Floto	42	19.1
Mark III	64	29.1
Mini-Mark/Shindawa	10	4.5
Pump, Mini-Striker	21	9.5
Pump, fuel, barrel, hand, rotary	18	8.2
Radio, TK270 with batteries	1.12	0.51
Saw, Brushcutter	27	12.2
Shovel, bantam firefighting, long handle	4.5	2
Shower	Lbs.	Kgs.
Portable, single	110	50
Portable, double c/w tent and wood boxes	455	206.8
Stove, cook, 4 burner propane w/o bottle	75	34.1

Tank, c/w pad where required		
Water, self-supporting, 500 gallons	32	14.5
Water, self-supporting, 1,000 gallons	48	21.8
Water, self-supporting, 1,500 gallons	77	35
Water, self-supporting, 2,500 gallons	125	56.8
Water, self-supporting, 4,000 gallons	110	50
Water, self-supporting, 5,000 gallons	160	72.7
Water, self-supporting, 12,000 gallons	200	90.9
Tent		
Canvas, 12' x 14'	70	31.8
Modular, army c/w boxes	770	350
Pumpkin, 18' – Comes with green boxes	745	338.6
- Comes with red boxes	545	247.7
Nylon, Overhead	10.72	4.9
Nylon, Firefighter	7	3.2
Ranger, 18' x 30'	404	183.6
Torch		
Torch, drip, brush burning	5	2.3
Helitorch, A&F made c/w kit	170	77.1
Aerial Ignition Device (Ping Pong Machine) c/w kit	95	43.1

NOTE: All equipment was weighed on a certified scale

Helicopter Landing Areas

In remote areas, helibases and helispots are necessary for the transport of personnel, equipment, and supplies to the fireline.

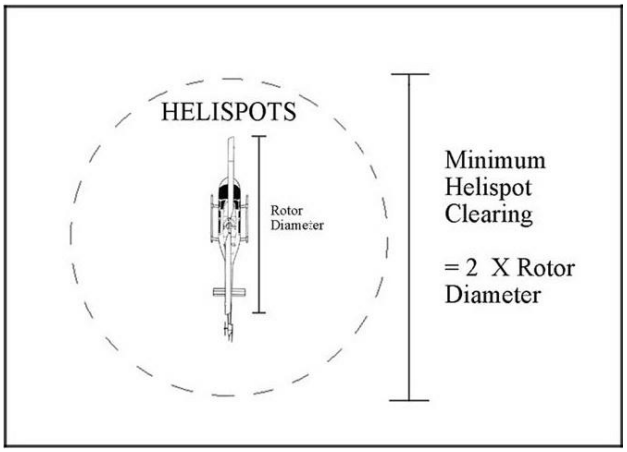
Helibase
The helibase is the main location for parking, fuelling, maintenance and loading of helicopters in support of an incident. When possible, Wildfire Management utilizes existing airstrips, open fields, or meadows with road access.

Helispot
A helispot is any designated location or area where a helicopter can safely take-off and land. Helispots may be used for offloading supplies, equipment, or personnel. Site section and preparation is a critical aspect of safe and efficient helicopter operations.

Helipad
A helipad is the surface or structure where the helicopter lands

Helispot Size and condition:

- The diameter of the helispot clearing should be a minimum of twice the rotor diameter
- Light or intermediate helicopters (23 – 25 metres)
- Medium helicopters (28 – 32 metres)
- Any dangerous trees and hazards shall be removed
- Helispot shall be free from debris, obstacles, and garbage; any equipment and loose gear will be secured
- Skid logs may be used in soft ground conditions
- Wind indicators should be installed



Wildfire Management will strive to construct safe and solid landing areas. Ultimately, it is up to the pilot to accept, reject, or suggest improvements to be made to any landing area.

Glossary of Wildfire Terms

Automatic Flight Restriction
As per the Canadian Air Regulation Standards, no person may operate an aircraft over a forest fire area, or area that is located five (5) nautical miles around the fire perimeter and at an altitude of less than 3,000 feet AGL. If additional space is required, due to increased aircraft activity, a request must be made through the Forest Area Office to have a Notice to all Airmen (NOTAM) issued by transport Canada for the fire area.

Bucket Source
A natural or manmade water source where helitankers can fill water from.

Cold Lake Air Weapons Range (CLAWR)
The Cold Lake Air Weapons Range is a Department of National Defence (DND) control area for the purpose of allowing military aircraft a practice / training area in the boreal forest. All aircraft are restricted from entering the zone without permission from the Cold Lake Forces Base. All aircraft must request permission to enter the range by contacting the Lac La Biche Duty Officer. If access is allowed, both a corridor and maximum elevation will be assigned. A map of the CLWR is provided in the map books and a digital map is available through the AWCC. Upon clearance by the duty officer, the pilot will contact the tower at Cold Lake.

Double Crewing
The addition of a second air crew to provide the ability to lengthen the operational period. This will include an additional pilot for lights, intermediates, mediums, and most heavy helicopters. Heavy helicopters that require dual pilots to operate will need two additional pilots.

Daily Flight Report (A0-02)
To ensure accurate information is collected at the time of the flight, all activity must be recorded daily for each aircraft in use or under contract and AO-02 is used for this purpose. The AO-02 must be filled out for each aircraft under contract whether any flight has taken place during the day. When flight hours occur, a report will be completed and will contain information about the following: purpose of the flight, take-off and landing by location, hours flown, Fuel consumption, and Crew expenses.

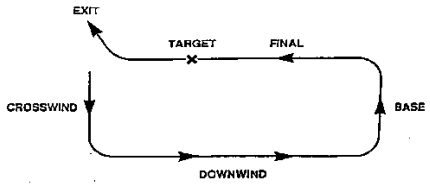
Day Base
A temporary moving of a tanker group or helicopter to another base due to fire hazard coverage levels or to support on-going fire operations. The aircraft is expected to be operational while enroute to the base.

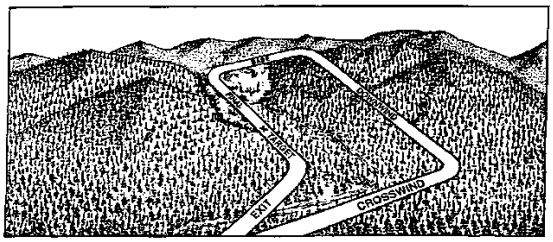
Dip Site
A retardant pit or tank for helitankers to fill retardant from.

Drop Assessment
The Air Attack Officer or Helicopter Coordinator will access each drop from an Airtanker or helitanker for its accuracy and effectiveness. Drops will be rated as a bull's eye, short, long, left, or right. Short and long drops are rated as a fraction of the entire load (e.g., ¼ load short). Left and right drops are assessed using the wingspan of the aircraft as a reference (e.g., the load was ½ wingspans left). Other factors that can be assessed include drop height, speed, coverage, foam, and drift.

Demonstration Run
A simulated bombing run made on a target by the Birddog or Helicopter Coordinator to indicate both the target and run to the Airtanker.

Fire Bombing Circuit





Fire Foam (Phos-Chek WD881C and Fire-Trol 104)
Are wildland Class A firefighting liquid concentrates, consisting of a surfactant, corrosion inhibitor and stabilizers.

Fire Traffic Area (FTA)
The portion of airspace within 5 nautical miles of a wildfire perimeter, extending to 3,000 feet above ground. The Fire Traffic Area dimensions may be amended by NOTAM. As per CAR 601.15, no unauthorized person may operate an aircraft over a forest fire area, or over any area that is located within five (5) NM of one, at an altitude of less than 3000 feet above ground level. If additional space is required, a request must be made through the area office to have a Notice to Airmen (NOTAM) issued by Nav Canada describing the amended restricted area (CAR 601.16).

Firenet
A radio system that is a province wide VHF-FM repeater network designed to meet the unique needs of Wildfire Management's, prevention, detection, and suppression operations. It will also be used on a limited basis by other Divisions within Agriculture and Forestry and Environment and Parks.

Half On / Half Off
An Airtanker or Helitanker drop made parallel to a given reference (fires edge) where one (1) side of the load falls on the burning fuel and the other half falls on the adjacent unburned fuel.

Wildfire Management is training HLCO personnel in airspace management so they can provide increased safety for all aircraft on an incident. Presently only some of our HLCO personnel have this capability.

The helicopter coordinator position plays an integral part in managing airspace over an incident. The helicopter coordinator may assign altitudes to "stack" other aircraft or give entrance and exit instructions. The primary airspace management responsibilities of the helicopter coordinator are to advise other aircraft of their current altitude and of aircraft traffic in the vicinity of the area they are working.

Each pilot in command on the incident is responsible to see and be seen and may only be assigned altitudes and entrance/exit instructions by a qualified Air Attack Officer or Air Tactical Group Supervisor that is managing the airspace.

Hover Drop
A drop made by a helicopter hovering over a target which results in a concentrated drop.

Incident Commander (IC)
Is the individual responsible to organize, assign, and supervise fire suppression activities on any given incident. When assigned to an initial attack fire, the aircraft report to the Incident Commander.

Initial Fire Assessment Form (FP41)
The first resource on scene is responsible to complete and pass the initial fire assessment. Information on wildfire status, size, spread rate, fire type, fuel type, values at risk and requirements are recorded and relayed to the Forest Area Fire Centre.

Lead-in

A technique whereby the Airtanker or Helitanker follows the Birddog or Helicopter Coordinator on a final run.

Long Term Retardant
Phos-Chek® LC95a - A liquid fertilizer grade ammonium polyphosphate (11-37-0), combined with guar gum, color package and a corrosion inhibitor. The mixing ratio of water to LC95a liquid concentrate is Alberta is 5.5:1This is the current retardant in use for the Province of Alberta and is supplied by ICL Performance Products Limited.

Operational Birddog
Working or low-level birddog, sometimes referred to as the Tactical Birddog. Operational birddog controls the base of the stack which initiates movement in the stack

Parallel Right/Left
Same bearing but position aircraft a specified distance right or left of previous drop. This can be a tag on but parallel right or left.

Provincial Aircraft Coordinator (PAC)
An individual based in the operations room at the AWCC and is responsible for the coordination of safe efficient use of Provincial Aviation assets.

Roll-ups
A retardant drop placed in front of a visible reference point, such as another retardant load, a structure, a water body, etc. The intent is to have the load end as it reaches the given reference point. Care must be made as to load type and delivery.

Salvo
Place entire load on designated target. Salvo is a common term for airtankers and helitankers with a fixed door system. A 4-door salvo will mean a 4-door drop all at once.

Tag On and Extend
To drop retardant in such a way that the load slightly overlaps and then lengthens a previous drop. A 25% overlap for conventional drops or 30 to 40 feet (for constant flow tanks) is desired.

Side Stepping
When bomb runs cannot be made by running down a slope using short drops dropped 90 degrees to the slope can build a line. Care should be taken as slope can introduce a different ground elevation off each wing of the aircraft. E.g., a pilot in an L-188 who drops across the slope (pilot on downhill side) may not be aware of rising terrain under the uphill wing.

Stack
An established holding pattern over a wildfire for aircraft awaiting instructions. Spacing will be at 500 ft. intervals. The operational birddog controls the stack movements. If the ATGS role has been activated, they will assign an entry altitude for incoming aircraft. Aircraft with external loads (longlines) will not be placed in the stack.

String Drop
A drop made by a helicopter in forward flight which results in a long narrow drop.

Target Altitude
Is the intended altitude, feet above sea level, at which an Airtanker is to release their load Target altitude is equal to the ground altitude of the target, in feet above sea level, plus the intended drop height above ground. This altitude is provided to the Airtanker, by the Birddog as part of their run description.

TCAS / TCAD
The Traffic alert and Collision Avoidance System (or TCAS) or Traffic Collision Avoidance Device (or TCAD) is an aircraft collision avoidance system designed to reduce the incidence of mid-air collisions between aircraft. It monitors the airspace around an aircraft for other aircraft equipped with a corresponding active transponder, independent of air traffic control, and warns pilots of the presence of other transponder-equipped aircraft, which may present a threat of mid-air collision (MAC).

Thirty-Minute Check-in
Mandatory position and status updates made from an aircraft to the Forest Area's dispatch centre every 30 minutes.

Unserviceable Aircraft Report
Unserviceable is defined as when the aircraft, pilot or engineer are not in condition to perform, fails to perform or is unavailable to perform during the alert/standby period as defined in “Flight Crew Statuses” or work assignment period specified in the daily Incidence Action Plan or Forest Area daily operations plan.

Wail Siren
Siren signalling the ground crews, that Airtanker Operations in the area have been completed.

Yelp Siren
Siren signalling the ground crews of an intended and/or imminent drop from an Airtanker. All ground crews must immediately move clear of the drop zone.

CLASS F AIRSPACE

As per the Canadian Aviation Regulation an automatic flight restriction comes into affect over the fire area.

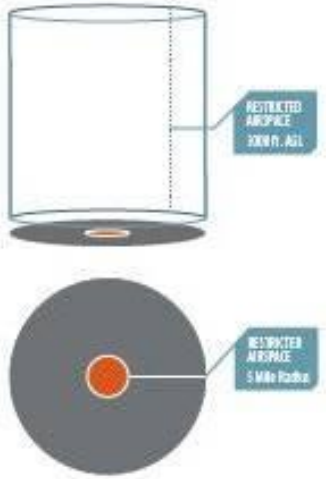
The regulation reads:

"no person may operate an aircraft over a forest fire area, or area that is located five (5) nautical miles around the fire perimeter and at an altitude of less than 3,000 feet AGL."

CARS 601.15

Through NOTAM procedures the dimensions of Class F airspace can be increased.

All aircraft working for the Wildfire Management Branch that will cross over a specific fire and that aircraft is not assigned to that fire, must abide by the regulation listed above.



CLASS F AIRSPACE MANAGEMENT DURING AIR ATTACK OPERATIONS

The Birddog / Air Tactical Group Supervisor (ATGS) act as the airspace managers over an incident. They will issue air space management instructions to aircraft within the class F airspace, on an established air advisory frequency.

FLIGHT PRIORITY GUIDELINES

1. Human emergencies.
2. Airtankers.
3. Rotor-wing (Bucketing / Aerial Ignition / Operations).
4. Service / Logistics
5. Reconnaissance (non operations).

AIR ADVISORY FREQUENCIES FOR AIR ATTACK WITHIN CLASS F AIRSPACE – VHF-AM

Initial Attack

- 129.800 MHZ (Primary)
- 128.950 MHZ (Secondary)
- 130.750 MHZ (Alternate), North of 52° only

Sustained Action

- 122.650 MHZ (Primary)
- 130.175 MHZ (Secondary), North of 53°only

As per visual flight regulations, all aircraft transiting to or from the incident will monitor the VFR mandatory frequency 126.7

Within the North Oil Sands area (North of Fort McMurray), monitor the designated VFR air traffic advisory frequency 123.5. Within the South Oil Sands area (North of Lac La Biche), monitor 123.025

(See the Canadian Flight Supplement for details)

DESIGNATED ALTITUDES IN CLASS F AIRSPACE

AIRCRAFT TYPE	ALTITUDE (Feet) AGL (Above Ground Level)
Rotor-wing	100 to 500
Birddog	100 to 1,000
Orbiting airtankers	1,500 to 3,500
A.T.G.S.	4,000 to 5,000
Others	Over 5,000

ESTABLISHMENT OF AN ALTIMETER SETTING

To ensure proper vertical separation all aircraft use the same altimeter setting. Vertical separation between aircraft over an incident is only 500 feet.

Altimeter setting will be established by first birddog on scene or other aircraft established over the fire.

APPROACHING CLASS F AIRSPACE

INITIAL ATTACK COMMUNICATION PROCEDURES

All aircraft will use the Primary Initial Attack Air Advisory Frequency 129.800, unless it has been updated by an airspace manager (Birddog or ATGS). When approaching Class F airspace:

- All aircraft must contact any known aircraft or the airspace manager (Birddog or ATGS) 5 minutes back from the fire on the assigned air advisory frequency.
- If no response, remain outside the restricted airspace (5 nautical miles) and advise the Forest Area Dispatch. DO NOT proceed inbound until communications are established. Confirm the assigned air advisory frequency and aircraft registrations with the Forest Area dispatch.
- All aircraft operating in an un-manned fire airspace will broadcast their movements and maintain their own separation using the assigned air advisory frequency.

ALTITUDE and CORRIDOR Assignments

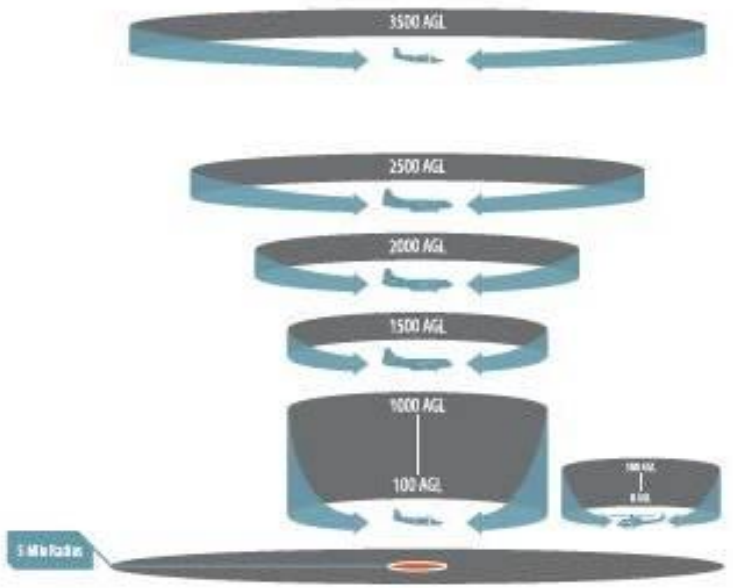
Outside the Class F airspace, aircraft are required to cruise at the appropriate Visual Flight Regulation (VFR) altitudes.

Heading	Altitude
Westerly Track (180° - 359°)	Even Altitude + 500ft.
Easterly Track (000° - 179°)	Odd Altitude + 500ft.

Inside Class F airspace, all aircraft will be assigned altitudes and corridors of approach and departure.

CLASS F AIRSPACE

VERTICAL ALTITUDE ASSIGNMENTS



Generally the airtanker stack is positioned directly over the incident, however; it is possible to offset the stack horizontally, to accommodate limiting factors such as, visibility, terrain, congestion.

The base of the stack will be set at 1500 feet above ground level (AGL). (Rounded up, to the nearest 500 foot interval i.e.: 4500' not 4300').

All aircraft must call using the assigned air advisory frequency at 5 minutes flight time (at current speed) back from the incident.

If no response, remain outside the restricted airspace (5 nautical miles) and advise the Forest Area Dispatch. DO NOT proceed inbound until communications are established. Confirm the assigned air advisory frequency and aircraft registrations with the Forest Area dispatch.

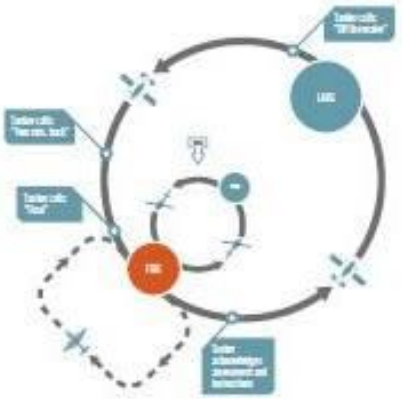
Altitude assignments / altimeter settings, entry / exit instructions, into the airspace will be communicated on assigned air advisory frequencies and will be managed by:

1. Uncontrolled Class F airspace
   VFR (See and be seen)
   Mandatory broadcasts on 126.7 and 129.8 (Initial Attack Fires) or the assigned air advisory frequency.
2. The working Birddog
   During air tanker operations
3. Air Tactical Group Supervisor (ATGS) - referred to as Air Attack 'fire number/name')
   If this position has been established, the ATGS will manage inbound/outbound corridors, entry/exit altitudes, holding points, and horizontal movement within the airspace.
   Working birddog will always control:
   - The base of the stack
   - Aircraft within the working birddogs zone of airspace
   - Entry and exit of skimming aircraft in a predetermined pattern

For complete information on airtanker stacking procedures refer to the *Alberta Fire Bombing Procedures Manual*.

CLASS F AIRSPACE

AIRTANKER CIRCUITS



TACTICAL WORKING AIRSPACE:

- Is the area directly over the incident up to 1000 feet above ground level (AGL); and is always under the direct control of the tactical birddog during airtanker operations.
- All aircraft will not enter into this working airspace over the incident, until positively cleared in by the working birddog
- A phrase including the working Airtanker(s) tail number and the words "cleared for the run" will signify that the Birddog team is permitting that Airtanker(s) to share the common airspace and that all ground crews or personnel are in safe locations relative to the intended drop zone.

RETARDANT AIRTANKERS:

- Will be stacked over the incident with the base of the stack starting at 1500 feet AGL, all other aircraft will be positioned in the stack, at 500 foot minimum vertical separation.
- Retardant airtanker bombing circuit starts at 1000 feet AGL down to target elevation
- In the Stack
  - Once Airtankers are established in their holding pattern at the assigned altitude, they will inform the Birddog they are over the fire.
  - Airtankers will remain on their assigned firebombing frequency and their only contact will be the working Birddog.
  - The Airtanker(s) maintain the defined holding pattern until instructed otherwise by the Birddog aircraft.
  - Airtanker Pilots are encouraged to monitor the air advisory frequency, as an increased awareness measure.
- After the Airtanker has completed the bombing run, the Airtanker will either:
  - Climb back up to the base of the stack and wait for instructions for the next run. OR Exit the fire area, as briefed by the Birddog team.
  - After the working airtanker has exited the airspace:
    - Airtanker #2 will automatically descend to the base-of-stack altitude, assume the working position, and will simultaneously broadcast this manoeuvre with the radio call on the tactical bombing frequency
    - Remaining airtanker(s) in the stack will descend 500 feet, into the next position in the stack. Keeping positive visual contact with the airtankers below them.

THE SKIMMER AIRTANKER / HEAVY HELI-TANKER:

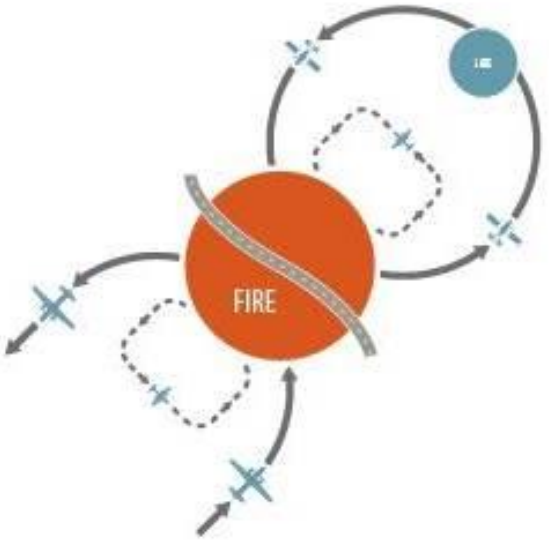
- Circuit pattern is "racetrack" like, and will be horizontally displaced between the incident and the water source.
- Skimmer aircraft will announce their position 2 minutes back from the tactical working airspace requesting entry.
- If Skimmer aircraft are required to hold for other traffic, they will be instructed to orbit over their pickup source, or a designated holding area.
- Skimmer altitude within the circuit will vary based on topography/ conditions, but generally be below 700 feet AGL.
- Skimmer aircraft will remain at circuit altitude and depart to their water source via a designated corridor.

BUCKETING ROTOR WING:

- Circuit pattern is much like the skimmer airtanker pattern, except the water source is generally much closer to the incident, and usually entirely within the class F managed airspace.
- During airtanker operations, rotor wing aircraft operating in the tactical working airspace, are under the direct control of the working birddog.
- An attempt will be made to separate airtanker and bucketing operations geographically. However if not possible operations may become mutually exclusive.
- When operations allow, increasing efficiency, multiple bucketing rotor wing may be setup up in a "Daisy Chain" configuration.
- The HLCO position is recommended to be activated during bucketing operations with multiple rotor wing aircraft.

CLASS F AIRSPACE

SPLIT FIRE OPERATIONS



IF CIRCUMSTANCES ALLOW, AND IT IS DESIRABLE, AIRTANKER GROUP(S), HEAVY HELI-TANKERS / BUCKET ROTOR WING, MAY WORK INDEPENDENTLY ON THE SAME FIRE.

This will occur if and only if the resources can be assigned to separate parts of the fire, with definable geographic boundaries. This occurs regularly if retardant and skimmer groups are working the same fire.

- If skimmer Airtanker(s) are working a separate part of the fire with its own birddog, it is very desirable to have the water source on the same side of the fire, and can maintain their own travel corridor.
- Should short term fire suppressant drops be required to support long-term fire retardant line construction, a co-coordinated airspace is required.
- Management of the overall Class F airspace is handled by one Air Attack Officer / Air Tactical Group Supervisor (ATGS), during multi-group operations, while the working airspace over a portion of the incident may be handled by another tactical Air Attack Officer.
- ATGS - referred to as Air Attack fire number/name/
  - If this position has been established, the ATGS will manage inbound/outbound corridors, entry/exit altitudes, holding points, and horizontal movement within the airspace.
  - Any aircraft wishing to enter the Class F airspace will make contact and receive instructions from the ATGS before entering.
  - Working birddog will always control:
    - The base of the stack
    - Aircraft within the working birddogs zone of airspace
    - Entry and exit of skimming aircraft in a predetermined pattern.