

<b>GENERAL FLIGHT RULES AND OPERATIONS</b> (Revised September 2001)	<b>8362</b>
<b>FLIGHT PROCEDURES AND RULES</b> (Revised September 2001)	<b>8362.1</b>
<b>GENERAL</b> (No. 23 June 2010)	<b>8362.1.1</b>
<p>CAL FIRE aircraft will be used for official state business only.</p>	
<b>AUTHORIZED OPERATIONS</b> (Revised September 2001)	<b>8362.1.2</b>
<b>TACTICAL AIRCRAFT (CAL FIRE FLEET)</b> (No. 23 June 2010)	<b>8362.1.2.1</b>
<p>CAL FIRE tactical aircraft are limited to fire protection and related missions. The primary missions of each type aircraft are:</p>	
<p style="padding-left: 40px;">CAL FIRE Super Huey Helicopter – Initial attack fire suppression with fire crew and water dropping capability.</p>	
<p style="padding-left: 40px;">OV-10A Air Tactical – Initial attack - fire incident command and control.</p>	
<p style="padding-left: 40px;">S2T Airtanker – Initial attack - fire suppression with retardant.</p>	
<p style="padding-left: 40px;">S2A Airtanker – Initial attack - fire suppression with retardant.</p>	
<b>HEADQUARTERS ADMINISTRATIVE AND SUPPORT AIRCRAFT</b> (No. 23 June 2010)	<b>8362.1.2.2</b>
<p>Ref: Standard Operating Procedures – Aviation Management Unit</p>	
<b>FLIGHT PLANS, FLIGHT FOLLOWING AND FLIGHT ROUTES</b> (Revised September 2001)	<b>8362.2</b>

## **FLIGHT PLANS (ADMINISTRATIVE FLEET)**

**8362.2.1**

(No. 23 June 2010)

CAL FIRE administrative aircraft shall file flight plans in accordance with Handbook 8100 [Procedure 407](#) with the Department ECC. (Aircrews still retain the option to file a FAA VFR or IFR flight plan).

Administrative aircraft assigned to Sacramento shall open, close and amend their flight plans with the SAC ECC by either telephone or radio. SAC ECC shall advise Northern OPS or Southern OPS of these reports.

The Departure ECC shall be responsible to transmit a copy of the flight plan to the next level ECC in the system with each level passing the form to all destinations affected. Filing a flight plan does not automatically initiate flight following with the FAA, CAL FIRE or USFS.

All other non-administrative flights shall follow flight following requirements outlined in Handbook 8100 Procedure No. 400

## **OPENING AND CLOSING A FLIGHT PLAN**

**8362.2.1.1**

(No.23 June 2010)

For all administrative fleet flights, the pilot-in-command of the aircraft for which the flight plan is being filed is responsible to open the flight plan with the Departure ECC and close with the Destination ECC. Flight plans shall be closed not later than **30 minutes** after arrival at the destination.

If the flight is intended to have multiple legs with a stop over time of more than 10 minutes, and/or passengers are to be dropped off or added, the pilot-in-command is responsible to file a multiple leg flight plan. Each leg of the flight plan will be opened and closed with the Destination ECCs. It is the responsibility of the Destination ECC to advise, through the normal command and control chain, the Departure ECC at the earliest convenience of the arrival time of the aircraft.

The pilot-in-command of aircraft that are flight following will ensure that their flight plans are closed in accordance with these procedures and will not assume that the ECC that is flight following will automatically close their flight plan unless it is the Destination ECC.

Aircraft arriving at McClellan, when the SAC ECC is not operational, shall close their flight plan with the Command Center Officer by calling the main SAC ECC phone number (916) 845-8680. If there is no answer at this number closure of the flight plan will take place by calling the Sacramento Duty Officer at (916) 561-3353.

All other non-administrative flights shall follow flight following requirements outlined in Handbook 8100 Procedure No. 400

## **AMENDING A FLIGHT PLAN**

**8362.2.1.2**

(No. 12 September 2003)

The pilot-in-command shall be responsible to advise the Destination ECC if the ETA will be more than 30 minutes from the original ETA, the passenger manifest has changed or any destination or multiple leg of the flight plan has changed.

## **FAILURE TO CLOSE A FLIGHT PLAN**

**8362.2.1.4**

(No. 23 June 2010)

Failure to close a flight plan no later than 30 minutes after arrival will result in the appropriate search and rescue procedures being activated per 8100 Procedure No. 406.

## **OPERATIONAL FLIGHT ROUTES NUMBERS**

**8362.2.1.5**

(No. 20 July 2005)

Tactical flight routes shall be planned to ensure safe and efficient operations. Flight routes shall:

- Avoid highly populated areas when practical.
- Utilize FAA traffic control radar facilities when available.
- Provide for separation between aircraft of different speeds
- Avoid converging on commercial and highly congested airways.
- Fly "neighborly" whenever possible to avoid unnecessary noise over farm, residential, school or hospital areas.
- When possible, select direct routes to minimize unnecessary flight time.

## **FLIGHT FOLLOWING**

(No. 23 June 2010)

**8362.2.2**

Flight following is necessary to ensure pilot and passenger safety and will be utilized on all flights for aircraft owned by or contracted to CAL FIRE.

Automated Flight Following (AFF) provides detailed and accurate aircraft location and flight history. In addition to AFF, CAL FIRE aircraft will likely utilize FAA flight following services. With AFF, radio communications will be required upon departure, possibly during in-flight operations (i.e. divers, in-flight emergencies) and at completion of the flight. If the AFF system goes down, flight following will revert to radio check-in procedures.

AFF requires the aircraft to be equipped with the necessary hardware. The Command Center (CC) and/or Air Tanker Base (ATB) responsible for AFF verification is required to be equipped with a computer connected to the internet and access to the AFF program. If the ATB is not capable of verification of AFF, then the departing CC will verify positive AFF. Any CC responsible for flight following shall be staffed for the duration of the flight.

(For flight following procedures see Handbook 8100 [Procedure No. 400](#).)

### **Responsibilities and Action**

#### **Pilot**

1. Establishes radio contact with the controlling ATB for fixed wing or CC for rotary wing. Once airborne, pilot will relay the flight itinerary, ETC, and "on AFF" (if AFF is operable).
2. If there is a deviation from the planned and briefed flight route, the pilot will contact the departure CC via radio with the changed information.

## **LOCAL ASSIGNMENT**

(No. 23 June 2010)

**8362.2.3**

In the case where aircraft are dispatched within their initial-attack area, and no FAA requirement exists for ATC flight following, CAL FIRE will perform AFF service. The pilot is required to monitor the assigned tactical frequency and comply with all instructions. The pilot will also continuously monitor Guard frequency 168.625 on a tactical FM radio.

## **OUT-OF-AREA ASSIGNMENT**

**8362.2.4**

(No. 20 July 2005)

In the case where aircraft are dispatched outside their local area, the same criteria applies as for a local fire mission, AND, pilots should flight follow with ATC if the route takes the aircraft through areas of concentrated air traffic.

## **POINT-TO-POINT (NON-EMERGENCY) MISSION**

**8362.2.5**

(No. 23 June 2010)

In the case of a flight where there is no emergency order or immediate response requirement, the pilot will:

- Flight follow with ATC when operating in an FAA radar environment. In some cases, the flight may originate in an FAA radar environment and later pass out of that environment. At that time, the pilot will contact the nearest ECC and initiate the CAL FIRE flight following procedures.
- Except for notifying the departure and arrival ECC, aircraft equipped with Automated Flight Following equipment are exempt from this Section.
- Upon arrival at destination, notify the Destination ECC via radio within 10 minutes of touchdown, or via telephone within 10 minutes after landing. In some cases required communications with FAA may preclude contact prior to touchdown. Use the following phone and fax numbers to report flight plan information:

North Ops (Redding) 530-224-2466

FAX 530-226-2742

South Ops (Riverside) 951-782-4169

FAX 951-782-4900

Sacramento 916-653-8360

FAX 916-653-8961

## **WEATHER LIMITATIONS AND FLIGHT HAZARDS**

**8362.3**

(Revised September 2001)

### **WEATHER LIMITATIONS**

**8362.3.1**

(Revised September 2001)

**WIND LIMITATIONS**  
(Revised September 2001)

**8362.3.1.1**

Special caution should be taken when operating in wind conditions of 20 knots (24mph) and above, or when the gust spread exceeds 10 knots (12mph). Tactical aerial operations requiring flight below 1000 feet AGL shall be continuously evaluated when winds exceed 30 knots (35mph), particularly over ridgelines and/or vertical terrain, or the gust spread exceeds 15 mph. Low level flight operations will be immediately suspended in an area where Moderate (or greater) Turbulence is reported by a participating aircraft. **It is the responsibility of the ATGS, pilots, and other responsible persons to constantly assess the risks versus benefits associated with operating in high-wind and turbulent conditions.**

**VISIBILITY**  
(Revised September 2001)

**8362.3.1.2**

Minimum visibility requirements contained in FAR 91 shall be adhered to.

**ADVERSE WEATHER**  
(Revised September 2001)

**8362.3.1.3**

Flight into known icing: No aircraft shall intentionally be flown into icing conditions unless all of the aircraft's installed deicing or anti-icing equipment is functional and the aircraft is certified by the FAA for operations into icing conditions.

Flight into turbulence: No aircraft shall intentionally be flown into known or forecasted extreme or severe turbulence.

Flight into thunderstorms: No aircraft shall intentionally be flown into thunderstorms.

**FLIGHT ALTITUDES**  
(Revised September 2001)

**8362.4**

## MINIMUM ALTITUDES

(Revised September 2001)

8362.4.1

### IMPORTANT NOTE

**Special training and pilot certification are required for fixed wing low level flight operations (flight below 500 feet AGL). Unless specifically authorized for low level operations by an inter-agency pilot inspector, pilots may not descend below 500 feet AGL, except during takeoff and landing.**

When operating within the confines of a canyon, pilots shall always make allowances for completing a 180° turn away from rising terrain.

Regardless of pilot certification, all aircraft will maintain an altitude of at least 500 feet above ground level (AGL) when operating on incidents except when a specific operation requires descent below 500 feet. Some examples are:

- Helicopter takeoffs and landings
- Special helicopter traffic patterns
- Airtanker retardant drops
- Helicopter water and foam drops

Airtanker pilots must make each drop as though there were ground personnel in the drop zone. Drops should be made from an altitude **no lower than 150 feet** above the top of the vegetation.

However, in an aircraft emergency, a pilot may jettison his retardant at any altitude. All pilots will remain alert to the presence of ground personnel in the target area.

## EN ROUTE ALTITUDES

(Revised September 2001)

8362.4.2

During daylight cross country flights, the minimum cruising altitude shall be 1000 feet AGL. During nighttime cross country flights, the minimum cruising altitude shall be 2000 feet AGL. Aircraft will adhere to the altitude requirements of FAR 91, except as outlined in the Incident Flight Operations.

**FLIGHT RECORDS**  
(Revised September 2001)

**8362.5**

Individual pilot flight time, flight records and aircraft discrepancies for each flight in a department aircraft will be logged on the approved flight forms.

**GENERAL OPERATIONS**  
(Revised September 2001)

**8362.6**

**OPERATING PUBLICATIONS**  
(Revised September 2001)

**8362.6.1**

No aircraft will be flown without the following publications accessible to the pilot and the pilot shall use:

Authorized cockpit checklist: Authorized cockpit checklists are those which are either provided by the aircraft manufacture or a checklist approved by the Chief of Aviation for use on department aircraft. At a minimum, a cockpit checklist shall have procedures for before starting engine, before takeoff, cruise, after landing, through flights and stopping engine. Operator and crewmember checklists will be used for all aircraft operations.

Emergency cockpit checklist: Emergency cockpit checklists shall have at a minimum procedures for emergency operation of the following systems: fuel, hydraulic, electrical, mechanical, instruments, controls as well as engine inoperative.

- Aeronautical Charts: All appropriate charts for either VFR or IFR flights for departure, en route, destination, and alternate landing sites shall be current and available to the pilot in the cockpit.
- Performance Data: Performance data sufficient to enable the pilot to determine aircraft performance under anticipated ambient conditions for the planned flight.

## **USE OF AIRPORTS AND AIRSPACE**

**8362.6.2**

(No. 23 June 2010)

CAL FIRE and contractor personnel shall remain aware that we use public airport facilities developed and maintained for the convenience of general aviation, airline, or military air traffic. Regardless of how important our mission may be, each user has an equal right to the airspace surrounding a facility and to the use of its runways and taxiways. Therefore, pilots shall observe all normal traffic patterns, procedures and regulations associated with use of any airport while working for the State. Further, special care shall be exercised when maneuvering near light aircraft due to the potential for damage caused by rotor/propeller wash.

When operating from tower-controlled airports, monitor ATIS, be familiar with published traffic patterns and reporting points, comply with tower instructions, be familiar and comply with the requirements of FAR Part 91.129.

## **DEMONSTRATION FLIGHTS AND STATIC DISPLAYS**

**8362.6.3**

(Revised September 2001)

All demonstration flights and/or static displays must be approved in advance by the Region Duty Chief through normal ECC channels (as per HB 8100 Procedure). Notification of demonstration flights (tanker drops, fly-bys, short hauls etc.) will be made prior to the flight to the AMU Duty Chief by the Region CC.

## **PROHIBITED ACTIVITIES/MISSIONS**

**8362.6.4**

(Revised September 2001)

Aerobatic flight is prohibited in department aircraft or aircraft under contract to the Department.

Aircraft may not be intentionally flown into Instrument Meteorological Conditions (IMC) or file for IFR flights unless the aircraft is approved for IFR flight.

No person shall start, ground run or taxi a department aircraft unless they are qualified in the type of aircraft. Qualified maintenance personnel authorized by the Chief of Aviation may start and run up aircraft under the provisions of the contract

Formation flight is prohibited.

## **FLIGHT AND DUTY LIMITATIONS**

**8362.7**

(Revised September 2001)

## **PILOT FLIGHT/DUTY LIMITATIONS**

**8362.7.1**

(Revised September 2001)

A pilot of a single-pilot aircraft is limited to seven hours of flight time in one duty day.

Pilots of aircraft with a required co-pilot (Second in Command) are limited to eight hours of flight time in one duty day.

NOTE: An aircraft in which one pilot is training another pilot is classed as a single pilot aircraft and is limited to seven hours flight time in one duty day.

A duty day is any day a flight is made, or any work is performed. A duty day begins at 0001 and ends at 2400 hours. A duty day may not be longer than 14 consecutive hours.

A pilot whose total accumulated flight time for the six preceding days exceeds 36 hours shall be placed off duty for the entire next day.

Fixed-wing and rotor-wing pilots shall have at least 2 days off during any 14 days of duty. The 2 days off need not be consecutive.

The pilot's day off shall not be less than 24 consecutive hours.

Within any 24 hour period, pilots shall have a minimum of ten consecutive hours off duty and whenever possible, off base immediately prior to the beginning of any duty day.

Pilots shall ground themselves at the onset of fatigue which affects safe job performance. Upon notification, the air base manager, air attack supervisor, or the pilot's immediate supervisor shall coordinate relief pilot arrangements.

# AIRCRAFT STARTUP AND SHUTDOWN TIMES

8362.7.2

(No. 23 June 2010)

CAL FIRE aircraft operations on an incident are often conducted under extremely adverse flight conditions. Congested airspace, reduced visibility, adverse weather conditions and mountainous terrain all add to the complexity of aircraft operations over an incident. The following policy explains the startup and cutoff times for all flights. **Poor flight visibility, mountainous terrain, shadows, sun and other hazards may require a later startup or earlier cutoff time. (Also see 8332.2 Daily Operational Requirements.)**

\*Official sunrise and sunset times are established by the astronomical applications department of the United States Naval Observatory, Astronomical Applications Department at website: <http://aa.usno.navy.mil/> (See 8300 Exhibit “Startup and Cutoff Information” for each base designated times.)

## Start-up

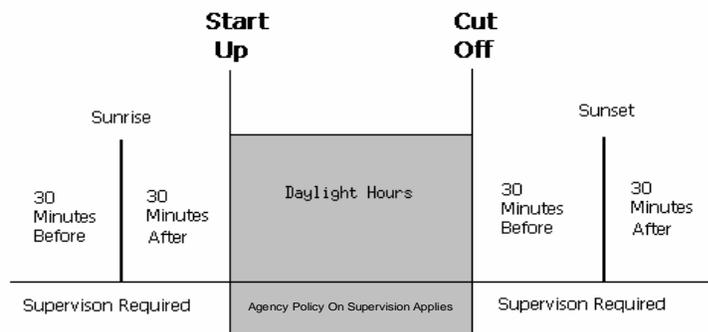
All CAL FIRE aircraft (fixed wing and rotary) are dispatched \* so as to **arrive** at an incident **no earlier** than:

- 30 minutes prior to sunrise - when an Air Tactical Group Supervisor (ATGS) or Airtanker or helicopter coordinator is at the incident.
- 30 minutes after sunrise - when not working with an air attack or air tanker or helicopter coordinator.

## Cut-Off

All CAL FIRE aircraft are to be dispatched\* so as to **arrive** at an incident **no later** than:

- 30 minutes before sunset when operating without an ATGS or airtanker or helicopter coordinator.
- Sunset – with an ATGS or air tanker or helicopter coordinator at the scene.



\*Dispatches are defined as the original or “new order/request” response to an incident.

#### After Cutoff Response Guidelines

CAL FIRE aircraft may be dispatched to an initial attack response after official cut off time within the base Zone of Influence response area. This will be agreed upon by the ATGS or helitack captain and the pilots involved. They will take into consideration flight safety of the flight crews and public, distance to incident, weather, ambient light conditions, familiarity with hazards and overall safety conditions of response. **All assigned aircraft shall cease incident operations and return to base no later than 30 minutes after sunset.**

(Refer to 8300 Exhibit, “Startup and Cutoff Information,” for the official startup and cutoff time for each base. Incident times will be determined using the closest base.)

Refer to the exhibit [Startup and Cutoff Information](#) for the official startup and cutoff time for each base. Incident times will be determined using the closest base.

Poor flight visibility, mountainous terrain, shadows, sun and other hazards may require a later startup or earlier cutoff time.

**RESERVED** **8362.8**

**AIRTANKER LANDINGS, NIGHT AND LOADED** **8362.9**  
(Revised September 2001)

**LOADED LANDINGS AND RETARDANT JETTISON** **8362.9.1**  
(No. 23 June 2010)

It is CAL FIRE policy to land air tankers loaded when possible, to reduce retardant waste. The amount of retardant with which an air tanker can land will depend upon the maximum allowable gross landing weight and other limiting factors such as runway length, airport restrictions, density altitude and pilot safety.

It is the tanker pilot's responsibility to calculate the landing weight of the aircraft and determine the amount of retardant with which the tanker can land under the existing conditions.

Air tanker fuel load reductions to facilitate loaded landings are authorized by contract.

When an air tanker is unable to land with the full amount of retardant on board, the retardant must be jettisoned in a designated jettison area. A retardant jettison area will be located at or near each air attack base as directed by the respective base manager.

Aviation Management maintains a list of designated jettison areas for reload bases within California.

- Retardant should not be dropped on a fire just because the aircraft cannot land while loaded. The tanker may be diverted to another fire before returning to a base.
- When returning to a base with retardant on board, the tanker pilot should advise the ECC whether retardant will need to be jettisoned so that the ECC can initiate a system check for possible diversion of the tanker.
- Notify the ECC at least three minutes away from the jettison area and wait for clearance before jettisoning retardant.

Except for aircraft emergencies, retardant must not be dropped in unauthorized areas. Retardant drops must be especially avoided on:

- Populated areas, houses, schools, etc.
- Cultivated crops.
- Roads or vehicles.
- Bodies of water (lakes, ponds, streams, etc.) or in drainage bottoms.

## **AIRTANKER NIGHT LANDINGS**

**8362.9.2**

**(Revised September 2001)**

The demand for airtankers, especially late in the response day, has prompted the need to issue direction on the dispatch, return to home base from move up and cover or the release of the airtanker from an incident as darkness approaches. Whenever airtankers are loaded with retardant (or water) and anticipate operating 30 minutes after sunset or later, the following direction shall be complied with:

1. Loaded airtankers should be dispatched to arrive at the intended landing base no later than 30 minutes after official sunset.
2. If the ETA is anticipated to be later than 30 minutes past sunset, the airtanker will:

Be down-loaded prior to departure, **or**

Jettison the full retardant load in a designated jettison area prior to 30 minutes past sunset, then continue the flight empty, **or**

Remain overnight and be released the next morning.

## **Tactical considerations**

Where it is strongly urged to fly "empty" after SUNSET, it is equally important to remain "loaded" and available up to that time. Airtankers pilots should be aware of approximate sunset times and note the clock time corresponding to 30 minutes past sunset. When a loaded airtanker is enroute approaching SUNSET + 30, the pilot should contact the appropriate Region/Unit ECC and state intentions to JETTISON. When cleared to jettison by the ECC, the pilot should proceed to the nearest DESIGNATED jettison area (normally associated with an airtanker base) and jettison the retardant load. Pilots need not descend to a normal drop altitude, but only to an altitude low enough to reasonably ensure that the load will come to rest within the boundaries of the jettison area.

## **Safety considerations**

Air operations managers are encouraged to be sensitive to air crew duty limits and night related hazards when planning the use of airtankers. Pilots will be responsible for adhering to duty and flight time limitations and should advise air attack managers if they cannot comply with a dispatch for these reasons. Pilots should not be denied a request to remain overnight when they feel it is more prudent to rest than to fly into the late evening hours.

[\(see next section\)](#)

[\(see HB Table of Contents\)](#)

[\(see Forms and Forms Samples\)](#)