

AIR ATTACK BASE OPERATIONS

8336

(Revised September 2001)

This part of the Base Operations chapter expands upon the provisions of the General Operating Rules and Guidelines that apply specifically to air attack base operations.

The base air attack officer is responsible for informing all assigned personnel of the provisions of this handbook.

AIRCRAFT RESPONSE, TIMEKEEPING, AND RECORDS 8336.1

(Revised September 2001)

All base personnel will remain ready for immediate incident response and when dispatched will respond as quickly as possible commensurate with operating safety.

Aircraft are to be maintained in readiness for immediate incident response during standby periods. Aircraft contracts stipulate a maximum time for aircraft response, not a normal response time for incident dispatches.

- Exceptions to the maximum response time are allowed for circumstances beyond the control of the operator or flight crew such as traffic delays and time lost in getting takeoff clearance, etc.
- Unjustified response delays will cause a reduction in the amount paid to a contractor for aircraft availability as specified in the nonperformance part of the contract.

Flight time for contract fixed-wing aircraft is normally recorded in hours and hundreds of hours for incident-related flights. Flight time, for contract purposes, includes the elapsed time between the start of a takeoff roll and the next stop at a base, including the taxi time from the runway. Time spent in taxiing to the runway and preparing for takeoff is not paid.

- Air attack supervisors normally keep track of the flight time for the aircraft in which they are riding.
- Base managers are responsible for seeing that flight time is accurately recorded for each air tanker for each incident in which the aircraft is involved. This is normally done on a time card.

GROUND OPERATING PROCEDURES

8336.2

(Revised September 2001)

Air attack base managers are responsible for organizing, training, and assigning personnel for handling ground support operations.

While operating aircraft at and around CDF air attack base facilities, pilots will:

- Follow the parking tenders hand signals. (refer to [Fixed Wing Hand Signals](#)).
- Give way to conflicting traffic and watch for obstacles in the path of the aircraft such as loading hoses, people, vehicles and chock blocks.
- Monitor the specified radio frequency for ground operations at the base and contact the base manager or radio operator for clarification if unsure of directions or instructions.
- Start engines or move aircraft only when cleared by the parking tender.
- When approaching a base, observe other traffic in the base area and follow the standard (or logical) taxi pattern if no traffic director is immediately available.
- Stop all engines on fixed-wing aircraft before loading or unloading passengers.

While operating aircraft at and around a CDF air attack base, pilots will not:

- Taxi an aircraft while making adjustments to safety gear, clothing or other materials in the aircraft.
- Taxi an aircraft faster than five mph in the base or loading area.
- Open or close aircraft tank doors on a pad without clearance by the crew member in charge of the pad.

Air tanker refueling will be done in the specified fueling area, at bases where such areas exist, during sustained retardant loading operations. This practice helps reduce aircraft congestion, and provides for timely movement of aircraft through the retardant loading area.

GROUND CREW SAFETY

8336.3

(Revised September 2001)

Air Attack Base Managers are responsible for ground crew safety training, providing the appropriate safety equipment, enforcing safety regulations and using safe operating procedures.

Specific rules and procedures to be used for operating safely at each base will be included in the base-operating plan.

The following safety practices are required during ground support operations at a CDF air attack base:

- All personnel involved in or near aircraft and retardant-loading operations will wear CDF approved head, hearing and eye protection.
- In addition, mixing crews shall wear the appropriate PPE. This will include, but is not limited to dust respirators during dry powder transfer and mixing operations where airborne particles are present and hearing protection if noise levels present a potential hazard to personnel.
- All personnel working or located near operating aircraft, taxi ways, active loading pads or internal combustion engines shall use hearing protection equipment.
- All ground support personnel must remain alert to the hazards and activities around them and follow the directions of the Ramp Manager. Extra vigilance must be exercised around aircraft propellers at all times. At no time shall ground crews walk through the propeller arc.

AIRCRAFT REFUELING AND CREDIT CARD USE

8336.4

(Revised September 2001)

All CDF-owned or contracted air attack or air tanker aircraft will refuel using a CDF credit card. The contractor will not be responsible for providing aircraft fuel while operating on wild land fires, approved training or proficiency flights required by the contract.

Air attack base managers will negotiate with airport fuel suppliers to obtain the best fuel prices for CDF aircraft. All aircraft will then refuel from the base selected supplier. When sufficient fuel is unavailable from the selected supplier, another may be chosen to fill the temporary need.

Pilots will be issued an aircraft fuel credit card for the aircraft. The card is to be used for the purchase of aircraft fuel only. Oil and other services are the responsibility of the CDF and should not be included with fuel purchases.

As an emergency back-up, base managers will be issued an aviation fuel credit card. This card should only be used if the aircraft card is lost and until a replacement can be provided.

Pilots will refuel their aircraft using the CDF fuel credit card, verify the accuracy of the charges, sign the appropriate block, and record the incident number of the last or largest incident they had flown prior to refueling. The fuel slip will be turned into the CDF base manager of their assigned base.

Base managers will be responsible for:

- Verifying the completeness and accuracy of the entries.
- Maintaining the fuel slips on file (by aircraft) for three years.
- Securing and controlling the use of the base aviation fuel credit card.
- Entering the aircraft fuel purchase information in the Automated Airbase Computer program.

RETARDANT OPERATIONS **8336.5**
(Revised September 2001)

GENERAL **8336.5.1**
(Revised September 2001)

Retardant operations consist of two phases:

1. Mixing and
2. Delivery to aircraft

MIXING **8336.5.2**
(Revised September 2001)

Procedures for mixing retardant at each base will depend greatly upon the type of mixing system at the base and the type of retardant being used, and specific details should be outlined in the base-operating guide. Procedures for testing and quality control, during the mixing process, are found in Section 8400.

DELIVERY **8336.5.3**
(Revised September 2001)

Delivery of the retardant to the aircraft is normally done through a process of pumping the retardant from wet storage tanks through a hard plumbed manifold system where there are multiple loading pads and then a flexible hose system to the aircraft. This may also include the use of flow metering devices.

Retardant mixing and testing policy and procedures are found in Section 8400. Base specific retardant issues should be included in the base operating guide.

RETARDANT LOADING

8336.5.4

(Revised September 2001)

Air attack supervisors and base management personnel should become familiar with the performance data, operating limitations and contract load specifications of the aircraft used regularly at their bases. Base managers are responsible:

- For helping tanker pilots ensure that their aircraft are loaded within operation limits.
- For consulting pilots regarding aircraft performance and operating limitations and discussing the conditions under which the aircraft will need to be downloaded for safe operation.

AIRTANKER LOADING REQUIREMENTS

8336.5.5

(Revised September 2001)

All personnel used for loading airtankers will be trained in ground operation safety, including traffic direction procedures, the standard hand signals, chocking procedures and use of safety equipment.

Air tankers will normally remain loaded during standby hours in readiness for dispatch. Exceptions to this may occur when:

- The base manager authorizes empty standby on the day before a scheduled day off or to facilitate needed aircraft maintenance between standby periods.
- The base manager authorizes empty standby while awaiting instructions regarding the type of retardant to be loaded on the tanker for a mission.

A method of down loading fire retardant from air tankers is needed at each base to allow for load changes improperly sealing doors and, when practical, retardant recovery.

- Recovery of long-term retardant is recommended due to its relatively high cost. Recovery of short-term retardant is not as critical, but should be made if it can be done without difficulty.
- A separate, isolated storage system is recommended for holding recovered retardant. Retardant recovery to a main system requires discretion to prevent contamination of the system.

- Retardant of different types should not be stored together in a main system unless compatibility is assured.

RETARDANT HOT LOADING

8336.6

(No. 25 August 2011)

The hot loading of Department S-2T aircraft is authorized. All hot loading operations will be conducted in compliance with Department Hot Loading procedures and if necessary, may include a base-specific hot loading plan.

The hot loading of any aircraft without an approved hot loading procedure is not authorized.

Pilots will have a one-time brief each season on hot loading procedures by a qualified Air Tanker Base Manger. This one-time brief shall suffice for all CAL FIRE air bases unless the base specific hot loading procedure dictates otherwise.

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S2T RETARDANT LOADING

8336.6.1

(No. 7 April 2003)

“Hot loading” (with both engines running) is the approved procedure for loading aerial fire retardant into the S2T airtanker. The S2T should be hot loaded whenever possible to minimize the number of engine starts, and the resulting engine wear.

The pilot or designated maintenance person (base mechanic) must be present when loading the S2T, whether or not the engines are running. They perform specific actions in the cockpit prior to and after loading. These actions cannot be delegated.

The following procedure is used for both “hot loading” and “engines-off” loading.

The pilot or designated maintenance person is required to perform specific cockpit duties:

1. Loader will be certain of the gallons to be loaded
2. Loader will confirm the flapper open light is illuminated
3. While filling, loader will continually observe the loading indicator lights. There are a total of 12 lights, each representing 100 gallons. The lights illuminate in sequence from the bottom up giving the loader a feel for the filling rate. The first 10 lights are green (100 to 1000 gallons), the 11th light is amber (1100 gallons), and the 12th light is red (1200 gallons).
4. If the “Flapper Open Light” is no longer illuminated, immediately stop loading. If the valve is closed, the retardant will not fill the front of the tank causing the aircraft to fall on its tail.

5. The warning horn sounds at 1000 gallons (10 green lights) and continues to sound until loading is stopped. The horn alerts the loading crew of a near-full condition. Loader should reduce the flow rate when the horn sounds in preparation to stop flow at requested quantity.
6. After filling, pilot must be signaled that loading is complete, at which point pilot will close the flapper valve and silence the horn.

S2A RETARDANT LOADING

8336.6.2

(No. 7 April 2003)

“Hot loading” (with both engines running) is the approved procedure for loading aerial fire retardant into the S2A airtanker. The S2A should be hot loaded whenever possible to minimize the number of engine starts, and the resulting engine wear.

THE SAME LOADING PROCEDURE MUST ALSO BE USED FOR “ENGINES-OFF” LOADING.

1. Remove the cap from the loading port
2. Activate both valve switches by pushing them to the “up” (open) position.
3. Slowly open the loading hose valve until fully opened.
4. When retardant flows out of the lower overflow tube on the right side of the fuselage, reduce the flow to half. Turn the lower switch to the “down” (closed) position.
5. When the retardant flows out of the upper overflow tube close the retardant loading hose valve. Turn the upper switch to the “down” (closed) position.
6. Replace the loading port cap.

FIXED WING AIRCRAFT LOADING

8336.7

(Revised September 2001)

Pilots are responsible for calculating the weight and balance of their aircraft and operating within prescribed performance limits.

- When aircraft are to be operated under changing conditions, i.e., varying loads, density altitudes and runway lengths, performance data will be recalculated and loads adjusted to stay within the operating limits.
- Air tanker load adjustments will normally be made by changing fuel and/or retardant loads according to manufacturer and contract specifications.
- Passenger aircraft load adjustments will involve changes in fuel, baggage, cargo and/or passenger loads depending upon the amount of fuel needed to safely carry out the mission.

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Cross-country passenger-carrying flights will require a passenger manifest to be completed before takeoff and a copy left at the departure point (base, flight service or terminal).

For flights originating from an air attack base, the base manager will see that manifests are completed and accurate.

For large scale airlift operations, an airlift liaison officer should be assigned to handle manifesting, coordinate staging operations and provide link between the operation and the sending or receiving unit.

For flights originating from locations other than an air attack base, the pilot, a CDF passenger, or an airlift liaison officer may be designated to complete the manifest form depending upon the circumstances and size of the operation.

The regular aircraft manifest form, FC-113, will be used for passenger operations using light aircraft.

The CDF Airlift Transportation Manifest form FC-117 should be used for large scale operations using chartered airline or military aircraft.

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

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

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