

A publication of the
**National Wildfire
Coordinating Group**



NWCG Standards for Airtanker Base Operations

PMS 508

JUNE 2018

NWCG Standards for Airtanker Base Operations

June 2018
PMS 508

The *NWCG Standards for Airtanker Base Operations* (SABO) standardizes operations and procedures at interagency airtanker bases to ensure safe, efficient, and effective operations in support of agency goals and objectives. Further objectives include:

- Support wildland fire and aviation policy through interagency coordination and cooperation.
- Provide common, interagency standards when working with contractors and agency air operations management.
- Facilitate the interoperability of airtanker base personnel among all participating wildland fire agencies and organizations through standardization.
- Provide a reference for commonly accepted forms, checklists, etc.
- Provide a framework for developing local Airtanker Base Operations Plan, which provide local and agency-specific guidance.
- Provide a standard interagency guide to airtanker base management, operations, responsibilities, and administration, available to all members of the airtanker base community.

The National Wildfire Coordinating Group (NWCG) provides national leadership to enable interoperable wildland fire operations among federal, state, tribal, territorial, and local partners. NWCG operations standards are interagency by design; they are developed with the intent of universal adoption by the member agencies. However, the decision to adopt and utilize them is made independently by the individual member agencies and communicated through their respective directives systems.

Table of Contents

Introduction.....	1
Airtanker Bases.....	1
Airtanker Base Types.....	1
Supplemental Airtanker Base Equipment: Portable and Mobile	2
Airtanker Base Operations Plan (ABOP)	3
Personnel.....	4
Introduction.....	4
Qualifications.....	4
Certification	4
Position Roles and Responsibilities	5
Airtanker Base Staffing.....	11
ATBM Workshop	12
Airtanker Base Equipment and Facilities	14
Equipment.....	14
Standby Facilities.....	14
Communications	15
Plan	15
Frequencies	15
Logistics.....	15
Aircrew Accommodations	15
Dispatch Procedures.....	15
Briefings.....	15
Dispatch/Reaction Times	16
Aircraft Dispatch Information.....	16
Communications	16
Airtanker Rotation	16
Proficiency or Mission Currency Flights	17
Landing with Full or Partial Load.....	17
Retardant Operations in Low Light Conditions (Sunrise and Sunset).....	17
Operations	17
Introduction.....	17
Operational Briefings.....	17
Ramp Safety Awareness	17
Aircraft Parking	19
Low Visibility Ramp Operations	19
Retardant Loading.....	19
Retardant Metering	20
Retardant Testing	20
Retardant Offloading and Reloading	20
Suppressants and Water Enhancer Loading.....	21
Fueling	21
Starting the Aircraft Engines	22
Clearing the Aircraft from the Loading Pit.....	22
Hot Loading	22

Simultaneous Fueling and Loading	24
Airtanker Specifics.....	26
Emergency Procedures.....	27
Other Ramp Activities	27
Retardant Jettison Areas	28
Sterile Cockpit Procedures.....	28
Safety	28
OSHA.....	28
Airtanker Base Evaluations.....	29
Aerial Hazard Maps	29
Airspace Coordination	29
Emergency Response Planning and Equipment	30
NFPA Standards.....	31
Hazard, Incident, and Accident Reporting.....	31
Airtanker Base Retardant Plant Safety Requirements	31
PPE.....	32
Administration	32
Administrative Reporting Instructions.....	32
Incident Cost Reporting	33
Airport Fees	33
Contract Administration.....	33
Environmental Issues	36
WFC Dropping in Sensitive Areas	36
Spills	36
Security	38
Security Planning.....	38
Aircraft Security.....	39

Introduction

This guide is intended to be used in conjunction with other guides or references, such as the *NWCG Standards for Single Engine Airtanker Operations*, PMS 506, <https://www.nwcg.gov/publications/506>, the *Interagency Standards for Fire and Fire Aviation Operations* (Red Book), https://www.nifc.gov/policies/pol_ref_redbook.html, and other state or local operations planning guides. These references together assist in standardization of common procedures and best practices throughout airtanker base operations.

Airtanker Bases

Airtanker bases are generally managed at the local unit level of the host agency. The local host unit is responsible for ensuring all established facilities are maintained and operated per the agency's policy and the *SABO*.

All airtanker bases (permanent, call-when-needed, [CWN] or temporary) shall develop and annually update a local Airtanker Base Operations Plan (ABOP) as outlined in the *SABO*.

Airtanker types and models vary in specification and ground handling characteristics. Similarly, airtanker bases and airports vary as well. Each airtanker base or host agency must identify and approve the aircraft and operations they are capable of supporting.

Approval of the actual airport in terms of airtanker performance shall be pre-approved by the host agency's Airtanker Program Manager or other identified aviation management. Such approvals when applied to hosting cooperator airtankers will require coordination with the cooperator's Airtanker Program Manager.

All airtanker bases (permanent, CWN, and temporary) will have current overweight authorizations or waivers for airtankers that exceed the airports published weight bearing capacity. The written authorization or waiver shall come from the airport authority and be in place prior to airtanker operations. Overweight authorizations and waivers must address runways, taxiways, and ramps, and be specific to airtanker Max Gross Landing Weight and Max Gross Taxi Weight. Copies should be provided to appropriate aviation management personnel.

When any specific agency's owned or contracted airtankers operate from airtanker bases owned or managed by other cooperators, agencies, or jurisdictions, the agency with the airtanker should make available a liaison to the other agency's airtanker base. The liaison will assist and provide administration and technical oversight of the agency's airtanker, policies, and operational procedures.

Airtanker Base Types

There are three basic types of airtanker bases: permanent, CWN, and temporary.

Permanent

An airtanker base that has permanent infrastructure installed in an identified area to service airtankers and support aircraft is a permanent airtanker base. In addition, the airtanker base will have permanent personnel whose main role is to act as management and support for the airtanker base and its facilities.

Call-When-Needed (CWN)

An airtanker base that has permanent infrastructure installed in an identified area to service airtankers and support aircraft. The airtanker base does not have permanent personnel whose main role is to act as management for the airtanker base but could have personnel identified at the local level who have collateral duties to the airtanker base.

Temporary

An identified and approved airport that could serve the need of loading airtankers. The airport would have little if any infrastructure to support the loading of airtankers and the additional equipment would have to be delivered and set up. This term would be used regardless of the ownership of the mixing and loading equipment. Personnel could be identified at the local unit to facilitate the management in support of the temporary airtanker base or personnel from outside of the area may be utilized in the management and support of the airtanker base.

The Washington Office Airtanker Program Manager in coordination with the Regional Aviation Officer (RAO)/State Aviation Manager (SAM) or appropriate agency aviation management personnel must pre-approve new locations for airtanker bases. For Forest Service contracted airtankers the following items must be addressed before commencing operations:

- Overweight waivers from the airport authority (if applicable)
- Lease agreement(s)
 - Land use
 - Water use
 - Facilities
- Approval of airport in terms of large airtanker performance
- Local ABOP/Temporary Base Operating Plan
- Ramp space
- Ingress and egress to and from the loading pit

Refer to Appendix A for the Temporary Base Operating Plan.

See Airtanker Ground Maneuvering and Parking Considerations for more specific airtanker base layout guidance at <https://www.nwcg.gov/committees/interagency-airtanker-base-subcommittee>.

Supplemental Airtanker Base Equipment: Portable and Mobile

The two types of equipment listed below can be ordered for a temporary airtanker base or used as supplemental equipment at permanent and/or CWN airtanker base.

Portable Airtanker Base (PAB)

The unit is an enclosed semi-trailer with the equipment and supplies required for temporary airtanker base operations. Commonly used and hosted by Region 8 and the State of Texas.

Mobile Retardant Base (MRB)

Refers to a portable retardant mixing plant typically provided through the National Retardant Contract. (See Appendix B.)

Neither term is descriptive of an airtanker base. These terms are only descriptive of the types of equipment and facilities that may be in use at a temporary airtanker base or used as supplemental equipment at permanent and/or CWN airtanker bases. An airtanker base is not identified by the method through which equipment and facilities are procured or obtained.

Airtanker Base Operations Plan (ABOP)

Each airtanker base shall develop and annually update a local ABOP. The plan should not repeat policy and procedures contained in the *SABO*, agency manuals, or handbooks but should provide local operational procedures and information. Appendix C is the national standard required outline for all ABOPs.

Aircrew Briefing and Orientation

Each airtanker base shall develop an aircrew briefing and orientation to be given either orally or in checklist or packet form to each aircrew that arrives at the airtanker base as soon as reasonably practicable. Appendix D includes an example of what should be included in an aircrew briefing and orientation.

Hot Loading Plan

Each airtanker base that intends to conduct hot loading will develop a plan that will describe the training and procedures. The RAO/SAM, or appropriate agency aviation management personnel will review and approve the plan. Airtanker base personnel who will participate in this operation will be trained using the Hot Loading Plan and a record of this training will be maintained at the airtanker base. A documented pre-operational briefing shall occur between the aircrew and airtanker base personnel prior to any hot loading operations. This briefing will include a review of the local hot loading procedures and airtanker loading procedures. Appendix E is the national standard template required for use prior to hot loading.

Simultaneous Fueling and Loading Plan

Each airtanker base that intends to conduct simultaneous fueling and loading will develop a plan which will describe the training and practices to be used. The RAO/SAM, or appropriate agency aviation management personnel will review and approve the plan. Airtanker base personnel who will participate in this operation will be trained using the Simultaneous Fueling and Loading Plan and a record of this training will be maintained at the airtanker base. Simultaneous fueling and loading shall be requested as needed by the agency Airtanker Base Manager (ATBM) on a case-by-case basis. A documented pre-operational briefing shall occur between the aircrew, ATBM, and local airport fuelers prior to any simultaneous fueling and loading operation. This briefing will include a review of the simultaneous fueling and loading procedures and aircrew and fueller procedures. Appendix F is the national standard template required for use prior to simultaneous fueling and loading.

Security Plan

Each airtanker base shall develop a security plan. Refer to agency-specific templates or requirements.

Personnel

Introduction

This chapter establishes common duties and responsibilities of airtanker base management positions. Roles and responsibilities cover incident operations. Airtanker base positions function to support the objectives of wildland fire incidents. An individual must be trained, experienced, current, and certified prior to planning or participating in airtanker base operations. Training, experience, and currency requirements for the various airtanker base positions are found in a variety of documents and not entirely herein.

Qualifications

There are multiple sources for policy regarding the qualification and certification standards for airtanker base positions.

Federal Wildland Fire Qualifications Supplement (FWFQS)

The FWFQS includes federal agency-sponsored positions that are not included in the *National Incident Management System: Wildland Fire Qualifications Guide*, PMS 310-1, <https://www.nwcg.gov/publications/310-1>, which are frequently used on wildland fire incidents. Positions and associated requirements listed in the FWFQS are approved for inclusion by the respective agencies. The FWFQS establishes minimum requirements for training, experience, physical fitness level, and currency standards. Most airtanker base position requirements and standards are included in the FWFQS.

Forest Service Fire and Aviation Management Qualifications Guide (FSFAQG)

The Forest Service provides standards for technical specialist positions through the FSFAQG. Forest Service personnel must meet the training and experience standards required in the guide for the airtanker base positions.

Other Agency-Specific Training Documents

Other agencies may have specific training and qualification requirements outside of the PMS 310-1, FWFQS and/or FSFAQG. Follow state or local agency policy and direction as required.

Certification

The completion of a position task book (PTB) is the primary criterion for evaluation for most airtanker base positions. Some agencies may provide and require agency-specific PTBs for some airtanker base positions. Where they exist, follow agency policy on their use.

PTBs can be found on the NWCG website: <https://www.nwcg.gov/publications/agency-taskbooks>.

Where PTBs do not exist, evaluations of airtanker base personnel must be conducted and documented based on the duties and responsibilities and other criteria within the *SABO*.

Qualified airtanker base personnel are expected to train and mentor new and less experienced personnel.

Position Roles and Responsibilities

General

Personnel working at an airtanker base shall receive training in airtanker base operations and specific training for the position(s) to which they are assigned. [Exhibit 1](#) depicts the various positions within the airtanker base organization. This organization should be expanded or contracted as needed to meet the current or expected activity level.

Airtanker Base Manager (ATBM)

Introduction

The ATBM provides supervision and coordination of airtanker base operations. The ATBM may report to the local aviation manager and/or Incident Aviation Manager.

Roles and Responsibilities

- 1) Conducts initial and daily or more frequent briefings and After Action Reviews (AARs) with pilots, contract personnel, and agency employees.
- 2) Develops and/or implements local ABOP providing for and enforcing accountability, safety, and security measures for personnel and resources.
- 3) Maintains and updates reference library.
- 4) Utilizes agency policies and guidance such as the *SABO* in decision making and planning.
- 5) Ensures adequate airtanker base staffing by trained and qualified individuals. Assigns tasks and specific duties to airtanker base personnel. If additional staffing is required, works with the dispatch center and local Geographic Area Coordination Center (GACC) to place resource orders.
- 6) Ensures that all personnel have been trained in their positions and in specific operations that are conducted at the airtanker base including procedures such as hot loading, single engine airtanker operations, simultaneous fueling, and loading, etc.
- 7) Ensures all training is documented for airtanker base personnel and identifies and corrects training deficiencies.
- 8) Orders, secures, and maintains all necessary facilities, communications equipment, supplies, and services needed at the airtanker base. Ensures pilot and aircraft operational or contractual requirements are met.
- 9) Ensures adequate quantities of required personal protective equipment (PPE) is available and orders additional PPE as necessary.
- 10) Responsible for safety management, that includes risk assessments, and mitigations for the airtanker base.
- 11) Serves as agency liaison to airport management, federal, state, and local officials, the military, aircraft vendors, and Fixed Based Operators (FBOs), etc.
- 12) Collects and records accurate daily flight and cost data and retardant use. Submits required forms to the appropriate personnel by close of business (COB) daily. Maintain all use records per agency guidelines.
- 13) Responsible to ensure the daily log is completed accurately and timely by COB.

- 14) Assists aircrews in arranging for transportation and lodging as appropriate.
- 15) Coordinates all tactical aircraft missions with local dispatch, GACC, aerial supervision, and/or the Air Support Group Supervisor (ASGS). Obtains daily or more frequent briefings from one or all of these positions regarding mission priorities, operational, and tactical briefings.
- 16) Coordinates with Incident Management Team (IMT) aviation operations staff during large incidents to facilitate duty-day start time, frequencies, costs, and safety concerns.
- 17) Keeps informed on predicted weather, fire behavior, and incident action plans to ensure an adequate supply of Wildland Fire Chemicals (WFC) is available.
- 18) Designates safe zones for Ground Support Equipment (GSE). Ensures all airtanker base personnel are trained in identifying properly secured GSE.
- 19) Ultimately responsible for movement of assigned aircraft, vehicles, and personnel at the airtanker base.
- 20) Is knowledgeable in and enforces the National Airtanker Rotation Policy.
- 21) Ensures that adequate fire, medical, and emergency equipment are readily available at the airtanker base and all personnel are trained appropriately.
- 22) Is thoroughly familiar with and enforces compliance with all agency, local, and state health and safety requirements. Responsible for the maintenance and update of the airtanker base safety, emergency response, security, and Incident/Accident Action Plans.
- 23) Requests and posts updated aerial hazard maps from the area forest, district, unit, or land managers. Submits agency Incident/Accident Reports and SAFECOMs per agency policy.
- 24) Coordinates with the agency safety representative to establish and maintain airtanker base and retardant plant safety plans, as required, to be compliant with agency and Occupational Safety and Health Administration (OSHA) regulations.
- 25) Maintains time and use records on equipment, retardant, and personnel assigned to the airtanker base.
- 26) Responsible for administration of airtanker base, retardant, and aircraft contracts, and agreements.
- 27) Ensures that the *SABO, NWCG Standards for Single Engine Airtanker Operations*, PMS 506, <https://www.nwcg.gov/publications/506>, OSHA, Environmental Protection Agency (EPA) Reports and/or agency forms and reports are completed as required.
- 28) Supervises the demobilization of personnel, equipment, and supplies.
- 29) Ensures *Incident Personnel Performance Rating* (ICS 225WF/NFES 001576) https://www.nwcg.gov/sites/default/files/products/ics-forms/ics_225_wf.pdf for all airtanker base support personnel (qualified or trainee) on assignment are completed and sent to home unit.

Ramp Manager (RAMP)

Introduction

The RAMP provides oversight for all ramp activity and reports to the ATBM.

Roles and Responsibilities

- 1) Coordinates movement of all aircraft, vehicles, equipment, and personnel on the ramp.

- 2) Maintains the safety of ramp operations.
- 3) Coordinates and directs the Fixed-wing Parking Tenders (FWPTs) and provides daily or more frequent briefings. Participates in AARs.
- 4) Establishes communication with incoming aircraft to identify and coordinate ramp assignment.
- 5) Responds to unforeseen circumstances and initiates contingency operational plan pertaining to ramp congestion, unexpected maintenance, unanticipated delays, etc.
- 6) Knowledgeable and proficient in nationally standardized hand signals. See Appendix G.
- 7) Properly utilize airtanker base radios to communicate with aircraft and airtanker base personnel.
- 8) Ensures FWPTs are proficient in the use of aircraft radios and nationally standardized hand signals. If the airtanker base is approved for hot loading and/or simultaneous fueling and loading of airtankers, ensures that all personnel have been trained in those procedures.
- 9) Ensures the use of required PPE.
- 10) Familiar with and briefs personnel in emergency ramp procedures.
- 11) Ensures that hazards are reported and corrective action taken.
- 12) Reports all hazards and incidents/accidents immediately to the ATBM.
- 13) Designates areas for loading, fueling, maintenance, overnight parking, day(s) off parking, and general parking.
- 14) Monitors and ensures the safety of all fueling operations by requiring fuelers to adhere to established regulations and procedures.
- 15) Ensures the ramp is free of Foreign Object Debris (FOD).
- 16) Ensures GSE is in the designated safe zone and visually validate that it is properly secured prior to any aircraft movement.
- 17) Monitors critical turning radii for wing clearances and jet/prop blast, to maintain safe operating distances from facilities, other aircraft, equipment, and personnel as needed for different types and sizes of aircraft operating at the airtanker base.
- 18) Assigns and briefs wing walkers as needed or required to ensure proper clearances.
- 19) Maintains communication with Mixmaster (MXMS)/Retardant Crew Members (RTCMs) regarding retardant needs.
- 20) Responsible for the cleanliness of the ramp. Reports all fuel and retardant spills to the ATBM and ensures they are promptly cleaned by the responsible party according to established environmental and/or hazardous materials procedures.
- 21) Completes *Incident Personnel Performance Rating* (ICS 225WF, NFES 001576) https://www.nwcg.gov/sites/default/files/products/ics-forms/ics_225_wf.pdf for all FWPTs (qualified or trainee) on assignment, with input from other airtanker base personnel, and sends copy to home unit.

Fixed-Wing Parking Tender (FWPT)

Introduction

The FWPT facilitates movement of aircraft, vehicles, and equipment in assigned areas and reports to the RAMP.

Roles and Responsibilities

- 1) Directs movement of all aircraft, vehicles, equipment, and personnel within assigned area.
- 2) Receives daily or more frequent briefings from the RAMP. Participates in AARs.
- 3) Verifies airtanker loading restrictions for each aircraft in consultation with the aircrew.
- 4) Monitors the RTCM in loading airtankers. If the airtanker base is approved for hot loading and/or simultaneous fueling and loading, the FWPT must be trained and ensure RTCM follows the procedures. After loading ensure the pit is washed down.
- 5) Proficient in the use of hand signals (<https://www.iat.gov/logon.asp>) in order to direct aircraft to/from their loading/parking areas safely. Maintains constant visual or audio communication with pilot(s). Is responsible for clearing the aircraft for movement.
- 6) Acts as a wing walker when necessary or as directed by the RAMP.
- 7) Proficient in radio use and etiquette to relay pertinent and/or emergency related messages to aircrew and airtanker base personnel.
- 8) Keeps assigned parking area or loading pit clear of all nonessential personnel, vehicles, and equipment.
- 9) Ensures GSE is in the designated safe zone and visually validate that it is properly secured prior to any aircraft movement.
- 10) Monitors and ensures the safety of all fueling operations by observing fuelers adhering to established regulations and procedures.
- 11) Performs FOD walks as directed by the ATBM and/or RAMP.
- 12) Knowledgeable of airtanker base emergency and safety procedures.
- 13) Familiar with the use of chock blocks, fire extinguishers, and required PPE.
- 14) Reports all hazards and incidents/accidents to the RAMP immediately, ensures that appropriate action is taken.
- 15) Relays aircrew requests (retardant, fuel, meals, rest, etc.) to the RAMP and/or other appropriate personnel.

Aircraft Timekeeper (ATIM)

Introduction

The ATIM tracks aircraft times and cost at an airtanker base and reports to the ATBM.

Roles and Responsibilities

- 1) Receives daily or more frequent briefings from the ATBM. Participates in AARs.
- 2) Receives briefing from the ATBM on the proper procedures for accurately recording incident aircraft use and cost.

- 3) Obtains information regarding aircraft assigned to the airtanker base and relays pertinent information to appropriate personnel.
- 4) Records on/off times for aircraft.
- 5) Proficient in the use of Automated Flight Following (AFF).
- 6) Uses common airtanker base applications (i.e., Resource Order Status System (ROSS), FireCode System, Microsoft Office, etc).
- 7) Ensures landing fees and retardant use are properly documented.
- 8) Records accurate information in the airtanker base daily log.
- 9) Documents aircraft and retardant use for incidents using the correct fire code.
- 10) Gathers and distributes aircraft use and cost information daily to the incident air operations staff.
- 11) Completes required agency reports and Aircraft Contract Daily Diary information after each operational period for airtanker and submits to the administrative Contracting Officers Representative (COR).
- 12) Answers the telephone and radio; receives and relays orders for dispatch of aircraft.
- 13) Maintains communication links with appropriate incident functions.
- 14) Verifies frequencies daily with the ATBM, GACC, and Incident Action Plan (IAP).
- 15) Assists ATBM in preparing operational briefing materials.
- 16) Communicates with the aircrew using the base radio for on and off-times, frequency changes, or other pertinent information.

Retardant Mixmaster (MXMS)

Introduction

The MXMS provides oversight and support of the WFC mixing and loading operation at an airtanker base. The MXMS reports to the ATBM.

Roles and Responsibilities

- 1) Receives daily or more frequent briefings from the ATBM. Participates in AARs.
- 2) Oversees the mixing crew during mixing operations.
- 3) Ensures wildland fire chemical products are mixed per the Qualified Products List (QPL) and tested prior to being loaded into airtankers.
- 4) Ensures airtankers are loaded per contract specifications.
- 5) Works with the ATBM to maintain an adequate wildland fire chemical products inventory based on current and expected activity.
- 6) Checks all equipment such as valves, hoses, pumps, and tanks for operability and ensures agency and OSHA safety measures are in place (e.g., pump shaft guards, fan belt shields, splash guards, wiring integrity, sealed switch boxes, safety signs, placards, etc.).
- 7) Takes immediate steps to request personnel and equipment necessary to perform operations safely and efficiently.
- 8) Plans the specific layout of the mix plant.

- 9) Responsible for the cleanliness of the mix plant.
- 10) Complies with the Lot Acceptance and Quality Assurance (LAQA) program for all WFC products.
- 11) Ensures only approved WFC products are utilized and mixed according to the QPL.
- 12) Proficient in the use and operation of refractometer, marsh funnel, and mass flow meter.
- 13) Develops a recirculation schedule.
- 14) Logs and reports pounds and gallons and validates as requested.
- 15) Ensures the safety and welfare of personnel working around the mix plant.
- 16) Reports all hazards and incidents/accidents immediately to the ATBM who takes appropriate action.
- 17) Maintains records of all equipment, replacement parts, catalogs, technical manuals, and Safety Data Sheets (SDS).
- 18) Ensures OSHA regulations for mix plant safety are in place and properly documented in conjunction with the ATBM.
- 19) Ensures compliance with state and federal EPA regulations for storage and handling of wildland fire chemical products, hazardous waste, and wastewater in conjunction with the ATBM.

Retardant Crewmember (RTCM)

Introduction:

The RTCM loads WFC as directed, into airtankers and reports to the MXMS.

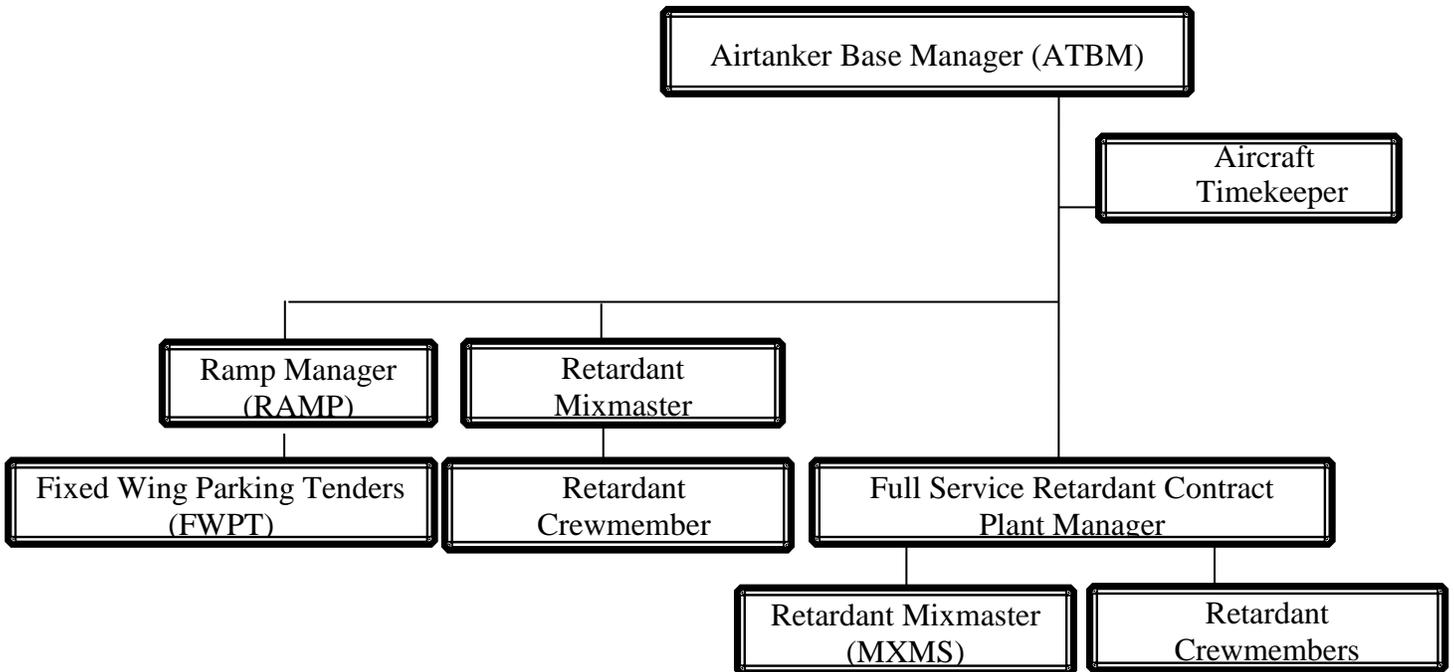
Roles and Responsibilities

- 1) Reports to the MXMS during mixing operations, who provides daily or more frequent briefings. Participates in AARs.
- 2) Assists the MXMS in mixing and testing retardant.
- 3) Assists the MXMS in maintaining all retardant mixing, loading, and testing equipment.
- 4) As directed, obtains samples of retardant for LAQA.
- 5) Loads WFC into airtankers.
- 6) If the airtanker base is approved for hot loading and/or simultaneous fueling and loading, the RTCM must be trained in the procedures.
- 7) In conjunction with the MXMS and aircrew, verifies that the pounds of WFC loaded into the airtanker does not exceed the load limits as specified by aircraft or amount requested by the Pilot in Command (PIC) to not exceed the maximum load.
- 8) Assists RAMP and FWPT with FOD abatement.
- 9) Washes WFC off the loading pit as directed in the local ABOP.
- 10) Knowledgeable and trained as appropriate in airtanker base emergency response and safety procedures; reports all hazards and incidents/accidents immediately to MXMS.

Fixed-Wing Base Manager (FWBM)

Refer to Appendix H for roles and responsibilities of the FWBM.

Exhibit 1: Basic Airtanker Base Organization Chart



FWBM/SEMG/MABM/MABS when working at an airtanker base report to the ATBM.

Airtanker Base Staffing

Generally on a day-to-day basis the positions listed at an airtanker base are not all individually filled unless it's warranted by the amount of activity or anticipated activity. The ATBM maintains proficiency in and performs the duties of multiple positions when activity permits.

There must be a qualified ATBM on site during the retardant Mandatory Availability Period (MAP).

Some considerations to identify the number and roles of personnel needed during airtanker operations are:

- Number of aircraft at the airtanker base.
- Number of loadings pits.
- Current or anticipated activity.
- Number and type of aircraft within the GACC.
- Hazards inherent to the airtanker base such as tight spaces.
- Ground maneuvering around other aircraft and/or obstacles.
- Ramp complexity.

Personnel may be assigned to more than one position in the airtanker base organization depending on the level of activity. This does not relieve the managing agency from ensuring that the individual is both trained and qualified to fill the position(s) to which they are assigned. ATBMs must anticipate the need for and request additional personnel during periods of high activity and/or complexity. Refer to Appendix I for the Airtanker Base Staffing Matrix.

Refer to the local ABOP for staffing levels, span of control limitations, and trigger points for ordering additional personnel.

ATBM Workshop

The ATBM position requires triennial attendance at an Airtanker Base Manager Workshop. The requirements for this training follow:

ATBM Workshop Requirements N9057 Triennial 16-24 hrs

Course Description

The ATBM workshop is designed to provide the attendee with current policy revisions, technical updates, changes in reference materials and operational procedures as well as an overall review of safety and security issues associated with the airtanker program.

Objectives

- Review the roles and responsibilities of the ATBM.
- Review risk management techniques to perform tasks safely.
- Update and maintain ATBM skills.
- Understand changes in aviation policy and how they relate to airtanker base management.
- Review changes in airtanker and retardant contracts.
- Crew Resource Management (CRM).

Target Group

Qualified and trainee ATBMs.

Minimum Instructor Qualifications

Lead instructor must be a qualified ATBM.

Course Prerequisites

Qualified or trainee as an ATBM.

Course Level

Local, geographic, or national.

Core elements of an ATBM Workshop will include the following:

Season Review:

This section generally covers yearend statistical information like total flight hours, gallons delivered, contract activity, highlights of what went well during the season, and lessons learned.

Outlook:

This section generally covers any new technical updates, new contract information, new long and short-term program changes.

Updates of National Contracts:

This section goes over changes to the national airtanker and WFC contracts.

WFC Review:

This section covers information about new technology or developments with the WFC industry, reviews the approved products list, and provides updates about the LAQA program.

SABO Updates:

This section covers revisions to the SABO.

Updates of Reference Materials:

This section covers any new updates and changes or additions to any of the reference materials designed for or related to the airtanker program.

Safety Review:

This section covers a summary of SAFECOMs submitted pertaining to airtanker base operations. Discuss safety alerts or bulletins issued related to the program and highlights of safety concerns and ramp operations lessons learned that surfaced throughout the season.

Security Review:

Discuss lessons learned from any security issues that occurred at airtanker bases, with aircraft, facilities, or personnel from the preceding season.

Additional Suggested Topics:

- Risk Management
- Dispatch/GACC input
- Standardized forms
- Communications
- Maintenance
- Airtanker base review summary

Flexibility should be encouraged within these topics to meet geographic and audience needs. This workshop shall be designed to provide discussion and information sharing based on the identified topics. The agenda should be revisited annually and be dynamic. For the national workshop the cadre will consist of all Interagency Airtanker Base Subcommittee (IABS) members and delegated IABS Unit members. Subject Matter Experts (SMEs) to be involved in the workshop should be contracting and program management representatives. Depending on the audience, additional SMEs can be brought in as needed.

Airtanker Base Equipment and Facilities

Equipment

Equipment needed at an airtanker base can vary greatly depending on the complexity of the operation. Appendix J contains a list of common equipment and parts for airtanker bases. Agency policy or other regulatory requirements may specify or require additional or specific equipment (i.e., OSHA, EPA, National Fire Protection Association [NFPA] etc.).

Lighting

Adequate lighting should be provided as necessary for security, movement of aircraft, aircraft maintenance, personnel safety, etc. In cases where lighting is not sufficient for night aircraft maintenance, the contractors are responsible to provide their own lighting.

Electrical System

The airtanker base electrical system must meet local electrical codes and provide adequate electrical power to meet facilities, equipment, and operational requirements. In the case of a loss of power, battery-powered radios, gas pumps, or generators should be available to maintain operational capabilities. Outlets should be provided on the ramp/pit area.

Audio System

A public address system should be provided at each airtanker base to alert personnel of pertinent information in a timely manner.

Telephones

Telephones shall be in service at each airtanker base. It is recommended that permanent airtanker bases have a minimum of two telephone lines. CWN or temporary airtanker bases, must have a minimum of cell phone service; however, local management should have a contingency plan for the appropriate expansion of phone capability during periods of heavy use.

Radios and Headsets

Base radio stations such as Amplitude Modulated (AM) and Frequency Modulated (FM) shall be provided at each permanent and CWN airtanker base. For temporary airtanker bases, handheld AM and FM radios are acceptable. All airtanker bases will have handheld AM radios with aviation headsets capable of connecting to the AM handhelds that should be used while operating on the ramp. The ramp radios and headset should be inspected annually by a qualified technician to ensure operability.

Standby Facilities

Adequate standby facilities for aircrews and airtanker base personnel must be provided. Use of FBO facilities/lounges for this purpose is not considered adequate. ATBMs should have a contingency plan that allows for expansion of the standby area during periods of high-fire activity (i.e., mobile trailer).

Permanent airtanker bases require non-agency-specific Wi-Fi to enable all personnel to perform their basic administrative duties in a cooperative environment, to limit interruption of work, to reduce data costs, and to support the interagency efforts of the base.

Communications

Plan

A Communication Plan shall be readily available at each airtanker base. All aircrews shall be briefed on communications procedures as contained in the local ABOP. ATBMs are responsible for assuring that the information is current. This plan should include important phone numbers for the airtanker base and local agencies as well as commonly used frequencies.

Frequencies

Airtanker Base/Ramp Frequency

A dedicated authorized frequency shall be established for ramp operations at each airtanker base.

The frequencies for each airtanker base and agency dispatch can be found in the *NWCG Airtanker Base Directory*, PMS 507, NFES 002537, <https://www.nwcg.gov/publications/507>, which is updated annually. ATBMs are responsible for assuring that all directory information is correct and provide updates as needed or at a minimum annually.

Airtanker bases that do not have assigned frequencies when activated, will order frequencies through the local dispatch center.

Logistics

Aircrew Accommodations

Transportation and Lodging

Ground transportation, lodging, and other Remain Overnight (RON) expenses will be the responsibility of the aircrew at the Assigned Work Location (AWL). The ATBM may assist with providing contact info or checking on availability.

Food and Drink

In certain instances ATBMs may need to provide food and drink for aircrews and other contractor personnel. Reference agency policy and the applicable contract for further direction.

Dispatch Procedures

Briefings

Each local ABOP should address the areas outlined in Appendix D. Each aircrew that remains at the airtanker base past initial attack should receive a thorough briefing about airtanker base procedures and a review of the local ABOP.

Dispatch/Reaction Times

The standard reaction time as specified in the federal airtanker contract is 5 minutes. The 15-minute standard is not applicable for delays caused by the agency, local air traffic, weather, planning for extended dispatches, flights to be made under Instrument Flight Rules (IFR), crews released for lunch by ATBMs, proficiency flights, and other causes beyond the pilot's control. Local, state, and regional procedures may further influence reaction times. Non-federal airtanker contracts may have different dispatch/reaction time procedures that must be followed per their respective contracts.

Aircraft Dispatch Information

Upon initial dispatch, aircrews shall be provided with the following minimum recommended information from the resource request:

- Incident name
- Latitude and longitude
- Bearing and distance
- Assigned frequencies (Flight Following, Air-Air, Air-Ground)
- Aircraft hazards
- Incident contact (air and/or ground)
- Other aircraft
- Initial Point (IP)-a fixed-wing reporting location clearly identified by the aerial supervisor. It may be a latitude and longitude or landmark with elevation.

This information will be verified by the ATBM.

The aircrew should have a hard copy of the information above, on initial dispatch. In the event a hard copy is not immediately available, the minimum dispatch information can be relayed via the radio. The aircrew must have the minimum information prior to takeoff. The dispatch office will provide this information to the airtanker bases. Local dispatch procedures should be reviewed with dispatch prior to the start of each fire season. In the event of a divert the aircraft dispatch information can be transmitted in flight.

Communications

- Frequency changes shall be relayed immediately to aircrews.
- AFF shall be used according to approved procedures provided in the *National Interagency Mobilization Guide* (<https://www.nifc.gov/nicc/mobguide/index.html>) and geographic area mobilization guides, and the Red Book (https://www.nifc.gov/policies/pol_ref_redbook.html) or agency policy.
- Ensure aircraft responding from alternate airtanker bases have the correct incident contact information and frequencies.

Airtanker Rotation

To ensure consistent utilization, rotation, and management of the national airtanker fleet, please refer to the Red Book (https://www.nifc.gov/policies/pol_ref_redbook.html) for the most current National Rotation policy.

Proficiency or Mission Currency Flights

In order to maintain aircraft and aircrew readiness during the contract period, the agency in certain situations may order pilot proficiency or mission currency flights. Reference agency policy and aircraft contracts for direction.

Landing with Full or Partial Load

Reference the contracting agency's policy and airtanker contract. The decision on landing with a full or partial load will be made by the PIC.

Retardant Operations in Low Light Conditions (Sunrise and Sunset)

Each airtanker base and dispatch office shall have official charts showing the official sunrise and sunset times at those locations. Official sunrise/sunset for the airtanker base nearest the incident shall be used to determine startup and cutoff times for the incident

(http://aa.usno.navy.mil/data/docs/RS_OneYear.php).

For startup/cutoff times for multiengine airtankers, refer to the *Interagency Aerial Supervision Guide* (IASG), PMS 505, NFES 002544, <https://www.nwcg.gov/publications/505>.

Operations

Introduction

Good communications, daily briefings, on-the-job training, and regard for safety are key factors in ensuring the safety and efficiency of airtanker base operations. The following operational best practices should be followed at all airtanker bases.

Operational Briefings

Operational briefings shall be held daily and are conducted for the following reasons:

- To address specific issues, such as previous day's activity or to convey or exchange pertinent information.
- To provide tactical information, prior to or during mission, as incident needs change.
- As part of an AAR.
- Address and discuss safety concerns.

Any briefing or training must be documented. Documentation should include the facilitator's name, printed name, and signature of all attendees, date, and list of topics discussed.

Refer to Appendix K for topics and websites for materials to use for the daily operational briefings.

Risk assessments should be done on a daily basis. Refer to Appendix L for the Daily Risk Assessment template.

Ramp Safety Awareness

General Precautions

- Due to the fragility of equipment and contract restrictions all personnel will perform only the duties for which they are responsible. Do not try to assist unless requested by the ATBM.

- Only essential personnel will be allowed in the loading area during hot loading operations.
- No ramp personnel or RTCMs are to be involved in activities on the side of the aircraft adjacent to operating engines; this might require preplanning at airtanker bases with wing tip to wing tip (parallel) loading pits.
- Never walk beneath, between, or in close proximity to aircraft propellers or engines – operating or stopped.
- Do not approach aircraft until the appropriate engines have been shut down and the FWPT has signaled the aircraft is clear to approach.
- When possible avoid the area to the rear of the aircraft while the engines are running due to hazards such as propeller/jet blast, dust, debris, and fumes except for the S-2T and SEATs.
- Be aware that fumes from raw fuel can ignite.
- Provide initial firefighting, commensurate with training, and PPE.
- Exhaust from running engine(s).
- High noise levels.
- Prop blast and flying debris when aircraft pulls out of the loading pit.
- Limit cell phone use while on the ramp. Refer to the local ABOP for specific direction on cell phone use during operations.

Equipment Foul Lines and Foul Boxes

Foul lines and foul boxes identify safe zones or areas where GSE can be secured without impedance by aircraft. The aviation industry has recognized that foul lines and foul boxes have reduced ground handling accidents. The following recommendations come from the Interagency Aviation Lessons Learned IA LL 17-06 (<https://www.nwcg.gov/committees/interagency-airtanker-base-subcommittee>) and should be incorporated at airtanker bases.

- Foul lines and/or foul boxes will be located and painted in accordance with the local airport authorities' operating procedures or FAA Advisory Circular 150/5340 –1L https://www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.current/documentNumber/150_5340-1. At CWN and Temporary airtanker bases, the lines may be marked with tape.
- A foul line will be placed no less than 10 feet (30 feet is preferred) away from where the closest aircraft wing tip will taxi. All GSE or equipment will be placed on the “safe” side of the line prior to releasing the aircraft for taxi.
- Foul boxes will fully encompass the piece of equipment with a minimum of 18 inches of clearance on all four sides. They will be clearly labeled to identify the equipment that is to be parked in the space. All foul boxes will be located in an area that will maintain a 30 foot separation from all aircraft while parked or taxiing.

Airtanker bases can utilize either foul lines or foul boxes to meet the requirements of their operations. While both safety measures can be used, at minimum, one safety measure (lines or boxes) must be utilized.

Aircraft Parking

- Airtanker bases have designated areas for loading, fueling, maintenance, light fixed-wing, and day-off parking. Appropriate tie downs and chocks should be provided for aircraft.
- Nose wheel positions should be marked on the pits for each airtanker type to ensure proper loading position and clearance. Consult local airport management for specific marking guidance.
- The FWPT shall use the nationally standardized hand signals to marshal aircraft. Refer to the FWPT training module at <https://www.iat.gov/>.
- To increase FWPT visibility, utilize industry standard day wands where available. Each airtanker base should have several sets of day wands available. When wands are not available, the standard hand signals still apply.
- Ensure the nose wheel is straight when the aircraft comes to a full stop.
- When propellers and engines have come to a full stop, give the pilot the Insert Chock hand signal and place chocks at an angle in the front and back of the nose wheel. Once chocks are placed, use the same hand signal to notify the pilot that the chocks are in place.
- Wing walkers shall be used anytime any part of the aircraft is within 30 feet of an object over 3 feet in height.
- Aircraft will not be taxied where any part of the aircraft comes within 10 feet of an object over 3 feet in height. Ensure ample vertical clearance of wing and obstacles is observed.
- Provisions should be made with local authorities to obtain adequate parking space to accommodate additional aircraft during periods of high-fire activity.
- The FWPT will direct all movement of aircraft, personnel, and vehicles in their assigned area to ensure safe operations and that prop/jet blast hazards are mitigated.

Low Visibility Ramp Operations

During periods of low visibility on the ramp due to smoke, weather, time of day, or other limiting factors, additional safety measures should be implemented.

- While performing hand signals, FWPTs shall utilize industry standard lighted wands or glow sticks.
- Utilize wing walkers and ensure they also have lighted wands or glow sticks.
- Ensure personnel involved in aircraft movement utilize ramp radios and headsets.

Retardant Loading

- Only properly trained personnel are permitted to conduct retardant loading operations.
- The RTCMs shall wear appropriate PPE as outlined in the SABO.
- A briefing from the aircrew shall occur the first time the specific type of aircraft is loading from the airtanker base, annually. The briefing should include a review of the loading hose hook-up and removal processes along with any specifics of loading the aircraft. The FWPTs, RAMP, RTCMs, MXMS, and ATBM should be involved.

- Retardant loading with propulsion engines running shall not be permitted except when all personnel involved have been trained on hot loading procedures and the airtanker base has an approved Hot Loading Plan.
- The loading hose should not be connected to the loading port on the aircraft until that specific airtanker is to be loaded.
- Always notify the PIC if the aircraft is overloaded. Overloading is defined as anytime the load exceeds the requested or contract weight.
- It is critical to flight safety that airtankers are not overloaded without-of-specification retardant that exceeds the per gallon weight limitations. Always determine the total weight in pounds (not gallons) loaded onto an airtanker. Notify the PIC if the aircraft may be overloaded.
- Prior to taxi, an overall visual safety check is to be conducted by all ramp personnel to identify anything out of the ordinary.

Retardant Metering

- Loading retardant through a mass flow meter is required to ensure safety and efficiency while loading airtankers. Knowing the actual weight of the retardant load placed on an airtanker is critical. Mass flow metering equipment provides the actual weight of the retardant in pounds.
- Each airtanker load should be measured individually to determine the precise weight placed on the airtanker. The ATBM should ensure that procedures are in place to track and document the actual pounds loaded onto each airtanker, as well as converting the pounds to gallons for payment and incident cost tracking.
- It is unacceptable to document and make payment for contract loads, unless the mass flow meter has malfunctioned.
- If the mass flow meter becomes inoperative, the airtanker can still be loaded using the visual indicators on the retardant tank along with close attention to the quality control procedures outlined for the product for the remainder of the operational period. Notify the PIC, RAO/SAM or appropriate agency aviation management personnel and Airtanker Program Manager that airtankers are being loaded without a mass flow meter.
- Never load more than one airtanker at a time through the same meter, it does not provide an accurate measurement of the weight for each aircraft's load.
- Mass flow meters at airtanker bases must be calibrated, at a minimum, every 24-calendar months. Airtankers shall not be loaded if the mass flow meter has not been calibrated within the previous 24-calendar months.

Retardant Testing

Follow direction given in the LAQA program and retardant contracts. Each airtanker base is expected to participate in the LAQA program.

Retardant Offloading and Reloading

- Airtanker bases should maintain the capability of offloading and reloading retardant.
- Airtankers may need to be offloaded prior to ferry flights, mission currency flights, or before any maintenance that would require removing the retardant from the airtanker.

- Retardant should be reloaded as long as it remains within specification.
- Reloading though a mass flow meter is preferred, however, if one is unavailable for reloading from the offload tank, utilize the aircraft's load indicators while paying close attention to the quality control procedures outlined for the product.

Suppressants and Water Enhancer Loading

Reference the QPL for direction on which aircraft are approved for WFC products. Refer to the QPL for specifications, mix ratios, and qualified applications. Consult individual agencies for specific policies.

Fueling

Obtaining Fuel Services

The ATBM should coordinate between the aircrew and the FBO to order fuel. If a Defense Logistics Agency (DLA) contract is available on the airfield the vendor with that contract shall be used. Refer to the local ABOP for specific fueling options.

For aircraft not currently authorized for DLA use, work with the local RAO to obtain permissions (i.e., aircraft from Canada and Alaska).

RAMP/FWPT Responsibilities

- Refueling operations are the responsibility of the contractor. The RAMP/FWPT will not participate in the fueling operations but will provide safety oversight such as:
 - Ensure no smoking within the fueling area.
 - Be present during maneuvering of the fuel truck to maintain safe clearances for the aircraft.
 - Make sure there is no cell phone or radio use within the fueling area.
 - Ensure fuel trucks use chocks and bond to the aircraft.
- The RAMP should ensure that all fueling operations are conducted in a secure area, without presenting undue hazard to other aircraft or personnel.
- Once fueling operations are complete, the FWPT will notify the pilot that the area is clear and the pilot can start the engines.

Some non-federal agencies may require RAMP/FWPTs to participate in fueling operations. Refer to the local agency for guidance.

Bonding

Prior to making any fueling connections to an aircraft and fuel servicing vehicle, fueling equipment shall be bonded to the aircraft and fuel servicing vehicles by use of a cable, thus providing a conductive path to equalize the static electricity potential between the fueling equipment and the aircraft. The electrical bond shall be maintained until fueling connections have been removed. Reference the NFPA 407, *Standards for Aircraft Fuel Servicing* (<https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=407>) for specific bonding procedures and requirements.

Hot Fueling

Certain aircraft operations may allow for the fueling of aircraft while engines are running, also known as hot fueling.

Refer to agency policy, guidelines, contracts, and local ABOP before commencing such operations.

Starting the Aircraft Engines

Under normal circumstances aircrews will not start aircraft engines without the authorization and the presence of a FWPT.

Clearing the Aircraft from the Loading Pit

- After the loading is complete and/or the pump is shut down, the RTCM will close the loading valve, disconnect the loading hose, and move it and themselves to the designated safe area.
- Before clearing the aircraft, the FWPT shall ensure the RTCM has replaced the retardant loading valve cap and overflow plug (if removed) and has pulled the loading hose completely clear of ramp, give the pilot the Chock Removed hand signal and remove chocks.
- The FWPT will notify the pilot by radio or hand signal when the chocks are removed and the hose and RTCM are clear of the aircraft.
- The FWPT will take up a position that will allow a view of both sides of the aircraft and be in clear view of the pilot. The FWPT will then either use hand signals or communicate by radio that the engines are clear to start.
- The airtanker will be cleared to exit the loading pit after the FWPT has determined that all obstructions and hazards are clear of the aircraft and the RTCM is in the designated safe area free from prop/jet blast.
- Allow for at least one (1) complete nose wheel rotation prior to signaling the aircraft to turn.

Hot Loading

Refer to the most current Authorization for Hot Retardant Loading of Turbine Airtankers (<https://www.nwcg.gov/committees/interagency-airtanker-base-subcommittee>) for guidance; however, the RAO/SAM or equivalent aviation manager has the final authority to approve or deny hot loading.

Purpose

Hot loading is the loading of an airtanker while one or more propulsion engines are running, in order to reduce loading times and prevent adverse impacts on aircraft systems.

Applicability

Hot loading shall be requested by the agency ATBM on a case-by-case basis. Situations may occur where the aircrew or ATBM elect not to hot load, even if approved.

The hot loading procedure requires an approved airtanker base Hot Loading Plan, trained personnel and concurrence by both the aircrew and airtanker base personnel. If used, it must be done properly, safely, and be addressed in the local ABOP.

The airtanker base Hot Loading Plan shall be reviewed and approved annually by the appropriate level of the agency's aviation management.

Responsibility

Each agency remains responsible for implementing safe and effective hot loading procedures for each authorized airtanker. The ATBM is responsible for compliance with the requirements and procedures outlined in the local ABOP Hot Loading Plan. Airtanker loading operations are hazardous under normal conditions, hot loading intensifies the degree to which personnel must adhere to the safety procedures in the Hot Loading Plan.

Training must be accomplished, using the most recent training materials, and must be addressed in the local ABOP.

Procedures

The following procedures shall be used for all hot loading operations for approved airtankers.

Each airtanker shall shut down all engines for the first hot loading operation at an airtanker base from which the airtanker has not previously operated in the current season. Aircrews, ATBMs, ramp personnel, and RTCMs will review the following procedures and equipment specific to each aircraft:

- Hot loading procedures
- Hand signals/communication during hot loading
- Safety considerations

At the discretion of the ATBM, airtankers may be required to shut down at any time to train personnel unfamiliar with the aircraft or the hot loading procedure for that aircraft.

Procedures Specific to Hot Loading for All Aircraft:

- With the airtanker positioned in the loading pit, the pilot places the engine(s) at ground idle, then shuts down the engine(s) on the side from which the aircraft will be loaded.
- Once the aircraft is secured, the pilot will inform the FWPT by hand signal or radio, that loading may begin.
- The pilot shall remain at the controls of the aircraft during hot loading procedures.
- There may be hot loading situations where radio communications between the pilot and FWPT is lost. Hot loading may be accomplished by the FWPT establishing eye contact with the pilot and utilizing standardized hand signals (see Appendix G).

FWPT Actions:

- The FWPT will take up a position providing the maximum view of the running engine(s), RTCMs, and cockpit.
- The FWPT will not allow anyone to approach the aircraft until the engine(s) have been shut down on the loading side and the propellers of propped airtankers have stopped wind milling.
- The FWPT must establish that the area is clear and receive approval from the pilot to begin loading.
- RTCMs will remain clear of the aircraft until the FWPT has given the signal to approach.
- If unauthorized personnel or equipment is observed approaching the running engine(s), the FWPT will immediately instruct the pilot to shut down the engine(s).
- Eye-to-eye contact and hand signals or radio communications between the pilot and FWPT will be maintained throughout the hot loading operations.

S-2T Specific Retardant Hot Loading Procedures

The following are general procedures for the S-2T aircraft. Refer to the *CALFIRE 8300 Aviation Handbook* (<http://calfireweb.fire.ca.gov/library/handbooks/>) for more specific guidance:

- During loading, the FWPT will have a visual of the PIC, loading operations, and both running engines.
- The FWPT obtains permission from the pilot to load when the aircraft is ready.
- The FWPT signals the RTCM the requested amount and to approach.
- The RTCM must ensure the Flapper Valve light is illuminated prior to loading.
- The RTCM observes the loading lights at the tail of the aircraft and if a mass flow meter is present, monitors the total pounds.
- When the load reaches within 200 gallons of the pilot's requested load or the aircraft warning horn sounds the RTCM reduces the flow.
- When the load weight is reached and/or the top light illuminates, the aircraft is full, and the RTCM stops the flow.

SEAT Specific Retardant Hot Loading Procedures

The following are general procedures for SEAT aircraft. Refer to the ISOG for more specific information:

- The raised nose of the SEAT makes visibility directly in front of the aircraft difficult.
- The FWPT will remain in position to see the turning propeller, pilot, and RTCMs (the front and side between the nose and wing tip).
- Normally, the Pilot will indicate the desired load amount and indicate when the appropriate load has been reached, often by hand signal only.
- SEATS often require loading at a reduced pumping rate, compared to large airtankers, to avoid overloading and provide adequate time for retardant quality assurance testing. Pump speed should be part of the initial briefing for SEAT pilots.

Single engine airtanker operations-specific planning documents are available on the National SEAT website at https://www.nifc.gov/aviation/av_BLMseat.html.

Simultaneous Fueling and Loading

Refer to the most current Authorization for Simultaneous Fueling and Retardant Loading of Turbine Airtankers (<https://www.nwcg.gov/committees/interagency-airtanker-base-subcommittee>) for guidance; however, the RAO/SAM or equivalent aviation manager has the final authority to approve or deny hot loading.

Purpose

Simultaneous fueling and loading is the process of fueling and loading an airtanker at the same time in order to reduce time on the ground.

Applicability

Simultaneous fueling and loading shall be requested by the agency (ATBM) on a case-by-case basis. Situations may occur where the aircrew or ATBM elect not to simultaneously fuel and load, even if approved.

The simultaneous fueling and loading procedure requires an approved airtanker base Simultaneous Fueling and Loading Plan, trained personnel, and concurrence by both the aircrew and airtanker base personnel. If used, it must be done properly, safely, and be addressed in the local ABOP.

The airtanker base Simultaneous Fueling and Loading Plan shall be reviewed and approved annually by the appropriate level of the agency's aviation management.

Responsibility

Each agency remains responsible for implementing a safe and effective simultaneous fueling and loading procedure for each authorized airtanker. The ATBM is responsible for compliance with the requirements and procedures outlined in the local ABOP's Simultaneous Fueling and Loading Plan.

Training must be accomplished, using the most recent training materials, and must be addressed in the local ABOP.

Procedures

The following procedures shall be used for all approved airtankers.

Each airtanker shall shut down for the first simultaneous fueling and loading operation at an airtanker base from which the airtanker has not previously operated in the current season. Aircrews, ATBMs, ramp personnel, and RTCM will review the following procedures and equipment specific to each aircraft:

- Simultaneous fueling and loading procedures.
- Hand signals/communication during simultaneous fueling and loading.
- Fuel truck placement.

At the discretion of the ATBM, airtankers may be required to shut down at any time to train personnel unfamiliar with the aircraft or the simultaneous fueling and loading procedure for that aircraft.

Procedures Specific to Simultaneous Fueling and Loading for All Aircraft:

- The pilot shuts down the engines once parked in the loading pit.
- Once the aircraft is secured, the pilot will inform the FWPT by hand signal or radio, that loading may begin.
- A member of the aircrew shall remain with the aircraft during simultaneous fueling and loading procedures.

FWPT Actions:

- The FWPT will take up a position providing the maximum view of the fueling and loading operations.
- The FWPT will not allow anyone to approach the aircraft until the engines have been shut down and the propellers have stopped wind milling.
- The FWPT must receive approval from the pilot to begin fueling and loading.
- RTCMs will remain clear of the aircraft until the FWPT has given the signal to approach.

Fueler Actions:

Fuelers are responsible for observing and following the FWPT hand signals and fueling the airtanker safely and efficiently while avoiding the loading operations.

One shut down and briefing per year can cover both hot loading and simultaneous fueling and loading procedures for each individual airtanker.

Airtanker Specifics

In general, the procedures for handling all airtankers are similar regardless of size and number of engines. Refer to the *NWCG Airtanker Base Directory*, PMS 507, <https://www.nwcg.gov/publications/507>, for current aircraft specifications.

Large Airtankers (LATs)

LATs refers to airtankers with a retardant capacity of 3,000 to 7,900 gallons.

Considerations for LATs:

- Prop/jet blast can cause issues for anything that is behind the LAT.
- Turning radii varies with each aircraft.
- Increase spacing behind the LAT to allow for jet/prop blast dispersion.
- Utilize wing walkers anytime any part of the aircraft is within 30 feet of an object over 3 feet in height.
- Do not allow any part of the aircraft to come within 10 feet of an object over 3 feet in height.

Very Large Airtankers (VLATs)

VLAT refers to airtankers with a retardant capacity of greater than 8,000 gallons.

Considerations for VLATs:

- Prior to a VLAT arriving, communicate with the airport and FBO to ensure there is an overweight authorization if needed, and to confirm the availability of GSE. Agency employees shall not procure, operate, or maneuver GSE.
- Identify safe zones for staging GSE when not in use.
- VLATs using existing airtanker bases should not impact the LAT access to the pits or loading to include mixing and loading capacity.
- Utilize wing walkers anytime any part of the aircraft is within 30 feet of an object over 3 feet in height.
- Do not allow any part of the aircraft to come within 10 feet of an object over 3 feet in height.
- Increase spacing behind the VLAT to allow for jet blast dispersion.

Modular Airborne Firefighting Systems (MAFFS)

MAFFS are military C-130's on state and/or federal agreements to supplement the national airtanker fleet. Each MAFFS aircraft has a slip in unit that has a 3,000 gallon capacity and is a pressurized system. Refer to the MAFFS Operating Plan at <https://www.nifc.gov/nicc/logistics/aviation/aviation.htm> for specifics on MAFFS operations. Site visits and preapprovals are required prior to operating MAFFS at an airtanker base.

Refer to the *NWCG Airtanker Base Directory*, PMS 507, <https://www.nwcg.gov/publications/507>, for additional information on MAFFS.

Amphibious Water Scooper Aircraft (AWSA)

AWSA have been used in the United States for several years. Currently there are two models the CL-415 and AT-802 FireBoss. The capacity for the CL-415 is 1600 gallons and 800 gallons for the FireBoss. Both aircraft can be very effective when a suitable water source is near the fire. They can remain over the fire for up to four hours. The FireBoss is approved to deliver WFCs the CL-415 is not. They typically come with a manager and only need a parking location and minimal logistical support. Refer to the AWSA Operations Plan (<https://gacc.nifc.gov/nrcc/dispatch/aviation/ApprovedScooperOpsPlan.pdf>) for further information.

Emergency Procedures

Airtanker base specific emergency procedures shall be outlined in the local ABOP.

Fire

The FWPT will notify the pilot by radio that there is a fire. If the radio fails, the FWPT will face the aircraft and point to the fire with one hand while drawing a figure-eight in the air with the other (see Appendix G). Fire extinguishers may be discharged to extinguish an engine fire only at the direction of the pilot or aircrew member. If a fire persists, follow established airtanker base emergency procedures.

Communication Loss

In the event of radio communication loss, the FWPT will secure eye-to-eye contact with the pilot and raise both hands and cover the ears and repeat the motion until communication is reestablished. The FWPT will continue to use hand signals if no radio is available. If the aircraft radio is inoperable, the aircraft will be shut down until repairs are made.

Situation Requiring Engine Shutdown

If a situation requiring engine shutdown occurs, the FWPT will notify the pilot by radio or hand signal drawing index finger across the throat.

Other Ramp Activities

Items below are the general guidelines required for all airtanker bases. Refer to the local ABOP for specific direction.

Vehicles

- Vehicles in the ramp/pit area must be kept to the minimum necessary for the operations.
- The ATBM has the final authority to approve which vehicles will be allowed on the ramp.

Visitors

- Before being allowed onto the ramp, visitors must obtain permission from the ATBM or his/her representative and be given a safety briefing. Visitors shall be escorted by agency or contractor personnel at all times. When airport security requires, visitors will be provided a visitor ramp pass.
- Visitors will be provided appropriate safety equipment, including hearing protection.

- If possible, members of the media shall be escorted by a Public Information Officer (PIOF).
- Visitors will remain clear of the ramp and retardant plant during operations.
- Visitors and the public shall be directed to and confined to a secure designated public viewing area while visiting the airtanker base to observe operations.

Retardant Jettison Areas

In the event of a cancelled or aborted mission after takeoff, the aircrew shall make the final decision as to whether or not the aircraft will land loaded or if a portion or all of the load shall be jettisoned. At any time during an emergency or when adverse conditions make safe landing uncertain the pilot may drop all or part of the load as necessary. Coordinate with the resource advisor to determine acceptable locations of retardant jettison areas. Indicate the location of jettison areas on the aerial hazard maps and include the latitude and longitude of the sites in the local ABOP, pilot briefing and orientation guide, and the *NWCG Airtanker Base Directory*, PMS 507, NFES #002537, <https://www.nwcg.gov/publications/507>.

Sterile Cockpit Procedures

Sterile cockpit rules apply within a five-mile radius of the airport. The aircrew will not perform radio or cockpit communication during that time that is not directly related to safe flight of the aircraft from taxi to five miles out upon takeoff and from five miles out until clearing the active runway upon landing.

Sterile Cockpit procedures means no communications between an aircraft and the airtanker base, dispatch office, or ramp personnel while the aircraft is in the traffic pattern unless it involves the safety of flight. Fire dispatching or reload instructions are not related to the safe flight of the aircraft.

Exception: When conducting firefighting missions within five miles of an uncontrolled airport, maintain sterile cockpit until departing the traffic pattern and reaching final altitude. Monitor CTAF frequency if feasible while engaged in firefighting activities. Monitor CTAF as soon as practical upon leaving the fire and returning to the uncontrolled airport. When conducting firefighting missions within Class B, C, or D airspace, notify dispatch that ATC communications will have priority over dispatch communications.

Safety

Safety at airtanker bases and around aircraft is a cooperative effort between pilots, mechanics, FBOs, contract, and agency personnel. Safety is also an individual responsibility for which each person is accountable. In no circumstance will safety be compromised.

OSHA

Workplace Safety

Agencies are responsible for assuring that facilities meet local, state, and federal laws pertaining to workplace safety for employees and do not impact the welfare of the surrounding community.

Hazardous Material Requirements

Refer to the OSHA website <https://www.osha.gov/> for information that pertains to OSHA hazardous material compliance.

Airtanker Base Evaluations

The ATBM assigned to an airtanker base shall evaluate it on an annual basis utilizing the Airtanker Base Readiness Review (Appendix M) or similar document/process.

Periodically, and generally during periods of extended or high activity, Fire and Aviation Management may elect to conduct a “Quality Assurance Audit.” This type of evaluation may consist of many of the same elements as the Airtanker Base Readiness Review. In addition, the auditors may interview the aircraft crews to ensure contract compliance. The intent of this type of evaluation is to engage with personnel to determine if there are issues that need to be addressed and to monitor the overall safety and health of the operations.

Use of the Evaluation

The evaluation checklist can be used for both pre-season and as needed spot evaluations of airtanker bases. The results of the evaluation should be reviewed with the fire staff of the agency(ies) operating the airtanker base. Deficiencies in training should be corrected within a reasonable time frame. Deficiencies in critical areas of safety must be corrected immediately. Completed evaluations will be provided to forest, state, and regional offices for review and line officer accountability.

Evaluation Team

Where possible, the evaluation team should be interagency in nature. Technical specialists with expertise in the areas of airtanker base operations should be part of the team.

Aerial Hazard Maps

Each airtanker base shall have a map noting known aerial hazards within its zone of influence posted prominently for use by aircrews.

The map shall be updated annually and as needed with the last revision date indicated on the map.

The Hazard Map shall include the following:

- Power lines and towers. If aeronautical charts are being used, e.g., Sectionals, then these hazards should be highlighted on these charts.
- Wires and power lines not marked on standard aeronautical charts.
- Military Training Routes (MTRs), Military Operation Areas, Restricted Areas, Sensitive Areas, and other Special-Use Airspace.
- Identifiable areas of known turbulence or avoidance.
- Additional hazards specific to your area such as hang-gliding, sky-diving, soaring, etc.
- A key to identify the type of hazard.

The ATBM is responsible for ensuring that briefings concerning local known aerial hazards are completed for all assigned crews.

Airspace Coordination

Information about Temporary Flight Restrictions (TFRs) and MTRs, Notification to Airmen (NOTAM), Fire Traffic Area (FTA), and additional information should be posted at the airtanker base and communicated to aircrews.

If air operations in support of an incident is becoming complex or unsafe at an uncontrolled airport, there may be cause to order an FAA Temporary Control Tower. Refer to the *National Interagency Mobilization Guide* at <https://www.nifc.gov/nicc/mobguide/index.html> for specific guidance on ordering a Temporary Control Tower. Examples of complex or unsafe conditions:

- Excessive smoke/visibility
- Pilot request
- Congested airspace

The *NWCG Standards for Airspace Coordination*, PMS 520, <https://www.nwcg.gov/publications/520>, is a good resource for additional information on airspace issues and concerns.

Emergency Response Planning and Equipment

The capability and knowledge to activate trained emergency response personnel quickly should be a top training priority.

Emergency Response Planning

- Each airtanker base shall develop and annually update an emergency response plan (i.e., the *Interagency Aviation Mishap Response Guide and Checklist* or the *Aviation Incident/Accident Response Guide*). Local airfields and community capability to respond to aircraft accidents and/or fuel fires should be built into the plan.
- The plan shall be prominently posted.
- Airtanker base personnel shall be familiar with and trained in how to use the guide and contact emergency services in the event of an emergency on or off the airfield.

Emergency Response Equipment

Fire Extinguishers

The purpose of portable fire extinguishers located on an aircraft ramp is to:

- Provide initial firefighting, commensurate with training, and PPE.
- Assist the aircrew at their exit point from the aircraft.
- An external fire extinguisher should never be used on an engine fire while the engine is running. The PIC may elect to either blow out an exhaust stack fire, or extinguish an intake fire through the use of on-board aircraft system fire extinguishers.

29 CFR 1910.157 requires monthly visual inspections and an annual maintenance check of all portable fire extinguishers. This code also requires annual training on the use of portable fire extinguishers and the hazards involved with incipient stage fire fighting for all employees.

Extinguisher Sizing

- NFPA 410 standards require each aircraft operations ramp to have a wheeled fire extinguisher with a rating of not less than 80-B at intervals of 200 feet (61m).
- The OSHA under 29 CFR 1910.157, Portable Fire Extinguishers, sets requirements for use, testing, and maintenance for fire extinguishers provided from employers to employees.
- NFPA 10, Portable Fire Extinguishers, sets the inspection and maintenance standards.

Local Emergency Response Organization

Local emergency response equipment and procedures for activation shall be included in the emergency response plan and in the local ABOP. The plan should also address the responsibility and chain of command in the event of an on-field accident or fueling mishap.

Supplemental emergency response equipment, if not available on the airfield or if it is needed to supplement local fire departments, should be ordered through the dispatch system during periods of high activity. ATBMs may also utilize an Emergency Equipment Rental Agreement (EERA) through the local fire agency. ATBMs can place an order with the local agency dispatcher for an ARFF Unit whenever multiple airtankers operate from the airtanker base for extended periods of time.

NFPA Standards

The NFPA has developed standards to establish reasonable minimum fire safety requirements for procedures, equipment, and installations for the protection of persons, aircraft, and other property during ground fuel servicing and basic operations that involve liquid petroleum fuels. Reference current editions of the following:

- NFPA 10 Standard for Portable Fire Extinguishers
- NFPA 407 Standard for Aircraft Fuel Servicing
- NFPA 408 Standard for Aircraft Hand Portable Fire Extinguishers
- NFPA 412 Standard for Evaluating Aircraft Rescue and Fire Fighting Foam Equipment
- NFPA 410 Standard on Aircraft Maintenance

Hazard, Incident, and Accident Reporting

All hazards, incidents, and/or accidents shall be reported promptly per agency-specific notification requirements. The SAFECOM system is the method for reporting aviation related incidents involving federal aircraft or federal jurisdiction. Cooperating agencies may have an alternate reporting system.

Personnel reporting an incident and/or accident must remember that it is officially reported to the agency that has operational control of the aircraft at the time of the occurrence. This may or may not be the agency which owns or has contracted the aircraft.

Airtanker Base Retardant Plant Safety Requirements

Airtanker base requirements should be covered extensively during the inspection process. OSHA's General Duty Clause 29 USC 654 Section 5(a)(1) requires that each employer furnish to each of its employees a workplace that is free from recognized hazards that are causing or likely to cause death or serious physical harm. Some examples of compliance are:

- 1) A permanent ladder and safety railings shall be on all walkways on tanks,
- 2) Skid-proof paint shall be applied to all walkways on tanks,
- 3) Pump shafts shall have guards,
- 4) All electrical equipment shall be properly grounded,
- 5) Cautionary signs (no smoking, hazardous area, no entry, etc.) shall be posted,
- 6) Mitigate slips, trips, and falls, and

- 7) Eyewash and emergency shower facilities must be provided. The OSHA standard is within 50 feet of the hazard. (CFR 1910.151).

PPE

It is the ATBMs responsibility to ensure personnel are trained in the use of PPE. If respirators are used at an airtanker base during mixing operations, an OSHA Respirator Plan must be in place.

Ramp Personnel

All ramp personnel including RTCMs working on the ramp shall wear ear and eye protection, as well as high visibility clothing differing in color from that of the FWPT or RAMP, see the local ABOP for specific colors and direction. PPE for skin protection against sunburn, prop blast, and blowing rocks/sand should be considered. Footwear with closed toe, non-skid soles shall be worn while working on the ramp during operations.

RAMP/FWPT PPE

In addition to the above-mentioned PPE the RAMP shall wear and be identified by a high visibility green vest and the FWPT/s shall wear a high visibility orange vest.

Audio Levels

Audio levels on the ramp can be extremely high during operations; ATBMs shall ensure appropriate hearing protection is available and worn. If OSHA standards are exceeded, additional protective measures must be taken. See the USFS San Dimas Technology and Development Center's report on Hearing Safety at Airtanker Bases (<http://fsweb.sdtcd.wo.fs.fed.us/pubs/html/99571205/99571205.html>), September 1999.

Airtanker base personnel will participate in the local hearing conservation program.

Administration

Refer to Appendix N Recommended Reference Library for publications and reference materials needed at airtanker bases.

Forms listed in Appendix O will provide an ATBM with the means to maintain an accurate record of airtanker base operations.

Administrative Reporting Instructions

The proper completion of agency flight payment documents is critical to the accurate and timely payment to vendors. Follow the procedures in agency policy on specifics for payment documentation. Airtanker administrative CORs rely on the timely and accurate incident and flight information reporting to input into the required database. By COB each day, the administrative COR should have all of the days information including but not limited to: on and off duty times, any unavailability times, any movement or flight activity with validated order numbers and job codes, any issues with the aircrew or aircraft, etc.

Incident Cost Reporting

Incident cost reporting is crucial and mandated by the Office of Management and Budget (OMB). It is vital that by COB each day all fixed-wing costs for the incident are sent to the appropriate incident, unit, etc. ATBMs should not only be capturing airtanker cost but also light fixed-wing costs out of the airtanker base to include in the total fixed-wing cost report.

Airport Fees

Airport utilization fees may include landing, parking, and tie down fees. The local ABOP shall address specific airport fees and how to deal with them appropriately.

Contract Administration

Roles and Responsibilities

Contracting Officer (CO)

The CO is responsible for all contracting actions including contracting procedures, contract legality with existing laws and regulations, contract administration, and termination.

The CO is the only individual who may modify or change a contract provision.

Contracting Officer's Technical Representative (COTR)

The COTR is appointed by and directly responsible to the CO for assuring compliance with the technical provisions of the contract. The COTR conducts initial contract compliance inspections of the vendor's equipment, facilities, and personnel prior to, and periodically during the performance period.

Generally speaking, COTRs from both Department of Interior (DOI), Office of Aircraft Services (OAS) and the USFS can assist with technical support for both agencies, particularly when dealing with maintenance issues and inspections.

Aviation Maintenance Inspector (AMI)

The policy that covers the Radio Technical Commission for Aeronautics (RTCA) and AMI is 5709.16, Chapter 40. Every contract for aircraft other than point to point requires the vendor to contact the AMI prior to being returned to contract availability. This is due to the fact that an aircraft that is removed from contract availability due to maintenance is not in compliance with the contract specifications for an airworthy aircraft. Under policy the only individuals that have the authority to assess the aircrafts airworthiness under the contract are AMIs.

Refer to the *Aircraft Inspectors Guide Handbook* at https://www.fs.fed.us/fire/aviation/av_library/AIG_2008.pdf.

A major responsibility is to perform contract compliance inspections of contract aircraft. Inspectors must remain informed of problems affecting airworthiness of contract aircraft operating in their region, and provide assistance to the field in resolving these problems. They must help managers in the field and give guidance when necessary, in dealing with maintenance related contract issues and Return to Contract availability: When an aircraft is removed from contract use and declared "out of service" for aircraft maintenance purposes, the process for returning the aircraft to contract availability by the agency is as follows:

- 1) Maintenance “Approval for Return to Service.” A maintenance release signed and dated by the contractor’s maintenance representative on an operating document, which identifies the work done; stating that the maintenance is complete and the aircraft is airworthy and approved for return to service.

An operating document is any document or form that the operator uses to document aircraft maintenance activity and airworthiness, i.e., Daily Flight Log, Pilot Daily Log, Aircraft Daily Flight and Maintenance Log, Aircraft Maintenance Logs.

If a repair is other than a minor repair or a scheduled inspection, component change, etc., the appropriate agency AMI is normally contacted for approval for continued use under the contract. The majority of the time inspectors will be able to do this over the phone. The normal practice under the circumstances is to either have the contractor fax copies of the log entries for inspector review, or have the manager retain the copies with his/her diary. Some inspectors want copies of all repairs, while others only keep them for major items. It is a judgment call on the inspectors part which way to handle it, and on whether they need to reinspect an aircraft, or not. As a minimum, copies of the logs for these type repairs should be retained by the COR/manager with their diaries.

There will be times when an inspector will want to reinspect an aircraft following a major repair or component replacement, before allowing it to Return to Contract availability. Be advised, once an operator notifies the COR that an aircraft is approved for return to service, their availability begins at that point (unless there are still problems with the aircraft during the reinspection). If a decision on whether to reinspect is not made until the last minute, and it takes the inspector several hours or more to arrive at the aircraft, the vendor will be paid for the time they are sitting on the ground awaiting the inspector’s arrival. Most managers will provide plenty of notice to allow inspectors to get to the aircraft before the maintenance is completed.

The agency COR/manager must notify the appropriate AMI before the aircraft is returned to contract use for major items listed in the FSH 5709.16, Chapter 44.11, Fixed-Wing Aircraft.

- 2) B. Flight Check. A flight check, if required, is performed by an authorized company pilot and a statement in the operating document stating the aircraft is returned to service, dated and signed by the pilot performing this duty, in accordance with FAR91.407(b). Operational checks required by an Aircraft Inspector must be reasonable. If a contractor indicates they believe an operational check is unreasonable, contact the CO for resolution before proceeding.

Ensure the most recent AMI contact list with designations is available.

Contracting Officers Representative (COR)

The COR is appointed by and directly responsible to the CO for monitoring contract performance.

The COR is primarily responsible for assuring compliance with the provisions of the contract. The COR maintains communications with the vendor concerning day-to-day operation, though this may be further delegated to the Project Inspector (see below). The COR may not modify the price or provisions of the contract.

The COR may recommend to the CO proposed changes and adjustments to the contract in order to meet the demands of the work project assignment. These proposals will be coordinated with the agency Airtanker Program Manager. The COR may discuss changes or modifications in equipment or other requirements of the contract, but may not commit the agency to such changes, modifications, or adjustments without going through the CO.

The COR is responsible for verifying the work performed upon which payment is based. Refer to the current Schedule of Items for specific assigned personnel and contact information. Consult with state agency representatives for personnel that may be assigned this responsibility for state contracts.

The COR should maintain a contract file. This file should consist at a minimum of the following:

- 1) A copy of the contract with all contract modifications.
- 2) Delegations of authority.
- 3) A bid price summary that specifies contract costs for all pay items.
- 4) Copies of flight payment documents.
- 5) Copies of all contract daily diaries.
- 6) Correspondence to or from the CO/Project Inspector (PI) and vendor.

Project Inspector (PI)

The PI is designated by the COR to assist in implementing the COR's instructions as delegated. Responsibilities of the PI are delegated by the COR and will generally include:

- Verifies services performed by the vendor.
- Ensures vendor's compliance with the contractor specifications and provisions.
- Discusses daily work assignments and ordering service within the contract provisions.
- Discusses problems that occur with the vendor and recommending proposed solutions to the COR.
- Maintains Daily Diary with documentation of the administration of the contract. Any problems of a serious nature are brought immediately to the attention of the COR.

Operating ATBM

- Administration of the contract is a joint responsibility of the host airtanker base and the office with contracting authority, with the ultimate responsibility vested in the CO. Administrative functions are generally delegated to a local level.
- All airtanker base personnel must understand that only the CO may alter the terms and conditions of the contract. Agency employees must understand that the contractor and company employees are bound only by the conditions as outlined in the contract and operate under the policy and guidelines of the contracting agency regardless of incident jurisdiction or land ownership.
- Airtanker base personnel should be familiar with all applicable aviation contracts, as well as the National Retardant Contract. Copies of these contracts should be maintained in the airtanker base reference library. Airtanker bases which utilize cooperator aircraft should maintain a current copy of the applicable contract.
- The ATBM is responsible for providing contract administration oversight (PI) of each federal and state airtanker operating out of the airtanker base. The ATBM must be familiar with the contract as there may be conditions or modification items unique to a particular contractor or aircraft, which differs from standard contract provisions.
- Personnel who are responsible for administering contracts within their delegated authority should document all actions taken with respect to the contract.

- Usually a SEAT is assigned to a SEAT Manager (SEMG), however, when SEATs are operating out of an existing airtanker base without a SEMG; the ATBM is responsible for administrative forms and contract oversight. Refer to the ISOG for required documents and procedures.
- Contact the COR for further direction and expectations.
- Anytime an airtanker goes out of service, the ATBM shall notify the local dispatch center, GACC, COR, and AMI immediately. Once the airtanker has been returned to service by the vendor, the ATBM will get confirmation of the Return to Contract availability from the AMI and then notify the local dispatch center, GACC, and COR.

Types of Contracts

Exclusive Use contracts are those awarded for a specific time period (e.g., 30-day, 90-day etc.), during which the contracting agency has exclusive use of the aircraft and/or retardant services.

CWN/On-call contracts are those contracts that allow the agency to order additional aircraft services during periods of high aircraft use.

States, counties, or other municipalities may have similar contracts or agreements, which are unique to that entity. Consult with the appropriate contract specialist for assistance.

During periods of high incident activity, aircraft from provinces in Canada may be used within the United States. Information about these aircraft may be found in the *National Interagency Mobilization Guide*, or other specific documentation issued with the mobilization of these aircraft.

Authority of Agency Personnel

Before any person takes contractual action on behalf of the respective agency, they need to ascertain whether authority to act has been delegated to them in writing. Consult with the appropriate agency representatives for their policy on contract administration.

Disputes with Vendors

Disputes that cannot be readily resolved at the local level by the ATBM, PI and/or COR will be referred to the CO. Documentation of the resolution of actions taken in any dispute is important to assure that the interests of the agency are maintained.

Environmental Issues

WFC Dropping in Sensitive Areas

Follow agency guidelines regarding WFC avoidance areas and what to do in the event of a misapplication. Reference the Red Book (https://www.nifc.gov/policies/pol_ref_redbook.html), and the local ABOP for additional guidance.

Spills

Work with the unit's Hazardous Materials Coordinator or equivalent to develop specific spill response and cleanup procedures to include in the local ABOP.

Special precautions must be taken to contain potential spills while the airtankers operate on the ramp. Retardant loading pits must have containment and treatment systems to handle leaks, spills, and/or wash down water that may contain metals, fuel, hydraulic fluid, oils etc. from the aircraft. Additionally, mixing and pump areas and storage tanks must have containment systems in place if spills or leaks may impact the surrounding airport environment, storm drains, or mineral soil.

In areas where retardant deliveries are received, aircraft maintenance is performed, or on the ramp where loaded airtankers are staged for dispatch, a containment system, or barriers should be in place. At a minimum, storm drains that may be affected by a spill, should be sealed with commercial containment rubber mats or straw bales. Mineral soil should be protected from potential retardant releases, leaks, or wash down water by concrete collection structures, curbing, or temporary barriers. Spills in these areas must be collected and disposed of per agency policy and/or direction as identified in the local ABOP.

Spills of retardant, fuel, oil, cleaning liquids, etc. must be cleaned up as soon as they occur. A pre-season contact should be established with a certified hazardous material disposal service to mitigate any spills on the airport. Many state and federal agencies have national and local contracts in place that can be accessed through agency engineering, environmental, or health and safety offices.

Local jurisdictions may consider spills, and wash down water acceptable to the facility and can be distributed into storm drains or dispersed on the ground. However, federal/state regulations, and agency policies dictate that airtanker bases comply with proper spill prevention, collection, treatment, and disposal. For local procedures refer to the local ABOP.

Fuel Spills

All spills will be reported to the appropriate authority immediately. Refer to local ABOP.

Procedures for handling fuel spills are subject to the regulations and procedures established by the authority having jurisdiction over airport operations.

If a fuel leak develops or a fuel spill occurs during aircraft servicing, follow the guidelines in the local ABOP and initiate the following emergency procedures without delay:

- The flow of fuel should be stopped, if possible.
- The airport fire crew should be notified if the spill presents a fire hazard.
- It could be necessary to evacuate the aircraft if the spill poses a serious fire exposure to the aircraft or its occupants.
- Mobile fueling equipment and all other mobile equipment should be withdrawn from the area or left as is until the spilled fuel is removed or made safe.
- Aircraft, automotive, or spark-producing equipment in the area should not be started before the spilled fuel is removed or made safe.
- If any aircraft is operating at the time of the spill, move the aircraft away from the hazard if it can be done safely.
- If the leak continues or the spill is a large one, all nonessential personnel should leave the area immediately until the hazard is neutralized, repairs are made, and the area is safe.
- If the aircraft is leaking fuel, contact the AMI as soon as possible.

Never operate an electric truck or cart near a fueling operation or fuel spill. The speed controller can be an ignition source.

During any spill or leak, extreme caution must be exercised to avoid actions that could provide ignition of the fuel vapors.

Reference the International Fire Service Training Association *Aircraft Rescue and Firefighting Manual*.

- During small or medium static spills (not over 10 feet in any dimension or over 50 square feet in area) a firewatch, as assigned by the RAMP, should be posted with one or more fire extinguishers with at least a 20: BC rating. Local regulations and procedures must be followed. However, in most cases absorbent materials or emulsion compounds should be used to absorb the spilled fuel, especially if aviation gasoline (AvGas) or low flash point fuels are involved. The contaminated absorbent should be picked up and placed in an approved container to await disposal.
- Aircraft fuels will damage some types of ramp surfaces. Spilled fuel should be contained and picked up as quickly as possible.
- Large spills (over 10 feet in any dimension or over 50 square feet in area) or smaller spills continuing to enlarge should be handled by the fire department, or if in a remote location, by a ground engine. Anyone in the area of a large spill should move upwind of the spill immediately.
- All fuel spills occurring as a result of a collision should be blanketed with foam to prevent ignition and to prevent damage to the aircraft or additional exposure.

If the fueler's clothing becomes wet with fuel, the ATBM should:

- Evacuate personnel from the fueling area.
- Shut down the fueling if the fueler is unable to.
- Provide the individual a water source for washing off the fuel.

Entering a warm room wearing fuel-soaked clothing can be dangerous. Chances of a fire starting because of static electricity are increased.

Fuel Spill Cleanup

Airtanker base personnel should ensure that all oil, fuel, and other materials are cleaned from ramp areas according to environmental requirements on a daily, or as needed basis. Use of biodegradable or environmentally acceptable cleaners or solvents is required. Keep in mind that the agency is responsible for the collection and proper disposal of contaminated materials.

Security

Security Planning

Airtanker bases shall develop a plan based on information and direction regarding security measures and planning addressed within individual contracts, *Forest Service Handbook 5709.16*, Ch. 60 Aviation Security, or Department of the Interior 352 DM 5, Aircraft and Aviation Facility Security or as otherwise appropriate based on your own agency.

Airtanker bases should also reference, Department of Homeland Security requirements, Transportation Security Administration (*TSA Security Guidelines for General Aviation Airports Information Publication A-001*) and appropriate individual state or local guidelines.

The security plan should reflect the needs of the geographic area and the type of operation in which you are engaged. Review with local law enforcement as needed.

Aircraft Security

It is generally the vendor's responsibility to provide for security of their aircraft. Follow contract requirements along with agency policy for securing aircraft while at an airtanker base.

The *SABO* is developed and maintained by the Interagency Airtanker Base Subcommittee (IABS), under the direction of the National Interagency Aviation Committee (NIAC), an entity of the NWCG.

Previous editions: 2015, 2011.

While they may still contain current or useful information, previous editions are obsolete. The user of this information is responsible for confirming that they have the most up-to-date version. NWCG is the sole source for the publication.

This publication is available electronically at <https://www.nwcg.gov/publications/508>.

Comments, questions, and recommendations shall be submitted to the appropriate agency program manager assigned to the IABS. View the complete roster at <https://www.nwcg.gov/committees/interagency-airtanker-base-subcommittee/roster>.

The IABS is responsible for maintaining the content of this guide in accordance with accepted standards of interagency procedures. The IABS will annually review and update the *SABO* as needed. Suggestions and comments can be submitted at any time at <https://www.surveymonkey.com/r/5CMTHFX>.

Publications and training materials produced by NWCG are in the public domain. Use of public domain information, including copying, is permitted. Use of NWCG information within another document is permitted if NWCG information is accurately credited to NWCG. The NWCG logo may not be used except on NWCG authorized information. “National Wildfire Coordinating Group,” “NWCG,” and the NWCG logo are trademarks of NWCG.

The use of trade, firm, or corporation names or trademarks in NWCG products is solely for the information and convenience of the reader and does not constitute endorsement by NWCG or its member agencies or any product or service to the exclusion of others that may be suitable.

This NWCG publication may contain links to information created and maintained by other non-federal public and/or private organizations. These organizations may have different policies from those of NWCG. Please note that NWCG does not control and cannot guarantee the relevance, timeliness, or accuracy of these outside materials.