U. S. Forest service
Jeffco Airtanker Base
Operations Plan
2014

JEFFCO AIRTANKER BASE

(Operations Plan - 2014)

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Table of Contents

Part 1: - Introduction to Jeffco
A. Objectives *Page 7*
B. Authority
C. General Information *Page 7*
1. Regional Organization. *Page 7*
2. Tanker Base locations in Region 2. *Page 7*
3. Air Tactical Organization/MAFFS *Page 7*
4. Prominent Landmarks in area. *Page 8/9*
5. Local Orientation flight. *Page 9*
6. Fuels & Fire Behavior Common to the area. *Page 9*

Part 2: - Organization and Responsibilities *Page 9*
A. Agency/Interagency Resposibilities *Page 10*
B. Air Tanker Base Personnel *Page 10*
1. Organizational Chart
2. Duties and Responsibilities

Part 3: - Administrative Proceedures *Page 10*
A. Forms and Reports *Page 10*
B. Contract Administration *Page 10*
1. Aircraft Contracting Organization *Page 10*
2. Retardant Contract *Page 10*
a. Responsibility and Proceedures. *Page 10*

3. Aircraft Payment Proceedures *Page 11*
a. Verification of flight times at home base and alternates
b. Schedule submission of flight use reports
c. Payment of Subsistance
d. Payment of Landing Fees and Airport use costs.

4. Availibility and Standby Requirements. *Page 11*
a. Pilot standby/availibility hours.
b. Off-Duty Scheduling and means of Contact.

5. Dispatch Reaction time requirements *Page 12*
6. Maintenace Scheduling *Page 12*
7. Liquidated Damages. *Page 12*

Part 4: - Base Facilities, Operations, and Dispatch. *Page 12*
A. Facilities
1. Equipment at the Base.
a. Parts and Equipment Storage *Page 12*
b. Maintance *Page 12*
c. Retardant Metering *Page 13*
2. Base/Ramp/Dispatch Communications *Page 13*
3.Lighting Equipment *Page 14*
4.Electrical *Page 14*

5.Flight Crew Accomodations and Facilities *Page 14*
6. Reference Library *Page 15*
7. Local Airfield Management *Page 15*
a. Regulations
b. Procedures

B. Operations *Page 16*
1. General
a. Base Operations
1. Washdown, Draining, and Spill Procedures
2. Holding Areas

b. Retartdant Dropping in Sensitive Areas *Page 17*
c. Retardant Disposal, (Jettison Area) *Page 17*
d. Retardant Operations
e.. Types of Retardant in Use
f. Off-loading procedures for delivered retardant *Page 18*

2. Retardant Testing Schedule and Procedures *Page 18*
a. Recirculation/Aeration of Retardant *Page 18*
3. Parking Procedures
a. Local Procedures *Page 19*

4. Pre-Flight Checks *Page 20*
a. Safe engine operation (Run up procedure)
Page 20
5. Loading
6. Fueling *Page 21*
a. Local Vendors *Page 21*
b. Procedures *Page 22*
c. Approved Fueling Areas *Page 22*

7. DEMOB/Releasing of Aircraft *Page 22*
a. Local Procedures

8. Tactical/ Lead Plane Organization Procedures *Page 22*

C. Dispatching Procedures *Page 22*
1. Dispatching Procedures *Page 22*
a. Resource Ordering *Page 22*
b. Overhead Orders
c. Supply Orders *Page 23*

2. Briefing and Orientation *Page 23*
a. Zones of influence *Page 23*
b. Sterile Cockpit *Page 23*

3. Communications *Page 24*
a. Local system *Page 24*
1. Base Stations, Repeaters, and VOR sights

2. Airfield and Base Communications
3. Frequencies, call signs, and identifiers
4. Lead Plane Communications and Procedures
5. Large Fire Communications Plan *Page 24*
b. Flight Tracking and Check in requirements. *Page 24*
1. Dispatch Priority
2. Startup and Cutoff times
3. Termination of Drop Activities

Part 5: - Safety *Page 25*
A. Airtanker Base Evaluations
1. Schedule and Procedures
B. Aerial Hazard Maps *Page 25*
1. Responsibility and Procedures for Update *Page 25*
2. Briefing on Airport Hazards
a. Turbulence (Winds Aloft, NOTAMS, Flight Weather Forcast,
and Flight hour Limitations.
C. Temporary Flight Restrictions/MTR's *Page 26*
1. Local Procedures
2. MTR Map
D. Crash-Rescue Planning and Equipment *Page 26*
1. Local Incident/Accident Action Plan.
2. Local Crash Rescue Equipment
a. Fire Extinguishers: Inspection and Location. *Page 27*
b. Local Organization and Responsibility *Page 27*
3. Single Engine/Engine Out Procedures *Page 27*
4. Emergency Fields *Page 27*
E. Hazard, Incident, and Accident Reporting *Page 27*
1. Local Procedures
2. Routing
F. Proficiency Flights *Page 27*
G. Dropping on or, near Congested Areas *Page 28*
1. Local Procedures *Page 28*
H. Landing with Full or Partial Load. *Page 28*
1. Local Contract Specifications
2. Runway and Ramp Wheel-Loading Capability
a. Allowable Takeoff Perfomance Chart.
I. Base Safety Items
1. Inventory

Part VI: Media Operations, and Visitor Policies. *Page 29*
1. Media Operations
2. Visitor Policies

Part VII: Airnet Base Units, Dispatch Centers, and Initial Attack Frequency Map.
1. Airnet/Airguard Units and Dispatch Centers *Page 29*
2. Initial Attack Frequency Map for Region 2 *Page 29*
(Ref- Pilot/Aircrew Orientation Packet)

Exhibits:
EX 1 - Jeffco Airtanker Base Telephone List
EX 2 - SAFECOM (FS 5700-14)

EX 3 - Base Safety Equipment
EX 4 - Prominent Land Mark Map
Ex 5 - SEAT Operational Safety Plan
Ex 6 - RETARDANT ORDERING PROCEDURES
Appendices: (Ask for separate attachments for Operations Plan.)
APP 1 – Job Hazard Analysis
APP 2 - Jeffco Airport/North Metro Fire Crash Rescue Plan,
Emergency Spill Notification Procedures/Overweight Agreement.
APP 3 - Airtanker Base Review (Abbreviated Version)

APP 4 – MAFFS Operations Plan

All other publications can be found in the Airtanker Reference Library by request.

Part I - Introduction

A. Objectives. *The objectives of this supplement are to:*

1. Define and standardize operating procedures at the Jeffco Airtanker Base in the Governments relationship with air tanker contractors and air tanker base personnel.

2. Through standardization, facilitate the activation of trained personnel during periods of high fire activity.

3. Provide checklists, orientation outlines, and special instructions for both contractor employees (Pilots/Mechanics) and government workers at the air tanker base.

B. Authority. *This local base supplement is a requirement at each air tanker base as prescribed in the Interagency Airtanker Base Operations Guide. The guide for Jeffco Tanker Base is designed to reflect local area operations.*

C. General Information.

1. Regional Organization. T*he Jeffco Airtanker Base Operations are supervised by the Arapaho/Roosevelt National Forest. The Jeffco Airtanker Base Manager/Assistant Manager, report to the FMO & AFMO with the Arapaho/Roosevelt NF. Funding for safety, standardization, and training is allocated by the Regional Fire Operations Specialist, to Bases as the funds are requested.*

2. Airtanker Base Locations in Region. *The Rocky Mountain Region has 4 primary air tanker bases and 1 secondary reload base. The bases are as follows:*

PRIMARY- (Contract Base)

Jeffco ATB	Broomfield, CO	USFS, R-2 Rocky Mtn.	303-439-0332
Grand Junction ATB	Grand Junction, CO	BLM, GJC Center	970-257-4800
Rapid City ATB	Rapid City, SD	USFS, Black Hills, NF	605-393-1364
Durango ATB	Durango, CO	USFS, San Juan/Rio Grande NF.	970-382-8070

SECONDARY-(Re-load Base)

Pueblo ATB	Pueblo, CO	USFS, Pike/San Isabell NF	719-545-1454

3. Air Tactical Organization. *Due to the aerial resources shortfall, Jeffco has not been assigned a contract airtanker. However, Jeffco ATB will be responsible for the management of an airtanker contract if so assigned.*

*The Jeffco Airtanker base may also host a Colorado State Forest Turbine Single Engine Airtanker **(SEAT)**. This Aircraft (**Air Tractor-802**) has the capacity of carrying up to 800 gallons of retardant. The SEAT is under contract with the State of Colorado for 60 days each year, typically in July and August.*

*This aircraft **(SEAT)** is used mainly in Colorado and can be propositioned, as needed. Repositioning needs are determined by Rocky Mountain Area Coordination Center. Jeffco Tanker Base has been able to maintain 8 air tankers at any given period. **<u>However, 5 air tankers are the best operationally for a two pit operation</u>**. Weight restrictions with the airport authority have been change per agreement with the airport authority. Operational weights for singles gear is, 78,000 lbs and dual gear are 130,000 lbs. Any aircraft operationally above the 78,000 lbs limit have take off fees submitted to the airport, and charged to the individual contractors. All charges will be entered into ABS system. See aircraft payment procedures paragraph 3, section D.*

*Jeffco ATB also has a exclusive use **Type1 Helitanker** that will be stationed at Jeffco ATB on a 180 day contract. All operations regarding the helitanker will falls under the responsibility of the helicopter manager. The helicopter manager and tanker base manager will coordinate in regards to dispatches, suppressant ordering, and overall logistics needed while stationed at Jeffco.*

As of 2012 Jeffco ATB is a designated MAFFS (Modular Airborne Fire Fighting System) reload base for the military. Any military C-130 can be operated at our facility. There base overweight agreements in place with the Rocky Mountain Metro Airport management. For more information contact the ATBM for the MAFFS operation plan.

4. Prominent Landmarks in the area. *The initial attack area to the west of Jeffco Airtanker Base is characterized by numerous small lakes, high mountains (Elevations over 14,000 ft), high meadows, Large Granite outcroppings, and numerous drainages. See Map under Exhibit 5, Jeffco Operations Plan.* Ask tanker base personnel for more detailed information as needed.

5. Local Area Orientation Flight. *At start of the fire season, during initial proficiency water drops, we will try to utilize the flight to illustrate some typical terrain to the pilots as well as a view of the prominent land features.* ***Be aware of possibility of erratic mountain winds***. **Flight hazard maps of the area are available in Dispatch.**

6. Fuels and Fire Behavior Common to the Area. *The Primary NFDRS fuel models vary greatly along the Colorado Front Range. The Front Range had 769 fires in 1996, and 394 in 1997. Lighting is responsible for 75% of the fires. The majorities approximately 90%, remain small, and less than a quarter of an acre, and do not require the assistance of retardant aircraft.*

T*he remaining 10% of fires are over a quarter of and acre, with 50% of those being over 10 acres in size. Most of the extended attack fires are contained successfully before the second burning period.*

Part II- Organization and Responsibilities

A. Agency Responsibilities. *The Jeffco Airtanker Base is managed by the Airtanker Base Manager. Tanker Base Manager also supervises the Assistant Tanker Base Manager.*

B. Airtanker Base Personnel. *The base has a Manager and Assistant Manager assigned during the fire season and off-season to perform various duties required to maintain the readiness for operations. When fire activity dictates the need, a Time keeper, Dispatcher,*

Mix Master, Parking Tenders, and Retardant Crewmembers (Loaders) are implemented to the ground crew.

1. Organizational Chart. *Is in accordance with Chapter 2, Interagency Airtanker Base Operations Guide, Personnel Exhibit II, Table of Organization*

2. Duties and Responsibilities. *The duties and responsibilities, of personnel at the Jeffco ATB, are described in Part 2, B, Airtanker Base Personnel: Duties and Responsibilities.*

Part III- Administrative Procedures

A. Forms and Reports. *The forms and reports used at Jeffco Airtanker Base are those described in Chapter 3, Interagency Airtanker Base Operations Guide Forms, Reports and Administrative Procedures.*

B. Contract Administration. *The Aircraft contract is issued by the USDA- Forest Service Contracting Office, located at the National Interagency Fire Center in Boise, ID.*

1. Aircraft Contracting Organization. *The Forest Service Contracting Officer is located in Boise, ID. The CO delegates contract administration responsibility to the regional Administrative Contracting Officer (ACO) in the Rocky Mountain Region Headquarters in Golden, Colorado. The (ACO) appoints the Contracting Officers Representative (COR) to be the local administrator to execute the provisions of the air tanker contract. The COR in-turn appoints Project Inspectors (PI) to assist in the day-to-day administration of the contract. The COR and PI are the personnel that normally interact daily with the contractor. The COR and PI, with help from the contractor, gather the information that provides documentation to support the payments, for services provided by the contractor. This is especially important if the aircraft is away from its home base. See Exhibit 2 (**SAFECOM**), Jeffco Operations Plan, Contract Contacts.*

2. Retardant Contract. *The retardant pumping operation at the Jeffco Airtanker Base is by Force Account (Employee Operated), as compared to a Full Service contract that provides the personnel for loading and mixing operations.*

a. Responsibilities and Procedures. *In a Force Account Operation the personnel that manage the base are responsible for maintaining a supply of fire retardant chemicals, keeping the chemical ready to be pumped, maintaining the base equipment, demand-mixing the retardant and pump in to the aircraft, and managing the aircraft traffic on the loading ramp.*

***b*. LAQA, Lot Acceptance and Quality Assurance**. *All retardant sampling will meet or exceed requirements as outlined, in NFES 1245 Sixth Edition – May 2000. For the 2005 fire season samples are to be sent in the following order: Base opening, truck load as needed, and end of season per WFC Labs Missoula base requirements. .*

3. Aircraft Payment Procedures. *The proper completion of flight payment documents is critical for the correct and timely payment to contractors.*

a. **Verification of flight times at home base and alternate bases.** *When the air tanker is at its assigned base, it is the responsibility of both parties (Government/Contractor) to record and verify the accuracy of flight times, and duty hours on proper forms, for subsequent payment. When the aircraft is working from an alternate base, the information must be passed back to the home base to insure proper credit for service rendered by the contractor. This can be done in one of 3 ways: (1) Home base personnel can call the alternate base and obtain the previous days flight and duty times, (2) The contractors designated representative (Pilot/Co-pilot) can call the home base and pass on the information, or (3) The management of the alternate base can send by facsimile (FAX), the information to the aircrafts home base, on the form (Individual Airtanker Flight Record) or a similar form.*

b. Schedule of Submission of Flight Use Reports. *Flight Use Report (FS 6500-122) shall be completed daily, usually for the previous day's activity. Frequency of payment shall be in accordance with the National Tanker Contract, Section G, and G.1.11 Payment Procedures*

c. Payment of Subsistence. *Payment of subsistence shall be recorded on the Flight Use Report (FS 6500-122), Block 26. The appropriate rate per night, according to Federal Travel Regulations (FTR), shall be paid for every night the authorized crew is assigned to an alternate base. A detailed explanation is located in, National Airtanker Contract, Section G, and G.1.10 Overnight Allowance.*

d. Payment of Landing Fees and Airport Use costs. *Unless there is a tie-down fee at an alternate airport, the only airport fees may be landing fees.* ***At the Jefferson County Airport, the FS is assessed a $50.00 landing fee for specific aircraft, based on overweight agreements. Landing fees are charged to the particular fire that the tanker is assigned.*** *Other airports may access fees, and payment shall be according to the information recorded on the Fixed-Wing Base Landing Fee Record form, found in the Interagency Airtanker Base Operations Guide. Fees are paid by the specific contractor and should be recorded on the flight payment sheet (FS 6500-122) in ABS.*

4. Availability and Standby Requirements*. Vary depending on the tanker base except for the requirement for 9hrs of availability, and 5hrs of standby time in a 14 hour duty day. The Jeffco Airtanker Base is on standby from 0900-1800 seven days a week starting April 15th of each season.*

a. Pilot Standby/Availability Hours. *Normal standby for the aircraft assigned to the Jeffco Airtanker Base will be 0900-1800 hours daily. Hours will be adjusted, to start earlier or later, depending on the fire danger and activity. See National Airtanker Contract, Section C, C.6.1 Flight and Duty Limitations. Availability will be paid and the day off shall be in accordance with the schedule of items in the National Airtanker Contract.*

Unavailability will be calculated according to the National Tanker Base Contract Section G, G.1.4, 5 in the. See section on Availability, Payment of Availability. Contractor will notify ATBM or acting of availability status.

b. Off-Duty Scheduling Means of Contact. *The contractor will notify Jeffco Base personnel of local address and telephone/cellular number. Other communications will be made by radio. See section C,C.6.1 (C), National Airtanker Contract, Flight and Duty Limitations and Section F, F.2 (5) (B) (3.) Return to standby.*

5. Dispatch Reaction Time Requirements. *Normal off times for dispatches is 15 minutes from the time of receipt of the order from dispatch. However, weather, fire behavior, or acts of god, may cause a reasonable delay in dispatch time. This will be in accordance with Section F, (B) (1.) Standby, National Air tanker Contract.*

6. Maintenance Scheduling. *Maintenance will be scheduled and accomplished according to the provisions in Section C, C.5.5, National Airtanker Contract, Aircraft Maintenance and Section F, F.2 (7), Authorized Breaks.*

a. **Unscheduled Maintenance**. Any major component change, structural damage or other maintenance as determined by COR, would require government A/P certification of airworthiness. *A request for a 1 hour maintenance break is authorized for minor repairs or safety checks on the airframe.*

7. Liquidated Damages. *Shall be determined by the ACO, after a claim is submitted by the contractor, and awarded automatically according to the Federal Acquisition Regulation, Clause 52.216-16,August 1989.*

PART IV Base Facilities, Operations and Dispatch.

A. Facilities.

1. **Equipment at the Base.** *The Jeffco Airtanker Base has the following equipment on the base. The base has a 25 HP Electric Powered Peerless 3in Pump (Pit 1), 30 HP electric motor with Monarch 4in pump, Portable Peerless 3in Pump that are designed to back up the main pumps. Also, on hand are 2 Homelite 4in Portable (gas) trash pump, 2 Honda 3in (gas) trash pumps,* ***36,000 gallons of liquid concentrate retardant storage****, 10,000 gallons of water storage, a ramp wash down collection facility (sand /oil separator) and a 4,000 gallon capture tank with disbursement pump. Jeffco is also equipped with at 4,500 gallon retardant download tank for aircraft.*

a. Parts and Equipment Storage. *Jeffco Airtanker Base has a 1800 sq/ft Warehouse. This house's all equipment needed to maintain ramp readiness and insure operations. Building also has another lounge and bathroom facility.*

b. Maintenance Responsibility. *The crews assigned to manage the Jeffco Base are responsible for the majority of the maintenance at the base. In the event, that maintenance required is beyond the capability of the base crew, a specialist will be located and services will be contracted for the job.*

c. Retardant Metering. Jeffco uses Micro Motion meters to measure the density and weight of retardant while loading air tankers for fire missions. These meters are very accurate, to ensure proper mixtures and to meet contract weight requirements. These meters are recalibrated and tested prior to every fire season.

2. Base/Ramp/Dispatch Communications. *Communications between the dispatch and ramp are done via radio or walk in Ramp/Dispatch Operations building. The base has VHF radios with headsets for use on the ramp. Jeffco ramp frequency 123.975, for ramp, timekeeping, and aircraft communications while on the ramp. Our ramp frequency may also be used to coordinate updated flight information as well as flight following. The ramp also has an outside public address system, to alert flight crews of an imminent dispatch. Air Dispatch will be flight following with Ft. Collins on 168.650, (**tone 110.9**) this frequency is also used for in-flight mission corrections/information. Automated Flight following is also in use for tracking aircraft movement. When a Resource Order is received for an air tanker, all radio frequencies, for the incident, will be noted on the original order.*

Air Guard frequency (168.625) is available for communications between the air tanker, dispatch, and ground forces for emergency purposes. After dispatch, communications will be according to the information found in Chapter IV, I.V.C.4. Communications, Interagency Airtanker Base Operations Guide

3. Lighting Equipment. *Lighting for security is provided by the USFS on the ramp. For night ground operations, the base has numerous portable light stands. Loading Pit number 1 is equipped with lighting for dusk operations.*

4. Electrical System. T*he electrical service on the ramp is 200 amps. This service provides electricity to all the pumps (2), GFI's located on the ramp, and to the pump remote switches. In the event of an electrical failure, 2 gas-powered pumps are available to load aircraft and a generator is available (from the R2 Fire Cache) to provide power to the ready room.*

5. Flight Crew Accommodations and Facilities. The *dispatch office is located in the SE corner of the Operations Building and has ramp access. This building is equipped, with male and female locker room, showers and bathrooms. This building has an office area, living area (pilot ready room), full kitchen facilities, laundry facilities, 2 Quiet Rooms, and a fitness room. Designated phone lines are in service for use for calls or Internet access*. **For transportation to accommodations and meals, this base follows the guidelines described in section G, G.1.10 (6) in the National Airtanker contract, under "LUNCHES" and Chapter**

4, IV.A.6 Interagency Airtanker Base Operations Guide. ***Jeffco Tanker Base will provide dinners to flight crews if placed on standby or if active fire operations occur after 1800 hrs.***

6. Airtanker Reference Library. *The air tanker reference library is located in dispatch area. Other information that may not be accompanied with the Operations guide can be found here or the base managers office. If there is specific information that is required, ask the Base Manager or the Assistant Base Manager for assistance.*

7. Local Airfield Management. *The Rocky Mountain Metropolitan Airport is run by the Jefferson County Council Government. Local Airport Management includes an, Airport Manager, and Assistant Manager, as well as an Operations Supervisor, and Maintenance Crew. They are responsible for most of the airport property, not occupied by tenants, including mowing and snow removal operations.*

The water system is under the City of Broomfield jurisdiction, and they are responsible for all the maintenance up to the water meter junction, from that point to the building, responsibility for other repairs is barred by the USFS.

a. Regulations. *Operations on the Jeffco base are in accordance with Forest Service Regulations. Additional regulations by the airport authority and the FAA govern some operations at the base. The airport authority governs local operations, mainly maintenance, since they own the property the ramp is built on. The FAA regulates flight operations, and the airport maintains security.*

b. Procedures. *Procedures at the Jeffco Base are in accordance with Forest Service Operational Handbooks:*

1. *Interagency Airtanker Base Operations Guide.*
2. *Contract Administration Manual*
3. *Health and Safety Code*
4. *National Airtanker Contract*
5. *Retardant Lot Acceptance and Quality Assurance Guide*
6. *Area Mobilization Plans*
7. *Pre-Dispatch Planning*

8. Incident/Accident Action Plan
9. Interagency Airspace Coordination Guide
10. Ramp Safety Plan, and others.

B. Operations.

1. General. ***Operations at the Jeffco Base are dependent on good communications, daily briefings, on-the-job training, and a demonstrated concern for safety. These key factors help in the safety and efficiency of the overall operation of the base.***

a. Base Operations. *Since the Forest Service is the primary operator of the Jeffco Base, the employees are responsible for ensuring compliance with local, state, and federal regulations pertaining to hazardous materials spillage containment and disposal.*

2. Wash down, Draining, and Spill Procedures. *The Jeffco base has a water system that parallels the underground retardant loading line to pit two. The water system is pressurized by the city of Broomfield water main that in turn feeds the 2, 1 1/2" water stanchions at each pit. The ramp is sloped to the trench drain located on the ramp.*
All wash down material flows to the drain and is collected into an underground storage tank (4000 Gallons). In the event of a spill the source is immediately identified and shut off.

Depending on the amount of material spilled, a wash down or recovery will be executed. A large spill will be recovered and placed into a 4000-gallon recovery tank in which time will be captured. A disposal provider will need to be contacted in order to haul off and dispose of product. A 5,000 gallon Sand/Oil Separator is in place for subsequent use. Small amounts will be washed down and diluted with water. To prevent spills, the standard procedure is to close all valves when ending a procedure and opening only those valves need to proceed with the next. A briefing is given to all involved in loading and ramp operations prior to any loading event.

If an aircraft is to be washed down after fire operations, ensure that ALL PERSONNEL with that aircraft keep the ramp clean.

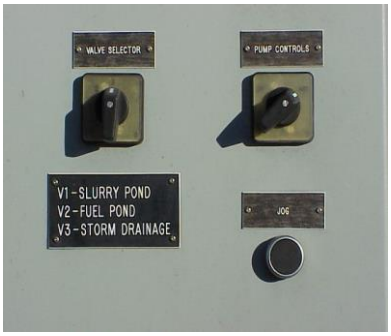
3. Holding Areas. *A 5000-gallon underground storage tank (sand/oil separator) is located off the ramp, to collect all wash down materials. The air tanker parking areas drain to and subsequently flow into the underground storage tank. The material collected is pumped out to 2 possible areas.*

a. Drainage Ditch to the rear of the base property ***(STORM WATER ONLY).*** This is classified as rain water, tank farm wash down, and any other storm water not having retardant or fuel spill from aircraft.

b. 5000-gallon Sand/Oil Separator is designed to safely dispose of

small washdown components thru the City of Broomfield waste water reclaimation system.

To pump to one of these tanks, the electrical panel by the wet well needs to be manually switched to the corresponding tank and the pumping route will be automatically switched below ground. The recovery tanks are marked with the corresponding valve configuration.



b. Retardant Dropping in Sensitive Areas. *Sensitive areas, within the Jeffco Base/Front Range Zone, will be clearly marked on dispatch maps. Sensitive area information will be requested from ordering dispatch offices, prior to dispatching the air tanker. Pilots will be alerted to possible sensitive areas in the vicinity of the incident. Sensitive areas that might be affected are, but limited to: Standley Lake/Great Western Reservoir (S/SW), City of Superior directly to the west-northwest, Several Subdivisions, streams, and misc structures in the area.* More information can be found under retardant avoidance guidelines from 2008. Ask base manager for this information as needed.

c. Retardant Disposal (Jettison Area). *The local jettison area is located northwest of the Jeffco Base on Coffin top Mountain within the boundaries of the Arapaho/Roosevelt National Forest. The site is located on Coffin Top Mountain @ N 40 11.92, by W105 21.35 which is 19.5nm at 317 degrees from the Rocky Mountian Metro VOR.* ***If identified jettison area cannot be reached, there is open space south and west of the airfield that could be utilized. The Pilot will immediately notify Ft. Collins Dispatch of Emergency Drop.***

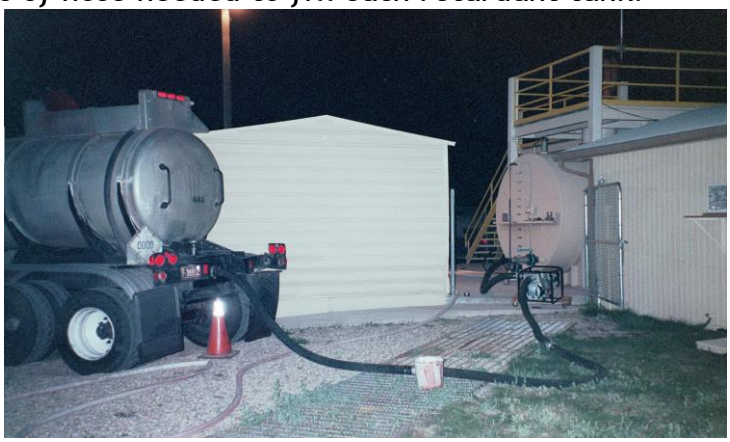
d. Retardant Operations. *Retardant Operations are governed by the standard operating requirements and procedures found in:*

1. **Lot Acceptance, Quality Assurance and Field Quality Control for National Fire Retardant Chemicals, (NWCG Publication, PMS 444-1, May 2000)**
2. **National Interagency Fire Center, (NFES#1245)**
3. **Interagency Retardant Base Planning Guide (NWCG pub,PMS 440-1Mar95)**
4. **National Interagency Fire Center, (NFES#1259)**
5. **Jeffco Tanker Base Operations Guide**
6. **Manufacturers product data.**

e. Type of retardant in Use. *The retardant used at Jeffco Base is "PhosCheck" LC-95A. See Lot Acceptance, Quality Assurance and Field Quality Control for National Fire Retardant Chemicals, (NWCG Publication, PMS 444-1, May 2000), for more information.*

1. Ordering Procedures can be done by calling the local dispatch center for a supply order number. Contact PhosCheck LLC, direct (See contact numbers) and ask for the Fire Duty Person,(He/She will need the resource order number, fire name and P-code. The person ording the retardant must fill out an AD-700 and submit it to Kim Luft, R2 Contracting Office via email or fax. Give a courtesy call prior to sending paperwork (303) 275-5405. Retardant is delivered in a 4000-gallon tanker truck, so make sure there is enough room in the tank for off-loading. Multiple Lots can be ordered. It needs to be decided if the load needs to be expedited, as it comes from Blackfoot, ID. It takes a good 12-24 hours for delivery of product, so try to anticipate delivery time. A minimum of "two" members from the air tanker base must be available to off-load the truck when it arrives.

f. Off-Loading Procedures of Delivered Retardant. *Jeffco Airtanker Base is a forced account base. Being a forced account base we have to off-load all delivered retardant. This requires the use of a portable pump, and various lengths of hose needed to fill each retardant tank.*



2.Retardant Testing Schedule and Procedures. *At the Jeffco Base the procedures for testing and sampling retardant will be as described in Lot Acceptance, Quality Assurance and Field Quality Control for National Fire Retardant Chemicals, (NWCG Publication, PMS 444-1, May 2000), for more information see pages 26-37.* ***Samples are sent via UPS to:*** Wildland Fire Chemicals 5785 Hwy 10 W., Missoula, MT 59802 (attn: Shirley Zylstra).

a. Recirculation of retardant. During the fire season and prior, retardant will have to be re-circulated. Jeffco Tanker Base uses a Liquid concentrated retardant **(LCA-95A)**.

Because of its content it will tend to separate into different layers if it sits for a long period of time. By aerating the mixture with high-pressure air, and the recirculation pump it allows the mix to stay in suspension **(non-settled)**. To accomplish this task

our base is equipped with a large diesel compressor with an attachment that is placed on the tank itself, and a 4 inch gas pump with recirculation system. **Before recirculation operations begin, get with a trained person to review procedures prior to any use of aeration equipment.**

b. High pressure air may be used to clear out retardant lines. This procedure is safe and expedient for personnel. This allows lines to be cleaned with out having to carry loaded hose to the top of the mezzanine level. *When using this procedure make sure that the off-load pump is not inline*. This will cause a positive pressure force in the pump housing causing the line to blow off when trying to bleed off the air. This only requires 2 personnel for operation.

3. Parking Procedures. *Parking will as described in Chapter IV, IV.B.4, Parking, Interagency Air Tanker Base Operations Guide, and Ramp Safety Plan.*

a. Local Procedures. *Pilots will be guided to parking by placing their nose wheels on either the solid yellow line or dash line into each pit. Deviations to this procedure could mean a possible collision with an immovable object or being too far away from the loading hose. All airtankers will follow national rotation policy of "first in", "first out" during any activity. At no time during the fire season will any small aircraft be parked in this area. Parking for transient small fixed wing aircraft is available on the Far East side of the ramp, just south of the hangar door.*

During times of high fire activity and when numerous aircraft are assigned to the Jeffco Tanker Base, (more than 4) additional parking will be arranged through the FBO-Denver Air.

Day off or Maintenance parking is on the General Aviation ramp controlled either by the airport or South of the main terminal by Denver Air. A security gate controls this area, and you must obtain a key or gain access through Metro airport authority. A ground guide is not required for this area but unnecessary activity must be kept to a minimum. Parking may be available on the Jeffco Tanker Ramp dependent on fire activity with permission from the Airtanker Base Manager. Additional operations regarding safety will be according to ***Appendix 2****, Ramp Safety Plan, and this supplement.*

4. Preflight Checks. *The pilot should accomplish the standard pre-flight checklist at the beginning of each duty day. The flight crew may start the engines, if they feel it is needed. The flight crew will also check radios and frequencies, Loran/GPS calibration, and a tank systems check.*

a. **Safe Engine Operations**. *When an air tanker has sat on the base for over a week, or times of cold weather will be allowed at their option, to start the engines, complete a run up, and ensure that they are working safely and efficiently.*

5. Loading. *The Airtanker Base Manager, Assistant Base Manager, Ramp Manager, Parking Tenders, and Loading Crews are the* ***ONLY*** *personnel permitted on the ramp during aircraft operations. The size of the ramp crew depends mainly on the amount of activity and number of air tankers working out of the base. Personnel that are in training must stay close to their primary trainer at all times when on the ramp. If there is a question* ***AT ANY TIME*** *regarding the loading of a particular air tanker, pilots or crew will be asked prior to commencing any loading procedures. During any operations ramp personnel will conduct a visual safety check. This insures that only authorized personnel are on the ramp and ramp safety procedures are being followed.*

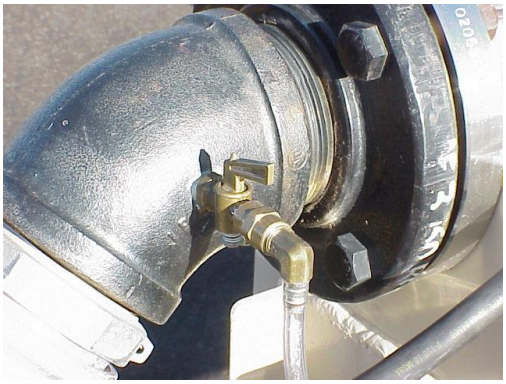
*The ramp crew shall wear hearing protectors, eye protection, and high visibility clothing. Loading crew clothing should contrast with the color of the parking tender to avoid the possibility of confusion. Boots with no skid soles are recommended (ie: light weight hikers, work boots, or safety boots.) for use on the ramp. Shorts are optional for ramp crews to cut down on heat related injuries from excessive physical activity. Loading of aircraft with engines running will not be permitted "****except****" when all personnel involved have been trained.* ***No Hot Loading of large air tankers are permitted. Only the S.E.A.T. is authorized to be hot loaded****. See* ***appendix F****, Retardant Hot Loading Procedures, IBOG.*

6. Retardant Mixing Procedures. Jeffco uses ICL LC-95A, Liquid Concentrate Retardant. This type is very easy to mix for proper proportions for a 5.5 ratio mix. A " **Y** " blender is used for our operation to mix retardant before going to the pumps.

This allows for manual control of the mixing valves for water and retardant. All fittings are color coded to aid in training and safe operations. The colors are as follows: Red- Retardant, Blue- Water, Green- Backflow preventers, Yellow valves w/red handles- Safety valves.

a. Aircraft Sampling. Located on each Micro Motion Meter is a sampling valve. By taking samples while retardant is begin loaded on the aircraft it gives better quality mix of retardant that is being sent to a fire. These samples are read by a refractometer they will show the salt crystal content in the mixture.

Mixtures should be between 12.8 and 14.5 centipoises, 13.6 is the ideal measurement. If we are not within these levels, we can adjust the blender accordingly to compensate the mixture. The Micro-Motion densities should be between 1.08 and 1.10.



7. Fueling. Fueling will be in accordance with Chapter IV, IV.B.7 (a-h), Fueling, Interagency Airtanker Base Operations Guide and Aviation Fuel Quality Control Program (USDA-FS publication May 1979), NFPA 407 (Aircraft Fuel Servicing, 1999 edition).

a. Local Vendors. The FBO (Fixed Base Operator) is Denver Air Center. They are the main source for aviation fuel at the Metro Airport. Both provide 100LL (Low Lead) and oil for

reciprocating engines, as well as Jet-A for turbine aircraft. For more information regarding updated fuel pricing and operations check out the web sight: www.airnav.com and select the KBJC ICAO.

b. Procedures. Fuel may be obtained one of two ways at the Jeffco Tanker Base. The flight crew may call in on Unicom, 122.95 directly to a fuel vendor, or call the base on 123.975, to relay requested fuel vendors prior to arrival.

c. Fueling areas. Airtankers may fuel on the Jeffco Ramp during the following times:

- **Prior to start of required duty day.**
- **End of each flight day.**
- **Only air tanker assigned to base.**

All other times fueling will be completed by the main terminal by either FBO vendor. This allows the loading pits to be open at all times during fire activity.

7. Releasing of Aircraft. *Release of aircraft will be in accordance with Chapter IV, IV.B.9, Releasing the aircraft, Interagency Airtanker Base Guide.*

a. Local Procedures. *If both pits on the Base are occupied, a wing-walker must be utilized to insure proper wing clearance of aircraft moving off the ramp, especially any aircraft moving out of pit #2.*

8. Air Tactical/Lead Plane Organization and Procedures. *Currently there is 1 lead plane assigned to Region 2. During the fire season, one is on standby seven days a week, usually paralleling the air tankers duty day. When tactical aircraft is needed, (ie: Air Attack) dispatch will attempt to locate one with the proper radio configuration, or one already on contract for the fire season.*

C. Dispatching Procedures, Briefings, Communications.

1. Dispatch Procedures. *Dispatch Procedures shall be as discussed in Chapter IV. IV.C, Dispatch Procedures, Interagency Airtanker Operations Guide. Dispatches for the Jeffco Airtanker Base will be through the dispatch center at Fort Collins. The Aircraft dispatcher filling out the resource order needs to contact the Airtanker Base Manager/Asst. Base Manager when an order is placed, to expedite the air tanker dispatch procedure. The ramp crew will then have time to notify the air tanker pilots, and the air tanker can be loaded and readied while the resource order is being finalized. Two copies of the Aircraft Resource Order are needed, One for the Base Manager and one for the Pilots.*

a. Resource Ordering: *Aircraft Resource orders for incidents on Arapaho-Roosevelt National Forest protected lands will originate at Fort Collins Dispatch.*

b. Overhead Orders*: Orders for Overhead resources to support operations at Jeffco will be placed via phone to Fort Collins Dispatch. The resource orders will be tracked on*

Form NFES 2213 or NFES 2214 (Continuation sheet). All fill information will be relayed from Fort Collins to Jeffco. Jeffco will relay all demobilization information back to dispatch. Dispatch will relay any reassignment orders back to Jeffco to be given to the employee. All travel arrangements are made and confirmed thru Ft. Collins and passed via fax to Jeffco Operations.

c. Supply Orders: *Request order numbers for supplies and equipment through Ft. Collins Dispatch or area of response dispatch centers. They will be placed by the Airtanker Base Manager or Asst. Base Manager. The Supply/Equipment resource orders will be tracked on Form NFES 2215 or NFES 2216 (Continuation sheet). When possible, supplies and equipment can purchased through local vendors using established purchasing procedures.*

2. Briefing and Orientation. *The Assistant Base Manager is responsible for covering area's of safety during the pre-work conference for aircrews and safety information needed during a dispatch.* Morning briefings will address the following:

- ***Departure Routes***
- ***Know Flight Hazards to Fire Area***
- ***Jettison sights***
- ***Local procedures***
- ***Altitudes***
- ***Flight weather***
- ***Frequencies for fire communications***
- ***Flight following***

Information for the complete (pre-work conference) pilot briefing is found in **Appendix 1**, *Jeffco Base Pilot Briefing Guide, Jeffco Airtanker Base Operations Plan.*

a. **Zones of Influence.** *The immediate initial attack area for the Jeffco Airtanker Base is the entire Colorado Front Range. Extended dispatches for the air tanker for initial attack occur due to the sparse availability of other air tanker bases throughout the region. Long dispatches for the air tankers frequently occur, their typical turn around times are over an hour.*

b. **Sterile Cockpit**: *"Limiting communications and actions within the cockpit to only those required for safe manuvering and traffic separation".* This means communications with Dispatch, ground personnel and other aircraft concerning mission information is prohibited. (cont. pg 18)

Pilots will be afforded the opportunity to manuever the aircraft safely at all times without undue physical or mental interference. This is especially important during approach/departure and take-offs/landings. **A sterile cockpit will be maintained within a 15 mile radius of controlled and uncontrolled airports.**

3. Communications. Communications shall be as described in Chapter IV, IV.C.4, Communications, and Interagency Airtanker Base Operations Guide.

a. Local System.

1. Base stations, Repeaters and VOR sights. The aircraft base station is located in the Ramp Operations building. Currently there is not a repeater in use in conjunction with this base unit. The Jeffco VOR is located on the Rocky Mountain Metropolitan Airport.

2. Airfield and Base Communications. The Rocky Mountain Metropolitan Airport is Class "D" controlled airspace. Hours of operation are 0600-2200 daily. The assigned flight service station is Denver. Communications with the dispatch center are on VHF-FM radio or with the tanker base on VHF-AM radio, or by telephone.

3. Lead plane Communications and Communication Procedures. A lead plane is required to accompany a mission where two or more air tankers will be over the fire at the same time, if the air tanker pilot is not initial attack rated, if the fire is in a congested area, is requested by the air tanker pilots, or if MAFFS are ordered and activated for the incident. The local air tactical frequency varies depending upon which state and which zone you may be flying in. A map of these frequencies and zones is posted in the ready room, with copies for each air tanker. Flight following is 168.650. When the lead planes are assigned to an incident, the pilot will be identified by a predetermined call sign, (ie: Lead 21 or Lead 77 etc.) Lead planes will contact the requesting unit dispatcher upon arrival and upon departing, if an Air Tactical Group Supervisor (AGTS) is stationed over the fire, communications from the dispatch center/air tanker base, will be directed to that person, who will in turn relay the information to the lead plane pilot. If there is no ATGS over the incident, the lead plane pilot will be the direct air tactical link.

4. Large Fire Communications Plan. If the Jeffco base is the main base utilized on an extended attack incident, an Incident Action Plan (IAP) will be obtained, daily, for the morning briefings of all tactical aircraft flight crews. Communications information will be obtained from the ICS 205 form, Incident Radio Communications Plan, that is located within the IAP. These are faxed to Jeffco Tanker Base prior to start of next duty day. A complete IAP will be distributed to ATGS, Air Attack, and Lead planes.

a. Flight Tracking and Check-In Requirements. At the contract pre-work meeting, flight crews will be advised of required check-in procedures, while in flight. Aircraft operating out of Jeffco or any incident will check in and flight follow with dispatch unless other arrangements have been made and approved by Fort Collins Dispatch. All aircraft will be monitored via AFF. (Automated Fight Following) The sending unit has the responsibility to forward the flight information on the air tanker to the receiving unit. The flight crew has the responsibility to check-in, upon arrival, at their destination.

1. Dispatch Priority. Will be according to Chapter IV, IV.C.5 (a-c), Dispatch rotation and Priority, Interagency Airtanker Base Operations Guide.

2. Startup and Cutoff Times. Will be according to Chapter IV, IV.C.6. (a-b), Airtanker Dispatch Limitations-Startup/Cutoff Times, Interagency Airtanker Base Operations Guide.

3. Termination of Drop Activities. Will be determined by the aerial supervisor over the incident, or Incident Commander using the cutoff time guidance in conjunction with the actual visibility.

PART V - SAFETY

A. Airtanker Base Evaluations. Shall be according to Chapter V, Interagency Airtanker Base Operations Guide, V.B.1-2., Airtanker Base Evaluations and Appendix G, Airtanker Base Readiness Evaluation and the abbreviated form found in Appendix 3 of this plan.

1. Schedule and Procedures. The evaluation is usually scheduled to coincide with the air tanker pre-work conference, held on June 16th. This is usually accomplished by the R-2 Fire Operations Specialist or a designated representative.

B. Aerial/Flight Hazard Maps. Are developed according to Chapter V, Interagency Airtanker Base Operations Guide, V.C.1-3., Aerial Hazard Maps.

1. Responsibility and Procedures for Update. The Airtanker Base Manager or Assistant Base Manager has the responsibility to update this yearly, reflecting changes and new aerial hazards. For adjacent initial attack lands, the base manager should solicit those land managers for aerial hazard information that can be incorporated onto the base map.

2. Briefings and Airport Hazards. The Base Manager or other personnel by direction, is responsible for the gathering of airport hazard information for the subsequent dissemination to the flight crews. This information can be obtained from the office of the Metro Airport Manager. These may also be located on the NOAA web sight. (www.noaa.gov) They have listings for all aviation type NOTAMS, which can be selected a single ICAO or, by radius to a particular area from their website. This information is briefed to the Flight crews currently assigned to the Jeffco Base. Copies of this information are also posted on the main bulletin board in the Pilots Lounge. As hazards change or are eliminated, the Base Manager will brief the flight crews accordingly.

a. **Turbulence, Wind and Time of Day Limitations on Flight Activity.** Information on turbulence will be obtained from pilot reports of such activity, when going to, over, or returning from a fire and relayed to other flight crews working from the base. Additional information will be obtained from the control tower, and the following web site:

Aviation Digital Data Service: www.adds.com (Best sight)

Flight restrictions during high wind events will be obtained from the flight crews and relayed to dispatch. Time of day flight activity limitations will be obtained from either the ATGS or the Airtanker Supervisor (Lead plane Pilot).

C. TFR's/MTR's. Temporary Flight Restrictions (TFR) will be according to the provisions in the Interagency Airspace Coordination Guide. Military Training Routes, in the area, will be monitored via the AP-1B, Military Training Routes Handbook. Current versions are available in dispatch by request, and in the pilots lounge.

1. Local Procedures. In the event that an Incident Commander requests a TFR, the request form in the Interagency Airspace Coordination Guide, is filled out by the dispatch center, with the appropriate information, and passed on to RMACC. The Denver ARTCC (Air Route Traffic Control Center) is contacted, by Rocky Mountain Area Coordination Center (RMACC). After the information on the request form has passed on the ARTCC, they will give the caller a TFR (Temporary Flight Restriction) number, that the dispatch center will place on a resource order (AIRCRAFT) to document the TFR. After the emergency ceases to exist, the TFR will be cancelled.

2. MTR Map. The tanker base will possess and update the current map illustrating Military Training Routes that traverse the Initial Attack Area. It will be updated/issued regularly by IAMS. When the TFR is cancelled, the map symbol will be removed if necessary. This information will be noted on the Aircraft Resource Order, and briefed to flight crews. MTR maps are located in the pilots lounge and in the Jeffco ATB dispatch.

D. Crash-Rescue Planning and Equipment. Shall be in according to Chapter V, V.E.1. Crash Rescue Planning and Equipment, Interagency Airtanker Base Operations Guide.

1. Local Incident/Accident Action Plan. The local plan will be as described in the Rocky Mountain Region, Aircraft Crash, Search, and Rescue Guide and FSM 5720. Crash Rescue procedures for accidents occurring within the local I/A area, away from the Jefferson County Airport, are described in the Forest/Unit/Incident/Accident response. *Copies of these plans shall be made available upon request.*

2. Local Crash-Rescue Equipment. Currently Jeffco Airport has a Titan II, Titan III, and Oshkosh Crash Rescue rigs located on the airport. These engines are currently located at the Jeffco Airport throughout of the year. North Metro Fire department has a mutual aid agreement with the airport. They will send 3 engines, 1 ambulance, and 1 Battalion chief to coordinate crash/rescue incidents.

a. Fire Extinguishers: Inspection and Location. Fire Extinguishers on the base are inspected on a yearly schedule. The base has 2 100lb PKP Dry Chemical Extinguisher. (One at each loading pit) The Base also has a minimum of 5 20lb ABC extinguishers located strategically throughout the ramp area.

b. Local Organization and Responsibility. In the event of an on/off field accident or fueling mishap, the Aircraft, Crash, Search and Rescue Guide will be followed. If there is an accident/incident, "**ALL EMPLOYEES**" have the responsibility of notifying the Airtanker Base Manager. The Base Manager & Dispatcher will contact the local fire department, ambulance service, organization with SAR responsibility, or Regional Aviation Safety Officer. If the dispatcher does not know that an incident has occurred on the ramp, it is the responsibility of the Ramp Manager to notify the Dispatcher, who immediately notifies the appropriate emergency response. Contractor responsibility shall be according to Section C, National Airtanker Contract, C.7.4. (1-6) Accidents, Incidents.

3. Single Engine/Engine Out Procedures. Shall be in accordance with the manufacturer or FAA approved procedures. Section C, National Airtanker Contract, C.7.2 (3), Takeoff and Landing, shall govern these operations.

4. Emergency Fields. There are numerous small paved and unpaved airports within the zone of influence of the Jeffco Airtanker Base. Rather than list them, pilots should make a decision, during a bonified emergency, where they can go, or an airport that they can reach. Information may be obtained from the aeronautical sectional charts, WAC charts, airport facility directories, and Flight Guide, as to location, length and surface. Closest airport to the current location of the aircraft is programmed into most of all Global Positioning Systems (GPS) receivers.

E. Hazard, Incident, and Accident Reporting. Hazard, Incident, and Accident Reporting shall be in accordance with Chapter V, V.F.1-5. Interagency Airtanker Base Operations Guide as outlined in FSM 5720. The form to be used is the new USDA/USDI SAFECOM, FS 5700-14 (OAS-34). See exhibit 2. **SAFECOMS** may be reported and sent on-line at the following web address:

www.aviation.fs.fed.us ***(Click on SAFECOM Icon, for all incidents)***

1. Local Procedures. It is the responsibility of any individual who observes or who is involved in an aviation incident or accident to report the occurrence at time of incident, as a "heads up" to the Regional Aviation Safety Officer. A hard copy or electronic copy of a SAFECOM should follow within 48 hrs. Circumstances of the Hazard, Incident, and

Maintenance Deficiency should be discussed with the pilot, if possible, and the form initiated, the pilot has the responsibility to report the incident on the SAFECOM form.

2. Routing. The form should be sent to the Regional Aviation Safety Officer for subsequent distribution to the Regional Aviation and Training Officer.

F. Proficiency Flights. Proficiency flights shall be in accordance with Chapter V, V.G.1, Proficiency Flights, Interagency Airtanker Base Operations Guide, and Section J., Exhibit 9, Proficiency Guideline Checklist, National Airtanker Contract.

G. Dropping On or Near Congested Areas. Shall be in accordance with Chapter V, V.H., Dropping On or Near Congested Areas, Interagency Airtanker Base Operations Guide and Chapter II, II.J.1. (a-c), Congested Area, Interagency Airspace Coordination Guide, Appendix 3, Text of FAR Part 91.119 and USDA/DOI of FAR Part 91.119, 5714.11, Grant of Exemption No. 392, and Appendix 3, Text of FAR Part 91.119 and USDA/DOI Exemptions to 91.119, USDI Guidance on Exemption 3017 from FAR 91.119 (Congested Area Operations).

1. Local Procedures. It is a local procedure, because of the growing complexity of local urban interface areas, various rural fire departments, numerous radio systems, numerous jurisdictions, local populace interference, numerous aircraft, etc., to order a lead plane with every air tanker order. As the complexity grows or as determined by the air tanker coordinator (Lead plane Pilot), an Air Tactical Group Supervisor (ATGS) will be assigned.

H. Landing with Full or Partial Load. Landing with a full or partial load operations shall be in accordance with, Section C, C.7.2. (3) (C), Takeoff and Landing, National Airtanker Contract, and Load bearing weights/agreements with the Rocky Mountain Metro Airport Authority.

1. Local Contract Specifications. Air tankers shall land with their contracted load onboard unless legal landing weight or airport limits will be exceeded. If there is an emergency or when adverse conditions make safe landing uncertain, the pilot is allowed to drop the load. Landing loaded is not allowed at Jeffco due to weight bearing restrictions limits.

2. Runways and Ramp Wheel-Loading Capability. Wheel loading capabilities at the Jeffco Airport are: 75,000 lbs for single wheel, and 130,000 for dual wheel (Tandem). Landing fees are in place for non-exempt aircraft. These fees are paid by the government and are not incurred cost by the contractor.

Perfomance charts exhibit has been removed

I. Base Safety Items.

1. Inventory. See Exhibit 3.

Part VI: Media Operations, and Visitor Policies.

1. Media Operations. During high fire situations, media tours are frequently asked for. Typically the media is present when activity on the ramp is high. Media personnel, or any other non-authorized personnel, must always be escorted either by base personnel, including tanker pilots, or agency public information officers. It is a good idea for a knowledgeable base person to be on hand to provide correct information, as many times air tanker operation information is not known by public information officers. Air tanker operations ***will not*** be held up for any media operations. ***Fire Missions are the highest priority*** and the media will be accommodated when time is available. If problems persist with Media personnel contact the Base Manager or Assistant Base Manager to resolve further issues.

2. Visitors Policies. Rules governing air tanker visitation can and should be made to fit the size of the group, and whether the pilots can accommodate these groups according to their company policies. Requests for large groups should be made at least 24hrs in advance. It is forbidden for anyone to enter the plane without the consent of the pilot or co-pilot. Due to changes in National Security policies any ***UNAUTHORIZED*** personnel will not be permitted on the ramp or near operations. Visitors may be given tours during periods of non-operations. There is NO SMOKING allowed on the ramp. During fire operations people tend to gather around to watch the planeload and depart. It is a must that they remain behind the blast fence or designated safety area. Safety must ***NEVER*** be compromised for any reason.

PART VII: AirNet Base Units, Dispatch Centers, Initial Attack Frequency Map.

1. AirNet/Airguard Units and Dispatch Centers: Within region 2 there are 10 communication centers. These centers monitor 168.650 (Net) and 168.625 (Guard) for all aircraft in transitioning their area of operations.

Colorado Centers:
FTC- Fort Collins Interagency Dispatch Center
PBC- Pueblo Interagency Dispatch Center
CRC- Craig Interagency Dispatch Center
GJC- Grand Junction Interagency Dispatch Center
MTC- Montrose Interagency Dispatch Center

Wyoming Centers:
CDC- Cody Interagency Dispatch Center
CPC- Casper Interagency Dispatch Center
RWC- Rawlins Interagency Dispatch Center

South Dakota/Nebraska: GPC- Great Plains Interagency Dispatch Center

(See Dispatch or Pilot/Aircrew Orientation Guide for Frequency Map)

Exhibit 1

Jeffco Airtanker Base Telephone list

Airtanker Base Personnel:

Robby Cline (acting) Base Manager……....(303) 439-0332

Cell……(303) 941-6359

Asst. Manager……..……...(303) 439-0332

Cell……

Jeffco ATB Dispatch/Ramp……..…….….(720) 887-4846

Fax…….……..(720) 887-4769

R2 Aviation Operations Fax…..…….……..…(303) 439-0401

Fort Collins Dispatch:

Geoff Bell, ARF FMO……..……...…
(970) 295-6631

Cell…….(970) 217-9814

Allyn Herrington, Dispatch Manager ……..…(970) 295-6830

Dispatch Direct Line……..……....…(970) 295-6800

Dispatch Fax……(970) 295-6801

GACC/Rocky Mountain Area Coordination Center:

Coordination Main Number……(303) 445-4300

Jim Fletcher, Center Manager…….(303) 445-4302

Aircraft Dispatch……..……...(303) 445-4317
Overhead Orders……..……(303) 445-4311 or 12
GACC Fax……..……...(303) 445-4319

Contracting Contacts:
Colleen Hightower, National Airtanker Contracting Officer (Boise)
(208) 387-5610
Kim Luft (RO) Contracting Officer, ……(303) 275-5405

Forest Safety, & Regional Aviation Contacts:
Mark McFall, Regional Safety Officer…….…(303) 275-5312
Matt Clementi ARNF Safety Manager……....(970) 295-6672
Sandra LaFarr RAO……..……...(303) 275-5740

Cell.…….…….(303) 886-2124
Kent Hamilton RASO……..…….(303) 275-5711

Cell…….…….(720) 480-0495

Metro Airport Personnel:
Airport Manager, Ken Mempa……..……(303) 271-4850
Jeffco Operations Manager, Brett Miller…...(303) 271-4861
Jeffco FAA Tower, Liz Meyer Mgr ……..…..(720) 633-8600

Operations……..(720) 633-8610

Denver Center
Approach…….....(303) 432-1590

(303) 342-1916

Phoscheck LLC, Retardant Contractor:
Bernie Post, phoscheck Rep…….……(719) 539-3557
home

(970) 222-8698 Cell

Main Office (Orland,CA)……..(909) 983-0772
(ask for fire duty person)

Ordering/Shipping 24 hr (Blackfoot, ID)……..(800)
682 - 3636

Exhibit 2

Safety Communiqué Form

This form is used to report any condition, observance, act, maintenance problem, or circumstance which has the potential to cause an aviation-related mishap. Submitting a Safecom is not a substitute for on-the-spot correction(s).

SAFECOM
AVIATION SAFETY COMMUNIQUE

Reported By *(Optional)*

Name

E-Mail

Phone *Office*

Cell Phone

Pager

Organization Other

Date *mm / dd / yy*

EVENT

Date *mm / dd / yy* Local Time *24 hour clock* Injuries? Damage?

Location *Airport, City, Lat/Long, or Fire Name* State

Agency Invloved Other

MISSION

Type Other

Procurement Other

Persons Onboard Special Use? Hazardous Materials Onboard?

Departure Point Destination

AIRCRAFT

Tail Number Manufacturer Model

Owner/Operator Pilot

CORRECTIVE ACTIONS

Submit Instructions:

1. Review and correct entries
2. Select a Send to Agency
3. STOP !! If you want a copy of this Safecom you must Print NOW.
   To Print this Safecom, use the **Print** button on your web browser.
4. LASTLY press the **Submit** button.

Reset **Send to Agency:** Submit

Exhibit 3

Base Safety Equipment

A. Base Safety Items:

1. Eye protection
2. Hearing Protection
3. Protective Coveralls
4. Gloves
5. Permanent Ladders and Safety Railings on all walkways and tanks.
6. Skid proof paint has been applied to appropriate walkways
7. Pump shafts are guarded.
8. All electrical equipment is properly grounded
9. No Smoking signs have been posted
10. Hearing Protection Required signs are installed
11. Emergency Eye/Wash Down Station Installed
12. Retardant Washdown procedures in place.
13. Tripping Hazards marked
14. Heavy Lifting aids in place (Forklift)
15. Gates & Fences Restricting Unauthorized Access

Exhibit 4

Prominent Landmark Map
Of
The Colorado Front Range

SEE FLIGHT HAZARD MAPS LOCATED IN DISPATCH AND PILOTS LOUNGE.

Exhibit 5

SINGLE ENGINE AIRTANKER OPERATIONS
At Jeffco Airtanker Base

A. Introduction
SEAT operations from large airtanker bases are permitted **if** the base has an approved Single Engine Airtanker Operations Plan in place. SEAT operations from Jeffco can be temporary in nature or extended events epically early on in the fire season. Large airtanker bases reload SEAT's primarily when the airtanker base is in close proximity to a fire where support is relatively brief. SEAT operations in conjunction with large airtanker operations should be kept to a minimum.

The following provides guidelines to the safe operation of approved SEAT's from Jeffco

B. Authority
Policy applicable to SEAT operations can be found in the Forest Service Manual, Bureau of Land Management Departmental Manual, Fire Operations Handbook and Interagency Airtanker Base Operations Guide. The primary direction for SEAT operations is found in the Interagency Single Engine Airtanker Operations Guide. All publications available in the Base Dispatch Office.

The Jeffco SEAT Operations Plan is supplemental to the above direction and provides specific direction for the Jeffco ATB, local information and procedures.

C. Approvals
The SEAT operations portion of the Jeffco operations plan must be approved by the Forest FMO/ FAO prior to SEAT operations taking place.

D. Risk Assessment
Consult the Job Hazard Analysis located in APP #1,for hazards associated with SEAT operations.

E. Base Personnel Qualifications

Personnel considered qualified in SEAT operations at the base will have had:

1. Prior training in local SEAT operations conducted by personnel holding current SEAT loading qualifications.

2. Will be qualified to hot load. Base personnel must have specific training in hot loading procedures.

3. Practical experience loading a SEAT under the supervision of a person qualified in SEAT loading operations at Jeffco ATB.

All classroom and on-the-job training will be documented for each employee in the personnel training files located in the Base Dispatch Office

F. Coordination
Prior to operating from Jeffco ATB, a qualified SEAT manager should coordinate with the ATBM to annually review and revise this plan. *(Ref. ISOG Chapter 2, a, b)*

The SEAT manager (SEMG) of the operating airtanker will be in constant contact with the base manager to provide verification that SEAT policies and contract provisions are adhered to. While the SEMG's responsibilities are not delegated to the ATBM, the airtanker base with coordination and concurrence of the SEMG, may provide many of the logistics needs of the SEAT prior to the SEMG's arrival.

These needs may include and are not limited to:

- Conducting briefings
- Regulating aircraft movement
- Providing base communications
- Monitoring loading
- Ensuring retardant quality control
- Monitoring fueling
- Aircraft Timekeeping
- Providing retardant and water
- Providing rest and shaded areas
- Providing ground transportation, food and lodging

Base personnel will provide the SEMG with contact frequencies and procedures for the SEAT and support vehicle to follow when they initially arrive at Jeffco (if applicable)

G. Required Personnel
Personnel **required** to load SEAT's at Jeffco ATB are:

1. Loading (Hot or Cold) in the Pits

a. Pilot
The pilot must monitor loading and load level.

b. Parking Tender
The agency parking tender must monitor the entire operation area.

c. Loader
The loader must operate the hose, valves and monitor load level.

d. Mixmaster
The Mixmaster is necessary to monitor quality control and metering.

H. Dispatch
Dispatch procedures for single engine airtankers are to be the same as Large Airtankers outlined on pg. 22.

I. Communications
Communication procedures are outlined on page 24 and are to be the same as for Large Airtankers,

J. Receiving Aircraft and Briefing

1. Upon arrival
The pilot should make initial contact with Jeffco approximately 10 minutes out on VHF 123.975 to report mission and describe intentions and needs.

Prior to taxiing in to the ramp area, the pilot will contact the ramp manager or parking tender on 123.975 to be directed to the appropriate loading pit or parking area.

1. Initial Arrival Each Operational Period

a. Base Crew Briefing
Upon the SEAT's initial arrival at Jeffco, the pilot will shut down and conduct a one-on-one briefing with the base personnel who will be involved in SEAT operations.

b. Vendor Briefing
If not conducted prior to the beginning of the fire season, the SEAT contractor personnel (pilot and loader) will receive a briefing from airtanker base personnel on subjects including but not limited to:

1. Ramp parking and traffic flow,
2. Retardant and fuel loading procedures
3. Communications and dispatch procedures
4. Base safety, emergency and crash-rescue procedures.

K. Ramp Operations

1. Operation from Primary Loading Pits
Operating SEAT's in the loading pits is acceptable. Adequate separation is maintained due to the nose-to-tail parking arrangement. It is preferable to hot load SEAT's in pit #1 in order to ensure positive visual contact with all personnel.

L. Loading
SEAT's are loaded using the same pump that is used for Large Airtankers. The pumps flow approximately 450 gals per min. Loading SEATS will occur fast, average time to load a SEAT is 2.5 – 3 mins. In order to not "pin down" the float in the hopper the Mixmaster will load the first 1000 lbs. with the pump valve half open. After the 1st 1000 lbs. is on the aircraft the Mixmaster will open the valve to the full open position.

Pilots should be briefed upon arrival that after the pump is shut down there will be a residual of 50gals that will make it into the tank before the valves can be closed, and they should plan accordingly.

The loader should watch the pilot for the shutdown signal and monitor the radio for the shutdown call from the Mixmaster. Loading will cease when either the pilot or Mixmaster (whichever comes first) says the correct load has been reached.

M. Metering and Quality Control
The Mixmaster will monitor quality control of the retardant during loading. At least one refractometer reading will be taken for each load. The sampling valve location is on the discharge side of the MicroMotion Meter. Additional quality control will be by monitoring the MicroMotion Meter to ensure that the retardant is the correct mix and weight. The Mixmaster will monitor the weight of the load and signal to the loader to shut down the loading operation when the appropriate load is reached if the Pilot has not already done so.

As required in the ISOG, the Mixmaster must provide copies of the loading documentation to the SEMG.

N. Hot loading
Single Engine Airtankers will only be hot loaded if all of the following criteria are met:

1. The base SEAT Hot Loading Plan is current and signed by the Forest FMO/FAO.
2. The pilot must be present and in the cockpit to monitor loading.
3. A ramp manager or parking tender must be present to monitor the operations. A Mixmaster must be present to monitor the retardant quality control and metering.
4. The loader, Mixmaster, and parking tender must have had previous base-specific training in SEAT hot loading operations.
5. The loader, pump operator, Mixmaster, parking tender and pilot must have conducted the initial briefing as outlined above.
6. All personnel involved in hot loading must maintain positive radio and or hand signal communication.

1. Receiving the aircraft for hot loading

a. After being directed to the appropriate loading pit the pilot will place the propeller in ground idle "flat pitch".

b. The ramp manager / parking tender remains in front of and to the side of the aircraft being loaded and in full view of the pilot and loader.

c. The ramp manager / parking tender will insure that the area is safe.

d. The ramp manager will signal by radio and/or hand to the loader to approach the aircraft.

e. If un-necessary or unexpected personnel or equipment is observed approaching the aircraft the ramp manager / parking tender will signal the pilot to shut down the engine.

2. Loading

a. All personnel involved in the hot loading process will remain in positive radio communication throughout the operation.

b. Loaders will approach the aircraft from the rear of the wing.

c. Loaders will start loading operations when the pilot indicates that all is ready.

d. The pilot and loader will monitor the tank loading visually while the Mixmaster monitors the metering and quality control of the load. The pilot or loader will signal for shutdown when load capacity has been reached.

3. **Communication Loss**

a. If radio communications are lost by any person involved in the hot loading operation that person will secure eye contact with the ramp manager / parking tender and tap their headset followed by a thumbs down signal. The ramp manager or person with an operating radio will inform the others of the individual's radio loss.
b. Hand signals may be used to continue and finish loading provided that the pilots' radio is still functional.
c. If a situation occurs requiring engine shut down the Ramp Manager / Parking Tender will notify the pilot by radio or by hand signal.

4. **Releasing the Aircraft**

a. The loader will disconnect the loading hose and move away to a safety area.

b. The parking tender / ramp manager will signal the pilot by radio and/or hand signal when the loader is clear and the aircraft is free to exit the pit.

O. Vendor Operations

1. Separate Location for Support Equipment
The paved area north of the Helicopter landing pads can be used to park/ stage the SEAT support truck and trailer. The airport management does allow contractors to fuel themselves. The local FBO should be contacted and the Contractor and FBO must reach an agreement to Fuel Flowage fee, Direct Purchase/ Reimbursement, etc.

In this scenario the agency ramp manager will retain full control of the ramp and pit areas.

P. Fueling
Fueling may occur in any pit or at the Helicopter pads if it is available. **Loading and fueling will not be done simultaneously. No Exceptions.**

1. Hot Refueling
Hot refueling or fueling with the engine running is approved only when operating from the helicopter pads and only if the aircraft and support unit are properly equipped

Q. Required PPE
Consult the base Job hazard Analysis for personal protective equipment required for SEAT operations, APP #1

R. Emergency Procedures
Follow the emergency procedures outlined in the Jeffco Airtanker Base Emergency Response Plan,

S. Security
Security procedures are as outlined in the Jeffco Airtanker Base Security Plan,

Prepared by: ___William R. Cline____ATBM_____ Date: 3-18-2013_____
ATBM

Approved by: _____ Date: _____
Forest FMO/FAO

Approved by: _____ Date: _____
Region 2 Representative

U.S. Department of Agriculture Forest Service	1. WORK PROJECT / ACTIVITY **FIXED WING / AIRTANKER OPERATIONS**	2.LOCATION **Jeffco AIRTANKER BASE**	3. UNIT **Arapaho & Roosevelt NATIONAL FOREST**
JOB HAZARD ANALYSIS (JHA) References - FSH 6709.11	4. NAME OF ANALYST **William R. Cline**	5. JOB TITLE **ATBM**	6. DATE REVIEWED **5-10-2012**

7. TASKS / PROCEDURES	**8. HAZARDS**	**9. ABATEMENT ACTIONS**
SEAT L.OADING	GENERAL	AUTHORIZED AND TRAINED PERSONNEL ONLY.
	BACK INJURIES	USE PROPER LIFTING TECHNIQUES. BACK SUPPORT BRACE AVAILABLE
	HOSE BREAKS UNDER PRESSURE	INSPECT HOSES PERIODICALLY DO NOT PUMP WITH VALVES SHUT. DO NOT HAMMER VALVES SHUT AGAINST FLOW. WEAR SAFETY GLASSES
	FALLS IN RETARDANT OR OIL.	WEAR FULL COVERAGE RUBBER SOLED SHOES. KEEP RETARDANT AND OIL SPILLS CLEANED UP. DO NOT RUN ON RAMP.
	RETARDANT ON PERSONS	CLOSE VALVES SECURELY BFORE DISCONNECTING. EYE WASH AVAILABLE AND SHOWERS AVAILABLE. WEAR COVERALLS WHEN LOADING RETARDANT.
	OIL ON PERSONS	DO NOT WALK UNDER THE ENGINES. DO NOT WALK UNDER WINGS.

SEAT LOADING (HOT)	SAME AS ABOVE PLUS...	ONLY TRAINED AND AUTHORIZED PERSONS.
	RUNNING ENGINE PROPELLER	STAY AWAY FROM RUNNING ENGINE. KEEP PEOPLE AND VEHICLES AWAY FROM SIDE WITH RUNNING ENGINE.
	EXHAUST BURNS	STAY AWAY FROM APU'S AND HAZARD AREAS.
	HEARING DAMAGE	HEARING PROTECTION REQUIRED NEAR OPERATIONS
	BLOWING DEBRIS	KEEP RAMP CLEAN. EYE PROTECTION AVAILABLE IF NEEDED.