



2011 COLORADO INTERAGENCY SINGLE ENGINE AIR TANKER OPERATIONS PLAN



*Buena Vista SEAT Loader Training
Photo by Clinton Bellinger*

Prepared by: S. Nelson 5/2011

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(INDICATES SIGNIFICANT CHANGE IN TEXT )

1.0 Introduction

1.1 Purpose

This document supports, but does not replace, the Bureau of Land Management (BLM) 9400 Manual, United States Forest Service (USFS) 5700 Manual, and the National Single Engine Air Tanker Operations Guide (ISOG). The purpose is to detail policy, organization, responsibility, and procedures for Interagency SEAT operations within Colorado. It is intended that all Colorado SEAT base plans/air tanker base plans if needed, be a supplement to this plan.

1.2 Mission Statement

The Colorado Interagency SEAT program provides leadership, direction, and expertise to all State and Regional bases utilizing SEAT aircraft. The program is designed to ensure the safe and efficient utilization of SEAT aircraft in the spirit of Interagency cooperation.

1.3 Objectives

- 1.3.1 Provide aviation management expertise ensuring the safe and effective use of SEAT aircraft within Colorado.
- 1.3.2 Increase rapid response initial attack capabilities for all participating Interagency partners involved in SEAT operations through coordination, aircraft sharing, and resource support.
- 1.3.3 Provide operational guidelines and checklists for Interagency partners as an aid to planning and procedures in support of SEAT operations.
- 1.3.4 Standardize operational procedures for integrating SEAT aircraft into heavy tanker base operations.
- 1.3.5 Standardize base support equipment and operational procedures for Colorado SEAT bases.

1.4 Authority

The authority for the SEAT Program is derived from the delegation of authority from the Director of Fire and Aviation, Department of Interior. For Colorado, Interagency support is established in the Colorado Interagency Cooperative Fire Management Agreement. Nationally, delegation of authority is established in a joint powers agreement between the United States Department of the Interior and the United States Forest Service.

1.5 Responsibility

1.5.1 Interagency National Aviation Program Manager

The National Air Tanker/SEAT Program Manager is responsible for providing oversight, leadership, and direction regarding policies and procedures associated with fixed-wing aerial retardant delivery operations.

1.5.2 BLM Colorado State Aviation Manager

The State Aviation Manager (SAM) acts as a focal point for the National SEAT program manager dealing with management and operations of Aviation Management Directorate (AMD) procured SEAT aircraft within Colorado. The SAM provides oversight for BLM Colorado SEAT operations.

1.5.3 Colorado State Forest Service Aviation Officer

The Colorado State Forest Service Aviation Officer serves as a focal point for State of Colorado aviation operations. The Aviation Officer will act as a liaison between the BLM, Colorado, and the USFS Region 2 concerning the Colorado State Forest Service SEAT program.

1.5.4 Forest Service Regional Aviation Officer

The Regional Aviation Officer (RAO) serves as a focal point for Region 2 Forest Unit Offices. The Aviation Officer will act as a liaison between USFS Region 2 and the other Interagency Colorado partners concerning the National SEAT Program.

1.5.5 Bureau of Indian Affairs

The BIA Regional Aviation Officer serves as a focal point for BIA areas. The BIA RAO serves as a liaison between the BIA and all other SEAT program participants.

1.5.6 United States Fish and Wildlife Service

The FWS Regional Aviation Officer serves as a focal point for FWS areas. The FWS RAO serves as a liaison between the FWS and all other SEAT program participants.

1.5.7 Interagency Unit Aviation Manager

The Unit Aviation Manager serves as the focal point for the Unit Aviation Program by providing technical and management direction of aviation resources assigned to support local fire suppression program. The Aviation Manager provides direction in the management of the local SEAT operations within the area of responsibility.

1.5.8 SEAT Logistics Specialist (Federal)

Serves as a SEAT specialist for all Interagency partners. This position is sponsored by the BLM Colorado State Office and is the base manager for the Colorado BLM sponsored Interagency SEAT bases; responsible for SEAT base maintenance, readiness, support, plans and statistics. The SEAT Logistics Specialist coordinates and performs training for SEAT base personnel and SEMGs and, during operational periods, monitors all bases, BLM SEATs, and their attached SEMGs within Colorado. This position serves as both a contract liaison between the Federal Government and vendors, providing SEAT aircraft and retardant support and as a liaison between CSFS and Federal Government SEAT operations. Serves as a SEAT Manager as needed.

1.5.9 SEAT Logistics Specialist (Colorado State Forest Service)

Serves as a SEAT specialist for all Interagency partners. This position is sponsored by the Colorado State Forest Service and is the base manager for the CSFS sponsored Interagency SEAT bases; responsible for SEAT base maintenance, readiness, support, plans and statistics. The SEAT Logistics Specialist coordinates and performs training for SEAT base personnel and SEMGs and, during operational periods, monitors all bases, CSFS SEATs, and their attached SEMGs within Colorado. This position serves as both a contract liaison between the CSFS and vendors, providing SEAT aircraft and retardant support and as a liaison between Federal Government and CSFS SEAT operations. Serves as a SEAT Manager as needed.

1.5.10 SEAT Manager

The SEAT Manager serves as the primary project inspector for the assigned contracted aircraft. The Manager coordinates with aviation managers and dispatchers and supervises aircraft operations in accordance with the Interagency SEAT Operations Guide. All managers assigned to SEAT aircraft operating within Colorado must be NWCG qualified. Each manager should consult the BLM National Aviation Office web page before operations commence to ensure that updated information and paper work are added to their kits:

<http://www.blm.gov/nifc/st/en/prog/fire/Aviation/Airops/seat.html>

1.5.11 SEAT Loaders

SEAT Loaders are responsible for the safe loading of SEAT aircraft with retardant, foam, gel, or water. Under federal contract, loaders are supplied by the vendor. Loaders from other sources must meet the training standard outlined in this plan (Attachment D) before participating in any SEAT loading activities. This does not affect training guidelines at full service retardant bases.

2.0 Contracting

2.1 Federal SEAT Contract Requests

All Federal SEAT contracting requests are reviewed and approved by the National SEAT Program Manager located at NIFC in Boise, Idaho. Approved requests are then forwarded to AMD and a Contracting Officer is assigned to administer the National On-Call contracts.

Note: 2011 Federal SEAT contracts will all be National On-Call contracts. 

Federal SEAT contracts will include a portable mixing/fueling support unit for each aircraft. The unit allows aircraft to sustain flight operations for 6 to 8 hours at a remote location. The contractor provides all safety equipment needed to support the SEAT aircraft and ground crew. The support unit is not optional for Federal contracts and is included in the contract price of the aircraft as a complete SEAT module. However, there will be other contracts specific to the USFS and the Colorado State Forest Service that do not have the same support requirements stipulated in the contract. Therefore, it is imperative to review each contract when utilizing SEAT aircraft to ensure that the contract items suit operational needs.

2.1.1 Federal Contracts

There is one type of contract that federal agencies can use to obtain aircraft services from Single Engine Airtanker vendors in 2011. Additional contracts may be available through various State agencies, but federal agencies must obtain aircraft services from the National On-Call Contract.

Note: 2011 is the first year of a new three year federal contract.

For clarification on specific contract language regarding mission currency verses pilot proficiency see Attachment A. Updates and clarifications are periodically posted to the BLM SEAT website, under SEAT Program Manager Updates, at: <http://www.blm.gov/nifc/st/en/prog/fire/Aviation/Airops/seat.html>.

National On-Call Contract: provides the agencies with a contract to obtain service from a SEAT vendor for a non-specified time frame. Generally these contracts are used by agencies during high activity to provide aerial support for a short duration of time. The National On-Call contracts are solicited and awarded every three years. Contractors that have been awarded the contract may only add additional like aircraft when approved by the contracting officer. Generally additional aircraft are only added when available resources are not adequate to fill the government's needs. All AMD contracts are available at: <http://amd.nbc.gov/apmd/cwn/cwn.htm>

2.1.2 Aviation Management Directorate Contract Administrators

AMD Contracting Officer for SEAT's
Tina Young
208-433-5021

Contracting Officer Technical Representative:
Gary Kunz
AMD Area Director
208-334-9310

National Contracting Officer Representative 
Glen Claypool
BLM National SEAT Program Manager
208-387-5160

2.1.3 Colorado State Forest Service SEAT Contracting

The Colorado State Forest Service annually procures SEAT aircraft on an "Invitation for Bid to Provide Single Engine Air Tanker" contract. Per this contract, the pilot and aircraft must meet current AMD, Call-When- Needed (CWN) requirements. Reference the contract for exceptions to the Federal CWN agreement. The 2011 CSFS SEAT contract is available online at: <http://gacc.nifc.gov/rmcc/logistics/aviation.html>

CSFS Exclusive-Use Contracting Contact:
Sergio Lopes
Aerial and Ground Fire Equipment Supervisor
Phone: 970-491-8437

2.2 Ordering SEAT Aircraft

For fire assignments, all Interagency SEATs will be ordered via the Interagency dispatch system.

Dispatch centers hiring a SEAT are required to make a Best Value Determination (BVD). This determination needs to be documented on the On-Call SEAT Ordering Record. Copies of the completed form need to be sent to the Contracting Officer (CO) listed on the bottom of On-Call SEAT Ordering Record. Urgency in acquiring services (Initial Attack) may be a factor and override the best value determination criteria allowing dispatch centers to directly hire SEAT's from the On-Call contract. When a local dispatch center has urgent and compelling reason to override the BVD criteria, the hiring dispatcher must check the box in Block 15a of the On-Call SEAT Ordering Record indicating the urgent need and sign the bottom of the form. Copies of On-Call SEAT Ordering Record must be sent to the Contracting Officer listed on the bottom of the form. An order may be placed orally or electronically, but must be documented by a resource order.

More information on On-Call SEAT ordering and the On-Call SEAT Ordering Record may be found at:
<http://www.blm.gov/style/medialib/blm/nifc/aviation/seat.Par.33827.File.dat/2011OnCallSEATContractFAQ.pdf>

2.2.1 CSFS Pre-positions

It is recognized that the Colorado State Forest Service at times, pre-positions a SEAT(s) for tactical advantage using avenues outside of the Interagency dispatch system. This plan requires that the non-initial attack movement of any SEAT throughout Colorado be accompanied with a courtesy call to the Rocky Mountain Coordination Center (RMCC). This allows critical information to be shared with the Colorado dispatch community and enhances aviation safety.

3.0 Operations

3.1 General

SEAT aircraft support initial and extended attack operations as a rapid response resource. The logistics and movement of ground support for the aircraft may require 2 to 12 hours for re-positioning or transitioning from one base to another.

A SEAT re-load network has been developed to service Interagency areas within Colorado. The system consists of Category I - II bases spread throughout Colorado and in association with base networks in Utah and Wyoming, (reference Exhibit 1 for SEAT base locations).

The system allows for aircraft to transition effectively from incident to incident within a specific area for retardant re-load, in order to minimize turnaround times. The network has been standardized where possible to ensure base utilization is simplistic, user friendly and economical for all Interagency partners.

3.2 Colorado Interagency SEAT Base Categories

Category I Bases – Established full-service (Interagency) or bulk account bases (USFS). Personnel are in place and continually staff aviation operations.

Category II Bases – Airports in which portable and semi-portable equipment are in place for the duration of the fire season. Agreements as to location and duration are established with the hosting airport. Personnel are either in place or on-call to support immediate operations under the provisions of the Interagency SEAT Loader Qualifications Program.

Category III Bases – Airports in which agreements are in place to support the parking of mobile equipment for periodic use as fire severity necessitates. Personnel are not identified with the base, but with the equipment that would be mobilized to the locale.

Category IV Bases (not listed or exhibited) – Airports or roads that could support initial attack fire operations. Operations will vary depending on need. Category IV airport agreements are not in place and usage is on a case-by-case basis.

Initial criteria for consideration of Category IV airports or roads

1. Anticipated density altitude less than 8,500' MSL and within acceptable published performance limitations for type SEAT.
2. Runway or road length greater than 4,000 feet.
3. Runway or road width greater than 20' and clearance to accommodate a 65' wingspan.
4. Adequate water source to support operations (ex. Fire hydrant, water tender).
5. Fire Department Engine Support to ensure nozzle pressure does not exceed 200gal/min.
6. Patent communications with a 911 or agency dispatch center by phone or radio
7. SEAT pilot concurrence.

Category IV base use exceeding **one** operational period shall be staffed at Category II – III levels to include:

1. One SEAT Manager
2. One “Blue Carded Loader” See Attachment B.
 - a. SEMG and Loader may be one in the same.
 - b. “Blue Carded Loader” may be substituted with a qualified vendor loader.



3.3 Colorado Interagency Approved SEAT Bases

Category I

Durango Air Tanker Base
JEFFCO Air Tanker Base
Grand Junction Air Tanker Base

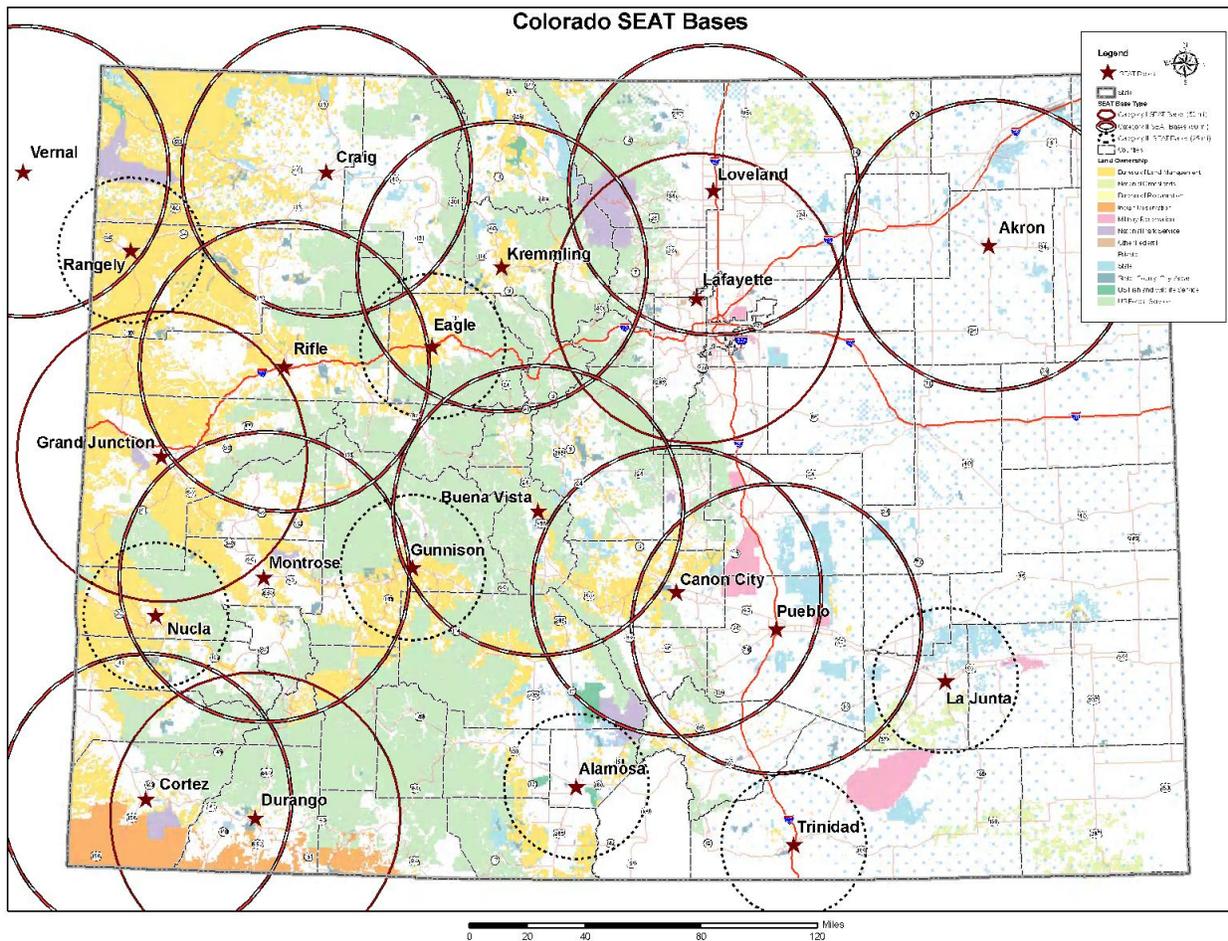
Category II	Airport Name	3 Letter Des.	RNWX	Elev.
Ft Collins	Ft. Collins/Loveland	FNL	8500'	5016'
Craig	Craig-Moffat	CAG	5600'	6193'
Cortez	Cortez/Montezuma	CEZ	7205'	5914'
Rifle	Garfield Co.	RIL	7000'	5544'
Montrose	Montrose Regional	MTJ	7500'	5759'
Canon City	Fremont Co.	1V6	5399'	5439'
Vernal	Vernal Regional	VEL	5278'	6201'
Kremmling	McElroy Field	20V	5540	7411
Buena Vista	Central CO Regional	7V1	8300	7946'
Pueblo	Pueblo Memorial	PUB	10496'	4726'
Akron	CO Plains Regional	AKO	7000'	4714'

*Colorado Interagency Single Engine Air Tanker Operations Plan
May 26, 2011*

Category III	Airport Name	3 Letter Des.	RNWX	Elev.
	Rangely Airport	4VO	6400'	5274'
	Meeker Airport	EEO	6500'	6421'
	Eagle Co.	EGE	8000'	6535'
	Gunnison/Crested Butte	GUC	9402'	7673'
	Nucla Hopkins Field	6V6	4600'	5936'
	Alamosa San Luis Valley	0V2	7350'	7489'
	La Junta Municipal	LHX	6849'	4229'

Airports in RED are require special consideration due to either airport elevation, runway length or both.

Exhibit 1
Category I, II, and III SEAT Bases 



4.0 Support Requirements

4.1 Operations from Category I Bases (Interagency Air Tanker Bases)

Colorado Interagency Air Tanker Bases are either Full Service or Force Account. These bases are opened annually on an established date relevant to normal fire occurrence for their respective area. All Category 1 Bases have been approved for SEAT operations.

Retardant is supplied to these bases in accordance with the National Long-Term Fire Retardant Requirement Contract.

The Air Tanker Base Manager will be the point of contact for the SEAT manager, pilot, and support personnel. It is the SEAT manager's responsibility to ensure that the SEAT Module has been properly briefed on base operational procedures before aircraft integrate into base operations.

4.2 Operations from Category II, III, and IV Bases

Category II – IV bases are not supplied with retardant via site specific contracts. Retardant will be obtained through provisions outlined in the National Long-Term Fire Retardant Contract.

4.2.1 Rotation Policy – When single engine air tankers are co-located at Category II – IV bases for a duration that necessitates the establishment of a rotation, the following guidelines apply:

1. Rotations adhere to first in, first out regardless of agency affiliation and land ownership at the site of the incident.
2. SEAT crews coming into an established rotation after days off start at the bottom of the list.
3. Where SEAT aircraft are collocated with Large Air tankers (LAT's) rotations will vary based on the situation, but in general will adhere to the first in first out policy.

4.2.2 Approval for SEAT Operations

1. Approval for SEAT Operations is contingent on conditions that allow for safe delivery of retardants and suppressants. Manufacturer generated performance charts will be utilized to aid in determining if contracted amounts of product can be delivered safely. Downloads in excess of contracted agreement require notification to fire management representatives.
2. The list of airports detailed in this plan is not inclusive and is subject to change without immediate plan revision based on operational necessity. All additions will be subject to approval criteria. Approval can be granted by any agency representative listed on the signature page or their designees (i.e. Interagency Unit Aviation Managers).

4.3 Retardant Use and Ordering Procedures

Retardant can be supplied to Category II – IV bases by the following means:

1. FOB Origin as outlined in the National Long -Term Fire Retardant Requirement Contract. BLM Colorado has developed the following process:

FOR DOI ORIGINATED ORDERS ONLY
The purpose of this process is to support Interagency SEAT operations away from established Category I Air Tanker Bases.

SEAT Manager (SEMG) or Dispatch identifies need, determines product, and relays order to one of the following Ordering Authorities:

Sandra Nelson (primary)	303-817-7295	slnelson@blm.gov
Jason Baldwin (secondary)	307-630-0070	jbaldwin@blm.gov
Beverly Derringer (alternate)	303-619-9673	bderringer@blm.gov

The ordering authority contacts RMACC for resource order number, and places order with the ICL representative. The order must include the quantity, location and supply number from resource order.

ICL Representative	970-222-8698 1-800-682-3626	Bernie Post (Primary Contact) (after hours)
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Once the order is placed, the ordering authority e-mails the Purchase Requisitioner with the following information as soon as possible, and initiates a follow up call to same:

- The estimated quantity, cost, and type of product
(D75F/P100, powder – by the ton, LC95A, liquid – by the gallon)
- The estimated freight costs and delivery address
- The fire codes and percentages to be billed to each

The e-mail will be sent directly to the Purchase Requisitioner, Natasha Laflin, and copied to the Contracting Officer, Ian Steinheimer, for immediate attention. If the primary Purchase Requisitioner is not available, Tammy Strahan will act as the secondary Purchase Requisitioner and input the request.

Natasha Laflin	303-239-3810	nlaflin@blm.gov
Ian Steinheimer	303-239-3806	isteinheimer@blm.gov
Tammy Strahan	303-239-3733	tstrahan@blm.gov

The Purchase Requisitioner will then complete the electronic procurement form, input the order with the UPC, unit price information, and applicable fire codes into FBMS, and submit to procurement electronically. The Purchase Requisitioner will also keep a log of PRs specific to retardant orders, and a separate file of fire retardant related documents.

When the order is received in procurement, the Contracting Officer or designee will verify the fire code information is complete, and then notify the vendor of the BPA Call # for their IPP billing. (Contact Sara Dawson for all Procurement issues, 303-842-3444, sdawson@blm.gov)

The vendor invoices per the BPA call number through IPP, which is provided by the Contracting Officer after verifications are complete.

Procurement de-obligates excess funds once the final ICL invoice has been received, and notifies the Purchase Requisitioner when the transaction is complete.

4.4 Foam Suppressant Use and Ordering Procedures

4.4.1 Category II SEAT Reload bases have containers of foam pre-positioned on site in some cases. Additional orders are submitted through the same process shown above. Additionally, the CSFS maintains a stock in Ft. Collins which is available upon request.

5.0 Retardant Testing and Handling Procedures

5.1 Testing Procedures

At Category II – IV base samples must be taken by the aircraft loader on every load going into the aircraft and tested with a calibrated refractometer to ensure mixing accuracy of retardant specifications. Readings will be documented by the loader on a load sheet and verified by the manager on the tanker log. Refer to the Interagency SEAT Operations Guide (ISOG) and the SEAT Operational Procedures Handbook for further information.

Should a load being mixed test below standard, it is policy to stop  loading operations, and purge faulty retardant into a designated storage container for either re-adjustment or disposal as appropriate. The refractometer reading for D75-R/F will read between 11.25 and 13.25 (see Attachment B). The refractometer reading for LC-95A-R will read between 12.75 and 14.5 (see Attachment C). Any time mixed retardant product falls outside of product specifications, immediately notify BLM, Sandy Nelson or CSFS, Clinton Bellingar. **Under no circumstance will retardant that reads above acceptable levels on the refractometer be loaded onto an aircraft.**

6.0 Hot Loading

Reference the Interagency Single Engine Operations Guide, Chapter 8 for policy.

6.1 Hot Load Operations from Category II, III, and IV Bases

Category II-IV bases using government personnel as loaders: Loaders qualified to hot load will have on their person a current Blue Card indicating they are qualified to hot load (see Attachment D). Government personnel without a Blue Card signifying that they have been trained to hot load will not be authorized to do so.

6.1.1 Hot Load Limitations by Base Type

Category II bases: All Colorado Category II bases have been approved for hot loading. As per the ISOG, upon initial arrival “the SEAT pilot shall shut down the aircraft and review the following procedures with the designated base manager:

Ramp traffic flow procedures
Hot loading... procedures

Base communications procedures
Emergency procedures
Basic safety procedures”

In the event a SEMG is not present, the SEAT will be allowed to hot load as long as the following additional conditions are met:

An “experienced” loader is present (indicated by an “E” on their Blue Card) to oversee the operation with at least one qualified loader (indicated by a “Q” on their Blue Card) to assist.

Category III-IV bases: There will be no hot loading by government personnel at Category III-IV bases without a SEMG present.

7.0 Retardant Spill Planning

Retardant is not HAZMAT. Any spills should quickly be washed from the tarmac for visual reasons. Notify immediately airport managers and the BLM Colorado State Aviation Manager at 307-630-0070 (C). Document by photo the extent of the spill and reason for the failure.

8.0 SEAT Communications Procedures

8.1 Communications Guides and Frequency Lists

Aircraft operating within Colorado will utilize the various communications guides provided by each Dispatch Office for their respective operating areas. These guides will provide both operational and communication information specific to SEAT aircraft at the various dispatch levels. Dispatch centers include:

- Rocky Mountain Coordination Center
- Craig Interagency Dispatch Center
- Durango Interagency Dispatch Center
- Grand Junction Interagency Dispatch
- Montrose Interagency Dispatch
- Ft. Collins Dispatch
- Pueblo Interagency Dispatch

9.0 Security

Consult the 2011 Department of the Interior, Bureau of Land Management National Aviation Plan for direction on SEAT security.

10.0 Data Management

Forms and guides needed for SEAT management can be found at:
<http://www.blm.gov/nifc/st/en/prog/fire/Aviation/Airops/seat.html>
Colorado State Forest Service has adopted the "SEAT Tanker Log / Cost Summary Sheet" (Attachment E) for interagency cost and activity reporting.

11.0 CO SEAT Program Contacts

BLM National SEAT Program Manager

Glen Claypool w) 208-387-5160
gclaypoo@blm.gov

CO BLM State Aviation Manager

Jason Baldwin w) 307-775-6237
jbaldwin@blm.gov c) 307-630-0070

Colorado State FS Aviation Manager

Sergio Lopes w) 970-491-8437
sergio.lopes@colostate.edu c) 970-222-8657

BLM SEAT Logistics Specialist

Sandy Nelson c) 303-817-7295
snelson@blm.gov

CSFS SEAT Logistics Specialist

Clinton Bellingar c) 719-221-3083
clinton.bellingar@colostate.edu

On-Call SEAT Contract Contract Language Interpretation Mission Currency vs. Pilot Proficiency

A number of sections of the 2011 On Call SEAT contract speak to both Mission Currency Training Flights and Pilot proficiency. As a point of clarification, the following definitions and interpretations will apply.

Pilot Proficiency: A pilot is considered to be "proficient" when they have completed their companies training and is current in all elements of operating the aircraft and providing flight services in dispensing of either fire retardants or suppressants in support of fighting wildland fires. It is the expectation of the Government that a pilot will arrive at the work site "proficient".

During breaks in service when pilots are not under contract, it is the company's responsibility to ensure that their pilots maintain proficiency. Section B20.2.1 and C25.5 speak to the need for pilots to be proficient and allows for proficiency flights during the contract period. Proficiency flights that occur during the contract period must be pre-approved by local officials and will be at contractor's expense. In these circumstances the Government will continue to measure and pay for availability during approved proficiency flights.

Mission Currency: A pilot is considered "Mission Current" when they have flown a fire mission while on contract within a 14 day period of time. A Mission Currency Training Flights (MCTF), as called for under Section B13 of the On-Call Contract, is required if a pilot has not flown a fire mission in the previous 14 days while under contract. A pilot is not expected to be "Mission Current" when they first begin on contract or after a break in contract services under the On Call contract; however they are expected to be proficient and ready to perform under the contract. There is no expectation on the Government's behalf that a pilot maintain their mission currency when not under hire.

Several points of clarification:

1. MCTF's should touch on as many elements of the SEAT Mission as is practical given the resources available. In some instances not all the elements identified in section B13 will be part of the MCTF.
2. If circumstances preclude the Government from conducting a MCTF, the pilot and aircraft will remain available under the contract to be dispatched.
3. Relief pilots are expected to be "proficient" at the beginning of their relief cycle. If their relief cycle extends to 14 days without flying on a fire the MCTF clause of the contract would apply.

Thank You

Glen Claypool

Glen Claypool
BLM National SEAT Program Manager

Attachment A

Gum-thickened, High-Viscosity
Iron Oxide and Fugitive Colored

Product Information

Phos-Chek D75-R and D75-F

Phos-Chek D75-R and D75-F are mixtures of monoammonium phosphate and ammonium sulfate as the active fire retardant salts. D75-R contains iron oxide coloring and D75-F contains a fugitive coloring agent. They also contain viscosity stabilizers and corrosion inhibitors. These products contain a relatively high concentration of gum thickener to provide a high viscosity for improved drop characteristics from fixed-wing airtankers. Due to their high viscosity, they are not recommended for application by ground engine or helicopter.

Product type:	High-viscosity, gum-thickened, dry powder, batch or eductor-mixed.
Application:	Fixed-wing airtanker.
Use level:	1.20 pounds of dry retardant mixed with 1 gallon of water will produce 1.07 gallons of mixed retardant. Each gallon of mixed retardant contains the equivalent of 1.12 pounds of powder.
Yield:	1 ton of powder yields 1786 gallons of mixed retardant.
Viscosity:	1000-1600 centipoise (cP). Field measurement (Marsh funnel) 24-34 sec through the large tip.
Salt content:	11.3 percent by weight active salt. 8.5 percent by weight AS, $(\text{NH}_4)_2\text{SO}_4$ and 2.8 percent by weight MAP, $\text{NH}_4\text{H}_2\text{PO}_4$. Field measurement (refractometer): A reading of 12.1 indicates a proper salt content. A reading between 11.25 and 13.25 indicates an acceptable salt content.
Specific weight:	8.91 lb/gal of mixed retardant.

Attachment B

Liquid Concentrate, Gum-Thickened – Low Viscosity
Iron Oxide Colored

Product Information

Phos-Chek LC-95A-R (5.5:1)

Phos-Chek LC-95A-R is a wet concentrate formulation that uses ammonium polyphosphate (11-37-0) as the fire retardant salt. Phos-Chek LC-95A-R contains a corrosion inhibitor and iron oxide color. The formulation is gum-thickened and yields mixed retardant having a low viscosity for improved drop characteristics from a variety of drop platforms. Mixing occurs through simple proportioning of the retardant concentrate and water. The resulting mixed retardant is pumped directly into the aircraft without intermediate storage.

Product type:	Low viscosity, gum-thickened, liquid concentrate; demand-mixed.
Application:	Fixed-wing airtanker and helicopter bucket; permanent or temporary base.
Use level:	1 gallon of liquid concentrate mixed with 5.5 gallons of water will produce 6.47 gallons of mixed retardant. Each gallon of mixed retardant contains the equivalent of 1.90 pounds or approximately 0.15 gallons of liquid concentrate.
Yield:	1 ton of liquid concentrate yields 1054 gallons of mixed retardant.
Viscosity:	75-225 (cP). Field measurement (Marsh Funnel) for the viscosity of the retardant is 30 – 37 seconds through the small tip.
Salt content:	7.6 percent by weight, P ₂ O ₅ equivalent. Field measurement (refractometer): A reading of 13.7 indicates a proper salt content. A reading between 12.75 and 14.5 indicates an acceptable salt content.
Specific weight:	8.97 and 12.29 lb/gal, respectively, for mixed retardant and liquid concentrate.

Attachment C

Interagency SEAT Loader Qualification Program



SEAT suppressant and retardant loading by contract is the responsibility of the vendor provided personnel. At times of increased activity and under the guise of fully utilizing the Category II – IV bases where equipment is pre-positioned, it is in the interest of operational efficiency that employees of the federal and state government, whenever possible, be pre-identified and trained to load SEATS. The Interagency SEAT Loader Qualification Program is a management tool to ensure consistency and quality of training for individuals acting in the SEAT loader capacity. The authority for this program is supported in the Interagency Single Engine Air Tanker Operations Guide, CH 8, Section 1. This is a two part process that should be completed in one half day session. Upon completion of the session, attendees will be issued an Interagency SEAT Loader Data Card (Blue Card).

Part 1: Mixing Session – Orients the student to proper retardant handling. The student will be taught, hands on, how to mix the retardant product utilized at their local base, how to recirculate the product, proper specifications, use of the refractometer and how to collect retardant samples to send to MTDC for testing.

Part 2: Loading Session – Orients the student to proper SEAT retardant loading procedures. The student will be taught, hands on, how to safely load retardant onto a SEAT. If a SEAT is available at the time of the training, the student will also be instructed in the proper procedure for hot loading the aircraft.

CO/WY Interagency SEAT Loading Qualification					
NAME: _____					
AGENCY AFFILIATION (circle)					
					
TRAINING LOCATION/DATE: _____					
<i>Good for one calendar year from month of issue</i>					
<i>For Tasks Below: Q= Qualified / E= Experienced</i>					
LOAD: ___	HOT: ___	MIX: ___	<u>Circle Types</u> : D75/P100/LC95		
AUTHORIZATION: _____					
<i>Document experience on back of card w/dates and roles.</i>					

Attachment D

Maintaining Blue Card Currency



Blue Cards are current for one calendar year from the month of issue. Annual attendance of SEAT Loader Qualification training is required to maintain currency. SEAT Loader Qualification training will be presented by the CSFS and/or BLM annually (generally April-June) at each Category II Colorado SEAT base.

Personnel who are experienced (indicated by an “E” on their Blue Card) can conduct training on an as needed basis throughout the season. Prior to conducting Blue Card training, contact BLM, Sandy Nelson or CSFS, Clinton Bellingar.

Attachment D (continued)

