

USDA - FOREST SERVICE
ANNUAL AVIATION PROGRAM
REPORT

2013



USDA - FOREST SERVICE

2013 AVIATION PROGRAM REPORT

Review and approval

Reviewed: _____ Date:
_____, National Aviation Safety Manager (acting)

Reviewed: _____ Date:
Paul Linse, Branch Chief, Aviation Business Operations

Reviewed: _____ Date:
Ron Hanks, Branch Chief, Aviation Operations

Reviewed: _____ Date:
John Nelson, Branch Chief, airworthiness

Reviewed: _____ Date:
Tom Ricks, Branch Chief, pilot standardization

Reviewed: _____ Date:
Rock Parrilla, Aviation Strategic Planner

approved: _____ Date:
Art Hinaman, assistant Director, Aviation

TABLE OF CONTENTS

	Page	
introduction	4	
Section One	7	Aviation Safety Management Systems Branch
Section Two	9	Aviation Business Operations Branch Aviation Technology
Section Three	12	Airworthiness Branch
Section Four	14	Pilot Standardization Branch Fixed- Wing Rotor Wing
Section Five	16	Aviation Strategic Planning
Section Six	17	Aviation Operations Branch Aerial Supervision/ Light Fixed Wing Program Airtanker Program Retardant use Water scoopers Smokejumper/ Large Fixed-Wing Aircraft Program Helicopter Program Agency-owned aircraft Law Enforcement & Investigations

Introduction

This is a calendar (CY) report of the USDA Forest Service's Aviation Program. The program includes Forest Service owned, contracted, leased or managed aircraft and other aviation related facets of the program.

The Forest Service aviation program consists of districts; forests, stations and units; regions and the Northeastern Area; and the Washington Office (Fire and Aviation Management, Forest Health Protection, Law Enforcement and Investigations, Engineering and Research & Development).

The cost and use numbers were queried from the Aviation Business System and Aviation Management Information System beginning in March 2014. The costs and use may change after the query date due to the processing of payments, corrections and reporting over time. In most cases the larger numbers were rounded for simplification. The cost and use numbers represent Forest Service and Interagency (DOI, State and local) missions.

Notable Flight and Use Statistics

- The Forest Service flew 66,222 hours in CY 2013, which is slightly above the 5 and 10 year averages.
- Non-fire related flights accounted for less than 8% of flight hours.
- 56% of airtanker flight time was charged to non-Forest Service job codes.
- 28% of all aircraft flight time was in support of the Department of Interior agencies and non-federal cooperators.
- Fixed-wing aircraft other than airtankers flew 38% of flight hours.
- Helicopters flew 51% of flight hours.
- Airtankers flew 4% of flight hours.
- Agency-Owned aircraft flew 7% of flight hours.

Need Photo

Figure 1- Airtankers at Boise, 2012

Notable Accomplishments

The Forest Service did not have any reportable aviation accident in 2013. This was the third year in a row that we have not had a reportable accident; 2011 was the first accident free year in over 50 years. This was the fourth year in a row that the Forest Service has not had a reportable helicopter accident. Forest Service Owned and/or Operated aircraft (O/O) have not had an accident in 10 years, the last accident occurred in December of 2003. There have not been any fatalities in O/O aircraft for 18 years.

In June 2013, the next generation large airtanker contract awards were finalized. Only one aircraft was able to meet its original mandatory availability period (MAP) date. One

more became operational following agency approval in late September 2013. The other 5 aircraft from 3 contractors are anticipated to meet their MAP dates in 2014.

The agency started flying helicopters again in 2013 after a three decade hiatus. The new Night Flying Helicopter Program transitioned to Night Air Operations (NAO) with the addition of a night fixed-wing ATGS aircraft as part of the program. The 24 hour helicopter and the IR/Color camera equipped ATGS were based on the Angeles NF at Lancaster.

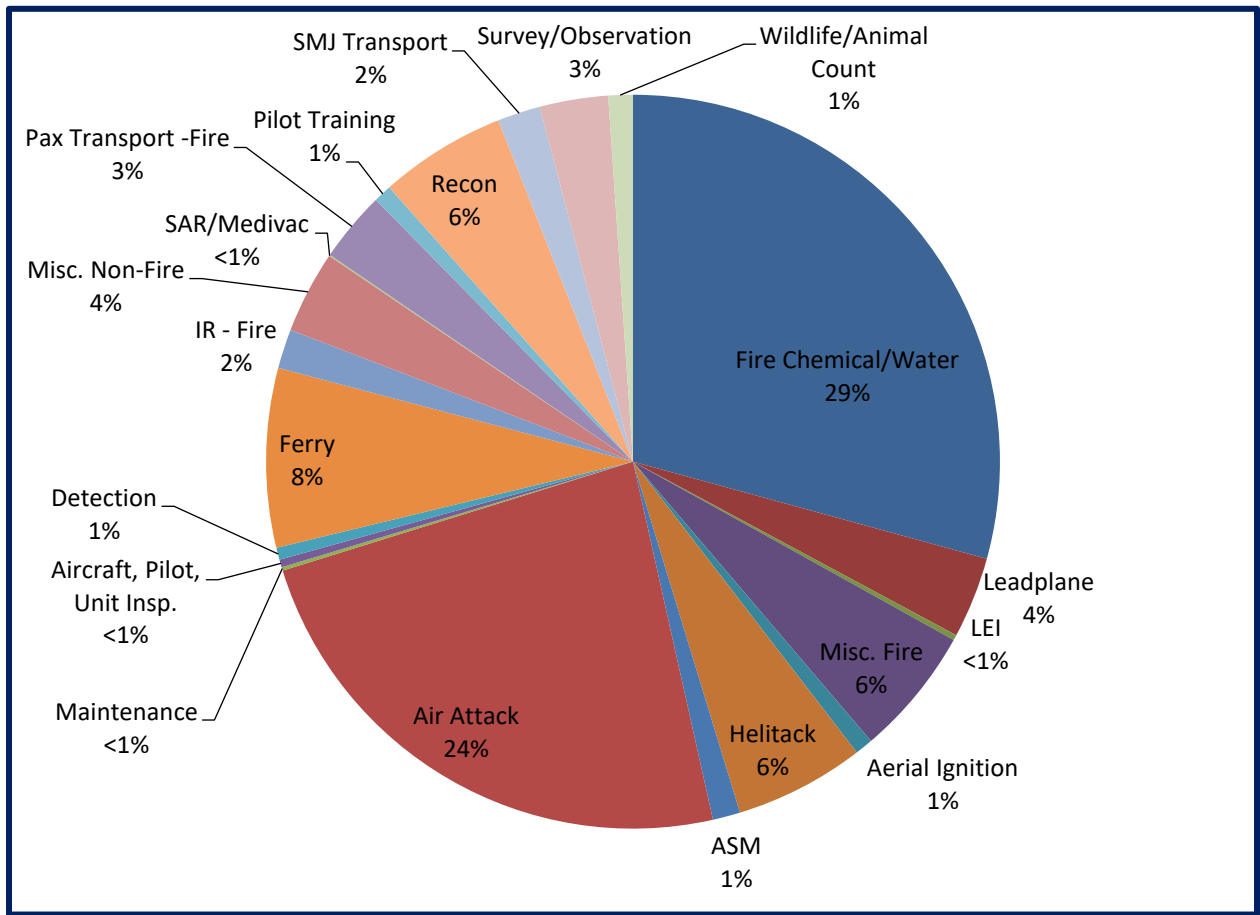
In October 2013, the Aviation Division in coordination with the Incident Support Branch of AQM hosted an interagency Airtanker Forum in Boise, ID. The objectives were to listen and respond to comments, questions and concerns and communicate agency aviation goals and strategies.

Notable CY 2014 Goals

- Revised the aircraft Exclusive Use and Call-When-Needed contract specifications to include vendor Safety Management System standards.
- Complete the re-write of FSM 5700 and FSH 5709.16 and get the drafts into the review and approval process for implementation in CY 2014.
- Continue to strive for the Director's initiative to achieve recognition as a world class aviation organization.
- Continue SMS implementation through focused efforts to identify gaps in FS fleet, contractor and cooperator systems through awareness, training, field audits and reviews.
- Continue focused efforts on weak areas found in the vendor pilot community through awareness, training and compliance reviews.
- Implement an action plan to improve safety and effectiveness of the aerial supervision program.
- Design and implement a comprehensive system for aviation program quality assurance that meets Interagency Committee for Aviation Policy (ICAP) standards as established in FMR 102-33.

2013 Flight Use

Fire management support accounted for approximately 91% of flight use in 2013 for all aircraft (contracted, leased and agency-owned). Mission code descriptions were combined to generalize use.



Section One – Aviation Safety Management Systems Branch

Introduction

The Branch of Aviation Safety Management Systems monitors safety data, hazard reports and mishaps in its effort to identify hazardous trends. The Aviation Accident Database supports accident trend analysis, and the identification of Human Factors issues. The SAFECOM system is a proactive method that monitors and corrects safety issues and shares lessons learned on a daily basis.

Reference Notable Accomplishments above for specific details.

Accomplishments

Policy:

- Revised the Safety Management System (SMS) Guide and developed a draft 5720 for standardization
- Revised the Exclusive Use (EU) and Call When Needed (CWN) contract specifications for vendor SMS
- Participated in contract technical evaluation board proposals

Risk Management:

- Completed strategic risk assessment on aerial supervision, airtankers, air tanker bases, water scoopers and smokejumper operations

Assurance:

- Coordinated investigations of multiple Incident With Potential (IWP) events
- Participated in rappel program quality assurance oversight
- Participated in quality assurance reviews on two aircraft contractors
- Conducted Region 9 program review.
- Conducted airtanker program system analysis
- Participated on aviation safety and technical assistance teams

Safety Promotion:

- Conducted 3 SSLAM courses at the McClellan training center
- Sponsored 27 scholarships each for six System Safety Leadership and Aviation Management (SSLAM) modules through UC Davis
- Published a combined total of 22 Safety Alerts, Technical Bulletins, Lessons Learned, Accident Prevention Bulletins and Information Bulletins

- Presented A-200 Aviation Mishap Reviews at several Regional Aviation and Safety meetings, Helicopter Crewmember, Helicopter Manager and Helibase Manager Courses
- SAFECOM Working Group continued to make enhancements to the SAFECOM system based on recommendations from the SAFECOM Survey
- Worked with Treasure Valley community college to collaborate on providing SMS training via remote web-based systems to expand training while reducing travel costs

Section Two – Aviation Business Operations Branch

Introduction

The Aviation Business Operations Branch provides budget, planning, policy and program management support to Headquarters Fire and Aviation Management and the three Aviation Branches at the detached unit in Boise. Paul Linse is the Branch Chief, Aviation Business Operations. Caleb Berry and Bob Roth are Aviation Management Specialists within the Branch.

Accomplishments

- The Branch continued to support the Aerial Firefighting Use and Effectiveness (AFUE) Study.
- Aviation Business Operations continued to participate on the Helicopter Night Flying Operations Steering Committee and participated in a late season quality assurance audit and the post-season after action review.
- The Branch Chief is leading the Aviation Policy Integrated Project Team which is re-writing FSM 5700 and FSH 5709.16. This is an extensive process to review and re-write all aviation policy.

Significant Events

The branch continued to provide budget actions and documentation for all Washington Office funded aircraft and programs.

When the re-alignment FAM organization is implemented, Bob Roth will be moved to the Capability, Development and Integration Assistant Director area because his experience, knowledge and skills were better focused in this new area. The aviation division will continue to coordinate and work with Bob on aviation technology.

One aviation management specialist positions remain vacant.

2014 Goals

Not Achieved- Complete hiring of the remaining Aviation Management Specialist positions.

Achieved - Continue to refine the contract commitment and obligation of funds and request for contract action processes working with AQM, Regions and WO Program Managers.

Achieved - Approve the National Aviation Safety and Management Plan on schedule.

Not Achieved - Complete the re-write of FSM 5700 and FSH 5709.16 and get the drafts into the review and approval process for implementation in CY 2014.

2015 Goals

Complete hiring of the remaining Aviation Management Specialist positions.

Complete the re-write of FSM 5700 and FSH 5709.16 and get the drafts into the review and approval process for implementation in CY 2015.

Aviation Technology

ATU - In 2011 Fire and Aviation management started evaluation of real time Airtanker events using the Automated Flight Following (AFF) satellite data link. Due to the number of doors on tanks, the very short time between events and the limited bandwidth of the data link a "black box" was required to detect, process and send the door event data. This system was named Additional Telemetry Unit (ATU). In 2012 all Legacy Large Airtankers were instrumented with the ATU system. In 2013 the Forest Service Night Ops helicopter tank added the ATU system. For 2014 Next Generation Airtankers will add ATU by contract modification. There is also interest in adding the ability to record door events on Very Large Airtankers, scoopers, MAFF's and SEAT's.

AFF - The Automated Flight Following (AFF) program started an overall program review to present leadership with recommendations for the system. One of the key usability issues has been the viewer has become outdated due to computer operating systems, security requirements, modern browsers and the dependency on Java. To resolve these critical issues and to embrace mobile computing AFF has just deployed a new viewer which allows end users access to real time aircraft tracking on any modern browser, smartphones or tablets. The new viewer and a quick start guide can be found at <https://www.aff.gov>.

Additional features to the viewer will be added and AFF is available in the new Enterprise Geospatial Portal (EGP). Other items from the program review will also need to be addressed. AFF is currently testing hosting services with commercial cloud services. The cloud could potentially reduce costs, increase scalability and provide additional reliability.

UASAG - In the past few years there has been significant growth in the Unmanned Aircraft System (UAS) technology area. The Forest Service had explored options and other agencies have started to utilize UAS. Due to the increased interest in the capability the Forest Service has chartered an interdisciplinary committee to explore the use of UAS and associated technologies for their potential to support operational needs throughout the agency. The UAS Advisory Group (UASAG) is sponsored by the Fire and Aviation Management, Engineering, Forest Health Protection, and Forest Management Sciences staff areas.

Information about the objectives and tasks of the UAS Advisory Group are documented in the group's charter and additional information can be found at the UAS Advisory Group website (<http://fsweb.wo.fs.fed.us/fire/fam/aviation/uas>). A strategic risk assessment has been completed and a UAS operations guide is being drafted.

ASSG Technology subcommittee - The Forest Service Aviation program has adopted the Safety Management System (SMS) and through this process has conducted formal Risk Assessments for several agency missions. In 2012 a Risk Assessment was completed for Aerial Supervision. To address the un-mitigated risk the Aerial Supervision Steering Group (ASSG) was chartered. Four subcommittees have been formed and one will focus on risk reduction with the use of technology. An exclusive

use contract for aerial supervision aircraft has been solicited which includes requirements for human aiding technologies.
These recommendations will be a key component of the required action plan.

Section Three – Airworthiness Branch

Introduction

The Airworthiness and Quality Assurance Branch continued operations in 2012. This Branch provides oversight, coordination and direction of airworthiness assurance, aircraft standardization and quality assurance conducted by the national office, regions, stations and area. John Nelson is the Branch Chief, Airworthiness with four positions located in Boise, ID (Heather Matusiak, AMS; Brett Terning, Aerospace Engineer; Guy Exon, AMI; Ricky Howe, AMI) and five positions in detached locations (John Flemmer, Avionics, Redmond, OR; Robert Torres, Avionics, Albuquerque, NM; David Heydt, AMI, McClellan, CA; Donna Shope, ASI, Atlanta, GA; Gil Elmy, ASI, Ogden, UT). This branch provides support and oversight to all Forest Service Aviation across program, geographical and interagency boundaries.

Accomplishments

The Airworthiness Branch achieved the following through cooperation, partnering and collaboration in 2012:

- Internal Evaluation Program (IEP) implemented in Regions 1, 4, 5, 6, and 8.
- Hired ABQ Avionics Inspector, Robert Torres
- Hired BOI AMS / Budget Analyst, Heather Matusiak
- Supported C27J project
- Conduct monthly AMI conference calls and published quarterly AWB Newsletter
- Conducted Interagency Inspector Workshop (1/2012)
- Participated as team members of:
 - Emergency Helicopter Extracting (EHE) Evaluation Team
 - UAS Charter Committee Member
 - HNO program
 - GSA / ICAP Arms audits of other federal agencies
- Exhibited at the 2012 Women in Aviation Conference
- Contract awarded for Operational Loads Monitoring systems
- Interagency agreement with The FAA and Wichita State University for the analysis of FS operational loads data
- Sold Beechcraft King Air 90 N148Z (\$233K) as part of an exchange sale.
- Acquired 2 additional UH-1H hulls for Rappel simulators (R4)
- Accomplished focused review of Large Airtankers. This included facility and field audits, reciprocating engine review and structural damage review
- Implemented a single POC for all Airtanker return to contract availability actions
- FS Cooperator Aircraft and Pilot Approval Guide, approved April 2013.

The branch team members participated in following activities in support of aviation operations, risk management and quality assurance.

Activity	Number
Contract evaluation teams participated on	7
Aircraft and Avionics inspections, contractor	208
Aircraft inspected, cooperator	34
Number of aircraft returned to contract availability	152
Number of workshops presented at	20
Field audits and reviews performed	57
Regional ASTAT teams participated on	7

Significant Events:

In cooperation with the headquarters Aviation Business Operations Branch, the AWB was able to implement a revision to Chapter 40 of the FSH 5709.16 in December of 2012. This is the first significant updating to Aviation directives in seven years. The branch also entered all FAIRS aircraft cost and use data from 2007-2012 to meet GSA regulations and fulfill requirement to achieve the ICAP Aviation Gold Safety Standard.

John Nelson, Airworthiness Branch Chief received the ICAP Federal Aviation Award for the 2012 Aviation Professional in an Operational/Support Position. The awards recognize leading Federal agencies for their superior aviation programs and professional management.

2014 Goals

Continue SMS implementation through focused efforts to identify gaps in FS fleet, contractor and cooperator systems through awareness, training, field audits and reviews. Continue oversight of FS fleet, vendor and cooperators.

The following goals are in progress for 2013:

- Re-create Standard PDs for the ASI Airworthiness and Avionics (in progress)
- N127Z / N147Z / N148Z / N181Z Replacement Integrated Project team (IPT) (in progress)
- Next Gen Airtanker inspection and approval
- Internal Evaluation Program (IEP) implemented in Regions 2 and 9 (in progress)
- C27J Project (in progress)
- Sale of N181Z and N142Z (accomplished)
- Type 1 and 2 helicopter and Airtanker Field Audits
- Assist FS Regions and Interagency partners in accomplishing QA field audits
- Helicopter Night Operations Program startup and oversight
- Submit revision of the NASF Cooperator Standards to NASF for consideration
- Revise contract language to have a similar structure and wording across all aviation contracts.

Section Four – Pilot Standardization Branch

Introduction

The Pilot Standardization Branch was operationally implemented in 2012. The Pilot Standardization Branch provides oversight, coordination and direction of pilot standardization/ quality assurance conducted by the national office, regions, stations and area. Tom Cook (Helicopter Standardization Pilot) was appointed as the acting Branch Chief, Pilot Standardization and the organizational transfer of the four National Helicopter Inspector Pilots (NHIP) to the Branch in 2012.

Kevin Meekin (Region One Pilot) was detailed into the vacant Fixed-Wing Standardization Pilot position until the position is permanently filled.

The four NHIPs are based in Boise (Bill Sloan and a vacant position), Atlanta (Larry Roberts) and Broomfield CO (Floyd Keller).

Accomplishments

In addition to Pilot Standardization and NHIP duties and policy requirements, the FW and RW Standardization pilots conduct and host annual Interagency Pilot Standardization workshops. The branch team members participated in supporting the agency-owned helicopter N106Z throughout its mission phases in the Southern Region and Pacific Northwest/ Alaska Regions. The HIP's accumulated approximately 40 hours of flight time with no incidents/accidents. The cooperation and coordination of all participants in the Alaska mission saved the agency approximately \$310,000 versus a contracted helicopter.

The NHIP's participated in 3 accident investigation teams in Colorado, Wyoming and Oregon.

The branch team members participated in following activities in support of aviation operations, risk management and quality assurance.

Activity	Number
Flight Evaluation- Vendor Pilots	186
Flight Evaluation- Cooperator Pilots	6
Flight Evaluation- Military Pilots	8
Vendor Training Oversight	8
Contract Compliance Audits	27
Contract Pre-Work Inspections	9
Aviation Safety & Technical Assistance Team Reviews	5

Significant Events

Challenges encountered in the vendor pilot community during 2012 include; Oral knowledge of contract requirements, including Load Calculations errors; Mountain flying skills and experience; Weight & Balance calculations and Radio and GPS operation.

2014 Goals

Complete the re-write of FSM 5700 that includes Pilot Standardization Branch related content.

Continue focused efforts on weak areas found in the vendor pilot community through awareness, training and compliance reviews. Continue oversight on vendor and cooperators. Continue to improve the annual FW and RW standardization workshops. The RW Standardization pilot will conduct a helitorch workshop that will add all HIP's to the authorization list for helitorch evaluations.

Develop pilot specific Standard Operating Procedures for administrative flights.

The Branch Chief and Fixed-Wing positions are scheduled to be advertised and filled in early to mid- 2013.

Section Five – Aviation Strategic Planning

Introduction

The Aviation Strategic Planning branch was expanded in 2013 with the addition of an Aviation Program Integrator position. The Branch provides Aviation Strategic Planning and Initial Program Planning/coordination for Forest Service aviation. Ezequiel Parrilla is the Aviation Strategic Planner. Aimee E. Mautone is the Aviation Program Integrator.

Accomplishments

- Assisted with Forest Service Unmanned Aircraft System Advisory Group Program Plan
- Drafted Forest Service Unmanned Aircraft Systems Privacy Policy
- Drafted Unmanned Aircraft Systems Project Plan
- Drafted Forest Service Aviation Strategic Plan
- Published FSM 5760, Aviation Security
- Lead on Strategic Risk Assessment Close Out Working Group –Completed Aerial Ignition Strategic Risk Assessment, working on Helicopter Rappel Strategic Risk Assessment.
- Represented Forest Service Aviation in the following subcommittees of the Interagency Committee for Aviation Policy (ICAP); Safety Training and Standards, Communications, Acquisition, Use, and Disposal, Energy and Environment, Management Data Systems, and Unmanned Aircraft Systems.
- Perform Meetings Management coordination for FS Aviation.
- Coordinated new Aviation Facilities Security Risk Assessment with Department of Agriculture Office of Homeland Security and Emergency Coordination, Regional aviation offices, and aviation units.
- Drafted Forest Service Aviation Mentoring program
- Developed Forest Service Aviation Onboarding Checklist

Significant Events

- Worked recruit and fill of Aviation Program integrator position
- Included FS Engineering, FS Homeland Security, and regional aviation offices in Aviation Facility Security Risk Assessment scheduling process.
- Completed Federal Aviation Safety Officer training

Next FY Goals

- Publish Aviation Strategy – Goal April 2014
- Draft Aviation 2025 Strategic Plan Concept
- Coordinate a priority process for recommendations of Security Assessments
- Assist Branch Chief, Aviation Safety Management Systems in developing an implementation plan for SMS.

Section Six – Aviation Operations Branch

Introduction

Aviation Operations is tasked to consider the availability of all agency aviation assets in selecting and positioning them in response to changing fire and resource conditions, requirements and planning.

The Branch also has a quality assurance responsibility for aviation operations. Quality assurance is accomplished through contract compliance audits, field operational quality assurance audits and Aviation Safety and Technical Assistance Teams.

Accomplishments

In 2012, the smokejumpers and the Washington Office conducted an analysis of operations to assess the potential for Ram Air vs. round parachute system effectiveness. The analysis included a comprehensive risk assessment for parachutes and aircraft. Based on recommendations from this analysis the Director, Fire and Aviation Management will make a decision for the future parachute delivery system.

Significant Events

Ron Hanks was selected as the Branch Chief, Aviation Operations in late summer 2012. Ron came from a 10 year assignments as the National Aviation Safety Manager position.

The Operations Branch has one third of its staff (3 of 9) vacant causing a significant lack of depth of personnel to manage the new or expanding workload in ASM, night helicopter operations, water scoopers, UAS operations, Program Review/QA, and fire simulators to name a few.

2014 Goals

Challenges facing the unit include improving communication among all levels of the FS as well as with cooperators. Many processes such as hiring, IT support, budget management and other administrative elements need to be improved.

- Continue to strive for the Director's initiative to achieve recognition as a world class aviation organization.
- Implement an action plan to improve safety and effectiveness of the aerial supervision program in 2013.
- Design and implement a comprehensive system for aviation program quality assurance that meets Interagency Committee for Aviation Policy (ICAP) standards as established in FMR 102-33.

Aerial Supervision/ Light Fixed-Wing Program

Air attack accounted for the largest percentage of fixed-wing mission code use in 2012, approximately 34%.

Aerial Supervision Module/Leadplane

The ASM/ Leadplane program consists of 14 leased King Air 90s. The aircraft operated in both the leadplane role and as Aerial Supervision Module (ASM). The leadplane mission accounts for 47% down from 77% of flight time in 2012. The ASM mission accounts for 19% up from 3% of flight time in 2012. These aircraft averaged over 257 flight hours per aircraft.

Mission Code Description	Flight Hours	Flight Time Cost	Availability Cost	Availability and Flight Costs
Air Attack (ASM)	46			
Aircraft, Pilot, Unit Inspections	91			
Other- Detection, Transport, Recon, Survey, Maintenance	237			
Ferry	80			
Lead Plane- ASM	697			
Leadplane	1694			
Pilot Training	355			
Unknown	122			
Total	3599	\$2,152,000	\$ 10,363,000	\$ 12,515,000

Airtanker Program

In 2012, the legacy (P-2V aircraft) airtankers were provided by two contractors, Minden Air Corporation and Neptune Aviation Services. This contract expired at the end of December 2012. A new legacy airtanker contract was awarded in March 2013. Seven P-2Vs and one BAe-146 are on the new legacy contract provided by the same two vendors.

Neptune was able to continue the interim evaluation on their two BAe-146 airtankers through December 2012.

The airtanker program experienced two fatal crashes in 2012. T-11 crashed while supporting a BLM fire in Utah, killing the 2 crewmembers. MAFFS 7 crashed while supporting a fire on the Black Hills National Forest killing 4 Air National Guard crewmembers.

One airtanker experienced damage during a landing and was not returned to service. Another airtanker was pulled from service due to airworthiness issues and not returned to service.

56% of airtanker flight hours were on non-FS fires based on flight hours.

Contracted Exclusive Use Large Airtankers

Model	Flight Hours	Flight Time Costs	Availability	Availability and Flight Costs	Retardant Gallons
P-2V	1,910	\$13,600,000	\$17,457,000	\$31,053,000	4,048,348
BAE-146	378	\$3,780,000	\$6,906,000	\$10,686,000	1,259,532
DC-10	379	\$4,382,000	\$5,645,000	\$10,027,000	3,616,000
C-130Q	14	\$95,000	\$2,346,000	\$2,441,000	37555
Total	2,681	\$21,857,000	\$32,354,000	\$54,207,000	8,961,870

Cooperator Airtankers

Two airtankers were ordered under the interagency agreement with the State of Alaska during 2012. The first Alaska airtanker was ordered on June 4th, the second was ordered on July 19th. Both were released on October 1st.

Model	Flight Hours	Flight Time Costs	Availability	Availability and Flight Costs	Retardant Gallons
Convair 580	658	\$1,970,400	\$1,847,000	\$4,793,000	Unknown
Total	658	\$1,970,400	\$1,847,000	\$4,793,000	Unknown

Very Large Airtankers

Two very large airtankers from 10 Tanker LLC were under a call-when-needed airtanker services contract. This CWN contract was set to expire at the end of December 2012, but was extended through June 2013. A new CWN contract will be awarded in 2013.

Use in 2012 increased due to the positioning of the aircraft and fire managers becoming more familiar with the VLAT capabilities and limitations.

Model	Flight Hours	Flight Time Costs	Availability	Availability and Flight Costs	Retardant Gallons
DC-10	336.25	\$2,510,766	\$ 6,142,502	\$8,653,269	2,963,276

Single Engine Airtanker

One single engine airtanker (SEAT) is assigned to a Forest Service base. The SEAT is part of the Bureau of Land Management (BLM) SEAT contract and is assigned to the air attack base in John Day Oregon for 60 days.

Use during 2012 was below average with 35,400 gallons of retardant delivered. The SEAT in John Day supports not only the Forest Service, but the BLM and the Oregon Department of Forestry (ODF). Averaged over the last eight years, 64% of the use has been Forest Service, 16% has been BLM and 20% has been ODF.

Model	Flight Hours	Flight Time Costs	Availability	Availability and Flight Costs	Retardant Gallons
Thrush, Turbine S2R-T45	30	\$46,380	\$91,620	\$138,000	35,400

Modular Airborne Firefighting Systems (MAFFS)

Certification Exercises	Date	Flight Hours	Flight Cost	Total Cost	Gallons
Channel Island	March	20.9	\$112,233.00	\$174,858.71	
Colorado Springs	April	38.3	\$292,075.80	\$361,523.14	
North Carolina	May	43.1	\$258,729.30	\$344,599.39	
Wyoming	Feb/April	47.3	\$283,941.90	\$330,558.24	
Total Costs		149.6	\$946,980	\$1,211,539	2,427,000

Activations	Flight Hours	Flight Cost	Total Cost
Colorado, Boise, Hill AFB, California	1122	\$7,260,000	\$19,500,000

MAFFS System Maintenance	Days Worked	Time Cost	Total Costs
8 Mechanics	571	\$ 356,067	\$ 463,709

Retardant Use

2012 was an above average year for retardant use. Almost 20,000 loads equaling approximately 26,699,000 gallons was dropped by fixed-wing airtankers (including SEATs). Helicopters dropped over 1.8 million gallons of retardant. The cost of retardant averaged \$2.33 per gallon for all of the permanent airtanker bases.

Numbers include BLM and state cooperator bases using contracted retardant, either full-service or bulk.

Bases/ Products	Gallons Pumped	# Of Loads
Fixed-Wing Bases/All Products	26,721,930	20,773
Retardants only	26,689,760	19,785
Gels only	32,170	392
Helicopter Bases (PC 259-F)	1,848,441	1848
All Bases/Retardant only (includes PC 259-F)	28,538,201	21,633
All Bases/All Products	28,570,371	22,621

Water Scoopers

Two CL-215 water scoopers were operated under a joint contract with the BLM for approximately 100 days.

Flight Hours	Flight Costs	Availability	Availability and Flight Costs	Loads	Gallons of Water	Gallons of Retardant
201.4	\$ 1,506,271	\$ 1,834,200	\$ 3,340,471	432	594,400	101,000

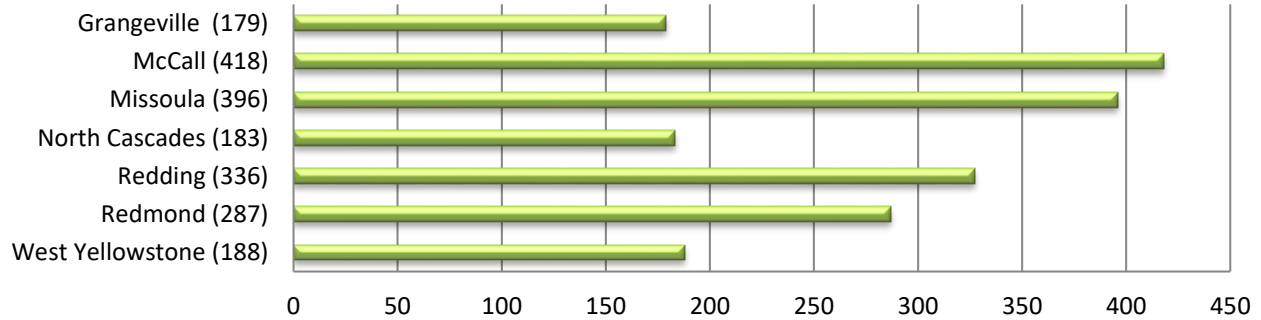
Smokejumper/ Large Fixed-Wing Program

Smokejumper Program

The mission of the U.S. Forest Service Smokejumper Program is to safely provide professional wildland firefighters to initial attack incidents, capitalizing on the efficiencies of fixed wing aircraft as the primary means of delivery. The focus of the smokejumper program is rapid initial attack.

USFS Smokejumpers jumped 369 fires with 1,987 individual fire jumps on wildland fires nationwide. Additionally, smokejumpers spent an average of 20 days per jumper on jumped fires for 2012.

USFS Smokejumpers made 1987 Fire Jumps on 369 Fires Nationwide



Smokejumper Aircraft

Aircraft Make/Model	Contract/ Agency Owned /#	Flight Hours	Flight Cost	Availability Cost	Availability and Flight Cost
CASA-212 North Cascades	Contract -1	173	\$208,348	\$1,139,981	\$1,348,329
Dehavilland DHC-6 Twin Otter Grangeville ID	Contract -1	168	\$541,994	\$503,687	\$1,045,681
Dornier 228 West Yellowstone & Redding	Contract -2	255	\$1,304,736	\$1,306,549	\$2,611,284
Dehavilland DHC-6 Twin Otter McCall	Agency Owned -2	487	\$457,686	\$401,160	\$858,846
Short C-23A Sherpa Missoula, Redmond, Redding	Agency Owned -4	777	\$1,647,664	\$580,800	\$2,228,464
Douglas DC-3T ¹ Missoula	Agency Owned -1	0	0	0	0
Total		1,860	\$4,160,428	\$2,950,217	\$8,093,000

¹The DC-3T was in maintenance for 2012. In late fall maintenance was completed and the aircraft was test flown. It will be fully operational in 2013.



Figure 2- Cargo Drop by USFS C-23A Sherpa

Large Aircraft- NIFC Transport Jet

The Forest Service contracts for 1 transport jet (Boeing 727) on an exclusive use contract. A second aircraft was utilized in 2013. Totals are for both aircraft.

	Flight Hours	Flight Cost	Availability Cost	Availability and Flight Cost	Passengers
Totals	473	\$3,235,500	\$1,449,400	\$4,684,800	9306

Helicopter Program

Exclusive Use Type 1 - Large Fire Support Helicopters

Thirty-four type 1/heavy helicopters from eleven contractors provide helicopter services under two large fire support contracts.

	Flight Hours	Flight Cost	Availability Cost	Availability and Flight Cost	Gallons Water	Gallons Retardant
Totals	11,978	\$82,317,855	\$77,492,861	\$159,810,716	83,182,734	1,848,000



Figure 3- Bell 212

Exclusive Use Type 2 - Initial Attack Helicopters

Thirty-three type 2/ medium helicopters from fifteen contractors provide helicopter services under one contract. All of these helicopters are staffed with helitack crews averaging 15 people per helitack module.

Fourteen of these helicopters are rappel capable working out of twelve bases located in Northern Region, Intermountain Region, Pacific Southwest Region and Pacific Northwest Region. 227 rappellers performed 574 individual rappels on 191 fires.

	Flight Hours	Flight Cost	Availability Cost	Availability and Flight Cost	Passengers	Internal Cargo Pounds	External Cargo Pounds	Gallons of Water
Totals	9346	\$17,340,000	\$ 25,234,000	\$ 42,574,000	30,293	2,199,000	2,319,000	11,637,000

Exclusive Use Type 3 – Initial Attack/ Prescribed Fire Helicopters

Fifty-nine type 3/ light helicopters from 19 different contractors provide helicopter services. Ten of the fifty-nine light helicopters are contracted specifically for prescribed fire services in the Southern Region, but are also available for fire suppression assignments. The 49 initial attack helicopters are staffed with an average of 8 people.

	Flight Hours	Flight Cost	Availability Cost	Availability and Flight Cost	PAX	Internal Cargo Pounds	External Cargo Pounds	Gallons of Water/ Retardant
Totals	11219	\$12,419,090	\$ 15,508,551	\$27,927,641	23,847	1,398,427	1,588,276	3,065,254

Rappel Program

2012 was the third year of rappel operations following the reactivation of rappel in 2010. Previously, consolidated training had occurred at John Day at the rappel training facilities on the Malheur NF, but the program added two training towers in Salmon Idaho, to spread out the training impact with Region 6 while maintaining the consolidation and national training cadre concepts.

Base	Region/Forest	Rappellers	Proficiency Rappels	Operational Rappels	Fire Rappels
Gallatin	R1/ Gallatin	11	86	42	42
Salmon 1	R4/ Salmon Challis	15	206	28	6
Salmon 2	R4/ Salmon Challis	15	150	52	15
Lucky Peak	R4/ Boise	12	116	None Reported	
Price Valley 1	R4/ Payette	11	114	22	7
Price Valley 2	R4/ Payette	12	114	31	6
Scott Valley	R5/ Klamath	21	135	None Reported	
Trimmer	R5/ Sierra	14	94	33	8
LaGrande	R6/ Wallowa-Whitman	16	112	29	9
Wenatchee	Wenatchee	26	164	104	26
Sled Springs	R6/ Wallowa-Whitman	15	148	34	11
John Day	Malheur	25	145	66	21
Siskiyou	Siskiyou	13	139	75	23
Prineville	Ochoco	21	139	58	17

Call-when-needed Type 1 helicopters

Call-When-Needed (CWN) helicopters are a surge capability used when the exclusive use helicopters are committed to on-going fires. CWN helicopters generally are 100% more expensive than exclusive use helicopters, so use of CWN helicopters is intensively managed throughout the fire season.

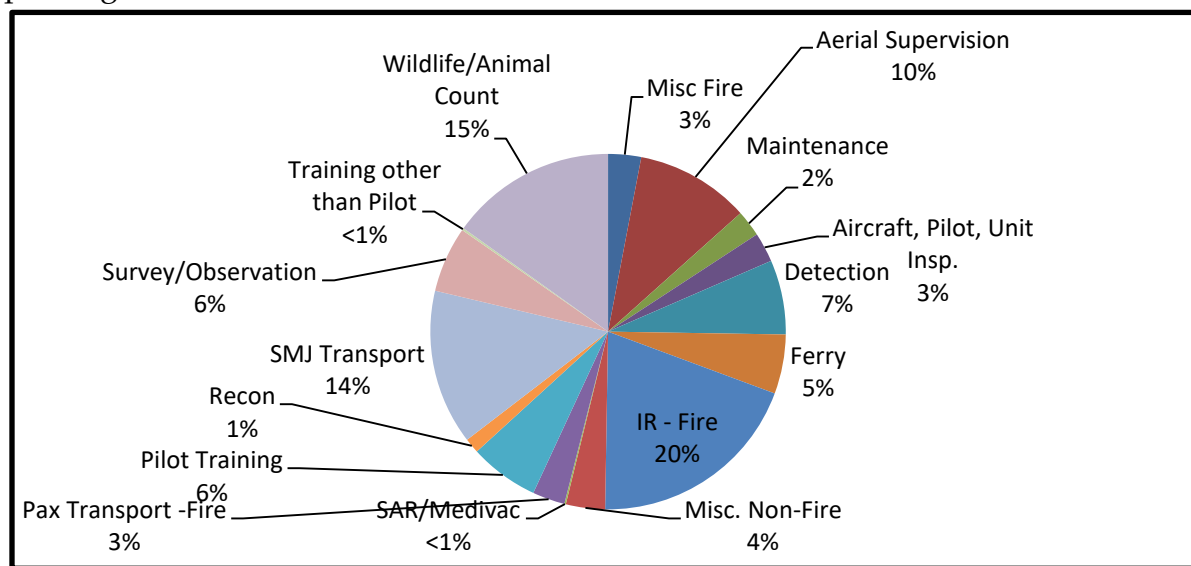
	Flight Hours	Flight Cost	Availability Cost	Availability and Flight Cost	Gallons of Water/Retardant
Totals	1,380	\$5,486,113	\$6,685,013	\$12,171,126	4,969,264

Call-when-needed Type 2 helicopters

	Flight Hours	Flight Cost	Availability Cost	Availability and Flight Cost	PAX	Internal & External Cargo Pounds	Gallons of Water/Retardant
Totals	3,156.0	\$5,768,725	\$6,690,446	\$12,459,171	872	629,602	4,498,078

Agency-Owned aircraft

The agency owns 24 helicopters and fixed-wing aircraft. Agency-owned aircraft flew just over 6,000 hours in 2012, carrying almost 500,000 pounds of cargo and almost 8200 passengers.



Miscellaneous fire missions include aerial ignition, cargo transport, equipment/supply transport, helitack, prescribed burning, retardant/water delivery and rappeller transport.

Miscellaneous non-fire missions include infrared imagery, personnel transport, research and seed and fertilization.

Aircraft N#	Aircraft Make/Model	Region Assigned	Flight Hours
N106FS	DeHavilland DHC-2, Beaver	R10 - LEI	192
N106Z	Bell 206 B3, Jet Ranger	R8 - FAM	124
N107Z	Bell AH-1, Cobra	R5 - FAM	349
N109Z	Bell AH-1, Cobra	R5 - FAM	297
N111Z	Cessna 206F, Station Air	R1 - FAM	82
N115Z	Douglas DC-3T	R1 - FAM	21
N126Z	Cessna 206F, Station Air	R2 - FHP	149
N127Z	Beechcraft 100, King Air	R5	81
N136Z	Cessna 206G, Station Air	R6 - FAM	164
N141Z	DeHavilland DHC-6, Twin Otter	R4 - FAM	226
N143Z	DeHavilland DHC-6, Twin Otter	R4 - FAM	261
N144Z	Cessna 550, Citation	R4 - FAM	556
N147Z	Aero Commander 500	R6 -FAM	11
N149Z	Beechcraft 90, King Air	R4-FAM	626
N173Z	Shorts C-23A, Sherpa	R5 - FAM	167
N175Z	Shorts C-23A, Sherpa	R6 - FAM	130
N178Z	Shorts C-23A, Sherpa	R6 - FAM	189

N179Z	Shorts C-23A, Sherpa	R1 - FAM	291
N182Z	Beechcraft 200, King Air	R8 - FAM	186
N191Z	DeHavilland DHC-2, Beaver	R9 - FAM	272
N192Z	DeHavilland DHC-2, Beaver	R9 - FAM	321
N193Z	DeHavilland DHC-2, Beaver	R9 - FAM	240
N4340Z	Piper PA-18, Super Cub	R5 - Wildlife	295
N4704A	Cessna 185	R5 - Wildlife	536



Figure 4- USFS Bell 206 B3 at work in Alaska

Law Enforcement & Investigations

Law Enforcement & Investigations (LEI) is a Washington Office program assigned to regions.

LEI in Region 5 uses helicopter short-haul to support their missions on National Forest System lands as well as in support of other federal, state and local law enforcement agencies. LEI aviation operations in R5 are supported by Region 5 Fire and Aviation Management. This support will lead to an exclusive use type 3 helicopter in 2013 to reduce costs to the LEI program.

Region 5 LEI accumulated a total of 1,230 flight hours of using a variety of contract, state, local and California National Guard aircraft during 2012.

LEI operates an agency-owned DeHavilland DHC-2 Beaver. This aircraft provides law enforcement support to the Alaska Region. During 2012, the aircraft flew 192.1 hours, carried 120 passengers and carried over 3 tons of cargo.