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NOTE: Formulas used: Industry standard "per 100,000 hours flown"

Accident Rate = Number of accidents divided by the number of hours flown.

Fatal Accident Rate = Number of fatal accidents divided by the number of hours flown.

Fatality Rate = Number of fatalities divided by the number of hours flown.

Executive Summary

Fiscal year 2001 was a high mishap year for the Forest Service Aviation Program. We experienced four Accidents and 8 Incidents With Potential. Fortunately, there were no fatalities and only minor injuries. We flew an average number of hours, 85,150 hours. Emphasis is being focused on helicopter operations including; bucket and longline operations, dropped loads and dip site management for future enhancement in the program.

Overview of the Forest Service Aviation Program

The USDA Forest Service utilizes aircraft for a wide variety of missions, including routine administration, research, forest rehabilitation, law enforcement support, aerial photography, infrared surveillance and fire prevention and suppression.

The vast majority of flight hours involve fire, and in fact, the aviation safety office that produced this document is located within the Fire and Aviation Management Directorate administered by State and Private Forestry section of the US Department of Agriculture Forest Service.

The **primary** mission of USDA Forest Service Aviation is to support the ground firefighter through a variety of means, including, but not limited to:

- ✓ Aerial delivery of firefighters by parachute, rappel line, or on site landing
- \checkmark Air tactical command and control
- ✓ Firefighter transport
- ✓ Surveillance, reconnaissance, and intelligence gathering
- \checkmark Aerial delivery of fire retardant and water

The Aircraft

The Forest Service operates approximately 850 aircraft. These include government owned, chartered, leased, and contractor aircraft which support the many mission elements. The Forest Service owns and operates 44 aircraft (43 fixed-wing and 1 helicopter). Over 800 helicopters and fixed wing aircraft of various makes and models are chartered, leased or contracted including a vintage (a nice euphemism for "very old") fleet of multi-engine airtankers. The aircraft are inspected and "carded" for government use by interagency inspectors, and are flown and maintained by the contractors.

Program Administration

The Forest Service aviation program is administered by approximately 130 employees at the Washington Office and Regional level, this number does not include aviation personnel at the local forest level. The National staff is located in Washington DC and at the National Interagency Fire Center in Boise, Idaho. The vast majority of aviation personnel are located at nine regional operations centers around the United States, providing day-to-day operational oversight and program guidance.

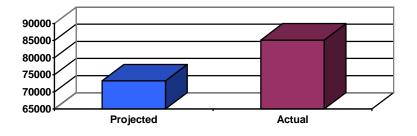
The USDA Forest Service aviation safety program is administered from Boise, Idaho under the guidance of the National Aviation Safety and Training Manager. The staff includes a Standardization and Training Officer, Helicopter Standardization Pilot, Fixed-wing Standardization Pilot, and Aviation Safety Specialist for data analysis.

Statistical Summary

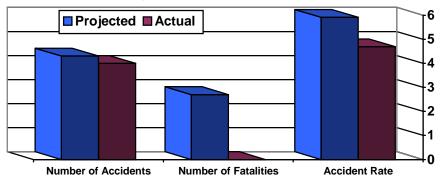
Actual hours flown in FY 2001 was above the projected number of hours (73,219). Analysis of the data shows an increase (+11,931) in total number of hours flown. Accidents, fatalities and accident rates were all below what was projected for FY 2000.

Comparison of Averages from FY1991-2000 to FY2001								
Projected Actual Comparison								
Hours flown	73,219	85,150	11,931					
Number of Accidents	4.3	4	-0.3					
Number of Fatalities	-2.7							
Accident Rate	5.92	4.69	-1.23					

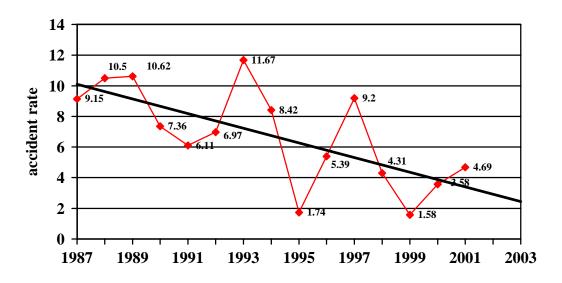
Projected vs Actual Hours Fown for FY 2001



Projected vs Actual for FY 2001



Accident Rates

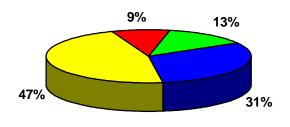


FY 2001 Statistics

Aircraft Type	Hours	Gallons of Aerial Delivered Suppressants	Number of Accidents	Accident Rate	Number of Fatal Accidents	Fatal Accident Rate	Number of Fatalities	Fatality Rate
Fixed-Wing	26,580	79,441	1	3.76	0	0	0	0
Helicopter	39,497	78,002,920	2	5.06	0	0	0	0
Airtanker	7,832	18,564,516	0	0	0	0	0	0
SEAT	*282	*Unknown	*1	*354.60	0*	0*	0*	0*
USFS Owned	11,241	0	0	0	0	0	0	0
Total	85,150	96,646,978	4	4.69	0	0	0	0

* The Single Engine Airtanker (SEAT) accident was an aircraft contracted to the BLM. The Forest Service does not have any contracts for SEAT's, thus there are no hours reported in our system for actual accident rate comparison. The hours used for the SEATs are from OAS contracts flown on FS missions. The accident is included in our overall total accident rate, however the hours are not included.

FY01 Flight Hour Percentages

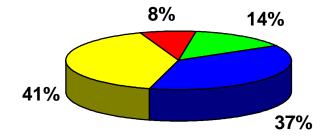




Flight Hours:					
Fiscal Year	Fixed Wing	Helicopter	Airtanker	USFS Owned	Total
2001	26,580	39,497	7,832	11,241	85,150
2000	34,976	53,145	10,616	12,749	111,486
1999	21,873	25,174	6,069	10,019	63,135
1998	32,416	24,423	3,685	9,055	69,579
1997	16,753	16,295	2,801	7,608	43,457
1996	31,919	36,307	8,407	11,648	88,281
1995	23,406	20,031	4,154	9,883	57,474
1994	44,995	49,200	10,100	14,405	118,700
1993	19,824	12,026	1,947	9,037	42,834
1992	28,793	27,973	5,147	9,847	71,760
10-year totals	281,535	304,071	60,758	105,492	751,856
Averages	28,154	30,407	6,076	10,549	75,186

10-Year Statistics

10 Year Average Flight Hour Percentages 1992-2001

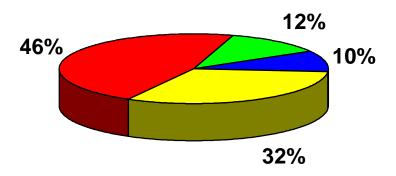


■ Fixed-Wing □ Helicopter ■ Airtanker □ USFS Owned

				USFS	Fatality	Fatal Accident	Accident
Year	Fixed Wing	Helicopter	Airtanker	Owned	Rate	Rate	Rate
2001	3.76	5.06	0	0	0	0	4.69
2000	2.85	3.76	0	7.84	1.79	0.89	3.58
1999	0	3.97	0	0	0	0	1.58
1998	3.08	4.09	27.14	0	5.75	2.87	4.31
1997	0	24.55	0	0	4.6	4.6	9.2
1996	0	11.02	0	8.59	0	0	5.66
1995	0	0	24.07	10.12	5.22	1.74	1.74
1994	2.22	14.23	9.9	6.94	5.05	2.53	8.42
1993	15.13	8.31	51.36	0	14.01	4.67	11.67
1992	0	14.29	19.43	0	2.79	1.39	6.97
10-year							
totals	27.04	89.28	131.90	33.49	39.21	18.69	57.82
Averages	2.70	8.93	13.19	3.35	3.92	1.87	5.78

Fatality and Accident Rates

10 Year Average Accident Rate Percentages 1992-2001



■ Fixed-Wing □ Helicopter ■ Airtanker □ USFS Owned

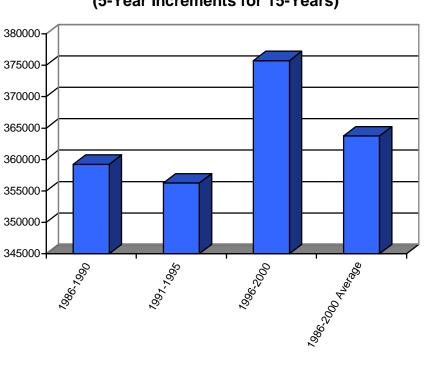
Forest Service Aircraft Accident Statistics in 5-Year Increments

Observations

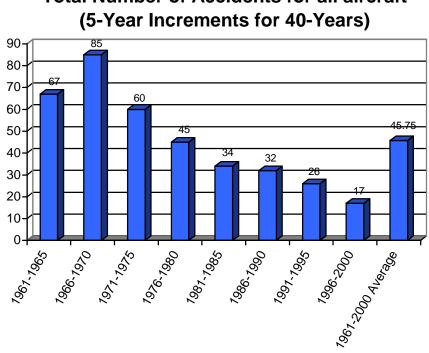
The 1996-2000 5-year increment shows an increase of hours flown over the previous 5-year increments.

The total number of accidents in 5-year periods shows a steady decline.

The total number of fatalities in 5-year periods shows steady decline with the exception of the 1991-1995 period.

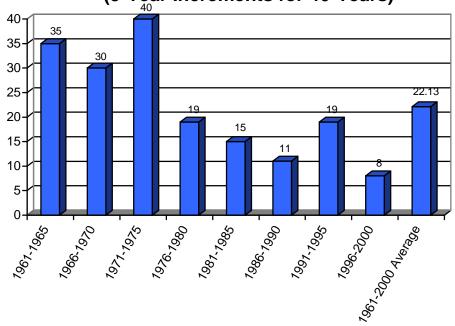


Total Number Flight Hours for all aircraft (5-Year Increments for 15-Years)



Total Number of Accidents for all aircraft

Total Number of Fatalities for all aircraft (5-Year Increments for 40-Years) $_{40}$



Benchmarks with other Organizations

These comparisons are for general information only. These charts present comparable statistical data from other organizations for the current fiscal or calendar years, where 2001 data was not available 2000 data was used and noted in parentheses.

The Forest Service Accident Rate for 2001 is well below the average (5.97) of the other organizations compared

Comparison to Other Organizations									
Organization	Accidents	Accident Rate	Hours	Note					
U.S. Forest Service	4	4.69	85,150)					
Office of Aircraft Services (Dept. of Interior Agencies)	4	4.71	84,976	ò					
U.S General Aviation	1721	6.56	26,220,000) 1					
14 CFR 135, Non-scheduled Service	72	2.12	3,400,000) 1					
Aerial Application, All Aircraft	56	Not Available	Not Available	1					
U.S. Civilian Helicopter, All Types	182	7.64	2,381,000	2					
Civilian Helicopter, Single Engine Turbine	82	5.74	1,428,000	2					
Civilian Helicopter, Multi-Engine Turbine	87	19.21	453,000	2					

Notes: Sources Cited.

- 1. National Transportation Safety Board website: <u>http://www.ntsb.gov</u>
- 2. Helicopter Association International (HAI) website: <u>http://www.rotor.com</u>

USFS Owned Aircraft

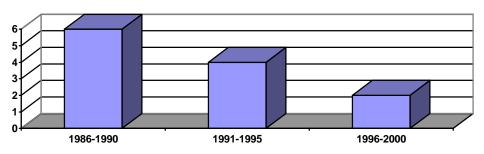
Forest Service owned aircraft accounted for approximately thirteen percent of the total hours flown in FY 2001; the ten-year average is fourteen percent. Accident rates have steadily declined and fatality rates have decreased the past five years.



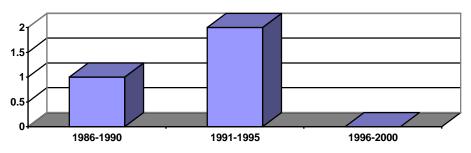
	USFS Owned 10-Year Statistics								
Fiscal Year	Hours Flown	Accidents	Accident Rate	Fatal Accidents	Fatal Accident Rate	Fatalities	Fatality Rate		
2001	11,241	0	0	0	0	0	0		
2000	12,749	1	7.84	0	0	0	0		
1999	10,019	0	0	0	0	0	0		
1998	9,055	0	0	0	0	0	0		
1997	7,608	0	0	0	0	0	0		
1996	11,648	1	8.58	0	0	0	0		
1995	9,883	1	10.11	1	10.11	1	10.11		
1994	14,405	1	6.94	0	0	0	0		
1993	9,037	0	0	0	0	0	0		
1992	9,847	0	0	0	0	0	0		
Total	105,492	4	33.43	1	10.11	1	10.01		
Average	10,542	0.4	3.43	0.1	1.01	0.1	1.01		

	USFS Owned 15-Year Statistics in 5-Year Increments									
Year	Hours	Accidents	Fatalities	Accident Rate	Fatality Rate					
1996-2000	51,616	2	0	3.87	0					
1991-1995	52,782	4	2	7.58	3.79					
1986-1990	53,466	6	1	11.23	1.87					
Total	157,864	12	3	22.68	5.66					
Average	52,621	4	1	7.56	1.89					

Number of Accidents in 5-Year Increments



Number of Fatalities in 5-Year Increments



Fixed-Wing (Contract)

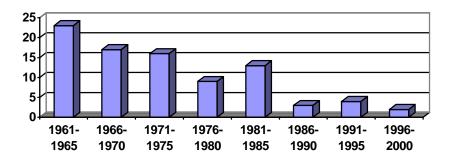
Fixed-Wing aircraft accounted for 31 percent of the total hours flown in FY 2001; the ten-year average is 37 percent. The number of hours flown in FY 2001 is 26,580, which is below the ten-year average of 28,154. Both accident and fatality rates have decreased over the past 40 years.



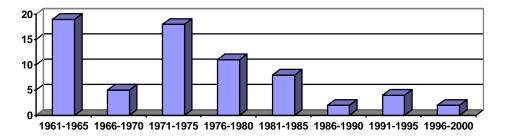
	Fixed-Wing 10-Year Statistics									
	Hours		Accident	Fatal	Fatal		Fatality			
Fiscal Year	Flown	Accidents	Rate	Accidents	Accident Rate	Fatalities	Rate			
2001	26,580	1	3.76	0	0	0	0			
2000	34,976	1	2.85	1	2.85	2	5.71			
1999	21,873	0	0	0	0	0	0			
1998	32,416	1	3.08	0	0	0	0			
1997	16,753	0	0	0	0	0	0			
1996	31,919	0	0	0	0	0	0			
1995	23,406	0	0	0	0	0	0			
1994	44,995	1	2.22	0	0	0	0			
1993	19,824	3	15.13	1	5.04	4	20.17			
1992	28,793	0	0	0	0	0	0			
Total	281,535	7	27.04	2	7.89	6	25.88			
Average	28,154	0.7	2.70	0.2	.80	0.6	2.59			

Fixed-Wing 15-Year Statistics in 5-Year Increments									
Year	Hours	Accidents	Fatalities	Accident Rate	Fatality Rate				
1996-2000	137,937	2	2	1.44	1.44				
1991-1995	144,074	4	4	2.78	2.78				
1986-1990	175,418	3	2	1.71	1.14				
Total	457,429	9	8	5.39	5.36				
Average	152,476	3	2.67	1.98	1.79				

Number of Accidents in 5-Year Increments



Number of Fatalities in 5-Year Increments



Airtankers

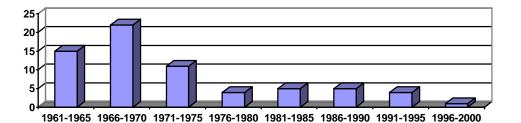
Airtankers accounted for nine percent of the total hours flown in FY 2001; the ten-year average is eight percent. Although they fly the least amount of hours, they have the highest accident rate. This past five-year increment had the lowest accident rate in the past 40 years.



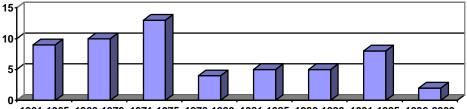
	Airtanker 10-Year Statistics									
	Hours	Hours Accident Fatal Fatal Fatal								
Fiscal Year	Flown	Accidents	Rate	Accidents	Accident Rate	Fatalities	Rate			
2001	7,832	0	0	0	0	0	0			
2000	10,616	0	0	0	0	0	0			
1999	6,069	0	0	0	0	0	0			
1998	3,685	1	27.13	1	27.13	2	54.27			
1997	2,801	0	0	0	0	0	0			
1996	8,407	0	0	0	0	0	0			
1995	4,154	1	24.07	1	24.07	2	48.14			
1994	10,100	1	9.9	1	9.9	2	19.80			
1993	1,947	1	51.36	1	51.36	2	102.72			
1992	5,147	1	19.42	1	19.42	2	38.85			
Total	60,758	5	131,88	5	131.88	10	263.78			
Average	6,076	0.5	13.19	0.5	13.19	1	26.38			

Airtanker 15-Year Statistics in 5-Year Increments									
Year	Hours	Accidents	Fatalities	Accident Rate	Fatality Rate				
1996-2000	31,578	1	2	3.16	6.33				
1991-1995	24,130	4	8	16.58	33.15				
1986-1990	21,529	5	5	23.22	23.22				
Total	77,237	10	15	42.96	62.7				
Average	25,746	3.33	5	14.32	20.9				

Number of Accidents in 5-Year Increments



Number of Fatalities in 5-Year Increments



1961-1965 1966-1970 1971-1975 1976-1980 1981-1985 1986-1990 1991-1995 1996-2000

Helicopters

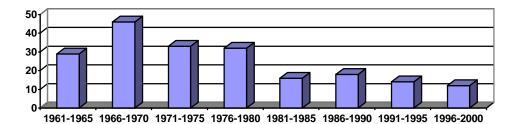
Helicopters accounted for the largest percent of the total hours flown in FY 2001. They flew 47 percent of the total hours flown in FY 2001. The 10-year average is 41 percent. While the number of accidents has steadily decreased the number of fatalities have risen after a dramatic drop up to the mid 1980's.



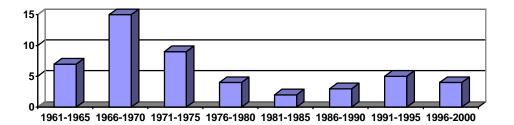
Helicopter 10-Year Statistics							
	Hours		Accident	Fatal	Fatal		Fatality
Fiscal Year	Flown	Accidents	Rate	Accidents	Accident Rate	Fatalities	Rate
2001	39,497	2	5.06	0	0	0	0
2000	53,145	2	3.76	0	0	0	0
1999	25,174	1	3.97	0	0	0	0
1998	24,423	1	4.09	1	4.09	2	8.18
1997	16,295	4	24.54	1	6.13	2	12.27
1996	36,307	4	11.01	0	0	0	0
1995	20,031	0	0	0	0	0	0
1994	49,200	7	14.22	3	6.09	4	8.13
1993	12,026	1	8.31	0	0	0	0
1992	27,973	4	14.29	0	0	0	0
Total	304,071	26	89.25	5	16.31	8	28.58
Average	30,407	2.6	8.93	0.5	1.63	0.8	2.86

Helicopter 15-Year Statistics in 5-Year Increments							
Year	Hours Accidents Fatalities Accident Rate Fatality Rate						
1996-2000	155,344	12	4	7.72	2.57		
1991-1995	135,262	14	5	10.35	3.7		
1986-1990	108,854	18	3	16.55	2.76		
Total	399,460	44	12	34.62	9.03		
Average	133,153	14.67	4	11.54	3.01		

Number of Accidents in 5-Year Increments



Number of Fatalities in 5-Year Increments



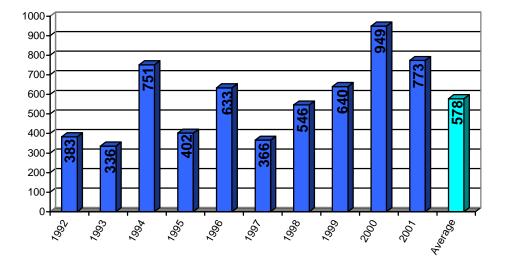
SafeCom Summary

The SafeCom system satisfies Federal Aviation Regulations requirements for incident reporting, but more importantly, it provides management and front line supervisors with near real time trend information. Armed with data on emerging safety and effectiveness challenges, operators and management can take appropriate actions <u>before</u> a mishap occurs. The National Safety Office provided monthly safety summaries to the field by providing hard copy and internet access to vital risk management data.

These charts trend the SafeCom data posted on the Forest Service Aviation Internet site at <u>www.aviation.fs.fed.us</u>. The average of total numbers of submitted SafeCom's is 578 per year. The FY 2001 number is significantly higher at 773. The total number of SafeCom's submitted usually fluctuates with the total number of hours flown.

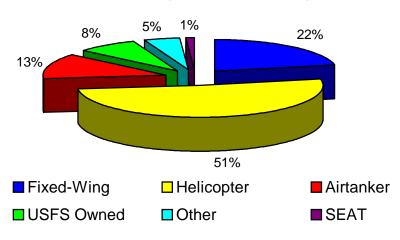
Although there were only 7 SafeCom's categorized as near mid-air, there were several more that mentioned close calls. The same is true for policy deviation, there were 39 SafeCom's categorized as policy deviation, but numerous more that indicated deviation from policy. Communication problems are alarming as well. The highest numbers of SafeComs in the Hazard category were communications related and numerous others indicated communications as a part of the problem. Many of these SafeCom's were related to frequency and radio issues but the majority showed that we have basic communication failures at multiple levels of our operations. Dropped loads are another concern, with the highest number of Incident SafeCom's reported

Yearly SafeCom Totals					
Year	Number of SafeComs				
2001	773				
2000	949				
1999	640				
1998	546				
1997	366				
1996	633				
1995	402				
1994	751				
1993	336				
1992	383				
Total	5779				
Average	578				



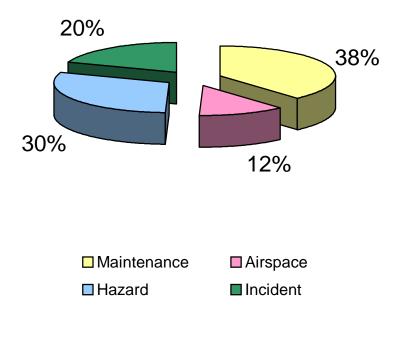
Total Number of SafeComs by Year

FY 2001SafeCom Information					
Aircraft Type	Number	Percent of all SafeCom's			
Fixed Wing	168	22%			
Helicopter	399	51%			
Airtanker	99	13%			
SEAT	9	1%			
USFS Owned	61	8%			
Other	37	5%			
Total	773	100%			
Category	Number	Percent of all SafeCom's			
Airspace	94	12%			
Hazard	232	30%			
Incident	151	20%			
Maintenance	296	38%			
Total	773	100%			



SafeCom's by Aircraft Type

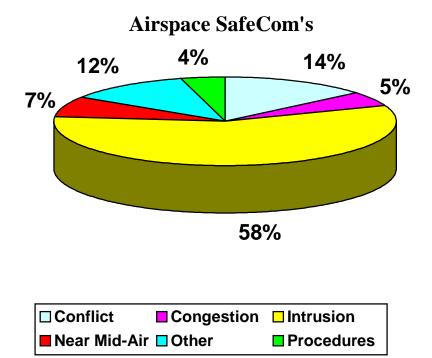
SafeCom's by Category

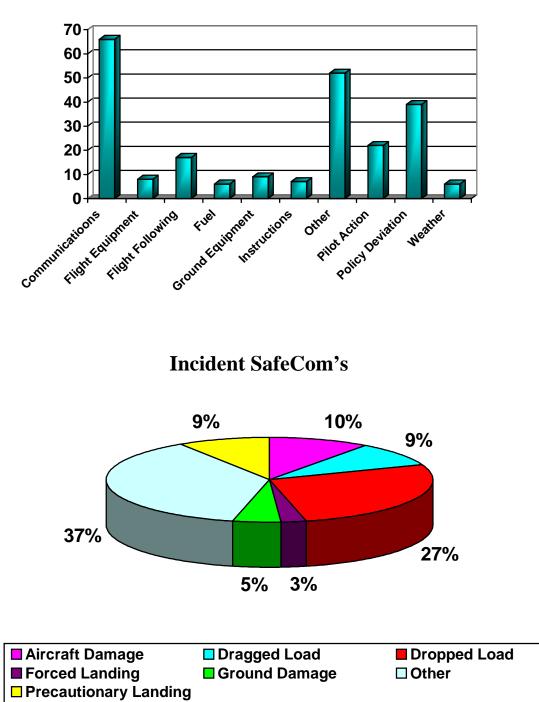


	SafeCom's by Category and Region							
Region	Airspace	Hazard	Incident	Maintenance	Total			
Region 1	15	27	17	29	88			
Region 2	0	17	7	18	42			
Region 3	6	23	7	16	52			
Region 4	13	18	25	49	105			
Region 5	13	41	21	63	138			
Region 6	29	54	38	63	184			
Region 8	14	29	21	39	103			
Region 9	2	10	9	3	24			
Region 10	2	9	2	12	25			
WO	0	4	4	4	12			
Total	94	232	151	296	773			

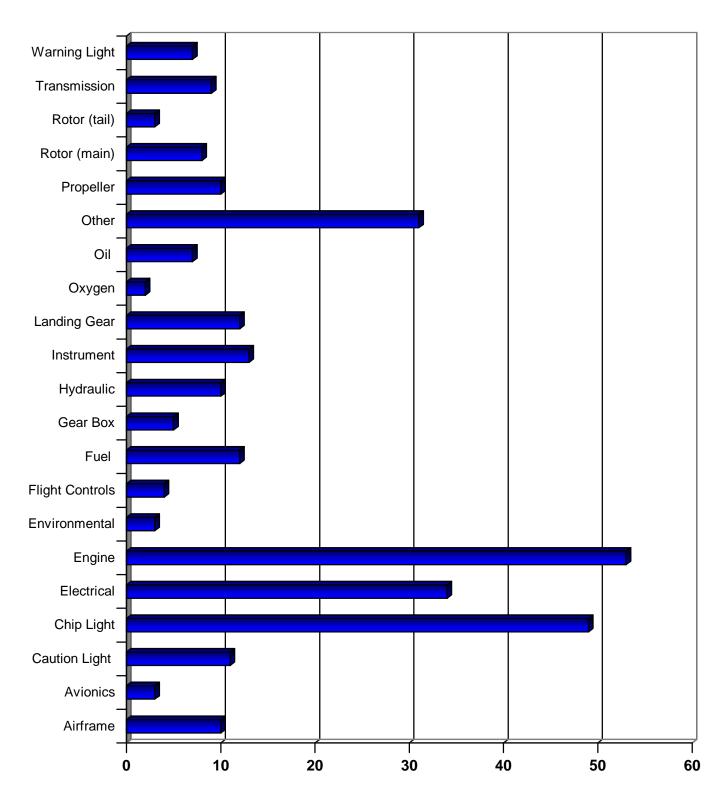
SafeCom's by Major and Minor Category					
	Airspace	Hazard	Incident	Maintenance	Total
Aircraft Damage	0	0	15	0	15
Airframe	0	0	0	10	10
Avionics	0	0	0	3	8
Caution Light	0	0	0	11	11
Chip Light	0	0	0	49	49
Communications	0	66	0	0	66
Conflict	13	0	0	0	13
Congestion	5	0	0	0	5
Dragged Load	0	0	14	0	14
Dropped Load	0	0	41	0	41
Electrical	0	0	0	34	34
Elevator	0	0	0	1	1
Engine	0	0	0	53	53
Environmental	0	0	0	3	3
Flight Controls	0	0	0	4	4
Flight Equipment	0	8	0	0	8
Flight Following	0	17	0	0	17
Forced Landing	0	0	4	0	4
Fuel	0	6	0	12	18
Gear Box	0	0	0	5	5
Ground Damage	0	0	7	0	9
Ground Equipment	0	9	0	0	9
Hydraulic	0	0	0	10	10

Instructions	0	7	0	0	7
Instrument	0	0	0	13	13
Intrusion	54	0	0	0	54
Landing Gear	0	0	0	12	12
Near Mid-Air	7	0	0	0	7
Oil	0	0	0	7	7
Other	11	52	56	27	146
Oxygen	0	0	0	2	2
Pilot Action	0	22	0	0	22
Policy Deviation	0	39	0	0	39
Precautionary Landing	0	0	14	0	14
Procedures	4	0	0	0	4
Propeller	0	0	0	10	10
Rotor (Main)	0	0	0	8	8
Rotor (Tail)	0	0	0	3	3
Transmission	0	0	0	9	9
Vacuum	0	0	0	1	1
Warning Light	0	0	0	7	7
Weather	0	6	0	0	6
Total	94	232	151	296	773





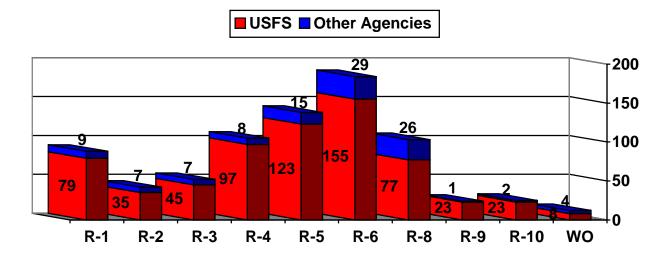
Hazard SafeCom's



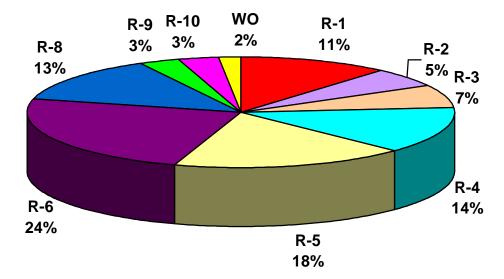
Maintenance SafeComs

SafeCom's by Region

The chart below shows the number of SafeComs by region (FS and other agency) reported in FY 2001. There were a total of 773 SafeComs reported, 665 were USFS and 108 were other agencies.



Percent of SafeCom's by Region



Region 1						
Aircraft	Number	% of total R-1	% of all SafeCom's	% of category total		
Fixed Wing	21	23.9%	2.7%	12.5%		
Helicopter	38	43.2%	4.9%	9.5%		
Airtanker	10	11.4%	1.3%	10.1%		
USFS Owned	12	13.6%	1.6%	19.7%		
Other	7	8.0%	0.9%	18.9%		
Total	88	100.0%	11.4%			

Region 2						
Aircraft	Number	% of total R-2	% of all SafeCom's	% of category total		
Fixed Wing	6	14.3%	0.8%	3.6%		
Helicopter	17	40.5%	2.2%	4.3%		
Airtanker	8	19.0%	1.0%	8.1%		
SEAT	4	9.5%	0.5%	44.4%		
USFS Owned	5	11.9%	0.6%	8.2%		
Other	2	4.8%	0.3%	5.4%		
Total	42	100.0%	5.4%			

Region 3						
Aircraft	Number	% of total R-3	% of all SafeCom's	% of category total		
Fixed Wing	9	17.3%	1.2%	5.4%		
Helicopter	22	42.3%	2.8%	5.5%		
Airtanker	12	23.1%	1.6%	12.1%		
SEAT	1	1.9%	0.1%	11.1%		
USFS Owned	5	9.6%	0.6%	8.2%		
Other	3	5.8%	0.4%	8.1%		
Total	52	100.0%	6.7%			

Region 4						
Aircraft	Number	% of total R-4	% of all SafeCom's	% of category total		
Fixed Wing	15	14.3%	1.9%	8.9%		
Helicopter	63	60.0%	8.2%	15.8%		
Airtanker	15	14.3%	1.9%	15.2%		
USFS Owned	8	7.6%	1.0%	13.1%		
Other	4	3.8%	0.5%	10.8%		
Total	105	100.0%	13.6%			

Region 5							
Aircraft	Number	% of total R-5	% of all SafeCom's	% of category total			
Fixed Wing	30	21.7%	3.9%	17.9%			
Helicopter	67	48.6%	8.7%	16.8%			
Airtanker	28	20.3%	3.6%	28.3%			
USFS Owned	3	2.2%	0.4%	4.9%			
Other	10	7.2%	1.3%	27.0%			
Total	138	100.0%	17.9%				

Region 6				
Aircraft	Number	% of total R-6	% of all SafeCom's	% of category total
Fixed Wing	44	23.9%	0.9%	5.6%
Helicopter	102	55.4%	3.1%	5.2%
Airtanker	14	7.6%	1.5%	10.1%
SEAT	3	1.6		
USFS Owned	13	19.0%	1.6%	25.9%
Other	8	15.2%	1.3%	33.3%
Total	184	100.0%	8.4%	

Region 8				
Aircraft	Number	% of total R-8	% of all SafeCom's	% of category total
Fixed Wing	9	11.4%	0.9%	5.6%
Helicopter	55	69.6%	5.8%	10.0%
Airtanker	9	11.4%	0.9%	6.5%
USFS Owned	3	3.8%	0.3%	5.2%
Other	3	3.8%	0.3%	8.3%
Total	79	100.0%	8.2%	

Region 9				
Aircraft	Number	% of total R-9	% of all SafeCom's	% of category total
Fixed Wing	6	40.0%	0.6%	3.7%
Helicopter	6	40.0%	0.6%	1.1%
Airtanker	1	6.7%	0.1%	0.7%
USFS Owned	2	13.3%	0.2%	3.4%
Other	0	0.0%	0.0%	0.0%
Total	15	100.0%	1.5%	

Region 10				
Aircraft	Number	% of total R-10	% of all SafeCom's	% of category total
Fixed Wing	14	70.0%	1.5%	8.6%
Helicopter	6	30.0%	0.6%	1.1%
Airtanker	0	0.0%	0.0%	0.0%
USFS Owned	0	0.0%	0.0%	0.0%
Other	0	0.0%	0.0%	0.0%
Total	20	100.0%	2.1%	

WO				
Aircraft	Number	% of total WO	% of all SafeCom's	% of category total
Fixed Wing	1	33.3%	0.1%	0.6%
Helicopter	1	33.3%	0.1%	0.2%
Airtanker	1	33.3%	0.1%	0.7%
USFS Owned	0	0.0%	0.0%	0.0%
Other	0	0.0%	0.0%	0.0%
Total	3	100.0%	0.3%	

Fiscal Year 2001 Accidents

Region 9, Huron-Manistee NF Mission: Reconnaissance

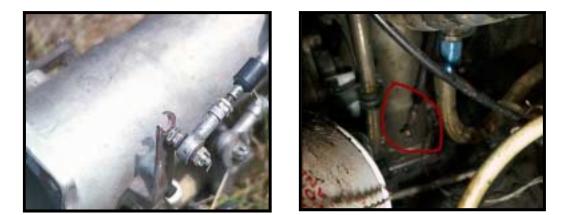
NTSB Identification: **CHI01LA225**. Accident occurred Friday, July 20, 2001 at FREEMONT, MI Aircraft: Cessna U206G, registration: N756DM Injuries: 2 Minor.

On July 20, 2001, at 1515 eastern daylight time, a Cessna U206G amphibian, N756DM, operated by Scenic Seaplanes, Incorporated and piloted by a commercial pilot, sustained substantial damage when it nosed over in a field 5 miles east of Freemont, Michigan, during an emergency landing. Prior to the accident, the airplane's engine lost partial power during cruise flight. Visual meteorological conditions prevailed at the time of the accident. The aerial observation flight was contracted by the United States Forest Service to perform fire patrol under the provisions of 14 CFR Part 135. A company VFR flight plan was on file. The pilot and passenger, a pilot-rated aerial observer, on board the airplane reported minor injuries. The local flight originated at Cadillac, Michigan, at 1400.

In his written statement, the pilot said they were proceeding east at approximately 2,500 feet mean sea level when he noticed the manifold pressure had dropped to approximately 30 inches of Mercury (Hg). The pilot said he moved the throttle in and out several times but the power did not change. The pilot said he executed a 180-degree turn toward the Freemont Airport. On completion of the turn, the pilot noticed the manifold pressure had dropped to 15 inches Hg. The pilot looked for a place to land. He said there was nothing in front of them but trees. The pilot then noticed a farm field beneath and to the left of him. He said he decided to put the airplane down in the field. The pilot said he left the wheels and the flaps up because he was "low, slow, and short". He said the farm field was a short one. The pilot said he tried to flare. They hit the ground hard. The pilot said he did not recall the airplane going over its nose and coming to rest on its back.

A Federal Aviation Administration inspector examined the airplane at the accident site. The airplane was found resting inverted in a corn stubble field. The left float and legs were bent to the right and resting against the right float. The landing wheels in the floats were in the "up" position. The engine mounts were twisted 35 degrees to the left. The cowling and forward fuselage was crushed aft and twisted left. One of the three propeller blades was bent aft. The other two blades were bent forward. The aft fuselage was bent and buckled. The empennage was broken off. Both wings showed numerous bends and buckles. Flight control continuity was confirmed. An examination of the engine showed the throttle cable broken at the linkage to the throttle box lever arm. No other anomalies were found with the airplane.





Region 4, Bridger-Teton NF Mission: Water bucket operations

NTSB Identification: : **DEN01TA134A and DEN01TA134B** Accident occurred Tuesday, July 31, 2001 at JACKSON, WY Aircraft: Bell 212, registration: N911VR Aircraft: Bell 205A-1, registration: N205BR Injuries: 2 Uninjured.

This is preliminary information, subject to change, and may contain errors. Any errors in this report will be corrected when the final report has been completed.

On July 31, 2001, at 1347 mountain daylight time, a Bell 205A-1 helicopter, N205BR, sustained substantial damage when the water bucket of a Bell 212 helicopter, N911VR, contacted its main rotor system near Jackson, Wyoming. The Bell 205A-1 helicopter was registered to Idaho Helicopters, Inc., of Boise, Idaho, and the Bell 212 helicopter was registered to Rogers Helicopters, Inc., of Fresno, California. Both helicopters were being operated by the U.S. Forest Service as public use fire fighting flights. The airline transport pilot of the Bell 205A-1 and the airline transport pilot of the Bell 205A-1 and the airline transport pilot of the Bell 205A-1 and a flight plan was not filed for the Bell 212. Both flights originated from Wilson, Wyoming.

According to preliminary information, the Bell 205A-1 helicopter was at an out-of-ground effect hover over a pond near the Snake River using a long line and bucket to pick up water during fire fighting operations. While the Bell 212 helicopter was operating in close proximity, its long line and bucket got tangled in the Bell 205A-1's main rotor system. The pilot of the Bell 205A-1 performed a vertical autorotation to the water, coming to rest with the tail section and part of the fuselage in the pond. The Bell 212 was not damaged.



NTSB Identification: **SEA01TA152**. Accident occurred Thursday, August 16, 2001 at Ukiah, OR Aircraft: WSK PZL Mielec M-18 Dromader, registration: N52768 Injuries: 1 Minor.

On August 16, 2001, approximately 1125 Pacific daylight time, a WSK PZL Mielec M-18 Dromader, N52768, registered to Western Pilot Service, and operated by the USDA Forest Service, as a local public use firefighting operation, collided with a fence during landing at a private airstrip located about four miles southeast of Ukiah, Oregon. Visual meteorological conditions prevailed at the time and company visual flight rules flight- following was in effect. The aircraft was substantially damaged and the commercial pilot, the sole occupant, received minor injuries.

In a written statement, the pilot reported that he had completed the retardant drop at the fire site and was returning to the airstrip for another load. The landing was made to the south. The pilot reported that the flare was a little high and after the aircraft touched down, it bounced, then settled to the runway. After touchdown, the aircraft veered to the left and the pilot corrected with right rudder and brake application. The pilot stated that the aircraft continued to the left toward a hill and rough terrain so he added power, and back pressure on the flight control. When the aircraft lifted off it started to roll. The pilot reduced power and the right wing contacted the runway. The aircraft touched down on the main landing gear and again bounced and started to drift to the right toward a barn. To avoid a collision with the barn, the pilot again added power and started a left turn. At this time the left wing collided with a steel gate and fence. The aircraft then descended to the ground in a nose down attitude. After ground contact, the aircraft spun around twice before coming to rest.

The pilot reported that there were no mechanical failures or malfunctions with the aircraft at the time of the accident.

The black top runway is 5,000 feet in length and 100 feet wide with a rise in the center. The pilot reported that the wind was variable at about 5 mph at the time.



Region 1, Kootenai NF Mission: Water Bucket Operations

NTSB Identification: **SEA01TA172** Accident occurred Monday, September 17, 2001 at Troy, MT Aircraft: Bell 205, registration: N458CC Injuries: 1 Uninjured.

On September 17, 2001, about 1600 mountain daylight time, a Bell 205 helicopter, N458CC, sustained substantial damage following a main rotor blade strike while conducting firefighting operations near Libby, Montana. The helicopter is registered to Billings Flying Service, Billings, Montana, and was being operated by the United States Forest Service (USFS) as a public use aircraft. The commercial pilot, the sole occupant of the helicopter, was not injured. Visual meteorological conditions prevailed, and USFS VFR flight following procedures were in effect.

In a written statement dated September 26, 2001, the pilot reported that he was maneuvering near a shoreline in an effort to get a full bucket of water. "I made 40-50 bucket drops on the fire and flew out my fuel cycle before breaking off from the fire and returned to Troy Airport. On the return flight to Troy airport, I noticed a vertical vibration at approximately 90 knots (forward airspeed)." He continued to Troy airport at a slower speed to avoid the vibration. After landing without incident, the pilot noted damage to the helicopter's main rotor blades. He also noted that pine needles had been ingested into the aircraft's induction system. The pilot did not recall coming into contact with anything during the flight.

Personnel from the USFS reported that the helicopter was conducting external load long-line (100 feet) operations when the helicopters main rotor blades contacted trees.

Post accident examination of the helicopter, by a certified mechanic, revealed that both main rotor blades sustained substantial damage.

The pilot stated that the weather was clear with more than 20 miles visibility, with the sky partially obscured by occasional smoke.

The pilot reported no mechanical failure or malfunction of the aircraft.









October 2000

Jill McCurdy Makes a Great Catch and Steps Up to Plate



The district biologist asked Jill McCurdy, a Helicopter Manager on the Ashley National Forest, if she could store some 2,000 pounds of grass seed at the helibase. Jill told the biologist that she could store it, but not for long, and the biologist replied "we'll be moving it tomorrow, we're doing an aerial seeding project". This was news to Jill, as it was to dispatch and everyone else. She attempted to contact the Forest Aviation Officer, but found that he was out of town. This is the great catch; project planned, no aviation plan. So what does Jill do, she steps up to the plate and takes it upon herself to put together an aviation plan to make sure all the bases are covered. For your great work Jill, this Airward's for you! No SafeCom submitted

Bob Wofford "The Wise Guy"

Bob Wofford, airtanker pilot of T-11, a P2V that he flies for Neptune Aviation, is commended for making a very wise decision. Bob was working out of McCall, ID on the Nick Fire in mid-August. At the same time, the McCall area was hosting a Back Country Fly In, which drew aviation enthusiasts from all over. The McCall Airport was experiencing heavy traffic, communications were poor, and the Forest Service had a very complex aviation program in full swing. Bob became very concerned and decided he had to shut down airtanker operations. His suggestion to reload out of Boise was an excellent idea. For being such a "Wise Guy" we gave Bob a welldeserved Airward. Thanks Bob! No SafeCom submitted





Houston Helicopter Pilot Saves The Day

Jorge Pino, a Bell 212 pilot for Houston Helicopters is commended for the actions he took when the landing gear on his Bell 212 failed. With crewmembers approaching the helicopter when the landing gear failed, he was able to keep it from hitting anyone. While the helicopter sustained major damage, fortunately Jorge and one person on the ground received only minor injuries. For your actions Jorge, we extend a huge Thank-You and an Airward too! SafeCom 00-810

Hey Brendan, You da Man

In the middle of a hectic fire season, Brendan Mullen became fully qualified as a helicopter manager for the Lewis and Clark National Forest light helicopter. Brendan was bombarded with minimally qualified crewmembers and trainees that were rotating in and out almost daily. Brendan was often tasked to do multiple missions which he assisted management in prioritizing. With this challenging situation, Brendan initiated regular communication with the Forest Aviation Officer regarding his concerns and needs. He demonstrated a high level of proficiency and a sincere effort to ensure safety above everything else. Due to his actions, his crew became better and consistently staffed. Forest Fire Management Officers were better informed of his helicopter and crew capabilities and limitations, resulting in better utilization of the helicopter. Congratulations and Thanks Brendan for a job well done! SafeCom 00-759





No picture available

Super Mechanic, Aaron Young

Rogers Helicopter mechanic Aaron Young's pre-flight inspection on his Bell 212 includes a procedure for inspecting the tail rotor for delamination and debonding. Using a coin, he taps on the entire tail rotor, listening for a distinctive noise that would indicate a bad rotor. As Aaron was tapping his rotors one morning, a mechanic from another company was watching him, wondering what in the world he was doing. When he asked Aaron, he explained and offered to show him on his Bell 412. As Aaron was showing the other mechanic, low and behold, they heard a very different distinctive noise on that 412. One of the rotors was indeed delaminated. Aaron's pro-active safety attitude and willingness to share his knowledge earned him this Airward. Our hats are off to you Aaron, THANKS No SafeCom submitted

"See and Avoid" Pays Off

Dell Boyd was flying Air Attack on the Storrie Incident when he observed a helicopter approaching head on at the same altitude. To avoid a mid-air collision, Dell took evasive action by diving and taking a hard right. He estimated the distance between the helicopter and his Cessna 182 to be less than 500 feet. The helicopter was identified as a Life Flight helicopter that had been cleared into the TFR earlier that day to transport an injured firefighter. Follow-up with the FAA and Life Flight determined that the Life Flight pilot thought that once he was cleared into a TFR he had clearance for the remainder of the day. This obviously is not the case. The pilot of Life Flight was directed to write a TFR plan for the company, present it to all employees and send a copy to the Sacramento FSDO. Once again "See and Avoid" pays off. Thanks Dell, keep up the Good Work and Safe Attitude! SafeCom 00-770





Enough Already

On the afternoon of August 25th, Ron Tieg had had enough. He was managing a helispot on the Lewis and Clark National Forest in support of the Antelope Creek fire and the Incident Commander was asking just too much of the minimally staffed crew. Ron put his foot down and called for a Stand Down of the helispot, which included two lights and one medium helicopter. There was so much confusion and poor management of the resources, Ron felt like he had to do something. He called a meeting with the Incident Commander and crews to discuss how the resources would be best utilized and staffed and how the helispot should be managed. The stand down was exactly what needed to happen and we're grateful for your decision Ron. Excellent job, Thanks! SafeCom 00-758

To view SafeComs click here: <u>http://www.aviation.fs.fed.us/safecom/psearch.asp</u> Enter the SafeCom number and click on submit







Aviation Safety Office www.aviation.fs.fed.us



March 2001

This is our first interagency Airward News with the Department of Interior, Office of Aircraft Services. Welcome aboard and congratulation to the first Airward winners from the Department of Interior.

It is our belief that recognizing and awarding employees, contractors and cooperators for their superior actions that contribute to a safe operation improves our safety mission across the board. The Airwards program recognizes people for being professionals, taking care of a hazardous situation, for making a significant contribution to aviation mishap prevention, a good idea or suggestion, developing and/or implementing a new process or procedure, making a difference and leading by example.

The Airwards program is about saying "Thanks" to people for keeping it safe and having the RIGHT ATTITUDE, a SAFE ATTITUDE. Anyone can recommend someone for an Airward by simply filling out a SafeCom or by contacting your Regional Aviation Safety Manager, State Aviation Officer or the Office of Aircraft Services. We know there are a lot of great things happening out in the field, and we'd love to hear about it and share it with the rest of the aviation community through this publication.



Quitting Time

On October 30, 2000, Bureau of Reclamation pilot Mark Santee was landing his Bell 206 L-1 helicopter at Chapin Helibase in Mesa Verde National Park, Colorado when he detected a high frequency vibration. Mark immediately released his external seed bucket and guided his helicopter to the helipad while avoiding over-flight of ground personnel. After landing, Mark inspected the tail rotor and discovered that one of the tail rotor blades had delaminated and that the vibrations caused by the out-of-balance tail rotor had fractured three of the four tail rotor gearbox mounts! Our thanks to Mark for acting quickly and responsibly to terminate the flight, avoiding further damage and injury. <u>OAS SafeCom 01-16</u>

Between a Rock and a Hard Spot

On August 30, 2000, National Park Service Ranger/Pilot Shad Dusseau departed Kobuk Valley National Park, Alaska, enroute to Kotzebue with three passengers aboard his Cessna 206 floatplane. Fifteen minutes into the flight, Shad, a registered EMT and former military medical corpsman, recognized that he was experiencing a serious medical problem. Rather than continue on to Kotzebue where medical assistance was available, Shad's concern for the safety of his passengers caused him to immediately terminate



the flight despite his medical condition. Shad landed in the nearby Kobuk River where he collapsed shortly after beaching the aircraft. The passengers successfully called for help using the aircraft's radio, administered first aid, and built a small shelter. Medical help arrived shortly thereafter. Shad was taken to Providence Hospital in Anchorage where he recovered. Congratulations to Shad Dusseau, Park Rangers Dan Stevenson and Linda Jeschke, and Park Management Assistant Patty Christian for a job well done! No SafeCom submitted.

Helicopter Manager Strikes Again



When the relief pilot showed up in Wiggins, MS to relieve the pilot for the helicopter Kirby Cook from the Beaverhead-Deerlodge NF was managing, the first thing Kirby did was check his card. Immediately red lights were flashing, the pilot was not carded for the mission. The pilot told Kirby that he had been carded in June for aerial plastic sphere dispenser, but it wasn't on his card. Kirby spent the rest of the morning burning up the phone lines calling various regions, OAS and the company to verify the pilots qualifications. Kirby

verified that the pilot was in fact qualified and by noon the helicopter was launched to the burn site to begin firing operations. Checking pilot and aircraft carding is essential to our safety program. This event demonstrates the importance of checking the paper work. Great job Kirby, this Airward's for you. <u>USFS SafeCom 01-43</u>









June 2001

Michael and Steve's Interception Saves the Game



Following a routine flight in their contract Bell 407, vibrations were noted after touchdown, requiring an inspection by the mechanic. The inspection revealed significant damage to the tail rotor gearbox assembly at the attachment point with the Michael Lewis, helicopter manager, tailboom. captured the damage with a prompt SafeCom, notified the Forest Aviation Manager and dispatcher, and initiated procedures to correct the damage. After notification. Steve Tome. Regional HOS, recognized the significance of the defect, particular aircraft since that has had an directive for airworthiness issued tail rotor problems. Here comes the play of the game.

Believing this could be related to other aircraft, Steve and Michael removed the aircraft from service until a more thorough investigation could be made. They completed a report with photographs for review by the Washington office, which had received a report of similar problems with another aircraft recently. This resulted in Bell Helicopters issuing a safety alert for inspections of the Bell 407 tail rotor system. Their thorough follow-up of a "one time" incident may prevent a more serious failure for another crew in the future. Thanks for the play that saved the game Michael and Steve!

USFS SafeCom 01-86



Here Comes Steve to Save the Day!



USFS SafeCom 01-23

Steve Woods, Great Western Aviation, used super-hero powers to discover the broken right rudder stop cable on a DC-3. This cable was found on top of the horizontal carry-thru structure during the Phase 3 inspection. The aircraft experienced high winds last spring when the aileron gust locks fell out, so the aileron system was inspected. The pilot reported this problem and stated that the other locks remained in place. The rudder stop cable may have been broken anytime because this part of the aircraft is only inspected during the Phase 3 which was last performed in October 1999. Steve's x-ray vision prevented a disaster from later occurring. Keep up the good work, Super Steve!









July 2001

Teamwork Takes Transmission Troubles from Treacherous Terrain to Tangible Yet Tacky Touchdown



On Saturday, June 23, while working initial attack on a small lightning fire in the mutual protection area less than a mile over the international border of Canada, the crew of Tanker 747, an Erickson type one helitanker, experienced indications of severe transmission problems. Pressure dropped to zero and temperatures were rapidly climbing toward the limits. With the decision that this aircraft had to be put down right away, pilot Scott Woodbury contacted the orbiting air attack and requested immediate directions to the nearest suitable landing spot. With nothing but lake and forest in the area, Tar Lesmeister guickly selected the only possible site, a boggy area along the lakeshore, and gave precise direction to get the crippled aircraft to the area. When Scott tried to set the aircraft down, he found the footing to be unstable and had to continue to move forward toward more rising vegetation.

Finally, as smoke was becoming noticeable from the transmission area, Scott put the aircraft down so it remained level. That's where things got tacky. The bog allowed the aircraft to settle about 4 feet deep until it rested on the retardant tank. During the settling and touchdown, the rotor blades contacted the tops of some of the surrounding brush creating only minor damage. Four days later the aircraft was airlifted out of the bog and returned to the tanker base, where the transmission and a rotor blade tip cap were repaired. Way to go team!

USFS SafeCom 01-243



The "A" Team

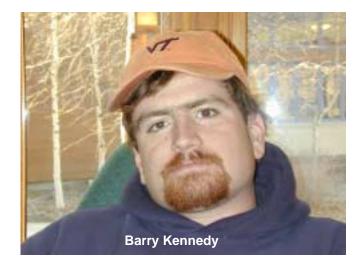


Rick Willis, Contracting Specialist, USDA-Forest Service, Sam Stivison, Chief, Division of Acquisition Management, Office of Aircraft Services, and JP Johnston, Helicopter Management Specialist, USDA-Forest Service, combined efforts in the interest of aviation safety. Rick and Sam awarded contracts only to firms that exhibit the ability to perform safely and effectively. Effective research proves to be beneficial when dealing with aircraft contracts. Nice work, gentlemen!

No SafeCom submitted

An Eye for Detail

Barry Kennedy, from Chena Lakes Helibase, Alaska, had a feeling that something was wrong while observing a recent pilot qualification flight conducting water bucket operations. Barry checked the bucket and found it was unserviceable. The bucket didn't have a model number or capacity markings nor did it have "cinch rings, markings or loops in the bucket" needed to adjust its capacity. Being concerned for the crew's safety, Barry approached the pilot with this information. The pilot confirmed the problem and the bucket was removed from service. Great job, Barry! <u>OAS SafeCom 01-90</u>



When the Going Gets Tough, the Tough Get...



Tammy Westover, a helicopter manager employed by the State of Alaska, observed several serious errors made by one of our helicopter operators, during interagency fire activities. Tammy quickly analyzed the situation and made the difficult, but correct decision to terminate flight operations with the operator. Fire behavior was extreme and helicopters and pilots were in high demand making the decision to ground the operator all the more difficult. Our special thanks to Tammy, her unwillingness to compromise safety, and for making that tough call.

No SafeCom submitted



The ONLY Way to Fly!







August 2001

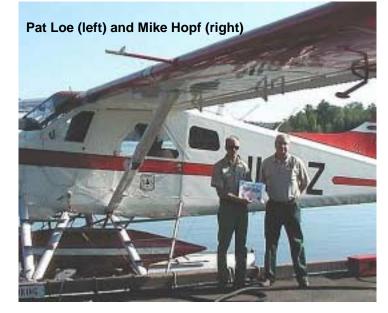


Nice Catch

Allen Johnson, acting as the Safety Officer on a Search and Rescue mission, intercepted Geffrey Davenport, Electronics Technician for the Forest Service, before boarding a helicopter. Forest Service employees are restricted from flying on uncarded helicopters like this one. This helicopter crashed with four crewmembers and two Office of Emergency Services' technicians. Johnson's quick feet and wise decision prevented what could have been a worse scenario. Safety rules are made to keep people safe. This boarding restriction proves the success of this field play. Nice catch, Allen! No SafeCom submitted

Faster than a Speeding Bullet

Pat Loe, Region 9 pilot, experienced some complications while conducting a forest insect survey on a DHC-2 Beaver floatplane. The floatplane experienced a vibration and trace of oil on the windshield. Pat didn't waste any time messing around. Notification was made to the forest dispatcher that he was redirecting to Devil Track Lake. While descending the vibration worsened. Faster than а speeding bullet, he changed direction again and executed a precautionary landing on Northern Light Lake without incident. Excellent moves, Pat! USFS SafeCom 01-283



Home Run



During rappel proficiency training at the John Day Oregon Base, the helicopter experienced mechanical failure during flight. Kevin Brown, spotter, had begun rappel training when he heard a noise that led him to believe it was a lost hydraulic pump. Hunter Ridenhour, pilot, decided to make the play of the day by stealing a base and sliding into home plate. He quickly turned the aircraft back to the airport while Brown prepared the crew for a hardball landing. The helicopter slid to a stop on the taxiway and the crew departed. Brown observed smoke from a grass fire that this incident

may have caused, notified Ridenhour and he contacted the base manager for initial attack action on the fire. Nice slide, guys! <u>USFS SafeCom 01-373</u>

Good Call

Jamie Tackman, leadplane pilot, made a critical decision to stop retardant aircraft operations and warn the firefighting helicopters of the erratic winds in the canyon they were flying. Jamie believed that had the airtanker continued its run it may not have been able to pull out of the narrow canyon. Good job, Jamie!





The ONLY Way to Fly!







September 2001



No Mistakes

Tom Landen, RAO for Region 2, was on standby for leadplane duty at Jeffco Airtanker Base. At approximately 1030 a dispatch was received for the leadplane and airtanker to the Jelly Creek Fire. Tom launched from Jeffco and the airtanker from Grand Junction Airtanker Base. As Tom arrived over the fire, he configured the aircraft for the leadplane mission and proceeded to make a practice run on the fire. After the initial run, he added climb power and noticed a hesitation in the left engine. He climbed to altitude, checked for the closest airport, and evaluated the aircraft for the malfunction. He noticed fuel streaming off the top of the left engine cowling. Tom immediately secured the left engine and flew to the Rangely Airport

and made a successful and safe landing. Tom's immediate in-flight emergency reactions and pilot actions may have saved the aircraft as well as the possible loss of life. As was stated in 1924 by the Army Air Corp, "Aviation is not inherently dangerous, however it is extremely unforgiving of mistakes." Tom made no mistakes! Thanks, Tom! <u>USFS SafeCom 01-522</u>

"Spooked"

On Friday, the 13th of July, 2001, BLM contract pilot Myles Elsing along with Brandon Hampton and Skip Young were conducting a G.P.S. mapping flight five miles west of Rogerson. Idaho when their Aerospatiale AS-350 B2 helicopter lost all hydraulic assistance to the flight controls. Myles was able to maintain control and land the helicopter at Twin Fall Airport without further damage. Brandon and Skip used their training in Crew Resource Management to assist the pilot with multiple radio calls and watching for traffic, allowing Myles to concentrate on controlling the helicopter and completing the emergency procedures. A great coordinated effort by all! By the way, the next time Friday the 13th comes around, you may find this crew at the golf course.



OAS SafeCom 01-204

Ships Ahoy!



Bob Wofford, pilot, and Dave Seashore, copilot, successfully landed a Lockheed P2V after experiencing some mechanical difficulties. After departing Missoula where the aircraft had just received its 100 hour checkup, Bob and Dave both felt a lurch as the front landing gear retracted into the plane. When they arrived at Boise and began landing procedures, they floated into some rough waters. The front landing gear would not extend down. The control tower waived them off. Dave examined the landing gear and was able to push it into the locked position with a 2x4. It was smooth sailing from there on

out. Bob landed the aircraft with no further complications. Nice sailing, Bob and Dave!

Whoa Nelly!

Bill Gimler, district forester, canceled a scheduled flight to view the extent of recent windstorm damage. Bill was not Chief of Party qualified. He decided not to horse-around and rescheduled the flight for a later date after he was able to complete the training. Nice riding, partner!

USFS SafeCom 01-474



No picture available



The ONLY Way to Fly!



