



# U.S. Forest Service



## FY 2011 Aviation Safety Summary

# Table of Contents



|  |           |
|--|-----------|
| <b>Executive Summary</b>                     | <b>3</b>  |
| <b>Aviation Safety Accomplishments</b>       | <b>5</b>  |
| <b>Statistical Summary</b>                   | <b>7</b>  |
| <b>USFS Owned and/or Operated Statistics</b> | <b>14</b> |
| <b>Fixed-Wing Statistics</b>                 | <b>16</b> |
| <b>Airtanker Statistics</b>                  | <b>18</b> |
| <b>Helicopter Statistics</b>                 | <b>21</b> |
| <b>SAFECOM Summary</b>                       | <b>23</b> |
| <b>Mishap Summary</b>                        | <b>33</b> |

**NOTE: Formulas used: Industry standard “per 100,000 hours flown”**

Accident Rate = Number of accidents divided by the number of hours flown multiplied by 100,000.

Fatal Accident Rate = Number of fatal accidents divided by the number of hours flown multiplied by 100,000.

Fatality Rate = Number of fatalities divided by the number of hours flown multiplied by 100,000.

This report is available on-line at: [http://www.fs.fed.us/fire/av\\_safety/fy\\_safety\\_reports/index.html](http://www.fs.fed.us/fire/av_safety/fy_safety_reports/index.html)

# Executive Summary

In FY 2011 the U.S. Forest Service experienced a ZERO accident rate for the first time in over 50 years. This is a tremendous achievement that our aviation personnel and vendors should be very proud of. Even with such an accomplishment, we must not let our guard down; quality assurance, risk management, training and promotion brought us here and must still remain a top priority.

The Forest Service Aviation Risk Management program is based on the philosophy that all aircraft mishaps are preventable and that mishap prevention is an inherent function of management.

## Risk Management Program Objective:

The objectives of Aviation Risk Management and Training Systems are in keeping with the most modern approaches to the safe management of complex systems. Success in aviation safety is a result of coordinated efforts with cooperators and vendors who provide approximately 90% of all Forest Service aviation services.

The Forest Service incorporates Safety Management Systems (SMS) in its aviation program. The Forest Service continues working with the FAA on implementing Safety Management Systems that target a reduction in the number of accidents experienced by aircraft vendors that service our natural resource missions.

Safety Management Systems achieve high standards of efficiency and effectiveness within the four primary components which include:

- ➔ **Policy** is management commitment, responsibility and accountability for the program and the appointment of key safety personnel. Forest Service manuals are being revised using principle centered management for guidance of aviation operations.
- ➔ **Risk Management** identifies hazards and applies risk assessment and mitigation processes.
- ➔ **Assurance** is the process of monitoring controls that also includes aviation accident prevention, review and analysis of historical data, accident investigation, error analysis, and corrective action plans.
- ➔ **Promotion** includes training for pilots, crews, managers, support personnel and end-users. Other communications, awards and lessons learned help to maintain safety awareness.



# Executive Summary

## Mishap Trends:

The Branch of Aviation Risk Management 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.

- This was the first year in over 50 years that we have not had an accident.
- This was the second year in a row that the Forest Service has not had a helicopter accident.
- Forest Service Owned and/or Operated aircraft (O/O) have not had an accident in 8 years, the last accident occurred in December of 2003. There have not been any fatalities in O/O aircraft for 16 years.
- The current accident rate of ZERO shows a significant decrease on the trend line for the last 10-years (pg 8).
- SEATS only accounted for .8% of the flight hours in 2011. they continue to have the highest 10-year average accident rate (35.83) due to the low number of hours flown.
- Airtankers accounted for 6.4% of the flight hours in 2011, they continue to have the second highest 10-year average accident rate at 8.46.
- Contract fixed-wing aircraft accounted for 32.1% of the flight hours, the 10-year accident rate is 3.13.
- Fixed wing contract operations have generally remained the same for the past ten years with an average of nearly one accident a year. All the fatalities in fixed-wing aircraft in the past 10 years have been non-fire missions.
- Helicopters accounted for almost half of all the hours flown (47.9%) in 2011, the 10-year accident rate is 6.95.
- Helicopters accounted for 47.8% of the flight hours over the past 10 years and 58% of all the accidents.
- The FS had 522 SAFECOM reports, which is below the average of 619 reports.
- There were a total of 125 incident and 126 hazard reports in FY 2011.
- The number of reported helicopter dropped (18) and dragged (12) loads accounted for 23% of the incident reports in 2011 compared to 24 in 2010, 41% in 2009, 54% in 2008 and 42% in 2007.
- Twenty-four of the airspace SAFECOM reports were congestion and conflicts, mostly between our own aircraft operating in confined areas. There were 13 intrusions of which 6 were military, the remainder were mostly internal and a few general aviation.



# Aviation Safety Accomplishments

Accomplishments achieved in aviation safety in FY 2011 include the following:

## **Policy:**

- ✈ Implemented the Safety Management System (SMS) Guide
- ✈ Implemented Exclusive Use (UE) and Call When Needed (CWN) contract specifications for vendor SMS
- ✈ Assisted development of National Aviation Safety and Management Plan
- ✈ Applied to GSA for approval of ICAP - SMS Gold Standard status
- ✈ Participated in the development of the Executive Leadership Team (ELT) system safety learning journey

## **Risk Management:**

- ✈ Revised Aviation Risk Management Workbook and distributed to regions
- ✈ Contracted and conducted strategic risk assessment on aerial supervision, airtankers and tanker bases
- ✈ Conducted operational risk assessment for fleet DC-3 operations
- ✈ Initiated a strategic risk assessment for water scoopers

## **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
- ✈ Co-located the Safety System Enterprise Executive Officer in Boise with the Risk Management group

## **Safety Promotion:**

- ✈ Conducted 3 SSLAM courses at the McClellan training center
- ✈ Published a combined total of 22 Safety Alerts, Technical Bulletins, Lessons Learned, Accident Prevention Bulletins and Information Bulletins

# Aviation Safety Accomplishments

## Safety Promotion (continued):

- ➔ Published 4 monthly Safety Summaries
- ➔ Initiated move of Interagency Aviation Training support to the Department AGLEARN training system
- ➔ Sponsored 27 scholarships each for six System Safety Leadership and Aviation Management (SSLAM) modules through UC Davis
- ➔ Instructed the NIFC safety engagement and multiple risk management sessions nationally
- ➔ 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



## Statistical Summary

The USFS flew 71,206 hours in FY 2011 which is slightly below the 10-year average of 75,122 flight hours. In terms of Forest Service accidents, aviation continues to be the single largest cause of wildland firefighter fatalities, accounting for 14 fatalities out of a total of 20 in the past 5 years. The primary mission of Forest Service Aviation is to support the natural resource programs through a variety of means, including, but not limited to:

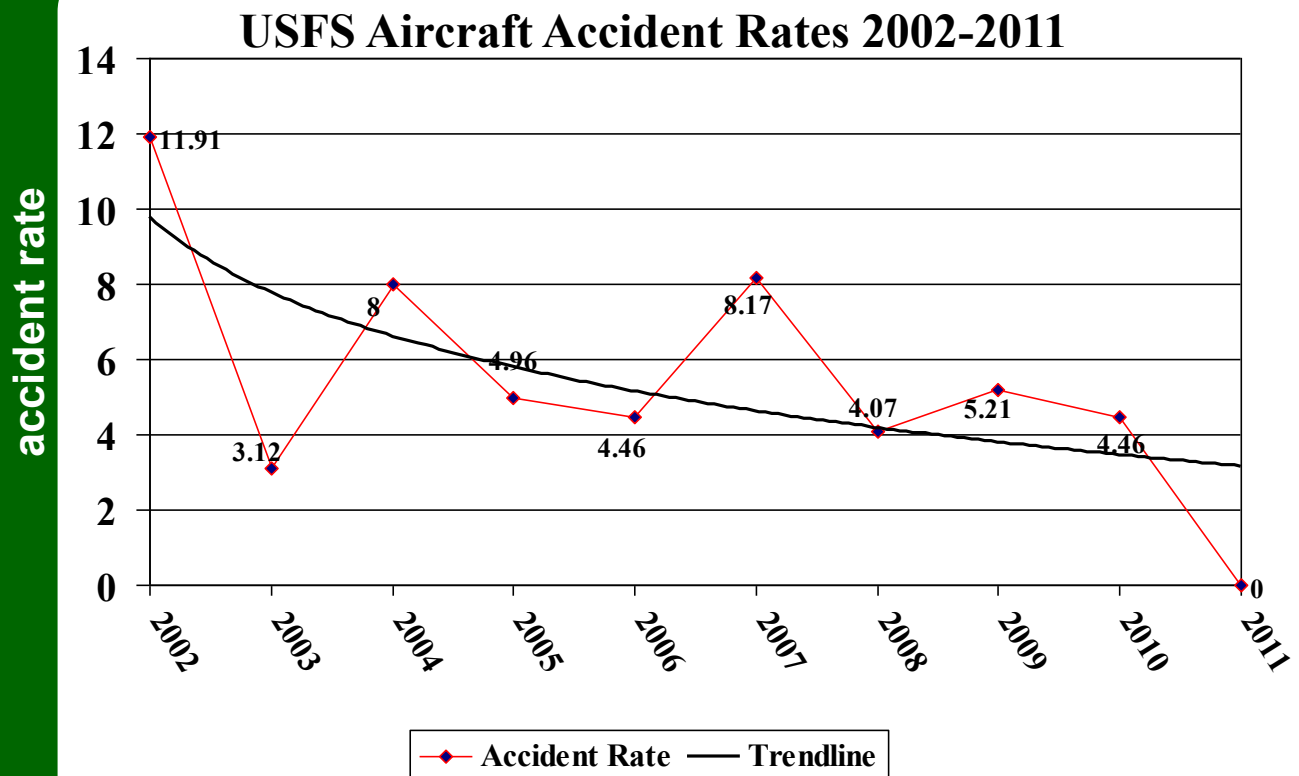
- Aerial delivery of firefighters by parachute, rappel rope, or on site landing
- Air tactical command and control
- Surveillance, reconnaissance, and intelligence gathering
- Infrared detection & mapping
- Aerial delivery of fire retardant and water
- Passenger transport for firefighting and resource missions
- Administrative flights
- Research
- Forest rehabilitation
- Forest Health Protection (aerial surveys, application and photography)
- Law enforcement
- Aerial photography

Approximately 180 employees at the Washington Office, Regional Offices and Forest levels administer the Forest Service aviation program. The national staff is located in Washington D.C. and at the National Interagency Fire Center in Boise, Idaho. The vast majority of aviation personnel are located throughout the regions providing day-to-day operational oversight and program guidance.

The Forest Service utilized approximately 520 aircraft in FY 2011. These include government owned and leased, but mostly contracted aircraft. The Forest Service owns and operates 27 aircraft (24 fixed-wing and 3 helicopters) and leases/operates 13 aerial supervision fixed wing aircraft.

Numerous state agencies and county municipalities operate Forest Service owned aircraft under the Federal Excess Personal Property (FEPP) program. These aircraft are not included in these statistics or mishap data.

## Statistical Summary



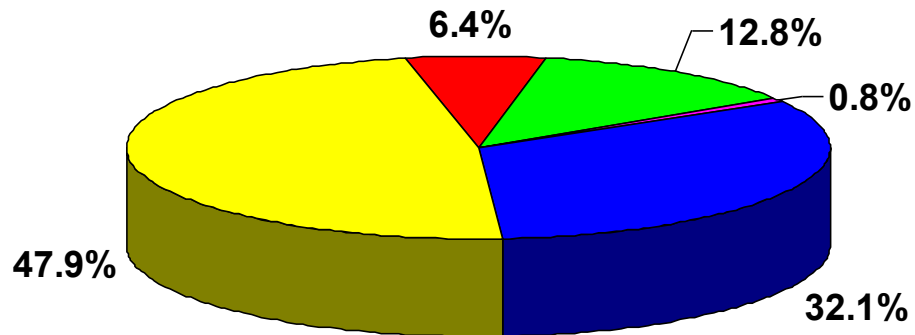
### FY 2011 Accident Statistics

| Aircraft Type                         | Hours  | Number of Accidents | Accident Rate | Number of Fatalities | Fatality Rate |
|---------------------------------------|--------|---------------------|---------------|----------------------|---------------|
| Fixed-Wing                            | 22,846 | 0                   | 0             | 0                    | 0             |
| Helicopter                            | 34,106 | 0                   | 0             | 0                    | 0             |
| Large Airtanker (LGAT)                | 4,550  | 0                   | 0             | 0                    | 0             |
| *Single Engine Air-tanker (SEAT)      | 578    | 0                   | 0             | 0                    | 0             |
| USFS Owned and/or Operated (USFS O/O) | 9,126  | 0                   | 0             | 0                    | 0             |
| Total                                 | 71,206 | 0                   | 0             | 0                    | 0             |



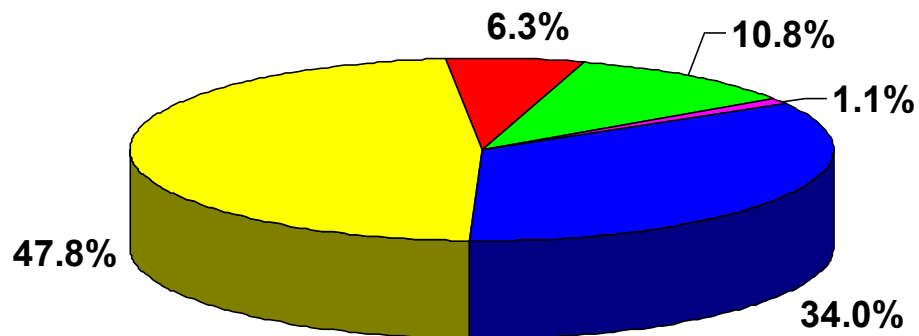
# Statistical Summary

## FY 2011 Flight Hour Percentages



■ Fixed-Wing   ■ Helicopter   ■ LGAT   ■ USFS O/O   ■ SEAT

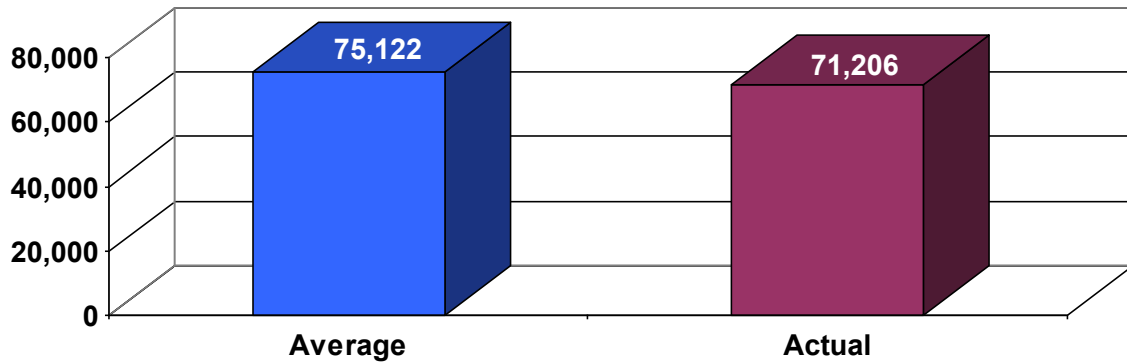
## 10-Year Average of Flight Hour Percentages 2002-2011



■ Fixed-Wing   ■ Helicopter   ■ LGAT   ■ USFS O/O   ■ SEAT

# Statistical Summary

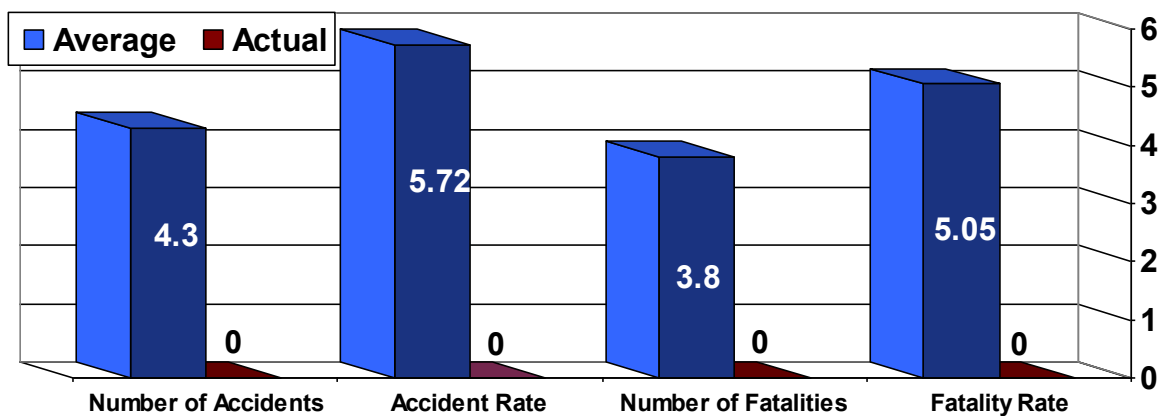
## Average vs Actual Hours Flown for FY 2011



## Comparison of Average vs 2011

|                      | 10 Year Average | 2011   | Comparison |
|----------------------|-----------------|--------|------------|
| Hours flown          | 75,122          | 71,206 | -3,916     |
| Number of Accidents  | 4.3             | 0      | -4.3       |
| Number of Fatalities | 3.8             | 0      | -3.8       |
| Accident Rate        | 5.72            | 0      | -5.72      |
| Fatality Rate        | 5.05            | 0      | -5.05      |

## Average vs Actual for FY 2011



## Statistical Summary

| 10-Year Flight Hour Statistics |            |            |        |       |          |         |
|--------------------------------|------------|------------|--------|-------|----------|---------|
| Fiscal Year                    | Fixed Wing | Helicopter | LGAT   | SEAT  | USFS O/O | Total   |
| 2011                           | 22,846     | 34,106     | 4,550  | 578   | 9,126    | 71,206  |
| 2010                           | 15,227     | 18,707     | 2,853  | 379   | 7,667    | 44,833  |
| 2009                           | 18,576     | 26,439     | 3,684  | 781   | 8,056    | 57,536  |
| 2008                           | 23,600     | 35,512     | 5,010  | 1,318 | 8,187    | 73,627  |
| 2007                           | 29,631     | 41,571     | 5,641  | 628   | 8,122    | 85,593  |
| 2006                           | 34,564     | 39,735     | 6,659  | 1,792 | 6,898    | 89,648  |
| 2005                           | 22,521     | 28,362     | 3,682  | 674   | 5,185    | 60,424  |
| 2004                           | 22,713     | 29,885     | 1,535  | 1,006 | 7,333    | 62,472  |
| 2003                           | 32,704     | 50,662     | 5,082  | 765   | 7,607    | 96,820  |
| 2002                           | 33,011     | 54,427     | 8,573  | 451   | 13,052   | 109,063 |
| 10-year Totals                 | 255,393    | 359,406    | 47,269 | 8,372 | 81,233   | 751,222 |
| Averages                       | 25,539     | 35,941     | 4,727  | 837   | 8,123    | 75,122  |

| 10-Year Accident Rates |                |                    |            |            |       |        |          |
|------------------------|----------------|--------------------|------------|------------|-------|--------|----------|
| Year                   | # of Accidents | Total All Aircraft | Fixed-Wing | Helicopter | LGAT  | SEAT   | USFS O/O |
| 2011                   | 0              | 0                  | 0          | 0          | 0     | 0      | 0        |
| 2010                   | 2              | 4.46               | 6.56       | 0.00       | 35.05 | 0.00   | 0.00     |
| 2009                   | 3              | 5.21               | 0.00       | 7.56       | 27.14 | 0.00   | 0.00     |
| 2008                   | 3              | 4.07               | 4.23       | 5.63       | 0.00  | 0.00   | 0.00     |
| 2007                   | 7              | 8.17               | 3.37       | 9.62       | 0.00  | 318.47 | 0.00     |
| 2006                   | 4              | 4.46               | 2.89       | 7.55       | 0.00  | 0.00   | 0.00     |
| 2005                   | 3              | 4.96               | 4.44       | 7.05       | 0.00  | 0.0    | 0.00     |
| 2004                   | 5              | 8.0                | 4.4        | 6.69       | 0.00  | 99.4   | 13.693   |
| 2003                   | 3              | 3.12               | 3.05       | 3.94       | 0.00  | 0.00   | 0.00     |
| 2002                   | 13             | 11.91              | 3.02       | 14.69      | 23.32 | 0.00   | 15.32    |
| 10-year Average        | 4.3            | 5.72               | 3.13       | 6.95       | 8.46  | 35.83  | 3.69     |

Accident Rate = Number of accidents divided by the number of hours flown multiplied by 100,000.

## Statistical Summary

| 10-Year Fatal Accident and Fatality Rates |                 |                     |                      |               |
|---|-----------------|---------------------|----------------------|---------------|
| Year                                      | Fatal Accidents | Fatal Accident Rate | Number of Fatalities | Fatality Rate |
| 2011                                      | 0               | 0                   | 0                    | 0             |
| 2010                                      | 1               | 4.46                | 3                    | 6.69          |
| 2009                                      | 2               | 3.47                | 4                    | 6.95          |
| 2008                                      | 1               | 1.35                | 9                    | 12.22         |
| 2007                                      | 1               | 1.16                | 1                    | 1.16          |
| 2006                                      | 2               | 2.23                | 6                    | 6.69          |
| 2005                                      | 1               | 1.65                | 3                    | 4.96          |
| 2004                                      | 2               | 3.2                 | 4                    | 6.4           |
| 2003                                      | 1               | 1.04                | 2                    | 2.08          |
| 2002                                      | 3               | 2.75                | 6                    | 5.50          |
| <b>10-year Average</b>                    | <b>1.4</b>      | <b>1.86</b>         | <b>3.8</b>           | <b>5.05</b>   |

Fatal Accident Rate = Number of fatal accidents divided by the number of hours flown multiplied by 100,000.

Fatality Rate = Number of fatalities divided by the number of hours flown multiplied by 100,000.

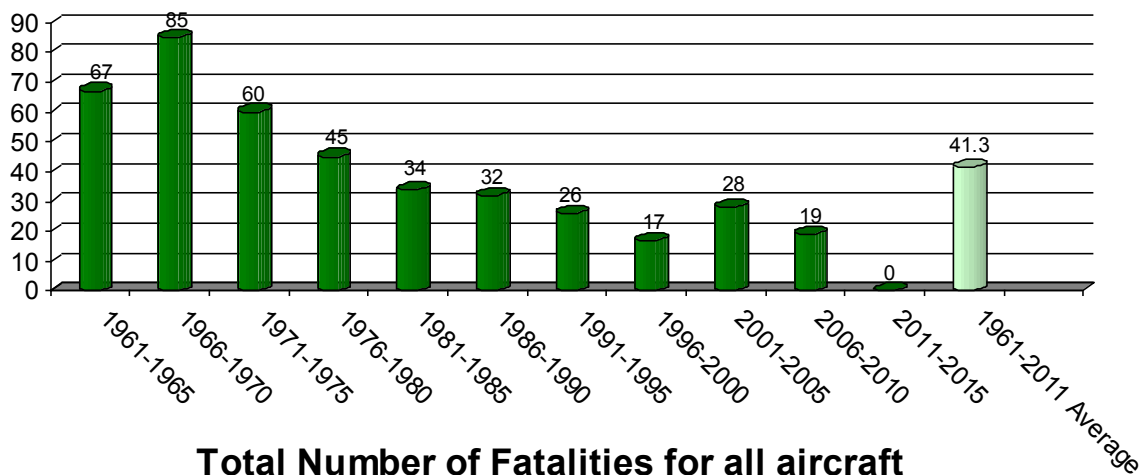


# Statistical Summary

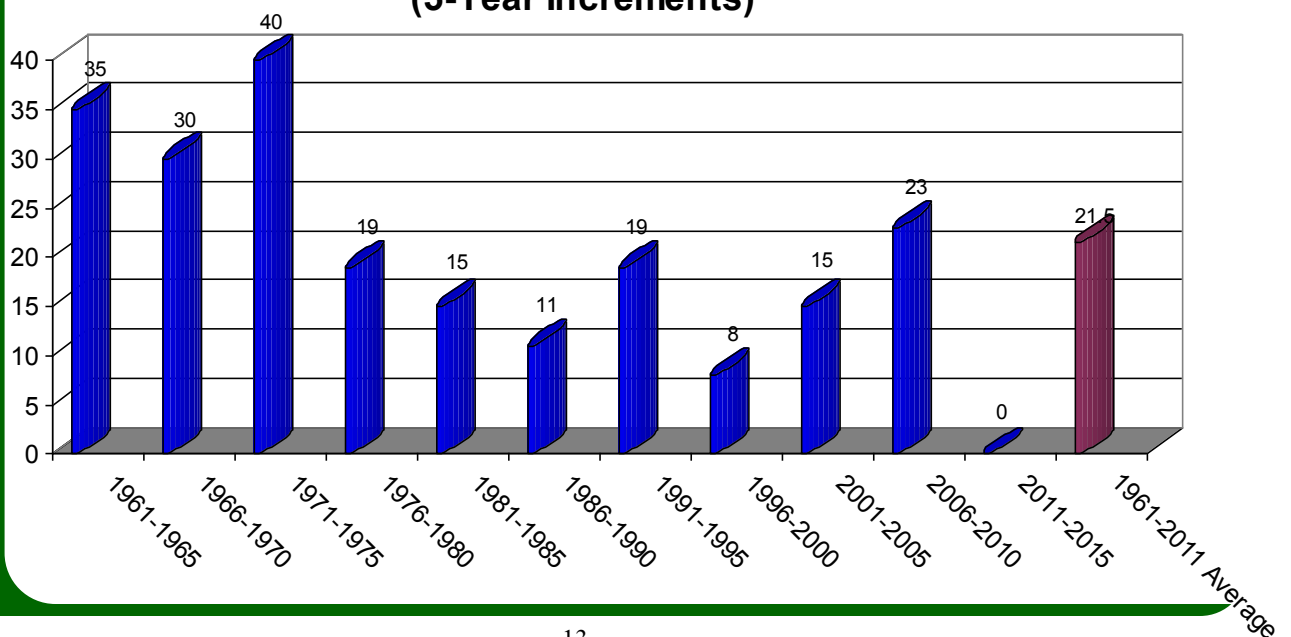
## Forest Service Aircraft Accident Statistics in 5-Year Increments

The total number of accidents in 5-year increments shows a steady decline, until the 2001-2005 period. The total number of fatalities in 5-year increments shows a major decline in the 80's from the 70's; however, since 2001 the number of fatalities has begun to rise. With the adoption of Safety Management Systems, particularly new risk management processes and quality assurance programs we anticipate a decrease in the number of accidents and fatalities in the future and 2011 was a prime example.

### Total Number of Accidents for all aircraft (5-Year Increments)



### Total Number of Fatalities for all aircraft (5-Year Increments)





## USFS Owned and/or Operated Aircraft

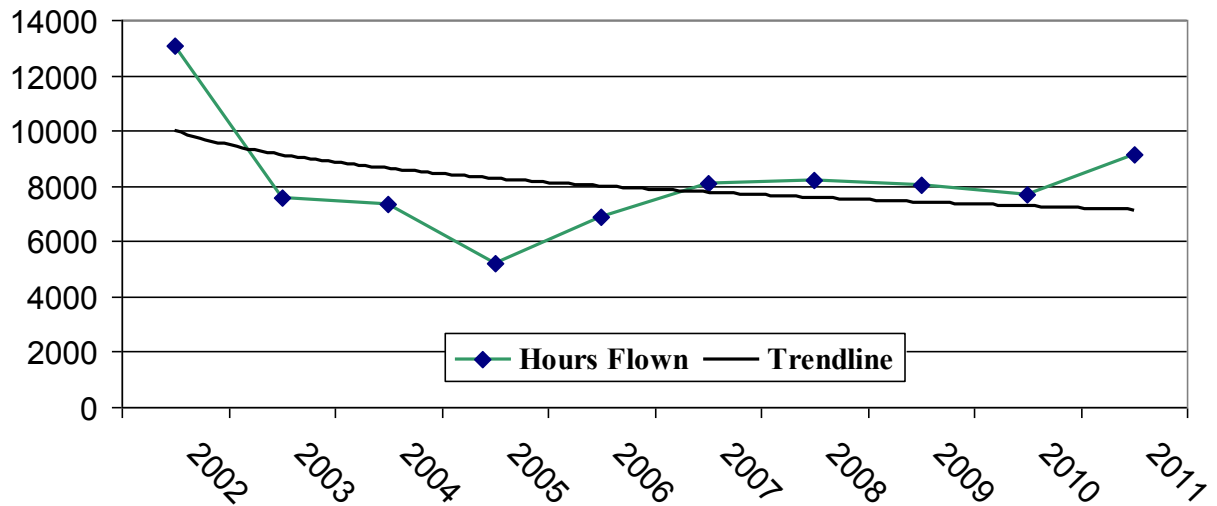
This section of statistics include the 27 Forest Service owned fleet aircraft and 13 leased Forest Service operated aerial supervision aircraft. The Forest Service owned aircraft accounted for 5,063 flight hours and the 13 leased aerial supervision aircraft flew 4,063 hours in FY 2011. This was 12.8% of the total flight hours, which is well above the average of 10.8%. There have not been any accidents since FY 2004 (December 2003) and no fatal accidents for 16 years in USFS owned aircraft.



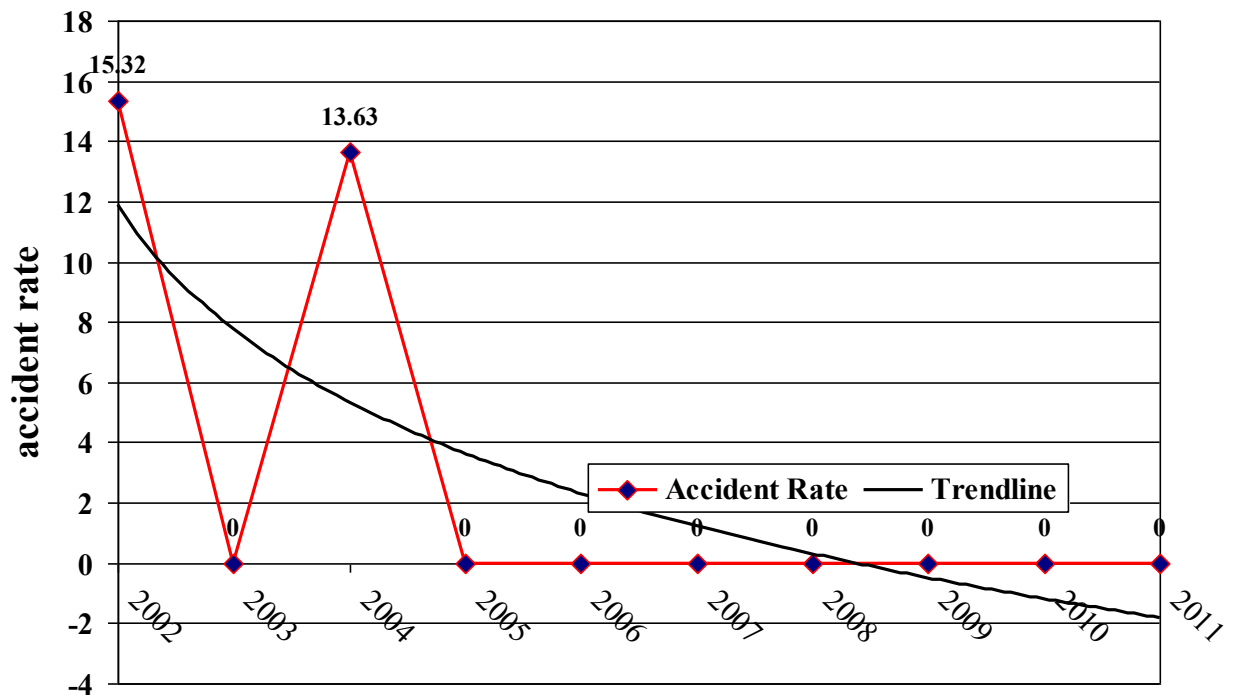
| USFS Owned and/or Operated 10-Year Statistics |             |                |               |                 |                     |            |               |
|---|-------------|----------------|---------------|-----------------|---------------------|------------|---------------|
| Fiscal Year                                   | Hours Flown | # of Accidents | Accident Rate | Fatal Accidents | Fatal Accident Rate | Fatalities | Fatality Rate |
| 2011  | 9,126       | 0              | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2010  | 7,667       | 0              | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2009  | 8,056       | 0              | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2008  | 8,187       | 0              | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2007  | 8,122       | 0              | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2006  | 6,898       | 0              | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2005  | 5,185       | 0              | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2004  | 7,333       | 1              | 13.63         | 0               | 0.00                | 0          | 0.00          |
| 2003  | 7,607       | 0              | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2002  | 13,052      | 2              | 15.32         | 0               | 0.00                | 0          | 0.00          |
| <b>Total</b>                                  | 81,233      | 3              |               | 0               |                     | 0          |               |
| <b>Average</b>                                | 8,123       | 0.3            | 3.69          | 0               | 0.00                | 0          | 0.00          |

# USFS Owned and/or Operated Aircraft

## USFS Owned & Operated Hours Flown



## USFS Owned & Operated Accident Rates



## Fixed-Wing Aircraft (contract)

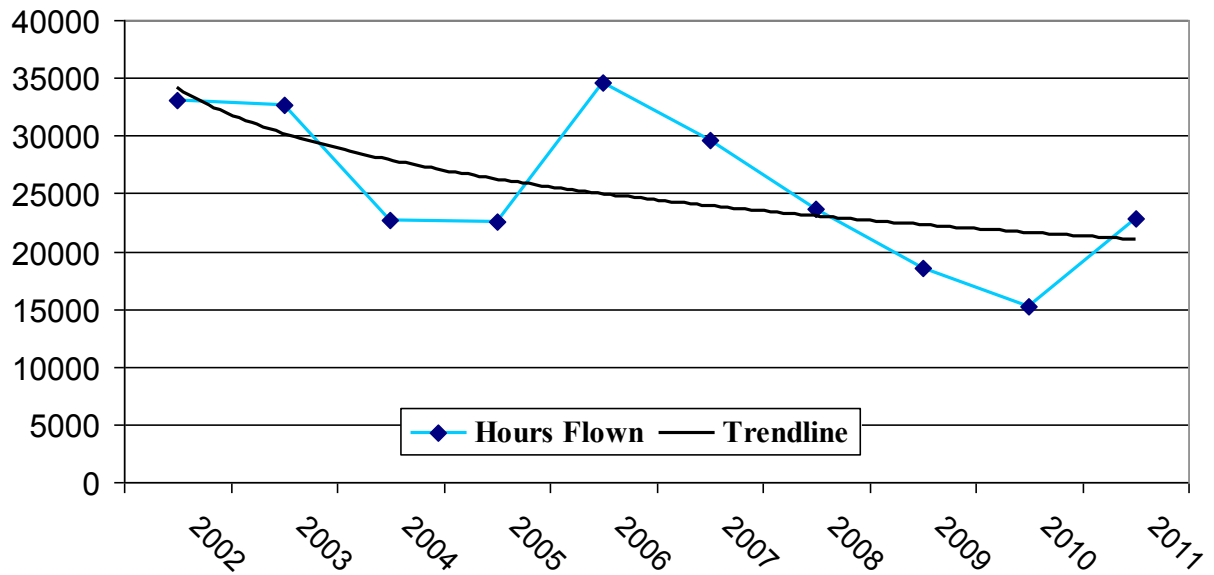
Fixed-Wing contract aircraft accounted for 32.1% of the total hours flown in FY 2011; the 10-year average is 34 percent. There were 22,846 hours flown in FY 2011, which is below the 10-year average of 25,539. The number of fixed wing accidents have remained constant over the past 30 years, averaging 0.76 per year.



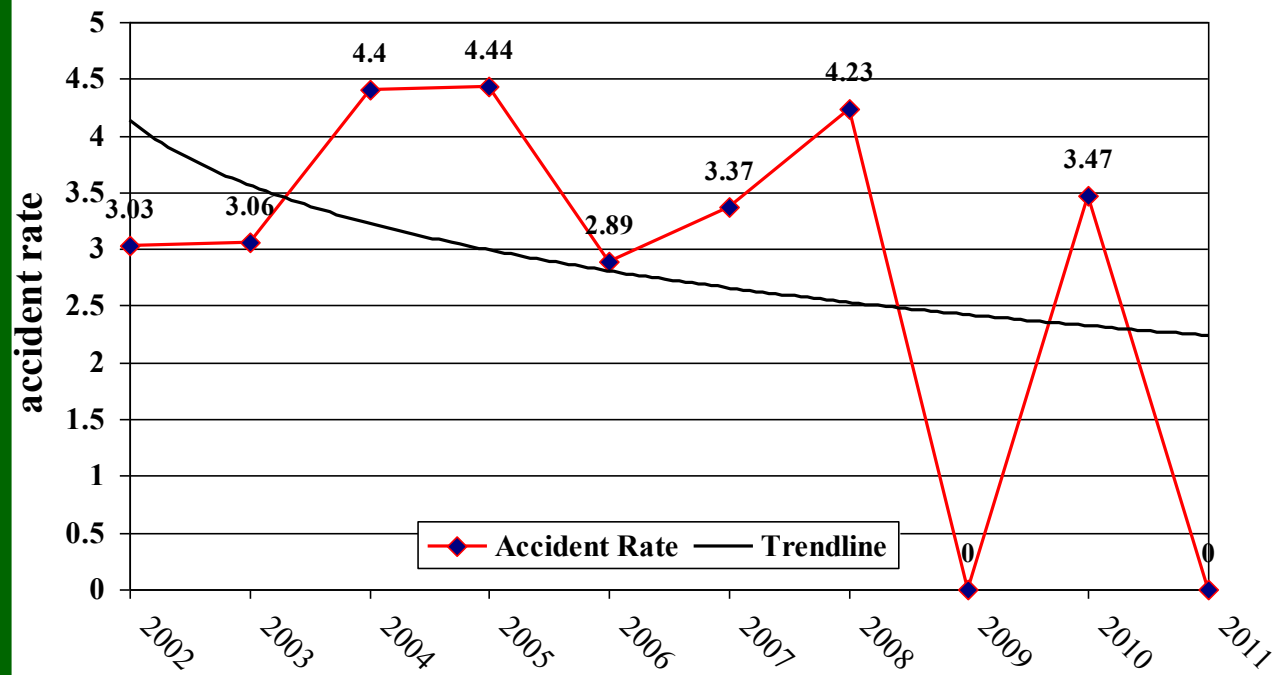
| Fixed-Wing 10-Year Statistics |             |           |               |                 |                     |            |               |
|-------------------------------|-------------|-----------|---------------|-----------------|---------------------|------------|---------------|
| Fiscal Year                   | Hours Flown | Accidents | Accident Rate | Fatal Accidents | Fatal Accident Rate | Fatalities | Fatality Rate |
| 2011                          | 22,846      | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2010                          | 15,227      | 1         | 6.56          | 1               | 6.56                | 3          | 19.7          |
| 2009                          | 18,576      | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2008                          | 23,600      | 1         | 4.23          | 0               | 0.00                | 0          | 0.00          |
| 2007                          | 29,631      | 1         | 3.37          | 0               | 0.00                | 0          | 0.00          |
| 2006                          | 34,564      | 1         | 2.89          | 0               | 0.00                | 0          | 0.00          |
| 2005                          | 22,521      | 1         | 4.44          | 0               | 0.00                | 0          | 0.00          |
| 2004                          | 22,713      | 1         | 4.40          | 1               | 4.40                | 3          | 13.2          |
| 2003                          | 32,704      | 1         | 3.06          | 0               | 0.00                | 0          | 0.00          |
| 2002                          | 33,011      | 1         | 3.03          | 0               | 0.00                | 0          | 0.00          |
| <b>Total</b>                  | 255,393     | 8         |               | 2               |                     | 6          |               |
| <b>Average</b>                | 25,539      | 0.8       | 3.13          | 0.2             | 0.78                | 0.6        | 2.34          |

## Fixed-Wing Aircraft (contract)

### Fixed-Wing Hours Flown



### Fixed-Wing Accident Rates



## Airtankers (contract)

Large Airtankers accounted for 6.4% of the total hours flown in FY 2011; which is very close to the 10-year average of 6.3%. Single Engine Airtankers only accounted for .8% of the flight hours; which is below the average of 1.1%. In a review of airtanker accidents over the past 50 years, we have seen a significant improvement, but much improvement is still needed. From 1962 through 1971 there were 36 accidents with 16 fatalities, in the past 10 years there were 7 accidents with 8 fatalities.



**All Airtanker 10-Year Statistics**

| Fiscal Year    | Hours Flown | Accidents | Accident Rate | Fatal Accidents | Fatal Accident Rate | Fatalities | Fatality Rate |
|----------------|-------------|-----------|---------------|-----------------|---------------------|------------|---------------|
| 2011           | 5,128       | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2010           | 3,232       | 1         | 30.94         | 0               | 0.00                | 0          | 0.00          |
| 2009           | 4,465       | 1         | 22.39         | 1               | 22.39               | 3          | 67.18         |
| 2008           | 6,328       | 0         | 0.0           | 0               | 0.00                | 0          | 0.00          |
| 2007           | 6,269       | 2         | 31.9          | 0               | 0.00                | 0          | 0.00          |
| 2006           | 8,451       | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2005           | 4,356       | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2004           | 2,541       | 1         | 39.35         | 0               | 0.00                | 0          | 0.00          |
| 2003           | 5,847       | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2002           | 9,024       | 2         | 22.16         | 2               | 22.16               | 5          | 58.32         |
| <b>Total</b>   | 55,641      | 7         |               | 3               |                     | 8          |               |
| <b>Average</b> | 5,564       | 0.7       | 12.58         | 0.3             | 5.39                | 0.8        | 14.37         |



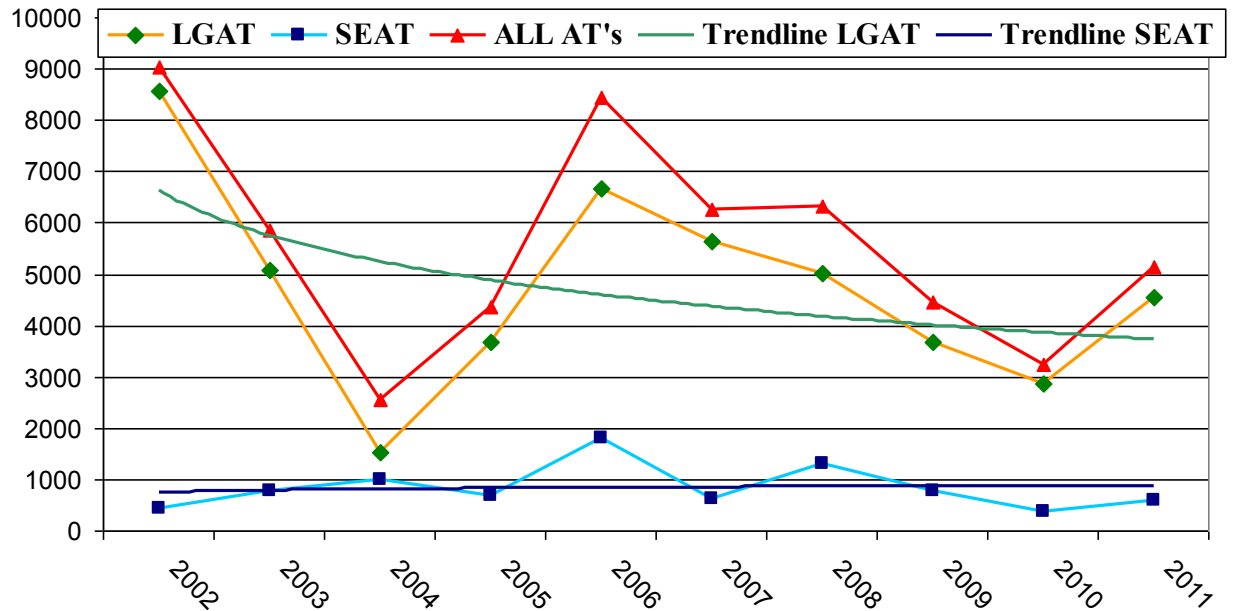
## Airtankers (contract)

| Large Airtanker 10-Year Statistics |             |           |               |                 |                     |            |               |
|------------------------------------|-------------|-----------|---------------|-----------------|---------------------|------------|---------------|
| Fiscal Year                        | Hours Flown | Accidents | Accident Rate | Fatal Accidents | Fatal Accident Rate | Fatalities | Fatality Rate |
| 2011                               | 4,550       | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2010                               | 2,853       | 1         | 35.05         | 0               | 0.00                | 0          | 0.00          |
| 2009                               | 3,684       | 1         | 27.14         | 1               | 27.14               | 3          | 81.43         |
| 2008                               | 5,010       | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2007                               | 5,641       | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2006                               | 6,659       | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2005                               | 3,682       | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2004                               | 1,535       | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2003                               | 5,082       | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2002                               | 8,573       | 2         | 23.33         | 2               | 23.33               | 5          | 58.32         |
| <b>Total</b>                       | 47,269      | 4         |               | 3               |                     | 8          |               |
| <b>Average</b>                     | 4,727       | 0.4       | 8.46          | 0.3             | 6.34                | 0.8        | 16.92         |

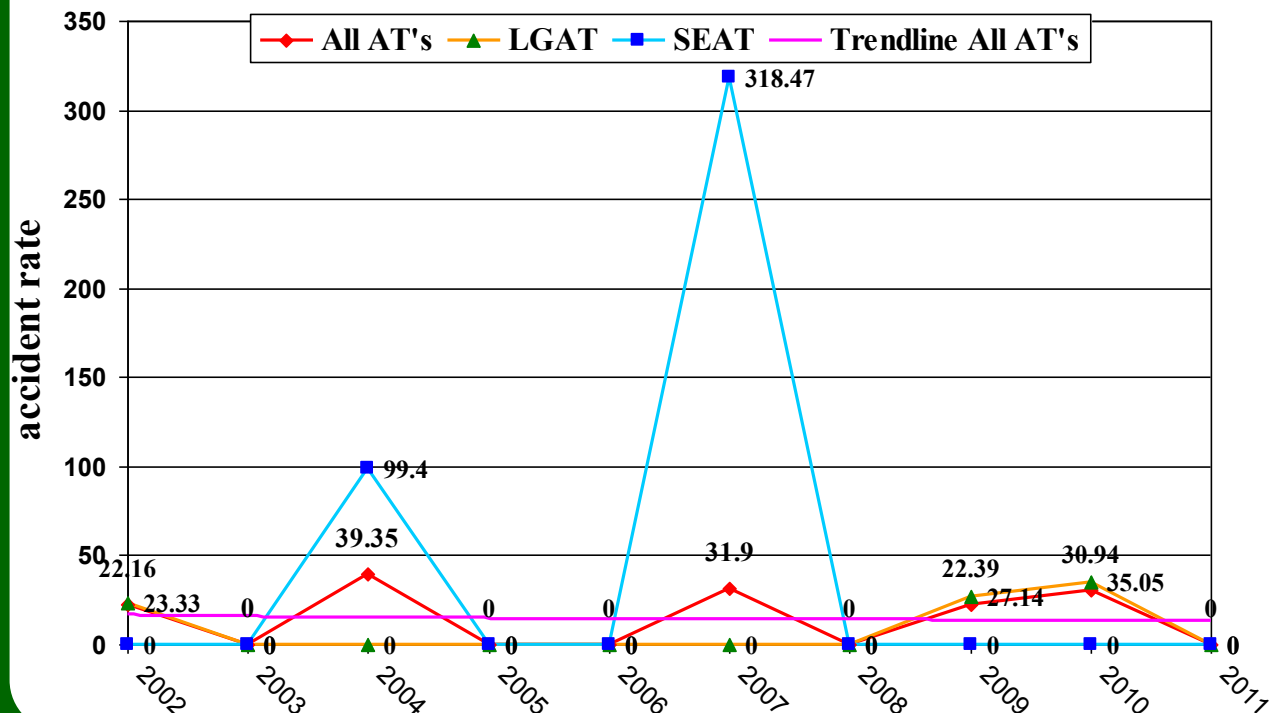
| Single Engine Airtanker 10-Year Statistics |             |           |               |                 |                     |            |               |
|--|-------------|-----------|---------------|-----------------|---------------------|------------|---------------|
| Fiscal Year                                | Hours Flown | Accidents | Accident Rate | Fatal Accidents | Fatal Accident Rate | Fatalities | Fatality Rate |
| 2011                                       | 578         | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2010                                       | 379         | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2009                                       | 781         | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2008                                       | 1,318       | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2007                                       | 628         | 2         | 318.47        | 0               | 0.00                | 0          | 0.00          |
| 2006                                       | 1,792       | 0         | 0.0           | 0               | 0.00                | 0          | 0.00          |
| 2005                                       | 674         | 0         | 0.0           | 0               | 0.00                | 0          | 0.00          |
| 2004                                       | 1,006       | 1         | 99.4          | 0               | 0.00                | 0          | 0.00          |
| 2003                                       | 765         | 0         | 0.0           | 0               | 0.00                | 0          | 0.00          |
| 2002                                       | 451         | 0         | 0.0           | 0               | 0.00                | 0          | 0.00          |
| <b>Total</b>                               | 8,372       | 3         |               | 0               |                     | 0          |               |
| <b>Average</b>                             | 837         | 0.3       | 35.83         | 0               | 0.00                | 0          | 0.00          |

# Airtankers (contract)

## Airtanker Hours Flown



## Airtanker Accident Rates



## Helicopters (contract)

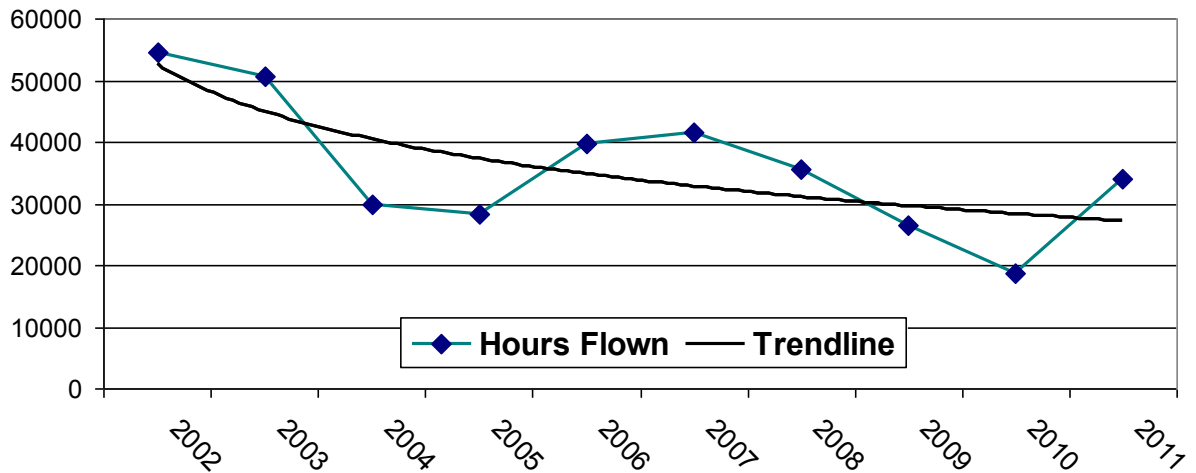
Helicopters accounted for 47.9% of the flight hours in FY 2011, which is pretty close to the 10-year average of 47.8%. Flight hours were slightly lower than the 10-year average. There were no helicopter accidents, which was the second year in a row and the first time in over 50 years of two consecutive accident free years. Since 1961 there were only two other years with no helicopter accidents, 1983 and 1995.



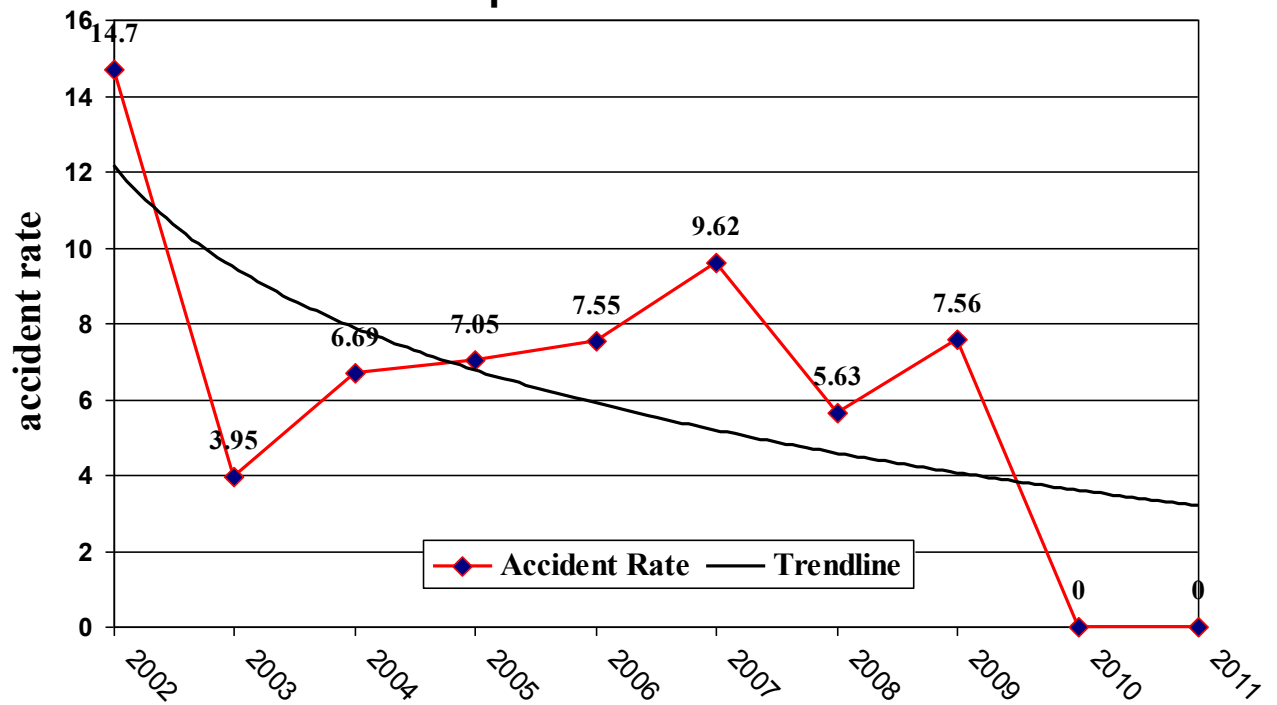
| Helicopter 10-Year Statistics |             |           |               |                 |                     |            |               |
|-------------------------------|-------------|-----------|---------------|-----------------|---------------------|------------|---------------|
| Fiscal Year                   | Hours Flown | Accidents | Accident Rate | Fatal Accidents | Fatal Accident Rate | Fatalities | Fatality Rate |
| 2011                          | 34,106      | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2010                          | 18,707      | 0         | 0.00          | 0               | 0.00                | 0          | 0.00          |
| 2009                          | 26,439      | 2         | 7.56          | 1               | 3.78                | 1          | 3.78          |
| 2008                          | 35,512      | 2         | 5.63          | 1               | 2.81                | 9          | 25.34         |
| 2007                          | 41,571      | 4         | 9.62          | 1               | 2.40                | 1          | 2.40          |
| 2006                          | 39,735      | 3         | 7.55          | 2               | 5.03                | 6          | 15.01         |
| 2005                          | 28,362      | 2         | 7.05          | 1               | 3.52                | 3          | 10.57         |
| 2004                          | 29,885      | 2         | 6.69          | 1               | 3.34                | 1          | 3.34          |
| 2003                          | 50,662      | 2         | 3.95          | 1               | 1.97                | 2          | 3.95          |
| 2002                          | 54,427      | 8         | 14.70         | 1               | 1.84                | 1          | 1.84          |
| <b>Total</b>                  | 359,406     | 25        |               | 9               |                     | 24         |               |
| <b>Average</b>                | 35,941      | 2.5       | 6.95          | 0.9             | 2.50                | 2.4        | 6.67          |

# Helicopters (contract)

## Helicopter Hours Flown



## Helicopter Accident Rates



## 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 accident prevention information. Armed with data on emerging safety and effectiveness challenges, operators and management can take appropriate actions before a mishap occurs.

There were a total of 1,013 SAFECOMs (522 Forest Service, 338 DOI, 143 State and 10 Other/Unknown/Military/Vendor) submitted to the Interagency SAFECOM database in FY 2011.

The following charts trend the Forest Service SAFECOM data submitted to the Interagency SAFECOM database online at <http://www.safecom.gov/>. In FY 2011 there were 522 Forest Service SAFECOMs submitted, which is well below the 10-year average of 619.

The most reported SAFECOMs in FY 2011 were communications (47), engine (37), precautionary landing (29), electrical (22), avionics (20), mission equipment (18), and dropped load (17). In an analysis of the past five years all but avionics and mission equipment were in the top reported. This was due to the issues with the new radios and the rappellers utilizing the SAFECOM system to report all equipment issues.

| Yearly Forest Service SAFECOM Totals |                     |
|--------------------------------------|---------------------|
| YEAR                                 | Number of SAFECOM's |
| 2011                                 | 522                 |
| 2010                                 | 398                 |
| 2009                                 | 441                 |
| 2008                                 | 594                 |
| 2007                                 | 620                 |
| 2006                                 | 753                 |
| 2005                                 | 516                 |
| 2004                                 | 494                 |
| 2003                                 | 887                 |
| 2002                                 | 962                 |
| Total                                | <b>6,187</b>        |
| 10 YR Average                        | <b>619</b>          |

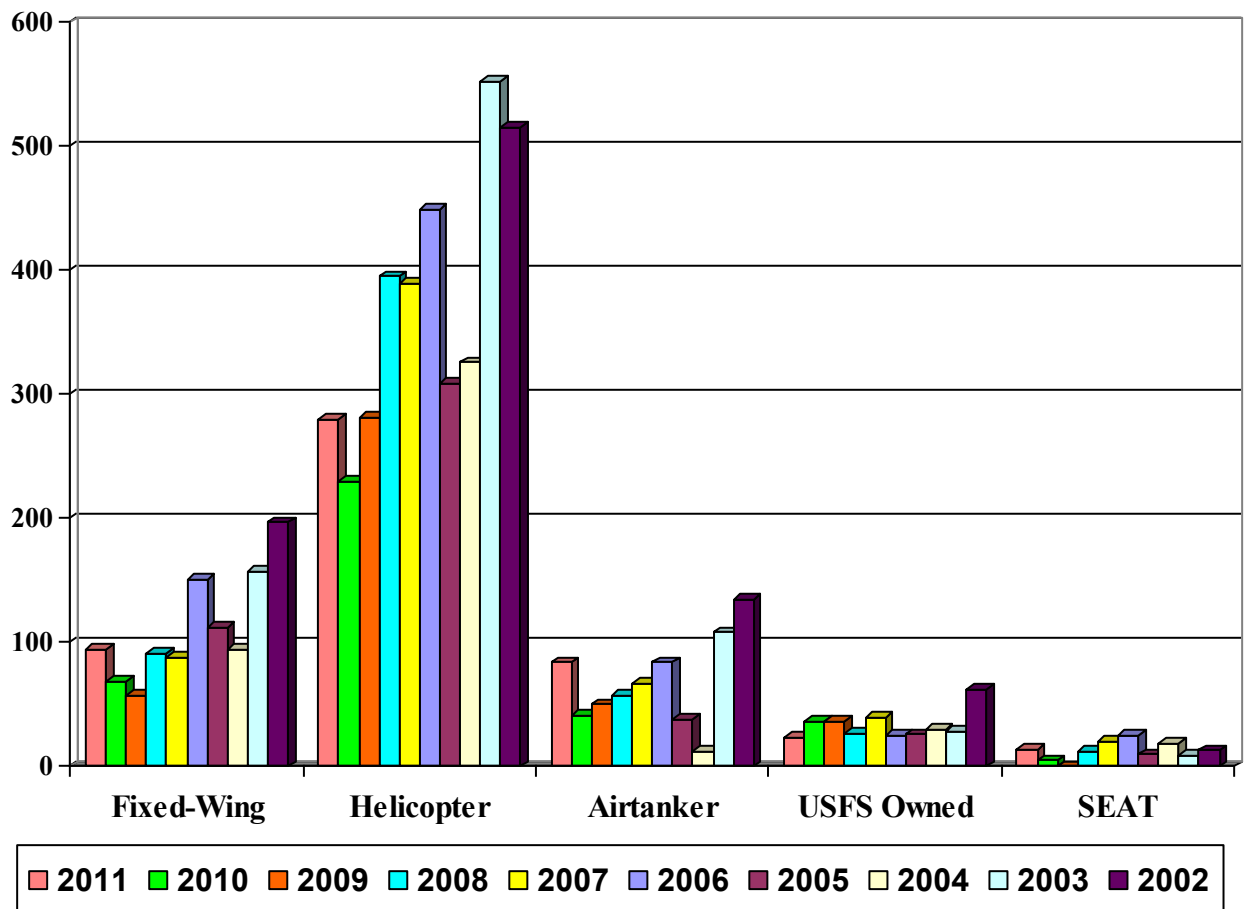


# SAFECOM Summary

## 2011 SAFECOMs by Aircraft

| Aircraft Type       | Number |
|---------------------|--------|
| Fixed Wing          | 95     |
| Helicopter          | 280    |
| Airtanker           | 84     |
| N/A                 | 25     |
| SEAT                | 14     |
| USFS Owned/Operated | 24     |
| Total               | 522    |

## SAFECOMs by Aircraft Type for 10 Years

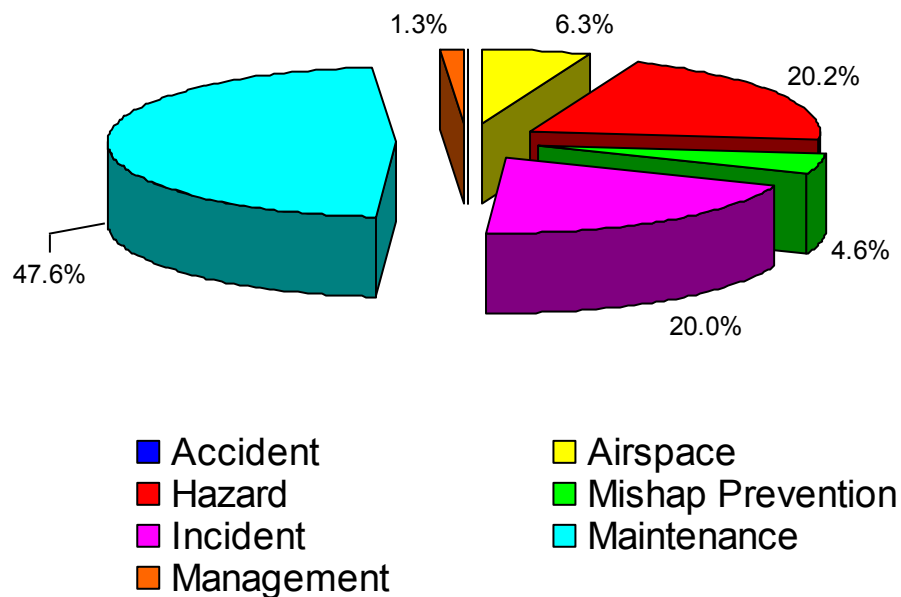


# SAFECOM Summary

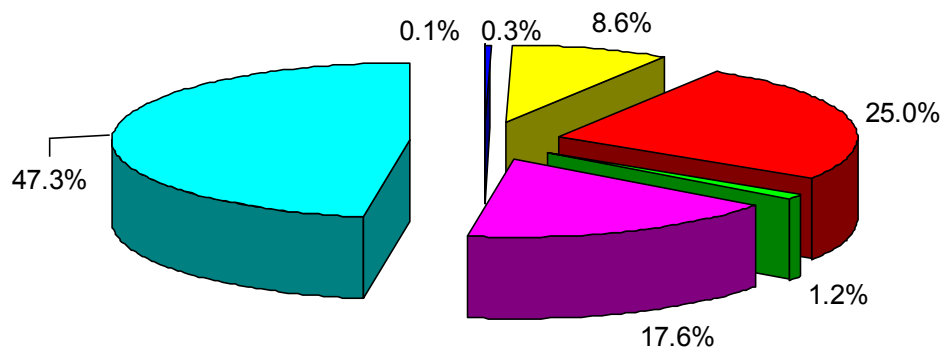
## SAFECOMs by Category

The numbers of SAFECOMs by category will be more than the total number of SAFECOMs reported as each SAFECOM may have more than one category assigned to it. For example, several Incident and Hazard SAFECOMs also have Maintenance SAFECOMs associated with them.

### 2011 Percent of SAFECOMs by Category



### 10-Year Average Percent of SAFECOMs by Category

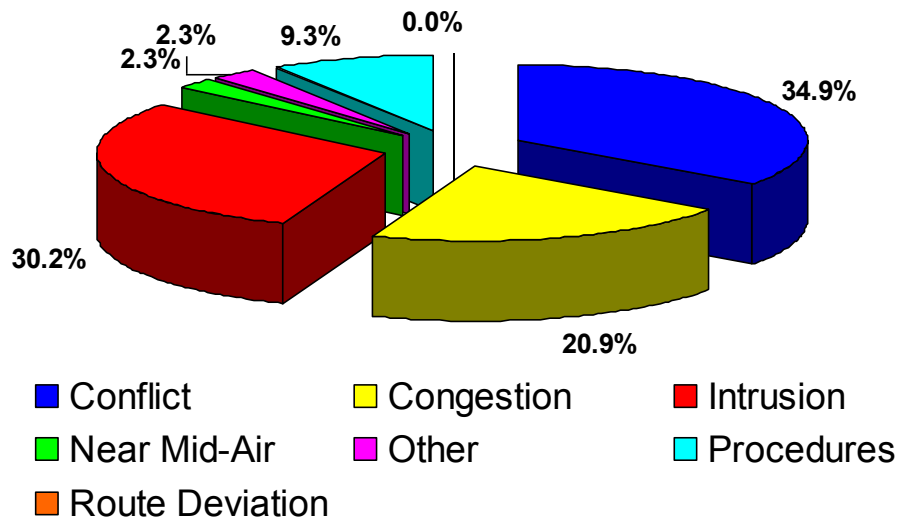


# SAFECOM Summary

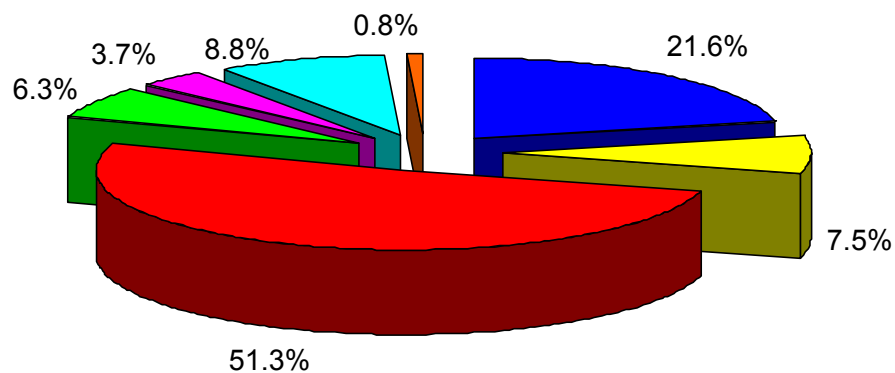
## Airspace SAFECOMs by sub-category

There were a total of 39 Airspace SAFECOMs reported this year, significantly below the 10-year average of 59.4. Conflicts (15 reports) accounted for almost 40% of the Airspace reports, which led to review of airspace concerns in the Southwest and the issuance of an Interagency Accident Prevention Bulletin ([IAAPB 11-03](#)) on mid-air collision avoidance. There were 13 Intrusion reports, which are generally the most reported airspace issues. There were 9 congestion reports and only one report actually classified as a near mid-air.

## 2011 Percent of Airspace SAFECOMs



## 10-Year Average Percent of Airspace SAFECOMs

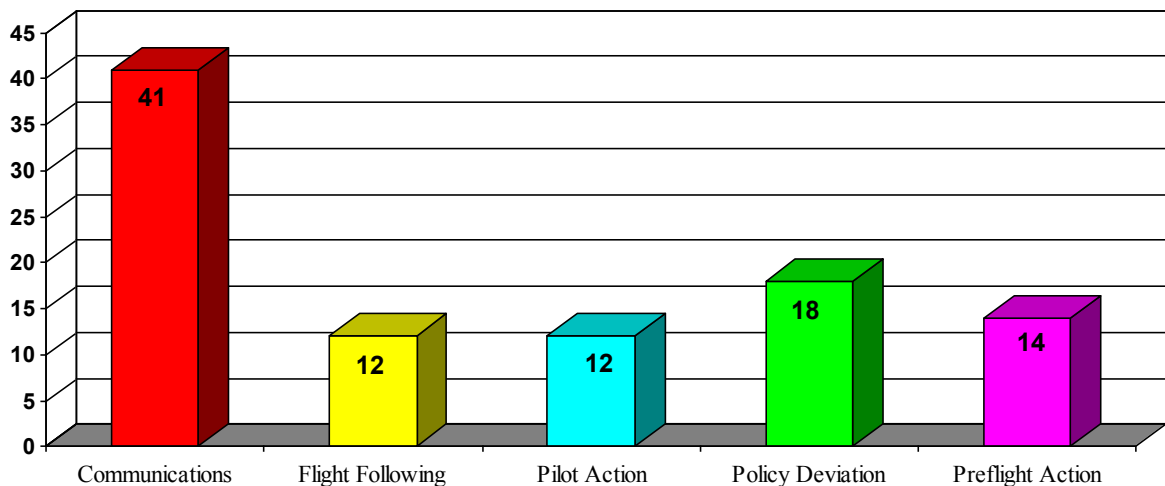


# SAFECOM Summary

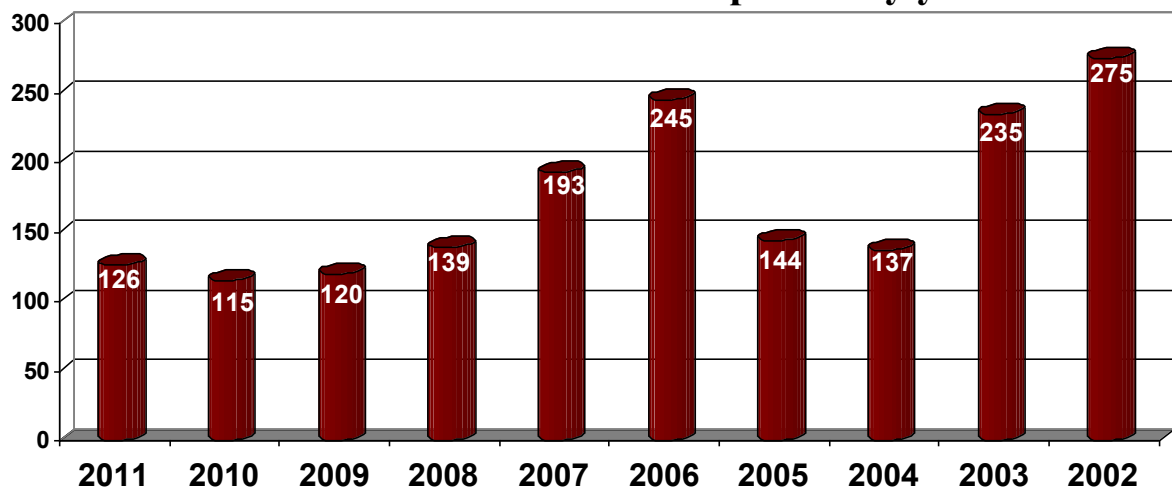
## Hazard SAFECOMs by sub-category

Communication issues are the most reported hazard, accounting for one third of the Hazard SAFECOMs. Frequency management, ground radios and repeaters, instructions and procedures accounted for a good portion of the communication SAFECOMs. Below are charts indicating the top 5 Hazard SAFECOMs reported, which were the same as last year and the total number of Hazard SAFECOMs reported for the last 10-years.

### 2011 Top 5 Hazards reported



### Total number of Hazards reported by year

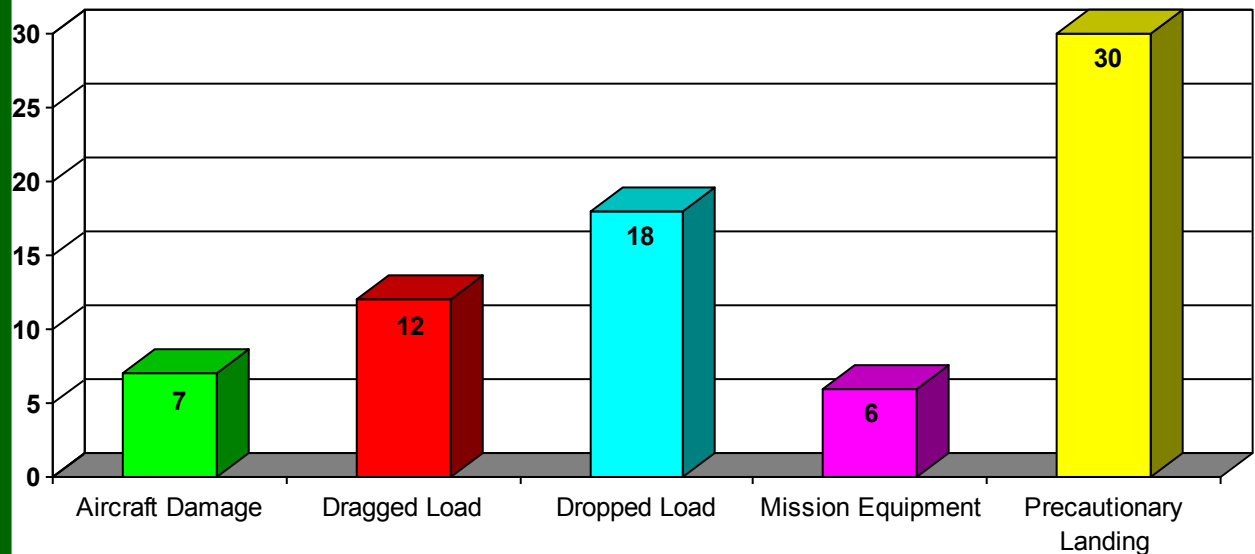


# SAFECOM Summary

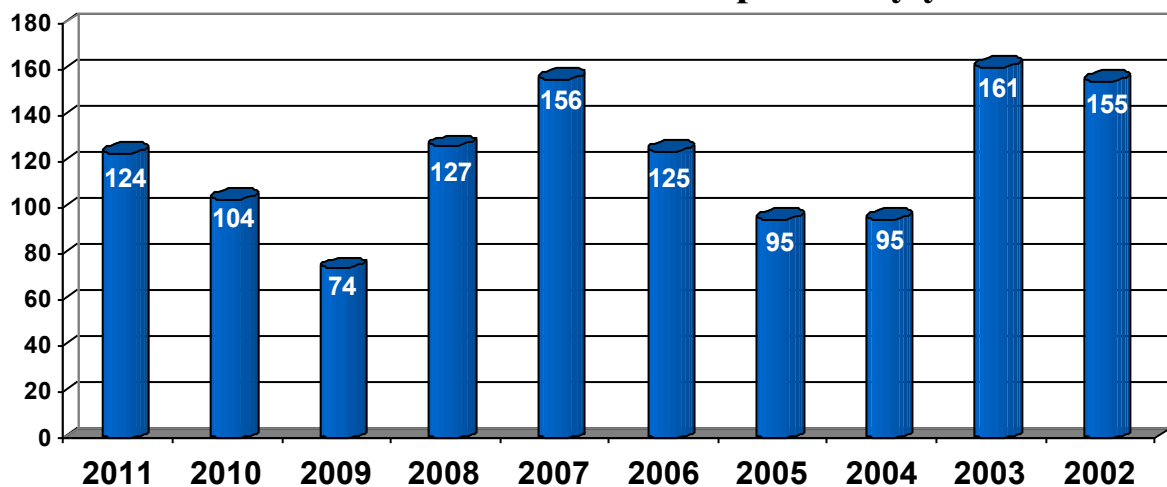
## Incident SAFECOMs by sub-category

Precautionary Landings were by far the most reported in this category with most attributed to maintenance problems. Dropped Load were the next most reported with almost half having human factors associated. Below are the top 5 Incident SAFECOMs reported in 2011 and the total number of Incident SAFECOMs reported for the last 10-years.

### 2010 Top 5 Incidents reported



### Total number of Incidents reported by year



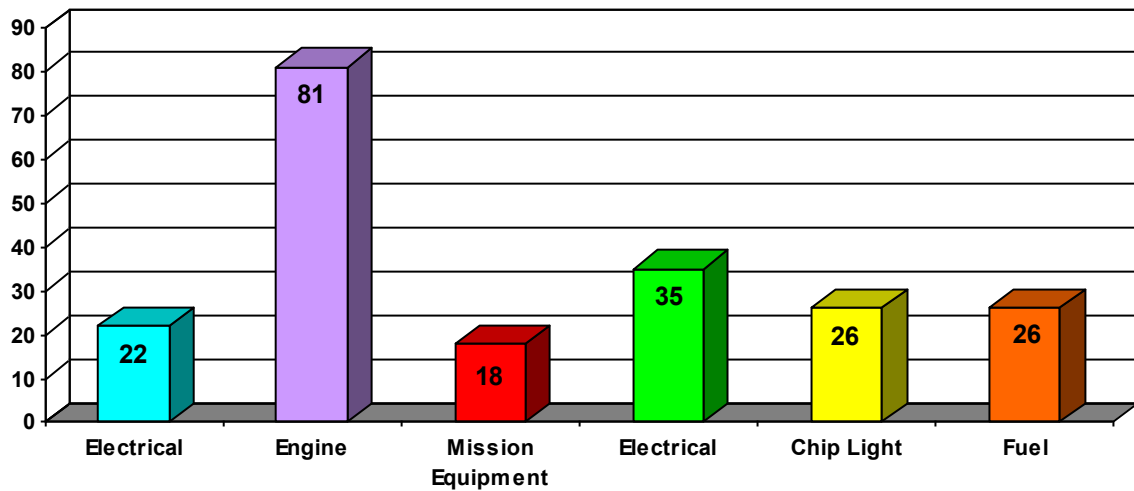


# SAFECOM Summary

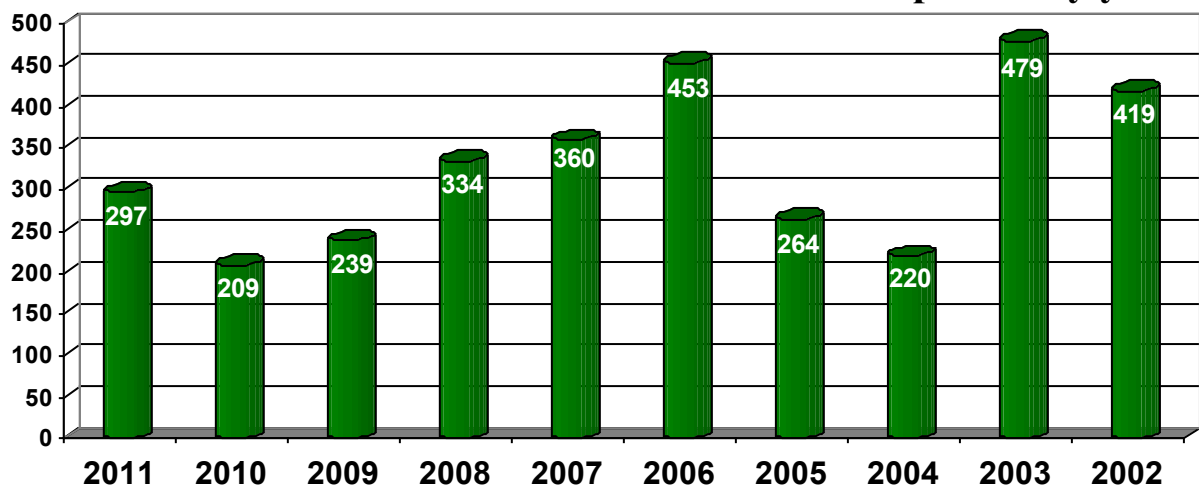
## Maintenance SAFECOMs by sub-category

Almost half of the SAFECOMs reported had maintenance related deficiencies. Engine maintenance discrepancies continue to be the most reported. In 2004 we added a sub-category under engine to capture more severe engine events (failures & shutdowns) which included six last year. Below are the top 5 Maintenance SAFECOMs reported in 2009 and the total number of maintenance SAFECOMs reported for the last 10-years.

### 2010 Top 6 Maintenance deficiencies reported



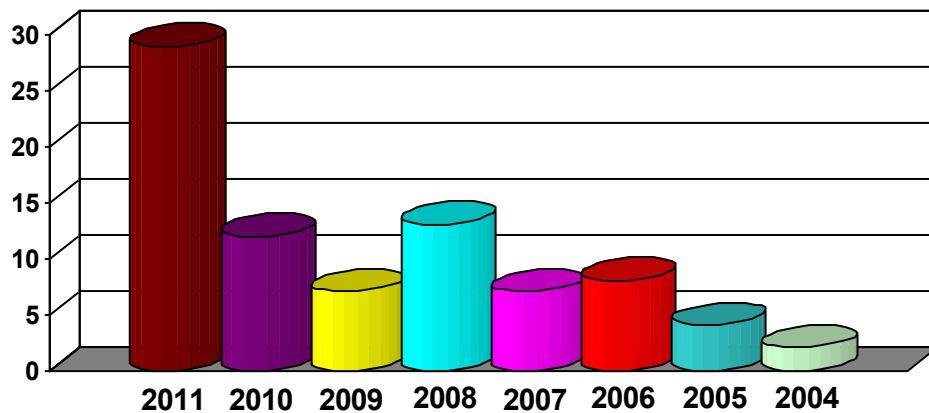
### Total number of Maintenance deficiencies reported by year



# SAFECOM Summary

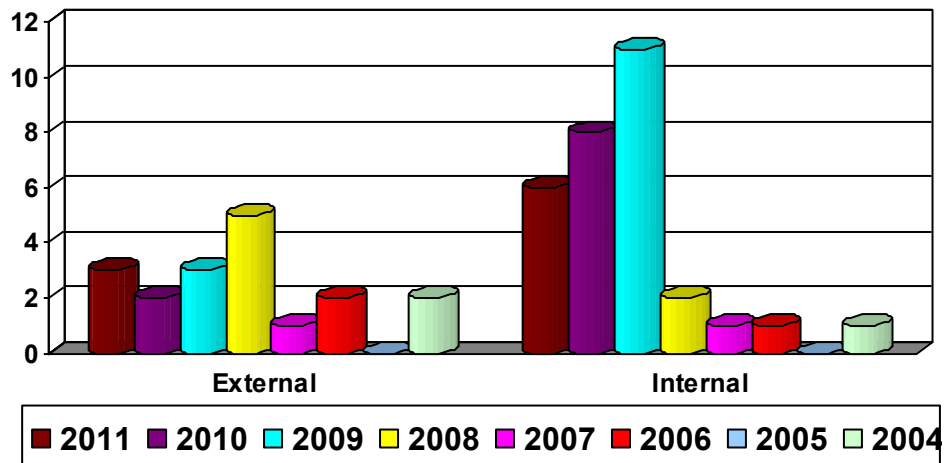
## Forest Service Mishap Prevention

This was a new category added in 2004 to attempt to capture the good things that individuals are doing for mishap prevention. There were more of these events reported this past year than ever. Most of the Airwards come from the SAFECOM system under this category.



## Forest Service Management SAFECOM's by sub-category

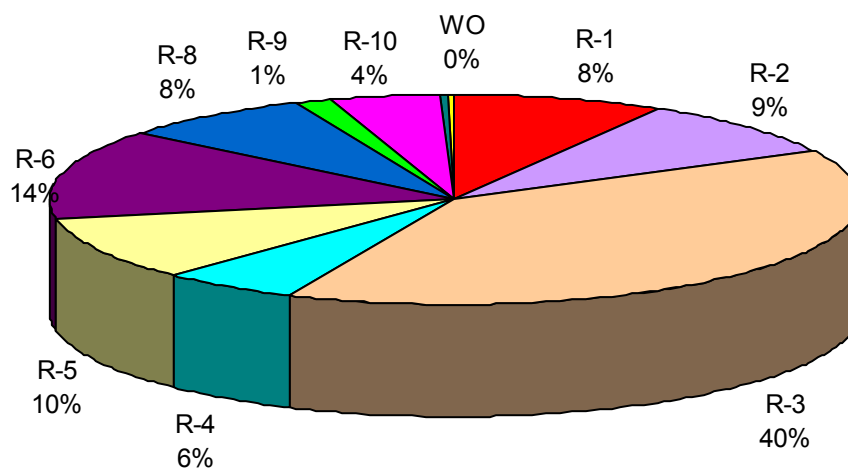
Management was a new category added in 2004 as well with the intent of capturing management safety issues internally and externally.



# SAFECOM Summary

## FY 2011 SAFECOMs by Region

### Percent of SAFECOMs by Region



| FY 2011 SAFECOMs by Aircraft Type and Region |            |            |           |      |            |     |       |
|--|------------|------------|-----------|------|------------|-----|-------|
| Region                                       | Fixed-Wing | Helicopter | Airtanker | SEAT | USFS Owned | N/A | Total |
| Region 1                                     | 12         | 18         | 4         | 4    | 4          | 1   | 43    |
| Region 2                                     | 13         | 23         | 8         | 1    | 0          | 2   | 47    |
| Region 3                                     | 39         | 97         | 55        | 5    | 7          | 3   | 206   |
| Region 4                                     | 6          | 16         | 3         | 0    | 3          | 1   | 29    |
| Region 5                                     | 5          | 29         | 7         | 0    | 6          | 3   | 50    |
| Region 6                                     | 6          | 49         | 3         | 4    | 1          | 10  | 73    |
| Region 8                                     | 4          | 30         | 4         | 0    | 1          | 2   | 41    |
| Region 9                                     | 0          | 5          | 0         | 0    | 0          | 2   | 7     |
| Region 10                                    | 9          | 13         | 0         | 0    | 0          | 1   | 23    |
| NEA  | 1          | 0          | 0         | 0    | 0          | 0   | 1     |
| WO   | 0          | 0          | 0         | 0    | 2          | 0   | 2     |
| Total  | 95         | 280        | 84        | 14   | 24         | 25  | 522   |

# SAFECOM Summary

## SAFECOMs by Region

The numbers of SAFECOM's by category are more than the total number of SAFECOMs reported as each SAFECOM can have more than one category assigned to it.

| FY 2011 SAFECOMs by Category and Region |          |          |        |          |        |      |                      |       |
|---|----------|----------|--------|----------|--------|------|----------------------|-------|
| Re-<br>gion                             | Accident | Airspace | Hazard | Incident | Maint. | Mgt. | Mishap<br>Prevention | Total |
| R-1                                     | 0        | 4        | 10     | 11       | 21     | 1    | 9                    | 56    |
| R-2                                     | 0        | 1        | 16     | 5        | 24     | 2    | 7                    | 55    |
| R-3                                     | 0        | 28       | 43     | 22       | 124    | 2    | 5                    | 224   |
| R-4                                     | 0        | 2        | 5      | 14       | 11     | 0    | 0                    | 32    |
| R-5                                     | 0        | 1        | 13     | 8        | 28     | 0    | 4                    | 54    |
| R-6                                     | 0        | 0        | 11     | 37       | 40     | 0    | 2                    | 90    |
| R-8                                     | 0        | 3        | 17     | 18       | 30     | 0    | 2                    | 70    |
| R-9                                     | 0        | 0        | 2      | 3        | 3      | 0    | 0                    | 8     |
| R-10                                    | 0        | 0        | 9      | 7        | 13     | 3    | 0                    | 32    |
| NEA                                     | 0        | 0        | 0      | 0        | 1      | 0    | 0                    | 1     |
| WO                                      | 0        | 0        | 0      | 0        | 2      | 0    | 0                    | 2     |
| Total                                   | 0        | 39       | 126    | 125      | 297    | 8    | 29                   | 624   |



## Mishap Summary

There were no USFS accountable accidents in 2011, however, there were a couple of accident investigations that we (USFS) participated in. The first event was a USFS exclusive use contract helicopter and the other one involved USFS personnel. The following NTSB Reports for these accidents are preliminary reports which are subject to change, and may contain errors. Any errors in these reports will be corrected on the NTSB web-site when the final reports are completed. Links are provided to the NTSB reports where updated information may be posted after the completion of this report.

NTSB Identification: [WPR11GA431](#)

14 CFR Part 133: Rotorcraft Ext. Load

Accident occurred Sunday, September 04, 2011 in Tehachapi, CA

Aircraft: BELL 205, registration: N205WW

Injuries: 1 Minor.

On September 4, 2011, about 1445 Pacific daylight time, a Bell 205A-1, N205WW, landed hard during an off field forced landing near Tehachapi, California. The Kern County Fire Department was operating the helicopter as a public-use fire suppression flight under the provisions of 14 Code of Federal Regulations (CFR) Part 133. The commercial pilot sustained minor injuries; the helicopter sustained substantial damage to the tail boom from impact forces. No flight plan had been filed for the local flight.

The helicopter had a water bucket as an external load, and the pilot stated that the helicopter experienced a loss of engine power. He released the bucket, and performed an autorotation into a clear area of uneven terrain. The helicopter landed hard; the skids collapsed, and the tail boom buckled.

NTSB Identification: [ANC11LA108](#)

Nonscheduled 14 CFR Part 135: Air Taxi & Commuter

Accident occurred Monday, September 26, 2011 in Juneau, AK

Aircraft: EUROCOPTER AS 350 BA, registration: N230CH

Injuries: 2 Uninjured.

On September 26, 2011, about 1300 Alaska daylight time, a Eurocopter AS350BA helicopter, N230CH, sustained substantial damage after landing at a remote mountain site, about 22 miles northwest of Juneau, Alaska. The helicopter was being operated by Coastal Helicopters Inc., Juneau, as a visual flight rules (VFR) passenger flight under the provisions of 14 Code of Federal Regulations Part 135, when the accident occurred. The commercial pilot and sole passenger were not injured. Visual meteorological conditions prevailed, and company flight following procedures were in effect. The flight departed Juneau about 1230.

## Mishap Summary continued...

During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC) on September 28, the passenger said they landed at the remote site to pickup two passengers. They had landed at the site numerous times. she said prior to leaving Juneau, they received a weather briefing, and were told the wind could be gusting in the 20 knot range. After landing, the helicopter was at flight idle, waiting for the 2 minute cool down. She and the pilot discussed not shutting down due to the gusty wind condition. While waiting, she saw snow blowing off the peaks above, and saw the trees on the pilot's side of the helicopter begin to move. The helicopter then rocked fore and aft, and a gust of wind rolled the helicopter onto its left side.

### Incidents With Potential (IWP)

| Date      | Region & Forest        | Aircraft Type | Comments                               |
|-----------|------------------------|---------------|--|
| 5/14-6/12 | R-3 Large Fires        | Multiple      | Multiple airspace close calls          |
| 6/3/2011  | R-3 Coronado NF        | Bell 407      | Loss of Tail rotor Effectiveness (LTE) |
| 6/15/2011 | R-2 Pike/San Isabel NF | AT 802F       | Wing contacted runway sign on landing  |
| 6/24/2011 | R-3 Coronado NF        | CH-54B        | Snorkel hit and broke chin bubble      |
| 7/30/2011 | PNW Research Station   | Bell 407      | Tail rotor strike                      |