

USDA Forest Service



Aviation Safety Summary August 2002

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Information Sharing

Great News from Aviation Safety Land

A meeting was held the week of September 3, 2002 in Boise, ID with Forest Service representatives, OAS and the database programmer on merging the USFS and OAS SafeCom databases. We are excited to say the least, there are going to be some great enhancements to the new system, like help screens and instructions for a start. We have also secured the internet address www.safecom.gov. How cool is that!!!

So keep your eyes open for the new SafeCom system coming soon to a web site near you and easy to find...

Aviation Accident Investigation Guide

The other great news is that Bill Bulger has worked diligently with the Washington Office Safety and Health Office and the Missoula Technology and Development Center to complete the aviation accident investigation chapter to add to the Accident Investigation Guide. The revision is currently being reviewed one last time and will be finalized next month. Thanks Bill.

Regional Aviation Safety Managers Coming and Going

Good-bye and good luck to Mike Davis who retired September 3rd.

Congratulations and good luck to Ken Barnes. Ken accepted a position with the National Park Service in Alaska.

Bill McMillan accepted the new Aviation Safety Manager position in Region 8. Welcome back Bill.

Lessons Learned for the SEAT program

SEAT pilots need more training prior to being deployed to fire. Some of the issues are that the SEAT pilots are not well versed on fire terminology, tactics, and procedures.

This issue has been raised and addressed by the SEAT Board and the industry association. The Industry is in the process of developing a training syllabus for prospective SEAT pilots, that will educate them as to how we do business. The curriculum will cover such things as fire behavior (S-190), Incident Command structure (I-200), Retardant Use and Application, and Fire Suppression Tactics (S-336). There will also be sections covering communications and procedures, as well as target identification and terminology. This training will be in conjunction with Federal Agency oversight to ensure proper material presentation. The first course presentation is tentatively set for this winter, depending on the progress of the course development.

Suppression efforts , with SEATs, seem to be more effective when two or more SEATs are used in conjunction. This seems to be especially true on initial attack type of fire suppression efforts.

This is logical, when you consider the fact that when two SEATs are used together the turn-around times are usually cut by half and that the amount of retardant/ suppressant is sometimes doubled per hour. The close air support mission, that provides the most efficient use of SEATs, becomes very effective when the SEATs are used in tandem. Although this requires some air to ground coordination, direct radio contact with the ground firefighters will provide this coordination.

SEATs definitely have a role to play in the aerial application of retardant and suppressants on initial attack incidents.

Because of the maneuverability of the aircraft and the small size, the SEAT has an advantage when used on initial attack missions. The most efficient use of SEATs occurs during the first few hours after discovery of the fire. It is also important to realize that the quicker the SEAT is deployed to the fire the more effective it will be in retarding the spread of the fire.

SEATs can be effective in the “close air support” mission on extended attack incidents.

Although SEATs carry a relative small amount of retardant or suppressant, they can still be an effective resource on extended attack fires, when used in conjunction with other aerial firefighting assets. An example would be to use SEATs to fill in any gaps in the retardant lines dropped by the large air tankers, or in support of burn-out operations, and spot fires ahead of the lines. Their quick response times and short turnarounds enable them to provide effective air support to the ground units.

Mishap Update

Region 1, Beaverhead-Deerlodge NF, Sheep Creek Fire
Mission: Water Dropping Bucket Operations

NTSB Identification: SEA02TA164
Accident occurred Saturday, August 24, 2002 at Wisdom, MT
Aircraft: Bell 206L-1, registration: N832AH
Injuries: 1 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 August 24, 2002, about 1600 mountain daylight time, a Bell 206L-1, N832AH, registered to Hillsboro Aviation, operated by the U.S. Forest Service as a public use firefighting flight, collided with trees located about 18 miles west of Wisdom, Montana. Visual meteorological conditions prevailed at the time and company visual flight following was in effect. The helicopter was substantially damaged and the commercial pilot, the sole occupant, was not injured. The flight had been operating in the area all day.

During a post-flight walk around, the pilot noticed damage to both main rotor blades. One blade was punctured and both blades displayed tearing to the underside material of the blade. The pilot reported that several missions had been flown that day and he was unsure as to when the damage occurred.

USFS personnel reported that it appeared that during the second to the last flight of the day, while the pilot was supporting firefighting personnel on the ground, the pilot descended into the trees with the 50 foot long line that held the water bucket. During this maneuver, the main rotor blades came in contact with trees.



Region 2, Rio-Grande NF, Trickle Mountain Fire
Mission: Water Dropping Bucket Operations

NTSB Identification: DEN02TA100
Accident occurred Monday, August 26, 2002 at Saguache, CO
Aircraft: Bell 206L-3, registration: N801HM
Injuries: 1 Serious, 3 Minor.

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 August 26, 2002, approximately 1630 mountain daylight time, a Bell 206L-3, N801HM, registered to Redding Air Service, Redding, California, and operated by the U.S. Forest Service, Golden, Colorado, was substantially damaged when it collided with trees and impacted terrain during landing approach 14 miles west-northwest of Saguache, Colorado. The commercial pilot was seriously injured and three passengers received minor injuries. Visual meteorological conditions prevailed, and no flight plan had been filed for the public use aircraft operating under Title 14 CFR Part 135. The flight originated at Saguache approximately 1615.

Witnesses reported the helicopter was approaching to land in gusty wind conditions when it started spinning to the right. It collided with trees, struck the ground, and rolled over.



Region 5, San Bernardino NF, Lytle Fire
Mission: Water Dropping Bucket Operations

NTSB Identification: LAX02TA267
Accident occurred Friday, August 30, 2002 at Lytle Creek, CA
Aircraft: Sikorsky S-55T, registration: N747A
Injuries: 1 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 August 30, 2002, at 1006 hours Pacific daylight time, a Sikorsky S-55T, N747A, collided with terrain while attempting a precautionary landing in a dry creek bed in Lytle Creek, California. The helicopter sustained substantial damage and the commercial pilot, the sole occupant, was not injured. The U.S. Forest Service was operating the helicopter as a fire suppression unit under the provisions of 14 CFR Part 133. The flight originated from a temporary helipad about 0810. Visual meteorological conditions prevailed and it is not known if a flight plan had been filed.

The operator reported that the pilot stated that a hydraulic warning light illuminated and the flight controls became stiff. The pilot began an approach to an open area. About 10 feet above the ground, the cyclic flight control moved "hard over" and the pilot was unable to regain control before the rotors made contact with a rocky shelf.

Post crash examination of the wreckage by the Forest Service investigation team did not reveal evidence of ruptured hydraulic lines. They took a sample of hydraulic fluid from the reservoir and stated that it appeared to be severely contaminated. The fluid will be sent to a laboratory for testing.



Region 5, Inyo NF, Paiute Fire
Mission: Aircraft Released, Flight was to Home Base

NTSB Identification: LAX02LA299
Accident occurred Sunday, September 29, 2002 at Bishop, CA
Aircraft: Eurocopter AS350-B3, registration: N352SA
Injuries: 4 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 September 29, 2002, about 0854 Pacific daylight time, a Eurocopter AS350-B3, N352SA, collided with terrain during a premature liftoff while engaged in a pre-departure hydraulic flight control check at the Bishop, California, airport. The U. S. Forest Service was operating the helicopter as a public-use flight under the provisions of 14 CFR Part 91. The commercial pilot and three passengers were not injured; the helicopter sustained substantial damage. The cross-country flight was to depart the Bishop airport for Bridgeport, California. Visual meteorological conditions prevailed, and an agency flight plan had been filed.

Forest Service officials reported that the helicopter was engaged in a hydraulic actuator check for the first flight of the day. The collective had been placed in the down and locked position and the rotor powered up to 100 percent flight idle. After depressing the hydraulic test switch, the pilot moved the cyclic fore and aft (pumped) to confirm there was remaining pressure for a few control movements. The collective rose uncommanded and the helicopter moved forward in a nose down attitude. The main rotor struck the ground and the helicopter made two revolutions before rolling over onto its side, destroying both the main and tail rotor systems. A small fire ensued in the exhaust area, but was quickly extinguished.

A postcrash examination was conducted, which revealed a deteriorated condition in the collective's locking mechanism. The stud was worn and the collective would come loose during movement of the cyclic. The Forest Service investigators also found this condition on another of their helicopters of the same type.



SafeCom Summary

There have been 872 SafeComs filed this fiscal year (October 1, 2001 – August 31, 2002). Last year there were 685 and in 2000 there were 876 for the same time period.

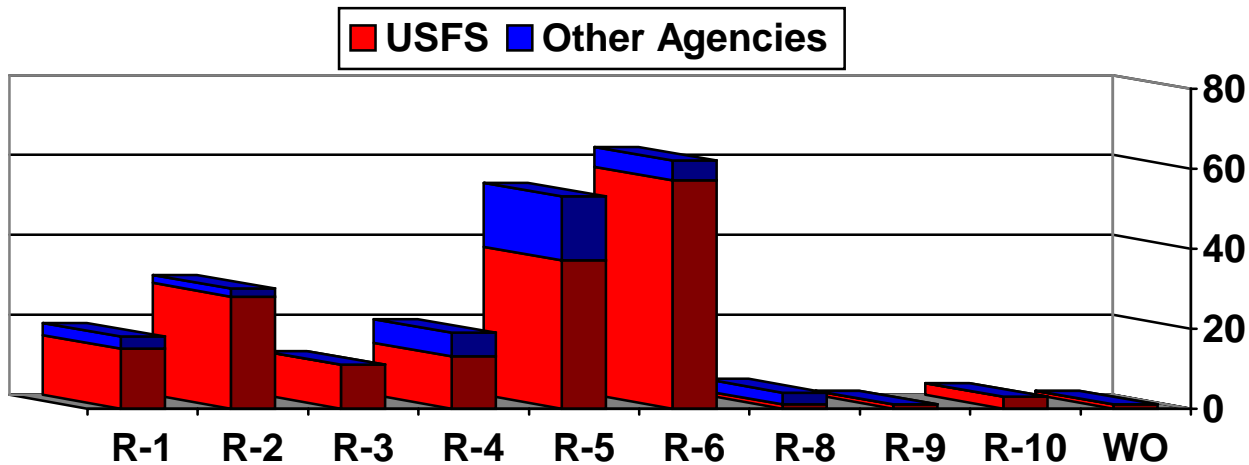
The following charts are based on SafeComs that occurred from August 1 through August 31. There were 202 (166 USFS and 36 other agency) SafeComs reported this August compared to 243 SafeComs last August and 317 in August of 2000.

Included in this report are representative samplings of the SafeComs reported in August of this year. To view all the USFS SafeComs click on the link to SafeComs below. Pick the options you want to search for, then click on submit, the less fields you enter the better. If you simply click on submit at the bottom you will get a list of all the latest SafeComs, use the arrows at the bottom left of the screen to navigate backward and forward.

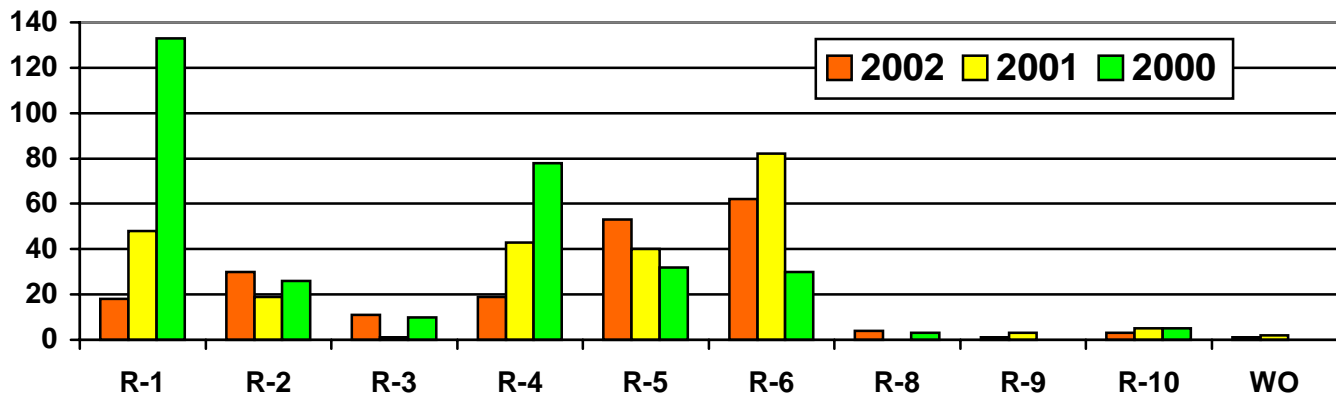
<http://www.aviation.fs.fed.us/safecom/psearch.asp>

SafeComs by Region

The chart below shows the number of SafeComs by region (FS and other agency) reported for August of this year.

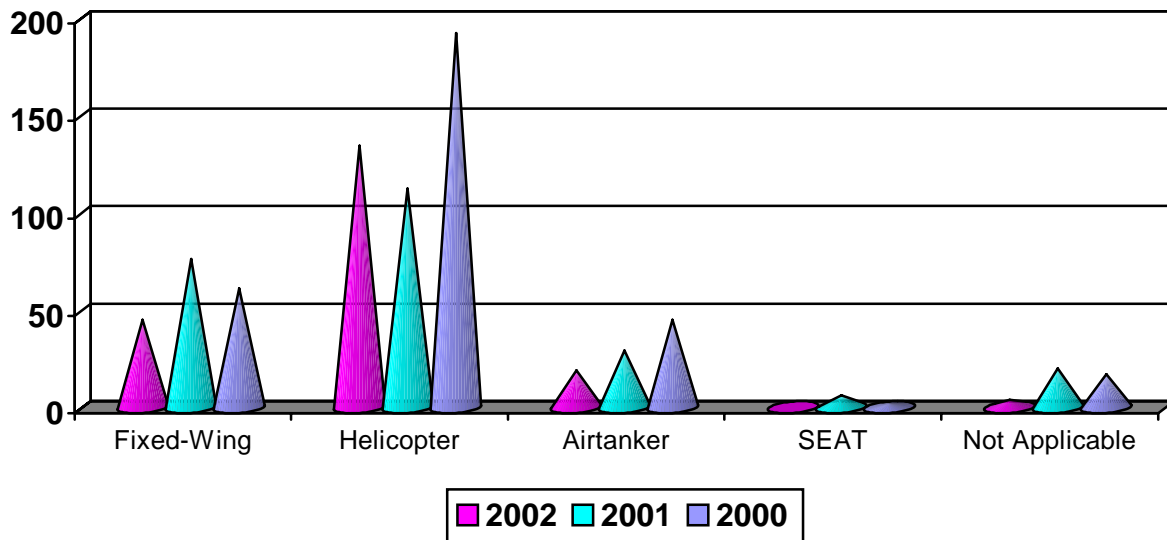


The following chart shows the total number of SafeComs reported by region for August of this year, last year and 2000.



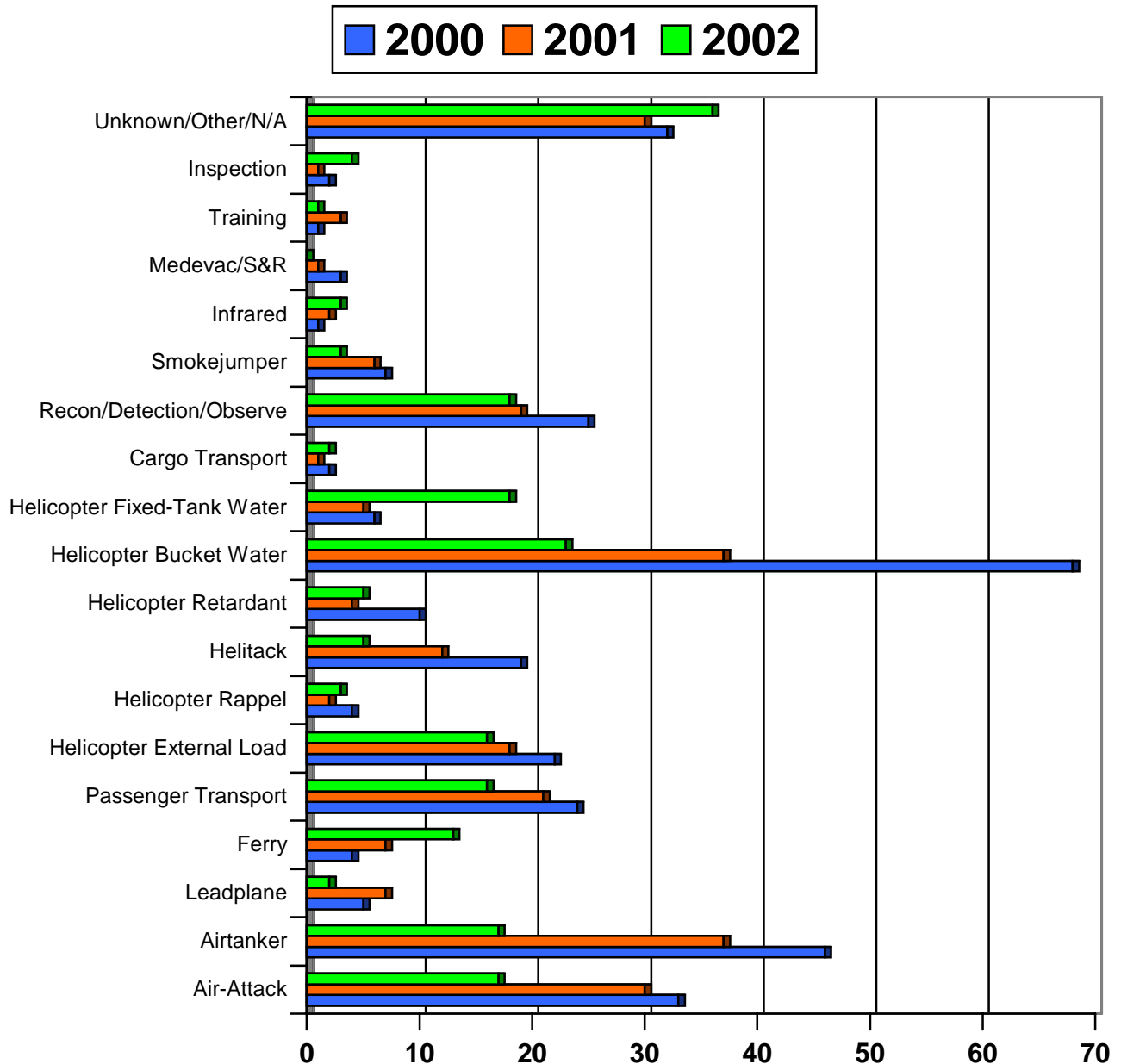
SafeComs by Aircraft Type

In August helicopter SafeComs accounted for 67% of the SafeComs this year compared to 47% last year and 61% in 2000. Fixed-wing SafeComs accounted for 22% this year, 31% last year and 19% in 2000. The percent of Airtanker SafeComs this year were less this year than the previous years, 9% compared to 12% last year and 14% in 2000. There were no SafeComs on SEAT's this year, last year they accounted for 2% and in 2000 1%. The chart below shows the number of SafeComs reported in August by aircraft type for this year, last year and 2000.



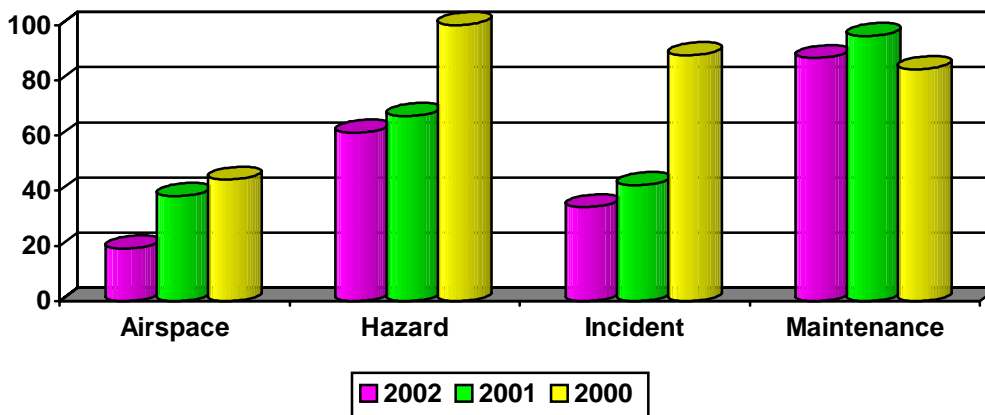
SafeComs by Mission Type

With the exception of Unknown/Other/N/A, helicopter water bucket drops continue to be the one mission that consistently generates the most incident reports. What stands out the most for this year is the increased number of helicopter fixed tank SafeComs, why is this? I would tend to believe it is because of the increased use of helicopter fixed-tank operations this year, mainly in California. The chart below shows the number of SafeComs reported in August by mission for this year, last year and 2000.



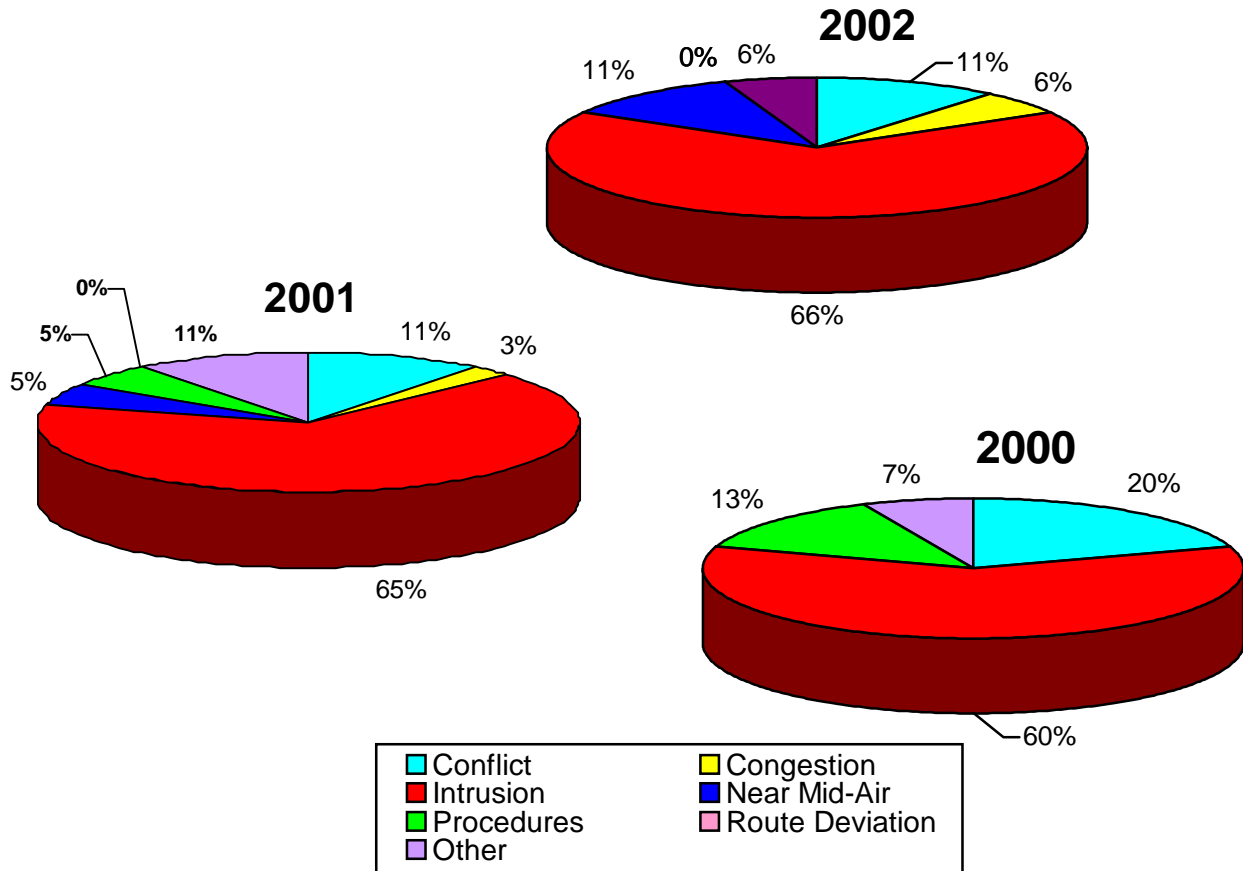
SafeComs by Category

SafeComs on Maintenance are generally the most reported, which rang true for this year and last year. In 2000 hazard SafeComs were the most reported. This year maintenance SafeComs accounted for 44% of the SafeComs reported, compared to 39% last year and 26% in 2000. There were about half as many Airspace SafeComs reported this year (9%) compared to last year (16%) and 2000 (14%). Hazard SafeComs were the second most reported, which is generally the case and comparable at 30% this year, 28% last year and 32% in 2000. Incident SafeComs reported this year and last year both accounted for 17%, which is much lower that the 28% in 2000. The chart below shows the number of SafeComs reported in August by category for this year, last year and 2000.



Airspace SafeComs

There were 19 SafeComs reported in this category in July of this year compared to 38 last year and 44 in 2000. The numbers this year are nearly half of what was reported last year and 2000. Intrusions are generally the most reported in this category, which is true for this month with 12 this year, 25 last year and 24 in 2000. There were 2 Near Mid-Air SafeComs reported this year and last year compared to 10 in 2000. The charts below show the percent of Airspace SafeComs by sub-category for August of this year, last year and 2000.

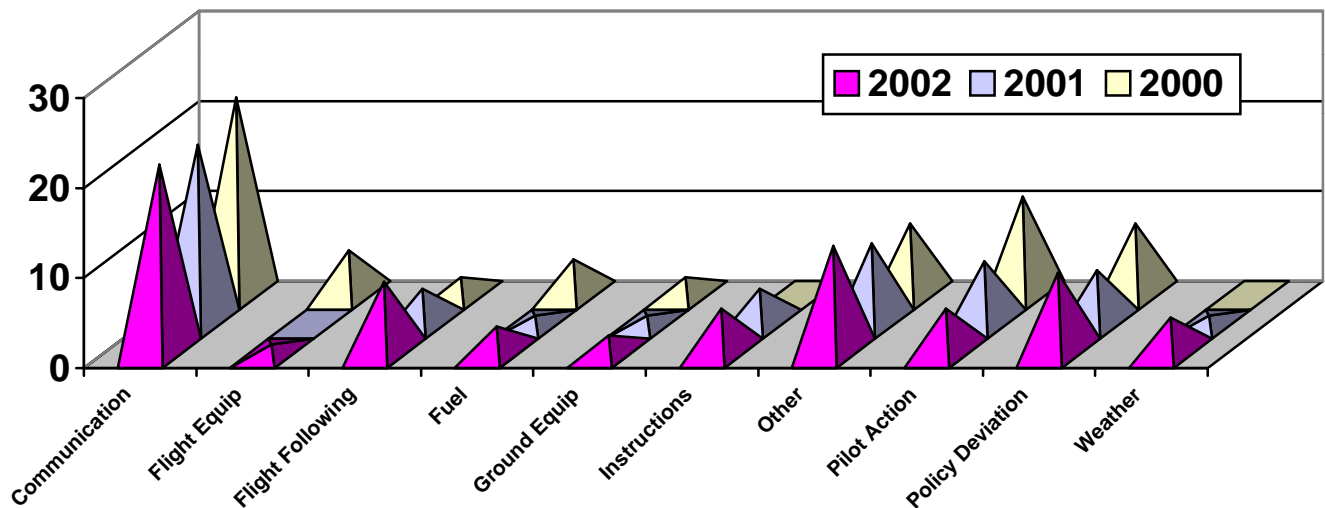


Select from the links below to view a sampling of the Airspace SafeComs.

- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3475>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3547>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3408>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3587>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3616>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3487>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3554>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3472>

Hazard SafeComs

There were 70 SafeComs reported in this category this year compared to 53 last year and 62 in 2000. SafeComs for communications have consistently been the most reported in this category. There were 21 reported this year, 20 last year and 22 in 2002. Besides other, policy deviation was the second most reported in this category this year, last year and in 2000 it was pilot action. The chart below shows the number of Hazard SafeComs reported by sub-category for July of this year, last year and 2000.

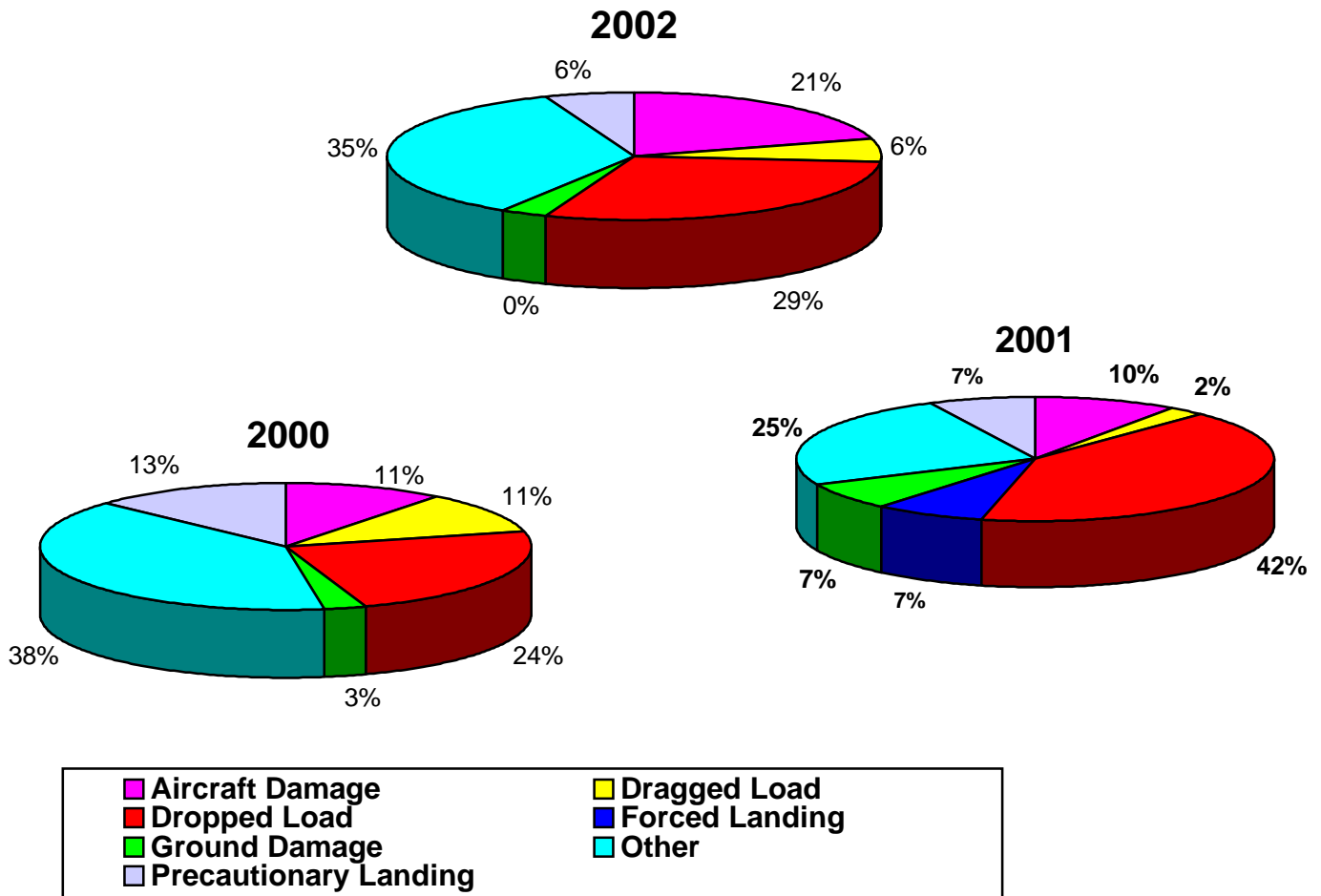


Select from the links below to view a sampling of the Hazard SafeComs.

<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3571>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3442>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3551>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3562>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3648>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3517>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3390>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3576>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3542>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3590>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3594>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3529>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3401>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3598>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3497>

Incident SafeComs

Considering the number of mishaps we've had this year, the number of SafeComs reported in this category are somewhat surprising. There have been only 34 reported this year, compared to 41 last year and 38 in 2000. Besides "Other", dropped load were the most reported SafeComs in this category all three years, with 10 this year, 17 last year and 9 in 2000. The charts below show the percent of Incident SafeComs by sub-category for July of this year, last year and 2000.

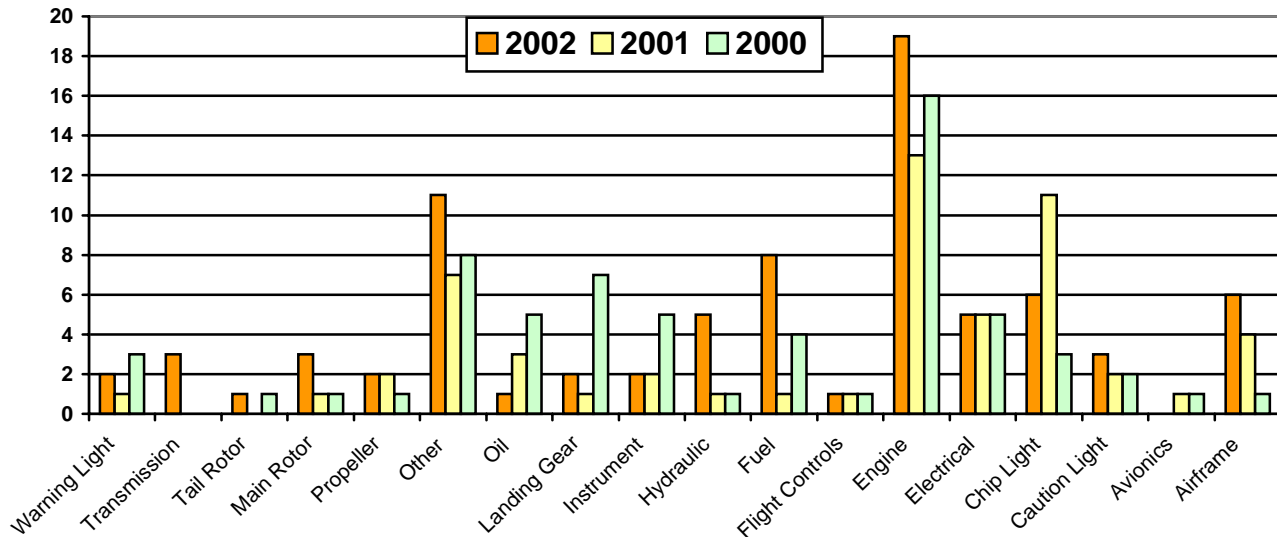


Select from the links below to view a sampling of the Incident SafeComs.

- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3465>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3478>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3441>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3601>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3561>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3599>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3397>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3520>
- <http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3463>

Maintenance SafeComs

There were 80 Maintenance SafeComs reported this year compared to 56 last year and 65 in 2000. SafeComs reported on engines were the most reported for all years. This year the second most reported SafeComs, other than "Other" were fuel followed by chip light and airframe tied in third place. The chart below shows the number of Maintenance SafeComs reported by sub-category for July of this year, last year and 2000.



Select from the links below to view a sampling of the Maintenance SafeComs.

<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3563>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3584>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3461>
<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3534>
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<http://www.aviation.fs.fed.us/safecom/psearchone.asp?ID=3560>

United States Department of Agriculture
Forest Service
Aviation Safety Alert

No. 2002-17

July 16,2002

Page 1 of 1

Subject: Accepted procedures for the mixing and loading of retardant into SEAT aircraft

Area of Concern: SEAT Aircraft Operations

Distribution: All Aviation and Fire Personnel

Discussion: There have been several recent aircraft incidents that involved the overloading of SEAT aircraft with liquid concentrate (LC) retardant as a result of mixing or loading procedures. These procedures included loading LC directly into aircraft from bulk storage tanks while utilizing various types of hardware devices that were intended to blend retardant being pumped directly from the bulk tanks to the aircraft. These hardware devices have included Canadian Y Blenders, "SEAT" Y Blenders, pre-calibration tanks and other locally fabricated hardware. However, serious overloading can occur when pure LC is loaded into an aircraft without being mixed with the appropriate ratio of water.

In an effort to eliminate the possibility of overloading an aircraft with an incorrect mix of retardant, the following procedures apply immediately:

Both powdered and liquid bulk materials will be blended in a mixing container prior to being introduced into the aircraft. In order to maintain quality control and safe flight operations, no bulk material will be loaded into an aircraft prior to being mixed to the proper ratio and checked by refractometer or other accepted method. The practice of loading an aircraft with bulk material and then adding water is not an acceptable method of mixing retardant.

All personnel engaged in the loading of retardant aboard SEAT aircraft must be knowledgeable of, and fully trained on, the use of retardant loading systems for SEAT aircraft.

This new procedure has been coordinated among DOI bureaus and the USDA/Forest Service.

/s/ Ron Hanks

USFS National Aviation Safety and Training Manager

United States Department of Agriculture
Forest Service
Aviation Safety Alert

No. 2002-18 July 22, 2002

Page 1 of 2

Subject: Bell 407 Main Rotor Blade Airworthiness

Area of Concern: Helicopter Operations

Distribution: All Aviation and Fire Personnel

Discussion: On July 16, 2002 a Bell 407 helicopter was on short final to a helibase in Arizona when the pilot experienced a slight yaw to the left, shaking of the cyclic, and a vibration in the helicopter. The pilot chose to take the aircraft to an open flat field approximately ¼ of a mile away to avoid possible injury to personnel on the ground at the helibase. After the helicopter was shut down the aircraft was inspected and it was discovered that the skin on the underside of one of the main rotor blades had de-bonded and separated from the blade tip extending inboard approximately 8 ½ inches. The skin tore away from the blade along a line at the aft lower edge of the leading edge abrasion strip and de-bonded aft approximately four inches. The occurrence is currently under investigation to try to determine the cause of the failure.

The USDA Forest Service is asking all contractors to assure airworthiness of all Bell BHT 407 Main Rotor Blades. This assurance is required prior to further flight after receipt of this safety alert. Regional Aviation Maintenance Inspectors in the Forest Service Regions will be notified as to the status of all contracted (exclusive use or all when needed) Bell BHT 407 helicopters.

If any abnormalities are noted or suspected the aircraft is not to be flown and the operator needs to notify a Forest Service Maintenance Inspector immediately.

For further information on the event that occurred in AZ, contact Larry Hindman, R-3 Regional Aviation Safety Manager (505) 842-3351, or Ron Livingston, Acting R-3 Regional Aviation Maintenance Inspector (505) 842-3356.

/s/ Ron Hanks
USFS National Aviation Safety and Training Manager



United States Department of Agriculture
Forest Service
Aviation Safety Alert

No. 2002-19

July 22, 2002

Page 1 of 1

Subject: Helicopter Water Bucket Operations

Area of Concern: Helicopter Operations

Distribution: All Aviation and Fire Personnel

Discussion: Contract helicopter operations utilizing varying lengths of extension lead lines attached to buckets have resulted in tail boom and/or tail rotor damage in two recent mishaps. This safety alert is being issued to draw attention to this specific aviation safety hazard as well as to identify new policy developed to mitigate this problem.

With the incorporation of these modifications, Interagency Fire Helicopter operations will continue to be conducted in accordance with the IHOG as amended by the following two (2) changes.

1. If long lines are utilized for water bucket operations then the long lines shall be a minimum of 50 feet in length to reduce the risk of bucket or long line entanglement with the tail rotor or tail boom.
2. Pilots utilizing long lines with water buckets must be approved for vertical reference operations

This policy change will bring our helicopter bucket operations in line with some bucket manufacturers' recommended practices and safety warnings, without seriously degrading operational capability.

Each operator, pilot and helicopter manager shall review the manufacturers' bucket operator's manual and limitations for the applicable bucket prior to use.

The effect of this policy is that "tag lines" of less than 50 feet are no longer authorized and pilots not approved for vertical reference operations must attach the bucket directly to the belly hook during water bucket operations.

This policy has been coordinated with all DOI bureaus that utilize the Interagency Helicopter Operations Guide and the USDA Forest Service.

/s/ Ron Hanks
USFS National Aviation Safety and Training Manager

United States Department of Agriculture
Forest Service
Aviation Safety Alert

No. 2002-20

August 1, 2002

Page 1 of 1

Subject: SA 315B Lama Stand Down

Area of Concern: Helicopter Operations

Distribution: All Aviation and Fire Personnel

Discussion: Investigation of the SA 315B Lama accident in Colorado is underway, however there is no conclusive information available to the Forest Service at this time. Some contractors have requested down time for inspection of their aircraft, and those have been granted by the controlling Forests.

This letter is to recommend that Regions who have this make/model of helicopter working on fires and projects provide a 24-hour period of relief from contract availability. The purpose of this safety stand down is to allow time for an additional, thorough maintenance inspection with emphasis on the engine, transmission, and drive train areas.

Regions may implement the safety inspection period while continuing availability payment, and begin or end it at their discretion upon receipt of this notice.

/s/ Ron Hanks

National Aviation Safety and Training Manager

United States Department of Agriculture
Forest Service
Aviation Safety Alert

No. 2002-21

August 19, 2002

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Subject: Retardant Fill Rate (Maximum – 500 gpm)

Area of Concern: Airtanker Operations

Distribution: All Aviation Personnel

Discussion: The National Airtanker Service Contract Section C.5.2 (6) (B) states: “All retardant tanks shall be capable of being filled in conformity with the certified retardant load through 3-inch diameter single or dual kamlock fittings on both sides of the aircraft or from the tail at a minimum fill rate of 400 to a maximum fill rate of 500 gallons per minute.”

Exceeding the 500-gallon per minute fill rate may result in certain aircraft to be overfilled and leak retardant.

/s/ Ron Hanks
National Aviation Safety and Training Manager

/s/ Asher Williams
National Aviation Operations Officer