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SAFETYWIRE

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FAA Rotorcraft Accident Summary for all of Fiscal Year 2022

Federal Aviation Administration

(Source: Lee Roskop, FAA)

The FAA's Fleet Safety Section (AIR-723) has released its annual report summarizing all rotorcraft accidents and fatalities for US registered helicopters for Fiscal Year 2023 (Oct 1, 2022—Sep 30, 2023).

Special acknowledgement goes to Lee Roskop of that FAA Branch who relentlessly compiles these factual data-based reports and emails them out on a distro list that anybody can join. It is hard to tackle a problem if you cannot define the problem—but Lee's efforts provide the rotorcraft industry the necessary data.

The next section captures Lee's summary notes, followed by several of the graphs and charts from the Dashboard. You can view the entire Accident Dashboard here: Rotorcraft Accident Dashboard.

FY23 Summary

FY23 Totals: 105 accidents, 18 fatal accidents, 36 fatalities

- The count and rate metrics for overall accidents and fatal accidents in FY23 showed improvement when measured against both FY22 and the 5 year average.
- There was an increase of one fatality from FY22. When adjusted for flight hours, the fatality rate was the same for both FY22 and FY23. Both the fatality count and rate showed improvement when measured against the 5 year average.

Accidents (includes both fatal & non-fatal accidents):

- The FY23 estimated accident rate was 3.63 per 100K hours. This is the lowest estimated rate since 2017 and tied for the second lowest rate in the past 10 FYs.
- The estimated accident rate for the FY is 21% lower than the same period in FY22 and 12% lower than the 5 year average for the same period.
- In 4 different months of the FY, the number of accidents observed was the lowest of the 41 FYs on record (January, February, June, and September).
- The count of 105 total accidents for the FY is the second lowest for the 41 years on record, trailing only FY20 (97 accidents in a year where peak COVID impact led to reduced flying activity).
- 55% of the accidents occurred in one of the following industry sectors: 1) Instructional/Training (20%), 2) Aerial Application (18%), and 3) Personal/Private (17%).

6021 South Syracuse Way
Suite 301
Greenwood Village, CO 80111
+1 513.852.5110
+1 800.361.2216
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Fatal Accidents:

- The FY23 estimated fatal accident rate was 0.62 per 100K hours (17% lower than the same period in FY22, 20% lower than the 5 year average for the same period).
- While the fatal accident rate was better than any of the previous 5 years, it lagged other recent rates from the most recent 10 years. Specifically, the lower rates occurred during the three year period of 2015-2017 where the rates were 0.58, 0.54, and 0.52 in consecutive years.
- For only the second time in the 41 FYs on record, there were 4 months during the FY with zero fatal accidents (January, February, June, and September).
- June, July, and August each had 4 fatal accidents during the month, together accounting for 12 of the 18 fatal accidents in the FY (67% of total).
- Fatal accidents for the FY were distributed across 9 different industry sectors. Personal/Private and Aerial Application led all industry sectors. Each had 4 fatal accidents, each accounting for 22% of the overall FY total.
- 17% of accidents during the FY had a fatality, similar to each of the two preceding FYs (16%) and the 10 year average from FY13-FY22 (18%).
- Of the 18 fatal accidents, two were U.S. registered a/c but were operating outside of the U.S.

Fatalities:

- The FY23 estimated fatality rate was 1.24 per 100K hours (the same as FY22, 19% lower than the 5 year average for the same period).

U.S. Helicopter Safety Team (USHST) Calendar Year Metrics

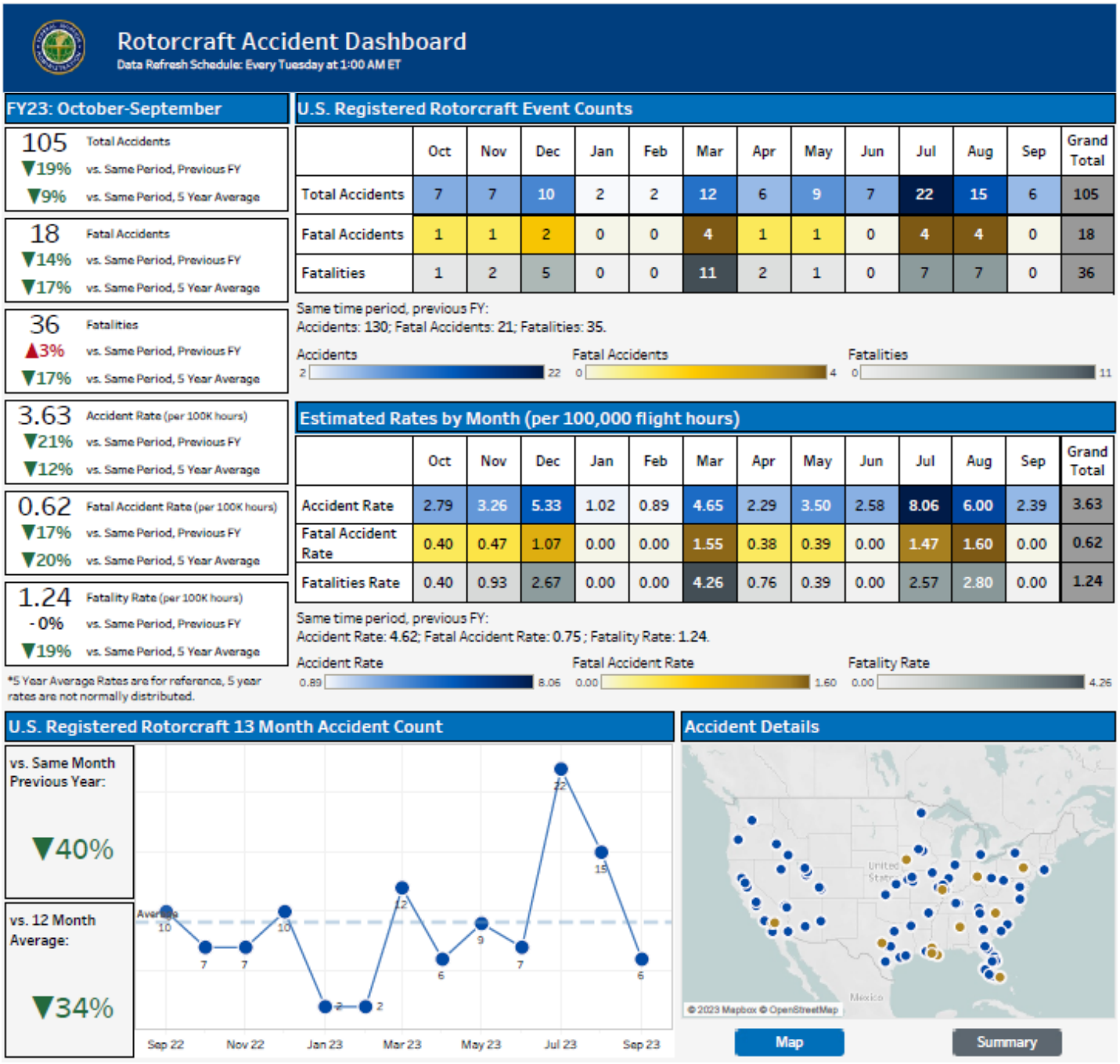
- Goal: Reduce the 5 year average fatal accident rate to 0.55 per 100K hours by 2025. The USHST uses the 5 year average fatal accident rate from CYs 2014-2018 (0.62 per 100K hours) as their baseline for measurement.
- The CY 2019-2023 5 year average fatal accident rate was 0.73 per 100K hours through September 2023.

FAA Rotorcraft Accident Dashboard

* The Rotorcraft Accident Dashboard uses data collected from Part 27, Part 29, and Restricted Category rotorcraft accidents to U.S. registered aircraft. Gyrocopters and experimental aircraft are not included in the FAA Rotorcraft Accident Dashboard.

6021 South Syracuse Way
Suite 301
Greenwood Village, CO 80111
+1 513.852.5110
+1 800.361.2216
argus.sales@argus.aero

* For rate calculations, FY 2022-23 rotorcraft flight hours were based on the FAA's FY2023-2043 forecast (released July 2023). Historic rotorcraft flight hours were extracted from General Aviation and Part 135 Activity Survey. The survey categorizes flight hours by calendar year.



	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Grand Total
Total Accidents	7	7	10	2	2	12	6	9	7	22	15	6	105
Fatal Accidents	1	1	2	0	0	4	1	1	0	4	4	0	18
Fatalities	1	2	5	0	0	11	2	1	0	7	7	0	36

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Grand Total
Accident Rate	2.79	3.26	5.33	1.02	0.89	4.65	2.29	3.50	2.58	8.06	6.00	2.39	3.63
Fatal Accident Rate	0.40	0.47	1.07	0.00	0.00	1.55	0.38	0.39	0.00	1.47	1.60	0.00	0.62
Fatalities Rate	0.40	0.93	2.67	0.00	0.00	4.26	0.76	0.39	0.00	2.57	2.80	0.00	1.24

6021 South Syracuse Way
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+1 800.361.2216
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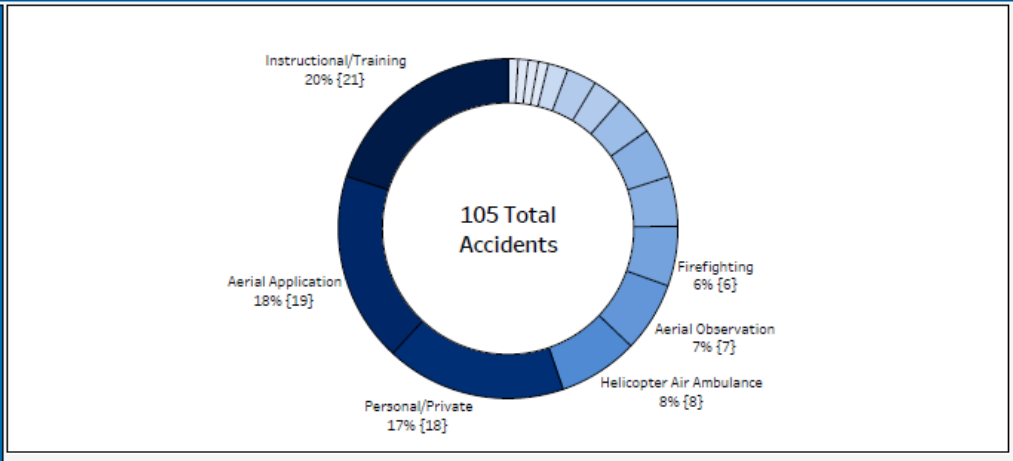
Accidents by Industry Sector

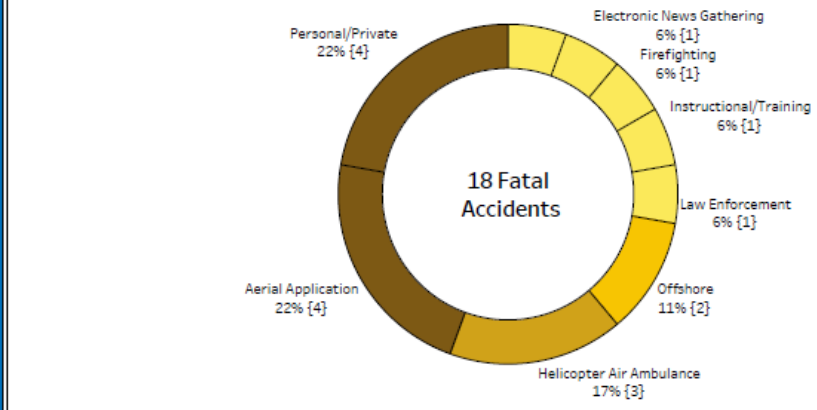
All Accidents



Business	1% {1}
Electronic News Gathering	1% {1}
Logging	1% {1}
Unknown	1% {1}
External Load	2% {2}
Air Tour / Sightseeing	3% {3}
Commercial	3% {3}
Offshore	4% {4}
Law Enforcement	5% {5}
Utilities Patrol / Construction	5% {5}
Firefighting	6% {6}
Aerial Observation	7% {7}
Helicopter Air Ambulance	8% {8}

FY to Date | This Month

Fatal Accidents

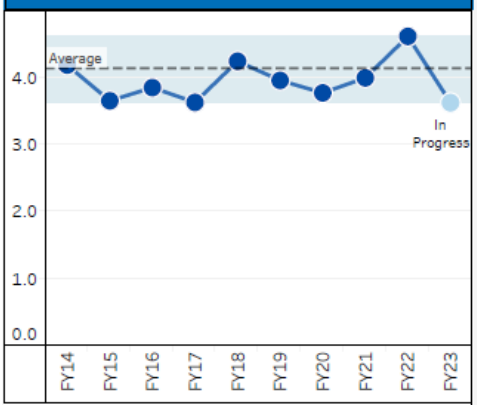


Aerial Observation	6% {1}
Electronic News Gathering	6% {1}
Firefighting	6% {1}
Instructional/Training	6% {1}
Law Enforcement	6% {1}
Offshore	11% {2}
Helicopter Air Ambulance	17% {3}
Aerial Application	22% {4}
Personal/Private	22% {4}

FY to Date | This Month

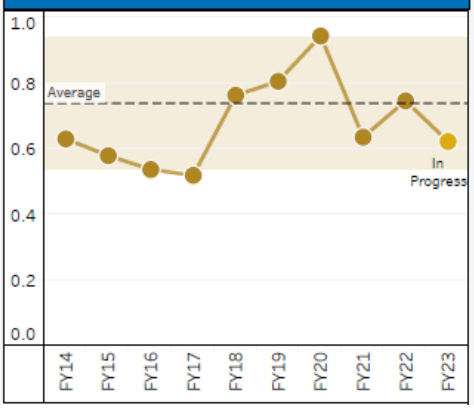
Estimated Rotorcraft Accident Rate by FY

10 Year Lookback - Rates per 100,000 Hours



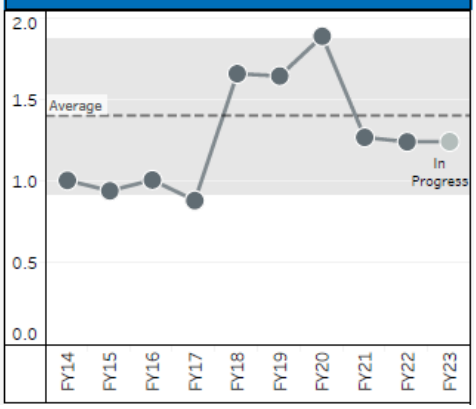
Estimated Rotorcraft Fatal Rate by FY

10 Year Lookback - Rates per 100,000 Hours



Estimated Rotorcraft Fatality Rate by FY

10 Year Lookback - Rates per 100,000 Hours



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Suite 301
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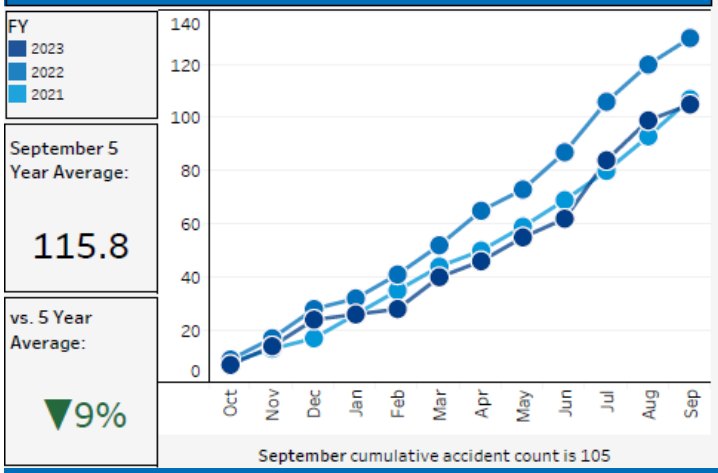
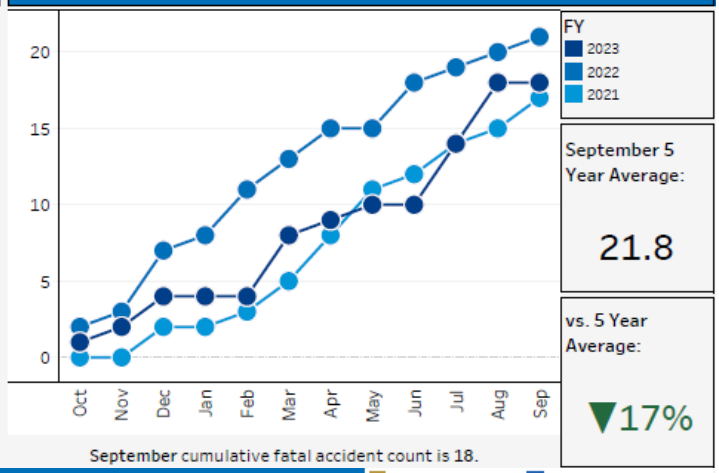
	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Accident Rate	4.19	3.66	3.85	3.63	4.25	3.96	3.77	4.00	4.62	3.63
Fatal Accidents Rate	0.63	0.58	0.54	0.52	0.76	0.81	0.94	0.64	0.75	0.62
Fatality Rate	1.01	0.94	1.01	0.89	1.66	1.64	1.89	1.27	1.24	1.24

*Average Rates and Standard Deviation Ranges are for reference, rates are not normally distributed.

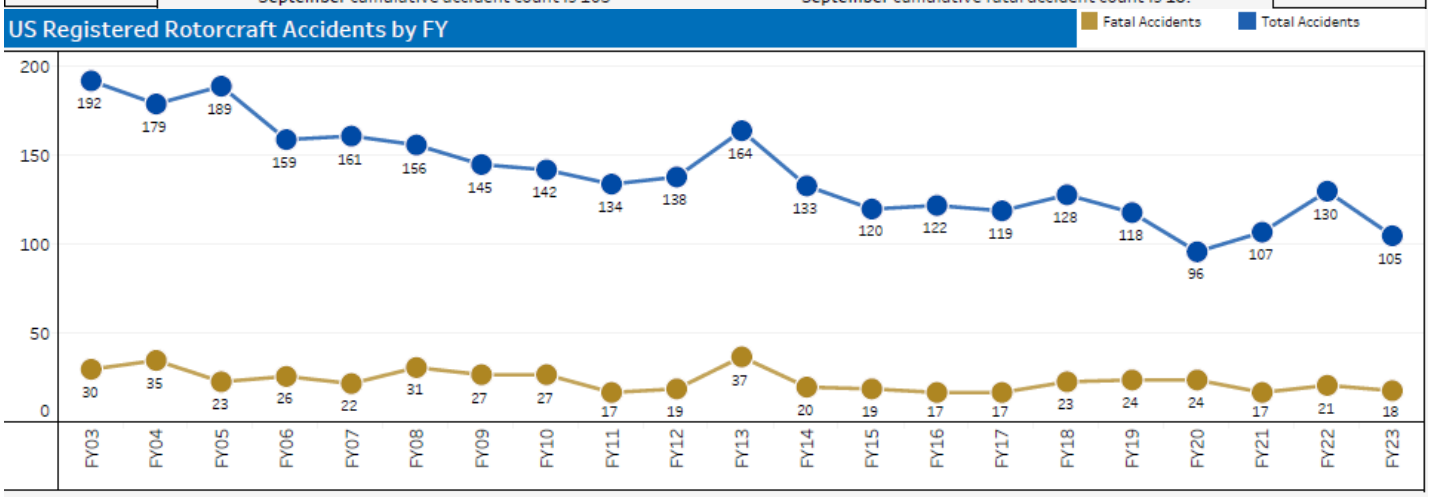
Cumulative Accident Count



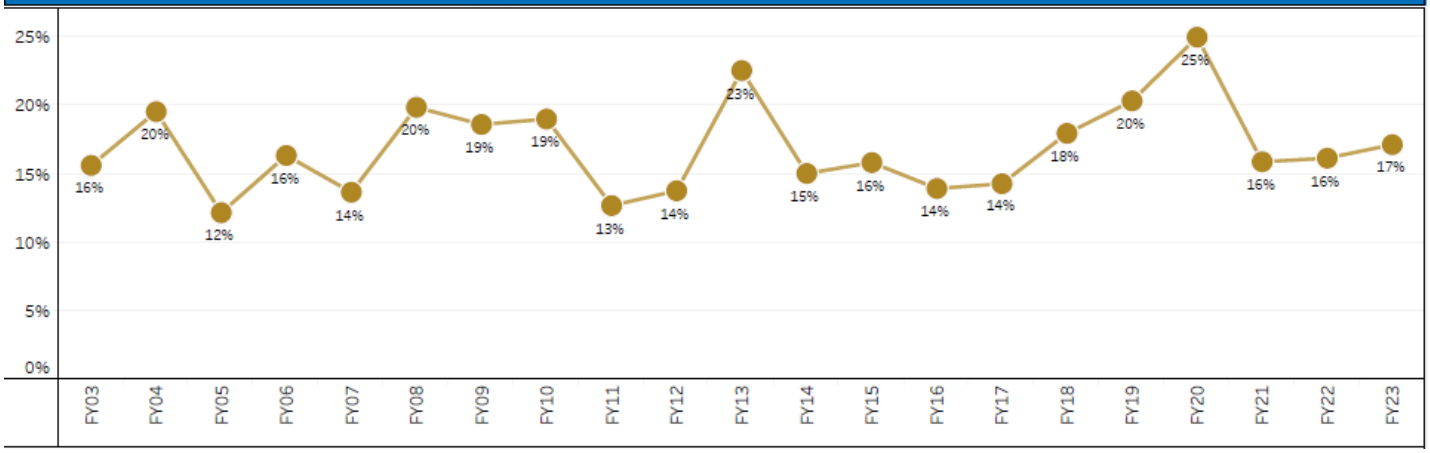
Cumulative Fatal Accident Count



US Registered Rotorcraft Accidents by FY



Percent of Rotorcraft Accidents with Fatality by FY



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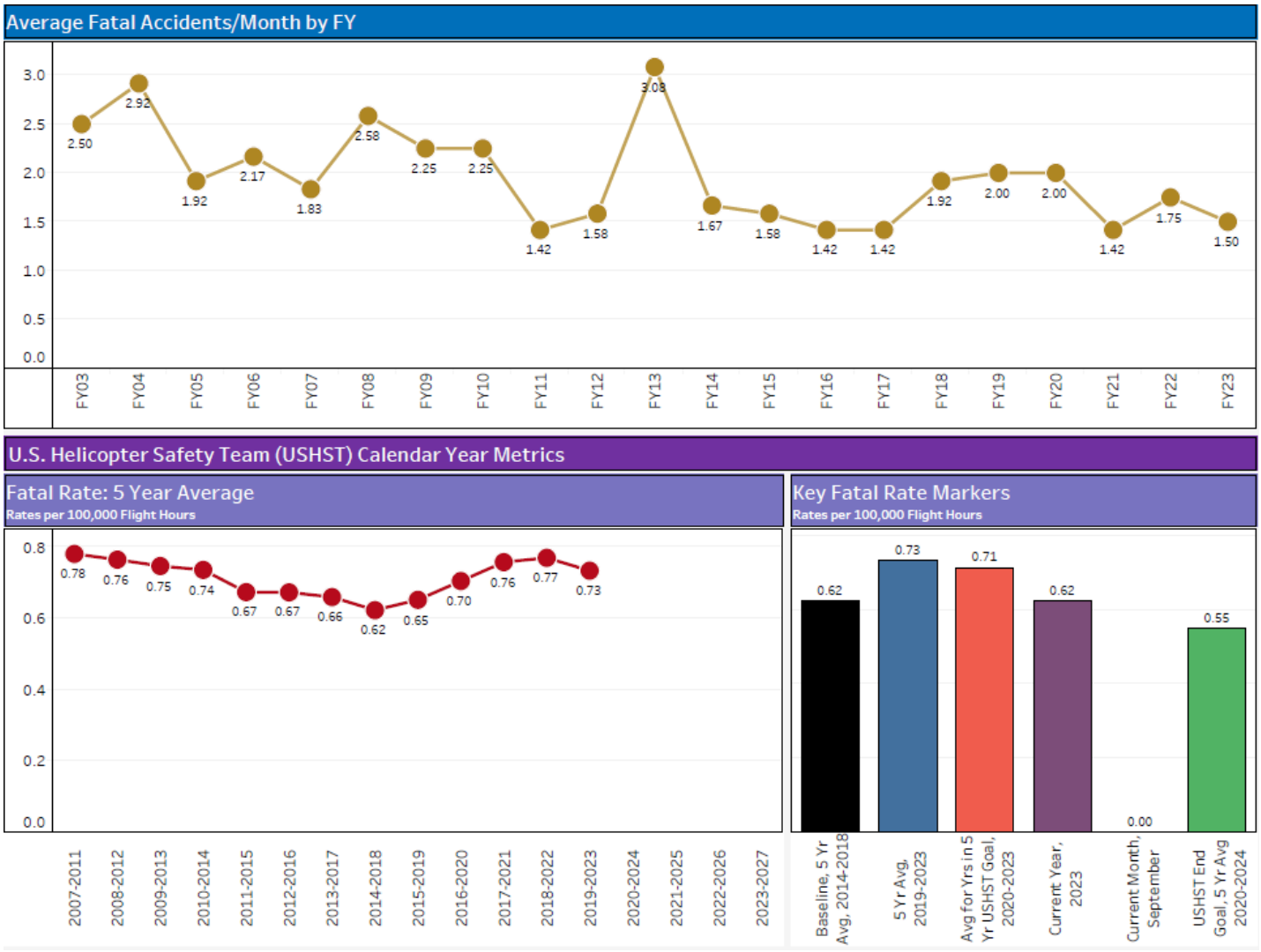

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Suite 301
Greenwood Village, CO 80111

+1 513.852.5110
+1 800.361.2216

argus.sales@argus.aero

FAA Safety BRIEFING
The FAA Safety Policy Voice of Non-commercial General Aviation

FAA Safety Briefing: Don't Roll the Dice with Ice

(Source: Gene Trainor, FAA Rotorcraft Collective; Published in: Cleared for Takeoff, October 26,2023)

As we enter the cold weather months, the FAA urges helicopter pilots and mechanics to prepare for icing conditions and other winter flying risks. Thankfully, equipment and operating procedures have evolved over the years to greatly reduce these risks. A key factor, as in any season, is pilot and mechanic vigilance.

One important document to familiarize yourself with is a Special *Airworthiness Information Bulletin (SAIB) titled Recommendations for Rotorcraft During Icing/Snowy Conditions*, which was published back on Nov. 26, 2013. The SAIB's warning that most helicopters are not FAA-approved for flight into known icing (FIKI) conditions remains relevant today. Instead, most of these helicopters are FAA-approved for flight into inadvertent icing conditions. The SAIB mentions two accidents in 2013, one of them fatal, where ice or snow ingestion led to the loss of in-flight engine power.

6021 South Syracuse Way
Suite 301
Greenwood Village, CO 80111
+1 513.852.5110
+1 800.361.2216
argus.sales@argus.aero

The SAIB warns that ice and/or snow can accumulate in the airframe engine inlet area while the rotorcraft is on the ground or in the air, and that turboshaft-powered rotorcraft are particularly vulnerable. Snow and ice can build up in the engine intakes and plenums when the rotorcraft is on the ground and the engine or engines are not operating or are operating at low power for extended periods. When a pilot increases engine power during takeoff, the accumulated snow and/or ice can separate from the airframe inlet surface and get ingested into the engine, resulting in decreased power or engine failure.

The Rotorcraft Collective, an FAA-industry safety group, also produced a video online at youtu.be/ClAgaIrHyig that outlines how pilots can prevent icing accidents.

Both the SAIB and the video recommend the following:

- Review the rotorcraft flight manual's limitations and operations sections for flight guidance for icing or falling/blowing snow. Helicopters are often prohibited from operating in known icing conditions, or when snow is falling or blowing.
- Look out for icing at weep holes, especially blade tip caps; engine oil coolers; fuel vents; static ports; drive pulleys; pitot tubes; intake screens; and tundra boards or bear paws. Most icing occurs between 0 and -20 degrees Celsius (32 degrees to -4 degrees Fahrenheit). During freezing temperatures, pay particular attention for any sheet ice on the bottom and forward of the inlet. Ice can also form behind particle separators. Engine preheating may be required.
- Remove all accumulated snow or ice without chipping or scraping. Instead, use heated air or deicing fluid in accordance with the manufacturer's procedures.

6021 South Syracuse Way
Suite 301
Greenwood Village, CO 80111
+1 513.852.5110
+1 800.361.2216
argus.sales@argus.aero

- Evaluate current and predicted weather briefings from Flight Service. Other resources for weather conditions include aviationweather.gov/hemst and aviationweather.gov/gfa/#ice.
- Park helicopters indoors or cover them. If the aircraft is parked outside, install inlet covers and exhaust inserts or covers. Make sure the REMOVE BEFORE FLIGHT streamers are visible.
- Prior to engine start, remove the inlet/exhaust inserts or covers and perform a complete inlet/exhaust inspection (using a flashlight). The inspection should include surfaces inside the inlet, the cowl area forward and around the inlet, and the area behind the particle separator or screen (if installed). Some aircraft may require fully opening the cowlings to gain access to inspect the inlet, assuring that a properly certificated person performs this task.
- If you keep the rotorcraft on the ground for an extended period (i.e., waiting for clear weather), shut down the engine or engines. Before takeoff, conduct a detailed preflight inspection and remove any snow/ice build-up. Perform the inspection even if the rotorcraft is fitted with some form of inlet protection, such as screens or baffles.
- Be aware that rotating icy rotor blades can sling ice at other aircraft and bystanders.

Winter weather is inevitable. Let's help make sure winter weather accidents aren't.

6021 South Syracuse Way
Suite 301
Greenwood Village, CO 80111
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+1 800.361.2216
argus.sales@argus.aero

SAFETY MANAGER'S CORNER

Smart Safety Reporting

If you have ever said or thought "Who cares what the report form looks like, as long as I get the reports," then it might be time to reconsider. Admittedly, obtaining a submitted safety report is the most important step in the process so let's not take anything away from that. Rather let's take a look at a bigger picture and focus on how smart information management leads to better safety data and more informed decision making.

Garbage in, garbage out; data can only do what you tell it to do; computers really are dumb machines that just follow instructions, etc. All truisms and very important concepts to understand when designing a safety report. You may have determined that a simple report format asking the submitter to identify a sort of macro hazard label and then provide a written description works best in your operation. However, it's important to realize what might become lost in safety data analysis terms. Let's chase down an example. Say you are interested in knowing how many unstabilized approach reports are contained in your safety data from the past two years, and moreover you would like to break the results into conditions of day or night and IMC or VMC. If your report format is similar to the simple type described above the data tally must be obtained by examining each flight report and looking for details describing unstabilzed approach, with further manual counting of day or night and IMC or VMC (assuming it's even listed in the description details). Additionally, you are relying completely upon the reporter including these specific details in the written portion of the submitted report; if not prompted for specifics these details might be missing. Manual analysis like this makes the safety manager job much harder.

The solution to effective safety data management starts with report construct; good info in, good info out. Build the safety reports so they contain searchable fields that discriminate hazard information important to your operation. Placing choice options like checkboxes or radio buttons allow for easy selection and enable accurate searches to sort data. Certainly a report can't nor shouldn't contain every possible hazard item, but it should contain significant ones. Think about the example described above and how a search would be greatly improved and simplified by sorting reports that had boxes checked for the values unstabilzed approach, night, and IMC. A simple search query looking for reports containing these three items would quickly yield the desired batch of data.

If placing more detail into your custom safety report is not the right option then consider developing a standard taxonomy you can place into the Admin section of the report to facilitate key word searching. For example, placing standard wording like "Taxi collision" into the corrective action area would allow you to key word search identify all reports pointing out this specific hazard, regardless of how the reporter chose to describe it in their written submission. Remember, getting the report is only a portion of the safety management process. Using information to prevent accidents and incidents is the primary objective.

6021 South Syracuse Way
Suite 301
Greenwood Village, CO 80111
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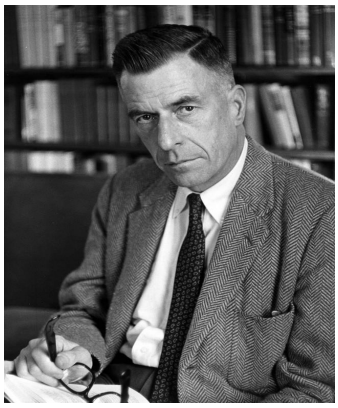
+1 800.361.2216
argus.sales@argus.aero

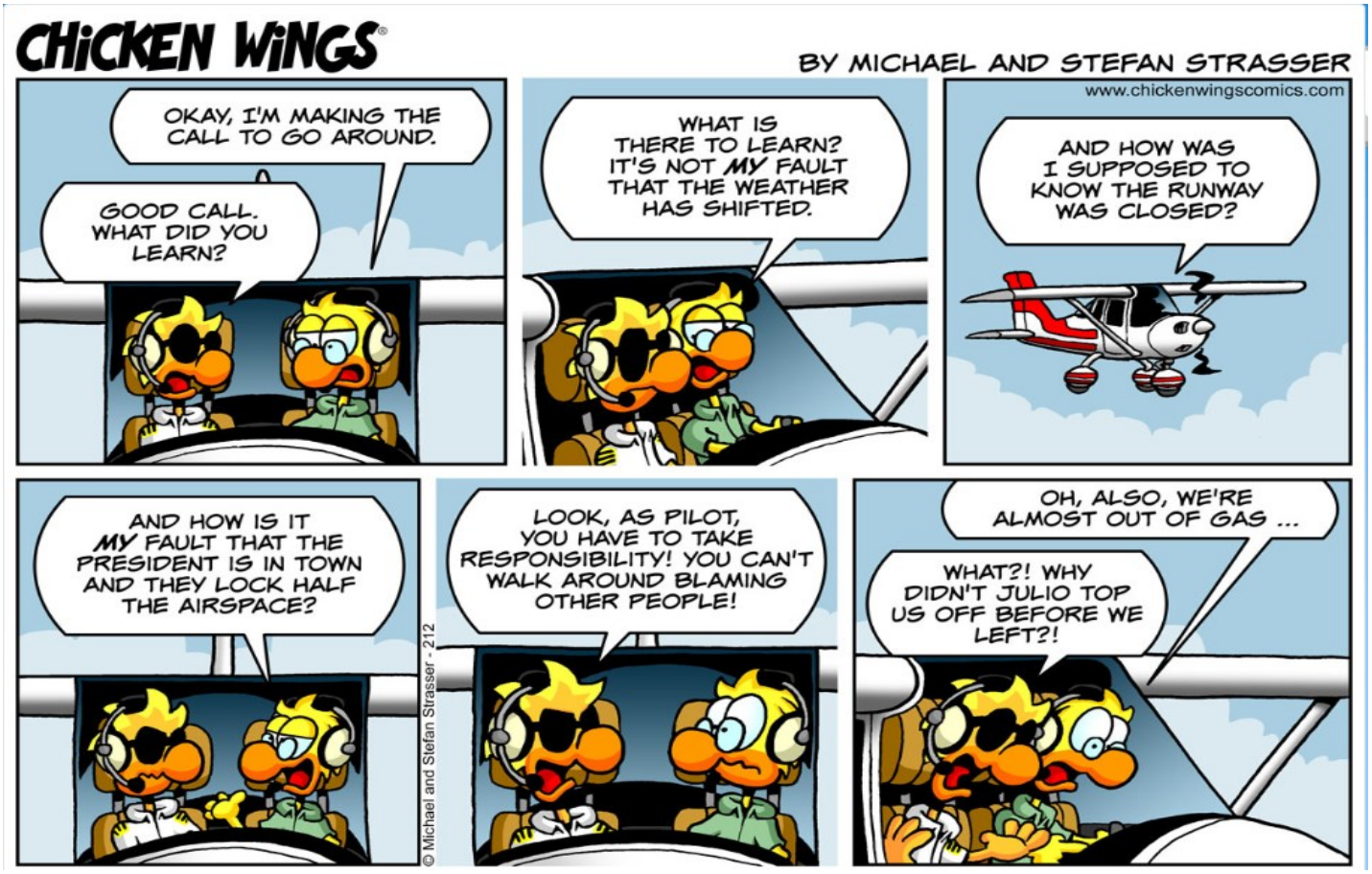
Quote of the Month

"If all else fails, immortality can always be assured by spectacular error."

— John Kenneth Galbraith



Even an economist understands aviation safety! Mr. Galbraith knew that proper planning and training provide an aviator with the tools needed to stay out of situations that can instigate infamy. Staying on the straight and narrow regarding procedures and training preserves proficiency, awareness, and competence. Be spectacular, for all the right reasons.



6021 South Syracuse Way
Suite 301
Greenwood Village, CO 80111

+1 513.852.5110
+1 800.361.2216

argus.sales@argus.aero

CONTACT LIST

Susan Cadwallader
susan.cadwallader@prism.aero
VP,SMS Services

Jenna Albrecht
Jenna.albrecht@prism.aero
Program Manager, SMS Services

Wayne Ehlke
Wayne.Ehlke@prism.aero
Safety Analyst, SMS Services

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Apr 2 to Apr 4, 2024—PRISM Course
Safety Management System (SMS)
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Go to Upcoming Training Classes to register.

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