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**Keynote address - "CAST, GAJSC, and USHST" are making a difference." James Viola - Manager, General Aviation and Commercial Division AFS-800**

**Investigations - Do they really make a difference**

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**Good morning and thank you for inviting me to speak with you today. My name is Jim Viola, and I have the honor of leading a fine group of professionals in the FAA's newly created Office of General Aviation Safety Assurance.**

**It's a reorganization of Flight Standards Service that was effective Monday – the same day the moon blocked the sun.**

**The quest to improve aviation safety has taken us down many paths, but few have paid dividends like good accident investigations and also public collaboration.**

**By building strong relationships with operators, manufacturers, trade associations, and academia, we have collectively made most every form of aviation safer.**

**In this presentation I will briefly highlight the history and successes of three of our most important safety teams- the Commercial Aviation Safety Team, the General Aviation Joint Steering Committee, and the U.S. Helicopter Safety Team.**

**The Commercial Aviation Safety Team was founded in 1998 with a goal to reduce the commercial aviation fatality rate in the United States by 80 percent by 2008.**

**Think about the significance of this for a moment.  
In the decade that preceded the formation of CAST,  
not a single year went by without a fatal accident involving a U.S. air carrier...  
and in several of those years, there was more than one fatal accident.**

**We are now on nearly an eight year run in which there have been no fatal accidents involving a scheduled U.S. certificated airline.**

**That is why by 2008, CAST was able to report that by implementing the most promising safety enhancements, the fatality rate of commercial air travel in the United States was reduced by 83 percent.**

**As impressive as that achievement was, the entire industry recognized there was still work to be done.**

**CAST has evolved and the group is moving beyond the “historic” approach of examining past accident data to a proactive approach that focuses on detecting risk and implementing mitigation strategies before accidents or serious incidents occur.**

**The goal over the next decade is to transition to prognostic safety analysis. CAST aims to reduce the U.S. commercial fatality risk by another 50 percent from 2010 to 2025.**

**CAST has developed an integrated, data-driven strategy to reduce the commercial aviation fatality risk in the United States. The CAST plan currently comprises 96 safety enhancements aimed at improving safety across a wide variety of operations.**

**CAST identifies precursors and contributing factors to ensure resources address the most prevalent categories of risk that pose the greatest threat to loss of life. The group has reduced the fatality risk in commercial aviation by focusing resources on the risk areas you see on the slide.**

**To get a better feel for the CAST methodology, let’s take a look at one of the safety enhancements aimed at reducing runway excursions. All of us understand that these excursions can lead to a loss of life, and like most accidents, they are well within our power to prevent.**

**Excursions are often the result of unstabilized approaches, incorrect performance planning, and/or poor runway surface conditions.**

**Safety enhancement 222, which began in 2014, tasked the aviation community with performing research to enable development, implementation, and certification of onboard aircraft system technologies to assess airplane braking action and provide the data in real time to the pilot, other aircraft crews, air traffic controllers, and the airport operators.**

**In a CAST study of runway excursions, the team determined that qualitative reports of runway friction based on pilot perception could be augmented, improved, and ultimately replaced by quantitative calculations of runway friction derived by onboard measurement and data processing systems.**

**This builds upon the work being done by the Take-off and Landing Performance Assessment, or TALPA group.**

**Just as a reminder, the TALPA initiative aims to reduce the risk of runway overruns by providing airport operators with a method to accurately and consistently determine the runway condition when a paved runway is contaminated.**

**This highlights another virtue of the CAST methodology, which is to leverage the work of other expert groups and to share data with other groups that seek to achieve common goals.**

**And speaking of common goals, our efforts to improve general aviation safety are no less ambitious than those directed at our airline community. One of the most effective strategies on which we have embarked is the implementation of the General Aviation Joint Steering Committee, or GAJSC.**

**The GAJSC was launched in 1997 as part of the industry-government Safer Skies Initiative to improve aviation safety. Revitalized in 2011, the GAJSC works to improve GA safety through data- driven risk reduction efforts focused on education, training, and enabling new equipment in general aviation aircraft.**

**This public-private partnership works to improve safety by using a consensus-based approach to analyze aviation safety data and develop risk reduction efforts.**

**The GAJSC's goal is to reduce the general aviation fatal accident rate per 100,000 flight hours by 10% from January 1, 2009 to December 31, 2018, with no more than 1 fatal accident per 100,000 flight hours by 2018.**

**I've included this slide to give you an idea of what the GAJSC has accomplished to date:**

**39 Safety Enhancements to date**

**29 Loss of Control**

**4 System Component Failure – Powerplant**

**20 SEs complete and another 18 SEs are underway**

**LOC- Approach and Landing – First test and demonstration of the CAST process to the GA community**

**LOC – All Other Phases of Flight – The first test of the CAST process was successful and a second working group was formed that looked at all LOC in all of the remaining phases of flight**

**•System Component Failure- Power plant**

**Third working group**

**CFIT was next on the list but since it had been trending in an downward direction and System Component Failure-Power plant had remained mostly static, the GA JSC decided to work on System Component Failure-Power plant next**

**You'll notice the focus on loss of control accidents. That is because when the FAA developed an overview of the 2001–2010 fatal GA accidents.**

**Again thanks full for all those in this room that have contributed data, and determined that 40.2% were involved a loss of control.**

**As a result, the GAJSC's Loss of Control Workgroup conducted analysis of 90 fatal general aviation accidents that occurred during approach or landing. The group then proposed a**

series of safety enhancements that targeted factors such as the need for angle of attack systems, improvements in aeronautical decision making, reliance on automation, the utilization of type clubs to improve training, increased emphasis on stabilized approach and landings, and the impairment caused by some medications.

These are just some examples, but they illustrate very clearly the multidisciplinary approach the GAJSC takes when analyzing safety issues, and by looking at a single problem from many points of view, we are better able to effectively target underlying safety risks.

In the case of lose of control, which is our single biggest bucket and safety concern, industry collaboration and use of the right data has yielded some significant improvements.

For starters, the FAA has used its regulatory authority to streamline the approval process for the installation of angle of attack indicators in small aircraft.

The FAA has also instituted the second pilot program, which allows home-builders to work with experienced pilots and builders to improve safety during the initial flight testing process.

In addition, the FAA also works closely with aircraft type clubs to develop and distribute important safety information to owners and pilots, including information that helps to reduce the risk of a loss of control. Finally, our industry partners are an invaluable distribution network for information on a variety of safety topics, topics such as strategies for the avoidance of sever weather or how certain prescription medications can impact pilot performance.

As you can see, the actual rate has been trending downward since 2009, when our rate stood at 1.17 fatal accidents per 100,000 flight hours.

So as we continue to make improvements in fixed-wing aviation, we must not forget another very important sector of the aviation community. Helicopters They perform a number of critical missions, missions that among other things, save countless lives each year. Still, the missions they perform and the challenging environment in which they operate pose unique challenges to operators and regulators alike.

Formed in 2013, the United States Helicopter Safety Team As a region of the IHST completed a comprehensive analysis of U.S. fatal accidents that occurred from 2009 to 2013. This data is now being used to develop specific intervention recommendations to support further accident reductions.

According to the group's analysis, out of 104 fatal accidents that took place during the five-year span, 50 percent of them stemmed from three "occurrence" categories

For the period 2016 through 2019, USHST is focusing its attention on reducing fatal accidents within the U.S. civil helicopter industry, IHST 2016 goal and its goal is to reduce the fatal accident rate to 0.61 per 100,000 flight hours by 2019. Or 20% by 2020.

The organization's fatal accident rate goal for this year is 0.69 accidents per 100,000 flight hours or lower.

Thanks in no small part to the actions of USHST participants, accident rates for U.S. helicopters declined in 2016 for the third consecutive year. There were 106 accidents in 2016, with an overall accident rate of 3.19 per 100,000 flight hours, compared with 121 accidents and an accident rate of 3.67 per 100,000 accidents in 2015.

Seventeen fatal accidents were recorded both years, with a fatal accident rate of 0.51 per 100,000 flight hours in 2016, compared with 0.52 per 100,000 in 2015.

Looking in terms of percentage, the 2016 *overall* helicopter accident rate represented a decline of 13 percent from 2015 and a decline of 27 percent since 2013, when USHST was formed.

The fatal helicopter accidents also declined 43 percent in the same period. This continues a downward trend the industry has enjoyed over the last decade. In fact, during that period, the U.S. helicopter accident rate has been cut by over half. So that's the good news.

The bad news is that the accident rate for the U.S. civil helicopter industry rose 6.6 percent in the first six months of 2017 to 3.37 accidents per 100,000 flight hours from a rate of 3.16 for the full year 2016. The fatal accident rate for the first half of this year rose more sharply, to 0.58 fatal accidents per 100,000 flight hours from a rate of 0.51 for the full year 2016.

So how do we drive this trend back downward in order to meet our safety goals?

The USHST has a number of initiatives underway, many targeting the occurrence categories I previously mentioned.

A great deal of effort has been focused on providing training and educational resources for operators.

As you can see from this list, which represents only a fraction of the work that has been accomplished, the industry is paying considerable attention to safety managements systems, and in particular the more formalized assessment of risk. This is not surprising when you consider this same approach has been used in CAST and the GAJSC to great affect... and very often to deal with similar accident causal pathologies.

**Talk about the UAST before going to this concludes the substantive portion of my presentation, but before I conclude, I want to take a moment to thank the many organizations and dedicated professionals outside of the FAA who have contributed so greatly to our collective success.**

**Ours is a difficult business, and we never have the luxury of resting on our laurels. Our partners in safety recognize this, and without their continued commitment, the success stories I referenced here would be far fewer... and we all recognize those graphs and statistics represent more than numbers.**

**They are lives saved and tragedies averted.**

**So never for one moment doubt you in this room are making a difference.  
Thank you.**