Aviation Safety

2020 Year in Review

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A Message from the Associate Administrator for Aviation Safety

Ali Bahrami

Photo: Danny Hart

The women and men of FAA's Aviation Safety organization work with tireless dedication to advance our mission of providing the safest, most efficient aerospace system in the world using a data-driven, risk-based, systems approach for standards, certification, and oversight.

In 2020, our workforce kept a laser-like focus on this vital safety mission despite the challenge of an unprecedented national and global public health emergency. Whether working with our stakeholders remotely, or donning masks (and gloves and safety glasses when appropriate) for in-person activities, Aviation Safety professionals didn't miss any opportunities to enhance safety outcomes in the National Airspace System and enable the expanded use of drones for delivery of packages and medical supplies.

This report highlights the exceptional teamwork employed during these unprecedented times to make progress in reducing commercial and General Aviation accident rates, and safely introducing new users into the airspace. We call the spirit that unites our Aviation Safety services and offices "OneAVS."

One example of this exceptional teamwork was found in our Office of Aerospace Medicine. This office — in cooperation with internal and external stakeholders — provided invaluable assistance to limit the spread of COVID-19 in airplane cabins and air traffic control facilities. They spearheaded airman medical certificate extensions when airmen and contract air traffic controllers were unable to get their required airman medical certificate exam. The team also supported efforts to add speed and critical capacity for COVID-19 testing for the general populace in Oklahoma and surrounding states by sharing sophisticated equipment. That's what the OneAVS spirit is all about.

It is my sincere hope that after reading this report you will echo my gratitude and appreciation for the extraordinary people of Aviation Safety, who have done their utmost to keep the skies safe in these extraordinary times.

INFLUENCING SAFETY GLOBALLY

International Engagement

Safeguarding and advancing aviation safety globally is an AVS enterprise effort. The rapidly evolving and increasingly globalized aviation sector has and will continue to benefit from our unique technical prowess and experience in aviation safety. This past year, the AVS International Group (AVS-5) has advanced efforts to evolve our internal and external collaboration methods for more integrated AVS safety approaches. Priority outcomes to advance aviation safety internationally include contributions to the FAA International Strategy, development of the AVS International Engagement Plan, and the reestablishment of direct working relations with the United Kingdom.

AVS-5 was a key contributor to the development of the latest FAA International Strategy. Safety is foundational for the FAA and naturally, AVS contributions would be central to the success of an agency-wide strategic plan. AVS-5 had a pivotal role in developing the international strategy to include elements related not only to influencing safety, but also to improve our internal agency-level capabilities needed to effectively respond to changes in the aviation landscape. Under this strategy, the FAA international safety efforts in the coming years will focus on the people involved in aviation safety, our core mission as safety champion and regulator, and advancing safety and security in critical technical areas. AVS-5 has already begun incorporating these initiatives into next year's AVS planning and performance efforts for international engagements.

Internal collaboration through the AVS International Coordination Team (ICT), which includes participation from each AVS Service and Office (S/Os) responsible for international activities. AVS-5 facilitates the ICT, which meets weekly to collaborate on strategic and cross-cutting international activities, discuss and develop improvements to AVS processes, identify and resolve challenges, and build a OneAVS approach to engagement with other FAA organizations and external entities. The ICT is a matrix team, where participants have committed to work together to promote shared goals and a unified approach across AVS S/Os, helping to ensure AVS international engagement is as effective as possible.

> "Because of the determination of our AVS International Coordination Team and the desire to collaborate as one AVS, we achieved all our desired outcomes this past year. This is what global leadership is all about."
>
> ~Tricia Stacey, Director, AVS International

This year, the ICT developed the first-ever AVS International Engagement Plan to bring together all of the anticipated AVS international work for the coming Fiscal Year to support integrated awareness, planning, and messaging. This outcome would not have been possible without the dedicated efforts of the AVS ICT. The ICT has enabled AVS to work as one on international engagement to enhance coordination, awareness, agility, accountability, and data-driven decision making in a transparent way that promotes a OneAVS culture.

FAA's relationship with the United Kingdom has been a focus for AVS as the UK prepares to complete its exit from the Europe Union at the end of the year. Activities included signing key new agreements between the FAA and UK Civil Aviation Authority (UK CAA). We have also had close collaboration in the areas of information exchange and the establishment of a UK CAA-FAA Emerging Technologies Work Group. These initial steps are building blocks to a robust relationship with the UK as they reestablish their independence from the European Union Aviation Safety Agency.

AVS continues to progress and evolve our international engagement approaches to influence safety globally. This past year has been foundational in laying the groundwork for a more integrated and intentional international strategy. The work in FY20 will be crucial to the success of our OneAVS approach to international engagement and leadership in the coming years.

New Voluntary Safety Reporting System

Photo: Danny Hart

Building on teamwork throughout the Aviation Safety organization in 2020, a new Voluntary Safety Reporting Program (VSRP) will soon provide employees a tool for raising safety issues without fear of retribution.

VSRP is a legacy-setting, non-punitive, safety reporting program that will establish and underpin a more robust, trustworthy and open safety culture within AVS. It will provide a means for reporting safety issues. The program will promote openness while maintaining the mutual trust between those who report, those who assess and those who act on reported safety concerns, all while ensuring safe and appropriate use of the information.

The program will leverage the best practices from those held up to be the gold standard, like the Aviation Safety Action Program for industry. We are also incorporating lessons learned from the Air Traffic Safety Action Program and Technical Operations Safety Action Program in the FAA's Air Traffic Organization, National Aeronautics and Space Administration, Australian Railway, European Union Aviation Safety Agency, Oregon Patient Safety Commission, U.S. Military Health System, and others.

> "It has been both an honor and privilege to work with this team developing this process. PASS [Professional Airways Systems Specialists Union] is fully committed to providing a safe and effective path for the employees it represents to speak up and question when they see something that may contribute to or cause an accident."
>
> ~ Ray Morgan, Union Official, PASS.

The VSRP Matrix Team is comprised of representatives from the AVS Services and Offices and four bargaining units (American Federation of State, County and Municipal Employees (AFSCME), National Air Traffic Controllers Association (NATCA), Professional Airways Systems Specialists (PASS), and American Federation of Government Employees (AFGE). Each step in the program's development depended on dedicated collaboration and group consensus before it was solidified. "It was an intense process and everything took a little longer but the value added was that we got everyone's input and did not miss any angles and got buy in at each phase," said Maggie McArthur, AVS VSRP Project Manager.

One of the biggest challenges—getting such a large group to agree on one solution—was also one of the team's biggest successes. The group had to come together to make complex decisions and complete actions such as developing and conducting a safety culture assessment, drafting Memorandums of Understanding, setting baselines and benchmarks and incorporating information from lessons learned across the FAA and the industry to develop the VSRP policy and governance.

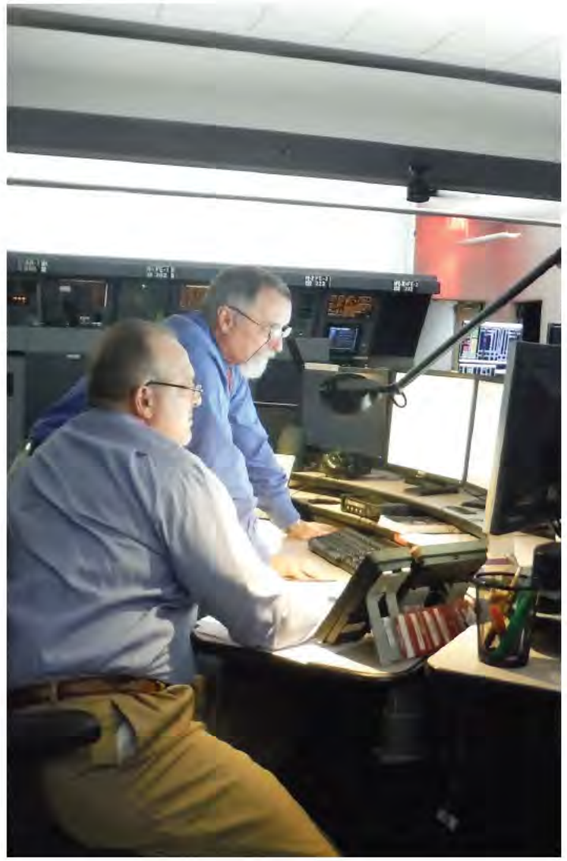
"The most remarkable thing about this process was the way the groups came together and found a proactive approach to collaboration," said McArthur. "This was a collateral duty for all the representatives. They had to complete actions, attend multiple meetings all while performing their main job, and ensure that the Services and Offices and union senior leaders had the necessary information to make decisions. Some decisions and actions took multiple discussions and strategy sessions, but everyone was committed to the process, hung in and did their part."

While the process featured some setbacks and trips back to the drawing board, the team began making steady progress. Then came the COVID-19 national health emergency. "Going to a completely virtual environment made communication—which was already a challenge—even harder," said McArthur. We had established a great team rapport from our frequent in-person meetings. Having to hold meetings virtually was tough because you can't read facial expressions or interpret body language like you can in person. We definitely had to adjust."

The biggest challenge after COVID-19 hit, according to McArthur, "was figuring out how to test the tool and perform table top excerises virtually and without being in the Beta environment." But where there is a will, there's a way. The company partnering with the VSRP team to create the reporting tool demonstrated the tool in a virtual environment using multiple browsers and scenario simulations to ensure its functionality in a variety of situations. "It took a little longer but it was the most creative and effective solution given the circumstances," commented McArthur.

> "The AVS VSRP hopes to create and maintain a supportive working environment that promotes open communication between labor unions, employees and managers concerning safety matters. It is always my pleasure in assisting the agency with labor issues, concerns and helping to resolve matters at the local level."
>
> ~ Blanca Tovias, President, American Federation of Government Employees Local 2282.

The collaborative efforts of the VSRP team, their ability to overcome challenges and commitment to promoting an open, trusting culture characterized by a commitment to compliance, self-correction and voluntary disclosure is critical to helping AVS reach its strategic goal of improving aerospace safety.



> "The Unions and especially AFSCME are looking forward to this new transparent way of doing business where the employees have a stake in ensuring compliance to aviation safety and prosperity of the industry."
>
> ~ Moin Abulhosn, AFSCME's AVS Vice President

Strategic Plan Teamwork

Drives Organizational Success

In 2019 the Aviation Safety organization adopted an ambitious five-year Strategic Plan. Seeking to drive improvements in key areas of our organization's skills, processes, systems, behaviors, and relationships, the Strategic Plan will advance our vision of being "an innovative organization that achieves excellence and assures safety in the global aerospace system."

The Strategic Plan initiatives and associated activities cover the following objectives:

- Establish and expand voluntary safety programs.
- Collaborate globally to influence the continuous improvement of aviation safety worldwide.
- Develop a uniform continuum for performance-based responses for all oversight and regulatory functions.
- Establish requirements and governance for safety data sharing across the enterprise.
- Improve the ability to identify and assess safety risks through advanced analytics.
- Establish a framework and criteria for data-driven decisions, priority ranking of initiatives, and resource allocation.
- Align workforce development and training with future needs.
- Create intentional strategies to effect culture change.
- Create a strategy for reinforcing expected behaviors.

Throughout FY 2020, nine Strategic Initiative teams, representing each of AVS's services and offices began working to bring the vision to reality. With broad input from the workforce and leadership, great OneAVS thinking, and feedback from a transparent assessment of our safety culture, the teams took tangible steps to achieve the outcomes of each initiative and made measurable progress.

A key focus of the teamwork this year was research and analysis breaking down each initiative into the actionable tasks that need to be completed to achieve our goals. This work validated the assumptions and identified changes that needed to be made to the activities and targets for FY 2021 and beyond.

Each of the teams has a Team Lead from the service or office most closely associated with the initiative and is composed of experts from every service and office, including a few participants on multiple initiatives. Acting as a conduit for this effort is the AVS Office of Quality, Integration and Executive Services and the Flight Standards Change Management Group who help each team build and achieve their case for change and act as a liaison between the teams and the AVS Management Team.

Using this structure, the teams use their respective expertise to effectively handle specific areas of the Strategic Plan while encouraging each member to get together and work out common approaches and needs. This has already borne fruit through the creation of four groups, or super teams, who work together on a common need between them all.

- The OneAVS group, focuses on building the workforce up to the OneAVS culture, from hiring through reinforcing the best professional behaviors.

- The Voluntary Safety Group focuses on how we can expand and improve current Voluntary Safety programs and create new ones that work hand-in-hand with each other. They defined the attributes and best practices for a positive safety culture.

- The International Team focuses on enhancing AVS's ability to influence aviation safety globally through our work within the International Civil Aviation Organization (ICAO) and with our international partners. This year, they developed an International Engagement Plan to identify priority international activities for AVS, conducted an international awareness survey to identify AVS outreach/training needs, and identified AVS's innovative approaches in aviation safety to highlight internationally.

- The Data Group focuses on finding all the sources of data, making them uniform, and determining how best to use the information. They developed an initial Concept of Operations for data governance and identified and assessed data and data sources needed for advanced analytics. They identified gaps in advanced analytic skillsets and prioritized desired advanced analytics to be performed. They also developed a framework for decision-making and documented high-level requirements for decision-making based on use cases.

In summary, every initiative in the Strategic Plan enables AVS to operate as one integrated organization. In this way, the Strategic Plan helps us build a common framework for success.

> "The Strategic Plan helps us build a common framework for success."

Aviation Safety Teamwork

Takes on Unprecedented Challenge

The COVID-19 national public health emergency represents an unprecedented challenge, requiring tremendous teamwork throughout the Aviation Safety organization to help ensure the safety of the National Airspace System. These stories document the breadth and extent of this extraordinary teamwork.

Regional Flight Surgeons

Step Up

Since the beginning of the COVID-19 public health emergency, Aviation Safety's Regional Flight Surgeon (RFS) Team took its place on the front lines of the FAA's response. When local and state public health authorities were only able to provide high-level guidance and were unable to provide detailed recommendations and help with contact tracing in response to operator demands, the RFS stepped into action providing public health guidance for our workforce.

Members of the RFS Team served on the Incident Management Team (IMT) and helped develop contact tracing forms, management guidelines, and return to facility criteria after an employee either tests positive, comes in close contact of a person with a positive test, or goes from presumed positive to negative. They quickly interpreted CDC guidance as applied to the FAA's operational needs.

Indeed, throughout the COVID-19 national health emergency the RFS Team has provided valuable advice and guidance to managers to help keep the national air space operational and our employees safe. When an employee identifies themselves as exposed to a person with COVID-19, ill with COVID-like symptoms, or has a confirmed case of COVID-19, the RFS coordinates the disposition of all affected employees with the AVS management team. The result of these steps plus closely adhering to guidance from the Centers for Disease Control mitigates risks for all employees. The RFS Team also works closely with the Regional Roadmap to Recovery Teams to facilitate orderly recall of operational employees while protecting the health and wellness of all. RFS's have participated in numerous Town Halls for different Aviation Safety Lines of Business and facilities to answer questions about the COVID-19 public health emergency from employees and managers, earning accolades from the participants.

Early in the COVID-19 public health emergency, holders of medical clearances or airman medical certificates began to experience difficulty obtaining required medical examinations. Working closely with Aviation Safety's Flight Standards Service, the RFS Team spearheaded the development of a policy that allowed the agency to extend medical certifications safely. With the Federal Air Surgeon's guidance, the RFS Team also implemented extensions for medical clearances. They reviewed each case to verify required documentation had been submitted and the individual was medically safe to continue performing safety-sensitive duties. When medical offices began to reopen for well patients, each RFS identified which Employee Designated Aviation Medical Examiners were open for business. Gaps in coverage were quickly identified by Aviation Medical Examiner Designee Managers, allowing redistribution of assets to obtain required evaluations.

The RFS Team has been critical to the continued safety of the national air space and to FAA employees by providing timely, scientifically valid, and risk-based advice. "This challenge was enormous," said Senior Regional Flight Surgeon Dr. Susan Northrup. "Yet from the start of the pandemic each of the Regional Flight Surgeons advanced our safety mission with unmatched skill and selfless dedication."

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>
> ~ Dr. Susan Northrup

Addressing Effects on **Commercial & General Aviation**

In 2020, teams from Aviation Safety's Office of Accident Investigation & Prevention (AVP) proactively worked with collaborative safety teams to address the effects of COVID-19 on the Commercial and General Aviation sectors.

During the COVID-19 national health emergency the demand for air travel decreased, resulting in the grounding of significant portions of airlines' fleets for months at a time, creating new safety challenges that needed to be addressed. To take on these risks, the Commercial Aviation Safety Team (CAST), a collaborative effort between the FAA, other government partners, and industry, through its Joint Implementation Measurement Data Analysis Team (JIMDAT), pulled together information and best practices from prior public health emergencies, carriers' financial crisis, carrier mergers and analyzed potential risk areas to commercial aviation associated with COVID-19.

This work resulted in the publishing of "Safety Elements to Monitor During a Period of Dynamic Change." This document was shared with the aviation community, both domestically and internationally. The goal is to help the aviation community monitor safety elements and organizations' current focus areas to identify potential gaps, or needed areas of collaboration for sharing concerns, findings, and best practices. "The document," said Vivek Sood, the JIMDAT Government co-chair, "reflects the unprecedented open and transparent exchange of information between the FAA and industry to ensure safety remains the top priority, and is a true testament of the relationship CAST has developed between government and industry over the past 20 plus years."

Meanwhile, the General Aviation Joint Steering Committee (GAJSC) and General Aviation Issues Analysis Team (IAT) worked with committee members and other industry associations to conduct safety seminars aimed at maintaining a safety focus and helping with the dissemination of best practices for dealing with COVID-19-related issues. These teams also helped to inform the GA community about COVID-19-related risks and issues identified by members and the broader GA community. Reflecting on this cooperation, Paul Snyder, Chairman of the University Aviation Association Safety Committee said, "It is really fantastic to see us all working together to press through COVID-19, which reminds me of what I often experience from our safety group, 'Safety has no secrets!'"

The FAA also collaborated with stakeholders in the Commercial Aviation and General Aviation communities to educate them about steps needed to ensure safety in the National Airspace System during the national health emergency. In May, FAA Administrator Steve Dickson and Flight Standards Service Executive Director Rick Domingo participated in a virtual part 121 Aviation Safety Town Hall with aviation industry leaders, which was viewed by roughly 14,000 members of the public. They discussed the importance of Safety Management Systems to ensure safety during this challenging time and best practices in response to observed safety issues/concerns; metrics to monitor operational health; changes to respond to the COVID-19 public health emergency that alter normal operations; and initiatives underway to prepare for restoration of normal operations.

Building on the success of the Town Hall, AVP organized leadership sessions between part 121 safety officials and FAA executives to discuss the challenges facing the industry and the plan for the safe spool up of operations in the National Airspace System. Indeed, government and industry partnerships are vital to address the challenges we face today.

In times when we see cancellations of in-person meetings and safety conferences, we had to find new ways to continue our collaboration and advancement of aviation safety. Not holding these meetings was simply not an option.

Further, in June, FAA Administrator Steve Dickson, Deputy FAA Administrator Dan Elwell, and Director of the Flight Standards, Office of Safety Standards Bruce DeCleene headlined a virtual FAA General Aviation Safety Town Hall, this one viewed by roughly 12,000 members of the public. They discussed challenges faced and overcome by general aviation partners and the success of Safety Management Systems in handling the national health emergency. A discussion also occurred on what pilots and operators have to take into account when preparing to resume operations including currency of flight experience and medical certificates. FAA's Office of Communications noted that more than 96,000 views took place after the event, on Facebook, Twitter and YouTube, and stated in a report to the Administrator that "no amount of press releases/website posts can replace the sheer volume of people who actually saw the good work the agency is doing."

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>
> ~ Vivek Sood

Providing Relief for

Certificate Holders

At the onset of the COVID-19 public health emergency, the Aviation Safety organization acted quickly to provide urgent regulatory relief to air carriers and other operators while maintaining flight safety. Aviation Safety formed a COVID-19 Exemptions Team and issued the first of several precedent-setting exemptions in March. These exemptions were coordinated extensively within the FAA, the Office of the Secretary of Transportation, and the Office of Management and Budget's Office of Information and Regulatory Affairs. Due to the team's efforts, the following relief is available to certificate holders:

- Exemptions for Training - Gives certificate holders grace periods for completing certain training and qualification requirements and gives crew members relief from having to don protective breathing equipment or oxygen masks in recurrent training, checking, or evaluation.
- Exemptions for Transporting Cargo on Airplane Seats or Floors - Allows certificate holders to carry cargo in airplane cabins when no passengers are being transported.
- Exemption to Help Protect Flight Attendants from COVID-19 - Allows flight attendants to relocate from the seats they would normally occupy so they can observe social distancing and allows for alternative methods to inform passengers of how to use certain equipment (such as oxygen masks).

As with any petition for exemption, the team's foremost consideration was whether granting the regulatory relief requested by certificate holders would have no adverse effect on safety and would be in the public interest as is required in 14 CFR Part 11 standard for granting an exemption. The team accelerated the exemption process where it could by granting exemptions that can be used by any certificate holder that submits a letter of intent and complies. This prevents each certificate holder from having to petition and be granted an exemption individually. The team proactively established and manages a central COVID-19 email account for certificate holders to submit letters of intent. The team has collected and reviewed over 1,200 letters of intent.

This email account also serves as a central place for internal and external stakeholders to ask questions about the exemptions and other regulatory matters related to COVID-19.

The team's innovative approach enabled the FAA to respond efficiently to its stakeholders' needs during the COVID-19 public health emergency. This would not have been possible without partnership and collaboration between Flight Standards, the Office of Rulemaking, and the Office of the Chief Counsel. As team co-lead Mary Thompson said, "Doing this incredible amount of work on tight deadlines required solid communications and constant successful handoffs across Flight Standards, Rulemaking and the Office of General Counsel. To say this was an above and beyond effort is an understatement."

Currently, the team continues its work to address petitions for new or extended relief due to the ongoing impacts of COVID-19. The FAA has received kudos from industry for its responsiveness to the challenges of COVID-19, and this team's work is a great example of interdependency, agility, and critical thinking.

> "Doing this incredible amount of work on tight deadlines required solid communications and constant successful handoffs…To say this was an above and beyond effort is an understatement."
>
> ~ Mary Thompson

SFAR Team Comes to the Rescue

Early on in the COVID-19 public health emergency, the FAA realized that relief for the General Aviation community was necessary, in addition to the relief that was available to air carriers and operators. AVS accordingly initiated a rulemaking project to provide urgent regulatory relief to a wide range of people and operations, including general aviation. This helped support the continued safe operation of our nation's air transportation system and the movement of critical goods and personnel, as well as enabling aerial observation of critical infrastructure to continue, despite the challenges presented by COVID-19. The final rule published as a Special Federal Aviation Regulation (SFAR) and was effective on April 30, 2020. SFAR 118 followed a normal coordination path through the FAA, the Department of Transportation, and the Office of Management and Budget's Office of Information and Regulatory Affairs, albeit at an unprecedented speed, which required an incredible amount of cross-agency collaboration and communication to achieve.

The cross-divisional team in Flight Standards worked expeditiously to identify the exact areas where relief was necessary, establish eligibility requirements for the relief, define any conditions required of an operator or individual in order to exercise the relief, and articulate when the relief would begin and end. The result was SFAR 118, which offered relief from certain FAA regulations that generally fell into the following areas:

- Pilot and crewmember training, recency, testing and checking requirements specified in parts 61, 91, 107, and 125, and SFAR No. 73;
- Duration and renewal requirements specified in parts 61, 63, 65, and 141, and SFAR No. 100-2 to include short validity period extensions for airmen medicals; and
- Certain air carriers and operators who are unable to obtain special flight permits with a continuing authorization under part 21 for the purpose of flying the aircraft to a point of storage.

Special Federal Aviation Regulation Team member Barbara Adams and COVID-19 Exemptions Team member Mary Thompson.

Because of the limited relief offered initially and the continued challenges airmen and operators have been experiencing due to the public health emergency, FAA published two additional rules to amend the SFAR to extend some of the relief to an additional population of affected persons. Again the team had to work under unprecedented timelines to achieve the goal. SFAR 118-1 was effective on June 25, 2020, SFAR 118-2 was effective on October 1, 2020. "All three rule projects would not have been successful without the incredible work of the Flight Standards team and the partnership and collaboration with the Office of the Chief Counsel, the Office of Aviation Policy and Plans, and the Office of Rulemaking," said team lead Barbara Adams.

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>
> - Barbara Adams

Virtually Seamless:

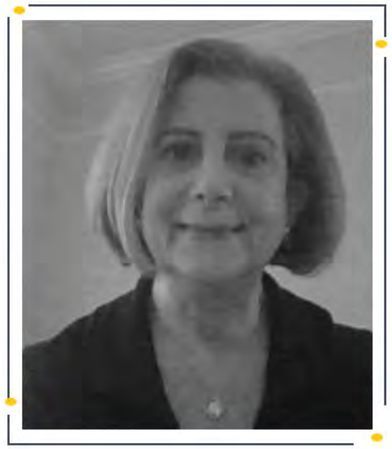
Providing Air Traffic Safety Oversight

FAA's Air Traffic Safety Oversight Service (AOV) provides independent oversight of the Air Traffic Organization's (ATO) personnel certification system. This ensures that personnel performing direct safety-related air traffic control services and certifying systems, subsystems and services possess and maintain the required knowledge, skills and abilities to perform their functions. AOV also manages the Control Tower Operator (CTO) program. Together, these programs establish that air traffic control specialists (ATCS), airway transportation system specialists (ATSS), and aeronautical information specialists (AIS) possess the necessary qualifications and skills to do their jobs safely. AOV manages credentials for over 20,000 ATCS, ATSS, and AIS in the ATO and the Department of Defense (DoD).

An AOV credential, with appropriate ratings, demonstrates that the holder has the required AOV authorization to work independently on safety-related tasks and systems. Maintaining a rating requires a current medical certificate (for ATCS), a Biennial Skills Evaluation (BSE), training, and currency. The COVID-19 public health emergency during FY 2020 posed a significant challenge: How could safety oversight requirements be met while following COVID-19 public health guidance to reduce the risk of spreading SARS-CoV-2, the virus that causes COVID-19, during these activities as much as possible?

To keep the system moving and rise to the challenges posed by COVID-19, a cross-organizational AOV team, led by Program Coordinator Cindy Nordlie, quickly developed and implemented an inclusive, expedited exemption approval strategy to extend expiring medical certificates for non-FAA and non-active duty and non-DoD ATCS.
"It took amazing collaboration for the FAA to issue the exemption in a week," said Nordlie. "The Offices of Aerospace Medicine, Rulemaking, and Chief Counsel and AVS Executives really stepped up so the affected individuals could keep providing critical air traffic services during the COVID-19 national health emergency."

Following a similar strategy, AOV authorized extensions of the BSE, providing relief for hundreds of controllers and technicians needing it, and developed virtual means to provide oversight for the administration of Airmen written exams. Finally, AOV developed and implemented a policy allowing initial CTO certificates to be issued to ATCS who held a Credential with a Tower Rating. This year-long effort in collaboration with the FAA's Office of the Chief Counsel leveraged the experience of FAA and DoD controllers and facilitated the seamless transfer of knowledge and expertise to contract towers, improving safety oversight in the National Airspace System.



"It took amazing collaboration for the FAA to issue the exemption in a week. The Offices of Aerospace Medicine, Rulemaking, and Chief Counsel and AVS Executives really stepped up so the affected individuals could keep providing critical air traffic services during the COVID-19 national health emergency."

- Cindy Nordlie

Enabling Expanded **Drone** Operations

The FAA's COVID-19 Unmanned Aircraft Systems (UAS) Team anticipated a greater number of inquiries for expanded drone operations to respond to the COVID-19 public health emergency. Thanks to their proactive approach, they quickly developed an internal COVID-19 Response Playbook to aid response efforts and provided value-added operational and administrative services to the FAA's proponents, including existing partners (e.g. UAS Integration Pilot Program, Partnership for Safety Plans) and new applicants. With various points of entry for applicants and great interest from the White House, Capitol Hill, and the Department of Transportation, it was critical to ensure that the FAA had one, consistent voice when engaging with potential operators.

The COVID-19 Response Playbook served as a vital tool to assist operators in leveraging the flexibilities within the FAA's existing rules to conduct COVID-19-related operations, while ensuring that the operations didn't create undue hazards in the air and on the ground. The playbook supported the FAA's discussions with interested parties by clearly framing the operational paths available, including:

- Operating under part 107
- Obtaining a Special Governmental Interest (SGI) approval
- Operating under part 135 Certification
- Operating under part 137 Certification

Once potential operators understood the existing operational options, the COVID-19 UAS Team worked tirelessly and collaborated across lines of business, challenging the status quo to consider new, innovative applications for existing rules. The Team pushed the boundaries of what's been done to meet the demands of the COVID-19 public health emergency and the operations they coordinated helped provide critical support during the public health emergency while supporting the American economy. The COVID-19 UAS team maintained a tracker for all approved, pending, and closed requests to operate drones in response to COVID-19 and provided multiple status briefings to the Department of Transportation and FAA leadership. Additionally, the COVID-19 UAS Team made public safety outreach a priority, coordinating specifically with public safety associations to provide information on how to get an Special Governmental Interest waiver. The Team partnered with the Department of Justice's Bureau of Justice Assistance to review grants for drones that are part of their FY 2020 Coronavirus Emergency Supplemental Funding for Law Enforcement.

The COVID-19 UAS Team was proactive and provided inspiring leadership to help stimulate the economy while maintaining the safest, most efficient aerospace system in the world. By developing the internal playbook and demonstrating a willingness to find solutions to meet the public's needs during an emergency, the COVID-19 UAS Team demonstrated their dedication to safety, innovation, and our nation.

"COVID-19 definitely changed the way we work, including building a whole new sense of teamwork," said team member Nicole Hartman. "We all had to quickly learn how to better trust each other and communicate openly. These skills will serve us well on the other side of the pandemic." Added team member Rachel Carlstrom, "Working with the team in furtherance of supporting operations in response to the COVID-19 public health emergency was a great experience. Our team has a great mindset and is always striving to think outside the box, which enabled us to establish new operations and find a path to 'yes.' Operations in support of COVID-19 response and recovery, such as contactless deliveries, allow people to remain sheltered at home."

> "COVID-19 definitely changed the way we work, including building a whole new sense of teamwork. We all had to quickly learn how to better trust each other and communicate openly. These skills will serve us well on the other side of the pandemic."
>
> ~ Nicole Hartman

Teamwork Boosts Approval of

Emergency Autoland System

A safeguard against accidents due to pilot incapacitation is now available, thanks to collaboration between Aviation Safety's Aircraft Certification Service (AIR), organizations throughout the FAA, and industry. The emergency autoland (EAL) system, designed by Garmin and certified by FAA for use on the Piper M600 on May 15 and on the Cirrus Vision Jet on August 27, is as simple as a press of a button. The interface is straightforward, designed so that any passenger on the aircraft can activate the EAL system. Once activated, it provides clear and simple flight information to passengers and automatically broadcasts an emergency message to Air Traffic Control (ATC) while it brings the aircraft down on the nearest, suitable runway.

Behind that button stands the cooperation and innovation of Aviation Safety; of AIR's certification teams; offices throughout the Air Traffic Organization (ATO); the Federal Communication Commission (FCC); and industry. Within AIR, separate teams certified the two different planes. The Piper team, based in AIR's Atlanta ACO Branch started first. As such, they hit the most turbulence, working out details and issues as they arose. They shared their experiences and lessons learned with the Chicago Aircraft Certification Office Branch's Cirrus team, and the two teams talked every week until the final test flight. "The Atlanta flight test team did a very good job of sharing all those lessons," said Addison Tower, Flight Test Pilot assigned to Cirrus in AIR's Southwest Flight Test Section. "Craig Edkins, their Flight Test Pilot, called me directly and said to make sure Cirrus received permission from the FCC to broadcast on an emergency frequency. Which is something they had become aware of while coordinating their flight test for the Piper."

The AIR teams conducted their certification efforts with the same new and novel approach that the EAL system brings to aviation safety. They coordinated with Aviation Safety's Office of Accident Investigation & Prevention (AVP), a partner not typically involved in design approvals, to review potential risks. "It made sense to have AVP lead an assessment of the EAL system risks across multiple lines of business as AVP would be called on to investigate and mitigate any future incident involving EAL." said Keith Noles, Program Manager for the Atlanta project. The effort included AIR and AVP working with teams in Aviation Safety's Flight Standards Service, like the Aircraft Evaluation Group, to ensure proper communication of the system's parameters and implementation to operators in the field.

> "It made sense to have AVP lead an assessment of the EAL system risks across multiple lines of business as AVP would be called on to investigate and mitigate any future incident involving EAL."
>
> ~ Keith Noles

Certifying the EAL system also required an unprecedented amount of collaboration with FAA's ATO. AIR worked with several offices in ATO, who shed light on the parameters needed to achieve a safe landing after activating the system. From AIR, ATO learned how aircraft and aircraft components are certified, and from ATO, AIR learned valuable lessons on flight operations in the National Airspace System (NAS). The two organizations communicated constantly throughout the project, including holding a meeting between ATO and AIR Southeast Flight Test Section's Wade Smith, Flight Test Section Manager; Cory Spradlin, Flight Test Engineer; and Edkins. Well before any certification would be granted, the Atlanta team reviewed design parameters and addressed concerns with ATO's senior management, operators, approach control, en route specialists and with representatives from the National Air Traffic Controllers Association.

"A key point to the meeting was that the EAL system didn't need to talk so much," said Edkins. "It just needed to briefly say what was going on, so that ATC could use the frequency to direct other aircraft out of the way."

This close collaboration between AVS and ATO will continue to pay dividends on future projects, such as the continued development of minimum safety requirements for all emergency autoland systems. As aviation becomes more automated, standards like those developed by AIR in conjunction with ATO will help define the next era of safe flight.

The flight tests proved vital in determining the EAL system's impact on the NAS and paved the way for certification, but both flight tests, and the certifications that followed, would not have gotten off the ground without the cooperation of countless people throughout AVS, the FAA and beyond.

Driving Down

GA Accident Rate

When it comes to reducing the rate of General Aviation accidents, "You must have collaboration," says Corey Stephens, the government Safety Analysis Team co-chair for the General Aviation Joint Steering Committee (GAJSC). "Nobody has the complete picture. If Aircraft Certification, Flight Standards, and Aerospace Medicine didn't bring their pieces of the puzzle to the table and if industry didn't bring their pieces, we wouldn't have the complete picture and be able to do what we are doing."

Powered by a sustained commitment to teamwork, the joint FAA-industry GAJSC is significantly advancing GA safety through data-driven risk reduction efforts focused on education, training, and enabling new equipment in general aviation aircraft. Two years ago, thanks in large part to the GAJSC's work since the partnership was revitalized in 2011, the target goal of reducing the GA fatal accident rate per 100,000 flight hours by 10 percent from 2009 to 2018 was met. But by no means has the GAJSC sat on their laurels. In FY 2020, the GAJSC registered the following accomplishments:

- Completed establishment of the Controlled Flight Into Terrain (CFIT) working group and approval of CFIT safety enhancements including encouraging pilots and operators to equip and utilize enhanced vision systems technology to improve situational awareness.
- Formed the System Component Failure – Non Powerplant (SCF-NP) working group to address GA accidents involving non-engine mechanical issues such as failure of a flight control or aircraft structure.
- Worked in partnership with the Aviation Safety Information Analysis and Sharing (ASIAS) program to implement the National General Aviation Flight Information Database 2.0. This database significantly upgrades tools available to GA pilots and operators to analyze flight data and identify potential risks, helping the GAJSC and ASIAS search for risks and trends in light GA. The database has amassed more than 1.2 million hours of flight data.
- Jointly, with the GA Issues Analysis Team,

worked with members and other industry associations to conduct safety seminars to maintain focus on safety and help with the dissemination of best practices for dealing with COVID-19 related issues.

Thus far, the GAJSC has developed 46 safety enhancements affecting such common types of accidents as inflight loss of control, system component failure – powerplant and controlled flight into terrain. Illustrating the lengths to which the GAJSC goes to find new ways to reduce the GA accident rate, Stephens invites you to look no further than your medicine chest. GAJSC members noticed a possible link in loss of control accidents to a pilot's use of over the counter medications containing diphenhydramine, such as Benadryl® and TYLENOL® PM, which could have a significant sedating effect. "We spoke to the folks at CAMI (Civil Aerospace Medical Institute) and the doctors at FAA Headquarters and asked, "Are these levels (of the antihistamine Diphenhydramine) that can cause an impairment?' And they said, 'Yes, they are." Stephens adds the GAJSC team was surprised that the recommended time for a person to fully recover their faculties after taking these medications was 40 hours instead of their collective estimate of 16 hours, leading to the development of new outreach material to educate pilots of the importance of understanding "wait times" after taking medications.

There are other initiatives the GAJSC is proud of, including working with the lower 48 states and Hawaii to expand the use of weather cameras that have proved greatly effective in Alaska, helping alert GA pilots to rapid changes in weather conditions.

"When you think of the GAJSC there is never a silver bullet that will take care of all accidents," says Stephens. "The risk mitigations that the GAJSC has developed is a mixture of best practices, training, technology and guidance information that go back to the community of pilots, operators and manufacturers." Adds Barbara Pisaro, Manager of Integrated Safety Teams in the Office of Accident Investigation & Prevention, "It takes trust from industry to make all this happen. We've accomplished that. It's a great effort on both parts. In all the teams we've set up everybody has taken part in the action. It's a great example of collaboration."

> "There is never a silver bullet that will take care of all accidents."
>
> ~ Corey Stephens

UAS Support Center Team

"How may we help you?"

Small team within AUS making a giant impact on outrech.

UAS Support Team Member Danielle Corbett with Tim Williams, President of Prince George's Radio Control Club.

The terms 'regulatory agency' and 'customer service' are seldom synonymous, but Aviation Safety's Unmanned Aircraft System (UAS) Support Center Team debunks that daily.

"We're pretty much the best customer service you can get," said Management and Program Analyst Danielle Corbett. She oversees the small group making a large impact on UAS outreach to the public. When you dial 844-FLY-MY-UA, there's a top-notch crew of aviation experts waiting to answer your drone questions. "I think the coolest thing about our support center is that you can call a giant government agency and we will answer the phone right away so that you can talk to a real person about your specific concern or issue," said Corbett. The UAS Support Team is composed of Steve Farrow, Paul Hamilton, Walter Jones, Landon Long, Jonathan Lunenfeld, and John Waters. "We like to think of ourselves as the in-house advocates for the public," said Corbett.

The UAS Support Center Team works painstakingly to answer more than 700 queries weekly, often with less than a two-day turnaround. This squad has also developed a weekly reporting process that has become a key component of status reporting to executive management. This process provides metrics and comparative analysis that is easy to understand. This data helps identify trends to executive management for information, decision-making, and direction of tasks to support integration and business plan items. This information also informs strategic communications through updates to the public-facing website, messaging on FAA initiatives through executive-level engagement, and programmatic priorities with FAA partners.

"It's very rewarding because it's such a great challenge," said Farrow, alluding to the fact that this team is often a drone owner's first venture into aviation. "In the unmanned arena, the vast majority of users are the general public. The financial and academic investment are minimal. Manned general aviation requires a significant investment, both a recurring financial and a continuous academic investment. It also requires a development and refinement of particular skill sets. This level of investment leads to a commitment which transforms those individuals into aviators."

This AUS group takes particular pride in helping people understand their responsibility as an operator in the NAS. "If you come to us with something really complicated, we'll take a few days to research it, find the primary person and then get back to you," said Corbett. The calls run the gamut from people with newly purchased drones wondering how to register them, to companies looking for advice on waivers. The team sometimes fields non-UAS inquiries from people just looking for a little direct assistance from the FAA. Farrow looks at the service as an educational process for the public, covering the full spectrum from registration, certification, general operating rules, operating in controlled airspace, operational waivers, to other non-part 107 certifications. "It is a challenge every member of the UAS Support Center embraces both individually and collectively as an organization. The reward comes from successfully meeting that challenge," he said.

> "We like to think of ourselves as the in-house advocates for the public."
>
> ~ Danielle Corbett

AVS Safety Innovations

Within the Aviation Safety organization, dedicated professionals constantly seek better ways to advance our safety mission. In 2020, the following innovations and actions helped make AVS a more efficient and effective organization.

ASIAS Expanded to Rotorcraft, GA light aircraft

The FAA's Aviation Safety Information Analysis and Sharing (ASIAS) system was expanded into the rotorcraft domain and continued growth in the General Aviation domain, to include light GA. This improves the ability of the FAA and industry to conduct cross-domain safety analysis, leading to improvements in risk reduction through the implementation by both of voluntary data-driven safety enhancements by appropriate collaborative Safety Teams.

Improved Certification Process for Air Carrier Operations

The Initial Certification process for Applications for Air Carrier Operations conducted under 14 Code of Federal Regulations part 121 was revised to ensure applicants get an immediate response and project support within two days of a Pre-application Statement of Intent submission. This new process allows the Office of Air Carrier Safety Assurance at least 60 days to use critical thinking in the assignment of the future Certificate Holding District Office. This change increases the effectiveness of the Aviation Safety organization by assuring all applicants are handled using a standardized process with standardized expectations clearly explained.

Aircraft Certification Process Streamlined

The Aircraft Certification (AIR) Service streamlined processes to better position AIR organizationally to deliver an improved level of safety in a rapidly evolving environment. A new Safety Program Management Branch (AIR-360) will integrate and provide national strategic oversight for product-related safety activities, including continued operational safety (COS), and serve as a single coordination focal within AIR for major accident and incident response and the FAA's State Safety Program. AIR also met major milestones in the direction of unifying validation and COS oversight and safety monitoring in AIR's Compliance and Airworthiness Division. The consolidation into the Operational Safety Branch (AIR-720) and the International Validation Branch (AIR-730) includes development and publication of airworthiness directives and validation of foreign design approvals.

Aeronautical Information Specialists Credentialed

The FAA issued the first credentials recognizing the Air Traffic Organization's aeronautical information specialists with an instrument procedure design rating. Aeronautical information – such as public instrument flight procedures, aeronautical charts, airport maps, etc. – provide the "foundations for flight" designed to support aviation and to meet the demand for increased capacity, efficiency, and predictability in the National Airspace System (NAS). Aviation Safety's Air Traffic Safety Oversight Service's credentialing of the providers builds on existing oversight and safety practices by applying a competency standard for all personnel who perform direct safety-related services in support of the NAS.

Progressive Policy for Diabetic Pilots

Aerospace Medicine (AAM) changed the horizon for diabetic pilots. For good. Following years of work, AAM published in the Federal Register a protocol by which Class 1 and 2 pilots with insulin treated diabetes could be considered for special issuance for the first time. This protocol incorporated the new continuous glucose monitoring technology into the risk assessment and is the only program in the world to do so.

Safety Risk Management Policy for Drones

The FAA Order 8040.6 UAS Safety Risk Management (SRM) Policy (published Oct. 2019) established the methods by which we assess applicants' requests to operate UAS and how the Aviation Safety organization performs SRM for UAS requests for waivers, exemptions and authorizations. The new order enables AVS to determine and document safety risks associated with UAS operations in a more consistent, coordinated, and timely manner. This allows AVS to make risk based decisions when assessing the more complex UAS requests to operate.

Rulemaking Information Management System

The Office of Rulemaking fully implemented the cloud-based Rulemaking Information Management System (RIMS) to manage rulemaking and exemption activities, helping to rank by priority FAA's safety rulemaking activities. RIMS is a collaborative tool that allows all parties involved in the rulemaking or exemption processes to participate directly and in real time. The rules and rulemaking history are all stored on RIMS, reducing the cost in time and resources for recordkeeping.

2020 Aviation Statistics *

Registered Aircraft: 1,998,650

Recreational UAS – 1,213,127

Part 107 small UAS – 497,603

Other Aircraft – 287,920

Flight Instructors – 116,192

Approved Manufactures – 1,492

Mechanics with Inspector Authority – 21,496

Active Pilots: 923,323

Remote Pilots Certificated – 193,862

Other Active Pilots – 729,461

Designees: 8,729

Aircraft Certification Designees – 2,532

Flight Standards Designees – 3,701

Aerospace Medicine Designees – 2,496

Air Operator Certificates – 4,972

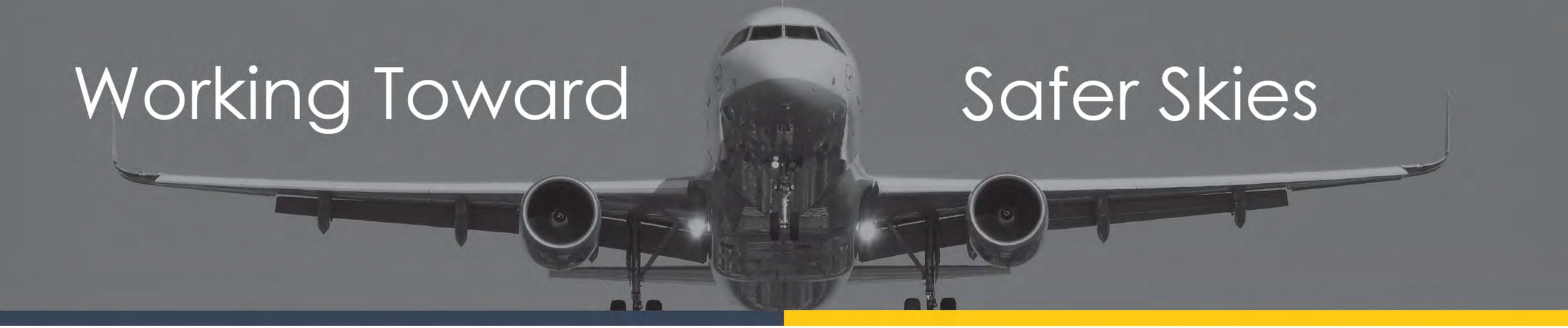
Air Agency Certificates – 6,320

Airmen Medical Examinations – 345,807

Air Traffic Specialist Credentials – 16,358

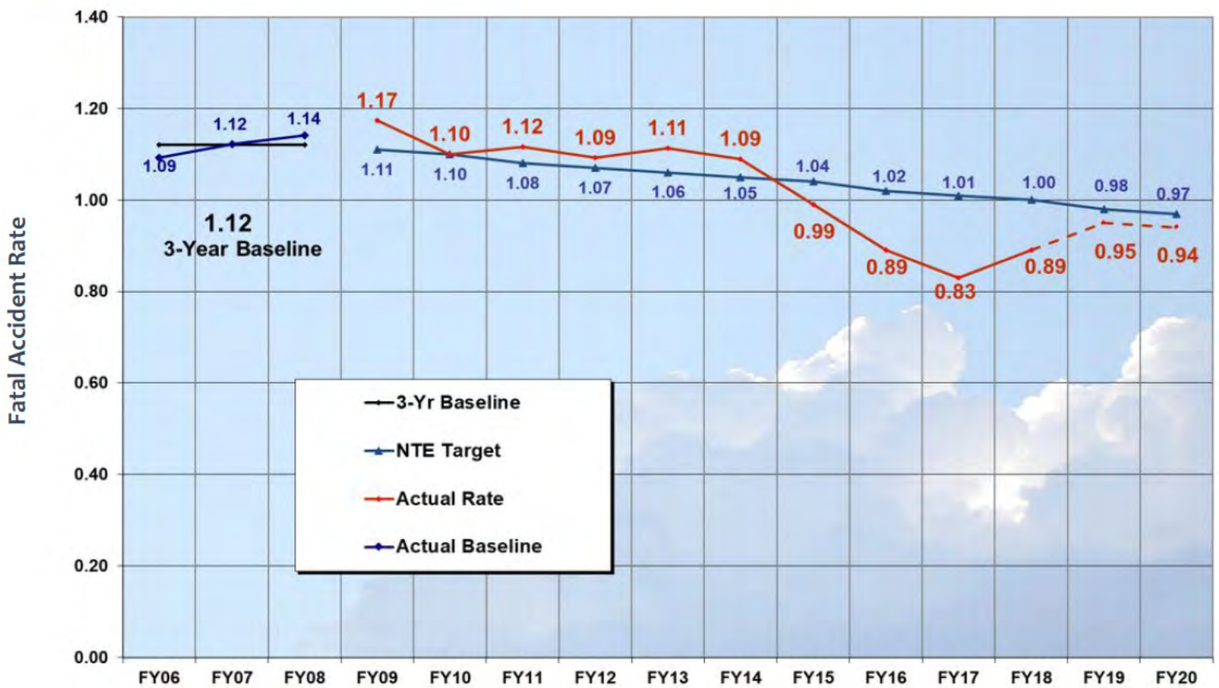
*As of Sept 30, 2020

Working Toward Safer Skies



General Aviation Fatal Accident Rate per 100,000 Flight Hours*

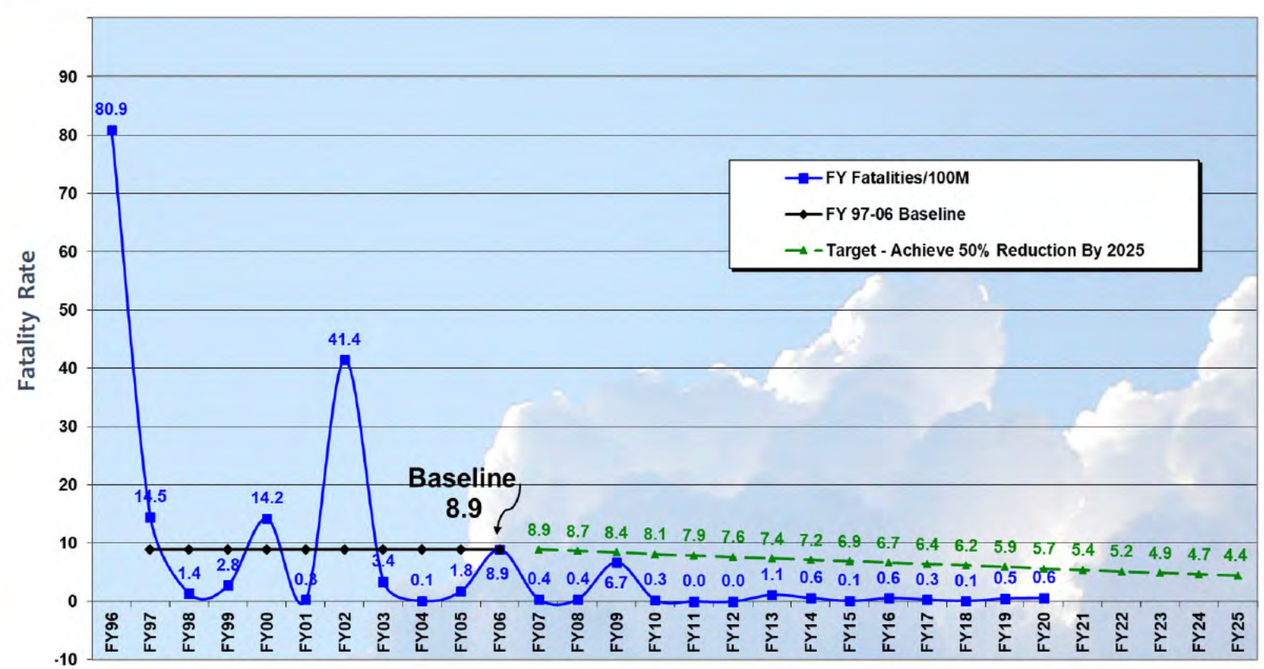
AVS
Safety Performance



*As of Sept 30, 2020

Commercial Air Carrier Fatality Rate per 100 Million Persons on Board*

AVS
Safety Performance



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