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Welcome to Communicating For Safety (CFS) 2018!



Paul Rinaldi President



Patricia Gilbert Executive Vice President



Steve Hansen Chair, NATCA Safety Committee



Jim Ullmann Director, NATCA Safety & Technology Dept.

On behalf of the National Air Traffic Controllers Association, we would like to thank you for attending and your commitment to continuous improvement in aviation safety. CFS is the premier aviation safety conference. And we count on every one of you to contribute to the conversation to ensure that we continue to run the safest, most efficient airspace in the world as we expand and grow. With nearly 1,500 attendees for the past several years, CFS has become an essential opportunity for members of the aviation community - including industry stakeholders, pilots, FAA leadership, and of course, air traffic controllers and aviation safety professionals - to come together and discuss the most relevant topics in aviation safety.

This year's packed agenda includes a host of fascinating experts, speakers, and panelists offering perspectives from across the aviation industry. Additionally, we are excited to welcome Gordon Graham back to the CFS stage to discuss risk management in his engaging style. Keynote speakers include Acting Administrator Dan Elwell, SR-71 pilot Brian Shul, and aviator and engineer Paul Dye.

Our exciting slate of speakers will provide insight on integrating new technology and upcoming challenges throughout the National Airspace System (NAS). Leaders from multiple aerospace companies, the Agency, and NATCA working at the forefront of the newest procedures, programs, and technologies will discuss the most significant changes coming to the NAS and how all of our jobs are affected. We will see how time and time again this resilient workforce is tested and excels at adapting to the constantly evolving innovations that we are helping integrate into the system, all while ensuring the highest levels of safety in the world.

This conference provides an opportunity to recognize extraordinary NATCA members and friends at the annual Awards Luncheon on Tuesday and concludes on Wednesday evening by honoring the best of our profession at the Archie League Medal of Safety Awards Banguet. An individual or group from each of NATCA's nine geographical regions will be honored for stepping up when it was needed most and providing exceptional ATC services. These individuals set the standard for the crucial, life-saving work of an air traffic controller.

CFS is an annual forum that facilitates year-long work collaborating on the most important thing we do - keeping the flying public safe while ensuring the efficient transportation of millions of passengers annually, fueling the largest economy in the world. That all hinges on the day-to-day work you do and is bolstered by conversations you will have here this week. Our collective work ethic and vision will build a NAS that includes Unmanned Aircraft Systems, commercial space flights, and an ever-increasing volume of traffic. Without a commitment to collaboration, dialogue, and progress, we could not continue to operate the safest, most efficient air traffic control system in the world. We hope you enjoy the conference and leave with a broader perspective of the possibilities of what lies ahead.

In solidarity,

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2018 CFS Code of Conduct

2018 CFS Code of Conduct

(Please refer to the full NATCA Code of Conduct in your registration packet.)

The National Air Traffic Controllers Association, AFL-CIO (NATCA) is committed to providing an environment free from discrimination and harassment, regardless of an individual's race, ethnicity, religion, color, sex, age, national origin, sexual orientation, disability, gender identity or expression, ancestry, pregnancy, or any other characteristic protected by law. As such, NATCA will not tolerate discriminatory, harassing, or otherwise unacceptable behavior in the workplace or at any of its activities, events or meetings. In this effort, NATCA adopts the following Code of Conduct, and expects its staff, its members, its leadership and any other participants in NATCA activities, events, or meetings, to abide by it.

NATCA expects its staff, its members, its leadership, and any other participants at NATCA activities, events, or meetings to:

- Respect others and their views
- Recognize and value individual differences
- · Not engage in aggressive, bullying, or intimidating behavior
- · Not engage in discriminatory or harassing behavior

If you experience or witness unacceptable behavior, please inform one of the designated individuals listed in this notice. If you are NATCA staff and covered by the ONEU-NATCA CBA, you may also report to your supervisor, the NATCA General Counsel, or the NATCA Executive Vice President, pursuant to Article 57 of the Parties' CBA.

NATCA takes these complaints seriously and any individual engaged in discriminatory and/or harassing conduct will be subject to disciplinary action, which may include exclusion from the event or meeting, up to and including termination of employment, or expulsion from NATCA, as appropriate.

If needed or requested, NATCA staff and/or officials will help complainants contact security or local law enforcement, provide escorts, or otherwise assist complainants to feel safe for the duration of the activity, event, or meeting. In instances involving allegations of assault or other criminal activity, NATCA shall advise the complainant to file a report with the appropriate law enforcement agency but will not pressure complainant to file such report. The NATCA official will also make NATCA bargaining unit employee complainants aware of their rights under Article 57 of the CBA.

Any complaint brought under this Code of Conduct will be treated confidentially to the extent that it is possible to do so while properly assessing the situation. NATCA will take all appropriate steps to ensure that the complainant is no longer subject to the unacceptable behavior. NATCA shall thoroughly investigate any allegations or complaints of discriminatory conduct, including sexual harassment, when properly notified and shall take corrective action to stop any and all such conduct found to be occurring.

NATCA will not tolerate retaliation against any individual who complains of unacceptable behavior under this Code of Conduct. NATCA will take any steps necessary and appropriate to ensure that retaliation does not occur and, if there is reason to believe that retaliation has occurred, NATCA will immediately take all necessary and appropriate action to stop the retaliation.

If you want to report an incident or have any issues during the event, please feel free to send an email to: CFS18Conduct@natcadc.org or contact anyone of the following designated Code of Conduct representatives:

 Trish Gilbert:
 cell: (713) 305-3039

 Dean Iacopelli:
 cell: (516) 356-3983

 Cheryl Lewis:
 cell: (202) 365-0755

 Meagan Roper:
 cell: (202) 445-1775

email: pgilbert@natcadc.org email: diacopelli@natcadc.org email: clewis@natcadc.org email: mroper@natcadc.org

Agenda

MONDAY, OCT. 22

8:30 am - 5:30 pm | Registration

10:00 am | Exhibit Hall open

Noon | Welcome

Steve Hansen, National Safety Committee Chair, NATCA

National Anthem: Tyler Hansen, Baldwin Wallace University

12:15 – 12:45 pm | Keynote Address Paul Rinaldi, President, NATCA

12:45 – 1:45 pm | The Benefits of Collaborative Safety Programs

Moderators: Steve Hansen, National Safety Committee Chair, NATCA & Jeffrey Vincent, VP, Safety & Technical Training, ATO

- Mike Blake, National Voluntary Safety Reporting Programs Rep, NATCA
- Ernesto Lasen, General Manager Safety Programs, ATO
- Chrissy Padgett, National Partnership for Safety Rep, NATCA
- Jon Kunowski, Chicago Center Local Safety Council Lead, NATCA
- Mike Schilz, Safety Information Analysis Programs, ALPA

1:45 - 2:10 pm | Surface Safety

- Bridget Singratanakul, National Runway Safety Rep, NATCA
- Emily Banuelos, Runway Safety Team Manager, Western Service Area, ATO
- Dan Hamilton, Surface Surveillance Rep, NATCA

2:10 – 2:30 pm | Contingency Operations in the NAS

- Jason Grider, Contingency Operations Rep, NATCA
- Philip Madrid, Contingency Operations Staff Specialist

2:30 – 3:15 pm | Break

3:15 - 4:00 pm | The Importance of

Including Human Factors in Training Introduction: Tom Adcock, National Training Rep, NATCA

• Richard Kennington, Recurrent Training, NATCA

4 - 5:30 pm | Moving the NAS

Towards a Trajectory Based System *Moderators: Kris Burnham, VP, Program Management Office, ATO* & Jim Ullmann, Director, Safety & Technology, NATCA

- Jeff Woods, National PMO Rep, NATCA
- Phil Hargarten, Northeast Corridor WG Co-Lead, NATCA
- Mark McKelligan, Deputy Director, Safety & Technology, NATCA
- Michele Merkle, Director of Operational Integration, Air Traffic Services, FAA
- Rob Hunt, Senior Technical Advisor to the VP of the PMO, FAA
- Rob Goldman, Sr. Manager, Air Traffic Management, Delta Air Lines
- Marc Henegar, Air Traffic Services Group Chair, ALPA

5:30 – 7:30 pm | Sponsors and Exhibitors Meet & Greet

5:45 – 6:15 pm | Partnership for Safety Demonstration

5:45 – 7:15 pm | Delta Air Lines Dispatch Presentation

6:15 - 7 pm | NCF Live Auction

7:30 pm | NCF Poker Tournament

TUESDAY, OCT. 23

7:30 – 8:30 am | Continental Breakfast

7:30 am - 3 pm | Registration

8:30 am | Welcome

8:35 – 9 am | Keynote Address Dan Elwell, Acting Administrator, FAA

9 – 10:20 am | Challenges to Operating the NAS: Implementing Emerging Technologies

Moderators: Steve Hansen, National Safety Committee Chair, NATCA & Hassan Shahidi, Director of Safety and New Entrants Integration, MITRE

- Trish Gilbert, Executive Vice President, NATCA
- Paul McDuffee, Business Development Executive, Boeing Horizon X
- Vincent Capezzuto, Chief Technology Officer & VP, Engineering, Aerion
- Kelvin Coleman, Associate Administrator for Commercial Space Transportation, FAA
- Eric Stallmer, President, Commercial Spaceflight Federation
- Tim Canoll, President, ALPA

10:20 - 11:00 am | Break

11:00 am - 12:15 pm | Integrating Remotely Piloted Aircraft into the NAS

Moderators: Steve Weidner & Jeff Richards, National UAS Reps, NATCA

- Sandy Gregoire, Syracuse Tower/ TRACON, NATCA
- Lt. Col. Aaron "Copper" Brown, 108 ATKS Director of Operations, Syracuse Air National Guard
- Sean Cassidy, Amazon Prime Air
- Parimal Kopardekar, NASA
- Randy Willis, UAS Integration Manager, ATO

 Dallas Brooks, Director, Raspet Flight Research Laboratory & Associate Director, ASSURE FAA UAS Center of Excellence

12:15 – 1:30 pm | Awards Luncheon

1:30 – 2:45 pm | Commercial Space Introduction: Kevin McLaughlin,

Commercial Space Rep, NATCA • Caryn Schenewerk, Sr. Counsel

- & Sr. Director, Space Flight Technology, SpaceX
- Kevin Hatton, FAA Licensing Manager, SpaceX

2:45 – 3:30 pm | Break

3:30 – 5:30 pm | Keynote Address Gordon Graham

5:30 – 7 pm | Sponsors and Exhibitors Meet & Greet

5:45 – 6:15 pm | Partnership for Safety Demonstration

WEDNESDAY, OCT. 24

7:30 – 8:30 am | Continental Breakfast

7:30 – 11 am | Registration

8:30 am | Welcome

8:35 – 9:30 am | Keynote Address Brian Shul, Author and Retired USAF Fighter and SR-71 Pilot

9:30 – 10:45 am | Aviation Industry's View from Outside the FAA

Moderators: Jim Ullmann, Director of Safety & Technology, NATCA & Brenda Boone, President, Human Solutions, Inc.

- Rachel Jackson, Executive Technical Director Transportation and Support Services Intelligence, Information and Services (IIS), Raytheon Company
- Kate Hallahan, Team Hallahan, LLC
- Jarrod Thompson, Airlines for America
- Donna McLean, Donna McLean Associates, LLC
- Todd Hauptli, President and CEO, AAAE
- Dave Holtz, Senior Vice President, Operations and Customer Center, Delta Airlines

10:45 – 11:30 am | Break

11:30 am – 12:45 pm | TRIED, TRUE, and TESTED – Aviation Safety Professionals

Introduction: Teri Bristol, COO, ATO Moderator: Trish Gilbert, Executive Vice President, NATCA

- Steve Jangelis, Aviation Safety Chairman, ALPA
- Jamaal Haltom, Facility Rep, Las Vegas Tower, NATCA
- Tony Borgert, Facility Rep, Las Vegas TRACON, NATCA

- Jared Mike, Facility Rep, Seattle TRACON, NATCA
- Kimberly Brooks, Certified Professional Controller, Seattle TRACON, NATCA
- · Jon Weaks, President, SWAPA
- Lyn Montgomery, President, TWU Local 556, The Union of Southwest Airlines Flight Attendants

12:45 – 2:15 pm | Lunch Speaker Paul Dye, Aviator, Engineer, Author

Breakouts (20 minutes)

- En Route
- Terminal
- 2:30 pm | Professional Standards | Collaboration
- 2:50 pm | CISM | ATC Procedures
- 3:10 pm | Partnership for Safety | Professional Standards
- 3:30 pm | Training | CISM
- 3:50 pm | Collaboration | Partnership for Safety
- 4:10 pm | ATC Procedures | Training

Archie League Medal of Safety Awards Banquet 6 pm | Reception

- 7 pm | Banquet

Agenda

Spotlight: NATCA Charitable Foundation



NCF OFFICERS

Corrie Conrad, President corriebconrad@gmail.com

Robin Hill, Vice President NCFVicePresident@natca.net

Annie Olson, Treasurer NCFTreasurer@natca.net

Dawn Taylor, Secretary NCFSecretary@natca.net

2018-2020 BOARD OF DIRECTORS

Jason Boyde Carrie Connor Patricia Gilbert Robert Hill Elisa Muise

For more information on NCF and how to get involved, contact: natcacharitable@natca.net 202.220.9831 The NATCA Charitable Foundation (NCF) is a non-profit 501(c)(3) corporation with a mission to assist charitable, educational, scientific, and other activities that benefit the common welfare. NCF is a 100 percent volunteer organization, and the official charity of NATCA. The charity's philanthropic efforts and programs stretch across the country with a volunteer network dedicated to making a difference in as many lives as possible.

A hallmark of NCF is its low operating expense, largely due to its volunteers of all ages and professions. NCF's operating expense ratio has remained below five percent since 1998. From 2011 to 2015, NCF has more than doubled the amount of money allocated to those in need from \$91,000 to \$200,000. In 2016 and 2017, NCF also allocated \$200,000. For 2018, NCF has allocated \$250,000 to be donated.

✓ DONATIONS

NATCA President Paul Rinaldi issued a tremendous challenge at NATCA's Biennial Convention last April in Philadelphia: Make NCF a million-dollar charity! At our booth, you can complete an 1187 payroll deduction form to establish an automatic donation to NCF each pay period. *If you complete an 1187 form to establish a \$10 or greater donation per pay period, OR if you increase your existing automatic deduction donation by at least \$5 per pay period, you'll receive two things: First, you'll be given a Fast Pass that will give you exclusive first access into the Archie League Medal of Safety Awards banquet on Wednesday night. Second, you'll receive a scratch-off card that gives you the opportunity to win a new Ford vehicle.*

✓ SILENT AUCTION

NCF is again hosting a silent auction this week in the exhibition hall that includes a tremendous array of mostly donated items, including food and wine, crafts, sports memorabilia, travel, NATCA-related items, and much more. The silent auction opens at 1 p.m. on Sunday and runs through Wednesday morning. Your bid number can be found on your CFS badge. Use that to bid on any item.

✓ LIVE AUCTION

We are excited to host our first live auction at CFS. It will be held on Monday from 6:15-7 p.m. in the exhibition hall across from the UAS center. The auction will be emceed by Kelly Richardson, NATCA's Manager of Outreach and National Events.

✓ POKER TOURNAMENT

NCF is again hosting its wildly popular poker tournament here at CFS. It starts at 7:30 p.m. on Monday evening. There is a \$100 buy-in. Prizes will be awarded to the top five places.

✓ MYSTERY WINE PULL

For \$40 per pull, you will get a bottle of wine valued between \$30 and \$140. Stop by our NCF booth in the exhibit hall to make your selection!

✓ NCF COFFEE MUG

Don't head to Starbucks here at Bally's in the Grand Bazaar Shops in front of the hotel unless you first have your NCF special edition coffee mug. Using this mug and taking it into Starbucks for a fill-up gets you 35 percent off your entire order.

Spotlight: NATCA Benefits

NATCA Members: You Could Win One of These Two Ford Vehicles!

Thanks to NATCA benefits partner Southern Insurance Group (SIG), Communicating For Safety (CFS) attendees have the opportunity to obtain up to three scratch-off cards. Each card gives you the chance to drive off with a new Ford, also one of our NATCA benefit partners which offers members great savings and customer incentives as part of the Ford X-Plan. NATCA members: Learn more at natca.org/benefits.

To get a scratch-off card, you can do any one – or all – of these three things this week:

STAMP CARD

In your registration materials is a stamp card with 10 blank squares. Getting these stamps requires a visit to these 10 booths in the exhibition hall:

- LAANC
- Commercial Space
- Partnership for Safety
- Professional Standards
- ATSAP

- FordCambr
- Cambridge Financial
- Board of Trustees/Unum
- SkyOneGeico

Return the card to the NATCA Benefits booth to be entered into a daily drawing and receive a scratch-off card. Only NATCA members (including corporate members) and NATCA staff are eligible to receive a scratch-off card. All CFS attendees are eligible to participate in the daily drawings.

VISIT THE NATCA CHARITABLE FOUNDATION (NCF) BOOTH

NATCA members can complete an 1187 payroll deduction form to establish an automatic donation to NCF each pay period. If you complete an 1187 form to establish a \$10 or greater donation per pay period, OR if you increase your existing automatic deduction donation by at least \$5 per pay period, you'll receive a scratch-off card.

3 VISIT THE NATCA BENEFITS COMMITTEE BOOTH

Stop by to pick up a benefits survey card. Once you complete it, return it to a Benefits Committee member at the booth in exchange for a scratch-off card.

Note: A winning scratch-off card wins you \$50,000, which can be put toward the purchase of a Ford vehicle.





Safety Reporting

Since that historic day in July 2008 when a Midway ATCT (MDW) air traffic controller filed the first Air Traffic Safety Action Program (ATSAP) report, Voluntary Safety Reporting Programs (VSRPs) have taken off for NATCA and the Federal Aviation Administration (FAA).

ATSAP, which began as an 18-month demonstration project, was developed during a very contentious labor/management period. It became the first collaborative effort by NATCA and the FAA and has grown into the largest VSRP in the world, generating over 160,000 reports since its inception.

The foundation of a robust VSRP is to provide a non-punitive environment where employees are free to report mistakes or instances of non-compliance without fear of reprisal or discipline. This was quite a cultural shift back in 2008, but has now led to a healthy learning culture through the implementation of recurrent training, Partnership for Safety, and monthly ATSAP and Confidential Information Sharing Program (CISP) discussion sheets. This new working environment is one where employees who share issues and recommendations voluntarily has positively impacted the safety of the National Airspace System (NAS) by providing invaluable data that had never been captured before.

The success of ATSAP for employees engaged in air traffic activities was the impetus for NATCA seeking expansion of VSRPs to other bargaining units it represents. ATSAP-X, a program for NATCA Engineers and Architects, was the next initiative, where reports concerning system/equipment/ facility designs have led to system improvements.

Federal Contract Tower (FCT) employees represented by NATCA are now able to participate in a program known as SAFER-FCT to address issues and concerns they have for operational improvement. In addition, NATCA bargaining unit members in the Aircraft Certification Directorate have a program as well, called the Safety Reporting Program (SRP). Participating in a VSRP is one thing, but what about tangible results? Funny you should ask...

There have been over 185 formal Corrective Action Requests (CARs) issued from the VSRPs to address serious system safety concerns, of which 112 have been closed/resolved. The remainder are in various stages of resolution. There have been at least 805 systemic positive changes that have been developed from voluntary reporting and informal changes taking place at FAA facilities at various levels are constant and numerous. In addition, information from NATCA VSRPs helps to develop recurrent training curricula, as well as contribute to the development of the FAA Air Traffic Organization's Top 5.

But that's not the end of the story.

In 2010, CISP was developed to share ATSAP reports with airline Aviation Safety Action Program (ASAP) reports. The intent of the initiative was to provide a more comprehensive view of events occurring throughout the NAS by including both pilot and controller perspectives. What began with sharing reports with one airline – United – has now grown to over 28 participants and has shared over 98,000 reports.

Also since 2010, NATCA has been a member of the Aviation Safety Information Analysis and Sharing (ASIAS) program, which compiles and analyzes additional sources of safety data from commercial carriers and general aviation.

All of the data collected through VSRPs has contributed to the safest 10-year period in U.S. domestic aviation history, but we know there is more work to do. Voluntary reports are crucial to keep this safety record growing and improving, so we ask, "keep 'em coming!"

Training

NATCA and the Federal Aviation Administration (FAA) continue to collaborate on various aspects of training. There are a number of initiatives running concurrently aimed at improving training at the FAA Oklahoma City Academy and in facilities.

The largest project over the last year was an Article 114 workgroup called the No-Experience Direct Hire Initial Screen (NDIS) which assessed the training given to those going to high level terminal radar facilities. Its purpose was to provide a collaborative approach for the FAA and NATCA to address the challenges of placing employees with no prior ATC experience into FPL-10 and above terminal radar facilities, starting with New York TRACON (N90). The workgroup visited several facilities and the FAA Academy and found gaps at various points from initial qualification through facility certification.

The first problem identified was the lack of formal training that would allow a person to progress from the current FAA Academy curriculum to training at a high-level terminal radar facility. It was a large leap to go from off the street to the Terminal Skill Enhancement Workshop (TSEW) and then to a terminal radar facility. There was no curriculum to teach the individual to transition to the training programs at our more complex facilities. An additional course was needed between the two. The workgroup began by adding additional classroom and problems to Radar Training Facility (RTF) in order to provide some added foundational learning to prepare them for TSEW. They also adjusted the TSEW curriculum. More classroom training and scenarios were added to prepare for a newly-developed course to be completed at the FAA Academy called the Ten Eleven Twelve Radar Assessment (TETRA). The design of this course will better prepare students by adding problems with higher volume and more complexity to allow for a smoother transition from the FAA Academy to a facility.

NOTES:

Once the new hire completed the redesigned Academy program, they were faced with additional gaps in local facility training when they reached the facility. Most large TRACON training programs were designed for Certified Professional Controller (CPC) transfers, not for all-source new hires. To assist the no-experience new hire, the training is now broken down to smaller pieces, meaning a developmental will focus only on training on a few scopes at one time, then return to class for the next positions. Another challenge was that controllers at the large facilities are not accustomed to training someone with no experience. Training for the instructors was developed with a key piece being human factors. The first classes to reach N90 under this newly-designed program have started arriving at N90 since July 2018 with an expectation for better certification rates.

Ongoing training for CPCs remains a priority as reporting programs identify safety issue trends such as Minimum Vectoring Altitude (MVA) and Minimum IFR Altitude (MIA) events, issues disseminating pilot reports (PIREPs), IFR to VFR separation requirements, and the failure to issue traffic advisories and safety alerts. Just as an athlete does not sit on the couch and expect to get fit, we cannot stand by and hope that these safety issues will fix themselves. Adults learn best when they have input in their training, which is the purpose of the discussion during Instructor-Led Recurrent Training. This way the CPC gets to ask tailored questions and provide input into the course making every class different.

Some projects that are just getting started but that will have a significant impact on future developmental training are the Terminal Stages 2-5 and En Route Stages 2-4 curriculum redesigns.

Surface Safety

Runway safety is a significant challenge and a top priority for everyone in aviation. With a projected increase in operations across the National Airspace System (NAS), the risk of a collision is always present when more than one aircraft is approaching, landing, departing, crossing, waiting on, or taxiing on the same runway.

Our safety record is built on swift and skillful actions and teamwork that comes together to save lives. Through Partnership for Safety (PFS), Runway Safety has begun a Surface Safety Campaign, which brings controller awareness to the trending surface safety events in the NAS. One of the continued goals of NATCA and the Federal Aviation Administration (FAA) is to bring more information from FAA headquarters to the field, and this is one of the techniques to do so.

Surface Watch is a joint recognition program developed under the Surface Safety Campaign. It allows for an opportunity to bring additional awareness as well as a recognition program to acknowledge individuals and teams of controllers and supervisors for their exemplary saves and initiatives that focus on surface safety.

NATCA and the FAA want to hear about these successes:

- Recognizing and addressing a potential wrong surface landing or takeoff;
- Recognizing and addressing an aircraft attempting to land at the wrong airport;
- · Preventing runway incursions/surface incidents;
- Reducing local surface events through local Runway Safety Action Teams (RSATs), the Local Safety Council, or other collaborative workgroup;
- Other achievements that focus on your facility's teamwork and dedication to improving surface safety.

Learn more and nominate an individual or a team for the new Surface Watch recognition program at http://www.natca.org/surfacewatch.

In the last two years, 596 aircraft landed or attempted to land on the wrong runway or wrong airport. Airport geometry,

communication, and expectation bias are among the most common wrong surface landing precursors:

- Parallel and offset parallel runway configurations contribute to more wrong surface landings (WSL) more than any other configuration;
- Pilots incorrectly proceed to the runway they typically utilize or expect, versus the one actually assigned by air traffic controllers, even after correctly reading back the runway assignment;
- Pilots not specifically (visually) identifying or confirming their assigned runway, or misidentifying another runway for the one they are cleared for;
- Pilots not utilizing readily available geographic, visual and charted information to aid in correct runway identification.

One of the many mitigations for WSL is Airport Surface Detection Equipment, Model X (ASDE-X) Taxiway Arrival Prediction (ATAP). In 2017, the FAA developed an ASDE-X enhancement that alerts when an aircraft is aligned with a taxiway. There is a national collaborative workgroup (CWG) working on bringing ATAP to all viable ASDE-X sites. ASDE-X ATAP is a technology aid for controllers to assist in mitigating events in which an aircraft lines up with a taxiway on arrival.

The following air traffic control towers are scheduled to be reviewed to determine viability of receiving the ATAP enhancement: Atlanta, Bradley, Boston, Charlotte, Dallas-Fort Worth, Chicago Midway, Philadelphia, and St. Louis. A Collaborative Workgroup has been formed to oversee the process of enabling this enhancement. The workgroup provides each facility with a checklist of necessary steps and the information and data pertinent to their operation. It also assists with local training and the local Safety Risk Management (SRM).

Safety works when people work together. Collaboratively, we work to develop runway safety solutions that benefit both stakeholders and the flying public by assessing the data to identify root causes and precursor events that may lead to accidents. Together we can make a difference in safety.

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On Sept. 26, 2014, Chicago Center (ZAU) was evacuated due to a fire set in the basement by a contractor. The fire caused severe damage to communications and other equipment utilized by air traffic controllers to provide separation services in their airspace. With all personnel evacuated to the parking lot, the surrounding facilities had to step in to help clear the airspace of existing traffic and begin figuring out how they would be able to resume traffic into Chicago-O'Hare (ORD), one of the busiest airports in the world.

Contingency plans are not a new idea for the Federal Aviation Administration (FAA). However, no one had planned for an outage of this magnitude that would last as long as it did.

Immediately after everyone was accounted for, NATCA, FAA management, Professional Aviation Safety Specialists (PASS), and the FAA Safety Team (FAAST) jumped into action to figure out what to do next. With the building unavailable for use to provide services, they had to look for other resources. Looking to surrounding facilities to help bring traffic back into the airspace that ZAU normally worked presented many problems.

The initial response was to utilize underlying Terminal Radar Approach Control (TRACON) facilities to bring aircraft into the core airports at a lower altitude than normal. This approach worked well but limited the amount of traffic and also burdened the airlines with extra fuel burn. There needed to be a better plan to restore the flow of traffic to the affected airspace. Eventually, controllers from neighboring centers along with ZAU controllers were able to begin using higher altitudes in the ZAU airspace they had taken control over to allow more efficiency for the airlines.

There are many challenges in divesting airspace to neighboring facilities. Whenever a center goes offline, the hosted TRACONs no longer receive flight data for aircraft taking off or landing. A group has been working closely with second level engineering to come up with ideas on how to overcome this issue. Until an automated solution is figured out, controllers will have to pass flight plans manually and also make manual handoffs. This significantly increases their workload.

Another issue is having frequencies and radar feeds rerouted to the supporting facilities. The FAA has been trying to get

Contingency Ops (ATOC)

ahead of this problem by adding long-range radars to a national network that will allow those feeds to be brought into any facility where they are needed. This process requires that new automation software is added to En Route Automation Modernization (ERAM) in all of the neighboring centers. Additionally, Harris Corporation has been installing FAA Telecommunications Infrastructure (FTI) racks in each center to allow for additional frequencies to be brought into the building during a contingency event.

After the post-event reviews for the ZAU outage, the FAA created a workgroup to come up with a plan to divest high altitude en route airspace to adjacent centers. The plans were designed very quickly at the FAA Technical Center in Atlantic City, N.J. Once they were completed, a plan was put together to make them viable. A review of all resources available at each center was completed and documented.

After the reviews had been completed, it was determined that a full time directorate would be created to address contingency operations. That resulted in the formation of the ATO Contingency Operations (ATOC) group, which was tasked with ensuring that each major facility has an operational contingency plan (OCP) that is viable given available resources.

Over the past two years, the office has been building off of the work that was done prior to it being created. With permanent staff in place to provide support for these facilities, the work began.

Since then the ATOC group has visited several centers, TRACONs, and towers to gather information on the state of their OCPs. With this information, the group has been able to develop a better format for capturing OCP data and has refined the Automated Contingency Tool (ACT2) database to better house the information that will be necessary to use during an ATC-0 event.

The plans moving forward will have members of the group working directly with each major facility to make improvements to their OCPs to ensure that if they are ever needed, everyone will know what they need to do to restore air traffic services to the affected airspace.

Trajectory Based Ops (TBO)

One of the new concepts within global aviation that you will hear about this week is Trajectory Based Operations (TBO). TBO is Performance Based Navigation (PBN) plus Time Based Management (TBM). It will have an impact on how the National Airspace System (NAS) is operated in the near future.

Let's break down PBN and TBM.

PBN is an advanced, satellite-enabled form of air navigation that enables flights to fly precise paths. Repeatable paths are defined with PBN procedures. Some of the key technologies that support PBN include

- Flight Management System (FMS)
- Area Navigation (RNAV)
- Lateral/Vertical Navigation (LNAV/VNAV)
- Required Navigation Performance (RNP)
- Required Navigation Performance Authorization Required (RNP-AR)
- Advanced-Required Navigation Performance (A-RNP)

TBM schedules the flow of air traffic to a predefined meter point based on time. Key technologies that support TBM include

- Traffic Flow Management System (TFMS)
- Time Based Flow Management (TBFM)
- Terminal Flight Data Manager (TFDM)
- En Route Automation Modernization (ERAM)
- Standard Terminal Automation Replacement System (STARS)
- System Wide Information Management (SWIM)
- Integrated Departure/Arrival Capability (IDAC)
- Ground Interval Management Spacing (GIM-S)
- Terminal Sequencing and Spacing (TSAS)

All of these technologies work together to draw desired benefits. It is a very complicated and difficult task.

TBO is designed to allow aircraft to fly more precise flight paths, using time rather than miles-in-trail. As it evolves, TBO, in theory, will maximize throughput and improve airspace, airport, and in-flight efficiency.

The hope is this will lead to more predictable, repeatable routes that are highly reliable. With the large amount of data that will be gathered and the planned decision support tools for ATC, NAS users should benefit from a more predictable schedule that will reduce operation costs, fuel burn, and delays.

On June 28, 2017, EUROCONTROL issued the following information:

"EUROCONTROL supports and is a main contributor to Trajectory Based Operations (TBO), which is the exchange, maintenance and use of consistent aircraft trajectory and flight information for collaborative decision-making on the flight ('collaborative' here means the involvement of the aircraft operator and all parties that have an interest in a flight)."

They further stated: "TBO is at the heart of all the latest ATM strategies and concepts including the SESAR Master Plan and ICAO's Global Air Navigation Plan (GANP). TBO is also the main focus of validation conducted in regional programmes such as SESAR, NextGen (U.S.), CARATS (Japan), and Sirius (Brasil)."

As you can see, TBO is more than just an idea, and NATCA has been involved in discussions regarding TBO since its concept was first discussed here in the United States. It has been discussed at meetings in which NATCA is a participant, including the NextGen Advisory Committee, of which NATCA President Paul Rinaldi is a member.

The plan is for TBO implementation to be incremental, coordinated, and cross-facility focused for NAS-wide benefits. FAA and NATCA are committed to providing the right tools for the right location at the right time. The goal is provide the sustained communications, training, and technical support needed to effectively transition to TBO in the field.

TBO is not a 100 percent solution. The plan is for controllers and managers to still have the flexibility to manage tactical situations like weather, go-arounds, and other things that controllers deal with on an minute-by-minute basis every day.

There remain many questions and NATCA has been vocal with some of its concerns, including its belief that the more standard use of TBFM is a key foundation to any iTBO success. NATCA remains resolved to be a collaborative partner with the FAA and other aviation stakeholders as we face the challenges of implementing some of these concepts.

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Tuesday: Speaker Spotlight

Acting FAA Administrator Dan Elwell

Dan Elwell is the Acting Administrator of the Federal Aviation Administration (FAA). He is responsible for the safety and efficiency of the largest airspace system in the world. It is overseen by more than 47,000 employees including nearly 20,000 represented by NATCA.

Prior to serving as Acting Administrator, Elwell was sworn in as FAA Deputy Administrator on June 26, 2017. He previously served at the FAA as the Assistant Administrator for Policy, Planning, and Environment from 2006-2008. Most recently, he was Senior Advisor on Aviation to U.S. Secretary of Transportation Elaine Chao. Earlier in his career, he served as a legislative fellow for the late Senator Ted Stevens of Alaska.

From 2013-2015, as Senior Vice President for Safety, Security, and Operations at Airlines for America (A4A), Elwell was responsible for leading the advancement of commercial aviation safety and security excellence for major U.S. air carriers. Prior to A4A, Elwell was Vice President of the Aerospace Industries Association (AIA) from 2008-2013. In this role, Elwell represented civil aerospace manufacturers and led policy development and advocacy for the civil aerospace manufacturing interests of more than 300 AIA member companies.

Elwell was a commercial pilot for 16 years with American Airlines, flying DC-10, MD-80, and B-757/767 aircraft. While maintaining his proficiency as an MD-80 Captain, he served as Managing Director for International and Government Affairs at American Airlines. He earned his pilot wings at Williams Air Force Base in Arizona after graduating from the U.S. Air Force Academy with a Bachelor of Science degree in International Affairs. Lieutenant Colonel Elwell retired from military service as a Command Pilot with more than 6,000 hours combined civilian and military flight time in the U.S. Air Force and U.S. Air Force Reserve, including combat service during Operation Desert Storm.

Elwell cited his time in the cockpit and his interactions with air traffic control in his remarks to NATCA members on May 21 at NATCA in Washington.

"This is cool for me. It's a great opportunity to talk to this group because quite frankly, most of my speaking to controllers was done through a headset, a microphone, and with a few thousand feet separating us," Elwell said. "I can tell you from my career in aviation, we are inextricably linked; our careers and our livelihoods. I for one, appreciate the many pickles I have been pulled out of during my too-long career."

Elwell also discussed the success of the Air Traffic Safety Action Program (ATSAP). Over the past 10 years, he said, FAA controllers have submitted 147,000 ATSAP reports. From those, he added, 181 corrective actions have been put in place, which has not been limited to the removal of tree obstructions at Albany and frequency problems at Kansas City Center. "That's 181 more ways to extend the safety margin so accidents don't happen."

"We are as safe as we are because we make sure we get things right," Elwell added. "And when they're not, we fix them."



Dan Elwell Acting FAA Administrator

Tuesday: Panel Previews

Tuesday's agenda at Communicating For Safety features panels that will provide an in-depth look at some of the most exciting, innovative technologies being developed and implemented in the National Airspace System (NAS). Our goal at this conference will be to discuss how they can all be safely implemented and integrated into the NAS.

The Challenges to Operating the NAS: Implementing Emerging Technologies panel will provide the basis for these discussions; featuring senior decision makers from every corner of the aviation industry. The panel will cover policy and challenges related to the introduction of Unmanned Aircraft Systems (UAS), Space-Based ADS-B, and Commercial Space, the future is here. Now the questions and the challenges are emerging over how to implement these emerging technologies while continuing to operate the NAS safely and effectively. There are challenges to appropriate staffing, training, strains on budgets, and other issues which panelists on Tuesday will discuss.

Following the higher policy level panel will be a panel on Remotely Piloted Aircraft (RPA) and a presentation on Commercial Space by SpaceX. The panel and presentation will cover current and future operations within the NAS and the unique challenges associated with them.

Now is the time to make changes in the NAS in order to shape the next phase of modernization for the future. New entrants to the NAS, a fast-paced changing environment of technologies and the effect of aviation on communities are among the priorities. Finding solutions is key to being on the forefront of the global airspace. Collaboration between NATCA, the Federal Aviation Administration (FAA) and the aviation industry is crucial to ensuring that integration moves forward smoothly.

On the front lines here in the United States are the aviation safety professionals who will be tasked with many of the challenges of safe and effective implementation of emerging NAS entrants. That includes the air traffic controller workforce, whom NATCA President Paul Rinaldi says shoulder those challenges while remaining supremely focused on safety. "You have to admire the controllers, the hurdles they overcome, and all that they do while maintaining the safety of our airspace," Rinaldi said.

Air traffic service providers and regulators around the world are moving toward airspace and flight operations that enable greater flexibility and adaptability, along with ensuring improved traffic flow, capacity, efficiency, and safety. In addition, new entrants such as UAS, commercial space vehicles, and upper airspace users require a unified approach to cooperative and non-cooperative surveillance to support the rapidly changing air transportation system.

NATCA has said that the most important thing when looking at major shifts in the use of technology is having the ability to come together with different opinions and leave the conversation with the best possible product. Ultimately, what it boils down to is understanding how we use the technology we do today, what we're trying to move to tomorrow, understanding what that means, and then identifying how we're going to get there.

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Remote Piloted Aircraft

Unmanned Aircraft Systems (UAS) are one of the fastestgrowing segments of the National Airspace System (NAS). There are over 1.2 million drones registered in the United States and that number is projected to grow to over 7 million by 2020. The FAA is working diligently to safely integrate UAS into the NAS and NATCA supports that position.

The task of integration is full of challenges, including the fact that the majority of the aviation rules in existence were written for manned aircraft. Trying to adapt these rules for UAS is a bit like putting a square peg into a round hole. Therefore, the FAA has undertaken significant rulemaking efforts for UAS. The Small UAS rule, which created Part 107 and codified hobbyist rules in Part 101e in 2016, was a big step forward.

The creation of the Low Altitude Authorization and Notification (LAANC) system was another major step toward integration. Part 107 operators are required to receive authorization to operate in Class B, C, D, and E surface area airspace. The manual process of approving these authorizations was taking weeks due to the volume of requests being received. To solve this problem, the Agency created and developed LAANC, a public/private partnership between the FAA and industry UAS Service Supplies (USS). LAANC enables UAS operators to receive an authorization in a matter of seconds versus the weeks it was taking under the manual process. LAANC is fully implemented nationwide at all FAA facilities and the Agency has already processed over 26,000 requests this year, surpassing all of the authorizations granted manually in 2017. NATCA worked with the FAA from the beginning in developing and deploying this successful technology.

Earlier this year, the administration announced the Presidential UAS Integration Pilot Program (IPP). The IPP allowed city, county, state, and tribal governments to submit their ideas for UAS integration in their communities. Ten sites were chosen from around the country to test UAS concepts such as night operations, beyond visual line of site (BVLOS) operations, and operations over people. These concepts will be applied to use cases like agriculture inspection, utility inspection, defibrillator delivery, package delivery, border protection, mosquito eradication, and on-airport aircraft inspections. The early test cases are primarily flying below 400' AGL and in Class G airspace. However, as the concepts of operation for the participants develop, the likelihood of operations in controlled airspace increases. NATCA is working closely with the Agency on these exciting projects.

In other successful integration news, Syracuse ATCT (SYR) continues to be on the UAS integration cutting edge. For over two years, SYR has successfully integrated MQ9 Reaper aircraft from the New York Air National Guard into their manned traffic pattern.

Additionally, NASA recently flew an MQ9 Reaper aircraft, with on-board Detect-And-Avoid (DAA) equipment, through ZLA, ZOA, JCF, and VCV airspace, proving that large UAS can successfully operate in the NAS using on-board DAA equipment.

These are among many exciting things happening in UAS integration. Full UAS integration is still out on the horizon, but great strides are being made toward that goal. It won't be long before seeing a drone delivering your pizza or inspecting utility lines near your home will be a reality. And with that reality comes an increase in the complexity and volume within the NAS. NATCA remains committed to a safe and growing NAS and we will continue to work with the Agency toward that important goal.

Commercial Space

The political, technological, and economic landscape for spaceflight has never been more favorable to new entrants. This rapidly expanding industry has placed growing pressure on National Airspace System (NAS) regulators to develop the means and methods to ensure equal airspace access to all participants while preserving current achievements in safety and efficiency. NATCA has participated in or observed numerous workgroups, safety panels, aviation rulemaking committees, simulations, and symposiums to help ensure the success of this effort.

The White House released three Space Policy Directives last year designed to foster success of the commercial space sector and there is bipartisan congressional support as well. The policymaking priorities are national security, economic opportunity, and technological innovation. National security is the most important priority as the United States intelligence apparatus and defense strategies rely heavily on satellite surveillance for force projection and deterrence capabilities. Military superiority has its roots in maintaining fundamental technological superiority and fostering a dynamic U.S. space industry is seen as a critical requirement for U.S. space security.

Secondly, the global space economy is currently valued at \$360 billion and is projected to grow at a 5.6 percent rate to \$558 billion by 2026. This activity equals jobs and tax revenues and the governments of China, European Union, India, Russia, Japan, and South Korea are competing vigorously with the United States for these opportunities. The current political climate has also energized a thirst for regulatory streamlining. Currently, to conduct a launch or reentry, operators must submit to a robust application review process undertaken by the FAA's Office of Commercial Space Transportation (AST). AST approves numerous elements including: launch and reentry sites, flight termination system testing, and whether the launch is compliant with public safety regulations, international law, U.S. treaty obligations, and domestic national security interests. Like any business, the

NOTES:

commercial space industry would like to see its regulatory oversight significantly streamlined, and the timelines from application to launch compressed.

For commercial space to grow at industry's desired rate, most industry pundits agree that the strategy of segregating space operations must evolve in favor of integrating these activities. To integrate launch and re-entry activities, the airspace volumes associated with segregation, typically presented to controllers as Temporary Flight Restrictions (TFR) and Stationary Altitude Reservations (ALTRV), will likely need to be reduced in both size and duration through the application of on-the-glass ATC decision support tools.

As the launch and recovery tempo both increases and diversifies away from the coastal launch ranges, the impacts of launch and re-entry events will also increase and it will be necessary to mitigate these impacts. Work has started on programs designed to address these needs. The FAA recently began the ongoing implementation of Acceptable Level of Risk (ALR) procedures for the radar environment. ALR is a safety criterion designed to accommodate commercial space operations while limiting the overall risk level to air traffic operations during space launches and reentries. It is implemented by applying course restrictions to areas surrounding existing closed airspace near launch and re-entry sites. The Space Data Integrator (SDI) Tool, currently in the FAA acquisition process, aims to introduce near real-time space vehicle situational awareness at the Air Traffic Control System Command Center and Traffic Management Unit level. The Hazard Risk and Management (HRAM) Tool has the potential to fulfill the need for on-the-glass decision support tool.

Providing the controller workforce with the tools to move from segregation-based procedures to an integration-centric system will permit commercial space operations to thrive and prosper while preserving current NAS safety and efficiency levels.

Tuesday: Speaker Spotlight

Gordon Graham

He's back! For the fourth time since 2014, the wildly entertaining and insightful Gordon Graham is returning to the stage at Communicating For Safety (CFS) on Tuesday, Oct. 23.

Graham is a 33-year veteran of California law enforcement. His education as a risk manager and experience as a practicing attorney, coupled with his extensive background in law enforcement, have allowed him to rapidly become recognized as a leading professional speaker in both private and public sector organizations with multiple areas of expertise.

Mr. Graham is a product of "The Greatest Generation." Raised in San Francisco in the 1950s, he was taught the immense value of continuous learning, hard work and the importance of always doing the right thing. These beliefs and values have become a constant and a catalyst in his busy life.

In 1973 Gordon was selected as a candidate for a major west coast law enforcement agency. Thereafter, he proudly served as a motorcycle officer for most of his first 10 years in the Los Angeles area. In addition to his patrol work, he helped design the first DUI task force, assisted in the development of the DRE (drug recognition program), was an instructor in the initial "Mod I and II" Haz Mat program, and wrote his first of many technical papers: "PCP – An Officer's Survival Guide."

Simultaneously he was furthering his formal education during his off hours. Spending two years at Long Beach State College under the tutelage of Dr. Richard Kaywood led to his receiving a Lifetime Teaching Credential.

Following this degree, he attended University of Southern California in their Institute of Safety and Systems Management. He will guickly tell you that this was the best education he ever received from the best and the brightest people in the field. His professors included Chavtor Mason. Ted Ferry. Bill Petak, and Harry Hurt. His relationship with Professor Hurt led to his being selected as a team member collecting data for The Hurt Report. Published in 1980, this report on motorcycle fatalities was and is recognized as the single greatest treatise on motorcycle safety.

He passed the California Bar Exam in 1982 and opened his law offices in Hollywood, where he focused his efforts on family law, immigration, and personal injury work. In his law enforcement life, Gordon was promoted to Sergeant in 1982 and supervised his former unit – the motorcycle cops of his agency assigned to Los Angeles. He and his fellow sergeants on "B" shift stressed the values and beliefs and built the most productive team of motorcycle officers in the history of the department.

Today, Gordon divides his time between study, research, writing, speaking, and consulting in the discipline of risk management. His innovative programs, based on the values and beliefs he learned as a child along with a passion for continuous improvement, are the standard for any organization that wants to improve existing operations and prevent things from going wrong.



Gordon Graham Risk Management Consultant

Spotlight: NATCA Safety and Technology



Jim Ullmann Director, NATCA Safety & Technology Dept.

I extend a warm welcome to all attendees of NATCA's 2018 Communicating For Safety (CFS) Conference.

Past CFS attendees may notice a change in this year's program. In our effort to continue to make CFS the world's preeminent and most informative aviation safety conference, and as we began preparations for this year's event, we made a conscious decision to place on the agenda many important topics that have not always been discussed at our past events.

While topics covered in past CFS conferences like pilotcontroller communications and in-flight and onboard weather continue to be extremely important subjects, 2018 brings us to the dawn of some very big changes within the National Airspace System (NAS). With everchanging and rapidly growing technologies, comes new demands that will forever change the NAS as we know it today.

For instance, let's take the ever-burgeoning commercial space industry, which continues to grow at an amazingly fast pace. The nation's 11th spaceport was recently licensed in Colorado, yet many in the business will tell you the rate of actual launches is well below expectations. There were 29 space launches within the United States in 2017, and another 60 worldwide. This year's expected number of worldwide launches is 161, and demand is expected to continue to increase.

Unmanned Aircraft Systems (UAS) will be another major factor when discussing changes to the NAS. As of last January, there were over 1 million drones registered to fly in the United States and that number is expected to grow to as high as 7 million in the next two years. These new NAS entrants will use UAS for everything from agriculture, insurance, energy, railways, and disaster assessment, to media and entertainment, law enforcement, public safety, and more.

These new demands on the NAS must be integrated into our current aviation system, which means they must fly in conjunction with those who fly in the NAS now. This includes commercial airlines, general aviation, a robust helicopter industry, military and more.

We must also factor in the implementation of new technologies, including new air traffic control decision support tools. With these new technologies comes the demand and expectation that access to the NAS is as efficient and predictable as possible.

You will also hear this week about Initial Trajectory Based Operations, or iTBO. This is the concept of using Time Based Flow Management (TBFM) and Performance Based Procedures (PBN). According to the FAA, "Trajectory Based Operations is a NextGen concept which calls for Air Traffic Control (ATC) services to transition to trajectory based operations. The transition to TBO has remained a constant cornerstone of NextGen. It will leverage improvements in navigation accuracy, communications, surveillance, and automation to decrease the uncertainty of an aircraft's path in four dimensions – lateral (latitude and longitude), vertical (altitude), and time – which will result in significant improvements in strategic planning. Better strategic planning will decrease the need for tactical intervention."

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These major issues are just a portion of ongoing changes to the NAS that will impact not only our workforce, but industry and the flying public. Whether it be en route Data Comm, Enterprise Information Display System (E-IDS), Terminal Flight Data Management (TFDM), or any of an additional 100-plus ongoing programs and projects, we will see major changes for which we all must be prepared.

NATCA has actively communicated – and firmly believes – a collaboratively-developed road map is necessary to guide implementation of new technologies and increased demands for access to our existing airspace system.

The NAS is an extremely robust and flexible system that is home to the safest, most diverse, and efficient, yet complicated airspace in the world. NATCA is committed to safeguarding the NAS. Through our continued commitment to collaborate for the betterment of the NAS, NATCA and our workforce must remain vigilant as these major changes take place. We must continue to be the most trusted organization within the aviation industry, to be honest and forthright in what is best for the NAS and for aviation worldwide.

In closing, I would like to thank each and every one of you for what you do every day to keep the U.S. NAS the world-renowned crown jewel of aviation.

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Collaborative Safety Programs











Air Traffic Safety Action Program



The goal of the **Professional Standards Program**, which is a core collaborative component of the NATCA/FAA collective bargaining agreement, is to promote and maintain the highest degree of professional conduct among participants. This is done through education and in compliance with our codes of professionalism. The purpose of the Professional Standards Program is to provide an opportunity for bargaining unit employees to address the performance and/or conduct of their peers before such issues rise to a level requiring corrective action(s) on the part of the Agency.

The **Turn Off Tune In** program is a collaborative, proactive initiative launched in 2013 at CFS by NATCA and the FAA to eliminate distractions in the operational workplace. Over the past five years, a collaborative workgroup composed of representatives from the FAA and NATCA jointly developed and implemented a proactive communications campaign designed to educate and increase awareness of the safety impact of distractions in air traffic control operations, with an emphasis on electronic distractions. The audience for this campaign is staff in U.S. air traffic control facilities, including air traffic controllers, supervisors, managers, and anyone entering the operational environment.

The **Fully Charged** campaign is a collaborative initiative established by the Collaborative Steering Committee (CSC), a joint leadership committee, and was launched in 2014 by the FAA, NATCA, and the Professional Aviation Safety Specialists (PASS). Fully Charged works to socialize the issue of fatigue in air traffic facilities throughout the nation, and to change the culture of how the workforce thinks about fatigue, and values alertness. The group works to promote fatigue education and awareness to the workforce and also to provide them the tools to self-educate and mitigate fatigue hazards.

The Air Traffic Safety Action Program (ATSAP) launched 10 years ago as a collaborative effort between NATCA and the FAA and was fully implemented in 2010. ATSAP enables air traffic controllers to voluntarily identify and report safety and operational concerns. ATSAP is non-punitive and the data collected is shared between aviation stakeholders through the Confidential Information Share Program (CISP) and the Aviation Safety Information Analysis and Sharing (ASIAS). By providing a more complete representation of National Airspace System (NAS) operations, NATCA, the FAA, and participating airlines can more accurately identify potential hazards and develop more robust mitigation strategies.

ATSAP-X: In addition to controllers within the ATO, FAA employees from several other bargaining units – such as Engineers and Architects, Flight Procedures Team, and Staff Support Specialists located in the ATO Service Centers – are encouraged to file reports about system design issues that otherwise may have gone unnoticed. Issues include air traffic control system irregularities, airspace design and coordination, STARS/SID conflict with standard operating procedures, equipment issues, flight restrictions, and Federal Aviation Regulations waivers or authorizations.

The **RESPECT** initiative aims to establish and support a workplace that creates an environment of mutual dignity, support and respect between all individuals who are part of the NAS. Through Respect, we strive to foster continued professionalism in each of our workplace relations through education and interaction.

Collaborative Safety Programs

Partnership for Safety (PFS) is local people solving local issues. Through a facility's Local Safety Council, it puts facility-centric data in the hands of the facility's team – the best people to solve the issues. PFS is a joint effort between the FAA and NATCA that encourages employees to become actively engaged in identifying local hazards and developing safety solutions before incidents occur.

All Points Safety is a communications campaign designed to raise awareness of how the FAA Air Traffic Organization (ATO) and NATCA are collaboratively providing employees with improved tools, processes, and programs that enhance our ability to collect, find, and fix hazards in the NAS.

Take a Stand for Safety is a joint campaign between the ATO and NATCA to address emerging trends and hot topics related to safety, such as weather, IFR/VFR conflicts, surface safety, and MVA/MIAs. Together, we are encouraging controllers to complete the weather picture for pilots, and work with pilots to avoid IFR/VFR conflicts. We want air traffic professionals to recognize and address wrong surface landings and departures, runway flyovers, and readback/hearback issues, as well as use MVA/ MIA maps, assign appropriate altitudes for MVA/MIA, and issue low altitude alerts to aircraft in close proximity to an obstruction or terrain.



The FAA is implementing **Automatic Dependent Surveillance-Broadcast (ADS-B)** into the NAS. By Jan. 1, 2020, aircraft must be equipped with ADS-B Out to fly in most controlled airspace. ADS-B enhances safety and efficiency by providing faster, more accurate information to air traffic controllers and free traffic, weather, and flight-information services to pilots. The ADS-B program also benefits airports, operators, and the public.

The FAA is responsible for the safe and efficient integration of space launch/reentry operations into the NAS. The Air Traffic Organization's **Space Operations** works collaboratively with affected facilities to develop traffic management initiatives and airspace management plans. Space Operations is co-lead with the Office of Commercial Space Transportation (AST) to form the Joint Space Operations Group (JSpOG). JSpOG is tasked with the real-time management of FAA licensed space launch/reentry operations.

The Low Altitude Authorization and Notification Capability (LAANC) is changing how the FAA authorizes drone flights. LAANC provides access to controlled airspace near airports through near real-time processing of airspace authorizations below approved altitudes in controlled airspace. It provides air traffic controllers visibility into where and when authorized drones are flying near airports, giving them more flexibility to plan flight operations. LAANC enabled sites now cover 500 airports and nearly 300 air traffic facilities.

Everyone working in the NAS, especially Engineering Services employees, have an enormous responsibility to keep the system operating at peak performance while doing so as safely as possible. **Operational Risk Management (ORM)** is the collaborative process used to identify, assess and mitigate the likelihood and severity of an undesired event having a negative impact to NAS operations. NATCA Region X members are asked to follow ORM practices before the execution of any activity that could potentially have a negative impact to the NAS.

Runway Safety identifies and resolves significant runway surface safety issues through a collaborative, proactive, and risk-based system. Using feedback from operators, airlines, and regulators, NATCA members and FAA Safety and Technical Training have identified precursors to potential events and developed priorities that take into account airport geometry, operation levels, runway construction, and other factors. Runway Safety has played a role in the development of a variety of programs that reduce the number and severity of surface safety incidents, including ADS-B, Runway Safety Action Teams (RSATs), and Runway Status Lights (RWSL).

Wednesday: Speaker Spotlight



Brian Shul Author, Aviator

Brian Shul

Brian Shul's compelling story of living fearlessly and embracing the opportunities each day brings resonates with people of all ages.

As an Air Force fighter pilot, Shul was shot down near the Cambodian border in the Vietnam War and severely burned in the ensuing crash. He was given up for dead before finally rescued by Special Forces. He spent one year in hospitals, endured 15 surgeries and was told his flying days were over. Amazingly, Shul returned to active duty flying, and became one of only 93 men in history to fly the SR-71 spy plane, the fastest jet ever built.

Shul masterfully uses his aviation slides and stories as a vehicle to tell a broader inspired story of hope, overcoming obstacles and daring to dream. From lying near death in the jungles of Southeast Asia to flying the world's fastest jet, Shul shares his amazing story in this most unforgettable one-ofa-kind presentation that both inspires and educates.

Shul, a Virginia native, graduated from East Carolina University in 1970 with degrees in History and Anthropology. He went on to become an Air Force fighter pilot for the next 20 years. During the Vietnam War he flew 212 close air support missions before his crash.

During a presentation in 2016, Shul described his physical therapy, how he battled back through the surgeries and physical rehabilitation to take his physical from a military surgeon who told him, "I am not going to go easy on you, but I do admire your attitude."

"My new philosophy was to follow your passions and enjoy every day," Shul said. "It was a matter of the deep understanding that life is short.

"It did not get any better than walking out of that hospital. I had a whole second life to get to."

Shul became an air show demonstration pilot, was in the first A-10 squadron, and instructed at the Air Force's Top Gun School. He culminated his Air Force career by flying the SR-71 Blackbird. He flew covert missions in the Blackbird for four years and was the pilot who provided the President with detailed photos of Libyan terrorist camps in 1986. During that time he became the only SR-71 pilot in history to fly three missions on three consecutive days.

Retiring from the Air Force in 1990, Shul became the first pilot to write a book about flying the Blackbird, completely illustrated with his own photography. This book, Sled Driver, won Aviation Book of the Year honors and is today the single most popular book on that plane worldwide.

Shul's remarkable comeback story has inspired audiences worldwide. He is a Spirit of Freedom Award winner, has appeared on the History Channel, and in 2011 was inducted into the Air Force Legends Hall of Fame. Shul owns a gallery in California where his nationally-acclaimed nature photography is displayed.

During his presentations, Shul uses his aviation slides and stories as a vehicle to tell a broader inspired story of hope, overcoming obstacles, and daring to dream.

Spotlight: Grand Benefactor



As every Air Traffic Controller can tell you, the skies are crowded.

There are more aircraft and more types of aircraft flying in the National Airspace System than ever before. The rise of drones alone is astronomical with civilian-owned unmanned aircraft systems registered with the FAA reaching more than 1 million in 2018, which includes nearly 900,000 for recreational use.

"We're seeing a lot more aircraft and a wider variety – some big, some small, some that go fast, some that don't – and these present a challenge for air traffic controllers because they all want to fly to the same places at the same time," said Kip Spurio, Raytheon managing director of air traffic systems. "We need new technology for a more complicated sky."

Technologies that are new today will soon be outdated. Innovations in aircraft development, in addition to rapidly changing operational requirements, demand increased innovation in air traffic control systems.

Raytheon's Low Power Radar is a one meter square Active Electronically Scanned Array software-defined radar unit originally designed to be networked together to provide highdefinition weather monitoring at all altitudes.

"Besides weather, we have customers interested in networking these on cell towers and buildings every 20 miles or so to monitor small drone traffic," Spurio said. "We have another customer that's interested in using it for precision approach control, because you just need one LPR, which you can set up very quickly, allowing controllers to know precisely where aircraft are so they can guide pilots in bad weather. It also can be used for area surveillance at all altitudes." That data could one day feed into the Standard Terminal Automation Modernization and Replacement System, or STARS, which is used by air traffic controllers at airports and Terminal Radar Approach Control (TRACON) facilities to monitor and direct air traffic.

"STARS gives controllers a more complete, precise picture of the airspace from a single platform," Spurio said. "It's new and expandable, really setting the FAA up for future modernization."

In some ways STARS is similar to an iPhone, Spurio said.

"You need to add all the latest and greatest apps to really take advantage of its processing power," Spurio said. "Today's STARS will allow the FAA to add apps and enhancement packages down the road to make the controller's life better and more efficient."

The team responsible for implementing and delivering STARS was recently awarded the Air Traffic Control Association's annual Industry Award for exceptional performance.

"This award reflects the great work the Raytheon STARS team is doing to advance the science, safety, and efficiency of our air traffic control system," said Pete Dumont, ATCA president.

The award recognizes the team's contributions to air traffic control safety and efficiency through an unprecedented transition of 68 systems to the modernized STARS in 2017, 100 percent on or ahead of schedule.

The team continues working with the FAA toward an historic first – a single national software and hardware baseline across America by the end of 2019. To learn more about the STARS and other Raytheon solutions, please visit booth 101.

Spotlight: Diamond Sponsor

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NATCA CFS: IMPORTANT WORK TAKES FLIGHT HERE

Every day, Leidos air traffic control systems help the Federal Aviation Administration (FAA) manage more than 43,000 flights and 2.5 million traveling passengers in the world's busiest and most complex airspace. We are proud to support the important work that takes flight at NATCA CFS and at air traffic control (ATC) centers across the world.

Leidos has a long history of support of the FAA's NextGen program with government accepted systems including En Route Automation Modernization (ERAM), Advanced Technologies and Oceanic Procedures (ATOP), Time Based Flow Management (TBFM), and our newest system Terminal Flight Data Manager (TFDM). Visit with the Leidos team in booth 906 at NATCA CFS and learn more about two of these systems:

TERMINAL FLIGHT DATA MANAGER (TFDM)

This demonstration utilizes a Phoenix (PHX) Airport Traffic Control Tower (ATCT) configuration to highlight the integration of best-of-breed flight data and tower automation capabilities into a single system to form the basis of the TFDM system. Operational benefits of TFDM include better data exchange and state of the art surface management capabilities, modularity to scale to various configuration needs, affordability by retiring one-off systems, and enabling NextGen objectives in the Terminal and Airport Surface Area domains.

TIME BASED FLOW MANAGEMENT (TBFM)

This demonstration reflects the current version of the TBFM Terminal Sequencing and Spacing (TSAS) software and Integrated Departure Arrival Capability (IDAC) software for departure scheduling. Operational benefits of TBFM include integration with the terminal system to allow better traffic flow between En Route and Terminal Airspace, automation between tower and center to reduce workload, and common situational awareness for enhanced coordination between Air Traffic Control and Traffic Flow Management.

Leidos is committed to the ATC mission. Our staff will be on hand in booth 906 to provide insight into and assistance with our existing programs, and to identify critical needs for future system enhancement or development. The following capabilities enable our team to fully support the goals of NextGen:

- Surveillance Using Radar and ADS-B
- Flight Data Processing
- Conflict Detection and Resolution
- Performance Based Navigation
- Trajectory-Based Operations
- Flight Tracking
- UAS Traffic Management
- · Time-based Metering Traffic Flow Management
- Arrival/Departure Management Solutions
- Interval Management
- Airspace Flexibility
- Weather Data Integration
- Information Sharing
- Cockpit Communication
- Adverse Condition Alerting Service
- VFR/IFR Flight Plan Filing
- Flight Plan Easy Activate/Easy Close
- NextGen/Delta/Abbreviated/Specialist
- Weather Briefings
- Inflight Pilot Reports (PIREP) Submission
- Application & Satellite Communication
- Web Services
- Open, Standards-Based Software
- · Highly Secure System Architecture
- Training
- Big Data for ATM
- Network Security
- Cloud Computing

We look forward to connecting with the air traffic controller user community at NATCA CFS. This conference is like no other, with information exchange that truly helps to make flying even safer, more efficient, and more predictable.

Visit Leidos in booth 906 and online at leidos.com/aviation.

Wednesday: Speaker Spotlight

Paul Dye

Paul Dye has over 40 years of aviation experience as an engineer, builder and pilot. His scope has ranged from restoring old light aircraft to planning and leading manned spaceflights. His love of flying machines dates back to early childhood, and he became involved with full-sized aircraft as a teenager, rebuilding J-3 Cubs with an FBO in Minnesota. He earned his degree in Aeronautical Engineering with a specialization in aircraft design and flight testing from the University of Minnesota in 1982.

For 33 years, he worked in increasingly responsible roles within the United States (NASA) Manned Space Program, both as a technical expert in spacecraft systems and, eventually, as the overall lead of many missions to space. Prior to becoming a NASA flight director, Dye held a leadership position in NASA's Mechanical Systems Division. During that time, he was a member of the NASA team that traveled to Russia to study the possibility of docking the American space shuttle to the Mir space station.

Dye retired from NASA in 2013 as the longest-serving Flight Director in U.S. history. The winner of many prestigious awards including the Johnson Space Center Director's Commendation, the NASA Outstanding Leadership Medal, and four NASA Exceptional Service Medals, Dye delights in bringing the lessons learned from the most advanced flight operations back to the next generation of space operation professionals and to general aviation pilots and builders.

Dye is well-known as a riskmanagement specialist, and advises designers and builders – as well as pilots – on ways to build and operate aircraft with greater margins of safety. He is also a leadership consultant.

Always a prolific writer, Dye has been a frequent contributor to type-club newsletters and websites for many years. After retiring from NASA as a Lead Flight Director for Human Spaceflight, he became Editor-in-Chief for Kitplanes Magazine, a publication dedicated to supporting the experimental aircraft industry. He attends most of the large aviation meetings and fly-ins around the United States, test flies aircraft for individuals and for magazine evaluations, and enjoys speaking to aviation and civic organizations on a variety of topics related to aviation. Dye is a licensed commercial pilot rated for single and multi-engine, instrument, seaplanes, gliders, and several experimental jet aircraft. He is also a licensed airframe and powerplant mechanic.

Dve has owned a number of aircraft over the years, and is currently deeply involved in the Experimental Aircraft movement. He is flying an RV-8 that he built himself, as well as an RV-6 which was purchased by his wife. He and his wife finished building an RV-3 in 2012, and have flown it from coast to coast and from the Gulf of Mexico to the Canadian border. He is an Experimental Aircraft Association (EAA) technical counselor and flight advisor, and does extensive product development testing for a number of avionics and airframe accessory manufacturers serving the experimental market. He is also a member of EAA's Homebuilt Aircraft Council, a group of EAA members who help develop policy and programs to assist the amateur-built aircraft community.



Paul Dye Engineer, Aviator, Author



YOUR PARTNER BEYOND NEXTGEN

Harris meets the challenges of complex airspace with scalable technologies to link thousands of personnel, sites, and ATC solutions for faster, safer operations. With passenger traffic doubling by 2036, Harris continues to evolve FAA infrastructure to meet demand while delivering mission-critical reliability.

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Thales is honored to support NATCA in its mission to preserve, promote and improve the safety of air travel within the United States

- - -

You Tube *Our annual awards luncheon at Communicating For Safety will be held on Tuesday, Oct. 23, from 12:15-1:45 p.m. in the main conference room. Several aviation safety professionals from around the National Airspace System (NAS) will be honored, including these awards:*

Steve Hansen Safety Advocate Award

Named for the Chairman of the NATCA National Safety Committee, the Steve Hansen Safety Advocate Award is presented to a NATCA member who has made extraordinary achievements and has worked tirelessly on NATCA's behalf to be a leader in furthering the cause of aviation safety. While each winner has contributed their skills, dedication, and work ethic in different ways, with varying areas of expertise, there is one thing that ties them all together: they are all passionate about safety and aviation.

NATCA National Professionalism Award

The goal of NATCA's Professional Standards program is to maintain and promote professionalism across all of NATCA's bargaining units. NATCA members achieve that through a commitment to safety and through upholding the public's trust. They work to inspire, to motivate, to provide personal examples of our professionalism to others, and to maintain the highest standard of excellence. They know their actions represent all of their fellow professionals, and we work to bring honor and respect to all that they do. The NATCA National Professional Standards Committee (PSC) created the "NATCA National Professionalism Award" as a means to recognize the actions of those who continually strive to achieve these goals.

Team Excellence Award

This award was created to recognize NATCA teams, workgroups, or committees that exemplify the true collective spirit of working together to achieve greatness.

Helping Hearts

This award is presented by NATCA's Occupational Safety and Health Administration (OSHA) Committee to the facility with 15 or more employees that has the highest percentage of people trained to use an Automated External Defibrillator (AED).

Other awards to be presented at various points in the conference this week:

James L. Oberstar Sentinel of Safety Award

NATCA created the Sentinel of Safety Award as a way to honor aviation leaders outside NATCA who have displayed outstanding achievement in the advancement of aviation safety. The award is presented annually at NATCA's Communicating For Safety conference. On Oct. 2, 2014, at its Biennial Convention in Minneapolis, NATCA proudly renamed the award to honor Congressman Jim Oberstar, who was a tireless advocate for aviation, air traffic control, and NATCA during his tenure in Congress and as the Chairman of the House Transportation and Infrastructure Committee. Congressman Oberstar died on May 3, 2014, just a few weeks before NATCA in Washington, the event he supported and attended for many years, and at which in 2005 he was awarded the first Sentinel of Safety Award.

Beacon of NATCA

The Beacon of NATCA award is given to a facility that rises above and handles an emergency or disaster situation with grace under pressure. It was created to recognize those facilities that go above and beyond to perform the essential and difficult task of disaster response. The recipients of this award provide exceptional ATC services. The individuals in these facilities show incredible perseverance and inspire us. They are the beacon that guides us home and the heroes that rise above the chaos to keep the NAS running as safely and efficiently as possible.

Spotlight: Gold Sponsor



Delta Air Lines' Operations and Customer Center (OCC) is excited to participate this year at Communicating For Safety (CFS) in an expanded role and is looking forward to interacting with front line air traffic controllers.

Delta will be hosting a "hot topics" meeting on Monday evening, Oct. 22, concurrent with the evening reception at 5:45 p.m. in the Bronze 1 room. Delta will have OCC staff on hand from disciplines such as Air Traffic Management, Operations Management, and Dispatch.

The hot topics discussion will include airspace redesign, airport throughput, hub operations, weather-impact operational planning, and an open forum where questions are encouraged. The Delta reps will be happy to discuss anything airline dispatch, operations, and planning related. In addition to the Monday evening meeting and reception, Delta will be present throughout CFS at booths 703/705/707 with OCC reps on hand to answer any questions you may have about airline operations.

In addition, Delta will be running its dispatch and operations management suite of tools to show how they plan and monitor their operation. Stop by for a visit!



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his son Steven R. Ozuna took the helm, & continues in his fathers footsteps as President/ CEO. Now, 50 years later, NBP has built a

After Mr. Ozuna passed,

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Visit us at NATCA CFS leidos.com/aviation **BOOTH 906**





