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# NATA SCHOLARSHIP AWARDEE: ALEXANDER THOMAS



One of the most important factors that any industry can work for is to better its safety. The agricultural aviation community is no different; many members work on different facets to improve safety. However, safety can apply to many different phases in the industry. I believe that there are several major ways the agricultural aviation community could improve its safety. First, studies about agricultural aircraft accidents have shown how the introduction of the PAASS program has benefited pilots and reduced the number of accidents. Second, use of Operation SAFE fly-in clinics can help pilots be more thorough with their chemical application and help increase environmental safety. Finally, the visible difference when both PAASS and Operation SAFE are utilized helps create and maintain a positive public image of agricultural aviation.

With increased voluntary participation in these programs, pilots can prevent accidents from occurring, reduce environmental danger, protect the industry from legal regulations, and increase safety in the aglicultural aviation community.

In 1996, the National Agriculture Aviation Research and Education Foundation (NAAREF) founded the

Professional Aerial Applicators' Support System (PAASS) with the intent of decreasing the amount of aerial accidents through education. PAASS is an program that educates pilots in safety and drift minimization issues to prevent accidents. In the six years before PAASS presentations were available (1991-1997), the accident rate of pilots was 9.5 accidents per 100,000 hours of flight. Between 1999 and 2015, the average rate of accidents fell to 7.39 accidents per 100,000 hours flown. These numbers might quantify the difference being made, but the real impact is not noticed as accidents have been prevented. Decreasing the number of agricultural aviation accidents is the main goal of this program and through education, the increase in safety can be felt by the agricultural aviation community.

Another program created to help increase safety in the agricultural aviation community is Operation SAFE (Self-regulating Application & Flight Efficiency). Operation SAFE allows pilots to have their aircraft tested at certified clinics to check spray pattern uniformity and droplet size. Pilots can then check the data gathered to find ways to improve their equipment. By reducing chemical application inefficiencies, pilots receive economic benefits while also improving environmental safety. First, when pattern uniformity is tested, it looks for inconsistencies over the area sprayed. By finding spots that are missed, pilots can adjust aircraft settings to hit those spots and increase overall effectiveness of application. Next, the drop size created by the aircraft is tested. If drops are too big, this can prevent chemical from reaching the entire plant, with the spots being hit receiving more product than necessary. However, if the drops are too small, pilots risk losing product, or it not being effective with such a small amount applied. Wind can also whisk away small droplets and carry them to other places possibly causing environmental damage. By using Operation SAFE, pilots can increase their bottom line and improve environmental safety in their communities.

By utilizing PAASS and Operation Safe, the National Agricultural Aviation Association and the Nebraska Aviation Trades Association have created a professional and responsible public image of the agricultural aviation community. The resulting increase in safety has also helped protect the industry from forced government regulation and legislation. With these proactive measures to prevent aircraft accidents and protect the environment, the NATA have presented themselves as symbols of rectitude in the industry. I believe that it is critical for members of the agricultural aviation community to continue to voluntarily participate in these programs, not only for their own personal benefit, but for the benefit of the industry. In order to prevent more government regulation, members must actively encourage each other to participate

in programs provided by the NAAA and NATA to improve the safety of the agricultural aviation community. Safety may begin with one pilot at a time, but it takes many pilots for safety to truly take off.

Works Cited: "Nebraska Aviation Trades Association." Nebraska Aviation Trades Association. N.p., n.d. Web. 9 Mar. 2019. CoTT, Alan. "Home, Agri-Spray Consulting." Agri. N.p., n.d. Web. 9 Mar. 2019. | "National Agricultural Aviation Association." National Agricultural Aviation Association. Naylor Association. Naylor Association Management Software, n.d. Web. 9 Mar. 2019. | "Federal Aviation Administration." FAA Seal. N.p., IO Mar. 2019. | Degg, Ken. "A Look at 2017's Agricultural Aviation Accidents." Agricultural Aviation - Winter 2018A Look at 2017's Agricultural Aviation Accidents. N.p., 2018. Web. 10 Mar. 2019.

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# 2019 AVIATION SYMPOSIUM

By David Moll

The 2019 Aviation Symposium was a huge success, even with last-minute substitutions after the FAA was not able to attend due to the partial government shutdown. The private sector provided solutions after a flight cancellation resulted in Brenda Collins, Technical Director for Sherwin INC, giving her presentation on current NDT methods via Skype.

For me as a pilot, the most interesting and informative presentation in the morning was from Captain Shanon Jamison, Flight Safety





Officer, F-16 Pilot, South Dakota Air National Guard and Major Michael Piening. Captain Jamison talked about safely flying through MOA's (Military Operations Area) during the times they are "hot," or in other words, as the F-16's are practicing in this airspace. In short, if you are flying VFR through a MOA, it is very important you either use "Flight Following" or contact the controlling agency, such as Minneapolis ATC. ATC will contact the F-16's and they will adapt as needed to avoid this traffic, since they are not equipped with TCAS or even ADS-B. Captain Jamison made very clear that VFR traffic needs to avoid the "Visual Routes" inside the MOA's because she can fly her F-16 at 500 ft AGL, doing 500 knots indicated in these routes (i.e. VR540 and VR541 in the Crypt South MOA).

During his "Nebraska Aviation Counts" presentation, GBA consultant Ed Young discussed the importance of sending fully completed surveys to every airport so the Economic Impact Study is 100% accurate. Why? To be good stewards of the taxpayers' money, it helps to know what the exact return of investment is with your airport. City, County, State and Federal officials need that information because they are paying the bulk of any improvement. Half the surveys are completed, and the rest should be finished by the end of February.

Kyle Schneweis, Director of the Nebraska Department of Transportation, gave a short, but informative, briefing on how the merger of the Roads Department and the Aeronautics Department was proceeding.

Every presentation at this symposium offered information any aviation-related person or company could use. Other presenters included Tom Chandler, AOPA, with an overview of Air Safety Institute Offerings; Lt. Col. Dan Peterson, Nebraska Civil Air Patrol; John Worthing, Aero Guard Aviation insurance, with insurance updates; Joshua Diggs, AvFuel, discussing FBO solutions; and Dan Geary, Deg Enterprises, discussing runway lighting. Symposium exhibitors included Advanced Air LLC; Aero Guard Aviation Insurance LLC; Aerospace Turbine Rotables, Inc; Airport Lighting Co; Alfred Benesch & Co; Asphalt Systems Inc; Avfuel; Cirrus Aircraft Inc; Duncan Aviation; Grip-Flex Surfacing; JEO Consulting; Kirkham Michael; KLJ; MacQueen; M-B Co; Midland Door; Olsson; Western Nebr. Com. College; and Wilco.





Do you have an Aviation event to promote? Let us know! Article and pictures are always welcomed.

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#### **RUNNER-UP SCHOLARSHIP ESSAY: CHLOE KOLB**

Watching bright yellow spray planes fly over fields is one of my favorite things to see in the summer. I often wish that I was the pilot in the sky operating the aircraft and enjoying the thrill of the flight, but it's not that simple. Pilots and other members of the ag community work hard to ensure safety in every aspect. It is very important to me to promote safety, which can be done in many ways, including attending conventions, being smart while in the air and on the ground, and also planning ahead for the future. Practicing these tips will help prevent danger and accidents.

To begin, I think that it is crucial to attend Nebraska Aviation Trades Association (NATA) and National Ag Aviation Association (NAAA) conventions. These conventions offer safety programs such as Operation S. A. F. E. (Self-regulating Application & Flight Efficiency) clinics. Any licensed operator or agricultural aviator is welcome to participate in Operation S.A.F.E. fly-ins. Pilots are able to attend fly-ins to socialize, to swap experience stories, to increase their professionalism, and to learn. Operation S. A. F. E. clinics give the operator the opportunity to test his or her equipment with a trained analyst, to help interpret the information and to

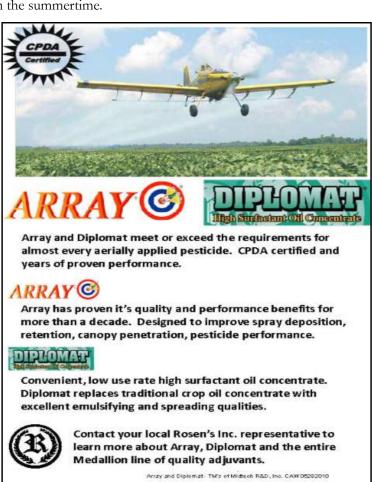
recommend changes to improve performance. Knowledgeable pilots will make the ag community safer.

Next, it is important for ag aviation community members to be smart when they are flying, and also when they are going about their normal lives on the ground. In the air, pilots should show good self-control. They shouldn't try to impress others or fly recklessly. Instead, pilots and operators should think things through and keep scanning for other aircraft while they are flying. When pilots aren't flying, they should make sure

to get enough sleep and to stay hydrated, especially during the summer. Although most pilots and operators know to do these things, I think that it would be beneficial to have reminders around the hangar. Keeping all of these things in mind will promote safety in my aviation community.

Lastly, to improve safety I think that pilots and operators should plan ahead for the future. Planning ahead can include doing good maintenance on an aircraft, performing good preflight, and also carefully surveying the field before starting to spray. Maintenance is an important item to complete properly because improper work done to an aircraft can damage it or cause accidents during takeoff or flight. Performing good preflight is important to safety as well. The pilot needs to check all the instruments and devices in the aircraft in order to have a successful flight. A careful survey of the field before beginning to spray can help the pilot avoid power lines, detasselers, and sign turners. Planning ahead for the future is important so that fewer accidents occur.

All in all, I think that safety within my ag aviation community can be improved by attending conventions, being smart in the air and on the ground, and also by planning ahead. Practicing these tips will allow people of all ages to see and hear the yellow crop dusters at work in the summertime.





#### OUTFLOW BOUNDARIES

By Jeff Kelly/NOAA

Thunderstorm season is not far away, so let's talk about outflow boundaries and why they are important to pilots. As rain falls into dry air below the cloud base, evaporation occurs. The air cools, and since cooler air is heavier and denser than warm air, the air sinks to the ground, sometimes rapidly. These vertical shafts of sinking air are called downdrafts. Upon reaching the ground, the air spreads out much like pancake batter.

Outflow boundaries are the leading edge of the rain-cooled air. They are important to pilots because they result in sharp wind shifts. Strong, gusty winds, wind shear, and turbulence accompany them, and they result in rapidly rising altimeter readings. Sometimes, winds are so strong that blowing dust can occur, severely lowering the visibility. These outflow boundaries behave like miniature cold fronts. They can force the air to rise to the point that new thunderstorms are triggered. Outflow can occur even from ordinary showers, with no lightning or thunder. This is especially true when cloud bases are higher than normal (7,000-10,000 ft). Outflow boundaries can move far away from the shower or thunderstorm that generated them. And when multiple showers or thunderstorms are in close proximity, their outflows can combine to make very large areas of outflow. In fact, this is how squall lines sustain themselves. The lift created by outflow continuously generates new thunderstorms that form long lines.

So, what can pilots do? First, be aware that they exist anytime showers or thunderstorms are nearby. Second, use radar to increase situation awareness. Outflow boundaries appear as narrow lines of low reflectivity (5 to 30 dBZ on the radar color scale).

Do you have a weather question you would like answered in this column? Or would you like a NWS meteorologist to speak at your next pilot meeting? Email me at jeff.kelley@noaa.gov.

# BOOK YOUR HOTEL ROOM FOR THE AG AVIATION EXPO

We're still several months away from the 2019 Ag Aviation Expo in Orlando, Nov. 18-21, but it's not too early to book your hotel room. Rosen Shingle Creek is a full-service, luxury hotel with impeccable customer service and top-notch amenities. The location is prime—on Universal Boulevard and 10 minutes from the Orlando International Airport. Besides networking, learning and having fun at the 2019 Ag Aviation Expo, enjoy your beautiful sleeping rooms, amazing restaurants, including everything from fun bars to casual dining to fine-dining, relaxing spa and the fun and competitive golf course.



- Rate: \$139/night + taxes (no resort fee and includes basic internet access in your room and complimentary fitness center access)
- Reservations: Book online here or call (866) 996-6338 and refer to NAAA convention. All reservations are two double beds. If you'd like a king room, please state that when calling or in the comments section when making the reservation online.
- Hotel Block Cut-off Date: Thursday, Oct. 24 at 5 p.m. ET
- Hotel Address: 9939 Universal Blvd., Orlando, FL 32819 | Hotel Phone: (866) 996-9939 | Reservations: (866) 996-6338
- Dates: Nov. 18–21, 2019 (NOTE THE NOVEMBER DATES)
- Location: Rosen Shingle Creek, Orlando, Fla.
- Attendee Registration: Opens July 1





#### INTERNATIONAL AVIATION ART CONTEST 2019 AWARDS PROGRAM

By David Morris



Have you ever looked out the window, and wondered what it would be like to fly? Inside many of us, a dream to fly is just waiting for the chance of coming to life. Nature has many ways of encouraging us to dream. For many, the race to the border of space will lead to dreams of high-powered aircraft going faster and higher than ever before. Each achievement in flight started with a dream. Along the way, aviation enthusiasts built their dreams on the works of those who came before.

The Lincoln Airport Authority Operations and Maintenance, located at the Lincoln Airport, was host to the Aviation Art Contest 2019 awards ceremony on Saturday, April 6, where the coveted, engraved trophies and other awards were presented. At the top of the program was Nebraska State Patrol Trooper Brandon Wilkie #464 and his K-9 Police Service Dog (PSD) Bane #464K. PSD Bane, a 4 year old Belgian Malinois, is a dual purpose canine trained in narcotic detection, tracking, evidence recovery and patrol. Bane totally "stole" the show! We learned of numerous drug seizures and apprehension of multiple criminals credited to K-9 Bane. Trooper Wilkie presented a very interesting program.



Next on the agenda was presentation of awards. Beginning with Category I Junior (Age 6-9) was Luigi Forgione, Lincoln, winning 3rd place, followed by Madeleine Charlsen of Omaha, capturing 2nd place. To wrap up this group was Nithin Paul Mehta of Lincoln, taking 1st place.

In Category II Intermediate (Age 10-13), was Ben Spencer of Gibbon, winning 3rd place, followed by Sicily Manganaro of Omaha, winning 2nd place. And, taking 1st place was Jingyi Wang of Omaha.



Completing the awards ceremony were the Category III Senior (Age 14-17) winners. Capturing 3rd place was Stevin Hasler of Osmond. Taking the 2nd place trophy was Sofia Pantano of Bennington. And, to close out the program, was Macey Wahl of Omaha, winning 1st place.

And, we are proud to congratulate the following individuals who deservedly won Honorable Mention: Everley Hatch, Charles Frame, Traysh Best, Kara Kucera, Riley Miller, Mattisyn Swarts, Karlie Mathis, Sydney Kumm, Joel Saucedo, Ethan Custard, April Prelle, Aspen Lynn Woods, Gustavo Diaz-Olguin, Wyatt Meggison, Araseli Figueroa, Alexandra Harpole, Holly Pavlik, Eden Lozano, Landon Becker, Kate Wegner, Cece Ward, Izabella Yungtum, Roxy Lightle, Cole Coppersmith, Sally Joyner, Beth Wegner, Evelyn Galicia Bedolla, Darian Villa-Lopez, Angela Pablo Hernandez, Hanna Bober, Jackson Timperley, Sophia Sullivan, Zoey Lewis, Joseph Timperley, Noah Lewis, Jozie Kumm, Anthony Zaner, Alexis Beacom, McKenzie Vargas, Megan Coffman, Lucy Bloomingdale, Hannah Ferry, Allie Aschoff, Brenden Gillespie and Madeline Huwaldt.



We, at the NDOT – Division of Aeronautics, want to send a special "congratulations" to all the contestants. Your work was outstanding and this made for tough decisions of the judging committee. To the parents, teachers and mentors, the Department wants to say a special "Thank You" for all the time, hard work and support you have put into this program. And, to our friends at the Lincoln Airport Authority Operations and Maintenance, along with all our sponsors, we want to again send a special "Thank You So Very Much." Without your continual generous support, this program simply would not exist.











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