October 14, 2022

NAAA eNewsletter

NAAA and NAAREF Board Getting the Aerial Application Industry's Business Done Sooner, Rather Than Later, in Oklahoma Last Week

The National Agricultural Aviation Association (NAAA) and the National Agricultural Aviation Research and Education Foundation's Board meetings were held last week in Oklahoma City, Oklahoma. Preceding the meetings on Oct. 5-6, the NAAREF PAASS presenters training for the upcoming 2022-2023 Silver Anniversary of the PAASS Program took place. The General Session of both Boards began Friday, Oct. 7, and included a presentation on the state of the industry and association delivered by Andrew Moore, NAAA CEO.

State of the Aerial Application Industry

Moore began by delivering statistics from the USDA that food price inflation is at its highest level in over 40 years. It increased by 9% in 2022 and is estimated to increase by another 3% in 2023. USDA 2022 net farm income is projected to be $147.7 billion, up $7.3 billion from 2021, but, when adjusted for inflation, down 0.6%. USDA projects total farm production expenses, which includes aerial application, to be $437.3 billion in 2022—an increase of 17.8% compared to 2021. Moore also stated that the Food and Agricultural Policy Research Institute think tank at the University of Missouri estimates that farm income will drop to $138.8 billion in 2023 due to an expected decline in U.S. ag exports of $2.5 billion from 2022. This is a result of the high price of the dollar versus other global currencies.

Moore then gave the results from the latest NAAA annual aerial application activity survey showing that in 2022, the number of hours flown per aircraft was 324.5 hours. That's a 3% decrease from the 334.5 hours flown in 2021. The 10-year average for the number of hours flown per aircraft is 316.1 hours (2022 was 2.6% above that average). In 2022, the average number of aircraft in use per operation decreased by 2%, from 2.56 aircraft per operation in 2021 to 2.51 aircraft per operation. In 2022, 62% of operators surveyed indicated that they flew either significantly more (11%), somewhat more (24%) or about the same number of acres (27%) compared with 2021. In 2021, 80% of operators surveyed indicated they flew the same, somewhat more or significantly more hours compared to 2020. Conversely, 38% of 2022 operators said they flew either somewhat fewer (22%) or significantly fewer (16%) acres compared with 2021, when only 20% flew somewhat or significantly fewer acres compared to 2020. Some 2022 surveyors were quite negatively affected by drought-like conditions, particularly in the West and Southeast. In terms of attitudes toward next year, 49% of 2022 operators were optimistic about the 2023 season compared to 43% of the 2021 individuals that took the survey.

The subject then turned to policy issues, specifically politics and pesticide registrations. Currently, lawsuits from eco-activists have resulted in the Biden administration's EPA further restricting pesticide registrations. Lawsuits have been brought against the agency to eliminate and/or rereview the (re)registrations of active ingredients such as paraquat, atrazine, all the organophosphates, sulfoxaflor and glyphosate. Unfortunately, these duplicative reviews by the EPA show its use of Tier 1 of the AgDRIFT atmospheric model, which overestimates actual drift. NAAA has submitted 30 comments alone in 2022 emphasizing the more realistic use of Tier 3 of the AgDRIFT model, which is a more accurate number of acres treated per day by air and common usage of drift reduction technologies in the industry that result in controlling drift. Since 2017 NAAA has submitted a total of 253 comments to support pesticide (re)registrations. Unfortunately, the statutory deadline to review pesticides every 15 years expired Oct. 1. The EPA has only finalized 151 (21%) of the total 726 pesticide decisions due to having to duplicate reviews due to lawsuits and to ensure biological decisions have been made on the effects pesticides have on endangered and threatened species. Ironically, there is a real risk now that the EPA has missed the (re)registration deadline that it will be sued again by eco-activists to cancel all uses that have yet to be (re)registered. Moore reiterated that NAAA's most important policy issue is to ensure pesticides are labeled for aerial uses and without unnecessarily burdensome restrictions. Toward this end, NAAA has also actively visited senior officials in person at UPL, BASF and Syngenta and virtually with Bayer in 2022 for their aerial registration support and in support of NAAA's and NAAREF's industry programs.

Moore then discussed the release of the report by the FAA's aviation rulemaking committee (ARC) this summer and its recommendations to allow drones to fly beyond visual line of sight (BVLOS). The ARC was over-occupied with drone interests from Google's drone subsidiary, Wing, and Amazon. Its recommendations were completely devoid of any consideration for low-altitude manned aviation safety. It would increase the weight limit for BVLOS drones to 1,320 pounds. It would not require ADS-B-equipped drones to give right-of-way to manned aircraft not equipped with ADS-B, and it would not require ADS-B technology or giving right-of-way requirements to drones flying in a "shielded area," which is defined as 100 feet vertically and laterally of obstacles that could include trees, wires, tracks, and towers. NAAA testified against the perilous recommendations in an FAA hearing on the subject and has been in direct contact with the FAA administrator on this topic. The ARC's recommendations are just recommendations. Now the FAA must take into account its feedback and have an open comment period to write a drone BVLOS rule. Moore emphasized the importance of ag aviation operators submitting their GPS logs to Mississippi State University's Raspet Flight Research Laboratory, which is compiling information on how active ag aviators are in low-altitude airspace—something the drone BVLOS ARC did not consider. The information submitted will be washed of any personal identification information. If the data is robust, it could be a great help in promulgating a safe low-altitude policy for ag aviators. Low-altitude airspace legislation will also be the topic of great debate in Congress this next year as the FAA reauthorization reaches its

statutory deadline. NAAA will seek to expand the statute requiring rural towers between 50 and 200 feet to be marked and logged in an FAA database to all towers, including communication towers.

Moore also mentioned the plethora of federal climate change funding in existence since the passage of the $1.2 trillion infrastructure bill and $700 billion climate change bill that passed within the past year. There are good provisions in the bill that will devote $27 billion to ag programs to address climate change, such as a $25-per-acre subsidy for farmers that cover-crop and $1.5 billion for biofuel infrastructure made from ag commodities such as soybeans. Conversely, there is also $93 billion for rural area broadband and rural area renewable energy production, which may lead to many more communication towers, wind-energy turbines and solar panels on arable farmland.

Moore switched gears and talked about NAAA's public relations endeavors over the past eight months during the ag aviation centennial. From March 21-22, NAAA participated on the National Mall for National Ag Day with 30 national ag groups. NAAA's centennial exhibit included a Bell 206 helicopter generously provided by Glenn Martin from Helicopter Applicators Inc. in Gettysburg, Pennsylvania. The National Mall is the most visited National Park in the U.S., receiving 25 million visitors a year. For the event, over 270,000 visitors for four days (including two setup days) were present to view the exhibit. NAAA representatives, including President Perrin, were interviewed by RFD-TV, Agri-Pulse, USDA Radio, legendary broadcaster Max Armstrong of RFD-TV's *This Week In AgriBusiness* and the producer/host of *Farm Progress America* and *Max Armstrong's Midwest Digest* daily radio programs, which are carried on more than 140 local radio stations and 100 local commercial television stations. Numerous key public officials also visited the NAAA exhibit area, including Dr. Freedhoff, the EPA's assistant administrator for the Office of Chemical Safety and Pollution Prevention (OCSPP); Ed Messina, EPA director of its Office of Pesticide Programs; Rod Snyder, ag advisor to EPA Administrator Regan; Sens. John Boozman (R-Ark.), and Deb Stabenow, the ranking member and chairwoman of the Senate Agriculture, Nutrition and Forestry Committee, respectively and Senator Cindy Hyde-Smith (R-Miss.), who also sits on the Senate Ag Committee.

Moore also stated that NAAA again issued its annual ag aircraft advisory press release informing the aviation, agriculture and general news media about being on the lookout and giving the right-of-way to manned ag aircraft that will be sharing the same low-altitude airspace as drones. The news release was picked up by 14 news sites throughout the country and internationally, including Farm Journal's AgWeb, CropLife News, AVweb, *Vertical Magazine*, *AirMed&Rescue* magazine, State Aviation Journal, RFD-TV's *Market Day Report*, the Southeast AgNet Radio Network, WOWO News/Talk radio broadcasting from Fort Wayne, Indiana, The Mighty 790 KFGO radio in Fargo, North Dakota, 6 Park News in Colorado, "Farm Life Live" on Farm Life Media's social media network, and the Australian website Farm Table.

NAAA also continued its "Above All Forms of Crop Care" ad campaign in AgWeb AM, *The Scoop* and CropLife News, informing readers of the yield benefits and speed of ag aviation in applying crop inputs and directing them to NAAA's "Find an Aerial Applicator" link on its homepage of agaviation.org, which allows a user to input their location, such as a zip code, to find an NAAA ag aviation operator near them. These three publications have a total circulation of nearly 200,000 farmers, ag retailers and crop consultants nationally.

NAAA also arranged to participate in the Wingnuts Air Show in Tarkio, Missouri, this year. NAAA member Adam Meyerkorth put on a great aerial display as the show's announcer spoke for 10 minutes about the history, importance, and technological evolution of aerial application over the past century. The Wingnuts show is organized each year by Congressman Sam Graves (R-Mo.), the current ranking member of the House Transportation & Infrastructure Committee. This year's event included Congressman Rick Larsen (D-WA), chairman of the House Aviation Subcommittee. NAAA bookended its 100th anniversary at EAA's AirVenture this year—the world's largest airshow. Air Tractor brought an AT-802 ag aircraft to the NAAA booth, and Leland Snow's early ag aircraft, the completely refurbished S-2A, was prominently displayed at Boeing Square—the epicenter of the show—next to NAAA's Ag Aviation Centennial timeline posters. Over 650,000 attendees attended AirVenture 2022. It was a fantastic closing to a wonderful 100-year celebration. The 100th anniversary "ad value equivalency," a metric that assigns a monetary value to the type of media coverage, earned hundreds of media mentions, with a potential audience reach of 400 million consumers worth $10 million.

Because the 100th was so successful in positively reaching a large external public audience, NAAA conducted a communications audit to gauge how NAAA should direct its communications focus. A healthy majority of 76% believed NAAA communications' resources should primarily be focused externally, rather than internally, to educate the public, ag and aviation trade press, and general news media about the importance of aerial application to positively raise the industry's profile. A plurality of participants, or 42.6%, believe that two-thirds or more of NAAA's communications focus should be externally based, and over 80% believed that half or more should focus on externally based communications. Some ideas have circulated about working with other publishers in the ag sector, such as Farm Journal or Marsayl Media, to include content about ag aviation in their wider circulation of ag media.

Moore then turned to education and safety issues, stating that the PAASS (Professional Aerial Applicators' Support System) Program is celebrating its silver (25th) anniversary of educating aerial applicators to augment safety, security and environmental professionalism in the aerial application industry. Moore discussed that the aviation safety portion of the 2022-2023 program will focus on wire avoidance. Wire strike accidents between 2017 and 2021 numbered 51 and accounted for 16% of the total accidents and 24% of the fatal accidents during those five years. The curriculum will focus on vision science and how to properly conduct reconnaissance of an application site and identify support structures and hardware to determine the location of wires. The environmental professionalism portion of the program will present growing evidence of achieving application efficacy with larger spray droplets.

Moore then presented that, to date, there have been 44 accidents in 2022. Sadly nine of those were fatal. To further move the needle in mitigating accidents, NAAA and NAAREF have developed a professional certification program for the agricultural aviation industry called C-PAASS (Certified-Professional Aerial Applicator Safety Steward). An NAAA survey of the industry conducted earlier this year showed that 72% favor an industry certification program, and C-PAASS, a completely voluntary program, is that program and will address the need

to continue to lower the accident rate, address insurance costs, and unnecessarily stringent pesticide language for aerial applications. The program will be christened in 2023. In that initial year, C-PAASS will require annual NAAA and state/regional agricultural aviation association membership, PAASS Program participation for the past three years and biennial Operation S.A.F.E participation. The focus on education is because participation in industry education programs is proven to work. PAASS has reduced accidents and drift incidents by 26% in 25 years with only a 47% attendance rate. Eighty-six percent of the accidents over the past five years have been from ag pilots either not attending or not annually attending PAASS. Future requirements of C-PAASS, starting in 2024, will include online coursework and testing on aviation safety, security and application efficacy/environmental professionalism topics on a biennial basis.

Next, Moore discussed the exciting events planned for the upcoming NAAA Ag Aviation Expo in Knoxville, Tennessee, Dec. 4-8. A comprehensive wire safety course will be offered on Sunday, Dec. 4. The Kickoff Breakfast speaker will be Captain Scott Kelly, former NASA astronaut, who holds the U.S. spaceflight record with his 340-day mission to the International Space Station in 2015. Kelly also piloted the Space Shuttle Discovery to the Hubble space telescope in 1999 for a fix. The General Session theme will be “Healthy Public Relations,” with Dr. Stan Musick (M.D., flight surgeon, 20-plus-year aviation medical examiner (AME) and part-time ag pilot) discussing fatigue prevention, being careful of mixing certain prescription drugs while flying and what pilots can do to help their AMEs ensure they get their medical. Michelle Miller, an ag public relations expert also known as the Farm Babe, will speak about her experience myth-busting falsehoods made about ag and positively “agvocating” the aerial application industry to your local community and media. Other great educational sessions—34 in total—including sessions on aerial application technology research, making precision applications, chemicals, ag aircraft on the market, self-testing application systems’ efficacy, and more will be offered. There are 18 states and certified crop advisors offering CEUs for convention educational session attendance, along with a great exposition of 140 exhibitors offering everything ag aviation under the sun along with six aircraft (three rotor-wing and a Thrush and Air Tractor). This year’s auction will also feature a generously donated Pratt & Whitney, Canada PT6A-34; an Air Tractor donated and themed golf cart; a two-day Turbine Transition Course, amongst many other great items.

Moore then touched on membership and said that as Sept. 30, there were 556 operator members, 470 pilot members and a total of 1,599 members. He stated that the number of operators in the industry totaled 1,560 operators and 2,028 non-operator agricultural pilots, so NAAA operator and pilot members presently total only 29% of the aerial application industry. NAAA spends $1,592 per member based on $2.55 million in expenses in its 2021-2022 fiscal year. The dues it receives account for only 30.7% of total expenses. Moore also offered that it costs $1.68 per day for operators and $0.71 per day for pilots to belong to the association. He also presented the audited results of NAAA’s 2021-2022 fiscal year, which had NAAA running a deficit at the fiscal year’s end of $16,268. This was primarily due to unrealized losses on its investments of $84,449 due to financial markets entering difficult times due to high inflation. NAAA does have $4,767,261 in assets, and NAAREF has $1,012,533 in assets and ended its fiscal year with a surplus of $126,465.

Moore concluded with a forecast of challenges and opportunities looking forward into the future. He stated now that the administration’s agency appointees are in place, the all-out push toward stringent pesticide regulation is likely to continue; hence resources must stay focused on continuing to push the more realistic Tier 3 version of the atmospheric AgDRIFT model with the EPA and further establishing the C-PAASS certification program. He also stated that with the infrastructure focus on rural broadband and wind and solar renewable energy towers and panes available from the massive infrastructure and climate policy spending bills, the association and industry must stay focused on tower marking and logging and drone safety policy over the next year as Congress addresses the FAA Reauthorization bill.

On a positive note, he said that agriculture has never been more important in a majority of people’s lifetimes than it is now, with food security being a huge issue due to the war in Ukraine and rampant inflation. That doesn’t appear as if it will change anytime soon, as the United Nations predicts that today’s world population of 7.9 billion is projected to grow to 9.7 billion in 2050 and 10.4 billion in 2080. Moore also discussed the huge growth potential in renewable diesel from soybeans. In 2021 soybean production reached a record 4.44 billion bushels. To meet current renewable diesel demand, production must grow by 3.6 billion bushels by 2030. Chevron, Marathon, ADM and Bunge are making big investments in converting soybeans into fuel.

After Moore concluded his presentation, President Jim Perrin closed the session for the Board and Committee members to attend their committee meetings.

On Saturday afternoon, the committees reported on their business and offered motions for NAAA Board approval. Here are some highlights:

Allied & Convention Committee

The committees discussed Oklahoma City as a potential convention site. If NAAA were to host an Ag Aviation Expo in the city, it would be in 2027 and the main hotel would be at the new Omni, which directly abuts the convention center and two other hotels. It was determined that NAAA move forward to obtain a proposal from Oklahoma City. Other locations in the mix would be Louisville, Kentucky, and Indianapolis, Indiana. Also, the Allied Industry Committee discussed their award, and the 2022 award will be given to Ian McVay of Transland. Future contracted conventions are as follows:

- Dec. 5-8, 2022 – Knoxville (aircraft trucked in)
- Dec. 4-7, 2023 – Palm Springs (aircraft flown in and exhibited outside the convention center)
- Nov. 18-21, 2024 – Fort Worth (aircraft trucked in)
- Nov. 17-20, 2025 – Reno (aircraft flown in)
- Nov. 16-19, 2026 – Savannah (aircraft flown in)
- Nov. 11-16, 2028 – Reno (aircraft flown in)

Awards Committee

The committee reviewed award nominations and determined the following 2022 award recipients, which will be presented at the Ag Aviation Expo in Knoxville, Tennessee, at the Excellence in Ag Aviation Banquet on the evening of Thursday, Dec. 8:

- **Agrinaut Award** – George Parker III
- **John Robert Horne Memorial Awards** – Hayden DeBlieck and Alex Viger
- **Opal and Bill Binnion Memorial Award** – Matt Peed
- **William O. Marsh Safety Award** – Rod Thomas
- **Richard "Dick" Reade Memorial Award** – Steve Rice, North Star Aviation
- **Zoren and Joan O'Brien Memorial Outstanding Service Award** – Lee Turnquist
- **Allied Industry Individual Award** – Ian McVay, Transland/Satloc
- **Evans-Christopher Operation S.A.F.E. Award** – Matt Gill

Budget & Finance Committee and Treasurer's Report

Treasurer Darrel Mertens presented the Treasurer's Report repeating the results of the 2021-2022 fiscal year NAAA audit mentioned during the General Session above. Treasurer Mertens also mentioned that NAAA's fixed assets have gone down by about $40,000 due to the disposal of old equipment that the auditor recommended getting off the books. The year ended with a deficit of $16,269 due to expenses incurred for the 100th anniversary public relations blitz campaign to the media and a rough year for association investments due to inflationary pressures hitting the financial markets. The budget did far supersede expectations, with the deficit initially projected to be $114,618.

Regarding the current Fiscal Year beginning July 1, 2022, Mertens stated that total NAAA assets to date equal just over $5 million. The net income for this fiscal year, which is now 25% complete, is $277,176.

The Budget & Finance Committee recommended that the Board accept the Fiscal Year 2021-2022 Audit as presented, and the motion was approved.

Communications & Public Relations Committee

Matt Regier, Committee Chair, presented the committee report and reiterated that NAAA continued its public relations blitz to the broader aviation, agricultural and mass media by participating and issuing press releases about its involvement at the 2022 Ag Day on the Mall and AirVenture. In November, NAAA will attend the 2022 Aviation Education & Career Expo in Leesburg, Virginia, to recruit young students interested in aviation careers toward ag aviation.

It was announced that Tom and Amy May (NE) purchased a set of the 100th anniversary panels, which traveled around Nebraska and exhibited at the Nebraska Prairie Museum in Holdrege, NE. The "A Century of Agricultural Aviation: 1921-2021" panels remain on display at the Nebraska Prairie Museum.

It was announced that Syngenta will be hosting a Leadership Training Program in February 2023 for NAAA, which will allow 10 members nominated by their state associations to participate. The NAAA-only Leadership Training Program will coincide with NAAA's Spring Board Meeting. NAAA will also still have five spots in Syngenta's multi-group Leadership At Its Best Conference with other commodity groups held the week after NAAA's February Board meeting.

The committee spent the remainder of its time discussing the results of the 2022 NAAA Communications Survey and Moore's accompanying memo describing possible ideas to consider for steering the association's communications services based on the member survey's results, communications trends and other matters. Agricultural Aviation and the future of the magazine were discussed, along with NAAA's presence on social media and other digital platforms. An ad hoc committee was formed to discuss these matters further to come up with ideas for expanding NAAA's external communications based on the survey results.

Government Relations Committee

Committee Chairman Damon Reabe discussed that Glenn Holloway (MS) and other Mississippi applicators hosted an EPA field day tour at Shelby Air Service in the Magnolia State for senior EPA pesticide policy officials that was quite successful.

The committee discussed the Balmoral wire-marking equipment efforts that have been effective in Australia to attach to wires to make them more visible. This year NAAA worked to emulate similar efforts in the U.S. and will work to develop a presentation that applicators can use to present to their local utilities for possibly equipping wires with the Balmoral wire markers.

The committee discussed many of the items mentioned in the General Session above. It also established an ad hoc committee to conduct real-time risk assessments by inputting exact conditions in the field to its GPS/applicator software technology. Currently, the EPA uses spray drift risk assessments that estimate worst-case scenarios in the field, such as the highest winds being used, small droplets, maximum rates and multiple applications always being used. The focus of the ad hoc committee is to forward the idea to the EPA that by

inputting exact conditions at the site of the application (wind speeds, droplet size, etc.), more flexibility would be allowed to perhaps have truncated or wind-directional buffers, etc. based on safer conditions in the field at the time.

Long Range Planning Committee

The committee primarily focused on the future needs of the association, such as the importance of ensuring pesticides will be available and available for aerial use in the future and the collection of data and development of even more accurate application technologies that will need to be available to ensure this. As such, membership dues and revenue were heavily discussed. After deliberating, the committee recommended that the Membership Committee look at a 10% membership dues increase in 2024 and then increase membership dues by 5% every year beginning in 2025. This issue will be further debated at the February 2023 NAAA Board meeting.

Membership Committee

The committee reviewed the “Ag Wings of Tomorrow” Scholarship applications and selected four recipients. They will be honored at the Kickoff Breakfast on Monday, Dec. 5, in Knoxville.

The committee also discussed the generous offer from Jim Mills of Turbines Inc., in which he would like to fund a new NAAA scholarship specifically for turbine transition courses in memory of Charles Stokes. The scholarship would be around $66,000 over ten years, which would equate to two scholarships each year to a turbine transition program priced around $3,300 each. The committee will work on an application for nominees to develop the additional scholarship.

Three following three motions were brought to the Board and approved:
- Approval of Fran de Kock as an Honorary Member of NAAA.
- Approved a turbine transition training course scholarship generously funded by Jim Mills.
- Approved new members.

Museum Committee

The National Agricultural Aviation (NAA) Museum in Jackson, Mississippi, will soon include an ag aviation liquid/dry spraying system for display, and the Snow S-2A will be delivered to the NAA Museum after the Ag Aviation Expo in Knoxville, at which time the engine will probably be taken out, auctioned off and funds donated back to the museum.

The Board was also informed that NAAA is making headway in having Agriculture’s Air Force—the history book on the industry’s centennial—available for sale at the Jackson, MS, museum’s gift shop, and NAAA is also working with the Smithsonian for the book to be available at the National Air & Space Museums in the Washington, D.C., area.

Nominating Committee

The Nominating Committee recommended the following people for the 2023 NAAA Officer team, which will be voted on at the Sunday, Dec. 4, 2022, board meeting:
- President – Craig Craft (NC)
- Vice President – Dwayne O’Brien (LA)
- Secretary – Sam Styron (MO)
- Treasurer – Ray Newcomb (NH)

Precision Agriculture Committee

The committee discussed several items, including autonomous spray systems, potential grant money for the development and testing of an autonomous aerial spray system, and that applicators need to provide their GPS data to the Mississippi State University’s (MSU) Raspet Flight Research Laboratory (RFRL) **low-altitude study** to help protect manned ag aircraft from errant drones. The Precision Agriculture Committee is also working on a substantive session that will take place at the Ag Aviation Expo that will include a panel of operators who use various precision agricultural technologies.

Research activities of the USDA-ARS Aerial Application Technology Research Unit were discussed, including new nozzle development, comparing spray application rates, an economic analysis of the ag aviation industry, how aircraft height impacts drift, and integrating onboard weather measurement with individual spray nozzle control.

Also, an ad hoc committee was formed to work on recoding the AgDISP atmospheric drift modeling software and investigating potential funding sources. The rewrite will include both moving the program to a more modern programming language as well as improving the accuracy of the model for manned ag aircraft and to project the movement of drift from drones, and to allow it to be used real-time in an ag aircraft.

Support Committee

It was stated that this year's presentation for the Athena program—the program for agricultural aviation crew—is titled "The Importance and Challenges of Balancing Family, Home and Work." Chuck Holzwarth is sponsoring the presentation at the 2022 Ag Aviation Expo. The Athena presentation will also be given at ten state/regional conventions.

Convention events for Support include Monday's event at the Sunsphere—the site of the 1982 World's Fair. Also, the Relationship Drift seminar will be presented at the convention on Dec. 7, which discusses ways ag pilot/operators and their working spouses might work better together during times of work stress. There will also be a fundraising booth in Tennessee with great apparel, including 100th anniversary apparel again. The committee reviewed and awarded scholarships for the 2022 Support Scholarship Media Contest, with the first prize essay going to Daxton Swain and second prize to Kelsey Shotkoski. The essay topic for 2023 is "What value does ag aviation bring to your local economy?" and that information will be posted on the NAAA website and other association publications/media. Tiffany Rivenbark will be the next Support Committee Chair for 2023-2024.

NAAREF Report

PAASS Train the Trainer took place on Wednesday and Thursday, Oct. 5-6, to train the presenters of this season's program. The primary topics will be wire strikes, utilization of large spray droplets to balance efficacy with drift mitigation and security incidents of fuel contamination.

The NAAREF Board discussed requests for virtual PAASS presentations for the state/regional agricultural aviation associations. It was determined, with substantive input from allied industry companies, that to protect the fiscal well-being of state and regional associations, all PAASS programs shall be in-person except for a virtual program that will take place at the end of the convention season.

A reiteration of the certified professional aerial application safety program known as C-PAASS was made. It begins in 2023. The requirements for C-PAASS are:

- Annual Membership in NAAA (2023)
- Annual Membership in a state or regional agricultural aviation association (2023)
- Annual PAASS (Professional Aerial Applicators' Support System) attendance (three out of the past three years: 2022-2023 season, 2021-2022 season, 2020-2021 season)
- Biennial Operation S.A.F.E. (Self-regulating Application and Flight Efficiency) participation (one out of the last two years: either 2022 or 2023)

Moving into 2024, NAAA will offer supplementary online training content through its forthcoming learning management system.

The NAAREF Board brought the following two motions to the NAAA Board of Directors that were approved:

- Endorsement of the "C-PAASS: Certified-Professional Aerial Applicator Safety Steward" professional certification program.
- Approval of a second NAAREF Board term for Perry Hofer and Eric Rojek and to bring Ray Newcomb to the NAAREF Board. All terms commence at the beginning of 2023.

Many cowboy hats and oil wells full of business were conducted in Oklahoma City on behalf of the aerial application industry last week, and a return to the Sooner state for the Ag Aviation Expo is hoped for due to the red-carpet treatment and excitement provided by Oklahoma City.

EPA Proposes Endangerment Finding for Lead Emissions from Aircraft Engines Using Leaded Fuel

On Oct. 7, the EPA announced a proposed determination that emissions of lead from aircraft that operate on leaded fuel cause or contribute to air pollution that may reasonably be likely to endanger public health. Under the Clean Air Act, the EPA analyzes sources and information on air pollutants to determine whether they pose a threat to human health or welfare. This finding is referred to as an endangerment finding which, if finalized, is the first step forward to using the EPA's authority to address this source of lead pollution.

Levels of airborne lead in the United States have declined 99% since 1980, but aircraft that operate on leaded fuel are still the largest remaining source of lead emissions into the air, according to the EPA. The proposed endangerment finding will go through public notice and comment. After evaluating the comments, the EPA plans to issue any final endangerment findings in 2023. If the proposed finding is finalized, afterward, the EPA would propose regulatory standards for lead emissions from aircraft engines.

Last month, General Aviation Modification Inc.'s 100 octane unleaded avgas, G100UL, received complete approval for its fuel use in all spark-ignition piston engines in the FAA's type certificate database and every airframe powered by those engines. The engines include both low- and high-compression engines used in agricultural aviation, such as the P&W 1340, and horizontally opposed engines used in Cessna and Piper agricultural aircraft and several helicopter models.

Any qualified refiner or blender of fuel may be licensed to produce this fuel. Ann Arbor, Michigan-based fuel supplier Avfuel is standing by to manage the logistics and distribution of G100UL. Initially, G100 is expected to be more expensive than current 100LL avgas, but the price should come down as sales volume increases. In addition, an unleaded avgas will potentially cause fewer maintenance issues, spark plugs should remain clean, and oil changes can be extended. More about unleaded avgas is available **here**.

FarmWeek Now Covers Joe Curless's Cover Crop Work

FarmWeek Now featured the farm stewardship practices of NAAA member Joe Curless **this week**. Curless of Farm Air Inc. and Curless Flying Service in Astoria, Illinois, has improved the soil makeup of his farm through a combination of aerially seeded cover crops and strip-tilling. He has been aerially applying cover crops on his farm since 2008. The results he has achieved through those experiences lead Curless to believe "he's found some systems that make using cover crops more convenient with significant results," *FarmWeek Now* reports.

In addition to being around aerial application most of whole life—Joe's father Harley Curless founded Curless Flying Service in the late 1970s—with undergraduate and master's degrees in agronomy, Joe has a background in weed science. That enabled him to get creative as he sought to improve the soil health of his farm and retain fertilizer in his fields.

Per *FarmWeek Now*:

> For fields he plans to rotate from corn to soybeans, he has cereal rye and dwarf essex rapeseed aerially applied into standing corn. He'll allow the cover crops to reach "chest high" and will seed using a crimper ahead of the soybean planter in spring. After seeding soybeans, he ground-applies glyphosate and 2,4-D to fully terminate the two cover crops and winter annual weeds.
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> "By having that cover (crop) there it holds (the P and K) in place for the (cash) crop so hopefully we can recoup a little bit of the fertilizer expense at some point."
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> When rotating from soybeans to corn, Curless used two strategies this year. First, he had triticale and dwarf essex rapeseed aerially applied last fall into standing soybeans, and strips created in late November. In early May this year, he had the lush layer of triticale ground-terminated with glyphosate and 2,4-D and planted corn into the strips.
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> "The triticale goes out and grabs the free nitrogen beneath the soybeans, said Curless. "It holds it in organic form or into the root system over the winter and releases it in the spring to the cash crop."
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> Curless cites University of Illinois at Urbana-Champaign research that shows double-digit losses of nitrogen naturally fixed by soybeans as another reason for his cover crop use. Last fall, he also had red, white and crimson clover aerially applied into standing soybeans. He harvested the soybeans in October and strip-tilled in November. The clover bloomed this spring creating a colorful sea of early habitat for pollinators. After the cold and wet start this spring, he planted corn into the strips in mid-May.
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> "If we're putting the cover crops there, we're grabbing those units of additional nitrogen and holding those in organic form over the winter during those high erosion events," said Curless. "We're keeping that P and K and other micronutrients in that soil in place."

For more on Curless's cover crop methods, check out the **video and audio recordings** of Curless that accompany *FarmWeek Now's* article.

NAAA CEO Discusses Ag Aviation Trends with Ag Pubs

NAAA CEO Andrew Moore was recently interviewed by *Farm Progress* and the *Argus Observer* for its Farm & Ranch issue. *Farm Progress's* article, **"Aerial application adapts to changing needs,"** came out this week, while the *Argus Observer* piece was published Sept. 28 under the headline **"New technology makes aerial applications more precise."**

In the *Farm Progress* interview, Moore discussed the aerial application industry's changeover from "more of a 911 business" in the past to more of a planned-application approach today, precision-application technologies, ag aircraft developments and more.

In the *Argus Observer*, Moore discussed how the aerial application industry has evolved over its 101-year history, how his agricultural background (Moore comes from a four-generation farming family) "really helps me appreciate this industry," precision-application technologies and the advantage of aerial applicators being able to treat fields above the crop instead of in it, which produces higher crop yields as a result.

Ag Aviation Expo Attendee Pre-Reg Closes Nov. 4; Room Block Closes Nov. 14

NAAA is excited to host our annual convention in Knoxville Dec. 5–8. We still have plenty of hotel rooms available at the Crowne Plaza and Hyatt Place in the **NAAA room block** for those who haven't booked a room or are still undecided. The deadline to book your hotel room in the NAAA block is Nov. 14.

If you're attending, we urge you to **pre-register by Nov. 4** to help us reduce lines at the registration desk and have accurate food/beverage counts, especially if you're attending the **Kickoff Breakfast** to hear from Captain Scott Kelly, history-making NASA Astronaut who completed the first Year-In- Space mission.

In addition to attendee registration, please also register for the following events:

1. **Flying in the Wire and Obstruction Environment Course**, which is acclaimed by professional airplane and helicopter operators world-wide. It gives low-altitude aviators the essential skills needed to safely operate an aircraft in wire and obstruction environments. This course is for both aircraft and helicopter pilots. Learn how to identify signs of wires and why ag aviators hit wires they already knew were there. This course may very well save your life—don't miss it. $100 per person; **register online**.
2. **AXEing for PAASS** is a fundraising event for NAAREF's PAASS program where axes are thrown by a participant at a giant dartboard-like target. Anyone can play and win! Join us for this friendly competition on Sunday, Dec. 4 at 7 p.m. This is a terrific social event with the added benefit of raising money for PAASS and the lifesaving, environmental stewardship benefits it provides. $110 donation to NAAREF per person; **register online**.
3. **Support Committee's Monday Lunch at the Sunsphere**, which was built for the 1982 World's Fair and is a one-of-a-kind structure. The Observation Deck offers a breathtaking 360-degree view stretching from downtown to the Great Smoky Mountains including World's Fair Park, the Tennessee River and the University of Tennessee Campus. Event RSVP is required to **Cathy Ellett**.

We look forward to seeing you in December for networking, education, **CEUs** and a really good time!

Details for the 2022 Ag Aviation Expo

- **Dates:** Dec. 5-8, 2022
- **Location:** Knoxville Convention Center
- **Kickoff Breakfast Speaker: Captain Scott Kelly**, first astronaut to complete a year-in-space mission.
- **General Session Speakers: Dr. Stan Musick & Michelle Miller**
- **Schedule of Events:** See the current, tentative schedule **here**.
- **Hotel:** Details **here**.
- **Attendee Registration: Now open**! **Pre-registration deadline Nov. 4.**
- **Exhibitor Booth Sales Information**
- **Sponsorship Opportunities:** Sponsorships are now available. View the **opportunities here**. Please **email Lindsay** if you would like to secure a sponsorship from last year or would like to be contacted about 2022 opportunities! We have sponsorships available for all budget sizes.
- **Auction Donations: Thank you to Pratt & Whitney Canada for donating a PT6-34AG engine and Air Tractor for donating a custom golf cart. For more details on donating an item or viewing items donated, visit our Live and Silent Auction page**. Your item will appear on the NAAA website and in the NAAA Expo App. Support the aerial application industry by donating an item today. **Email Lindsay** with your donation details.

Flying in the Wire and Obstruction Environment Course to be Offered at Ag Aviation Expo

On Sunday, Dec. 4, in Knoxville, NAAA is hosting a Flying in the Wire and Obstruction Environment Course, acclaimed by professional airplane and helicopter operators worldwide. This course is for both fixed-wing and helicopter pilots. It gives low-altitude aviators the essential skills to safely operate an aircraft in wire and obstruction environments. Learn how to identify signs of wires and why ag aviators hit wires they already knew were there. This course may very well save your life—don't miss it. The cost to attend is $100 per person, and you can register **here**.

The course is taught by Utilities/Aviation Specialists Inc., a unique group of aviation safety practitioners who provide safety auditing, specialized training, installation of safety management systems, and technical aviation consulting. They provide mission-specific expertise in specialized applications which require skill sets above those found in most routine transport operations. Learn more about Utilities/Aviation Specialists Inc. at **helicoptersafety.com**.

The course will take place at the Knoxville Convention Center on Sunday, Dec. 4, from 8 a.m. to 1 p.m.

New Bell Helicopter AD Adopted

The FAA is adopting a new airworthiness directive (AD) for certain Bell Textron Inc. Model 204B, 205A and 205A-1 helicopters and various restricted category helicopters. **AD 2022-21-11** was prompted by a report of cracked main rotor blades (MRBs). This AD requires repetitive inspections of each MRB and removing any cracked MRB from service.

AD 2022-21-11 goes into effect Nov. 16. On and after this date, an inspection is required before the first flight of each day, with further action required if an indication of a crack is found. The complete AD is available **here**.

Honeywell Unveils Ethanol-to-Jet Fuel Process to Tap Sustainable Aviation Fuel Demand

Honeywell announced that it has a new ethanol-to-jet fuel processing technology that will enable producers to convert corn-based, cellulosic or sugar-based ethanol into climate-friendly aviation fuel. The company claims its sustainable aviation fuel process, or SAF, can cut greenhouse-gas emissions by 80% on a total life-cycle basis versus petroleum-based jet fuel. The U.S. and Europe have announced goals to boost the production and use of sustainable fuel in the aviation industry.

CapstanAG Gets STC for SwathPRO Aerial Spray System

CapstanAG's SwathPRO aerial spray system has received its STC from the Federal Aviation Administration, the company announced Oct. 3. It is now available for sale as a factory-installed option on new Air Tractor aircraft and retrofit installation on customer airplanes through the Air Tractor worldwide dealer network.

"The SwathPRO aerial spray system will revolutionize the way ag pilots accomplish their work. Since its debut at the 2018 National Agricultural Aviation Association convention, there has been a tremendous amount of interest in the system. We're excited to now offer it exclusively through an industry leader like Air Tractor," Jeff Hemeyer, CapstanAG's national account sales manager, said.

The patented individually optimized nozzle spray system has an electronic solenoid at each nozzle station that controls both flow and pressure to adjust for pattern disturbances during flight. "Utilizing the CapView in-cockpit controller, the pilot can push a button to select from as many as seven different nozzle pattern profiles to adjust deposition characteristics as conditions change while spraying a field," reports Hemeyer. "All of this is done 'on the fly.' There is no need to land and adjust spray nozzle settings."

Each SwathPRO nozzle station controls both flow and pressure.

Air Tractor President Jim Hirsch says aerial applicators have a new way to streamline their operational efficiency and mitigate drift. "There are numerous benefits to the SwathPRO aerial spray system. It will save pilots time and boost their productivity."

An Air Tractor airplane equipped with the SwathPRO spray boom system will be displayed in December at Air Tractor's booth during the 2022 NAAA Ag Aviation Expo trade show. The SwathPRO team will also be on hand to explain how the aerial liquid spraying system helps ag pilots mitigate drift, increase productivity and precisely apply crop protection products with better accuracy. "This will be a great opportunity to learn and ask questions," Hirsch said.

"Multiple Air Tractor test aircraft equipped with SwathPRO aerial spray systems have collectively treated more than 2 million acres here in the United States during the past four seasons," Hemeyer reports. "Feedback from those pilots and ag operators who've been testing our equipment has been quite positive, informative and helpful."

For more information about the SwathPRO system, visit **airtractor.com/swathPRO** or contact an **Air Tractor dealer**.

NAAA Supports Aerial Use of Atrazine and Other Vital Pesticides as EPA Continues to Reverse Reregistration Decisions

Last week NAAA commented on the EPA's proposed revisions to its 2020 final registration review decision for atrazine. In the 2020 decision, the EPA set the aquatic level of concern or LOC (the level at which atrazine would be predicted to have a potentially harmful effect on aquatic organisms) at 15 parts per billion (ppb). In response to a lawsuit from environmental groups, the EPA issued proposed revisions seeking to lower the LOC to 3.4 ppb. This lower LOC is not supported by scientific research and dramatically increases the acreage where atrazine use would be expected to cause harm to aquatic sites. The proposed revisions also include several mitigations the EPA claims are now necessary in order to deal with the much higher risk it now claims atrazine represents.

NAAA successfully fought to retain aerial application for atrazine in the 2020 final registration review decision, but that is now in jeopardy. The proposed revisions seek to ban aerial applications. They also seek to prohibit ground applications to saturated soils and within 48 hours of a storm event. NAAA objected to the proposed ban on aerial application and explained why the additional restrictions on application timing would increase the demand for aerial application. NAAA also pointed out soils don't have to be saturated before it becomes impossible to operate a ground rig on them and that there is no logical reason to ban aerial application of atrazine in those situations.

Unfortunately, the EPA's reversal on atrazine is only one of several recent examples where instead of fighting lawsuits from environmental groups, the agency is caving into their demands and agreeing to change or revisit registration review decisions. Paraquat was reregistered in 2021, and NAAA was successful in retaining aerial application despite the original proposed interim decision suggesting it be banned. However, in July, the EPA requested a voluntary remand of paraquat's interim registration. At this point, paraquat is still legal to apply based on the 2021 decision, but the EPA will have to go through the entire registration review process for paraquat again. NAAA fully expects a proposed ban on the aerial application of paraquat to be back on the table at some point in the process. Similar to atrazine, the decision to remand the 2021 registration review decision for paraquat was not based on science but instead on a lawsuit from environmental groups.

It doesn't stop there. As reported **last week**, the EPA is currently reviewing a petition by numerous worker and environmental activist groups demanding the EPA ban 15 organophosphates. The week before, the EPA withdrew the 2020 interim registration review decision for glyphosate. Similar to paraquat, this doesn't mean the product is banned. At this point, it can be applied according to the labels agreed upon in the 2020 interim decision. It does mean glyphosate will have to go through the registration review process again.

These recent decisions by the EPA to throw out registration review decisions in the face of lawsuits from environmental groups are very concerning to NAAA and others involved in agriculture. It calls into question who is calling the shots on the pesticide review process and whether sound science or alarmist comments are more important in the process. All of this adds to the already mounting pressure on the EPA to meet its legal obligations to **make registration review deadlines** and adequately **protect endangered species**.

NAAA will continue to closely monitor these reversals and continue the fight to ensure aerial application of these critical ag products is an option for farmers.

NAAA Comments on Osprey Agridrone Solutions' Petition for Relief from FAA Safety Requirements

On Sept. 29, NAAA submitted comments on a petition for relief from Osprey Agridrone Solutions to specific safety requirements within Federal Aviation Regulations (FARs) 14 CFR § 61, 91 and 137 to perform agricultural operations, including commercial applications with drones over 55 pounds. Since the drones are heavier than 55 pounds, they do not operate under FAR Part 107—regulations for commercial drones under that weight—and are required to request relief from the FAA to be exempt from certain parts of the FARs to operate.

NAAA's comments opposed the requests for exemptions dealing with airworthiness, safe altitudes, fuel requirements and maintenance and reiterated that the requirements for heavy drones outside of FAR Part 107 should be identical to those of manned aircraft. NAAA also commented on unsubstantiated and inaccurate claims made in a document prepared for Osprey Agridrone Solutions by UASolutions Group LLC as to the purported advantages of unmanned applications over manned applications. Since one of the risk mitigations that Osprey Agridrone Solutions is promoting is that the operations will occur *"under controlled conditions in predetermined airspace that is, 1) Limited in scope 2) Controlled as to access by mission essential personnel only,"* NAAA reminded the FAA that the national airspace (NAS) is not private, and access is not controlled by private entities. Short of temporary flight restrictions, the NAS is accessible to aircraft such as manned agricultural aircraft to properly do their jobs.

Other claims made and NAAA's response are as follows:

Osprey Agridrone Solutions' claim that its drones *"reduced exposure to chemicals for applicators"* was met with the NAAA response that there is a far greater likelihood due to the small hopper size and exponentially more times a worker will have to refill a small drone that it will result in greater exposure to chemicals for those workers. The drone will most likely be refilled at a temporary site in or near the field, where the lack of closed-contained facilities will make decontamination difficult.

Osprey Agridrone Solutions' claim that its drones' *"reduction in chemical drift compared to manned aircraft application and reduced exposure of surrounding beneficial vegetation"* was met with the NAAA response that the claims were completely unproven and that drift from drones has not been adequately studied. Moreover, there are many factors that indicate drift from a drone will be equal to or greater than from manned aircraft. Drones are light and do not have the weight necessary to bring the product down to the crop canopy. The multi-rotor design appears to send the spray in many different directions, and to get a decent spray pattern requires drones to apply at about 10 to 12 feet above the crop canopy, which is the same height as manned aircraft.

Osprey Agridrone Solutions' claim that its drones result in a *"more environmentally friendly application with reduced noise"* was met with the NAAA response that while the decibels may be lower, the time spent in the area will be substantially longer due to a drone's low productivity, causing the acoustic imprint to remain. One of the most promising developing uses for drones is hazing (harassing) blackbirds in sunflower fields to prevent depredation. Such a use would require continuous activity in the blackbird-invaded area with the constant audible whining of the drone. Unlike the claims made, drones are not environmentally benign either audibly, to the physical land or to human exposure.

Osprey Agridrone Solutions' claim that its drones result in a more *"selective use of chemicals for a safer more targeted application, and better value for the customer"* was met with the NAAA response that there is no difference in the selectivity in the use of chemicals between unmanned and manned aircraft. Manned aircraft operators are constantly looking for the best value for the customer. Manned aircraft can and do perform variable rate and selective applications when it is of value to the customer.

NAAA's comments may be viewed **here**. While the requests for relief have become routine, NAAA continues to comment against parts of the requests it believes make the airspace less safe for manned aircraft and the general public.

AgTech Firm Taranis Secures $40M in New VC Funding

Taranis, an Israeli-based company that provides AI-powered crop intelligence, has raised $40 million in a new round of venture capital funding, bringing its total funding to $100 million, the company announced.

Bar Veinstein, Taranis' CEO, said, "I'm excited about our growth trajectory. The new funding will allow us to accelerate our three-year plan, rapidly expand our operations and deliver transformative technology to the market faster."

"We see a tremendous need for crop intelligence at scale as growers deal with soaring costs and a constant need to increase productivity and yield," Ofir Schlam, Taranis' president & co-founder, added.

Taranis' crop intelligence platform uniquely leverages leaf-level imagery and is powered by cutting-edge machine learning that utilizes a crop data set of more than 200 million AI-data points. According to the company, it delivered "millions of actionable insights to ag advisors and growers" in the most recent growing season.

Schlam spoke at NAAA's 2019 Ag Aviation Expo about Taranis' innovative aerial imaging technology and the synergies it could present to

agricultural aviation operations by mounting Taranis' proprietary high-tech camera pod to ag aircraft. Although Taranis relies on satellites, manned aircraft and UAVs to provide images of various resolutions, Schlam said manned aircraft is the best vehicle to take aerial images due to its speed and altitude and told NAAA Expo attendees that ag pilots are ideally suited for this type of flying.

In Taranis' announcement of its latest round of funding, Andre Ronsoehr of Seraphim Space Manager, one of Taranis' new investors, said, "When we discovered Taranis, they immediately stood out to us, given their sub-millimeter imaging capabilities. These images unlock early detection of nutrient deficiencies and diseases, which is the key to improving crop yields."

Since starting in 2015, **Taranis** has worked with the world's top agricultural retailers and crop protection companies, including BASF, Climate Corp., Nutrien and Syngenta, and serviced millions of acres for customers in the United States, Brazil and Europe. Taranis has offices in Westfield, Indiana, Tel Aviv, Israel, and Campinas, Brazil.

Farmers Deserve Notification Act Introduced

On Sept. 29, Reps. Jim Baird (Ind.-04) and Cindy Axne (Iowa-03) introduced the Farmers Deserve Notification Act, which would give farmers nine months to adapt to any new restrictions on pesticides. The bill would stop the EPA from canceling, suspending or enacting new restrictions on pesticides without first providing a 270-day advance notice in the Federal Register. If the latest data requires new restrictions to go into effect sooner than the 270-day notification requirement in the bill, it can be waived by a majority vote of the independent FIFRA Scientific Advisory Panel.

In the Farmers Deserve Notification Act's release statement, the representatives shared that farmers typically make input decisions months in advance, and last-minute changes have significant impacts on farmers' growing seasons, especially with recent supply chain bottlenecks.

The bill is supported by the Agricultural Retailers Association, the American Soybean Association, American Sugarbeet Growers Association, California Specialty Crops Council, Indiana Corn Growers Association, Indiana Soybean Alliance, Indiana Farm Bureau, Iowa Soybean Association, National Association of Wheat Growers, National Agricultural Aviation Association, National Onion Association, National Sorghum Producers and the North Dakota Grain Growers Association.

NAAA Support Committee Events at Ag Aviation Expo

We look forward to seeing you at the 2022 NAAA Ag Aviation Expo in Knoxville Dec. 5-8. The NAAA Support Committee has organized fun events at the Ag Aviation Expo for spouses/significant others, family members and office crew. Save $75 by pre-registering by Nov. 4 for what promises to be an outstanding convention!

2022 Ag Aviation Expo Support Committee Events

Monday, Dec. 5: Lunch & Tour of the Sunsphere: (RSVP required) 11:30 a.m.–2:30 p.m.
Join us for Monday's lunch and tour of the Sunsphere, which was built for the 1982 World's Fair and is a one-of-a-kind structure. The Observation Deck offers a breathtaking 360-degree view stretching from downtown to the Great Smoky Mountains including World's Fair Park, the Tennessee River and the University of Tennessee Campus. The Sunsphere offers a 1982 World's Fair timeline, gallery, memorabilia and gift shop. RSVP required for event to Cathy Ellett at **catellett@gmail.com**. *Sponsored by GarrCo Products Inc.*

Wednesday, Dec. 7, 8–9:30 a.m.: NAAREF Relationship Drift
(no RSVP required)
The Relationship Drift Session will look at how personal relationships affect pilot decision making and safety. Men and women should attend this session together, including couples and office crew. This is similar in format to the popular Com*paass* Rose program, but instead of better facilitating relations between inexperienced pilots and more experienced operators, the new session is designed to facilitate relations between operators/pilots and their spouses or significant others and office crew. All are invited!

Wednesday, Dec. 7, 9:45–11:45 a.m.: Athena Project Presentation
(no RSVP required)
Attend the Wednesday Athena Project presentation, The Importance & Challenges of Balancing Work and Home. The program is written by the Athena presenters and committee for the office bookkeepers, the working loaders, operators, pilots and family members. The program covers information that is beneficial to anyone in the industry and family members. Attend this session, whether you're a spouse, office crew or family member, to gain inspiration, encouragement and advice on better ways to serve our industry. All are invited and no RSVP is required. *Sponsored by Chuck Holzwarth Flying Service.*

NAAA CEO Discusses Ag Aviation on American Ag Today

NAAA CEO Andrew Moore discussed agricultural aviation on the Sept. 28 episode of the *American Ag Today* podcast. During his conversation with host Jesse Allen, Moore discussed technological innovations in the agricultural aviation industry over its 101-year history, the advantages of aerial application over other application methods, and several other topics.

"You're able to treat four to five times the amount of land than any other form of application, and when you're looking at pest pressure—whether it's [an] insect, whether it's a fungus, whether it's a weed—the faster you get to it, the better the yield harvest will be for that

farmer," Moore said.

He also talked about aerial application's role in combating weed resistance. "When you're dealing with weed resistance now with a lot of the herbicides, you have to get to that weed when it's at a certain size. Once it grows to a certain length or maturity, it's much more difficult to eradicate," Moore explained. "It might be seeding and spreading, so aerial application can get to that crop disease, whatever it is, much faster than and at that pest's more-vulnerable point to eradicate it."

Allen asked what the agricultural aviation industry is doing to improve efficacy and mitigate drift. Moore cited a litany of technologies and techniques aerial applicators use, including 100% adoption of GPS systems for precise accuracy and the use of smokers and onboard meteorological measurement systems, which track wind speed direction, barometric pressure, humidity and other conditions in real-time and feed that data into the GPS unit for even greater accuracy, which is especially handy for treating the edges of fields. The industry has also made tremendous strides in improving the aircraft spray system's setup over the past 30-plus years.

Allen brought up using unmanned aircraft for spraying. "We do have a few members that are using drones for application," Moore said. "It's still very small. They are small for the most part—they're slow and small—but I think they have a niche. They can go to areas we wouldn't go to because they're too maybe cramped with obstacles and an aircraft couldn't get in there. But right now, in terms of treating the scope that we treat, 127 million acres out of 347 million acres … the [unmanned] fleet is just way too small and slow to come close to being able to treat that."

Moore estimated that spray drones only make up a quarter of 1% of the industry. That could change as technologies and regulations change, he added.

Allen also inquired about regulations or other pertinent issues NAAA is working on. "We work with the agencies to make sure products are registered and let them know about our technological advances, and also let them know that without aerial application and the judicious use of pesticides, we have to remember that there'd be far more land that would be used for farming, and that could take away endangered and threatened species habitat, it could take away carbon-sequestering forests, it could take away water filtering wetlands," Moore said.

"We consider ourselves climate-smart agriculture," he continued. "We're seeding cover crops. That's a huge issue now at the end of the season, where we're putting out cover crops over the cash crop.… We consider ourselves really part of the solution, and we need to make sure that the regulatory agencies take that into account."

Listen to the full podcast interview **here** or wherever you get your podcasts. *American Ag Today* is a production of the American Ag Radio Network. The "Talking Ag Aviation" episode debuted Sept. 28, and a condensed version of Moore's interview aired Oct. 3 on *American Ag Today* on SiriusXM Rural Radio 147.

NAAA Comments to EPA to Ensure Reregistration of Key Pesticides, Such as OPs, Remain Available for Aerial Use

On Sept. 25, NAAA submitted **comments to the EPA** on a petition to revoke all food tolerances and cancel registrations for what the petitioners claim are harmful organophosphate uses. The petition was submitted by numerous worker and environmental activist groups and covers 15 individual organophosphates currently going through the registration review process. The petition is in response to the EPA delaying the deadlines for finishing the registration reviews for the organophosphates. The petitioners claim this is unacceptable due to their belief that organophosphates poison people.

The petition mentions aerial application several times, claiming it represents the highest risk of drift to bystanders and that mixers and loaders supporting aerial applications cannot be adequately protected. Because the risk assessments the petitioners refer to were conducted using the Tier 1 AgDRIFT model, NAAA reminded the EPA about the inaccuracies of this model and once again implored them to begin using the Tier 3 model with realistic assumptions as detailed years ago by NAAA in a separate letter to the agency which has included numerous follow-up meetings. NAAA also made suggestions on PPE and engineering controls that would reduce the risk to mixers and loaders. In addition to our comments, NAAA signed on to **a letter from a coalition of agricultural groups**—including the Agricultural Retailers Association,
American Soybean Association, American Sugarbeet Growers Association and the California Specialty Crops Council—objecting to the petition.

The week prior, NAAA submitted comments on the Biological Evaluation (BE) for sulfoxaflor. A BE is the first step in the registration review process aimed at protecting endangered species. The BE for sulfoxaflor was also based on the use of the Tier 1 model in AgDRIFT, so NAAA commented on using Tier 3 again as well as once again promoting that the buffer zones the EPA is proposing should be wind directional. One of the mitigation options mentioned in response to the BE was to ban aerial application of sulfoxaflor on crops where aerial application is not used frequently. NAAA reminded the EPA that aerial application may not be a normal option for certain crops and pesticides but can become a critical option during pest outbreaks or when weather restricts other application platforms.

Earlier in September NAAA commented on the proposed interim decisions (PID) for tebuconazole and triadimefon/triadimenol. These PIDs were encouraging as they both acknowledged progress being made in regard to the EPA shifting to the Tier 3 AgDRIFT model with realistic assumptions. The PID for triadimefon/triadimenol proposed a maximum wind speed of 10 mph for aerial applications, which NAAA objected to, citing numerous recent PIDs that have allowed aerial applications in wind speeds up to 15 mph.

NAAA continuously monitors pesticide registration review activities and comments as needed to ensure aerial application remains on the labels.

EPA's Pesticide Registration Review Deadline (Oct. 1): Status Update and Plans for Remaining Work

The Federal Insecticide, Fungicide, and Rodenticide Act's (FIFRA) pesticide registration review deadline is Oct. 1, per the statute's 15-year reregistration schedule. Pesticides without finalized review as of this deadline can remain on the market and be used according to the product label. The EPA will continue to review all remaining pesticide cases in the meantime.

In the past 15 years, the EPA has:

- Completed 685 draft risk assessments (94% of the total number of cases), evaluating the potential for human health and ecological effects of a pesticide.
- Completed 633 proposed interim decisions or proposed final decisions (87% of the total number of cases), which present the EPA's responses to public comment on draft risk assessments and which propose label mitigations and/or restrictions so that a pesticide product can continue to be used safely.
- Issued 431 interim decisions (60% of the total number of cases), which explained any changes to what had been proposed, responded to significant public comments and required registrants to submit any product label amendments needed to protect human health and the environment.
- Issued 151 final decisions (21% of the total number of cases), which document any changes to what had been proposed, respond to significant public comments, and require registrants to submit any product label amendments needed to protect human health and the environment.
- Of the 582 interim or final decisions, 140 cases resulted in cancellations of some or all uses (19% of the total number of cases).

Of the 726 total cases, 461 are conventional agricultural pesticides. Conventional pesticides are generally produced synthetically and are used to prevent, mitigate, kill or repel any pest. They may also act as a plant growth regulator, desiccant, defoliant or nitrogen stabilizer. For conventional pesticide cases, the EPA has:

- Completed 99% of the draft risk assessments, completed more than 90% of the proposed interim decisions and issued more than 80% of the final or interim decisions.
- Canceled some or all uses in 25% of cases with final or interim decisions.
- Required human health and/or ecological risk mitigation for nearly 70% of cases for which the EPA completed interim or final decisions.
- Required new or additional personal protective equipment requirements and/or engineering controls for 98% of cases where the EPA required mitigations to protect human health.
- Required application rate reductions in 60% of cases, changes to restricted entry intervals in 30% of cases and use cancellations in 20% of cases where the EPA required mitigations to protect human health.
- Instituted requirements to reduce pesticide drift for 80% of cases where the EPA required mitigations to protect from ecological risks.
- Set requirements to reduce pesticide runoff, such as no-spray buffer zones, vegetative filter strips and/or application rate reductions for more than 20% of cases where the EPA required mitigations to protect from ecological risks.

Of the 726 total cases, 265 are nonconventional pesticides (140 antimicrobial pesticides and 125 biopesticides). Antimicrobial pesticides are intended to disinfect, sanitize, reduce or mitigate growth or development of microbiological organisms, or prevent contamination caused by bacteria, viruses, fungi, protozoa, algae or slime. Biopesticides are pesticides derived from natural materials like animals, plants, bacteria and certain minerals. For these cases, the EPA has:

- Completed final or interim decisions for 71% of antimicrobial cases.
- Canceled some or all uses in more than 30% of antimicrobial cases with interim or final decisions.
- Finalized human health and/or ecological risk mitigation for nearly 30% of antimicrobial cases with interim or final decisions.
- Increased personal protective equipment requirements and/or engineering controls for more than 65% of antimicrobial cases where the EPA required mitigations to protect human health.
- Completed final or interim decisions for 98% of biopesticide cases.

While the EPA has completed final or interim decisions for all but 144 of the 726 total pesticide cases, the agency has been delayed in its ability to issue many final decisions. According to the EPA, delays are due to receiving data from registrants, a lack of resources to respond to ongoing and increasing litigation, and the scientific complexity associated with many of the pesticides yet to go through the registration review process. As further described below, the EPA also must comply with the Endangered Species Act (ESA) and Endocrine Disruptor Screening Program (EDSP) obligations and complete cumulative risk assessments before its registration review work can be finalized.

Background

In 2007, an amendment to FIFRA formalized a requirement that the EPA review each registered pesticide every 15 years to determine whether pesticides continue to meet the standard for registration—that they do not present unreasonable adverse effects on human health or the environment. This amendment set the first registration review deadline as Oct. 1, 2022. During the registration review process, the EPA has completed work plans, draft risk assessments, proposed interim decisions/proposed decisions and interim decisions/final decisions. Throughout this process, the EPA makes its information, assessments and supporting material for each case available to the public through each case's docket at **www.regulations.gov**. There are 726 conventional, biopesticide and antimicrobial pesticide cases that were registered before Oct. 1, 2007.

In order to complete the registration review for a pesticide and issue a final decision, the EPA must complete an ESA listed-species assessment and any necessary ESA consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (the Services). For each pesticide ingredient, the entire FIFRA and ESA process typically takes no less than four years and sometimes over 12 years. To minimize the time needed to complete this process, the EPA has taken significant steps to fundamentally improve how it fulfills ESA obligations in its pesticide work. The EPA's work plan, **Balancing Wildlife Protection and Responsible Pesticide Use**, describes new approaches to come into compliance with ESA.

As part of implementing the work plan, the EPA expects to release a work plan update in November 2022 explaining how it will adopt early mitigation for ESA species as part of registration review decisions. Even though early mitigation does not mean that the EPA has fully met its ESA obligations for a pesticide, it should contribute meaningfully to meeting those obligations and facilitate future ESA reviews. The EPA will also host a public webinar to explain the update and other ongoing ESA efforts, including ESA pilot projects described in the work plan. More information on this event is forthcoming.

The EPA's registration review final decisions have also taken into account EDSP screening, consistent with the Federal Food, Drug, and Cosmetic Act § 408(p). The EPA is required to screen and test certain substances to determine whether they may have an effect in humans that is similar to an effect produced by a naturally occurring estrogen or other endocrine effects. The EPA plans to issue a draft Endocrine Disruptor Screening Program White Paper for public comment. This white paper will address the EPA's use of new approach methodologies (NAMs) that may serve as alternatives to a vertebrate animal test and other in vitro assays. The availability of NAMs in EDSP, along with recent updates to internal EDSP standard operating procedures, represents an important next step in the EPA's efforts to rebuild this program. The current Tier 1 methods used for screening chemicals for endocrine disruption are expensive, require extensive staff time and use laboratory animals. These new approach methods will allow the agency to screen chemicals more efficiently and ultimately provide better data.

Finally, the EPA must complete cumulative pesticide risk assessments as part of the registration review process where necessary. A cumulative risk assessment evaluates the potential for people to be exposed to more than one pesticide at a time from a group that shares an identified common mechanism of toxicity. A common mechanism of toxicity is identified when two or more chemicals or other substances cause common toxic effects by the same process. The EPA's cumulative risk assessments approximate people's actual exposures and potential risks resulting from current uses of pesticides in different parts of the country. To develop these assessments, the EPA considers potential exposures from food, drinking water and residential sources.

AD proposed for GE 601 and H 80 Series Engines

The FAA proposes to adopt a new airworthiness directive (AD) for certain GE Aviation M601D-11, M601E-11, M601E-11A, M601E-11AS, M601E-11S, M601F, H75-100, H75-200, H80, H80-100, H80-200, H85-100 and H85-200 model turboprop engines. This proposed AD was prompted by reports of cracks in dilution tube weld areas of the combustion chamber outer liner. This proposed AD would require initial and repetitive borescope inspections of the dilution tube weld areas of the combustion chamber outer liner and, depending on the results of the inspections, replacement of the combustion chamber outer liner with a part eligible for installation.

If adopted as proposed, action would be required at the next 300-hour engine inspection or within 25 flight hours (FHs) after the effective date of the AD, whichever occurs later, and thereafter at intervals not to exceed 300 FHs.

Comments on this proposed AD are due by Nov. 14, 2022. To read the complete AD or submit a comment, click **here**.

Beware of Fraudulent Email with Ag Aviation Expo Name

NAAA received notification that scammers have sent an email to several members offering attendee lists to the Ag Aviation Expo. **THIS EMAIL IS SPAM AND NOT AFFILIATED WITH NAAA; PLEASE DELETE IT.** NAAA does not email members to offer lists of any kind.

If you are unsure if an email is legitimately from NAAA, please feel free to email **information@agaviation.org** for clarification.

Any message from NAAA will come directly from **information@agaviation.org**, **naaaexpo@agaviation.org** or a staff member's email address.

There are several reports of entities trying to scam people by having them give money toward fraudulent efforts. Do not fall victim to one of these scams.

Pre-Register for the Ag Aviation Expo to Avoid Long Lines On-site

We urge you to pre-register before Nov. 4 for the 2022 Ag Aviation Expo, which saves you $75 per person. Pre-registration helps us to have accurate food, beverages and seating counts at our events. **Attendee registration** and **booth sales** are open for the NAAA Expo in Knoxville Dec. 5-8! You'll hear from Captain Scott Kelly, the history-making NASA astronaut who spent one year in space, at the Monday **Kickoff Breakfast**. Tuesday's **General Session** features Dr. Stan Musick and Michelle Miller, the Farm Babe.

If you're looking to grow your business, find a job or sell a product or service in the aerial application industry, the 2022 Ag Aviation Expo is the place for you! Our expo has everything from a world-class trade show floor featuring aircraft and helicopters to education sessions, expert speakers and many networking opportunities!

Getting to Knoxville

Knoxville is located at the intersection of I-75 and I-40, just a day's drive from more than half of the U.S. **McGhee Tyson Airport (TYS)** offers more than 20 direct flights. Flying your own aircraft? Check out **Knoxville Downtown Island Airport (DKX)**.

As you search your airfare options into Knoxville for the Ag Aviation Expo, visit NAAA's Transportation Discount webpage at **AgAviation.org/transportation** and explore tickets on American, Delta and United Airlines.

Knoxville is centrally located for those in the eastern U.S. who would like to drive. *Contact your **hotel** for parking details. Book your hotel room **online**.*

- **Atlanta, GA:** 192 miles
- **Birmingham, AL:** 252 miles
- **Charlotte, NC:** 215 miles
- **Cincinnati, OH:** 248 miles
- **Louisville, KY:** 238 miles
- **Memphis, TN:** 388 miles
- **Nashville, TN:** 178 miles
- **Raleigh, NC:** 333 miles
- **Richmond, VA:** 420 miles

Low-Time Pilot Registration

If you are an ag pilot with less than five years of experience or are interested in becoming an ag pilot, we are offering a special price to attend the NAAA Ag Aviation Expo for pilots like you. Further details are available **here** *(scroll down to the Low-Time Pilot Registration section)*.

Details for the 2022 Ag Aviation Expo

- **Dates:** Dec. 5-8, 2022
- **Location:** Knoxville Convention Center
- **Kickoff Breakfast Speaker:** **Captain Scott Kelly**, first astronaut to complete a year-in-space mission.
- **General Session Speakers:** **Dr. Stan Musick & Michelle Miller**
- **Schedule of Events:** See the current, tentative schedule **here**.
- **Hotel:** Details **here**.
- **Attendee Registration:** **Now open**!
- **Exhibitor Booth Sales Information**
- **Sponsorship Opportunities:** Sponsorships are now available. View the **opportunities here**. Please **email Lindsay** if you would like to secure a sponsorship from last year or would like to be contacted about 2022 opportunities! We have sponsorships available for all budget sizes.
- **Auction Donations: Thank you to Pratt & Whitney Canada for donating a PT6-34AG engine to this year's NAAA Live Auction.** While we are still a few months away from the Ag Aviation Expo, we are already accepting donations for the **Live and Silent Auction**. The earlier you inform us of your auction donation, the more advertising you will receive on the NAAA website and in NAAA publications. Support the aerial application industry by donating an item today. **Email Lindsay** with your donation details.

NAAA Membership Renewal Open for 2023, Renew Today!

Thank you for your support of NAAA as a 2022 member. NAAA delivers remarkable value that benefits your bottom line, provides the crop input tools you need, enhances the industry's safety and professionalism through substantive educational programming and offers excellent business networking opportunities. Please **renew your NAAA membership** for 2023. Watch our new video below, where you'll hear from your fellow members why membership is essential to your business.

NAAA continues to passionately advocate on behalf of ag aviation and raise awareness about its benefits to the public and national policymakers, which we capitalized on across policy and all media channels during the **100th anniversary** of the industry.

This positive coverage of the industry and its importance to global food, fiber and bioenergy production comes at a crucial time as NAAA fights to preserve the aerial use of pesticides that are being targeted for cancellation or unnecessary and burdensome restrictions under current EPA leadership. It takes your membership resources to save these aerial uses and positively represent the industry before the public.

As the industry moves into its second century, NAAA and NAAREF have developed a way to augment industry advancement of safety and application accuracy while showing your customers, regulators, insurers, pesticide manufacturers, and the public the professional nature of the industry. Our new **Certified-Professional Aerial Applicator Safety Steward (C-PAASS)** program, launching in 2023, will fill that very role for those that want to participate. We know education works to reduce accidents and drift occurrences based on PAASS program stats. Since the first PAASS season in 1998-1999, the ag aviation accident rate (number of accidents per 100,000 hours flown) has dropped nearly 26%, and the fatal accident rate has fallen 10%.

The impetus for developing C-PAASS was to expand and gain recognition for maximizing professionalism by ultimately receiving additional benefits for being certified, such as insurance discounts and more flexibility pertaining to pesticide label language and for ag pilots to market to their customers that they have undergone additional training and development to best ensure that they can provide high-quality service.

Please make it a priority to **renew your NAAA membership**—the payoff far exceeds what you will spend in dues in the form of effective advocacy that reduces regulation and taxes affecting your aerial application business. Trade association membership dues are tax deductible.

NAAA Releases Book of the Century! Buy It Today

NAAA has released the book of the century—a century of agricultural aviation, that is.

One hundred years ago, an aerial crop dusting experiment spawned the birth of the agricultural aviation industry. To commemorate agricultural aviation's 100th anniversary, NAAA is pleased to present ***Agriculture's Air Force: 100 Years of Aerial Application***.

Agriculture's Air Force provides a new, updated account of aerial application's history, 35 years after Mabry Anderson's masterpiece, *Low & Slow: An Insider's History of Agricultural Aviation*, was published. NAAA's meticulously sourced book is based on a collective history of the agricultural aviation industry based on material from *Agricultural Aviation* magazine, *AgAir Update*, *Low & Slow* and other resources.

Beginning with ***Agricultural Aviation's*** **Spring 2021 issue**, NAAA published excerpts from *Agriculture's Air Force* and continued to do so through the **Fall 2021 issue**. Those stories are just a small slice of what's in the 268-page hardback edition, however. The complete book contains so much more.

Agriculture's Air Force delves into the intersection of agriculture and aviation. It chronicles the agricultural aviation industry's growth from its infancy in 1921 through the boom times after World War II and on to today's modern era of high-tech aerial application.

The finished hardback book has been years in the making but well worth the effort. "This is a significant piece of work covering not just the industry's history, but its essence," NAAA CEO Andrew Moore said. "We are proud of it and believe it will make a lasting contribution to the industry."

The story of agricultural aviation is much like the broader story of aviation: It is mostly punctuated with interesting smaller moments sandwiched between milestone developments. Aerial application is also the story of technological leaps and bounds.

Agriculture's Air Force covers five eras spanning more than 10 decades. In addition, it features 34 Spotlight pieces focused on significant individuals, organizations, trends, technologies and topics related to aerial application.

Agriculture's Air Force: 100 Years of Aerial Application may well be NAAA's most enduring 100th anniversary initiative. One thing's for sure: It is no textbook. The commemorative book is written from a fresh perspective that is entertaining and enlightening. Readers will come away with a new appreciation for agricultural aviation as a profession and the dedicated individuals who propel it forward.

Order Your Copy of Agriculture's Air Force Today!

Agriculture's Air Force retails for $45, excluding shipping. Order it from **AgAir Update's Online Store**.