



The official publication of the North Dakota Aviation Association

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From the Editor

Welcome to the winter edition of the Fly-ND Quarterly! With the New Year comes continued challenges and fresh opportunities. We hope that in these pages you will find the

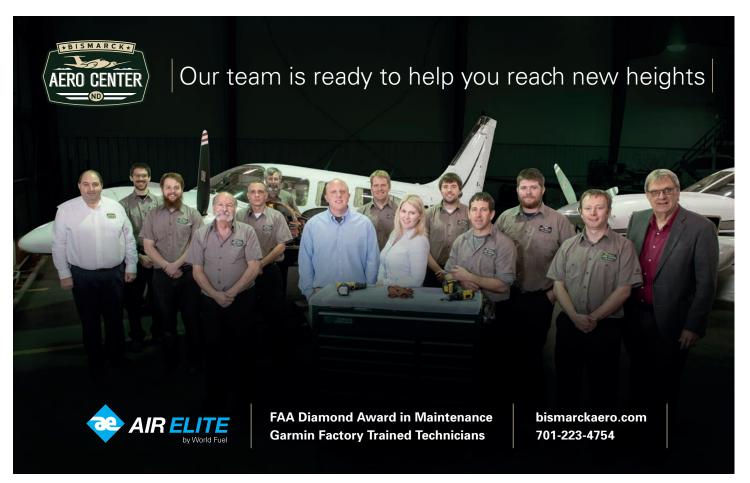
reassurance to overcome any aviation obstacles, the answers to any questions you may have, and that you are filled with excitement with the opportunities to come. Already on the calendar, we have the virtual Fly-ND Conference in March, followed by the first Fly-ND Career Expo this spring, and a fantastic Fargo Airsho lineup this summer. I hope you chuckle reading the tale of a recent cross-country adventure, are heart warmed by a tribute to love at 95 hundred feet, and are inspired by the numerous aviation education opportunities for our youth in North Dakota. May 2021 bring you continued good health and countless adventures!

Wishing you clear skies and unlimited visibility, Nicolette

CORRECTION: The Five Seater Fly-Off, published Fall 2020, received a correction from reader Jim Waldron. He states Navion's with a IO-520 or IO-550 upgrade and true out at well over 150KIAS.

Statements of fact and opinion are the responsibility of authors alone and do not imply an opinion on the part of officers and members of NDAA, or FLY-ND Quarterly staff.

If you've received more than one copy of this newsletter, please share it with a friend.





Darren Hall, Chairman North Dakota Aviation Associaton chairman@fly-nd.com

CHAIRMAN'S COMMENTS

One Word for 2021...

If I think of one word that sums up my outlook for 2021 and applies to me, you, our industry, students, and the mission of the North Dakota Aviation Association (NDAA), that word is opportunity.

op·por·tu·ni·ty | \ ä-pər-tü-nə-tē, -tyü- \
plural opportunities

Definition of opportunity

1: a favorable juncture of circumstances

Ex: The halt provided an opportunity for rest and refreshment

2: a good chance for advancement or progress

So much of our lives over this past year has moved to an online environment. The opportunity that has evolved from many of us being forced into online meetings in business or school is that we found new ways to get things done. Personally, I like the second definition from above; a good chance for advancement or progress.

Let's get into our opportunities.

The Fly-ND Conference this year has moved to an online conference in March. What we give up this year in meeting in person brings a new **OPPORTUNITY** to reach out to a larger audience, who may not have attended our conference in the past. The move to online also created another **OPPORTUNITY** of hosting an in-person event later this summer to bring us together in a fun and engaging event. We hope to announce the new event this spring.

The Fly-ND Career Expo has been rescheduled to May 14 at the Fargo Air Museum. We are really excited for what this event will bring to students looking to pursue a career in aviation. The delay to this spring brings an OPPORTUNITY of all of us to help spread the word to students and to help in our fundraising efforts to fund scholarships for students. Connect on our website if you would like to get involved with the Career Expo.

As we get into this summer, the Fargo Airsho is back and scheduled for July 24-25. The event will feature the U.S. Navy Blue Angels as they celebrate their 75th anniversary this year. The show will be extra special with Blue Angels Commander and Fargo, ND native Commander Brian Kesselring leading the team in their newly upgraded fleet of F/A-18 Super Hornets. The week leading up to the show will be filled with opportunities to celebrate the history of the Blue Angels. New

at the Airsho this year will be an education focused STEM EXPO. Contact the Fargo Airsho or Fargo Air Museum if you would like to get involved.

Lastly, the Federal Aviation Administration has officially released the Notice of Funding OPPORTUNITY for the Aviation Workforce Development Grant. We are working on grant applications for both the pilot and mechanic side of the grant. If awarded, the grants would fund numerous opportunities from supporting more schools across the region with new aviation programs, equipment, and curriculum to professional development for educators, new student outreach programs, and scholarships for students to just name a few.

With all of the **OPPORTUNITY** ahead of us, we would love for you to join the NDAA and look for an area to plug in and get involved in our mission, to promote and support growth in aviation.

Looking forward to an exciting year ahead!

Darren



Become a member today! www.FLY-ND.com



NDAA Mission:

TO PROMOTE AND GROW AVIATION IN NORTH DAKOTA

Advocacy | Education | Outreach



The purpose of the NDAA is to exercise leadership in the aviation industry and among individuals active in aviation professions in North Dakota by:

- Improving relations among aviation professionals and those interested in or concerned with the aviation industry in ND.
- 2. Promoting and extending aviation services in all appropriate ways.
- 3. Improving the standing, qualifications, and abilities of aviation professionals in the state by all means in compliance with state and federal guidelines.
 - Providing for the general organization of an annual aviation conference.
 - Conducting, or arranging to have conducted, discussions, studies, research, surveys, articles, and similar inquiries into the field of aviation, and disseminating the results of such activities in an appropriate aviation publication.

MEMBER BENEFITS



NDAA Members attend the 2021 Fly-ND Virtual Conference for FREE!

MEMBERSHIP LEVELS

Any individual, corporation, or organization in the State of North Dakota that is active in, or promotes and supports the Aviation industry, is eligible for membership in the NDAA.

There are four categories of membership:

ORGANIZATION MEMBER

Organization Member category is intended for agencies and non-profit groups whose mission serves the aviation professions, industries, and supports the purpose of the NDAA. Organization Members are registered non-profit corporate entities. Organization Members are not entitled to vote or hold board positions.

Dues are \$250/year.

ALLIED MEMBER

Allied Member category is intended for firms, companies, and consultants who are actively engaged in providing products and/or services to aviation professions, and companies who support the purpose of the NDAA. Allied Members are not entitled to vote or hold a board position.

Dues are \$250/year with 20 employees or less, and \$500/year with over 20 employees.

INDIVIDUAL MEMBER

Individual Member category is intended for those with personal or employment interest in the aviation profession or industry, and who support the purpose of the NDAA.

Dues are \$25 per year for Individual Members.

STUDENT MEMBER

Student Member category is intended for individuals enrolled in an institution of higher learning, a North Dakota high school or home school setting, who have a keen interest in aviation and support the purpose of the NDAA. Student Members are not entitled to vote or hold a board position.

There are no dues to be a Student Member.



Kyle Wanner, Director North Dakota Aeronautics Commission 701-328-9650 | kcwanner@nd.gov



A Time for Perseverance

By many metrics, 2020 was a difficult year. I won't sugarcoat the fact that certain parts of the aviation industry in our state and throughout the country have seen significant negative impacts from the COVID-19 pandemic. That being said, I believe growing positive trends and an approved vaccine provide us with reasons to start the new year with a positive outlook. I also acknowledge that we must have an awareness that we are entering a time where continued perseverance is required.

A new legislative session has arrived for us in North Dakota and community leaders around the state will be hard at work discussing how to best position our state over the next biennium. As requested by the governor, the North Dakota Aeronautics Commission (NDAC) has successfully reprioritized our budget and I believe that our initial agency bill provides a strategically sound starting point. I look forward to having conversations with our elected leaders to discuss our industry's current situation and I will work hard to advise on an appropriate pathway that will support our airports and aviation industry as we recover from the pandemic.

I want to encourage all of you to stay engaged with the legislative process by keeping in touch with your legislators and by utilizing the Legislative Council bill tracking system, which can be found at www.legis.nd.gov. As legislation comes forward regarding elements that have a factor in aviation, I will be in direct communication with the North Dakota Aviation Association (NDAA) and the Airport Association of North Dakota (AAND) as we work through any critical issues. I also encourage you to contact me to share any concerns or relevant information that you may have on pending legislation.

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Outside of the legislative session, the NDAC is also continually working with our federal funding partners to fully understand their grant programs and eligibility criteria, as we want to have high priority shovel-ready projects ready to go as funding becomes available. Though we currently do not know what our future has in store, we need to make sure that we are not complacent and that we position ourselves to be prepared to accept any challenges or opportunities that arise in the near term.

I also hope that you are able to join us March 8-9 for the virtual FLY-ND conference. As always, your NDAA board members and volunteers have been hard at work preparing an exceptional program for all aviation enthusiasts to enjoy. Though we are unable to come together in person this year, I sincerely hope you are able to take the time to celebrate aviation with us at our state's first ever virtual conference.

Wishing you smooth flying, Kyle





New Aviation Opportunities

When 2020 recently came to a close, I bid it a not-so-fond farewell. I, like many of you, am glad to be looking at last year through a rearview mirror. My focus for 2021 is one of hope and optimism. Although 2020 was one for the record books, I found light in the darkest of times amongst our circle of family and friends, essential workers, neighbors, teachers, and even strangers. I truly believe that once we are through this pandemic, our community will be stronger, people will embrace one another, support one another, and look at the world through a different lens. We came together as a family, a neighborhood, and community in the face of this pandemic. It is in that hope for the future and the fact that it's a new year, I think now is the best time to examine what's in front of us and if we want to be part of something bigger than ourselves.

This year, I decided not to make any resolutions; I'm not adding to my plate or to my to-do list. Instead, I am choosing to narrow my focus on what's important and my role in my home, my family, and my community. I encourage you, as well, to consider what role aviation plays in your life. Is it a profession? A hobby? A passion? An escape? Whatever it means to you, I know that if you have opened this publication and made it to this article, you have a vested interest and care or concern for the industry. Perhaps it's one small area, or maybe it's aviation in its entirety. I want you to know that the North Dakota Aviation Association (NDAA) and it's passionate board members, volunteers, and staff care deeply about all aspects of aviation.

The Merriam-Webster Dictionary defines an association as:

- 1. (often in names) a group of people organized for a joint purpose.
- 2. An organization of persons having a common interest: SOCIETY.

The greatness of a community is most accurately measured by the compassionate actions of it's members.

~Coretta Scott Kind

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Our Association clearly understands that each sector of the industry needs each other, as we cannot have one without the other. Some of you may already know this, but the NDAA was founded in 1983 by six aviation

organizations, interested in promoting aviation

in the state and presenting their concerns before the government and the general

public. It was founded with the notion that solutions to problems facing aviation can be best served by consolidating and working together, rather than struggling as independent groups. The NDAA seeks to serve aviation professionals by providing a forum for the exchange of information, ideas, and experience among their peers: pilots, agricultural operators, airport managers, Fixed Base Operators, aviation mechanics, educators, and aviation museums. By combining our talents and resources, we are set to explore answers to the most pressing issues of today to ready ourselves for the exciting aviation world of

tomorrow, all while having fun in the process and networking with like-minded individuals!

Further explore your passion for aviation through your membership in the NDAA. Membership means that you too believe in this community of aviation and you have a voice in the direction of the industry. We are in this together, we are a community who works together to accomplish so much and affect change. The dynamics and vision of our organization are focused on preserving the past, embracing the present, and preparing a path for the future of the industry. It's easy to see the depth and importance of the North Dakota Aviation Association. If you are considering joining, I encourage you to check it out, come for the education, networking, and preservation and advancement of the industry. If you simply believe in the mission and vision of what we do, now is a great time to join to make a difference in the community of aviation.

I look forward to your involvement and your impact on the future.





Mike McHugh, Aviation Education Coordinator North Dakota Aeronautics Commission 701-328-9650 | mmchugh@nd.gov



Building Your Personal Learning Network

The theme for the 2019 Upper Midwest Aviation Symposium was "Building a Community of Aviation." As the COVID-19 pandemic continues to impact everyone around the globe, I am constantly reminded of the tremendous aviation community we have here in North Dakota. I also believe the number one factor impacting student success in schools is having a relationship with a positive role model

or mentor. The stronger the relationship a student has with a positive role model, the more likely they are to succeed. I believe this also applies to us in our professional lives or while flying for recreation.

Building a personal learning network is one helpful way to grow in the aviation industry. I have found that one of the easiest ways to develop this network is through memberships in professional organizations. These organizations accomplish many goals, one of which is bringing members together to learn.

The North Dakota Aviation Association (NDAA) does this through media such as the Quarterly, social media and, as we talk about every winter, the upcoming FLY-ND conference. Though we will not gather together in person this year, the virtual conference will present an opportunity to meet and network with other like minded individuals. I encourage you to attend this year's virtual conference which is FREE for all NDAA members. You really can't ask for a better deal than that!

Through my role at the North Dakota Aeronautics Commission (NDAC), I continue to work to develop the aviation community by building relationships with the various aviation groups around the state and throughout the country. At the NDAC we work hard, along with the Airport Association of North Dakota (AAND), to ensure airports are kept safe and well maintained. Planning projects becomes a bit like a jigsaw puzzle, while we work with stakeholders to leverage local, state, and federal funds to ensure high priority projects are completed on time. We also work with pilots and aircraft owners through our Passport Program to learn more about the needs of airports around the state.

In regards to aviation education, I work consistently with the high school Career and Technical Education (CTE) programs around the state, as well as our air museums, to develop high quality educational programming for youth of all ages. We also help with funding needs for these programs through

educational grants. Recently, we awarded educational grants to help fund simulators at three North Dakota airports. These simulators are available for low cost or free-of-charge in the cities of Mandan, Mohall, and Hillsboro.

I would like to encourage you to continue building your personal learning network through networking and membership in professional organizations. If you are not

already a member, consider joining the NDAA, where you will gain access to this year's virtual conference among other benefits. In addition, the Professional Aviation Maintenance Association (PAMA), the AAND, and the Experimental Aircraft Association (EAA) are local organizations which can help you learn and network. Both statewide and national aviation organizations have social media presences as well. Consider joining, following, liking, and contributing to your personal learning network.





Airport Association What's Happening

By: Matthew Remynse, A.A.E., President, Airport Association of North Dakota

With 2020 in the rearview mirror, I'm excited for what a new year will bring to the Airport Association of North Dakota (AAND) and its members. In 2021, AAND will again be lobbying for airports at the Legislative Session, will be working with FLY-ND staff to host a speaker for the virtual FLY-ND Conference, and will see new leadership after the business meeting in March.

With the Legislature being in session for a short while, there is not yet much progress to report. Through the assistance of Odney, the Association's Transportation Network Company bill was able to get a sponsor with several co-sponsors. The bill was heard by the Senate Transportation Committee in January. The North Dakota Aeronautics Commission's bill will be heard by the Senate Appropriate Committee early on and we'll provide testimony to support the Aeronautics Commission. In an effort to help political subdivisions with funding, several legislators have developed a bonding bill using the earnings off the Legacy Fund. This bill includes airport grant funding. For certain, it will be a bill that Odney and the AAND will be watching very closely and providing testimony on, when the time is right. Additionally, the AAND is watching bills related to an airline tax issue and radio reimbursement for political subdivisions. It is definitely a busy session once again.

In March, the AAND and its members will be participating in the virtual FLY-ND Conference. I'm pleased to see that the site committee has elected to provide a virtual format for the conference, which will provide a safe opportunity for individuals to attend the sessions. Also, I'm optimistic that the virtual format will provide individuals who haven't been to the aviation conference in some time an opportunity to see the quality of the conference and that they will be inclined to participate again at future conferences. Looking at the

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conference agenda, the Association will have a legislative update, an Federal Aviation Administration (FAA) Airport District Update, the annual business meeting, an update for the NDAC staff, amongst other sessions.

Annually, the AAND members elect the officers of the Board. After six years, I will be stepping down as the President of the Association and passing the torch onto Ryan Riesinger, Director of the Grand Forks Airport. Over the last year, Ryan and I have been working together to ensure a seamless transition. I'm excited to see him continue to build the organization. Looking back, I'm proud of what the Association has accomplished in both the aviation community and legislatively over the last six years. Truly, it was an honor and privilege to guide the organization, having the trust of its members, and I appreciate the opportunity.

Here is to a fantastic 2021 and remember, check the NOTAMs!



Introduction to Aviation camps

The Fargo Air Museum (FAM) is partnering with local aviation companies to offer Introduction to Aviation camps for area youth. These camps provide an opportunity for participants to learn about different areas of aviation through exciting interactive experiences. This comes as part of the museum's efforts to expand educational programming for kids and teens in the community.



"The goal with the Introduction to Aviation camps is simple: to introduce these kids to various parts of the aviation industry and get them excited about it. There are so many aspects of aviation that many people never get the chance to see up close. We want to help change that for the upcoming generation,"

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Office: (701) 235-2041 FAX: (701) 239-4235 Home: (701) 280-9056 said Ryan Thayer, FAM Executive Director. "We are very thankful for our partners who are volunteering their time to provide meaningful experiences for these kids."

During the March camp, participants will get the opportunity to take to the air as volunteers from the 317th chapter of the Experimental Aircraft Association (EAA) come in to teach about the principles of flight and offer 20 minute flights over the Fargo/Moorhead Area. These flights are offered at no additional charge thanks to the EAA's Young Eagles program.

The Introduction to Aviation camps will be offered on an alternating monthly schedule opposite of the Turn It, Build It Advanced STEAM (Science, Technology, Engineering, Arts, Math) camps which were introduced at the end of 2020. Youth ages 8-18 are invited to participate, registration costs are \$20 per child with a discount for FAM members. Other topics covered in camp curriculum include air traffic control, airport operations, aeronautical engineering and mechanics/avionics.

> Full schedule of all youth education camps and camp registration can be found at www.fargoairmuseum.org/education.

Why Participation in Grassroots Aviation Organizations Matters



By Kristi Ivey, NBAA Northern Mountain Regional Representative

Supporting members in their home communities and at General Aviation airports across the country is among the National Business Aviation Association's (NBAA) primary objectives. I have had the honor and privilege of regularly engaging with North Dakota aviation stakeholders over the past fourteen years, as part of my role as a regional representative for NBAA. I continue to be delightfully impressed with your continuous outreach, communication, connection with each other, as well as your passion and advocacy for our industry within your great state, despite how far apart you may be geographically.

I have met with NBAA members and partners across your state and have participated in several of your past Upper Midwest Aviation Symposiums, as well as your Aviation Days at the capitol. One theme resonates throughout: aviation is absolutely vital in North Dakota.

As the umbrella aviation organization has evolved to what

is now the North Dakota Aviation Association (NDAA), I find myself eagerly anticipating each new wonderfully-written copy of the FLY-ND Quarterly. I truly enjoy each thoughtful conversation about ideas for your organization's continuous improvement with your leadership.

I encourage you to continue to spread the word about the benefits of participating in NDAA as a whole. Join as a member and share best practices with others from around your state, follow NDAA on social media and repost the news and events that they promote, volunteer for committees and help with planning for future events, such as the upcoming NDAA Career Expo.

Participating in grassroots local and regional aviation organizations provides many benefits for both the organization and you, as individuals. For the organization, diverse and engaged leaders and passionate community members play a role in hedging developing local and state issues, capturing



Value of Participating in Business Aviation Groups

Joining a local or regional group is a smart career move for any business aviation professional. In addition to expanding your network and establishing yourself as an industry leader, participation provides opportunities to enhance your own knowledge, find and develop young talent, and stay up-to-date on legislative and regulatory activity that can impact your business.

For prospective members who are on the fence, these are some key value propositions of being active in your local or regional group:

Leadership opportunities

Giving back to the community

Strengthening skill sets

Networking and expanding business connections

Key knowledge about legislative activity and aviation advocacy efforts

Empowering future aviation professionals through educational outreach and scholarships

-excerpt from NBAA's Guidelines for Regional Business Aviation Groups constituent voices, and advocating for aviation interests. These volunteer-based groups provide value to stakeholders by communicating effectively about current issues and hot topics, providing tools and resources for members, and encouraging active participation affecting tangible change. For the individuals participating as members and taking volunteer roles in leadership, this builds professionalism and leadership skills, allows for continuous education and benchmarking, and ignites the spark to pay it forward and mentor the next generation of aviation professionals and stakeholders.

The NBAA has resources available for anyone interested in learning more about local and regional grassroots aviation engagement on our website. Please visit us at www.nbaa.org/regional. Thank you for making a difference in promoting your exceptional organization. Our collective efforts truly make a difference! I look forward to seeing you in person as soon as possible. Blue skies...



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Watch for more information visit www.FLY-ND.com





William A. Beeks to be inducted into North Dakota's Aviation Hall of Fame

2021 Hall of Fame Inductee William A. Beeks

North Dakota Aviation



HALL OF FAME

The North Dakota Aviation Hall of Fame committee announces that William A. (Bill) Beeks has been selected for induction into the state's Aviation Hall of Fame. Bill will join the prestigious aviation hall of fame group that currently includes 45 other individuals who have all had a significant impact to the growth, development, and promotion of aviation in North Dakota. For more information on the North Dakota Aviation Hall of Fame, visit www.fly-nd.com/HoF.

Bill Beeks was born January 21, 1941 in Bismarck, North Dakota. In 1957, he completed his first flight on his 16th birthday and moved on to earn his private pilot's license at the age of 17. Bill grew up in Washburn, North Dakota and after his High School graduation in 1959, he continued his education at the University of North Dakota and received a Bachelor of Science in Industrial Arts.

Bill returned to Washburn in 1967 to assist his father, Clifford H. Beeks with their family business, Central Flying Service. The business was incorporated in 1969 and Bill worked hard to eventually purchase and become the primary owner. He married Mary Ann Guenthner on July 26, 1969, and together they raised their daughter, Lara. During this time, Bill began his many years of working in North Dakota as a flight instructor, aircraft mechanic, aircraft inspector, and aerial applicator.

Whenever friends and family would visit Washburn, Bill took time to give them an aerial tour of the area and share his love for North Dakota, the Missouri River, and its rich history of the Lewis and Clark Expedition. In the 1980's, Bill flew for the U.S. Army Corps of Engineers and the Civil Air Patrol, where he helped to gather counts of campers and boats on Lake Sakakawea and the Missouri River. He also provided critical surveillance for area storm damage, range fires, and ice jams.

Bill served as the manager of the Washburn Airport for many years and was well-known around the area for his love of aviation and the services that he provided. His desire to improve the Washburn Airport prompted him to lead the effort to successfully advocate for the construction of a new concrete runway which occurred in 2002.

Bill was active in many different community and church organizations but was especially involved in the state's aviation-related organizations, where throughout the years he served in multiple leadership roles. His early and active participation with the North Dakota Agricultural Aviation Association and the Airport Association of North Dakota led to many positive evolutions within both organizations as they matured. Bill also volunteered his time to act as a lobbyist for the aviation community, where he would represent the best interests of the industry during multiple state legislative sessions.

Bill had a passion for his local community that was hard to match, and his sense of citizenship led to help place a small North Dakota farming community on the map. Bill will always be remembered for his love of aviation and his work to tirelessly show others that the front door of any community can truly begin - at the airport.

Bill will be honored at the upcoming Fly-ND **Virtual** Conference that will take place March 8-9, 2021. To find more information on the virtual conference, visit: www.fly-nd. com/events/Conference. Tentative plans are also being made for an in-person summer induction ceremony and information regarding that event will be provided at a later date. *Questions can be directed to the North Dakota Aeronautics Commission at 701-328-9650.*



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Cold & Clear: North Dakota's Best Air

By Leisha Lunnie



North Dakota breeds hearty stock. During the winter, we deal with the cold, wind, and ice as part of our daily life. At some point you may have heard someone say, "The cold keeps the riff raff out!" in response to North Dakota's low crime rate. While that theory has not been statistically proven, a typical winter in our state is undeniably cold. Often with those frigid temperatures comes smooth air and clear skies, which are some of the best flying to be had. The sun is so bright it hurts your eyes, bouncing off the whiteness of the ground and everything sparkles; it truly is beautiful.

As a teenage student pilot enjoying the comfort of climate-controlled heating in our home, I remember my dad, who was also my flight instructor, commenting on those beautiful winter days being perfect for flying. Deep down I knew he was right, but sometimes I just dreaded the words "cold and clear" because I knew it meant bundling up and being chilled for the next couple of hours. After a frigid pre-flight in the unheated hangar, I was usually ready to go warm up before we had even started the engine! Teens are notorious for taking the easy way out, so a cup of hot chocolate while watching a movie or meeting my friends at the local ski hill seemed like a better use of my Saturday afternoon than trying to keep my hands and feet warm in a drafty Cessna 150.

But once you are airborne with that fantastic cold weather climb rate that seems to launch a little Cessna 150 into the air like a rocket, everything else falls away. The heat kicks in, the air is smooth and perfect for practicing maneuvers. One can wonder at how something as simple as snow cover makes everything look so different from the air, so perfectly serene.

Winter flying also includes winter weather gear and precautions to keep the pilot and passengers safe from the everpossible engine failure and forced landing. If you were raised in the North, you were likely taught to always have winter gear in your vehicle from October to April. You know the drill: a blanket, boots, extra mittens or gloves, stocking hats, scarfs, a shovel, and of course a candle with matches. Flying in winter weather requires the same precautions. We may not need a shovel, but there are definitely some items required to keep an aviator safe from the elements.

If you're a current flight student, you will learn all you need to know about winter pre-flights, snow and frost removal,

watching for carburetor icing, and so forth from your Certified Flight Instructor (CFI). If you need a refresher, don't be shy about asking to go over these things during your next flight review or simply schedule a lesson from your favorite CFI.

Until then, here are a few essential items you should always bring along on a winter flight:

- Parka
- Food bars
- Winter boots and warm socks
- Gloves or mittens
- Warm hat and scarf
- Fire starter kit
- Insulated pants, coveralls, wool pants, etc.
- Space blanket or wool blanket and large, heavy duty plastic tarp
- Cell phone kept close to your body to save the battery
- First aid kit and signal mirror
- Knife or Leatherman-type tool

Depending on where you will be flying, there may be other FAA requirements. Here in North Dakota, this is a good basic list for emergency situations. Most of us don't want to be bundled up in the cockpit when the heat is on and it's hard to move around. Don't even get me started on how difficult and unsafe it is to try to manipulate rudder pedals while wearing large winter boots. However, should you be forced to execute an unplanned landing, you will definitely need warm clothing, footwear, and shelter.

In a best-case scenario, you've completed your emergency checklist, radioed your location, and perfectly executed an off-airport landing with no injuries and minimal damage to the aircraft. However, it may still be some time before you are located and rescued. Some days, even a short amount of time exposed to the elements is enough to cause serious frostbite and hypothermia.

So, dress warmly in layers, complete a thorough weather check and pre-flight, grab your sunglasses, and enjoy some of the best flying days of the year to be had in our beautiful state. And don't forget your emergency gear though, just in case!

It's Never "Too Late"

I've been flying and teaching in the Dakotas for more than 40 years. Overall, I'd say we have it pretty good here in the flatlands. However, a closer look at the national accident data tells a story that is cause for us flatlanders to pay attention.

Did you know that 79 percent of all Controlled Flight Into Terrain (CFIT) accidents have had fatal outcomes? As pilots, we must rethink the dangers that lie below, as well as above. With such land features as the Turtle Mountains, the Killdeer Mountains, the Hogback Ridge area northeast of Bismarck, rising terrain as you head west towards Montana, and the buttes along the Badlands area, all give this "flatland" of ours

an altitude change of more than 3000 feet from east to west. I think we can all agree that it's not that flat out here, except perhaps in the Red River Valley.

I like to think of terrain as anything that might impede



my direct-to flight path. It may be the rising terrain, towers, or mountains that could interfere with my flight. By National Transportation Safety Board (NTSB) and International Civil Aviation Organization (ICAO) definition, "Controlled Flight into Terrain (CFIT): occurs when an airworthy aircraft under the complete control of the pilot is inadvertently flown into terrain, water, or an obstacle. The pilots are generally unaware of the danger until it is too late." It would seem that lack of planning was a key element if it was "too late."

Statewide, there are more than 1,500 registered communications towers, some like the KVLY towers near Grand Forks reach 2,063 feet in height above ground level

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(AGL). Of course, along with a tall tower are its support structures. Having a width or total support space of nearly a quarter of a mile allowing for guy wires, it is still the tallest radio tower in the nation. This is why planning for such obstacles reduces the risk to your flight.

Another obstacle we have here in the Dakotas are wind turbines, which account for more than 1,900 objects of



conflict. Most are over 500 feet in height, located in multiple wind turbine farms across the state. All of these obstructions need to be considered as rising terrain and factored into our risk assessment as airmen.

If you remember, each Visual Flight Rules (VFR) or Instrument Flight Rules (IFR) chart

has a Maximum Elevation Figure (MEF). This represents the highest elevation within a quadrant, including terrain and other vertical obstacles, such as towers or trees. A closer look at how that is reported goes like this: Tower, 2375 feet Mean Sea Level (MSL), possible vertical error plus 100 feet, obstacle allowance, add 200 feet, added all together you get a charting value of 2700 feet MSL.

Flight planning is a complex process over any flight path, even in the Dakotas. You must remain vigilant and avoid distractions involving unforecast low ceilings, fog, reduced visibility, snow, or smoke, just to name a few. All are contributing to our risk of getting to where we want to go. Just as the weather controls most of our go/no-go decision making process, so should the terrain along that route. Don't let it be "too late" – instead, plan ahead.

WINGS Proficiency Program is there for you! Join us today! www.faasafety.gov

For more reading on this topic, join us at www.faa.gov/news/safety_briefing/ "Avoiding Controlled Flight Into Terrain."

Fly Safe!

Jay M. Flowers

Aviation Safety,

National FAASTeam ASI, Operations

2021 Inspection Authorization Renewal

Hello from the Fargo Flight Standards District Office (FSDO). 2021 is an odd-numbered year and with it comes the regulatory requirement to renew Inspection Authorization endorsements. Just as in 2019, the FSDO will accept renewal documents, preferably via the U.S. Postal Service. Our office is minimally staffed due to COVID-19 office safety protocols. If you send the FSDO paperwork via other couriers, it may be delayed as there will be no one to accept it at the FSDO.

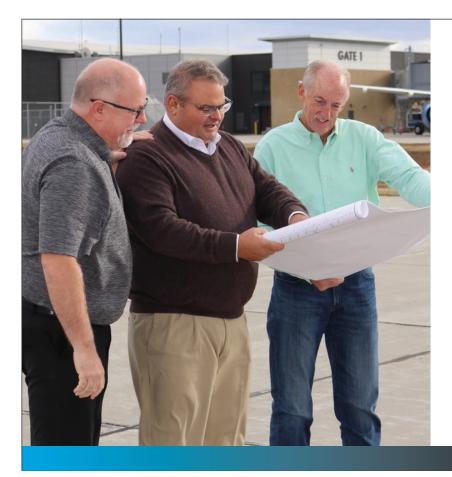
Here is a short checklist to assist you in submitting the necessary renewal documents:

- 1. Your IA card, FAA Form 8310-5
- 2. Two **signed and original** FAA Form 8610-1 Mechanic's Application for Inspection Authorization-Privacy Act.
- 3. Signed Pilot's Bill of Rights (PBR).
- 4. Supporting documents, which support your basis of renewal. For example, an activity sheet/log or training certificate(s).

All forms are accessible via www.faa.gov. The mailing address for the Fargo FSDO is: Fargo FSDO, 4620 Amber Valley Parkway S, Fargo, ND 58104

COVID-19 Vaccines by Pilots and Air Traffic Controllers

TThe Federal Aviation Administration (FAA) has determined that pilots may receive both the Moderna and Pfizer COVID-19 vaccines, under the conditions of their FAA-issued airman medical certification. FAA Air Traffic Controllers, who are subject to FAA medical clearance, may also receive either vaccine. The Moderna vaccine requires two doses 28 days apart, while the Pfizer vaccine requires two doses 21 days apart for maximum effectiveness. A 48-hour "No Fly/No Safety-Related Duty" interval must be observed after each dose. Individuals holding an Airman Medical Certificate or Medical Clearance should be reminded that they are prohibited from performing flight crewmember duties or air traffic control duties if they do not meet medical certification requirements, including those related to adverse events from medications that render them unable to perform such duties. The FAA Office of Aerospace Medicine (AAM) will monitor the patient response to each vaccine dose and may adjust this policy as necessary to ensure aviation safety. Additional vaccines will each be evaluated as Emergency Use Authorizations (EUA) are issued. However, the agency's medical professionals will continuously monitor the initial distribution of the novel vaccine and documented clinical results and will adjust these recommendations as needed. The FAA will also evaluate vaccines from other manufacturers as they receive FDA authorization in the coming weeks and months and will advise pilots and air traffic controllers of any waiting periods required for those vaccines. The FAA encourages Americans to receive COVID-19 vaccinations as authorized by the Food and Drug Administration (FDA). Read more at www.faa.gov/news.



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Adam Dillin, Airport Planner North Dakota Aeronautics Commission 701-328-9650 | adillin@nd.gov



Shooting the Breeze about Windsocks

An iconic feature found at many airfields since the earliest days of aviation, the humble windsock is without a doubt one of the most helpful tools available to pilots. It's hard to imagine a simpler weather instrument, typically consisting of a brightly-colored fabric cone rotating about a pole. Yet it readily displays crucial wind information including direction, shifts, speed, and gusts. A smooth and safe takeoff or landing often hinges on how well this little piece of fabric does its job.

Windsocks, also referred to as wind cones, fall under the Federal Aviation Administration (FAA) design standards outlined in Advisory Circular 150/5345-27 FAA Specification for Wind Cone Assemblies. While they are often sold in many different styles, the two sizes officially defined by the FAA are 8 feet and 12 feet long models. They can be constructed of cotton, synthetic, or a blend, must be water repellent, and come in colors of orange, yellow, or white. A windsock must be durable enough to withstand winds up to 75 knots and temperatures ranging from negative 67 degrees Fahrenheit up to 131 degrees Fahrenheit. It is important to note that windsocks are required to drain properly, freely move in just a three knot wind, fully extend in a 15 knot wind, and accurately indicate wind direction within plus or minus five degrees. They may also be illuminated for nighttime operations, using internal fixtures or downward-facing spotlights.

Airports should make a habit of frequently inspecting their windsocks. The fabric gradually fades over time and may

become poorly visible, wear through, or tatter. They can snag and twist around mountings or vegetation. Poles can become tilted or bent, and lights will inevitably burn out. Proper drainage is essential, as storms can quickly fill windsocks with water, snow, or ice. This produces a telltale bulge in the fabric surrounding the frame and can add more than 10 pounds of weight to the windsock, reducing its accuracy or potentially even stopping its rotation. To prevent this, some windsocks are fabricated with built-in drain slits or grommets, and

airport staff can easily install grommets onto non-equipped models. Care should be taken when installing a windsock to ensure the proper orientation of any drain slits or grommets, otherwise the drains will be rendered all but useless, as seen in this photo.



The North Dakota Aeronautics Commission (NDAC) administers a state Windsock Program to help airports keep their windsocks in tip-top shape. Each public-use airport in North Dakota may request one free windsock from the NDAC in each calendar year. We also offer windsocks for sale, in sizes of 12 feet, 8 feet, 5 feet, and 4 feet, as well as a small selection of windsock frames. For more information, please visit our website at https://aero.nd.gov or call (701)328-9650.



Q&A North Dakota Air Museums

With Don Larson and Ryan Thayer

It is no secret that North Dakotans are proud of their rich history and legacy, boasting many museums across the state. While you may be familiar with the North Dakota Cowboy Hall of Fame, the National Buffalo Museum, or the Lewis and Clark Interpretive Center, how much do you know about your local aviation museum?

In Minot, ND, you can find the Dakota Territory Air Museum, and a few hundred miles southeast is the Fargo Air Museum. They are a part of the North Dakota Association of Aviation Museums, a branch of the North Dakota Aviation Association. **Don Larson** is a Founder and the President of the **Dakota Territory Air Museum**, and **Ryan Thayer is the Executive Director of the Fargo Air Museum**. Both Don and Ryan have a deep passion and appreciation for all things aviation; they work hard to connect the local community to the past and present of North Dakota's aviation industry through preservation, restoration, and education.

How did you get started in aviation and where has it led you?

Don: My introduction to aviation began 60 years ago, when I started taking flying lessons. I worked up to my commercial license with an instrument rating. For several years, I worked as a charter pilot on a part-time basis with Pietsch Flying Service in Minot, ND. In 1986, I, along with Warren Pietsch and the late Alfred Pietsch, organized the Dakota Territory Air Museum. I have been on the Board of Directors ever since.

Ryan: I was born and raised into an aviation family, as my father was a pilot and aircraft controller in the Aberdeen, SD, and Fargo, ND, areas. I received my solo pilot's license at 16 years old and earned my private pilot's license at 19 years old from University of North Dakota (UND) Aerospace. From a young age, I began dreaming of an aviation career and attended UND for an Airline Transport degree. After receiving my pilot's license, the industry was struggling due to the terrorist attacks of 9/11. I chose to take a detour and instead received a business degree from UND. Since then, I started and ran over seven companies, from finance and insurance to real estate and construction. I recently moved back to the Fargo area with the hopes of getting back into aviation and I was hired to run the Fargo Air Museum.

$igoplus_{m{\cdot}}$. That is the mission of your museum?

Don: The mission of the Dakota Territory Air Museum is: "To be a vital historical aviation resource honoring the men, women, and machines that have impacted the rich history of aviation through displays and events that educate, inspire, and entertain people of all ages." Over the years, we have collected thousands of artifacts, books, pictures, and newspaper articles, along with over 50 aircraft that have been donated or loaned for display. We have over 55,000 square feet of indoor display area on our 17-acre campus, which also includes numerous outdoor displays.

Ryan: "The Fargo Air Museum is a nonprofit organization that serves to promote interest in aviation through education, preservation and restoration." We are very passionate about our mission and we work hard each and every day to accomplish it. We recently expanded our Youth Camps with STEAM/STEM

and flight curriculum, are undergoing restorations like our BT-13 and Stinson Reliant projects, and preserve history in the area with our veterans and exhibits.

What role does the local aviation community play for your museum?

Don: Over the years, our local aviation community has donated hundreds of thousands of dollars in financial help. In addition, we have received thousands of hours of volunteer help from our local community, including Minot Air Force Base.

Ryan: The local aviation community is very, very important to us. We have a great partnership with our local community where we help support each other, whether it be for aircraft to display at the museum or helping us with youth education and veterans events. We are all pursuing similar missions, enjoying aviation, and helping to spur the passion for aviation in our youth!

What resources do you provide to your local aviation community?

Don: For our local community, we provide a place where families can preserve and display artifacts that have been in their families for many years. We, as a nonprofit 501c3 organization, serve as a facility where folks can donate aircraft and other items and use the donation as a tax benefit to them. We also have an education outreach program, which provides aviation camps to local youth. Additionally, we administer a scholarship program with the funds provided by the Farstad Foundation. From those funds, we provide eight \$2,500 scholarships annually for aviation-related careers. The Farstad Foundation also provides \$5,000 annually for our general education outreach program.

Ryan: We provide many resources to our local aviation community with preservation, restoration, and education. We provide advanced educational programs for our youth, preservation of history in our community, and restoration of historic aircraft. This offers opportunities to help out our community in the areas our volunteers are most passionate about. We are also working on offering scholarships for flight training, as well as other exciting new programs.

Q. How have you built relationships with the local community?

Don: Our museum is open to the public from mid-May until mid-October. Up until this past summer, we had scheduled monthly events in an effort to encourage the community to visit the museum. Many of our events are done around historic dates, such as Victory in Europe Day, Victory over Japan Day, and Pearl Harbor. We provide space for some smaller community events, like the Chamber of Commerce meetings, occasional service club meetings, United States Air Force groups, and promotion receptions.

Ryan: We are continually building new relationships, as well as fostering current relationships, in our community. We have very strong relationships with local schools, the North Dakota Air National Guard, and local businesses with partnerships and sponsorships. We offer a ton of benefits to our community, which helps naturally draw people in. We also have a great team of staff to help with outreach in setting up partnerships and relationships, as we work through opportunities and challenges. Our community works better together!

• What is your favorite exhibit/attraction in your museum?

Don: My favorite exhibit is the full-scale 1903 Wright Flyer. I find it very interesting, because that is where it all started 117 years ago.

Ryan: That is a tough one. I would have to say my current favorite is the Happy Hooligans F-16 that we have on

temporary loan from the North Dakota Air National Guard. I grew up just north of Fargo, and I can remember playing in the backyard as a kid and hearing and watching them do touch and gos and practice maneuvers. It is an amazing aircraft, coupled with childhood memories and the strong tie to the Fargo Area, that makes it very special to me.



Ryan Thayer is the executive director of the Fargo Air Museum



Dakota Territory Air Museum president, Don Larson

of the North
Dakota Aviation
Association
(NDAA), in
what ways is
your museum
involved in the
Association?

Don: As a member of the NDAA, I am currently serving on its Board of Directors. I also served for a

number of years as Director of the former North Dakota Aviation Council. Both of our museums have been very proactive in the NDAA. Each year that the annual North Dakota aviation conference is held in our cities, the museums have offered our facilities for the opening night social. It is a very appropriate setting for the event, at which we also have an exhibitor's booth.

Ryan: We do our best to be a resource for NDAA members with our event venue services, youth camp programs, veterans events, in-house special events, and to help bring new content to the association through our articles. We are also discussing a NDAA member discount to the Fargo Air Museum. The NDAA has been very supportive of us and we would like to return the favor with a potential discount.

Q. What volunteer options do you have?

Don: We are usually looking for volunteers most anytime at our museum. Even during the off-season, from mid-October to mid-May, we are putting together new exhibits or re-doing existing exhibits. If you're interested in volunteering, call the museum or visit our website.

Ryan: Currently, we are looking for volunteers to help with our restoration department. We have a BT-13 we are working on and are over halfway complete, as well as our Stinson Reliant project. We would love to speak to former and current Airframe and Powerplant Mechanics to restore these two aircraft, as well as pursuing additional aircraft for future restorations. We are also looking for volunteers for other things, like landscaping, youth camp help, and drywalling and maintenance. There is always something that we can use help with at our facility. We also host special events and always need volunteers to help with security, parking, and ticketing.

Stop in at your nearest North Dakota aviation museum, where you can explore the exhibits and aircraft. You are sure to discover something you love! You will find visitors and volunteers from high school students all the way into retirement years, from veterans to former youth camp kids, and everyone in between. Learn more about visiting, volunteering, and events here:

Fargo Air Museum

1609 19th Ave N, Fargo, ND 58102 www.fargoairmuseum.org, 701-293-8043, communication@fargoairmuseum.org

Dakota Territory Air Museum

100 34th Ave NE, Minot, ND 58703 www.dakotaterritoryairmuseum.com, 701-852-8500 airmuseum@minot.com, Facebook: @DTAMMinotND

Eternal FLIGHT



Jim Lawler, 61, Mandan, ND, passed away Tuesday, October 20, 2020 at a Bismarck Hospital.

Jim was born December 15,

Jim was born December 15, 1958, to Murray and Margaret (Bradbury) Lawler. He was raised in Linton, ND, and spent his

childhood working on the family farm. After leaving the family farm, he worked at the MacDonald farm, and built houses with his brother in Lincoln, NE.

In 1980, Jim began working as a mechanic and grounds assistant at the Mandan Municipal Airport. In January of 1988, he became the general manager of the airport. His life was devoted to promoting local and regional aviation and helping the airport to thrive.

In 1990, Jim married Sharon Helbling, in Mandan, ND. They welcomed three children, Erin, Sarah and Jacob. He was a devoted father who attended countless band concerts, dance recitals, hockey games, and soccer games.

Jim loved racing cars. He spent many years building and racing his own cars at Dacotah Speedway, Mandan. He also loved traveling with his wife, attending Nascar races, and taking his family on camping trips close to home and around the country, including visits to Texas, Idaho, Colorado, Michigan, and many other states. As his children grew older, he loved to go visit them wherever they lived.

Coming in at a close second to his family was Jim's passion for the airport and local aviation community. Under his watchful eye, the Mandan Municipal Airport went from a small local airport to one of the most well-known general aviation airports in the state.

A scholarship fund has been established in memory of **Jim Lawler**

To contribute to the Jim Lawler Memorial Scholarship Fund, visit: www.fly-nd.com/Donate. The scholarship will be awarded to a student pursuing an airport management degree.



Chris Hans - Fargo Scheel's lost its best customer when Christopher Russel Hans died suddenly in an airplane accident on Saturday, November 7, 2020.

Chris was born on December 21, 1976, to Jerome and Barbara

(Bakkerud) Hans in rural Davenport, ND.

Chris grew up on the family farm, where he learned to master the art of fixing things from following his Dad around all day. He attended and was confirmed at Canaan Moravian Church, Davenport, ND.

He attended Kindred High School and graduated in 1995. He wasn't much of an athlete but he did have the coolest car (so we're told).

Chris graduated from WyoTech in Laramie, WY. While living there, he was an avid rock climber, hunter, fisher, and snowmobiler.

In 1998, Chris became a dad to his first daughter, Rayne, who he loved from the start and always talked about her. In 2000, he returned to the family farm and worked for Glasow Farms on and off for the next several years. He couldn't resist helping out at harvest time.

It was in September of 2000 when he met the love of his life, Michelle. They were married on June 7, 2003, and lived in Wahpeton, where they both worked at the Circle of Nations School.

In 2005, their daughter, Rylee, was born. Chris was an amazing dad and she soon became a daddy's girl and had him wrapped around her finger, which was still true till his last day. Chris attended North Dakota State College of Science in Wahpeton, ND, and graduated in 2010 from North Dakota State University with a degree in Civil Engineering.

He worked at Ulteig Engineers until joining Bolton and Menk, Inc., in June of 2019, where he was excited to be doing strictly aviation projects.



Ray Staiger, passed away at the age of 87, on December 1, 2020 at his home at Edgewood Village in Bismarck, ND.

Raymond J. Staiger, son of Jacob G. and Emma Schatz (Diede) Staiger was born December 9,

1932 in Hebron, ND. He received his high school education at Hebron High School and graduated from Minot State University in 1963. Ray was a veteran of the Korean War serving in the Airforce from 1953 to 1957. Following graduation from college, Ray worked for the State of North Dakota Division of Emergency Management for 34 years, retiring in 1998.

Ray was a hot air balloon pilot and owned the first hot air balloon registered in the state. His hobbies were collecting barbwire, cutting quill pens from feathers, and collecting and repairing fountain pens. He had an extensive collection of toy tractors. He was an amateur radio operator (his call was "WB0NAD"). Ray also volunteered and retired from the Civil Air Patrol after 30 years. In addition, Ray was active in the Germans from Russia society and spoke fluent German. Ray was Past President of the State Associated Public Communication Officers (APCO), life member of the Veterans of Foreign Wars and the Golden "K" Kiwanis Club. He was a dedicated member of Lutheran Church of the Cross. He served on the church council and as the church's treasurer for seven years, as Missouri Slope Lutheran Care Center M-Club liaison for 30 years and was a member of the church's helping hands committee.

His fondest memories were of his time with his family, from one-on-one time with his grandsons to fun filled Staiger Days weekends at the lake. Ray lived for his family.

Ray was a dedicated servant of God and had a strong foundation of faith. We know our world is no match for the beauty he has now. We know God has welcomed him into his heavenly home and he is free from the pains of this earth.



John M. Nord, 68, Devils Lake, ND, died Tuesday, December 1 at Valley Senior Living in Grand Forks.

John Marvin Nord was born July 24, 1952 in Rugby, North Dakota to Marvin Orlando and Inger Johanna (Kristoffersen) Nord, a Norwegian immigrant. He was

baptized and confirmed at Zion Lutheran Church in Churchs Ferry. John graduated from Churchs Ferry Public School in 1970 and was a proud member of the Churchs Ferry Raiders Basketball team, scoring over 1,000 points before there was a 3 point line. After he graduated from high school, he attended North Dakota State College of Science and graduated from Devils Lake Junior College (now Lake Region State College) with a certificate in Civil Engineering Technology.

On June 30, 1972, he was united in marriage to Elonda Lannoye. They lived in Egeland at the Stebleton farm, while John worked for North Central Consultants out of Jamestown at the Nekoma Missile site. They then moved to the George and Lilly Lannoye farm near Penn, where he spent many years as the Quality Engineer for Sioux Manufacturing, traveling all over the country. John also was employed by Dakota Tribal Industries (DTI) in Fort Totten. In 1994, he became a partner of Dakota Sportswear, an embroidery company based in Minneapolis with the manufacturing site in Devils Lake. The company had contracts for the NBA, MLB, and NHL championships caps. In partnership with Mike Yoder, Decorated Wearables was born in 1996 providing local embroidery and screen printing services.

After a fire destroyed Dakota Sportswear in 2008, John served as the Airport Manager of Devils Lake Regional Airport until he retired in January 2020. He was proud that the airport earned the "2017 Commercial Service Airport of the Year" award sponsored by the North Dakota Aeronautics Commission in partnership with the Airport Association of North Dakota.

John was a member of St. Peter's Lutheran Church in Devils Lake, where he served in numerous roles, including congregational President, Head Elder, Mission Board, and Worship Leader. He was a lifetime member of the Elks Lodge 1216 and was named Elk of the Year in 2014. He liked to travel, visiting 47 of the 50 states and countries including Norway, South Korea, China and many others. He enjoyed having a cold one with his friends and buddies, but the thing that brought him the most joy was spending time with his girls, grandkids and family. He proudly earned the nickname of "Gruber," serving as Grandpa Uber for Anna and Jacob.



The aviation industry has a spot for YOU!

A rewarding career in aviation doesn't only mean being a pilot...

Register for the FREE Fly-ND Career Expo to see what your future could look like in management, air traffic control, weather planning, flight operations, maintenance, engineering, unmanned aircraft systems, space studies and so much more.



Friday, May 14, 2021 9 AM – 2 PM | Fargo Air Museum Scholarship Opportunities!

Free Registration at: www.FLY-ND.com/career-expo

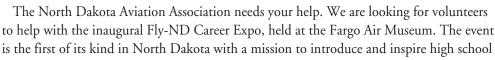






FLY-ND Career Expo is part of the ND Aviation Association. Learn more at www.FLY-ND.com

We Need YOUR Help!





senior high and college age students to the many careers available throughout the aviation industry. To learn more about the event please visit: www.FLY-ND.com/Career-Expo.

We have separated the volunteer responsibilities into groups to make the most of your volunteer time. You can participate in as many as you'd like! Here are ways you can help...

Outreach and Exhibitor Committee: This committee will be responsible for reaching out to potential exhibitors. We have a great list developed of people who may want to attend however, we need help in reaching out to these people to encourage them to participate. Remember, there is no fee to have a booth, so it's not hard sales! Most of this committee's work will be done in the planning part of this event.

Onsite Logistics Committee: This committee will be responsible for helping coordinate onsite logistics at the event. Including, but not limited to, exhibitor set up, student attendees, and overall event setup. Most of this committee's work will be done onsite at the event.

Scholarship Committee: This committee will be responsible for soliciting sponsorship dollars from potential donors. In addition, this committee will review scholarship applicants and select scholarship winners.

Finally, if you can't help but would like to donate to the scholarship fund, please visit: www.fly-nd.com/Donate.

The North Dakota Aviation Association (NDAA) has several opportunities for involvement. Volunteers are needed to support the annual Fly-ND Conference (formerly the Upper Midwest Aviation Symposium), the Career Expo, or any of our active committees.

In addition, if anyone is interested in serving on the NDAA Board of Directors,

please reach out to Mike or Stacy in the NDAA Central Office at admin@fly-nd.com or call 701.223.3184 to learn more.



Did you know?

All issues of the Fly-ND Quarterly, from 1987 until now, can be found on our website: www.fly-nd.com/fly-nd-quarterly. There you can also subscribe to our mailing list, for either a physical or digital copy.



God's Grace at 95 Hundred Feet

By Rob Spiekermeier

Carol and I were married Saturday evening, October 16, 1976, at St. Patricks' Church in Enderlin, ND. On Sunday, we drove to Valley City Municipal Airport in light snow flurries and cold. On the ramp was a nearly-new Piper Archer II Airplane that Larry Lindemann had serviced and fueled earlier that morning. With it, he had left a note wishing us a safe and fun trip. I did my pre-flight, checked fuel and oil as Carol secured our baggage. I called Flight Service and checked weather and winds aloft enroute. Earlier that year, I had earned my commercial license on Carol's birthday, March 17. I had considerable time in this aircraft. It was fully equipped for IFR flight, we were ready to go!

We blew out of there down 3-1 into light snow and wind, it was 24 degrees. We turned southeast climbing steadily and flew out of the snow into clear skies before we grazed the edge of South Dakota. I leveled and stabilized the craft at 9,500 feet and engaged the autopilot. This plane had a full panel and the latest avionics of the era. As I recall, it had two quality Nav-Com radios, Automatic Direction Finding (ADF), digital Distance Measuring Equipment (DME), a transponder, an Emergency Locator Transmitter (ELT), and a good Exhaust Gas Temperature (EGT) display. It was a comfortable, quiet, dependable aircraft. I only wished it had retractable wheels.

I was busy dialing in VOR stations, trimming the plane, leaning the mixture, and we had a nice tailwind at 9,500 feet. I had all the avionics humming and autopilot engaged, when Carol asked if I would mind if she took a little nap? "Sure," I said, thinking about her big day yesterday. She folded her arms, leaned against the window, and fell asleep. Carol was a beautiful young woman with long dark brown hair that fell below her shoulders and eyes you could drown in. One of her special qualities was that she slept beautifully; her face was relaxed and peaceful, she was stunning!

That's when it happened; I looked over at her, the brilliant afternoon sun reflected off the wing, diffused slightly through the plexiglass, sparkling through her long hair. The effect was a heavenly glow about her face. Her beauty was overwhelming to me at that instant, she was my best friend, now my wife, and I loved her so much! I thanked God right then for where we were, for my blessings, and her.

Here I am 44 years later, and this memory is still as vivid as that day so long ago. Carol died on a clear sunny morning on February 25, 2020, in our home with me by her side. Although cancer had consumed her, she died in no pain and was at peace with God. The remarkable thing was her face was just like that

day in the sky when she was 18 years old. She was even more beautiful now and I loved her so much more! This was surely

Dana (Paul) Lindemann (left), Carol (Rob)
Spiekermeier (center), Dani (Jarrod) Lindemann
(right) at the shop in Valley City a few years

loved her so much
more! This was surely
God's handiwork now as it was way back then.

Spiekermeier (center), Dani (Jarrod) Lindemani (right) at the shop in Valley City a few years ago. Three women with time in the air!

I never told her or anyone else about this memory before; now, my grief has inspired me to honor her with this poem.



Carol on wing of the Piper Archer II at a fuel stop enroute to Florida, October 1976. The brown bag was full of Twizzlers.

God's Grace at 95 Hundred Feet

She was only eighteen years young, girl so sweet, Wed on Saturday, Sunday in snow down 3-1 we sped. Lifting gently, south towards Florida's warmth we flew, Climb mechanical bird, leveled at 95 hundred feet.

The Lycoming's reliable drone, the rush of the air,
Pointers confirm our course steady and true.
New young couple very at ease in God's domain,
My glance caught her asleep, with nary a care!

Air so clean, that only a pilot can see, Brilliant west sun, glistening off the wing, Sparkled through her lovely long dark hair, God's light revealed, that girl was the world to me!

Lord protect us from the many perils above, Thank you God for the gift of flight. Pilots do get just a little bit closer to thee, Help me God, to give you and her my love!

Carol, flying with the angels.

All my love! Rob 8-1-2020





Justin flying with his Grandpa Roger

Justin's senior photo, taken with the same plane in which Justin went flying with his grandpa

An Inheritance of Passion

By Justin Ormiston, NDPA Flight Training Scholarship Recipient

My name is Justin Roger Ormiston. My middle name is after my Grandpa Roger, who dreamed of being a pilot as a boy. I was lucky enough to have been able to fly with him when I was younger. I have always wanted to be a pilot since I flew with him, and this is what sparked my passion for aviation.

When I was able to take hold of the airplane controls, it was an exhilarating experience. As I continued my flight training, the exhilaration never faded but I felt more confident with every flight.

The day I soloed was the most memorable part of my training so far. Going up all by myself was so exciting! The feeling of looking over and not seeing Ray, my instructor, in the passenger seat was surreal.

My favorite sight when flying has been navigating between cloud layers and seeing the different cloud formations. My friends and family have been very encouraging and enjoy all the stories I tell about my flight experiences.

My dreams of being a pilot are becoming more attainable with every flight. With this scholarship from the North Dakota Pilots Association (NDPA), I am able to afford my pilot's license before going to college. After I graduate, I plan to attend the Commercial Aviation program at the University of North Dakota.

I would like to thank the NDPA for giving me the opportunity to begin my aviation journey.







I love a good book. Now, it doesn't compete with a lived adventure, but I think it's one good substitute. As each chapter closes, the page turns to endless possibilities.

This is the last submission on behalf of the North Dakota Pilot's Association (NDPA). The NDPA Board has carried the wishes of the membership to the North Dakota Aviation Association (NDAA) and has come to terms with high hopes of what the Association will offer; namely, a paid staff to coordinate meaningful value from membership. At the same rate, a greater body with which pilots can partner for fly-ins and safety seminars, and a managed scholarship fund.

At future non-pandemic impacted conventions, pilots should see little change, as our required business agenda can now cut straight to armchair flying and friendly banter.

The estimated total of \$12,100, NDPA's projected remaining balance, will be donated to the FLY-ND scholarship fund for pilots. With continued donations, we can secure the minimum threshold to attain an annual \$1,000 scholarship.

The minimum endowment to have a perpetual \$1,000 award is \$30,000. Just to put our gas money where our propeller spins, the board and other involved members have committed to \$2,500. The reality is that we need to raise about \$15,000 to secure that perpetual scholarship. That's a challenge to you. If those of us on the board, paying mortgages and raising kids, can commit, so can you. So join us at www.fly-nd.com to get this scholarship fund underway.

The NDPA had a good run from its inception in 1984 until now. While it isn't fun to be at the helm of a closure, the board and the membership at large see the benefit of a larger, more capable organization and implore you to bring your membership forward with us to the NDAA. Honestly, it's the same book, just a new chapter.

Join us, it's a formation flight.







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Sharing A Runway and Border

By Dennis K. Johnson

International Peace Garden Airport (S28) is one of six airports that straddle the United States/Canada border. At a few of these, the runway (often turf) is oriented along the border, so that one side is American soil and the other Canadian; you could land with one tire in each country.

Although the runway at International Peace Garden Airport is entirely in the good ol' USA, by about 125 feet, it has a taxiway and parking area that crosses the border, which makes for a unique way to drive into Canada.

Each of these airports is located near border control posts, so they're the place to land and pass through customs and immigration if making a flight to the land of hockey and maple syrup. Additionally, this airport makes for a great day-trip destination, as the International Peace Garden is just across the road. It's certainly worth the flight to tiptoe through the tulips and enjoy a \$100 hamburger.

International Peace Garden

The International Peace Garden was built along the United States/Canada border as "a memorial to the peace that has existed between the United States of America and the Dominion of Canada." Construction started in 1932 on land donated by Manitoba and North Dakota, with some work completed by the Civilian Conservation Corps during the Great Depression. Each year, the park plants more than

150,000 flowers and visitors can stroll through a sunken garden, formal garden, and nature conservatory. Other activities include hiking or biking wooded trails, or canoeing or kayaking on the lakes. Additional attractions include the Peace Chapel, the North American

Game Warden's Museum, and 9/11 Memorial. Afterward, enjoy the picnic areas and café. (The café is currently closed for the season.)

IPG Airport (S28)

The International Peace Garden Airport is located on the North Dakota/Manitoba border, 11 miles north of Dunseith, North Dakota. It's not much—just a strip of pavement with no aviation services or fuel, only tiedown space. Bring your own tiedown straps and covers, and your passport. What it does offer is access to the International Peace Garden and customs/immigration services between Canada and the United States. Runway 11/29 is 3,005 feet by 60 feet of asphalt at an elevation of 2,315 feet msl.

COVID 19 and Customs

As of November 1, the Peace Garden is open, but the Canadian border is closed to Americans. Although no identification or procedures are needed to get into the Peace Garden from the United States or Canada, you'll be wandering between the two countries during your visit and you'll need proper identification upon leaving the garden to return to the United States. Preferred documents include a passport, Global Entry card or Nexus card (a driver's license and birth certificate will work in a pinch), and for minors, their birth certificate.

Check at the customs/ border crossing office before going into the park to ensure there are no problems when returning. The park café is closed, so plan to bring your lunch and use the picnic areas.



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Logbook Entries Don't Always Say It All

By Rich Altendorf

10-Nov.-20: NC13072, 4V4-47Y and return, 2.3 X/C Bill to Perham.



Tuesday, November 10, 2020: It was a casual conversation my Waco partner, Bill O'Keefe, and I were having as I returned him to Pelican Rapids, MN, after he had delivered his Great Lakes to my shop for a look over. Our conversation focused on taking our 1933 Waco Continental 670

biplane on a long cross country trip someday. It was a clear, warm afternoon.

On the solo flight home, my thoughts turned towards the weather. A small taste of winter had come and gone, and an unusually warm day was on the horizon. The old Waco just rumbled along toward home. I tried to think of a further destination.

My son, Mark, who was retired from the United States Marine Corps, and his wife, Chrystal, live in Fredericksburg, VA. Why not visit there? It had been a long time between visits!

That night, while watching Jimmy Stewart cross the Atlantic in the movie "The Spirit of St. Louis," I plotted out a course. Northwood SE around Chicago; ESE to Fredericksburg. About 1,300 miles, three gas stops, one night each way, and a good forecast! Bill had borrowed me his iPad and I had all seven sectionals.

Wednesday, November 11, 2020: I kissed my wife goodbye, grabbed a change of clothes, a bottle of water, a box of cinnamon granola bars, and headed for the airport.

The Flight Service Station (FSS) reported a high pressure would follow me all the way. Clear, warm, and a tail wind with a 7-10 window. The only derogatory remark from the briefer was about how nice it was for old guys to be out flying. Apparently, I bracketed my age when I told him I wrote my private test at the old FSS at Grand Forks International Airport (GFK), upstairs with 360 degree observation windows. I topped everything off, threw a couple of extra gallons of oil in the back, and headed southeast.

I was past Fargo, ND, before I had the GPS up and running. Not bad, just a little off the magenta line. 3500 MSL, 105 IAS, 118 GS, clear and smooth. Life is good. Had a granola bar.

Mankato, MN (MKT), came up as a good stop for gas. 33 gal. and 2 qts. Added to the ship gave me my fuel and oil burn check. A few streaks on the windscreen were normal for three hours. Let's go.

Back on the magenta line, 3500 MSL, 105 IAS, 100 GS, clear and smooth. Next stop, Platteville, WI (PVB). Had another granola bar. Platteville was a quick turn, topped off with enough fuel to last until dark. Back on the magenta line. 3500 MSL, 105 IAS, 98 GS, clear and smooth. I'm in no hurry, anyway.

It was about the time I reached the 30 mile veil around Chicago that my preflight plan went astray. The screen I'd been following turned gray, announcing a dead battery. I quickly realized that all seven of my sectionals were in the back, and none had so much as a course line drawn in! That moment I knew I wasn't lost, but I darn sure didn't know where I was. Desperate minutes passed finding the bag. Bill had said something about spare batteries! Find the cord! Which one? Which end goes in? Light. It's on! There again was the magenta guide, just in time to skirt the Chicago veil. I was humbled by the fact that all my trusty maps were sitting neglected in the back, but I found solace in the fact that I overcame this technological problem.

The little box showed 85 GS until I rounded the veil. With the shadows growing longer now and with a stiff tailwind, I headed east. Mishawaka, IN (3C1), was within reach, and a Waco Club friend of mine had offered to put me up if I ever came by.

I touched down on a smooth grass strip with the sun just on the horizon. After surprising Jon Nace, a well known Waco guy, with a phone call, I serviced the ship while he drove over. I parked in the grass next to his hangar. We spent a couple hours talking about his Waco parts.

He showed me a bunk and fridge and said goodbye. I dined on a granola bar and a couple of Bavarian Ales from his fridge, while I plotted lines on the remaining charts. 500 miles to go. I slept like a baby.

Thursday, November 13, 2020: The sky was full of stars when I left the hangar. The old ship sat patiently in the grass waiting for me. Not a cloud in the sky. One more gas stop and I'll be there.

The sunrise was awesome. I was glad I'd cleaned the oil off the windscreen. 3500 MSL, 105IAS, 122 GS, clear and smooth. This is fun. I think I'll have a granola bar.

As my finger followed along the more familiar pencil mark, I noticed my path crossed over Wynkoop Airport (6G4), the location of the National Waco Club Fly-In. It was a good place for gas, so I stopped. Wynkoop Airport was built around 1918. I touched down on their grass and taxied back toward the hangars.

A sad sight greeted me. A storm had come through earlier, and the last original building had collapsed. Several wrecked aircraft lay about. The remaining hangar and fuel tank was

right out of the 1930's. A time capsule. Brain Wynkoop was the third generation owner and not quite as old as my Waco. As I serviced the ship, we talked about Wacos, life as an airport bum and the weather. His parting comment was that strong upper level west winds usually meant that the weather would sock in. Or maybe his bones just ached. I'm not sure. I thanked him and headed southeast. 250 miles to go. 3500 MSL, 105IAS, 122 GS, clear and smooth.

The terrain began to change now. Farmland, which had become increasingly more populated as I went east was disappearing, turning into an endless series of low, tree covered hills. The Appalachian Mountains began to appear on the horizon.

The Mississippi, Ohio, and Shenandoah Rivers were the most impressive sights to see. I thought about the early settlers and Grant and Lee duking it out; history I couldn't imagine at home.

The Appalachians were here. Tops at 5500 MSL. I crossed at 5700, smooth as glass. What a view!

My destination was in sight now. Stafford Co. Airport (RMN), Fredericksburg, VA. My halfway point of the trip, and the Continental 670 hasn't missed a beat.

My son, Mark, and his wife, Chrystal, met me at the airport. We tied the ship down and headed to their home. I had only told them yesterday I was coming and to tell the truth, we were all kind of amazed.

The rest of the day was spent fooling around, barbecuing the

best steaks I've ever tasted, and talking til the wee hours of the morning. I trundled off to bed in a very fine mood, but with Mr. Wynkoop's dire weather prediction on my mind.

Friday, November 13, 2020: After watching the National Weather channel at breakfast, common sense and fear told me it was already time to go home. Growing up around airports as well as myself, Mark knew it had to be. Chrystal set me up with sandwiches and lemonade as I laid out my charts and plotted a return course. No more granola bars! The FSS gave me a good forecast to start out. Reluctantly, we all headed for the airport. A little after 1 p.m., with the Waco full of gas and oil, I fired it up and headed west. My reluctance disappeared as soon as my wheels left the ground. Flying is just too much fun.

Airborne again and climbing towards the Appalachians, 100IAS, 95 GS, clear and smooth. The mountains, foothills, and rivers were just as inspiring on the way home. Coal mines, barges, riverboats, and industry were amazing. Half a hoagie and some lemonade hit the spot.

East of the Appalachians, being back over flatter farmland was comforting but I never doubted the old Continental once. She just rumbled along 5500 MSL, 105IAS, 95-100 GS, clear and smooth.

A quick stop at Newark, OH (VTA), and I was off again. As the shadows stretched out, I skirted past Columbus, OH, and decided to stop at Maryville, OH (MRT). Only 350 miles out. The forecast weather was bad after Sunday at home and wind might be a problem along the way.



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Andrew enjoys flying airplanes upside-down as a member of the UND National Championship Aerobatics team! He hopes to someday work as an Air Medical Pilot.

Tony enjoys exploring his musical interests by participating in the Pride of the North Marching Band. His goal is flying for a commercial airline.



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Lining up on the large asphalt at Maryville, I couldn't believe I saw a grass parallel strip. That's a no brainer. What a crew there. I was topped off, offered a car and hangar before the engine cooled off.

That night, five local airplanes got to spend the night with my old Waco. Four of them didn't even have propellers, and they all smelled of kerosene. I found a nearby hotel.

November 14, 2020: As promised, the manager, Dave, met me at the airport and we rolled the ship out. I almost offered to clean the place where she marked her spot.

A little after 6 a.m., I lifted off with 900 miles to go. I climbed to 5500 MSL, 105IAS, 92 GS, clear and smooth. In all my years of flying, I have always enjoyed watching the sunrise. I've never seen two of the same.

Two hours later, GS 85-97, I started thinking about gas. Morris, IL (CO9), was the place 630 miles behind, 620 miles to go. I couldn't wait to get around Chicago. Forecast winds southwest, increasing. With any help and gas around Rochester, I should be within striking distance of home. A quick last leg in the morning, but a gusty 25 mph, 90 degree crosswind was out of the question. We'll see!

I rounded the Chicago veil at 5500 feet and picked up a nice tail wind. Life was still good.

As I flew north, I watched the little boxes lower my ETA and increase my GS. The Automated Weather Observing System (AWOS) stations along the way were 15-20, but unlike

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at home the runways actually line up with prevailing winds. That's a good idea!

I finally had to admit, an iPad with Foreflight is a very useful tool. By then, I could even turn on the surface wind feature. After all, I had been playing with this thing for 15 hours! However, I didn't like what it told me: there was an Airmet around Minneapolis and Rochester. Lots of yellow and red flags on the map with funny little tails. It didn't take a rocket scientist to figure that I should land short and refuel with a plan to fly over the wind. Once again, Platteville, IA (PVB), fit the bill. With 490 miles to go, full fuel and oil, I climbed back to 5500 SL, 105IAS, 130 GS, clear and smooth, right back on my new pencil line. As I went past Rochester, MN, the AWOS reported 30 mile-per-hour winds gusting to 40, straight down the runway. I could have landed there.

I finished my day old hoagie and pressed on. 300 miles later, I touched down at Sauk Center, MN (D39). The wind was 15 knots, close to runway heading. A piece of cake. The little box had informed me that my estimated time of arrival for home would be 5 p.m., but that was before I landed. With evening approaching, the wind might drop off. Where would I spend the night? I called my wife, Penny, and when she told me the windsock had a big kink in it, I explained that it might get too late today. Leaving Sauk Center, I leveled off a little lower, still indicating 105IAS and about 120 GS, still clear and smooth. 190 miles to go. I might make it! Before long, Fargo was off my left wing. Hillsboro came in sight as the sun neared the horizon. The maps and GPS were all forgotten. I was on my home turf.

As I turned final on the grass at Northwood Municipal Airport, I couldn't help but wonder how the trip would be in a 1933 Model A Ford. I touched down just as the sun disappeared, like a butterfly with sore feet (a phrase used by a notable Washington Aviator, describing how Jon Nace's landing gear parts worked). I tucked NC13072 back in the hangar, as if I'd just been out for a lap around town and went home for supper.

The final report:

2496 miles, 22 hours, 17 minutes
306.8 gallons of gasoline
Four and a half gallons of oil
One box of granola bars
Four days, three nights, dear and smooth all the way

What a wonderful trip visiting family, eating good steak, meeting new friends, and seeing lots of stuff. It was good to be home safe too.

Logbook Entry:

Nov. 11-14, 2020: WACO 13072 4V4 - RMN & Return 22 1 2 X/C Dinner with Mark and Chrystal.

Those logbook entries just don't say it all!

A Quick Flight Back 75 Years

By Penny Rafferty Hamilton, Ph.D.

Imagine it is 1946. North Dakota, as is the rest of America, is booming with Post-World War II prosperity. Returning GIs (WWII slang used by soldiers meaning "Government Issue") trained at airports all across the state using their educational benefits. Dickinson's Sax Aviation Company, Westhope Flying Service, and Rugby Airport (described as the geographic center of North America) advertised flight instruction in the new Dakota Flyer. In 1946, Hector Field hosted a Military surplus PT-26 auction drawing potential buyers from seventeen states. All 111 Fairchilds sold to eager buyers with the average selling price of \$1,288, which is about \$18,000 today. The average price of a new car back then was \$800, with gas about 15 cents a gallon.

The PT-26 was popular with pilots. This primary trainer was often the first plane our World War II pilots flew before moving on to other trainers. Along comes twenty-two year old Geneva Evelyn Schow from Mott, ND, who launches the brand new Dakota Flyer. Her purpose was to boost aviation in the Dakotas and benefit the flying fraternity with a monthly subscription publication about all things flying.



In November 1946, Geneva launched her Dakota Flyer. In the December issue, she printed some of the letters of congratulations about her new aviation publication. Geneva must have been thrilled when she opened the official looking letter from North Dakota Governor, Fred Aandal, congratulating Geneva on her first edition to promote aviation in the state and "further projects in which all air-minded people in North Dakota desire." The letter did not indicate if the two dollar annual subscription was enclosed.

In her first editions, Geneva wrote about Ms. Zona Brown, only 16 years old, becoming North Dakota's youngest female pilot. Zona worked in stores "and saved every dollar for flying lessons and to buy her own airplane." Zona was also writing "Hangar Chatter" for the Bowman County Pioneer. Geneva also wrote about Elgin High School student Darlene Levorson's solo on October 13, 1946. Darlene dreamed of flying for the past six years. Jumping ahead to the August 1948 Dakota Flyer edition, Geneva wrote an update that now age 19, Darlene was

a private pilot and University of North Dakota sophomore.

Seventy five years ago when Frank Sinatra was crooning "Five Minutes More" and Perry Como sang "Prisoner of Love," Geneva's Dakota Flyer continued covering the good news about aviation training, flyers, airports, and organizations such as Flying Farmers and the Civil Air Patrol. On July 9, 1948, Geveva married Todd Oleson. She continued her beloved Dakota Flyer. However, over time she turned it over to Carl T. Thompson. In January 1949, Thompson expanded the vision to promote aviation in the North Central States and changed the name of the iconic aviation newspaper to *The Central Flyer*.

Seventy-five years has flown by since Paris unveiled the bikini and World War II combat pilot, Jimmy Stewart, played George Bailey in the acclaimed movie "It's a Wonderful Life." However, one constant is the enthusiasm for aviation in North Dakota remains strong.

Dr. Hamilton researches and writes about unique aviation history. Learn more www.PennyHamilton.com

VANTIS - The Future of UAS

The problem with flying Unmanned Aerial Systems (UAS) Beyond Visual Line of Sight (BVLOS) is that it's incredibly prohibitive and not repeatable, scalable, or economically viable - yet. The requirements to make it possible - extensive research and technology development, building out infrastructure, testing and validation, securing regulatory approvals, creating an advanced safety case - take years to meet and are simply unrealistic for most single-use cases. Imagine if everyone had to build their own road to travel further than their own yard, and had to individually negotiate approvals for what they'd be able to do and how they'd be able to do it, once they did. Imagine there being separate roads, regulatory approvals, safety measures, and building procedures, for the USPS, FedEx, and UPS. One for fire engines, one for ambulances, and one for police. One for every different trucking company. It's expensive, it's inefficient, and it just doesn't make sense.



It's a first-of-its-kind, turnkey product that will enable BVLOS flights across the state without the overwhelming upfront investment of "building your own road." It's not an exaggeration to say that there is nothing in this country like Vantis; it is truly a revolutionary first step towards opening up the skies for UAS operations. Administered by North Dakota's homegrown center of UAS expertise, the Northern Plains UAS Test Site (NPUASTS), Vantis infrastructure is already being installed at key sites in McKenzie and Williams Counties with a Mission and Network Operations Center (MNOC) in Grand Forks County.

Improving Quality of Life

Enabling commonplace BVLOS flights for public and commercial use cases isn't just an exciting advancement in the UAS industry, it's a boon for North Dakotans, who will be able to reap the benefits for decades to come. As Northern Plains UAS Test Site executive director Nicholas Flom is fond of saying, North Dakota doesn't have a last mile problem, it has a last hundred-mile problem. North Dakota isn't just rural; 36 of our 53 counties are designated as frontier counties, meaning they have a population density of fewer than six people per square mile. Traditionally, this has posed challenges related to meeting the needs of our citizens. Mail and package deliveries take longer. Access to healthcare is more limited than in cities,

and wait times on medical test results are longer. They are often last to receive technological developments. This was true when electrical infrastructure was being built out, and continues to be true with deployment of high-speed internet infrastructure. There are miles and miles of roads between rural North Dakotans and population centers that need consistent maintenance and inspection. Following a storm or a natural disaster, those long roads need to be safe before emergency responders can arrive or before technicians can be deployed to fix critical infrastructure, like downed power lines after a blizzard.

People often frame this as a disadvantage, but Flom believes it's an opportunity. "Unique problems just mean that we need a unique solution – and luckily, North Dakota is an entrepreneurial state."

When people think of commercial UAS operations, package delivery is often what they think of. It's true that Vantis will open the door to fast, efficient deliveries for retail items, as well as things like medications for people who receive theirs by mail. But there is a much larger scope of what is possible. Rural residents, who may have to wait days to get test results back from the lab in the nearest big city, could see a much quicker turn-around. Quicker results mean quicker treatment, which often means better outcomes.

This is also true for emergency response. Following a natural disaster, returning electricity to a rural hospital is imperative. Locating lost hikers or people who may have been stranded in a storm, providing first aid supplies to the scene of an accident before ambulances arrive, or getting communication equipment to someone injured and stranded in a rural location, who just needs to remain calm and know that help is on the way. Doing these things quickly can be a matter of life and death.

Not only does Vantis have the potential to make North Dakotans safer, it is poised to improve their lives. Quick, safe, and efficient rail inspections not only reduce the risk of dangerous crashes and derailments, they also reduce the risk of costly delays and expensive maintenance that contribute to higher prices. Extensive road and bridge inspections not only make North Dakotans safer, they mean that we get better gas mileage and hit fewer bumps in the road on the way to visit relatives over the holidays. It means we are all back on the road sooner after a flood, a blizzard, or a tornado. Monitoring wells and pipelines to respond to spills quickly, or catch them before they happen, means a thriving energy industry in the state and clean, unspoiled natural spaces for outdoor recreation and tourism. Agriculture is the heart of North Dakota's economy; UAS surveys can help improve crop yields, track herds, and produce more food for the country and for export. Vantis will help North Dakota farmers work smarter, not harder.

These opportunities for commercialization using UAS do not exist elsewhere in the United States, because Vantis is literally the first of its kind. The development of this network will draw in business from around the country. However, it

will also inspire exciting innovation right here in the state. It makes sense, as our state already has all the components needed to support UAS education, training, research, and commercialization.

Why North Dakota?

North Dakota has been one of a handful of leaders in UAS innovation across the country. The University of North Dakota and North Dakota State University are home to experts with decades of experience in aviation and UAS technology. The Grand Forks Air Force Base (GFAFB) specializes in UAS flights. In 2013, NPUASTS was selected to be one of only seven Federal Aviation Administration (FAA) designated UAS test sites. Since then, UAS businesses have been flourishing here and the nation's first UAS business and aviation park, Grand Sky, opened at the Grand Forks Air Force Base. The NPUASTS, in partnership with North Dakota Department of Transportation (NDDOT), was a lead participant in the FAA's Integration Pilot Program (IPP), whose goal was to explore how to safely integrate UAS into the national airspace system (NAS); NPUASTS, along with the NDDOT, was further selected to participate in the second iteration of the IPP, known as BEYOND. North Dakota is on the cutting edge of UAS flight beyond visual line of sight in this country.

It's no exaggeration to say that North Dakota is uniquely positioned as a leader in UAS advancements. We're also supported by state leaders and partners, who believe in Vantis.

One of the missions of Vantis is to leverage existing infrastructure and capabilities deployed throughout the state. The NDDOT owns and operates towers throughout the state, which Vantis will be able to use to install remote infrastructure. The North Dakota Information Technology Department (NDIT) manages a network called STAGEnet, which Vantis will use to support the backhaul network. The North Dakota Aeronautics Commission (NDAC) works with each of the 89 public-use airports in the state, a tremendous asset when Vantis needs access to or contacts at these airports. The North Dakota Department of Commerce is the funding agency that provides strategic guidance for Vantis.

Senator John Hoeven has been a long-time advocate for the development of a thriving UAS ecosystem in North Dakota. Governor Doug Burgum is second to none when it comes to supporting leading-edge initiatives. Lieutenant Governor Brent Sanford chairs the Northern Plains Unmanned Systems Authority, which is directly responsible for the execution of Vantis. North Dakota's legislature has been incredibly supportive of UAS initiatives in the state and of Vantis in particular, approving the initial investment to begin building out the infrastructure and make North Dakota the nation's UAS epicenter.

It's not only North Dakotans who see the incredible value of a network like Vantis. In 2019, NPUASTS hosted an industry day to outline the vision for Vantis and to announce

the upcoming competitive Request for Proposals (RFP) for the selection of three system engineers/system integrators. Collins Aerospace, a Raytheon Technologies Company, L3Harris Technologies, and Thales USA bring decades of safety experience in manned aviation, as well as cutting-edge UAS technology to the table. Each of these giants in aviation technology has been involved in the development of the network. L3Harris Technologies and Thales USA were selected to build out the initial key sites. Volansi's VOLY C10 was selected as the aircraft to test and validate Vantis. It will ensure the safety and reliability of the network and perform use-case development flights.

The Future of UAS

Integral to Vantis' success will be the Mission Network and Operations Center (MNOC), which is currently under construction at Grand Sky Business and Aviation Park in Grand Forks county, attached to the Grand Forks Air Force Base. Grand Sky is the only park of its kind in the country, assisted in its innovative capabilities by that relationship and proximity to the Air Force base. The MNOC will function as a command center, connecting all of the remote sites across the state, including towers and airports that house Vantis technology infrastructure, to the backhaul data network. Top of the line, aviation-grade technology will ensure that Vantis is safe and reliable by monitoring the health of the network and identifying problems before they can impact flights.

Because nothing like Vantis exists in this country, nothing like the MNOC exists either. This is infrastructure that is designed to grow with Vantis as it develops and grows, as the UAS industry is evolving rapidly, both in terms of technology but also in terms of regulations. For example, the FAA recently announced final rules for Remote Identification (Remote ID) of drones. These rules would allow for small UAS to fly over people and at night under certain conditions or circumstances that one would normally require a waiver. This change will facilitate greater integration of UAS into the National Airspace System. The NPUASTS is assessing the implementation of these rules and their incorporation into Vantis for the benefit of both unmanned and manned aviation. Once incorporated, the conditions in which Vantis can operate are significantly expanded.

Regulations will continue to change and evolve and Vantis is built to be nimble enough to change and evolve with them. This is incredibly important, because making BVLOS flights commonplace will open the door to possibilities that have not even been imagined yet. Today, Vantis is North Dakota's BVLOS highway; tomorrow, it's the nation's interstate system. The first roads were built long before anyone could have imagined a car to drive on it, and the Model T was built before anyone could have conceived of a Tesla. What else are we not imagining yet?

U.S. Department of Transportation Announces \$5.8 Million in 33 Unmanned Aircraft System Research Grants to Universities

The U.S. Department of Transportation's Federal Aviation Administration (FAA) today announced \$5.8 million in research, education and training grants to universities that comprise FAA's Air Transportation Center of Excellence for Unmanned Aircraft Systems (UAS), also known as the Alliance for System Safety of UAS through Research Excellence (ASSURE).

"These universities are making great strides in advancing the Department's efforts to integrate UAS safely and efficiently into our Nation's airspace system, ultimately delivering new transportation solutions and economic benefits for the American people," Acting U.S. Secretary of Transportation Steven G. Bradbury said.

The FAA's Center of Excellence for UAS is advancing the administration's transportation and economic goals that air travel provides to the nation. The Center of Excellence UAS universities received a total of \$5,822,990 to advance specific goals and projects.

"These universities are making great strides in advancing our efforts to safely and efficiently integrate UAS into our nation's airspace system," said FAA Administrator Steve Dickson. "Each grant is designed to explore the questions that will lead to greater UAS and unmanned air carrier integration, which will

ultimately deliver new transportation solutions and economic benefits for the American people."

More than 1.7 million recreational and commercial drones are in the active UAS fleet. That number is expected to grow to as high as 2.31 million by 2024. The ASSURE grants are aimed at continuing and enhancing the safe and successful integration of drones into the nation's airspace system (NAS).

The FAA has established 13 Centers of Excellence in critical topic areas focusing on: unmanned aircraft systems; alternative jet fuels and environment; general aviation safety; commercial space transportation; airliner cabin environment and intermodal transportation research; aircraft noise and aviation emissions mitigation; advanced materials; general aviation research; airworthiness assurance; operations research; airport pavement and technology; computational modeling of aircraft structures; and technical training and human performance.

The first round of ASSURE grants for Fiscal Year (FY) 2021 were awarded for the following eight (8) research areas.

Air Carrier Operations-Investigate and Identify the Key Differences Between Commercial Air Carrier Operations and Unmanned Transport Operations

This research will provide findings, recommendations and



lessons learned that will enhance the FAA's understanding of the requirements for certifying large UAS for air carrier operations.

Specific focus of this evaluation will analyze projected demand by location (e.g. rural, exurb, suburb, or urban) and the feasibility of commercial UAS air carrier operations. It will also explore the role of autonomy in UAS vehicles beginning with operations in less risky areas such as rural locations to exurbs (areas beyond the suburbs), and then on to more populated areas of suburban and metro areas. This exploration will focus on the passenger transportation environment, and investigate the workforce impact of this new capability.

Kansas State University – Lead University	\$220,000
University of Alaska, Fairbanks	\$150,000
North Carolina State University	\$150,000
University of North Dakota	\$130,000
The Ohio State University	\$149,745

UAS Cargo Operations-From Manned Cargo to UAS Cargo Operations: Future Trends, Performance, Reliability, and Safety Characteristics Towards Integration into the NAS

This research will evaluate the feasibility of commercial UAS cargo operations together with the projected demand by location. Furthermore, the research will detail anticipated needs of the FAA to support further integration of UAS cargo operations, including how greater autonomy may provide an improved level of safety.

University of Alaska, Fairbanks – Lead University	\$240,000
Kansas State University	\$125,000
University of Alabama, Huntsville	\$124,987
North Carolina State University	\$125,000
University of North Dakota	\$60,000
The Ohio State University	\$124,996

High-Bypass UAS Engine Ingestion Test

Inclusion of large numbers of small Unmanned Aircraft Systems (sUAS) into the NAS may pose unique hazards to manned aircraft. It is necessary to determine the potential severity of sUAS mid-air collisions with manned aircraft to define an Equivalent Level of Safety for UAS operations. Since sUAS are not similar to any other foreign body (e.g. bird, ice, volcanic ash) that the FAA currently regulates, understanding the severity of an ingestion is critical to being able to estimate the extent of potential damage.

The Ohio State University – Lead University	\$340,000
Wichita State University	\$100,000

Small UAS (sUAS) Mid-Air Collision (MAC) Likelihood

This research focuses on sUAS MAC likelihood analysis with general aviation (GA) and commercial aircraft. Because severity research varies based on where a collision occurred on a manned aircraft, this likelihood research will not only look at the probability of a MAC, but also the likelihood of colliding with different parts of a manned aircraft.

Wichita State University – Lead University	\$464,000
Kansas State University	\$220,000
Embry-Riddle Aeronautical University	\$215,000
University of Kansas	\$160,000

Mitigating GPS and Automatic Dependent Surveillance-Broadcast (ADS-B) Risks for UAS

This research is necessary to enable safe and secure automated sUAS navigation and safe and secure automated sUAS Detect and Avoid operations. Unvalidated or unavailable GPS and "ADS-B In" data poses security and safety risks to automated UAS navigation and to Detect and Avoid operations. Erroneous, spoofed, jammed, or drop outs of GPS data may result in unmanned aircraft position and navigation being incorrect.

University of North Dakota – Lead University	\$325,000
Kansas State University	\$135,000
Embry-Riddle Aeronautical University	\$135,000
Oregon State University	\$100,000
University of Alaska, Fairbanks	\$135,000

Shielded UAS Operations-Detect and Avoid (DAA)

This research is intended to identify risks and recommend solutions to the FAA that can enable shielded UAS operations such as a flight within close proximity to existing obstacles and not to exceed the height of the obstacle. This effort will identify risks, determine whether shielded operations can be made safe, to what degree UAS Detect and Avoid requirements can be reduced, and recommend UAS standoff distances from manned aircraft and ground obstacles, including buildings and air traffic control towers.

University of North Dakota – Lead University	\$430,000
Kansas State University	\$110,000
Embry-Riddle Aeronautical University	\$150,000
New Mexico State University	\$140,000
North Carolina State University	\$95,000

Validation of Visual Operation Standards for Small UAS (sUAS)

This research will measure Visual Observer (VO)/Remote Pilot (RP) performance in avoiding other aircraft and hazards, identify and estimate potential failures, and inform recommendations for training standards. The research will help the FAA and industry consensus standards bodies, such as American Society for Testing and Materials (ASTM), to better understand the safety performance and challenges associated with VO/RP visual line of sight operations to include Extended Visual Line of Sight (EVLOS). Under EVLOS, the small unmanned aircraft system (UAS) is beyond the visual range of an observer but any manned aircraft are still within visual detection range of the ground observer. Research outcomes

may also potentially inform recommendations for future regulatory updates to Part 107, the FAA's Small UAS Rule.

Kansas State University – Lead University	\$190,000
Wichita State University	\$120,000
Mississippi State University	\$70,000
New Mexico State University	\$120,000

UAS Flight Data Research in support of Aviation Safety Information and Sharing (ASIAS)

This research will help pull together different flight data sources including high quality UAS flight data, commercial and general aviation flight data, and surveillance data. This data will be utilized to enhance the development of safety case analyses for NAS stakeholders (e.g. operators, regulators, and certification authorities) and to support the approval of new UAS operations in the NAS.

University of North Dakota – Lead University	\$393,693
Embry-Riddle Aeronautical University	\$75,569



Old Geezer's Flying Academy

By Tajae Viaene

If you find yourself reading these articles through thick glasses, in between reruns of "The Andy Griffith Show," this column may just be right up your alley. Maybe you have been an aviator all of your life, yet you still want to learn more. Or perhaps you are just pondering getting started in your later years. Have no fear, the young fledgling at your local flight school may be eager to fly, but the patience and maturity that comes with age are beneficial tools that will aid you in this journey. Let's discuss a few tips regarding flight training as a vintage aviator.

Many times, I have initiated training for customers in their 70's or 80's. Quite often, at some moment during the first lessons, the question will be asked, "Do you think I can accomplish this at my age?" Well, I'm here to say that yes, you will likely not only succeed at this newfound endeavor, but feel younger and more vibrant every day you hop in the airplane, as you become that giddy little kid again!

The art of flying takes hard work, patience, persistence, and much practice. At this point in your life, if you are able to devote the time needed for studying and regular flight training lessons, the battle is already half won.

You have decided it's time to start flying, so what's next? Go ahead and take the first step by scheduling a meeting with a Certified Flight Instructor (CFI). They will bring you up to speed on the ever-changing medical requirements and tailor flight training to your unique needs. Get yourself a quality headset, as hearing loss is a cruel but nearly inevitable joke played upon us as we age. Be sure to get the right study materials to match your learning style. For instance, if you learn best by reading textbooks and taking notes, an online course is probably not the most efficient way for you to soak in the required ground knowledge. And by all means, stick with a steady plan; sequential yet timely lessons help enormously as you progress through your training requirements.



Call for Stories

The AOPA recently covered the Commemorative Air Force (CAF) naming their restored warbird for a woman who helped build it during World War II.



Do you have a Rosie the Riveter story? We'd love to share local stories.

https://aopalive.aopa.org/detail/video/6212484867001/missbetty--caf-names-warbird-for-rosie-who-built-it



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CALENDAR of EVENTS

Check out the online calendar for details on these events: aero.nd.gov/events

This year it is recommended to confirm the upcoming events with local airports or organizers.

March 2021

FLY-ND Virtual Conference March 8-9

June 2021

Mandan Fly-In — Jun 13Y19 Mandan, ND

Valley City Fly-In — Jun 19 KBAC