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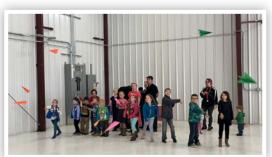
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#### North Dakota Aviation Council

Summer 2017



KJMS Ribbon cutting for the grand opening of the new jet bridge.



Dunn County Airport: During the Fly-In, we held a build-andfly paper airplane contest for kids of all ages.



at Watford
City Municipa
Airport
and the
naming of
the new
James L.
Taylor
Terminal.



Taylor Termin

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KBIS Career Day



Y19 Poker Run

Milnor (Below): We had 17 flights come in, which was a record for us.

N94505

In North Dakota we are fortunate to have many fly-ins where you have the chance to get to know the greatest people. So, if you have a chance to attend a fly-in, hop in your plane, drive – or even hitch a ride and you will be glad you did! You will meet great people, get to talk about flying, and the food is tasty! Cleared for Take-Off! Darrel Pittman







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#### North Dakota Aviation Quarterly (NDAQ)

Official Publication of the North Dakota Aviation Council

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

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### CHAIRMAN' COMMEN

## **Probable Changes on the Way!**

In past articles, much has been written about the appointment of an Executive Director for the North Dakota Aviation Council. This change has been re-enforced in a positive manner by several of our members and readers of this publication. This summer, the Council has appointed a few folks to help with the transition of a board that has hired an Executive Director for the first time.

One of the studies that we have been going through is to explore bylaws, governance requirements, mission and to understand in general terms, "how the Council and membership groups function." Through this rediscovery process we are quickly reminded of the North Dakota Aviation Council Mission and purpose.

The Mission Statement of the North Dakota Aviation Council is "To promote and support aviation's growth in North Dakota through our membership organizations, professional development, and advocacy."

The bylaws state that "the purpose of this organization shall be to exercise leadership in the Aviation professions and among those individuals active in the Aviation professions in the state by:

- Improving relations among aviation professionals and those interested in or concerned with aviation professions;
- Promoting and extending aviation services in all appropriate ways;
- · Improving the standing, qualifications and abilities of aviation professionals in the state by all suitable means;
- Providing for the general organization and coordination of an annual aviation convention;
- · 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.

Through our discovery process, members of our committee including, the Executive Director Team (Staiger Consulting Group), the Aeronautics Commission, and others feel strong that the mission and purpose of the North Dakota Aviation Council is still relevant and still accurate.

However, we have several items in our bylaws that prohibit us from carrying our Mission and Purpose in today's world. For example, our bylaws require active participation from each of the alphabet chapters in North Dakota. Unfortunately, some of our alphabet groups are barely hanging on with current levels of participation. We are exploring if it would make sense to centralize some of the activities to reduce the overlap of some of our alphabet groups. We have members of the EAA chapter wearing hats in NDPA, NDBAA, NDAC and etc. These groups are stretched thin and are struggling with statewide participation and alignment between their regional chapters, yet several of their individual group initiatives are common. On the other hand, we have groups like PAMA that have a very clear mission and purpose and we don't want to derail their initiatives through significant change at the Council level.

Other thoughts floating around include adding a second event to compliment the Upper Midwest Aviation Symposium (UMAS). UMAS is our annual convention that has been successful for nearly 30 years. However the event does not appeal to Remotely Piloted Vehicle operators, business aviation professionals and pilot groups across the state. Although we have great turnout by Airport Managers and A&P Maintenance Technicians, we need to find new ways to appeal to the groups that are getting missed. We believe a second event that focuses on the demographics and educational needs of some of the other aviators across the state could be a great draw and a great contribution to North Dakota Aviation.

It's time to explore a few updates to our governance structure that will enhance statewide participation and promote new ideas. At the end of the day, initiating changes can be a daunting task. With the support of our readers and our members, we must be ready to make some changes in order to benefit the long-term future of aviation in North Dakota.

Please email any comments to jons@bismarckaero.com.





Kyle Wanner, Director
North Dakota Aeronautics Commission
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# DIRECTOR'S **Chair**

#### A Week in the Life

In past conversations that I have had with previous Aeronautics Commission Directors, there were two common themes that stood out in memories of their time working at the state agency. The first was the diversity of issues worked upon on a daily basis and the second was their joy in developing relationships with many different people and organizations to work with on those issues. I can already tell that I will have a very similar response some day when the job is handed over to the next individual charged with progressing aviation in the state.

The breadth of issues that our office works on for the state and aviation community is incredible...and is exactly what makes our work fun and exciting. A good example of these issues can be shown in a recent week of activities at the Aeronautics Commission.

To follow us in a week in the life at the agency - I recently had the opportunity to meet with Senator Hoeven and other North Dakota leadership to sit down and visit with Elaine Chao, the U.S. Secretary of the Department of Transportation to discuss aviation issues. Our conversation led to the identification of action items that would help address the ability for our state to continue to be a leader in the unmanned aircraft systems industry. I also attended the Drone Focus Conference in Fargo, which brought together professionals from around the world to discuss and provide further updates regarding unmanned technology.

The following day, I met with the Aeronautics Commission Board to discuss statewide aviation issues and allocate \$3.3 million in airport infrastructure grants to public-use airports throughout the state. The very next day after that, I met with Senator Heitkamp in Dickinson to discuss airport infrastructure issues as well as the importance of Essential Air Service to three of our communities.

In between these meetings, our office helped to coordinate projects at the public use airports, worked through issues with pilots and aerial applicators, pro-actively worked to implement aviation education initiatives into our communities, and communicate North Dakota priorities to organizations that could have an impact on federal authorization bills.

My staff and I also joined a teleconference with employees from seven other states to discuss regional aviation issues and to discuss programs and ideas that other states are working on. I also had the opportunity to meet with the North Dakota Aviation Council chairman and Executive Director team to discuss strategic planning for their organization. I then finished the week with a meeting with the Williston airport team to discuss the progress on their current airport relocation project.

Our state provides an incredible place for the aviation industry and I have found that we have an audience of people at all levels of government that are willing to listen and work hard to address important issues. We have so many exciting and positive things that are happening in aviation and we want those positive trends to continue. Our agency wants to continue our work to further the brand of experience, knowledge, and trust as we continue to build strong relationships throughout the state. If there is something that our agency should be working on or an issue that we need to be aware of – always feel free to contact us.

#### Wishing you smooth flying, Kyle



Kyle Wanner – Director of ND Aeronautics, U.S. Senator John Hoeven, Thomas Swoyer – President of Grand Sky Development Co., Nick Flom, Director of ND UAS test site, Elaine Chao – U.S. Secretary of DOT, Governor Doug Burgum, Lt. Governor Brent Sanford





#### State Awards \$3.3 Million for Airport Infrastructure Grants

By Kyle Wanner, NDAC Director

On June 15, 2017 the North Dakota Aeronautics Commission awarded approximately \$3.3 million in infrastructure grants to multiple public airports throughout the state.

These state infrastructure grants are utilized to help fund numerous high priority airport projects throughout North Dakota. The revenue source for these airport grants is derived primarily from taxes on aviation fuel and aircraft sales. A majority of the state grant allocations will also match federal grants that are anticipated to be received for 2017 airport projects. These grants are critical in maintaining the needed infrastructure to support the aviation industry, which is a major contributor to our state's

In 2015, the North Dakota Aeronautics Commission completed a research project to estimate the annual economic impact that the 89 public-use airports provide to North Dakota. The research concluded that the airports have an estimated annual economic impact of \$1.6 billion dollars on the state's overall economy while providing support for over 12,200 jobs. More information on this study is available from the Aeronautics Commission website.

The directive that the state legislature gave to the North Dakota Aeronautics Commission when they created the agency in 1947 was to encourage, foster, and assist in the development of aviation in the state. One of the primary ways that our organization

**Air Carrier Grant Awards:** 

Bismarck...... Runway 13/31 Reconstruction - Phase 2

Devils Lake . . . . . Runway 3/21 Rehabilitation

Fargo ...... Taxiway A-3 and Taxiway T Reconstruction Grand Forks ...... Design and Reconstruct Taxiway U

Jamestown ...... Design Runway 4/22 Rehabilitation

Minot...... Reconstruct General Aviation Apron Phase 1

**General Aviation Grant Awards:** 

Ashley ...... Runway 12/32, Taxiway, Apron Rehabilitation

Beach ...... Construct Hangar Taxilane Beulah..... Pavement Maintenance

Bowman . . . . . Design Parallel Taxiway Extension

Cando ...... Pavement Maintenance

Casselton . . . . . Design Apron Rehabilitation

Cavalier..... Construct Partial Parallel Taxiway

Cooperstown ..... Pavement Maintenance

Crosby..... Taxiway Rehabilitation

Drayton ...... Design Taxiway and Apron Reconstruction

Ellendale..... Installation of 100LL Fuel System

Enderlin..... Pavement Maintenance

Grafton ...... Update Airfield Lighting and Signage

Gwinner..... Design Hangar Taxilane

Harvey..... Rehabilitate Airport Lighting

Hazen ..... Construct Taxilane Extension

Hettinger..... Runway 12/30 Rehabilitation

Hillsboro ...... Runway 16/34 Reconstruction Kenmare . . . . . Design Access Road Rehabilitation

Killdeer ..... Airfield Mowing Equipment

Kindred . . . . . Pavement Maintenance

Kulm ...... Construct Concrete Hangar Apron

accomplishes that mission is by working to direct federal and state funds to North Dakota communities for the development of their airports. The commission is excited to provide these grants and to continue our active role in helping with multiple high priority airport infrastructure needs.

The state aeronautics office is also excited to announce the completion of a new grant database system. All grants that have been provided to public airports since 1968 are now entered within a secure database that has the ability to print multiple reports that can provide information on state, local, and federal funding levels for projects throughout the years. If you are interested in historical grant information, feel free to contact our office for any related information pertaining to airport infrastructure funding.

Provided on this page is a listing of the public airports that the state has approved funding for during this spring's grant allocation along with at least one of their funded projects. 58 airports received grants this year with a total of 137 grants being authorized. A full listing of the airport grants can also be found in the news section on the Aeronautics Commission website. Congratulations to all of the communities on their grant awards!

Langdon . . . . . Design Airfield Lighting Rehabilitation

Larimore . . . . . . Pavement Maintenance

Lidgerwood..... Grading Turf Runway

Linton ..... Runway 9/27 Rehabilitation

Lisbon . . . . . Pavement Maintenance

Maddock..... Design Taxiway

Mandan..... Design Wildlife Fence

Milnor . . . . . Turf Cones Installation

Minto..... Land Purchase

Mohall..... Environmental Work for Runway Extension

Mott..... Pavement Maintenance

New Rockford . . . . . Pavement Maintenance

New Town . . . . . . Pavement Maintenance

Northwood . . . . . Runway 8/26 Rehabilitation

Page ..... Pavement Maintenance

Park River . . . . . . Update Airport Master Plan

Parshall..... Pavement Maintenance

Pembina . . . . . Design Apron Rehabilitation

Rolla ..... AWOS Repairs

Rugby ..... AWOS Repairs

Stanley ..... Purchase Land

St. Thomas . . . . . Pavement Maintenance

Tioga . . . . . Pavement Maintenance

Valley City . . . . . Design Wildlife Fence

Wahpeton . . . . . . Pavement Maintenance

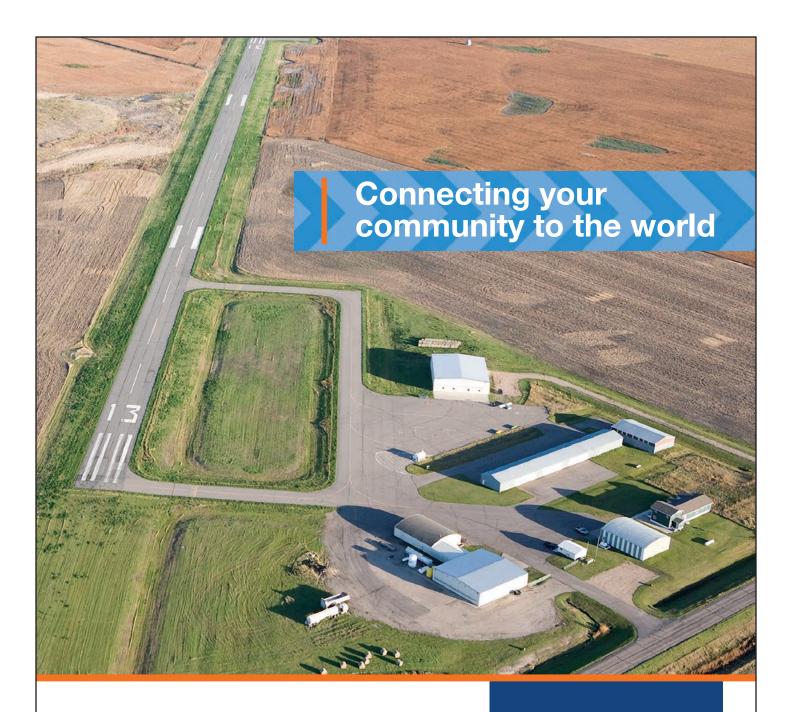
Walhalla . . . . . Pavement Maintenance

Washburn . . . . . . Update Airport Master Plan

Watford City ..... Update Airport Master Plan

West Fargo . . . . . Pavement Maintenance

Wishek ..... Pavement Maintenance



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# For the Love of Flying

One of the greatest ways to improve your flying skills is to practice, practice, practice. The Passport program awards offered by the North Dakota Aeronautics Commission recognizes pilots for landing at airports throughout the state. To date 43 pilots have received a leather jacket for accomplishing the feat of flying to all 89 public use airports in the state. I have the opportunity to listen to the stories of these pilots as they journey through the state looking for the stamp at each airport. Nearly every pilot comments about the growth in their flying skills as they fly in a variety of environments throughout our state. I would like to take this opportunity to encourage you to start or continue gathering stamps.

To get started, you may pick up a passport book at an airport or contact our office and we will get one in the mail. If you are



Participation Levels and Awards	Airports	Air Museums	FAAST Seminars
Gold Leather Jacket	89/89	2	3
Level verified by NDAC (employee signature)			
Silver Flight Bag	60/89	1	2
Level verified by NDAC (employee signature)			
Bronze Legacy Shirt	30/89	0	1
Level verified by NDAC (employee signature)			

participating in the program, we enjoy hearing from you; if you have difficulty finding a stamp, or are unable to land at an airport, we encourage you to contact our office and we will mail a stamp from our office to include in your book. Also, if you notice areas for improvement at an

airport (for instance if a windsock is faded or missing) our office will work with the airport so they are aware of the issue.

In addition to airport stamps, participants must visit the two North Dakota air museums and attend FAA safety seminars. For a listing of FAA safety seminars, visit: www.faasafety.gov, these seminars do not need to be completed in North Dakota.

I hope that we can add your name to the list of completers of the Passport program. Stamping your Passport book is sure to be fun and improve your flying skills.



Growing up on a cattle farm east of Ashley, North Dakota, Jen Boehm dreamed of traveling, and travel meant airports. Six years of working on civil engineering projects at Denver International gave her access to one of the world's largest. These days, Jen's wanderlust has her leaving footprints at campgrounds all over her home state while bringing her years of airport engineering experience to projects at Hector International, Bismarck and many other North Dakota airports.

# Mead&Hunt

jen.boehm@meadhunt.com 701-566-6449







# Capital Improvement Planning Timeline and Thoughts – State Planner's Perspective

As the state's airport planners, Ben and I are responsible in ensuring sponsors maintain an airport's current infrastructure as well as preparing for future demand and needs. Through extensive collaboration with our partners at the FAA, the airport sponsors and the engineering consultant community, we have been able to achieve many success stories at our 89 public airports in North Dakota. This article is intended to briefly describe the process and provide some insights into what we refer to as Airport Capital Improvement Planning (ACIP).

The first step in ACIP planning begins with identifying potential projects on and around the airport. For many airports in the state most of the projects will focus on maintaining and preserving pavement and/or turf surfaces. Alongside condition reports from airport sponsors and users, paved surfaces are evaluated once every three years as part of the state's Pavement Condition Index (PCI) Report. This report is crucial in gauging current and forecasted pavement conditions at our state's paved airports and a vital tool to engineers and planners on determining the extent and timing of pavement rehabilitation projects.

In addition, other common projects identified by airport sponsors include the construction of hangars and AWOS stations. These two projects draw an extra level of scrutiny, due to lower priority ranking at the federal and state levels. Airport sponsors need to be cognizant about their airport's need for hangar development, as well as maximizing existing hangar space. For potential federal and/or state participation in hangar development, airport sponsors need to justify their proposed hangar with

evidence of intended usage and a complete business plan. In addition, airport sponsors considering installing an AWOS station should contact NDAC staff once a potential AWOS installation project is identified by the airport. AWOS stations present a unique challenge to the North Dakota Aviation System as current FAA AIP funding guidelines restrict the use of federal funds to the initial AWOS installation, but ineligible for follow-up maintenance costs accrued by the airport sponsor.

Once projects have been identified by airport sponsors, sponsors and their engineers will compile identified projects and list them in a CIP report that depicts project, dates, and anticipated project funding schemes. Ideally, NDAC and FAA staff would like to see projects in years 1 through 3 to be relatively locked in place unless special and/or unforeseen circumstances warrant justified changes. Years 4-10 will depict projects, such as anticipated pavement rehabilitation projects and other airport infrastructure improvements identified by the airport sponsor.

The key component in communicating the airport's CIP report to the NDAC and FAA is scheduling a CIP meeting with both government agencies. These meetings are beneficial to all involved parties since clear expectations can be defined as well as establishing a path to project success. For larger, more complex projects this may require establishing monthly meetings to ensure progress of the project. We have offered four dates in August for airports to meet with the NDAC and FAA; however, both offices are always open to meeting with sponsors to discuss their airport.

Once CIP meetings have been concluded, NDAC works



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alongside the FAA's staff to compile the statewide CIP, which essentially provides a game plan for projects for the upcoming 3 years and an outlook for airport development for the next decade. Working in collaboration, the two government agency's staff determine the best path forward for airport projects from a funding standpoint. These discussions primarily focus on the three AIP funding options: Entitlements, State Apportionment, and Discretionary. Using these AIP funding options, alongside state and local funding, we have been very successful in recent history in maximizing federal dollars being brought into North Dakota for needed airport development projects. While this article is intended to bring a "behind the scenes" look in how we plan ACIP projects, how can airport sponsors assist in ensuring project success? With any project, three key areas seem to be a constant topic for discussion.

The planning topic primarily focuses on ensuring projects have been clearly defined on an approved Airport Layout Plan (ALP), a guiding document for airport development approved by the sponsor, NDAC and the FAA. As discussed previously in the article, the concept of having a justified and needed project ensures projects can competitively compete for AIP discretionary funding, if identified by FAA and NDAC staff. For funding, other than discretionary, projects need to be clearly defined to be approved in our next discussion step.

The environmental topic focuses on ensuring projects are minimizing impacts to environmental issues, such as cultural matters, wetlands, wildlife, and noise abatement. Through experience, it has been best to bring up potential environmental concerns to NDAC and FAA staff early in the project cycle. By knowing potential impacts, both agency's staff can ensure all interagency coordination can occur and project alterations can be discussed upfront, if required. This upcoming year NDAC and FAA personnel are requesting approved environmental documentation as part of the AIP pre-application process, which are due to the NDAC office by September 30th, 2017.

The engineering and construction topic focuses on adequately identifying construction work areas and ensuring engineering documents are submitted to the FAA and NDAC in timely manner. Through experience, NDAC and FAA staff have reviewed several project sketch and plans and specification reports that do not match the work approved through the environmental process. Airport sponsors and engineers must also ensure engineering reports are submitted for NDAC and FAA review well in advance of grant application. This upcoming year NDAC and FAA personnel are recommending submittals of engineering design reports in January 2018 with additional key dates in February and March 2018 for Construction Safety Phasing Plans and Plans and Specifications.

In closing, the process involved with completing an airport infrastructure project can be complex and overwhelming at times but with our continued partnerships at the federal and local levels, we hope to continue accomplish many more great things at North Dakota's airports.

Take care and safe flying! Jared



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# Drone camp propels student learning

By Blair Emerson, Bismarck Tribune

Brad Stangeland watched over the shoulder of a student, with an iPad and remote control in one hand. A faint whirring noise carried over the distance as they intently stared into the parking lot.

Stangeland, overseeing a group of about 10 children in the parking lot across the street from Bismarck Public Schools Career Academy on Wednesday, was teaching them how to fly a Phantom 3 drone.

"Is that true you have to call every time you fly?" fifth-grader Avery Matt asked Stangeland. Yes, every time you have to call the local airport control tower, he told her.

Stangeland and another instructor, Tim Meyer, taught a group of 25 kids during a two-day camp hosted by the Career Academy. The students learned everything from drone safety to learning the characteristics of flight to building Lego drones.

"This is the way school should look like," said Dale Hoerauf, director of the Career Academy, who said this is the first year drone instruction has been offered through a summer camp.

The fourth-, fifth- and sixth-graders in the camp used a flight simulator, flew mini quadcopters then went outside to watch the larger drones in action.

In the parking lot, the kids took turns flying the drones, which, they said was surprisingly easy.

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"They actually do a better job flying these than my high schoolers," said Stangeland, who teaches the Career Academy's aviation programs. Stangeland was also a pilot, primarily flying charter planes and doing flight instruction.

"Tree!" one student warned.

In addition to trees in the parking lot, the students have to be careful because they're in the approach path of planes, said Stangeland, who warned them of how annoying the drones can be for pilots.

Interest among students in the aviation programs has been growing, with participation doubling this school year, according to Stangeland. In the Aviation 1 program, students learn what it takes to become a pilot, as well as other career paths.

A former student, Max Rydquist, also helped teach the students how to fly drones on Wednesday.

Rydquist, who just graduated from Century High School and worked an internship through the Career Academy, is joining the U.S. Army and ships out for basic training on Sept. 11 to Oklahoma. After that, he'll continue drone training and one day fly for the Army.

"I've been working on these things since I was about these guys' ages; actually, it's always been a hobby of mine," he said. "I didn't have anything like this when I was a kid. It was really just me being a nerd by myself."

In October, Rydquist started a drone company, Dragon Drones, for which he flies drones for real estate and insurance. He'd like to get into agricultural work and get farmers to integrate drones. He said he often visits with farmers and tells them about the

advantages of drones, such as saving time checking on their crops and providing adequate bug spraying.

Students also spent time Wednesday inside the Career Academy's Aviation room, where small, blue quadcopters whizzed around, occasionally running into other students or a desk.

"It takes a little while to learn how to fly these, but, once you actually know how to get the controls, that means you learn how to do tricks and stuff," said fourth-grader Finley Opp, who was visibly excited about learning more about drones.

"This control, once you move this one up, it starts taking off," said Opp, who has a quadcopter at home.

His dad also has a drone, and, once, he flew it it all the way to the mall on Black Friday to check out the parking situation. Opp also learned from a police officer that drones can fly underwater and are used by law enforcement officers in search-and-rescue missions.

"I wanted to take this class because I'm really interested in drones, so that means I could figure out some more controls and maybe try one out with a camera," said Opp, adding he's interested in becoming a pilot or policeman who uses drones.

BPS Career Academy's drone camp was made possible by a \$75,000 Tesoro grant to be used for STEM activities, Hoerauf said.

"One of the things we've always wanted to do is run a camp during the summer, and there's no money to ... pay the teachers and to buy the equipment," said Hoerauf, adding the grant helped pay for the drones and salaries for teachers.

The classes filled up within an hour of opening registration, so Hoerauf said another session is being offered next week.

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# North Dakota Aviation Quarterly

## **EAA Celebrates Young Eagles 25th**

Submitted by Jake Werner

2017 marks the 25th Anniversary of the Young Eagles program, which has provided more than 2 million young people ages 8-17 with an introduction to the world of personal aviation.





**Total Young Eagles Flown: 2,038,836** Stats as of July 10, 2017

Founded in 1992, the Young Eagles program has dedicated nearly 25 years to giving youth ages 8-17 their first free ride in an airplane.

It's the only program of its kind, with the sole mission to introduce and inspire kids in the world of aviation.

Today, the Young Eagles program has flown over 2 million kids with the help of EAA's network of volunteer pilots and ground volunteers.

We reached our goal and celebrated the 2 millionth Young Eagle flown during AirVenture Oshkosh 2016.

Here in North Dakota, during the fly-in season, pilots routinely fly Young Eagles providing them with their first opportunity to experience flight in a general aviation aircraft. Join us in offering every child, tween, and teen the chance to experience the Spirit of Aviation<sup>TM</sup>.

To celebrate, EAA has planned a variety of events and activities throughout the year starting with a special 25th anniversary exhibit in the EAA Aviation Museum.

AirVenture 2017 attendees are invited to join EAA for a birthday cake celebration and show their pride in the Young Eagles program with special 25th anniversary T-shirts and hats that will be available during the convention. EAA will also host a Young Eagles volunteer dinner on July 26 to thank those who make the Young Eagles possible and successful.

As a special thank you to pilots who fly Young Eagles during this anniversary year, EAA has created a commemorative prop card and a set of decals. In addition, a special 25 for 25 pin will be given to pilots who fly at least 25 Young Eagles during 2017, and they will also receive recognition on the Young Eagles website.



# North Dakota Aviation Quarterly

## Question: What is the value of an internship? Answer: Invaluable

By Sean Clemmons

The benefit of an employer offering an internship are that the employer can get new and fresh ideas from the next generation of industry leaders. It is in the internship that these ideas can be put through thought experiments and tried. It is also a great way to figure out which ideas are brilliant and which ones are dismissed. Employers also get to shape and mold interns to better prepare them for their career paths ahead of them.

Internships are how their careers got started. Internships are the way to go when somebody wants to gain experience in order to find a steady job. I and many of my colleagues have been trapped in the following catch-22: Can't get a job due to lack of experience, can only get experience from a job. I have found that internships offer a way out of this vicious cycle. Even some entry level jobs want some experience. Employers may not even award a position to those with more certificates and education because they lack the experience.

Education is important but it only goes so far. Formal education is also limited. A bachelor's degree typically takes four years to obtain. I know many people who have a bachelor's degree and 15 plus years of experience. Masters and doctorate degrees open many more doors, but most employers aren't looking for advanced degrees. The reason is, there are things that experience will teach you that you cannot learn in a classroom or laboratory.

I talk to Air Traffic Controllers a certain way because experience has taught me that the method I use provides the most amount of clarity and least amount of confusion between myself and the Air Traffic Controller. Sure, experiences can be shared in a classroom or laboratory; but people learn more from their own experiences than from what they are taught.

Another aspect of learning which I feel is an excellent bridge between education and experience is being mentored. I say this because it is my personal experience that mentorship helped prepare me for my internship. In a nutshell, a mentor is someone with education and experience takes someone with little education and experience under their wing and teaches them at no cost.

I will be a mentor in the future, there is no question in my mind. Mentors have helped me and the time will come then I will do the same. I would also like the readers to consider doing the same.

How much better would our society be if we just took the time to help future generations?

The time has come for me to reflect on my time as the Bismarck Airport Intern since it has drawn to a close. This opportunity has been an eye opener and has exposed me to so many aspects of airport management, operations, and administration. I have had quite a journey and many people to thank along the way.

It has been a great journey so far and the various paths I've taken to get here. Starting as a very young airport bum watching airplanes take off and land; to joining an aviation youth group where I've made lifelong friends, learning to fly, and earning an

After having a desire to enter the airport industry, the time had come for me to earn my Certified Member certificate with the American Association of Airport Executives, followed by an Airport Certified Employee in Operations. Then came the career search, which led to Bismarck.

During my first tour of the airport, I got so see the belly of the terminal where the general public does not see, getting to see the baggage belts and everything else we saw in the airport scene in "Toy Story 2." Learning everything else in those first few months was overwhelming with information overload.

Over the course of the next few weeks I slowly wrapped my head around the tasks I put before me. My favorite thing by far was working operations – the idea of being part of something that makes a difference in the safety of the general public.

This opportunity has opened the door to my current position as an Airport Operations Officer with the Capital Region Airport Authority in Lansing, Michigan. Here I currently have learned dispatching, police 10-codes, and taking detailed reports of daily activity.

The staff at Bismarck Airport set an example of not only teaching airport operations, but the personal responsibility of inspiring and sharing knowledge and opportunity with the upcoming generation of airport professionals. In addition to having even more airport jargon I can confuse my friends and family with.

Thank you, Bismarck Airport, for your encouragement, knowledge, experience and inspiration. I shall take all this wherever I go.



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# **Engineer Units Partner with Local Community for Wishek Airport Project**

By Staff Sgt. Eric W. Jensen. ND National Guard

Soldiers from two North Dakota Army National Guard engineer units are refining their military skills during "annual training" this summer by making enhancements to the Wishek Municipal Airport. The work is being completed through the National Guard's State Civil-Military Construction Program, which provides Guardsmen with realistic training in their respective military occupational specialties, or MOSs, while providing local non-profits and governmental agencies with needed assistance.

About 40 Soldiers from the Wishek-based Detachment 1, 815th Engineer Company (Horizontal) began work in early June by clearing debris and hauling about 60,000 cubic yards of fill dirt to grade and expand the airport's hangar apron. The upgrade will allow additional hangars to be built there to accommodate increased traffic at the facility. Additionally, the unit constructed an access road running to the apron, as well as a parking lot across from the airport terminal.

"This is the type of project that really adds training value for our Soldiers, allowing them to use their Army-acquired expertise to enrich their communities," Maj. Gen. Al Dohrmann, North Dakota adjutant general. "Many of the Guard engineers involved in this airport project call Wishek home. Their ability to work in their communities as military members shows the unique attributes of the citizen-Soldier. Being a part of the National Guard allows for opportunities to



Spc. Drew Docktor, of Valley City, North Dakota, a heavy equipment operator with the 815th Engineer Company (Horizontal), uses a grid stick to make sure dirt is level June 12, 2017, as other soldiers from his unit build a new taxiway at the Wishek Municipal Airport. (U.S. Army National Guard photo by Spc. Thea Jorgensen, 116th Public Affairs Detachment/Released)

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This week, another 30 Soldiers from the 815th Engineer Company of Edgeley, North Dakota, are using their heavy equipment to build a new 2,500-foot taxiway in Wishek. Lorren Henke, a board member for the Wishek Municipal Airport, said the work done by the North Dakota National Guard will help to enhance safety and help enable the airport's future growth.

"I've enjoyed every time I've been out there to visit the airport. (The Soldiers) are helpful people; they're really concerned about doing a good job and they take pride in what they do," he said. "They wanted a quality project and want people to come by (the airport) and be able to say 'this is what our Guard can do."



Heavy equipment operators from Detachment 1, 815th Engineer Company (Horizontal), based in Wishek, use bulldozers and a scraper June 12, 2017 to complete groundwork on an apron expansion at the Wishek Municipal Airport. The unit used its 2-week "annual training" period to provide assistance to the Wishek community through a National Guard State Civil-Military Construction Project. (U.S. Army National Guard photo by Spc. Kristin Berg, 116th Public Affairs Detachment/ Released)



Soldiers from Detachment 1, 815th Engineer Company (Horizontal), based in Wishek, use heavy equipment June 15, 2017 to construct a new taxiway at the Wishek Municipal Airport. The unit used its 2-week "annual training" period to provide assistance to the Wishek community through a National Guard State Civil-Military Construction Project. (U.S. Army National Guard photo by Mr. Jonathan Haugen, N.D. National Guard Visual Information Office/Released)

1st Lt. Justin Johnson, the executive officer for the 815th Engineer Company, said the project in Wishek gave the unit an alternative to its typical training venue at Camp Grafton Training Center, near Devils Lake, North Dakota. It also gave the Soldiers an opportunity to interact with the community. While in Wishek, the Guardsmen hosted a pinochle tournament, softball game, golf scramble and flag ceremony to show their appreciation.

"The community has completely accepted and supported us. To be able to help them out is great," Johnson said. "It's awesome to be able to give back."



# 16 North Dakota Aviation Quarterly

#### The 411 on Part 107

Tajae Viaene **Lead Flight Instructor** Fargo Jet Center



In the world of drones, one of the things you discover fairly quickly is the amount of overlap between the UAS (unmanned aerial system) and aviation industries—commercial operators who used to fly fighter jets, flight-school teachers turned sensor-company founders and university students with a foot in each world.

Tajae Viaene fits that mold to a T.

She's been the lead flight instructor at the Fargo Jet Center for the past year and has been flying manned aircraft for six years, but after attending Drone Focus Conference in 2016, she soon found herself taking a keen interest in UAS.

Realizing early on that there weren't a lot of options in Fargo-Moorhead for people interested in learning to operate a drone for commercial purposes, she took it upon herself to set up at the Jet Center the area's first training curriculum for Part 107, the Federal Aviation Administration's (FAA) new rules for nonhobbyist, small UAS operations.

Viaene talks about what piqued her interest in drones, what people can expect from the Part 107 course and why visibility is still the most important factor in closing the gender gap in maledominated industries.

#### **Part 107**

#### My interest in drones really started at last year's **Drone Focus...**

I went to that and was just amazed at all the possibilities and uses they had—agricultural applications, solar-powered UAVs, all the places you can take them. I thought it was so neat.

Then, over the past year, I started having students upon students coming in and asking, "So what about this drone stuff? How do I learn to fly one? What are the rules?"

#### What I soon realized is I was in the same boat...

I said, "You know, I need to learn more about this." I called around to different places in town, and I didn't find the structured training program I was looking for. So I discussed it with our flight-school manager, and he said, "Well why don't you go get trained and work on developing a program for our area?"

So I did. I went down to Texas, attended training, and came back and put together a materials binder. Now, we've developed a whole course and have been doing this for months now. PowerPoint slides taught by a flight instructor during a day-long course work hand-in-hand with the provided materials binder in order to prepare those interested in taking the remote-pilot written exam (Unmanned Aircraft General).

If you take and pass that, then you get a temporary certificate and you can fly a UAS for hire—whether it's for photography purposes or you're a farmer interested in checking your crops.

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### We've had people from so many different types of businesses take our course...

The first person who showed interest was a guy involved with a tower company in town, and that's to be expected. Why not check your lighting and wires on your tower with a drone instead of sending a person up?

I had a number of different seed companies in town reach out, too, and I had no idea so many of them were getting into this. I had no idea the data they could get from flying a drone over a crop.

We've had a bunch of local groups from NDSU looking at using drones for research, usually in the biological sciences—monitoring wildlife, as well as data collection. Then, there's fire departments and local police. For fire departments to be able to fly a drone over a fire or into a building instead of using a person or to be able to get an aerial view, that's a pretty neat deal.

I've even heard from insurance companies about utilizing UAVs for crop insurance and roofing. People are wanting to use drones to inspect roofs instead of having to go up there themselves.

#### Everyone learns at their own pace...

It really is about learning patience and learning to teach to everyone's learning preferences. Some people are visual, and I need to show them first. Other people need me to show them from a textbook or write something on a board. It's about figuring out how to teach each person and treat them differently instead of as one group.

When we do our course, we do it in a small setting so we can accommodate and make sure everyone learns what they need to about airspace. Then, we deal with specific questions as they come up. Say someone with a tower company has towers in different cities. We take a look as a group and figure out, "Okay, so in this city, this is what airspace you're looking at, here's where you'd need an authorization and here's where you're okay."

#### Much of the course is devoted to learning about airspace...

Airspace gets very complicated and is very tough to teach yourself. So we spend quality time teaching it because it's not just, "I work for a company, and I'm going to take my remotepilot exam and I'll get a 70 percent so now I passed and I'm good. Because really, you're expected to know 100 percent of that information when it comes to liability.

We teach the different levels from the bottom up. It's not just a straight forward "I can fly my drone to 400 feet" because it depends on where you're at. If you're right in the middle of Minneapolis, you probably can't do that. But what you can do is you can take a look at different levels of Bravo airspace and figure out whether you could come out a ways and be under Bravo airspace.

That's what we do is take you from being able to pass a written and multiple-choice exam versus really knowing the stuff so that you know you're safe where you're flying. Because you're sharing this airspace with airplanes.

# We're all sharing the airspace together, and drones are only going to get bigger...

The drone industry is growing like crazy, and so we all have to learn how to share nicely. It actually keeps me safer flying in the

air knowing that I've trained other people who are going to fly drones safely.

Even though my expertise is in airplanes, I can help bridge the gap. I can show people: This is why you need to be listening on the radio because there could be a crop sprayer in the area. Where would he be flying if he says he's on a left downwind for runway one-three? That sounds foreign to a normal person, but I teach them what it means along with the traffic patterns so that they know where to look for that airplane.

#### I try really hard to be not just a pilot but also a teacher...

It's great being able to have both young people and older professionals in the same room, walk them through this course, and then have them come back to me later and say, "Hey, I really appreciated this" or say, "It really meant a lot to me to have someone sit down and be willing to slowly walk me through A, B, C, D and E airspace."

## 3 Questions on Diversity

# 1. With all the initiatives and attention nowadays paid to closing the gender gap in high-tech industries and not a lot to show for it, what do you think we're missing?

Tajae Viaene: "I'd say it's cultural. With aviation, in particular, one of the issues is that the time that's best for us to be really intensive with our training is also the time, in general, that we're having families and having children. It turns out that flying while you're pregnant isn't actually so much fun.

"There's also the expense. You have to have a really good spouse to be able to say, 'I'd like to spend a lot of money to do this training.' It takes a family effort to be able to pay for flying lessons, juggle kids and everything else."

# **2**. There seems to a consensus that reaching girls at an early age is of the utmost importance. How can we do that better?

TV: "In my opinion, the biggest impact is made when women who are in a field talk to younger women. Just going to high schools and doing that outreach is so impactful.

"I'll give you an example. I've done discovery flights where I'll take up a husband, and the wife just wants to ride with. Then, after the flight, the wife says, 'So I never thought about this, but what if I took lessons?' And I say, 'Yeah!'

"It's almost like it's something that doesn't cross their mind until they see that another woman can do it and is doing it. That's when they say, 'Oh, actually, I could do this.'

"That's why I think it's really important that women who are already in an industry reach out to other women as they continue to look into career opportunities."

## 3. Are you yourself involved with any diversity or outreach programs?

TV: "My boss has been really great about this. What I primarily do is outreach with different high school events when they have career days. Reaching out to the high schools is a big deal because those kids are in the process of deciding what they're going to do for a career.

(Continued)

"We work with a professor at Concordia College and do discovery flights for his students every year. We also do outreach with different events going on in Fargo, as well as corresponding functions with the Fargo Air Museum.

"I'm also a member of the local EAA (Experimental Aircraft Association), and while it's primarily men, all of those guys have wives, sisters and granddaughters who are much more comfortable getting to fly with a woman. The daughter of one guy came up to me recently and said, 'I'm really nervous, but I think I could fly with you.'

"She wasn't quite sure if she wanted to fly with a guy, but she told me, 'If you can do it, I think I can do it.' I taught her how to fly, and now, I just started with her mother."

#### As Good a Time as Any

With a global pilot shortage and a number of airline pilots retiring in the next four or five years, Viaene says there's maybe never been a better time to be a woman interested in aviation.

"Opportunities are crazy good," she says. "Right now, as a pilot, you can pretty much go anywhere. It's really neat when young people come to me and ask, 'What are my job prospects here or here?' And I can honestly tell them, 'If you finish this, this, and this, you can for sure have a job waiting for you that's well-paying and secure."

To learn more about Part 107 training, visitFAA.gov/UAS. Fargo Jet Center, FargoJet.com, 701-235-3600

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#### While I Was Out...

By Ron Lundquist

As small airport managers or Airport Authority members, have you ever stopped to think what we are tasked with or the budgets we are entrusted to take care of? I realize that some of the state's airports are bigger than others, have more activity and more projects going on but it's really quite remarkable that many of us who are just regular folks with very little if any formal airport management training step up and do some pretty great things to keep our airports running.

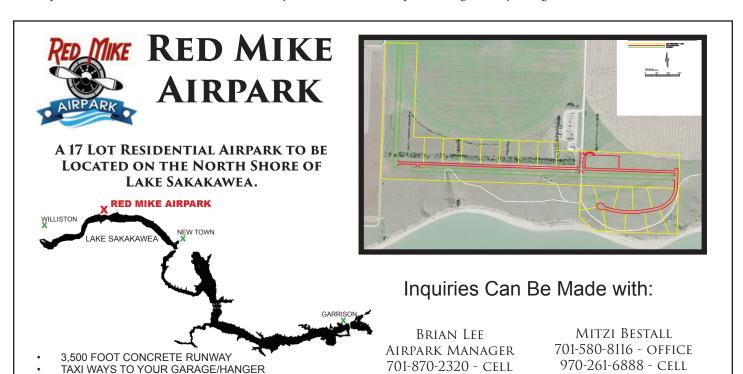
Last week as I was mowing one of the over runs, I was kind of day dreaming and started to think of the facilities just our airport has. I won't embarrass myself (although I'm fairly good at that!) by listing the prices of what we have because I'd probably be way off. Let's just say if you were going to build the hangars we have in today's prices, you'd be in the millions pretty quick. Your airport may have less than that, some maybe more. Equipment is another big asset that most airports have. For us, a large tractor with a snow bucket/blade and rotary plow. We also have a large mower that we drag behind it. A pickup with a snow plow. A lawn mower for smaller areas and a bunch of odds and ends but you can safely bet put together it's worth quite a bit.

Then there's the property itself. Worth a lot? You bet! Your airport may be a ways out of town and if there wasn't a runway there, they would probably be farming it. Our airport sits literally in the city limits (some of it anyway) and if the runway, hangars, etc. weren't there, it would likely be homes. The part of the airport that's not in the city limits is still farmland and while I'm not an expert, I would guess it would be pretty pricey!

Now do we do all this by ourselves? Does the FAA just give us an open check to do whatever we want? Obviously not. The North Dakota Aeronautics Commission has a big role in helping us, guiding us through the myriad of regulations, funding strategies and other needs we have in taking care of our airports. The FAA does their part in reviewing projects and securing funding for big ticket projects. The engineers and consultants are there for the "hands on" work with us and getting the projects ready for review however it's largely up to us to decide what those projects are. Its also up to us to care of the airport. We do the mowing, the snow removal, fixing equipment, the fly ins and really anything else that needs doing. I just think it's really cool that I get to help!

So, on to mowing the other over run. After pondering on what we have and how we keep it up, I had to ask myself how did I get into this position of helping take care of an airport? Did someone ask me? No. Did I apply for the job? No. To tell you the truth, I don't even remember. I think I just showed up and the next thing I knew, I was on the board. Just loved aviation I guess. Showed some passion for it. That's probably how most of you that have been "airport people" for a long time started doing what you're doing. You had a love for all things aviation and you just kind of started. Of course if if you run a business at the airport, I think you may be the manger or on the airport board by default.

To all of you that help take care of your airport, I'd like to say thank you. I know what a time commitment it can be (although I think most of us enjoy it!). To those that think that they may want to take a stab at airport management, I say do it! Everyone of us has a talent and I'm willing to bet that your airport could use yours! Go to your airports' next meeting and ask how you can help. I would guess they'd be glad to see a fresh face around!



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## **Startle** Response!



Jay M. Flowers / FAA Safety Team Program Manager, OPS, North Dakota, 701-492-5809, jay.m.flowers@faa.gov

#### From time to time I am reminded of an old saying in aviation: "There are those that have and those that will."

Critical thinking and expecting the unexpected are key elements in keeping our accident/incident rate low. I know I talk about "training is key" in almost all of my articles, but without that key element in our aviation careers, most of us would not have survived as long as we have.

The human startle response is a deep seated reflexive action initiated by the limbic system - the most ancient part of our brain. For eons it's been a recipe for evolutionary success; instantly preparing us to fight for, or run for, our lives.

Running or fighting may not be helpful when coping with a rapidly developing aviation emergency. Success or failure will depend on how well we are prepared to deal with the emergency. Compounding the problem is how close we are to the ground when it happens.

Back in 2010, a Cirrus Aircraft on a day VFR cross country flight had a door come open shortly after takeoff. The airman

contacted the tower and requested to return for a landing to close the door. While on base leg to the runway, the airman lost control and crashed. The airman was fatally injured and buildings were damaged.

The Cirrus accident is a classic example of an abnormal situation that was NOT managed well; either because of distraction from the door being open, the noise, trying to close the door, or some combination of those distractions. The PIC lost control of the aircraft while maneuvering to land and attempting to solve the problem. This 'unexpected event' became an 'unexpected emergency' when it didn't have to.

I could say train for this, but how would you? For starters, just running through the procedure in your head helps. At the very least, walk through the steps to maintain positive control of the aircraft and get it back on the ground.

Partial or full loss of power on takeoff	Communications/navigation failure
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Turbo charger failure	Split flaps – aircraft specific
Circuit breaker failure or pop	Jammed or failed control cable
Jammed or failed control cable to include: elevator, aileron, and rudder trim failure	Aircraft lighting failures to include: lighting sensors, dash lights and landing lights
Landing gear failures	Critters strikes – it hits you: birds weighing from ounces to 40+ lbs.
Failure to retract / Failure to extend / Partially Extended  Severe vibration after take off  Severe vibration on Landing Flat Tire	Four legged critters – you hit on airport surface: Animals weighing a pound to 1500 lbs.
Frozen brakes / No brakes	Critter strikes – you hit on runway: Turtles – hard round object Frogs – slippery

Not all types of practice will make you perfect, but they will help prepare you for the unexpected. Open those checklists and visit your local CFI to find out more.

You can make a difference in the accident rate. After all, **Safety is on you**.

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# 인 North Dakota Aviation Quarterly

## **Spring & Summer Recap**

By Sarah Swartz











In April, the Fargo Air Museum honored those who served our country with a very unique event. Every other year the museum coordinates a Vietnam Memorial Week with artifacts and veterans to share their stories. Many area high school students, military families and the general public attended this impactful dedication to the past. We were excited to have John Collins, The Paper Airplane Guy, demonstrate his knowledge and talent. He is a world record holder and focuses on STEM education and contributes to the science of flight and aerodynamics. The museum hosts monthly camps with varied topics for youth ages 6-18. We focused on aviation mechanics and had several Marines, an Army helicopter mechanic, and UND flight school instructors visit. The campers were allowed to sit in a helicopter for an authentic educational experience!

In May, we hosted our annual Celebrity Dinner and Auction. It is our largest fundraising event as a non-profit organization. A special guest pilot, Jim Tyler, flew the P-38 in WWII. The elegant event came together thanks to many generous volunteers offering countless hours utilizing their talents. Many auction items involved community members donating unique experiences in addition to local businesses offering items and services. Our inaugural Women and Wings evening celebrated a wide range of females in various entities of aviation. Guest presenters graciously volunteered their time to share their experiences with others with a similar interest. We would like to extend our gratitude to the GF Air Force Base, UAS Flight School at UND, The Fargo Jet Center, and Cindy Schreiber-Beck. The youth camp focused on aviation emergency preparedness across several environments.

In June, Kay Nehring presented "The Forgotten Airborne," the largely forgotten story of the airborne missions flown in the Southwest Pacific Theater of WWII. Nehring is the daughter of Lt. Charles Nehring, who flew C-47 missions in the SW Pacific During WW II. Her presentation included briefings on the missions at Nadzap, Noemfoor, Corregidor, Tagaytay Ridge and Appari which were flown by men of the 317th Troop Carrier Group and jumped by the 503rd and 111th Airborne. Nehring included never before seen photos, rare color film and first hand reports to share the story of each of these remarkable events.

We interacted with the community on a larger scale by attending the Midwest Kid Fest. The children in attendance received a wooden aircraft to design marker graphics as a creative interactive activity. The youth camp focused on aviation fire safety with a presentation from the Hector Airport firefighters!

In July, our Dusty Crophopper replica aircraft joined the Detroit Lakes breakfast fly-in. Our local YMCA is bringing over 1,000 youth for museum tours throughout this month and August. We continue to host a complimentary coffee and donut social for veterans on the second Wednesday of each month. Our facility offers a unique venue for birthday or retirement celebrations, weddings, and photo shoots. Local groups regularly meet here including the American Legion, Valley RC Flyers, and an astronomy club.

The museum appreciates those who assist our efforts in aviation education, preservation, and restoration. Several tour guides volunteer their time to spark interest in youth through guided tours of our museum. Events both large and small are needed to maintain our success as we serve the community in a very treasured way!

# Eternal FLIGHT



**John C. Goerger**, 44, Barney, ND passed away on Thursday, June 29, 2017 near Gwinner, ND as the result of an aircraft accident

John Carl Goerger, was born September 18, 1972. He was an accomplished pilot; but that doesn't even begin to describe the amazing

heart he had. John was the father of three beautiful children, Ethan, Michael, and Lucinda. He loved them with every ounce of his being. As attentive of a father he was, he found more in his heart to share with the love of his life, his wife Cathryn. The two absolutely embodied the concept of soulmates and loved each other completely.

But, still, his love and kindness was not exclusive to his created family. He was a devoted son and sibling. Often, he could be found working out in the yard with his father, Allan, followed by joining his dad inside to visit with his mother, Patricia. His sisters, Lorena and Stephanie, miss him dearly. His big sister, Bernadine, is guiding him through the next step. John was a very generous spirit and would give anything and everything to his friends and family.



Mark David Yaggie, 41, of Breckenridge, MN, passed away on Sunday, July 2, 2017, in Moorhead, MN. Mark was born in Breckenridge, MN, on May 5, 1976, one of three children born to David and Jeri (Nelson) Yaggie. Continuing a strong family tradition, Mark attended St. Mary's Catholic School

through the eighth grade and graduated from Breckenridge Senior High School in 1994. He then attended North Dakota State University and grew to be a passionate Bison alum. Following his formal education, Mark returned to the family farm and farmed with his dad. A passion for the WWII era flourished when he began flying planes from that time period. His favorite plane to fly was the TBM Avenger WWII Torpedo Bomber Aircraft.

Family, faith, farming, and flying were Mark's life. He was a gifted mechanic and innovator and was the go-to person when an unusual project needed designing and building. Mark remained true to his passions by serving. He was on the Red River Grain (Breckenridge) Board of Directors as well as the Board for the Fargo Air Museum. He had a strong work ethic and a contagious zest for life, a legacy he was imparting to his sons, Austin, Trevor and Dylan.

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# AAND

# Have You Thanked Your Engineer Today?

Matthew Remynse, AAND President



As the meteorologist on the news this morning said, "It's going to be 102 degrees," I was suddenly appreciative of my office job. Upon arriving at the airport, I saw the various contractors working on our runway project and a concrete crew working on a new hangar across from the terminal. Their work

made me ponder about all the other projects happening at airports across the state and hoping they're going as well as our projects.

I become curious about the other projects and found the North Dakota Aeronautics Commission's (NDAC) grant award press release. The NDAC awarded grants for all types of projects. A quick review of the grant awards shows runway reconstruction and rehabilitations projects, fuel farms, taxilanes, beacons, and buildings. These projects mandate several types of contractors and crews on our airfields this construction season. The one crew that is constant though, no matter the project type, is the airport's engineer. It struck me that the engineer is side by side with the contractors as well as the airport staff throughout the entire project.

So have we really thought about the role of the engineer when they are on site? It's easy to always think about the contractors being onsite in the heat, wind, cold, rain and other uncomfortable conditions - after all, the contractors are the ones building the tangible product we watch change our airfields. Don't forget our engineers are on site too. We are entrusting

our engineers to be our advocates and informants on million dollar projects. Working with the testing firms, contractors, subcontractors, and FAA is no easy task and requires countless hours. One could easily say that our engineers have the same slogan as the postal service; no matter rain, sleet, or snow the engineers are onsite advocating for us, the airport owner/operator.

Every so often a realization hits me and things click (which always makes my wife happy). As I've watched our runway project move forward and thought about the other projects throughout our state, I realized how much time our engineers put in and the trust in these relationships that ensure a quality project. Our engineers spend countless hours on our airports away from their families, missing barbeques, little league games, and countless suppers to ensure quality in our industry. Yes, they get paid for this and it's what they want to do but still it's tough to miss those moments.

Engineers probably don't get the same prestige or recognition a firefighter or police officer gets for working long hours but anybody willing to sacrifice those moments is a champion in my book. So on behalf of the Airport Association of ND, I want to thank all the engineers working sunrise to sunset or later, advocating for the airports. Your work does not go unnoticed and hopefully our projects won't interfere to much with fall fishing, hunting, travel, school starting and anything else you want to do when you get some time to yourself. Be safe and check the NOTAMs this busy construction season.



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**NDBAA** 

Roger Lawyer, Director of Flight Operations, Bismarck Air Medical, LLC

When you hear the term "air ambulance" or "medevac," the picture that comes to mind is of a helicopter responding to the scene of an accident. The rotor wing guys are the rock stars of the industry and I do admit that landing on top of a building is pretty cool but, the reality is the majority of medical flights are not conducted as seen on TV. More often than not, air med flights involve transporting a patient from one care facility to another that provides either a higher level of care or a specialized medical procedure.



Those flying billboards, known as helicopters, are the airframe of choice for air ambulance flights conducted to the actual scene of an accident and, of course, to communities without an airport. Another advantage helicopter operations have over fixed wing operators is in how they are staffed. The typical rotor wing operation has a pilot and medical staff waiting with the aircraft.

This allows helicopter crews to start engines in as little as 5 minutes from the time they accept the flight. This quick response time can have them to the scene of an accident before the victim is cut out of wreckage and, despite the slower cruise speed of a helicopter, makes them ideal for transports between medical facilities located within an hour flight time of each other. Again, as a fixed wing pilot, I do admit helicopters are very cool machines which can complete missions that fixed wing aircraft are just not capable of performing and, because I know there are pilots who will argue an airplane can do anything a helicopter can, I have no doubt that I could land a King Air in a

hospital parking lot or bring it to a hover - once.

But helicopters are limited when it comes to payload, speed, and weather capabilities. They are short range, fair weather machines, so, when the weather turns, the distances increase, or a larger medical team is required, the fixed wing air ambulance becomes the machine of choice. Rotor wing and fixed wing operations fill the same role, the difference is in mission capabilities and operation setup. Since fixed wing operations don't perform scene flights (well, almost never perform scene flights as I did pick up one patient who crashed his car into a pole at an airport), their crews are typically not required to be at the airport but must be

able to start engines in 30 minutes. While a quick response time is still important, it is not as necessary since our patients are typically receiving care at a medical facility. The fixed wing mission is to move patients to a different facility for better or specialized care.

The medical team responsible for providing care during the patient transport typically consists of a paramedic and a trauma nurse. The advantage fixed wing operations have is the ability to add individuals with specialized training to meet the needs of the patient. Since airplanes have more room and higher payloads, they are able to add team members, such as a respiratory therapist or a neonatal intensive care nurse, with little affect on aircraft operation. We are also able to carry family members which eases to burden of making immediate travel plans, especially late at night or during periods of inclement weather.

Air ambulance flight operations, whether fixed or rotor wing, are governed under Part 135 rules, just the same as any charter operation. The only difference is the added operations specification issued by the FAA. The aircraft are equipped as mobile hospital emergency rooms and the passengers usually don't walk on the aircraft. The one advantage is the MedEvac call sign. While using the call sign, Air Traffic Controller does a great job of routing air ambulance flights on the most direct routes through some very congested airspace. This becomes very apparent when you get the opportunity fly a med flight to a destination inside class B airspace, then fly a charter to same destination the next day.

> So, what aircraft do you use for an air ambulance? The answer is a question. The same question asked for our ground based brethren which is, "What can we convert to do the job?" Just like there has not been vehicle specifically built to be a ground ambulance, there is not an aircraft built specifically for the task. The company I work for, Bismarck Air Medical, has converted Piper Chieftains, Cessna 414s, a 441, and Beechcraft King Airs for this purpose. Over the years, other companies have converted everything from the Cessna 210 to corporate jets and I am pretty sure the US military has converted every aircraft big enough to carry a stretcher. Currently, the most

popular airframes are the King Airs, the Pilatus PC12, and, of the corporate jets, the Lear Jet is the favorite because of its wider clam shell door and higher cruise speed. Once you have decided on an airframe, converting it for air ambulance operations can be as simple as installing a modular unit that attaches to the aircraft seat rails, to as complex as a custom built medical interior with electric patient lifts. Add to this about 150lbs of medications and medical gear and you have a flying ambulance.

The one aspect of my job at Bismarck Air Medical that never ceases to amaze is the compassion and professionalism of the medical crews. They are capable of providing the same level of



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care as a hospital emergency room and, for the duration of the flight, provide that care with limited space, limited resources, and virtually no outside assistance.

Another group of professionals who have our thanks and deserve their communities' thanks are our airport managers. Everyone of them with a medical center in their community has received a 2 am call during a snow storm to check on or clear the runway for a patient flight. In most cases, the families will never know the only reason their loved one received the care

needed to save their life was because of the efforts of this group of professionals.

Since most of you reading this article are looked at as your community experts in all things aviation, I want to leave you with a piece of advice. Please let people in your community know if they or a family member are ever in need of an air ambulance transport, they need to ask, "What are our options for transport?" and "What is this going to cost?" Please understand that if a person's condition requires them to be transported ASAP, they need and will get whatever service can move them the quickest. But, if the patient is stable and is being transported to receive a higher level of care or a medical procedure where leaving now or leaving in a couple hours will have no affect on their recovery.



THEY NEED TO ASK. The difference in cost can literally range from paying their deductible to having a lien placed on their property. The simple act of telling your hospital case worker you want quotes from the available services could save you from paying three times or more for a flight, especially if you are un-insured or the service doesn't participate with your insurance provider. North Dakota has four companies providing fixed wing transports and three companies providing rotor wing. It is a small community, so all the medical facilities are aware of these options but not

until August 1<sup>st</sup> of this year will there be a requirement for them to inform you of your options. The reality is hospitals with their own services or that have a private service close by, are going to use them because it is easy and convenient. Unfortunately, this a medical decision which requires the patient or the patient's family to push for a second opinion.

The author, Roger Lawyer, is the Director of Flight Operations for Bismarck Air Medical, LLC., a provider of air ambulance, charter, and aircraft management services. Since 1987 he has worked in the aviation industry as a professional line service tech and held various pilot and management positions for air ambulance, charter, regional airline, and corporate operations. He may be reached at rlawyer@maas-nd.com.



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#### **Hot Brakes Heartache**

By Ed Burkardt, NDPA

What are hot brakes and why should you worry about them? Well, your instructor hopefully talked a bit about them in systems class, but as we all know, you just push on the top of the rudder pedals and the plane slows down. We know that hydraulic fluid goes from our toe pressure down little lines to the brake caliper that squeezes against the disk brake. More pressure equals more slowing. Easy peasy to understand - no higher thought level required – or is it?

Just like most things in aviation, complacency or not appreciating all factors affecting the safety of your flight (FAR 91.3) can have unpleasant consequences.

Back to systems class. Brakes slow by inducing friction between the brake pads and the brake disk. Friction causes heat. The heat is normally dispersed by airflow around and between the pads and the disk. If this heat is not dispersed, the pads and the disk can heat up to the point where the friction between them is lessened and more

pressure is required for them to

slow the aircraft.

Here's your situation. C-182 with wheel pants (fairly heavy aircraft) wishes to takeoff on the northwest runway. Winds are strong and gusty, but right down the runway 310 28G38. It's a long runway 7000+ and a correspondingly long taxiway downwind. Piece of cake to





apply proper wind corrections to the controls as you taxi down to the runway, but the aircraft keeps rolling too fast for comfort so you ride the brakes. Still too fast? Push a little harder. Tower offers an intersection takeoff but you decide you want the full length of the runway. Notice that funny smell in the cockpit? Looking outside you see whiffs of smoke. Smoke? Look at your wheels and see your wheel pants on FIRE!

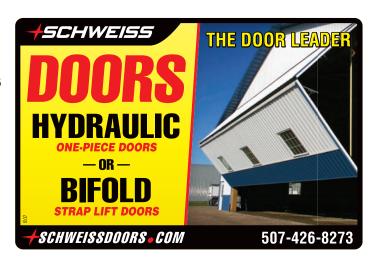
Take a look at the pictures; notice the left axle actually bent up 90 degrees, the melted metal left from the calipers and pads, the

scorched wheel struts. Think about the heat required to do that.

Repairs, tires, tubes, brake calipers, lines and pads, gear struts and axles, and wheel pants. North of \$30K.

Not often talked about is proper braking technique. We don't like to pump the brakes and jerk the aircraft around by

> pushing firmly on the brakes and then releasing. Makes us look unprofessional and passengers nervous. But that is exactly what you are supposed to do. Releasing the pressure allows the brake calipers and pads to retract from the disk and airflow to cool both. Riding the brakes results in a heat buildup that can (a) make them fail and (b) cost you big time in repairs to your aircraft or whatever you run into! So, pump away.









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# CALENDAR of EVENTS

August 2017

Great Lakes Chapter AAAE Annual Conference Aug 3 to Aug 6 Grand Forks, ND

EAA Chapter 317 pancake breakfast Aug 5 KFAR Fargo Air Museum

Tioga Drone Camp Aug 5 to Aug 6 Tioga, ND

Kindred Fly-In Breakfast Aug 12 Kindred, ND

Fargo Air Museum Youth Camp Aug 12 Fargo Air Museum Robotics

Milnor Fly-In BBQ Supper Aug 27 4R6 Milnor, ND

> Please send your upcoming dates to ndaero@nd.gov

September 2017

International Peace Gardens Fly-In Sept 4 Dunseith, ND

Moorhead Airport Fly-In/Drive In Sept 9 KJKJ Wings and Wheels Fly-In and Car Show Moorhead, MN

Fargo Air Museum Youth Camp Sept 9 Fargo Air Museum Unmanned Aircraft

Valley City Fly-In Sept 9

Bismarck Fly-In Breakfast Sept 10 Bismarck Aero Center

Fargo Air Museum Golf tournament Sept 11 Maple River Golf Club Mapleton, ND

Fly-In Pancake Breakfast Sept 17 Enderlin Municipal Airport for details on these events: aero.nd.gov

Check out the online calendar

October 2017

Fargo Air Museum Youth Camp Oct 14 Fargo Air Museum, Space Exploration

Fly-In and Chili Feed Oct 21 Mandan, ND

November 2017

Fargo Air Museum Youth Camp Nov 11 Fargo Air Museum Composites

Mark Your Calendar!
Upper Midwest
Aviation Symposium
Mar 4-6, 2018 | Fargo, ND



#### **ATC Privatization and User Fees?**

The North Dakota Aviation Council is on record as being opposed to Air Traffic Control privatization. Now is the time to contact our members of congress to tell them you're opposed to bill H.R. 2997. For more information, please go to www.ATCnotforsale.com, and consider their link to write Congressmen Hoeven and Heitkamp and Representative Cramer. GA was not consulted, and every other model of privatization has seen a decline in general aviation. Do your part to keep fly-ins on the front page in your community.