

NORTH DAKOTA AVIATION ASSOCIATION

FLY-ND

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IN THIS ISSUE

Five-Seater Fly-Off

FLY-ND **QUARTERLY**

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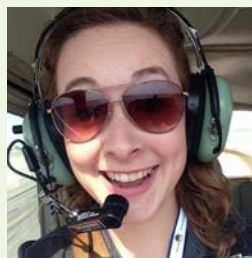
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From the Editor

Welcome to the fall edition of the FLY-ND Quarterly! Despite the turbulent changes in our world, summer has come and gone as usual and I hope you are taking advantage of these beautiful fall days while

they last. This issue is reflective of changing seasons, sharing new ideas and experiences in a familiar way.

In these pages, you will enjoy tales of pilots' recent experiences while flying, as well as dive deeper into North Dakota aviation history. You'll be fueled with excitement as you explore new aviation resources, attractions, and events, and learn about fall wildlife hazards and aircraft sanitization. There is a little bit of everything in this issue, so no matter where you focus in aviation lies, I hope you will find something to peak your interest.

Our North Dakota aviation community has remained strong, and though we too have been greatly affected these past months, we have continued on with ingenuity and determination. My hope is that you will be informed and reassured as you enjoy this issue, and that you continue in good spirits and health.

Wishing you clear skies and unlimited visibility,

Nicolette

Cover Photo credit: Ashley Sabin (See page 26)

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.



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CHAIRMAN'S COMMENTS

As Chairman of the North Dakota Aviation Association (NDAA), I am excited to share some updates on progress we have made in staying true to our mission of supporting and growing aviation throughout North Dakota.

Over a year ago, the NDAA Board of Directors made a commitment to develop and host an annual aviation career expo for students interested in exploring or pursuing a career in aviation. Hopefully you have seen and heard about it by now. If not, check out our promo video at www.FLY-ND.com/career-expo. A big thank you to the University of North Dakota Aerospace for the production of the video. The free FLY-ND Aviation Career Expo, which was scheduled for this October, has been postponed until 2021. In addition to the Career Expo, we have established the NDAA Scholarship Fund. This fund will ultimately be a tool to help students take their first steps towards a career in aviation.

We have also launched our new website www.FLY-ND.com that is the hub for everything we as an association are working on. Events, membership info, scholarships, and news all can be accessed quickly and is easy to use and view from any kind of device.

The NDAA has also been working with Senator Hoeven's and Congressman Armstrong's offices to stay on top of government funding the Federal Aviation Administration (FAA) recently received to address our industry's workforce challenges. The funds have been appropriated to the FAA and we are expected to be available as early as mid-November. We are taking some initial steps to prepare for a potential grant submission and are collaborating with a number of organizations. These include the North Dakota Aeronautics Commission, North Dakota Department of Public Instruction, North Dakota Career and Technical Education, UND Aerospace, North Dakota State College of Science and Aircraft Owners and Pilots Association to name a few. If you are interested in serving on our working committee, please contact me directly. To learn more about the grant available, visit the FAA's website at www.faa.gov/about/office_org/headquarters_offices/ang/grants/awd/

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Advocacy | Education | Outreach



MEMBER BENEFITS

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

1. 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.

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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.

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.

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.

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.

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.



Whether you've hosted a recent airport event, heard an inspiring aviation story, or have an exciting flying adventure to share...

We would like to hear them!

Submit your ideas or stories for consideration to:
editor@fly-nd.com

Do you have an interesting aviation story, event or photos to share?



Kyle Wanner, Director

North Dakota Aeronautics Commission
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DIRECTOR'S Chair



Challenge Accepted

COVID-19 has brought significant impacts to the aviation industry and the North Dakota Aeronautics Commission (NDAC) staff has been hard at work accepting the challenge to help our state adapt to the current and future environment that the industry is facing.

During the Fall of each year, our planning staff, in partnership with the Federal Aviation Administration (FAA), works to hold meetings with as many of our public-use airports as possible. This year, the meetings were held virtually due to COVID-19 concerns and we were able to meet with over 40 of our airports over a one-month time period. These meetings are designed to allow a free-flowing conversation between the local airport management, the state, and the federal government, which helps to ensure that everyone has an understanding of the current situation each airport is facing. Throughout this process, we also want to identify all of the potential airport improvement and rehabilitation projects that exist as we work to ensure that the best projects throughout the state are being prioritized. This is a critically important process, as we work to ensure that a cost-effective, safe, and growing aviation environment exists throughout all of North Dakota.

Now that these discussions are complete, our planning staff is faced with collecting updated individual capital improvement plans from our airports. We will then work to analyze and combine the information into an updated statewide capital improvement plan that will reflect anticipated funding scenarios and project priorities over the next three years. This is an incredible challenge, as the needs always outweigh the funding availability. We also live in a time when government revenues and funding streams are currently very unpredictable.

One significant impact that the COVID-19 pandemic has had specifically on our agency, is the fact that the current and future projected oil revenues the state is receiving have dramatically dropped. Last legislative session, the state's aviation industry was able to secure the potential of additional infrastructure funding through the passing of HB 1066, formally known as the "Operation Prairie Dog" bill. The intent of that legislation was to provide a certain level of ongoing funding certainty for infrastructure projects throughout the state and created new "buckets" of funds that are projected to fill from future oil tax revenues. These newly created funds are currently authorized to fill up to \$250 million per biennium in total, distributing up to \$115 million to cities, \$115 million to counties and townships, and \$20 million for airport infrastructure. Due to the drop in oil demand created by the COVID-19 pandemic, it is now estimated that these buckets will most likely not fill during the current biennium. This will result in major impacts to road, bridge, and airport projects all throughout the state and has prompted the need for

state agencies and local municipalities to adapt to the current situation.

Our agency has also seen a significant decline in aviation fuel tax revenues since the pandemic began this past spring, though tax revenue from aircraft sales has held steady. Like many other businesses and government entities, we have been able to reduce operational expenditures during the current biennium and are working on updating forecasts for our budget that will be discussed during the upcoming legislative session. Our planning process allows our agency to fully understand the airport infrastructure needs that our state requires and allows us to educate our elected officials so that they are able to make their decisions with the best information possible. As legislative session approaches, please feel free to communicate any concerns or recommendations that you may have that could lead to a positive impact on aviation in North Dakota.

Though we are faced with some unexpected circumstances, our office gladly accepts the challenge to serve you. We will continue to work to the best of our ability to make the future of aviation in North Dakota a brighter one.

~Kyle



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A Hopeful Future

I certainly did not go to school to be a teacher. However, due to COVID-19, I have become one! Although my second grader may disagree with me, I think I am doing a pretty good job. These times have forced me, and likely many of you, to pause and reevaluate how and where we spend our time and energy, as well as our place and footprint in the world. Maybe we are stretching our skills as a teacher, searching for grant funds to keep programs running, or exploring new ways of delivering business or education in a "Zoom" world. Some of these situations have come out of necessity and others have presented themselves as an opportunity to grow, expand, and give.

Even in the challenging and uncertain times we are navigating, I feel a great sense of hope and excitement for what a post-COVID world will look like. I am excited for the future, especially the future of aviation. There is an excitement in the eyes of these curious and resilient students. They are flexible and hopeful. They are willing and courageous. They are figuring out how to learn and attend school in unprecedented circumstances. I am especially hopeful for students exploring a career in aviation.

For students eager to explore their options, the North Dakota Aviation Association (NDAA) is proud to host the first ever FLY-ND Career Expo (originally planned for this October, it has been postponed until 2021). The NDAA is thrilled to be the launching point for students taking a step in this direction.

This free event is the first of its kind in North Dakota, with a mission to introduce and inspire high school and college age students to the many careers available throughout the aviation industry. The event will be filled with numerous opportunities for students to engage and learn, from aircraft static displays and numerous aviation exhibitors to our keynote speakers Gil Rud, a former Commander of the U.S. Navy Blue Angels, and Karen Ruth, a Delta Airlines Boeing 777 captain. There are opportunities for companies to exhibit and showcase their organizations and provide students with information and

resources to help them look beyond the horizon and develop a vision for their future.

One of the highlights of this event is scholarships. We have partnered with the North Dakota Community Foundation to establish scholarship funds for students. If you are interested in donating, there are options for both endowed and non-endowed scholarships. Please visit our website to learn more: www.fly-nd.com. If you choose to make a contribution, you personally make a difference in the lives of aviation students. The endowed scholarship is an opportunity to leave your footprint on the industry in perpetuity. Whether it is a financial contribution or the generous contribution of your time and efforts, I thank you.

I have hope for students, as well as forward progress of the aviation community. The future is theirs, led by a guiding hand from us. Whether it is programs like the Career Expo or the Chromebooks and notebooks scattered on my kitchen table, the future remains strong and I'm excited for what is to come.

“In the rush to return to normal,

...use this time to consider which parts of normal are worth rushing back to.”

~Dave Hollis



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The North Dakota Airport Association's 2021 Legislative Agenda

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



Earlier this year at the Upper Midwest Aviation Symposium (recently renamed the FLY-ND Conference) the Airport Association of North Dakota's (AAND) members and officers discussed and set forth the 2021 legislative agenda. Additionally, the members authorized the AAND board to negotiate and enter into an agreement with Odney Inc. to assist the AAND with its legislative efforts.

The 2021 AAND legislative agenda includes the following:

- Supporting the North Dakota Aeronautics Commission (NDAC) and their funding request
- Introducing legislation that would allow commercial service airports to enter into contracts with Transportation Network Companies (TNC), such as Uber and Lyft
- Supporting legislation that causes airport authorities to be eligible for infrastructure loan programs
- Monitoring any new legislation related to Operation Prairie Dog, which was approved in the 2019 Session

As with past sessions, supporting the NDAC will be a top priority for AAND. During the 2021 session, we'll be backing the NDAC's budget request and their appeal to receive carry-over spending authority for funds that were received during the 2019 session, but will not be granted until after July 2021.

Another focus will be introducing legislation to allow commercial service airports the ability to enter into contracts with TNC. In the 2019 session, the AAND was unsuccessful in moving this bill forward, which is not surprising as it normally takes two or more sessions to get a bill through. With lessons learned, the AAND is going to try again in the 2021 session. The importance of this bill is that as TNC operations continue to grow in the state, our airports will start seeing less use of the paid parking lots, taxi services, and rental cars, which ultimately leads to less revenue for airports. As a way to re-collect some of the revenue and meet federal grant assurances, the AAND will introduce legislation to change North Dakota Century Code so commercial airports are able to enter into contracts with the TNC.

Another focus will be supporting legislation that will allow airports to be eligible for a state operated infrastructure loan program. In the 2015 and 2017 sessions, the AAND provided testimony on legislation that would have allowed airports to be eligible to request low-interest loans through the Bank of North Dakota. However, the bill was modified to remove airports, as the focus at the time was on other types of infrastructure. During the 2019 session, the AAND did not pursue any loan program legislation as Operation Prairie Dog provided a lot of promise. Even with the potential funds

provided by Operation Prairie Dog, the AAND feels there is a need to ensure airports are eligible for a loan program. At this time, there are several ideas for a loan program legislators are discussing. Once a direction is known, the AAND and Odney will work to assure airports are deemed eligible to participate in the program.

A top focus for the AAND will be monitoring any potential changes to Operation Prairie Dog legislation. In the 2019 session, Operation Prairie Dog approved \$20 million for airport infrastructure grants that were to be distributed through the NDAC's grant program. The \$20 million came from the oil and gas extraction tax formula that filled a set of funds or buckets. Unfortunately, the economic downturn has not allowed the buckets to fill as fast as hoped and the airport bucket has yet to start filling. Our vision is to not see any modifications to the formula and allow it to work before making any modifications in future sessions.

To continue our efforts to interact with legislators, the AAND plans to host a legislative social and hopes to assist with the development of Aviation Day at the Capital. These are two great events that provide AAND members and the aviation community the ability to interact and promote our industry with legislators and executive branch members. However, with COVID-19 precautions in place, we are not quite sure how the logistics will play out for hosting these events. Just as in past years, the AAND expects that one or two bills affecting airports or aviation will require our testimony.

Through the hard work of many, the AAND has been very successful in past sessions. This session should be no different, as the organization is well set up with seasoned lobbyists from Odney by our side and an established rapport with legislators. Most importantly, we have members that are ready and willing to participate if called upon. By this I mean, contacting legislators or testifying if possible. When we unify, our voice is stronger!

The AAND is looking toward another busy and successful legislative session. As we near the beginning of the session, there will be updates coming from the AAND board via email, as well as conference calls once the session begins. So, be on the lookout for those invites and communications. Lastly, the AAND would like to extend a thank you to all those that have reached out to their legislators or have given time to come to Bismarck to testify in the past. Without these efforts, we would not be as successful. So, let's look forward to a new year and as always, remember to check the NOTAMs!



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



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



Challenges Present Opportunities

It is often said, “When one door closes, another one is opened.” Although everyone has been impacted by the pandemic, certain parts of the aviation industry have been hit harder than others. The airline industry is still not seeing passenger numbers of even 50 percent of one year ago, while other parts of the industry are doing well. Though I have not seen any official statistics, I have had a number of conversations with individuals in the industry indicating many maintenance shops are currently busy. Aerial applicators have had a busy summer and flight instruction may have reached a record level of interest and activity. It took me by surprise to learn that we are seeing potential record numbers of students looking for flight training. However, I speculate that many of those individuals are either looking to check an item off their bucket list, looking for a career change, getting recurrent, or finishing up the training they may have started long ago. With more time on their hands, it also provides a reason to get out of the house and view some great scenery, all while in a safe environment.

With the growing interest in this area, there is an opportunity for pilots who have had a reduction in flight hours at their current employer or have more free time to offer flight instruction. Whether short term during the pandemic or long term, there is currently a demand for additional Certified Flight Instructors (CFI). If you are a CFI with a little extra time, I encourage you to visit a nearby airport and see if demand exists in your community. If you find one or more students further away and you need to travel, the North Dakota Aeronautics Commission (NDAC) offers travel assistance through our Flight Training Assistance Program (FTAP). This program will fund 75 percent of eligible travel costs for a flight instructor’s travel to an airport in need.

Visit our website for more information: www.aero.nd.gov/education-programs

You are welcome to contact me as well, I would be happy to discuss the program with you. I hope that you are staying safe and are able to enjoy the skies!

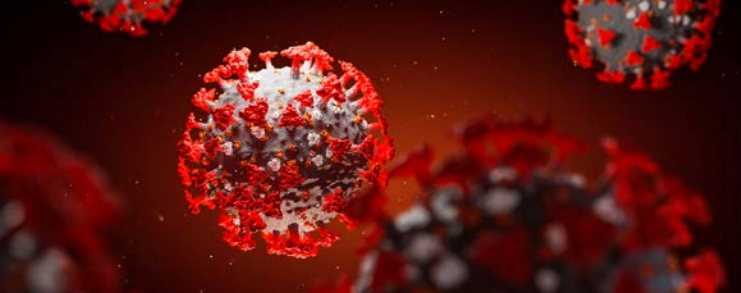


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Brushing Up and Being Safe During COVID

This year has been full of challenges in our private lives, professional lives, and in getting out to the airport. For many of us, flying is something we fell in love with at an early age. Then maybe we got married, raised a family, built our professional lives and it hit us- I haven't flown since I was 19 years old. Maybe it's time I start flying again! You went out to the airport and with some effort, you and your flight instructor got you and your skills back to a safe level which allowed you to enjoy flying once again.

If you remember, it took time to get you back up to speed. This included 8-10 hours of ground school and self study along with three or four hours of flight training. And if you were giving it all, you took to the skies once again at the Private Pilot level, building that confidence back with every flight.

Unlike the 20 year break from long ago, this past year has grounded many of us for reasons I need not explain.

I have been working with our colleagues at NASA and the Aviation Safety Reporting System (ASRS) program, reviewing reported flight proficiency issues. What we discovered should be of concern to all pilots. As you know, the NASA reporting system, or ASRS as it is now called, was designed to allow airmen to report non-regulatory events while operating in the National Airspace System. Report after report from professional and General Aviation pilots alike have been stating proficiency was a contributing factor for their report, reflecting a myriad of challenges found in the cockpit due to the COVID-19 shut down.

So, if the professional pilots in the system who are active in a training program are reporting proficiency or skill issues, how has this shutdown been affecting the pilots who do not usually train in our system? Concerns have surfaced nationally, pointing towards a lack of proficient and sometimes borderline competent pilots.

How do we fix this? During these times of lapse in maintaining our aviator skills, the importance of sitting down, refreshing our knowledge, and flight training to brush the dust off those skills should be our path to remaining safe in an aircraft.

Nowadays, all we hear about is getting the face mask on and disinfecting wherever and whenever possible. Keeping your aircraft or rental aircraft disinfected can mean introducing chemicals to the aircraft interior that may be doing more bad than good. I recommend David Tulis' recent article for AOPA regarding damage by disinfectant.

Placard integrity is generally subject to exposure to sunlight, can become fragile due to age, and may be destroyed by the lightest touch, let alone being cleaned with disinfectant chemicals. Use care when disinfecting your aircraft with alcohol or similar based cleaning products. Be advised that any loss of placard data, no matter how small, may require the attention of an authorized mechanic to correct. Take a moment to review 14 CFR Part 91.9, regarding marking and placarding.

As for you and your passengers, the U.S. Food and Drug Administration (FDA) has published a "Do Not Use List" that includes certain hand sanitizers which have been determined unsafe for use. The FDA has determined that some hand sanitizers on the market contain methanol (also known as methyl alcohol) and other ingredients, which may be toxic when absorbed through the skin. They can cause symptoms such as nausea, vomiting, headaches, blurred vision, seizure, and even death. These products might be labeled as containing ethyl alcohol, but testing by the FDA has determined that they are contaminated with methanol. Methanol and many methanol-containing products are considered hazardous materials for transport purposes and are regulated for transport by aircraft. Under U.S. global Dangerous Goods Regulations, no one may offer, accept, or transport hazardous material not in accordance with applicable requirements. For your protection and the protection of those on your aircraft please take a moment to ask one very important question:

"Are you or your passengers carrying any form of liquid sanitizers in the aircraft?"

Keep in mind that some alcohol based hand sanitizers are very flammable, with flash points in the 70-plus degrees Fahrenheit range, which is well below body temperature. This has resulted in occasions of a spark from a cigarette or even static electricity igniting the sanitizer while in use.

So brush up! Consider what you will need to attain proficiency and what you will need to be safe and clean in your aircraft.

WINGS Proficiency Program is a great place to start! Join us today: www.faasafety.gov

Safety is a motivated action which requires attention, skill, and refreshment throughout time.

Fly Safe!

Jay M. Flowers,

Aviation Safety, National FAASafetyTeam ASI, Operations | (701) 226-6283 | jay.m.flowers@faa.gov



Teaching Our Aviators: Tips for Fellow Flight Instructors

By Tajae Viaene, Chief Flight Instructor, Fargo Jet Center

Over the years, I have heard numerous reasons to become a Certified Flight Instructor (CFI). Many of those reasons arise from an interest in earning flight hours, looking for a flexible schedule to raise a family, or a desire to share the joy of aviation with new aviators. Of all these, I have yet to hear someone respond, “because it sounds like an easy job.”

Trust me when I say, the instructors sticking around are those who find a special joy in teaching, and they understand the hard work and patience required. With the right organization and mentality, inspiring others to earn their wings can be an immensely rewarding career. As I have been instructing for years now, I want to share a few tips for my fellow flight instructors.

Tip #1: Treat every sunset as if it is your first

I cannot count how many beautiful sunsets I have seen over the years while teaching in the air. That being said, I still enthusiastically perk up and try to take the next best picture of the stunning reflection off our wings. Though it is not my first viewing, the way I react has a direct impact on my flight student's experience. Imagine how inspiring it is for them to share a special moment with their instructor while gazing at scenery, the likes of which are only reserved for those with a front seat view in the sky.

Tip #2: Mix it up

Fellow instructors, before you rule this out as a lifetime career option, let me ask: have you really given this a fighting chance? I do understand the monotony when doing the same kind of training day-in and day-out, but in most cases I can stress: YOU ARE IN CONTROL! When I was in a rut, I took it upon myself to earn more training to diversify my customers and my daily flights. Earning my CFI-I allowed me to teach instrument students and I had the opportunity to fly in many unique aircraft owned by those customers. Later, I earned my Multi-Engine Instructor. Wow! Talk about exciting training and teaching after earning this. Multi-engine training has become my “knack” if you will. The thrill of shutting down an engine and restarting in the air with a student – yeah, that's not going away anytime soon.

Tip #3: Give yourself a break

My first year of instruction was also the year I flew the most. I worked long hours, rarely declined the chance to fly, and I am pretty sure my kid became accustomed to my absence. I learned a lot that year and the main things were: Don't forget to take care of your health, your family, and give yourself a break.

Maybe you are just beginning to teach, or perhaps you are looking at many more months of instruction due to the delay in airline or corporate pilot positions available with our current economic situation; either way, I hope these tips will help you to enjoy each and every flight with your students.



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Nels Lund, Airport Planner
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The 2020 Effect on the Air Cargo Industry

In a year filled with unforeseen impacts on every industry, it comes as no surprise that the air cargo industry has also seen significant changes. In some cases, packages are even being buckled into the seats passengers usually occupy. This is happening internationally, but the U.S. has stronger restrictions. Some foreign carriers are even removing passenger seats to make way for more cargo, especially because of the decrease in passenger travel. In the U.S., more shipments are traveling in the cargo bins of passenger aircraft rather than luggage. In some cases, the Federal Aviation Administration (FAA) has allowed shipments to be stored under seats, in overhead bins, or even stowage closets. In those cases, the weight of cargo cannot exceed the approved weights for each area.

Typically, air cargo goods are any combination of low in weight, low in volume, of high dollar value, or time sensitive items such as an organ transplant. In addition to the usual cargo, other items are being shipped via air in mass quantities such as personal protective equipment (PPE), masks, ventilators, and goods purchased online. These items would not necessarily have been shipped on air cargo prior to COVID-19.

Fewer planes are traveling these days, but a larger percent of them are cargo planes compared to pre-COVID times. With fewer planes, shipping costs have gone up. In April, it cost \$1.65 to ship a pound of cargo, up 65 percent from March because of fewer planes in the air. This is not due to a demand shortage, rather, a decrease in the supply chain.

From July 2019 to July 2020, cargo carried by U.S. air carriers rose nearly 13 percent by weight, according to the Bureau of Transportation Statistics preliminary data. In July

2019, the 12.8 percent system-wide gain, both domestic and international, was the largest year-to-year gain since June 2010. Most of this gain was the 16 percent increase in domestic cargo, which had the largest year-to-year gain since May 2009. It was also the eighth consecutive month that U.S. carriers carried more domestic cargo than the same month of the previous year.

These same carriers showed an increase of 4.5 percent in

international cargo. The gain in international cargo was the first year-to-year gain since March 2019 and the largest annual gain since October 2018. Domestic cargo has seen an increase of 6.3 percent year-to-date, while international cargo has seen a decrease of 7.2 percent. Much of this is caused by restrictions in travel and the economy, due to the COVID-19 pandemic. The table below shows the domestic and international system-wide change in U.S. airlines cargo by weight from the same month of the previous year.

In North Dakota, we have seen a great demand for air cargo in

recent years. While 2020 data was not available at the time of this article, we can hope for another increase in air cargo in our state. We may not see the impressive increase that we saw from 2018 to 2019, but we will soon see the effect of the current demand for medical supplies and e-commerce. The graph below shows North Dakota compared to the U.S. as a percent changed in weight of cargo landed year-to-year since 2010. North Dakota was higher in every year except one. Let's hope for continued positive trends in air cargo in North Dakota!

Source: ND Airports, FAA All-Cargo Reporting with Form 5100-108

Table 1: Systemwide Percent Change in US Airlines Cargo by Weight from the Same Month of the Previous Year 2016-2020

Cargo = Freight + Mail

Year-to-Year Percent Change

	2016-2017	2017-2018	2018-2019	2019-2020
January	6.4	10.5	5.1	-0.5
February	6.1	9.2	-0.3	-0.1
March	8.0	5.8	-0.2	-1.6
April	2.6	5.9	4.4	-1.9
May	10.8	9.0	3.1	0.9
June	6.8	5.5	-1.1	9.1
July	6.9	6.7	3.5	12.8*
August	9.7	5.0	0.2	
September	4.3	5.0	-4.4	
October	10.6	5.5	-1.2	
November	10.6	-0.6	-2.3	
December	5.6	0.3	0.7	
Jan-July	6.8	7.5	-1.0	2.7
Annual	7.4	5.4	0.6	

Source: Bureau of Transportation Statistics, T-100 Market

* July 2020 data is preliminary

Cargo Flights in a COVID-19 World

By Mark Antonenko

Sunrise over Mt. Rainer

When I started flying Beech 1900's for Great Lakes Airlines back in 1998, I was filled with excitement as I embarked on what has been an amazing journey. After flying for Great Lakes, I was hired by Air Wisconsin, where I flew DO-328 turboprops and the CRJ-200, performing check airman duties on both. In 2005, I realized my dream of flying for a major carrier when UPS called. I worked as a flight engineer on the now retired DC-8, and then moved on to the Boeing 757/767 a year later. I have been flying internationally on the Boeing 767 ever since, circumnavigating the globe for close to 15 years now. Two years ago, I upgraded to Captain on this beautiful aircraft.

Flying internationally is a pilot's dream. At UPS, we operate into the busiest airports in the world. Airports such as Paris, Shanghai, Singapore, Narita, and Hong Kong, not to mention the very busy U.S. major hubs. We fly mostly during the night, but also during the busy day times, sharing the busiest times with our passenger carrying colleagues. Being a major carrier, UPS puts us up in beautiful hotels around the world, normally in downtown areas where we are free to explore local restaurants and sights during our layovers. I have had the privilege of seeing many sights around the world, including the 16 hectare Naritasan Temple in Japan, watching the Hanshin Tigers play baseball in Osaka, Japan, the Night Safari in Singapore. I've played golf in Penang, Malaysia, shopped in various markets in Qingdao, Shanghai, and Shenzhen, China. I've seen incredibly beautiful churches in numerous European cities, as well as museums such as El De Haus, the SS Headquarters in WWII, in Cologne, Germany, and the Duxford Imperial War Museum just outside of Stansted, England. Once, due to a lightning strike on our aircraft, we were "stuck" in Venice, Italy for a weekend, while the aircraft was repaired. The whole time, my Captain and I were wishing our wives were with us!

While the layovers have been cool, it is not always vacation time. The demands of international freight flying does have its challenges. As we normally fly at times opposite to our

passenger flying colleagues, rest can be challenging. UPS and the Independent Pilots Association, our pilot union, have worked hard to help minimize hotel disruptions that prevent us from getting adequate rest. Efforts have also been made in the construction of schedules to allow for rested crews. Continuing qualification training includes quarterly home studies and annual simulator training events. Internationally, we face the challenges of busy Atlantic and Pacific crossings. Atlantic crossings are more challenging, as we normally fly random routes, as opposed to flying organized tracks that you may ride on with carriers like Delta or United. Weather can be a challenge too, such as Midwest thunderstorms, typhoons in the Pacific, fog, and high winds. Flying some of the best equipment in the skies makes meeting these challenges very manageable.

As the COVID-19 pandemic hit the world, the aviation industry was turned on its head. The changes to our profession due to the pandemic has been a sequence of challenges unprecedented in our industry. Around the world, traffic congestion at the major airports ground to a halt. My last trip with inter-Asia flying was amazing. Airports normally busy and bustling with airplanes and passengers became boneyards. In Asia, Singapore, Incheon, and Narita had billions of dollars of equipment in storage: A-380's, A-350's, Boeing 747's, 787's, 767's, and more. Taxiways and ramps were filled to capacity. Here in the U.S. the Atlanta, Dallas-Fort Worth, and Chicago-O'Hare airports became boneyards for Delta, American, and United.

As the passenger demand waned or was taken away by government mandates, normally busy Air Traffic Control sectors became eerily quiet. Complicated Standard Terminal Arrival Routes (STAR), despite being planned for, ended up with controllers clearing us direct to Initial Approach Fixes (IAF) for approaches. Cargo went from being a vibrant but smaller part of most areas to being the only game in town. In the North Atlantic, we usually see five or six organized tracks to

manage the numerous flights crossing from North America to Europe and back again. Through the end of the summer, that number was down to one track!

For myself and other UPS pilots, the biggest challenges have been the changes to rules and regulations for entry into different countries, and even different states here at home. In addition to entry rules, there are new restrictions to what we can do on layovers. Something as simple as grabbing dinner has become a huge challenge. For example, on a recent layover in Anchorage, AK, many downtown restaurants were either closed or only open for take out. Room service in the hotels is usually a reliable option. However, being on a night freight sleeping schedule, those options are often limited and exorbitantly priced. Local governments, especially China and Hong Kong, are mandating COVID-19 testing either prior to or upon arrival and, regardless of the test being negative, now mandate that we remain within our rooms for the duration of our layovers. Considering some of our layovers last several days, cabin fever is a real concern. Regulatory rule changes now require UPS to publish updates to our airport briefing guides daily, causing enormous workloads for our flight control folks as well as crews. Fortunately, we use electronic flight kits so info is easily transmitted, versus the days of old when paper revisions were the only option. Even with the diligence of our flight department, there have been instances of rule changes happening literally during flights. The companies only become aware of these changes after one of their crews experiences them

upon arrival. As a result, we are asked to update our electronic flight kits daily, during our flights.

While the pandemic has had an incredible impact on the airline industry, those of us flying the empty skies still enjoy what we do, despite the ever-changing environment in which we are working. I consider myself blessed to be flying for UPS, as we and our friends at FedEx and other cargo companies have plenty of flying to do and continue to grow. My thoughts are definitely with my passenger flying colleagues, however, who are looking at massive layoffs once federal aid dries up. My hope for them is a speedy recovery and minimal furloughs as we emerge from these challenging times! As for us, we will continue to navigate these crazy headwinds and do our part to aid in the recovery from the pandemic.



Captain Antonenko in front of his Boeing 767 aircraft

Mark Antonenko is a Boeing 757/767 Captain with UPS Airlines. He is based in Louisville, KY, but lives in Grand Forks, ND.

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When Wildlife Decide to Line Up and Wait

By Leisha Lunnie, Assistant Professor of Aviation, University of North Dakota

Fall in North Dakota is a beautiful time of year. The temperatures have dropped, the air is smooth, and it is wonderful weather for flying. Aside from what the dates on the calendar indicate, it sometimes feels like we only have a couple of weeks of these temperatures and beautiful colors associated with the season. Some would say that North Dakota only has two seasons and fall is not one of them. Regardless, fall in North Dakota can be compared to a toddler: precious and short. So, before the last of the leaves fall from our few trees and the frost covers our vehicles and airplanes in the morning, North Dakota aviators will try to log some time in that perfect flying weather where it's not too hot and not too cold.

I use this time of year to reinforce the dangers of wildlife to my aviation students. Bird strikes are a serious threat. They like to congregate on the runway and do not seem to be in any hurry to get out of the way. A bird flying at an altitude higher than you will usually dive, if it feels threatened. It really makes one wonder at their intelligence. Of course, a bird strike can happen at any time of year, as proven by possibly the most famous bird strike in recent history: U.S. Airways Flight 1549, nicknamed 'The Miracle on the Hudson' and piloted by Captain Chesley Sullenberger and Jeffrey Skiles. In January 2009, the Airbus A320 struck a flock of Canadian geese not long after take-off from LaGuardia and lost power, forcing an emergency descent into the Hudson River.


Whether it's geese while flying an Airbus or a barn swallow while flying a Cessna 150, the potential risk for a bird strike is always present. Late summer and fall pose more of a threat,

simply because of the number of migratory birds sharing our airspace. According to Federal Aviation Administration (FAA) reports, approximately 53 percent of bird strikes occur between July and October. This is when fall migration occurs, as well as young birds fledging from their nests.

We have covered birds, but what about other wildlife pose a threat to pilots? Rabbits, squirrels, and deer do not compete with our airspace, but they may very likely be occupying space on our runways. Wait, deer? Yes, you read that correctly. While they are less common than seagulls on the runway or a jackrabbit, there's nothing to stop a deer from venturing across a runway at the absolute worst time.

This, as I can share from experience, was one of my least favorite adventures in my flight career. As a college sophomore, I often flew home in my Cessna 150 on weekends. When returning that Sunday, I had borrowed my dad's Mooney M20C, as it was faster and more fun to fly than my little 150.

It was about 10:30 pm, and it had been a beautifully uneventful flight, followed by a perfect touchdown. My landing rollout was suddenly horribly jarred by the impact of a large white tail deer hitting the right side of the aircraft. I didn't immediately know what had happened, just that I needed to maintain control of the aircraft and get it stopped. It was a quiet night; the control tower had closed by this time, but the runway lights were still on from my approach and landing. The engine was already stopped due to the impact and it had already been at idle upon touchdown, so I stopped the plane right on the runway and got out to investigate. I'm sure



*While I do not know
of a foolproof plan to
avoid wildlife, there
are some things we
can do to try to avoid
wildlife strikes....*

I was shaking when I called the General Aviation terminal for assistance. It was worse when I had to call my dad. That is not a phone call I would ever want to repeat!

We towed the plane onto the ramp and the city took care of the deer carcass, which seemed to have a broken neck from the impact. It hit just in front of the wing, right at the firewall, then rolled under causing damage to the belly of the plane. There were only a few drops of blood, so while it did a healthy amount of damage, it could have been significantly worse. I am relieved it did not happen in December, as I have already heard all the jokes and they would just be worse if there was any chance I had killed one of Santa's reindeer.

This time of year, aviators need to be especially vigilant, particularly when flying at low levels over bodies of water. While I do not know of a foolproof plan to avoid wildlife, there are some things we can do to try to avoid wildlife strikes:

- Always maintain control of the aircraft (aviate, navigate, communicate)
- Have a plan for what you would do during each phase of flight in the event of a wildlife strike
- Be prepared to abort a takeoff, if needed
- Be prepared to go-around, if needed
- Avoid low level flying over bodies of water
- In cool weather, a warm windshield will have less likelihood of shattering upon impact

- Consider keeping shatterproof glasses or goggles, in the event your windshield is broken
- Before takeoff, ask the airport manager to clear the runway of any congregating birds or animals

If you see birds or other wildlife making a nuisance on the airport, call the airport manager or airport authority board. It is their duty under FAR Part 139 to mitigate wildlife hazards. At a tower controlled airport, you can also report it to Air Traffic Control. They have a duty under FAA Order 7110.65 to inform other pilots of a hazard. If you do have the unfortunate experience of being involved in a bird or wildlife strike, you need to report it to the FAA once you are safely on the ground and out of harm's way. The FAA Bird/Wildlife Strike Report can be found online at www.wildlife.faa.gov. You can also submit an Aviation Safety Report online to the Aviation Safety Reporting System (ASRS) at asrs.arc.nasa.gov. The ASRS collects and analyzes this data and uses it to lessen the likelihood of aviation accidents.

Wildlife are naturally camouflaged to blend into their surroundings. Some will bolt, others will freeze, especially with a landing light blinding them. Deer can run at speeds of 20 to 30 miles per hour and do not let runways alter their course. Fences will not keep wildlife out, and to them it's just another field to cross, whether on the ground or airborne, leaving us with the responsibility to avoid them.

Hanna Sampel

Majors: Commercial Aviation

Hometown: Forest River, ND



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Hanna keeps herself busy on campus as a Tour Guide for the Aerospace Dean's Office, a Student Services Representative and a Flight Physiology Chamber Operator. She is also in the Simultaneous Membership Program with the North Dakota Army National Guard.

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What is the North Dakota Statewide UAS BVLOS Network?

By Jakee Stoltz NPUAS Test Site

In May 2019, North Dakota Governor Doug Burgum and the North Dakota Department of Commerce announced a \$30 million dollar investment to be used to build out infrastructure to support Beyond Visual Line of Sight (BVLOS) operations of Unmanned Aircraft Systems (UAS) across North Dakota. The goal of a statewide BVLOS network is to enable UAS efficiencies for state agencies, local communities, and commercial sectors, including automated farming, utility inspections, and disaster response. The future of our statewide BVLOS network can be likened to common aviation infrastructures, such as navigational aids and runways which support manned aviation activities in North Dakota and across the country. Instead of each company deploying their own technology to support advanced UAS operations, North Dakota will deploy a common infrastructure that can be used by all UAS operators. Northern Plains UAS Test Site, headquartered in Grand Forks for the past seven years, has been chosen to manage the implementation of this network.

Immediately, Northern Plains UAS Test Site began working diligently with State and other partners, such as the North Dakota Department of Transportation and the MITRE

Corporation, to plan the initial deployment of the system. The statewide BVLOS network will consist of technology to detect other aircraft and assist UAS pilots in avoiding them, technology to reliably command and control the unmanned aircraft at extended distances, and technology to monitor the entire system so as to ensure it is running at the intended performance levels. All these technologies must be robust, secure, and able to gain the necessary approvals from agencies like the Federal Aviation Administration and Federal Communications Commission.

The initial deployment of the system, called the Key Site, is beginning to take shape with the signing of several agreements with leading UAS companies. L3Harris Technologies and Thales USA have been selected to provide technology, such as radars and radios, and build out the initial Key Site infrastructure. Volansi has been selected to provide an advanced UAS for network testing and use-case development. The Key Site location has also been chosen as the area surrounding Watford City and Williston, due to proximity to many potential use cases and existing state and local government infrastructure that can be leveraged for deployment.

The goal is to have an operational Key Site by the summer of 2021. At that time, UAS operators will be able to leverage the statewide BVLOS network to conduct advanced UAS operations that cannot be done today and that support their business needs. For example, the statewide BVLOS network might support an oil and gas company flying UAS with advanced sensors to inspect long distances of pipeline for integrity. Or the network might support law enforcement flying a UAS to quickly cover large areas to search for a missing person. Perhaps the network may even support the UAS being flown to deliver your packages. In all cases, the statewide BVLOS network will provide technology and support to enable these advanced operations safely in the North Dakota skies.



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The FAA recently selected 26 schools across the United States to participate in the Unmanned Aircraft Systems Collegiate Training Initiative (UAS-CTI). This program recognizes institutions that prepare students for UAS careers and was launched in April 2020. Two North Dakota schools were selected: Dakota College in Bottineau and the University of North Dakota in Grand Forks.



A Life-Saving Phone Call

*By Reed Groth,
Safety Officer,
Sanford AirMed*

School has started and signs of fall are here. Another great North Dakota summer is in the books. However, with the changing of seasons, winter weather will arrive and begin to play a major role in our daily lives. With that knowledge in mind, the air medical community is asking for your assistance.

When thinking of air medical transport, most people picture helicopters landing on a road and taking the patient from a car accident straight to the hospital. Sanford AirMed is more than that. With two fixed-wing King Air 200s stationed in Dickinson and Fargo, they are ready to go at a moment's notice. Flying 24/7, 365-days-a-year, these fixed wing aircraft annually log more than 400,000 miles. Serving North Dakotans for more than four decades, over 70,000 patients have been safely transported to higher level of care facilities, providing them with necessary lifesaving interventions.

Sanford AirMed, along with other air medical services, are calling on local airports across North Dakota for their support

and assistance. Picture this: someone you know and love is having a heart attack. You are located in rural North Dakota, miles away from a hospital that has the critical interventions required to help. It is the middle of winter and a blizzard has gone through, leaving roads nearly impassable. The forecast is calling for icing, leaving the helicopter unable to respond. Your next point of care is a fixed wing transport. The good news is these weather conditions allow Sanford AirMed's King Air 200 to accept the mission. The only requirement is an accessible, clear, and uncontaminated hard surface.

Flight conditions for the fixed wing aircraft look good. Sanford AirMed is cleared to fly and the crew is ready. Unfortunately, our pilots are unable to reach personnel at the destination airport to check runway conditions; therefore, we may need to land at an airport further away, thus delaying our team's arrival to the patient. Every minute equals precious heart muscle lost.

Verification of the runway conditions is one of the biggest challenges all local air medical crews face during winter months, especially on weekends and evenings. The phone call at the airport from an unknown number at 3:00 am may be from an air medical pilot, trying to initiate a mission. If it goes unanswered, they may not be able to accept the flight. Ensuring that the pilot can speak to someone knowledgeable about aircraft operations and the current status of the airport will greatly increase the probability that your air medical crew can be there in a timely manner when needed.



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James Buchli: A North Dakota First

By Penny Rafferty Hamilton, Ph.D.

North Dakota has always propelled sky and space “stars” to stellar careers. Born in New Rockford, ND, James F. Buchli is an excellent example of accomplishments in aviation and aerospace. In 1963, as Buchli graduated from Fargo Central High School, KVLV broadcast the international news of Soviet Cosmonaut, Valentina Tereshkova, becoming the world’s first women in space. KQWB radio blasted out the Beach Boys, “Surfin’ U.S.A.” and The Cascades singing “Rhythm of the Rain.”

That summer, Buchli left his beloved North Dakota for the U.S. Naval Academy. By 1967, he earned his Aeronautical Engineering degree and was commissioned as an officer in the United States Marine Corps. After some additional training, the Republic of Vietnam was his duty for a year as a Platoon Commander, then Executive Officer, and later Company Commander. Buchli is proof that North Dakota creates natural leaders.

Former NASA Astronaut, James Buchli, frequently returns as a speaker for University of North Dakota space studies students and faculty. (NASA archival photograph)

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By 1969, he landed for Naval Flight Officer training, earning his gold wings. Following that, he was stationed at Marine Corps Air Stations and missions in support of Vietnam War operations. In 1977, the U.S. Naval Test Pilot School became his new duty assignment. Over the years, Buchli logged over 4,200 hours of flight time: 4,000 in jet aircraft, including combat in the F-4 Phantom II. Along the way, he earned significant military awards and a Master of Science in Aeronautical Engineering Systems.

In 1979, Buchli was selected to become a NASA astronaut, becoming North Dakota's first native-born astronaut. Now a full-fledged American "Space Star", he is a veteran of four space flights and has orbited the earth 319 times, traveling 7.74 million miles in 20 days, ten hours, 25 minutes and 32 seconds. His space missions included STS-51-C flying on the Space Shuttle Discovery. In 1985, he launched on STS-61-A with the Space Shuttle Challenger. In 1989, STS-29, he flew on Discovery. In 1991, he was again on the Discovery mission STS-48, which provided critical data for future NASA missions. He served in the NASA Astronaut Office as Manager of Space Station Systems Operations and later was promoted to Deputy Chief.

In 1992, Colonel Buchli retired from the Marine Corps and NASA, but continued his contributions to our space efforts

with several leadership positions at Boeing Defense and Space Group. In 2019, North Dakota's James Buchli was inducted into the United States Astronaut Hall of Fame.

Quoted in a February 3, 2019, Valley News Live story about this most recent honor, Colonel Buchli said, "Being from North Dakota, that's a hard one. You kind of go, 'aw shucks' and look at your feet. Being part of that group in my mind is humbling and very special. Whether or not I've done as much as others or could have done more, it doesn't matter at this point..."

"...What matters is along the way I've done my best to contribute to our space effort."

Isn't that just like someone from the great state of North Dakota?

Author Note: Dr. Hamilton's latest print and eBook, *Inspiring Words For Sky and Space Women*, is scheduled for November publication. Learn more at www.PennyHamilton.com



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Close the Door on Hangar Problems

Avoid Being Grounded by Using these Door Maintenance Tips

By Jason Myrvik, Midland Door Solutions General Manager

Photo courtesy of
Midland Door Solutions

It's a beautiful day for flying. The flight plan is filed and airplane checks are done. A push of a button and the hangar door will open to the airfield.

That's how it should happen. But, without regular maintenance checks, there could be a headache ahead rather than blue skies.

As with any moving piece of equipment, regular hangar door maintenance checks and services will prevent problems and the downtime and expense that come with them. After all, it's much cheaper and faster to prevent a problem than to fix one. These tips will help do just that.

1. **Take a wide-angle view.** Before each use, look over the whole door for any damage. Ensure the hinges, rollers and structure all appear serviceable.
2. **Examine the movement mechanisms.** On bi-fold doors, ensure the cables or straps track correctly over the drum before each use. Each month do a closer visual inspection of the cables or straps to look for frays, tears or breaks. Check the cable tension by pulling each away from the door while it's closed, ensuring the straps are equally taut. Confirm, too, that the cables or straps hold the door in a straight, vertical position when it's closed. If any adjustments are needed, be sure to do it while the door remains closed. For hydraulic doors, inspect the lines, hoses and cylinders for leaks, and repair anything that's out of spec.
3. **Grease and oil.** Each year grease the door's operating mechanism and lubricate the hinges. On hydraulic doors also check the oil reservoir before operation and, if it's low, refill with hydraulic fluid. Also inspect the gearbox fluid level and drive chains for proper alignment. If the gearbox is low on lube, check that none of the seals are leaking, and then follow the manufacturer's instructions for viscosity and quantity of gear lube. The drive chains should be lubricated every six months, if needed.
4. **Latch on to durability.** If the door does not have automatic latches, make sure the manual ones fully disengage before opening. Some manufacturers simplify this maintenance point by using a single manual latch rather than two. No matter the number or style, ensure the latches remain tight against the door jamb, which will prevent potential injury or damage in strong winds.
5. **Look and listen.** When opening and closing the door, watch the motor and brakes to ensure both are not over-working or dragging. Listen for anything that sounds different from the norm. If something sounds off, consult the owner's manual or call the dealer or manufacturer.
6. **Put the brakes on.** While closing the door, hit stop when it's 4 or 5 feet from the ground and observe if it stops right

away or coasts a few inches. Over time, the gearbox teeth can wear and cause the door to continue to move. If the door coasts 3 inches or more, a brake system will need to be maintained or added.

7. **Keep it taut and tight.** On bi-fold doors, look over the belts, sprockets, chains and chain links each month for damage, ensuring everything is properly aligned and tensioned. If it's not, contact a dealer for service. For hydraulic doors, inspect the fittings on the hydraulic lines and hoses every three months to ensure they are tight. Also check the hydraulic pressure during operation. On both door styles, ensure receivers and remotes are undamaged.
8. **Don't skimp on the opening.** The limit switch, which controls where the door stops when opened or closed, may need to be reset occasionally if the door stops just shy of closing or doesn't go up all of the way. Manufacturers typically provide adjustment instructions in operator's manuals, but some manufacturers ensure it's at the user's fingertips, placing the instructions under the control box cover. If the limits are off, avoid slippage by ensuring that the control box sprocket screw is tight and the chain tension is correct. For added safety, use override switches that will stop the door from moving past its fully open point should the limit switch fail.
9. **Check on safety.** Look over the safety guards and shields every to ensure they are installed correctly over the

operating system's lifting drums, chains and sprockets as well as over the automatic latch components. If the door uses manual latches, test them by holding the switch while attempting to open the door; the door should not move. Also, ensure all safety decals are still in place and readable.

10. **Keep an eye on it.** Regularly clean the photo eyes and sensing edges, which detect objects in the door's path, to ensure the door continues to open smoothly.

Just like any other piece of equipment, repairs tend to be needed more frequently as a door ages. If repairs are needed every six to 12 months, it will be worthwhile and more cost-efficient to explore purchasing a new door. When that time comes, work with an experienced manufacturer that will manage the entire process, from carefully checking the building's specs and providing a design and accurate estimate to engineering a safe, all-steel door to fit the opening. Their service should not end there but should continue through the installation and finish work as well as after-sale check-ins to address any concerns.

When choosing a new door, ask about maintenance-friendly options and modern conveniences, such as override systems, high wind-load ratings, automatic latches, brake systems, insulation and door liners, photo eyes, sensing edges, walk-through doors and windows and variable speed drive systems.

Whether new or old, periodic checks will ensure the hangar door operates safely and efficiently for years to come.

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Only You & UAS Can Prevent Forest Fires

By Robbie Lunnie

Wildfires are devastating. According to the National Interagency Fire Center, there have been

41,051 wildfires this year with approximately **4.7 million** acres burned.

States such as **Oregon, California, and Washington** have been devastated by fire. **Aviation plays an important role in helping these states combat this ever-growing threat.**

Historically, airplanes and helicopters have carried out dangerous aerial firefighting operations. Pilots conducting these missions fly at very low-levels, oftentimes putting themselves and their aircrews at extreme risk. Until recently, crewed aircraft were the only means of combating wildfires from the air. However, unmanned aircraft are taking to the skies to conduct life-saving operations in hopes of lowering the risk to aerial firefighters.

Unmanned aircraft are being used in multiple applications, such as monitoring ground crew positions in real-time, identifying smoldering hotspots with infrared technology, and even delivering rescue supplies. Although these are important uses of unmanned aircraft, another benefit of this technology is being explored.

Although it sounds like a scene from an apocalyptic science fiction film, unmanned aircraft equipped with fireballs are being used to thwart potential wildfires in the Midwest and Western United States. These aircraft, known as Unmanned Aerial Ignition Systems, are being used to conduct prescribed burning operations. Prescribed burns are fires intentionally started under controlled circumstances to reduce the hazardous fuels near woodlands, grasslands, developed areas, and even national historic sites.

An example of unmanned aerial ignition systems are small, vertical takeoff and landing aircraft equipped with dispensers designed to drop ignition spheres. Self-igniting ignition spheres, affectionately dubbed “dragon eggs,” are used aboard unmanned aircraft to start prescribed burns in areas where dry shrubs and grasses have a high potential for ignition.

The self-igniting plastic ping-pong sized balls are filled with potassium permanganate and are injected with glycol immediately before being deployed. Once injected, the spheres ignite within 30 seconds, giving ample time for the “dragon eggs” to fall from unmanned aircraft and settle on the prairie or forest floor.

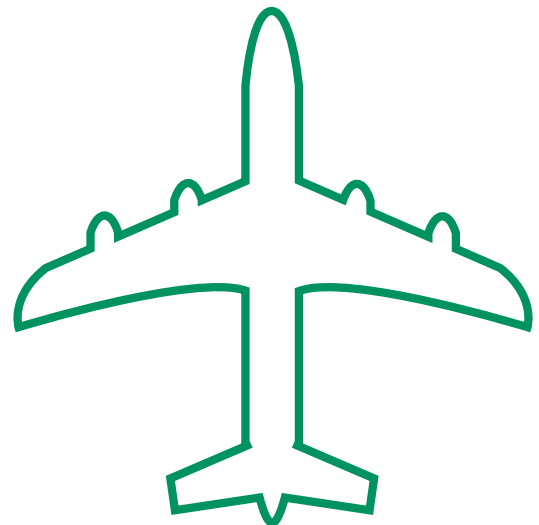
This technology, an industry standard for years, is typically deployed by fixed-wing and helicopter aircraft. However, a

team at the University of Nebraska has studied the applicability of using unmanned aircraft technology to safely conduct prescribed burn operations. Last year, the U.S. Department of the Interior purchased commercialized versions of Unmanned Aerial Ignition Systems and trained firefighters to pilot them.

Aircrew safety is one of the biggest motivators for using unmanned aircraft in aerial firefighting operations. Using unmanned aircraft systems gives firefighters the benefit of conducting dangerous, yet critical, aerial firefighting missions from a safe distance, allowing pilots and aircrews a safe return to their home airfields.



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New MQ-1 Predator Exhibit at the Fargo Air Museum



Photos Courtesy of North Dakota Air National Guard.

The Fargo Air Museum recently received a MQ-1 Predator remotely piloted aircraft (RPA), which was originally a North Dakota Air National Guard (NDANG) aircraft, on loan from the National Museum of the U.S. Air Force (NMUSAF). The 119th Wing, known as the Happy Hooligans, operated the MQ-1 Predator from 2007 until 2018, when it was replaced with the MQ-9 Reaper.

You may have seen the MQ-1 Predator flying around town for training purposes in years past, but now you can see one up-close and personal.

The Fargo Air Museum was granted full civilian museum certification from the NMUSAF in December of 2018, which allows it to request loans of aerospace vehicles for display. The certification, coupled with the ongoing, positive relationship with the NDANG, makes this a very special addition to the museum. "We are very excited and thankful to the North Dakota Air Guard for its continuous support of the Fargo Air Museum," said Ryan Thayer, Executive Director. "Having this aircraft on display will allow us the opportunity to educate the public on the role of RPAs and the 119th Wing's mission. We look forward to continuing our partnership with the Happy Hooligans and are also actively working to assist with recruiting efforts."

The MQ-1 Predator is operated by a crew, consisting of a pilot and a sensor operator, from a ground control station (GCS). The aircraft stands 7 feet tall, measures 27 feet in length and has a wingspan of 48 feet 7 inches. Although equipped with surveillance technology for the primary purpose

of reconnaissance, the Predator can also be armed for light attack in warzones. To protect the legal rights of U.S. citizens, surveillance technology on U.S. Air Force RPAs is not used during training sorties over non Department of Defense controlled territory.

The Fargo Air Museum was founded with the nonprofit mission of promoting aviation through education, preservation and restoration. Located on 19th Ave N, just east of Interstate-29, the Fargo Air Museum is home to aircraft of all eras. Visit www.fargoairmuseum.org for additional information.

The North Dakota Air National Guard is a trained and highly motivated force of about 1,100 Citizen-Airmen executing world class MQ-9 precision attack and reconnaissance, kinetic and non-kinetic target intelligence production, and expeditionary support capabilities for the nation and state.



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Five-Seater Fly-Off

By Joshua Simmers

Photo credits Ashley Sabin

I would have never thought my wife and I could be surprised. And yet, before we decided whether or not we wanted a third child, our youngest (I repeat, *youngest*) was on her way. Those of you who are not pilots are missing the point: what am I going to do for a fifth seatbelt?



In Need of a Solution

Before we were married, I was a kayaker and she a hiker: we both packed light. We both loved – no, more than loved – were *addicted* to traveling: we’re compatible. Both of our dads and grandpas, as well as my grandmother, were pilots: we’re an aviation family. As we grew our way from the Cessna 150 to the 172 and then out of the 182RG, our young family needed an option. With daycare bills, I initially made do with an Aeronca Champion (Champ), but I was raised with aviation being a family activity and wanted that for my children. So, I used the Champ occasionally as my “motorcycle in the sky” while I searched for an option until five-point car seats quit debilitating our style.

We live in western North Dakota, so we had specific criteria for our next plane. It had to be good for unimproved strips, and it better have enough power for short strips. It needed to have a useful load: we are both shy of 6 feet tall and our children are high on the growth charts. Occasionally getting to the city is a must, but more often short, fun destinations and camping trips were the goal.

About the time we realized my wife was carrying the completion of our family of three, my dad fulfilled his dream of buying a Cessna 195. That radial engine on that long body is hardly fit for minors to look at, and it flies as cool as it looks. Naturally, we found ourselves at EAA AirVenture, as you are never too old to let your dad buy gas, and camped in the middle of dozens of Cessna 195 “Business Liners.” They had radial engines of every color, including chrome, lined up row after gleaming row.

A short distance away, I stole a forbidden glance at a North American Navion, pronounced “navy-on” and often written NAvion, and the dilemma began.

Now, you may be wondering why I did not consider six seaters. To bend the assumptions, the Cessna 180 has that little third seat bench you can put in the baggage area, but that’s a short term solution. Every other option that has a longer fuselage for a third row demands a larger powerplant or significantly sacrifices performance. In addition to looking utilitarian (i.e., just not as cool), any six seater with the performance I wanted was out of my price range and anything in my price range didn’t offer the performance I wanted. Is this not the quintessential dilemma in aviation? Some readers will wonder why I didn’t consider the Rangemaster, a descendent of the Navion. The Rangemaster simply doesn’t look as cool once the Navion has taken your fancy.



Ford vs Ferrari...

Watching the Cessna 195 keep my dad on his toes was a little intimidating to me. While I had some dual time in a Piper J3, Aeronca Champ, Cessna 180, Aviat Husky, Cessna 195, and oodles of tailwheel time in a UH-60 Blackhawk, I was lacking the confidence and familiarity to fairly consider the 195 at the time. As other writers have noted: either the Navion catches your eye or it simply doesn't. My father is apathetic, at best, toward the Navion, but its high body and unique curved rolling canopy captured my attention. In many matters, I prefer form over function and was certainly planning on function over form for any five seater. But apparently I can have both, even if the Navion's body may not personally attract you. See chart for a side by side comparison.

	Cessna 195	North American Navion
Cruise (knots)	about 135, some over 140	120-140 (it's almost unheard of to get over 140)
Useful Load (lbs)	usually over 1100	800-1150
Seats	5	4 or 5
Fuel Burn (gph)	around 16	about 13
Take Off	charts start at 650'	easily under 650'
Landing	as little as 560'	as little as 450'
Handling	Even for a tailwheel, this requires full attention on the ground - particularly for landings. Familiar and smooth in flight.	A stable, dihedral airframe with a rudder-aileron coordinating system. Requires intentional power on final to manage vertical speed.
View	It's hard to see around the radial while taxiing, but that is not a factor airborne. While the high wing provides great visibility, the windows are a little high and narrow.	The aircraft sits high with the pilot seated at the leading edge of the wing, providing nice down and forward visibility. The back seat is higher than the front, offering a great view for passengers. Windows offer a 360 degree view.
Loading	While cargo is easy to load in the rear compartment, it takes some maneuvering to get in and seated - particularly into the front seat.	Aside from a big step to get up the high wing, stepping into the cabin is easy. The baggage compartment is loaded through the cabin; a little cumbersome without a baggage door mod.
Maintenance	A "tinkerer's plane."	As to be expected for an aircraft this age, but with a reputation for being sturdily "overbuilt."
Price Range	starting at \$85k, hard to find under \$100k	\$38-80k
Insurance	same (tailwheel)	same (retractable gear)

A couple of notes: compared to the 195 or most other aircraft, the Navion has a ton of modifications and engine options. Hence, the varied usable loads and airspeeds. Also, not all Navions are certified for five seats.

The 195 is a visual representation of an aviation era; that radial engine is unmistakable, the windows and long body are from another time. I think it's the most photogenic plane outside of the war bird community. The Navion, on the other hand, is more subtle in its representation. Its round and over-sized design also reflect the car designs of the time. It gives a strong nod to the WWII aircraft, as it is designed by the same engineers who made the P-51 Mustang. Much of production went to the U.S. Armed Services for training. When airborne, a Navion looks like a war bird. While a few of the 195's were also used by the military, it's only an anecdote to their story.

Some folks, my wife among them, have questioned whether or not my kids will get too squished in a Navion, which surfaces early memories of sleeping buckled in with my brother in the back of a Champ. They're kids: squish 'em for a few short years before the first leaves the nest. Honestly, both the 195 and the Navion offer a roomy bench seat in back.

Flying a Solution

The 195 comes to life and demands full attention to taxi, after which it seems to rumble into the sky with neither effort nor aggression. It's a comfortable dream to fly, trims up nicely, and if it were not so exciting to sit in that iconic treasure, the rumbling of the radial engine would lull you to sleep.

The Navion is rarin' to go and get off the ground as soon as you push the throttle. As one passenger of mine exclaimed, "it's like an elevator!" Originally manufactured with an adequate Continental O-470, the most popular engine now seems to be





to extend gears and flaps and then descend slowly to the runway. On final, full flaps are like a full-brake and pitches every occupant forward to suddenly look at the intended point of landing, reminiscent of a carnival ride. I spend a lot of time flying low-wing aircraft, so I find Navion landings familiar. Because of the way they sink, one needs to keep adequate power 'til roll out and remember the height of the fuselage. With landing gear engineered for unimproved strips, it makes every landing feel unfairly smooth. Sure, that gear is robust, but let's not make it work any harder than it has to.

the IO-520 with 285 horsepower. This is what mine has, and if I am already climbing at 1200 feet per minute without effort, I can't imagine what the IO-550 upgrade would feel like! In all my orientation on 90 degree Fahrenheit days, I never once used 600 feet of runway.

Known as a stable platform, even in turbulence, a Navion feels smooth and quiet. It has a spring coupled system assisting coordinated turns, either making me better or lazier. For Cessna flyers, a power failure is almost a non-issue, as long as you have a place to land and can tune out your racing heartbeat. Without power, the Navion is a heavy object falling without much sense of any lift at all. Approach this emergency more like a helicopter: pitch for the earth to trade off excessive airspeed for essential lift to soften your landing.

The biggest challenge in a Navion is slowing to 100 mph

Flying the 195 is as familiar as any other Cessna, until landing. Every successful landing is a sheer joy and sense of accomplishment! Regular tail wheel flyers may find it less exciting. For non-tailwheel readers, I'll just state the basic principle that one doesn't land a tailwheel like you're accustomed to, as it's more like "flying" it gracefully onto the surface with perfect flying pitch and managed power. The 195 complicates this a tad with such a long tail and the pilot seated just at the center point to hardly notice pivoting. You are never done until you have come to a complete stop and this will, or should, keep every pilot not just attentive but on their toes until stopped. While the 195 has me determined not to have my tail in front of me, Navion's were not designed with toe-brakes so you need a handbrake to do your job. That's okay,



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we should all use our pedals and power smartly and not lazily rely on toe brakes. Using the handbrake requires very little transition, you'll find it as soon as you look for it!

So, to make my short-story long, I work for a Fixed Base Operator (FBO) where I noticed a Navion in for annual maintenance. It looked cool and had three seatbelts in the back row. I tracked down the owner and asked if my wife and I could simply sit in it, so I could show her what we were considering. He was excited to talk about his Navion and noted

he hadn't been flying it. After I noticed a different Navion fitting our criteria fly off the market quicker than it came on, I decided to ask this local owner if he would consider selling. Shortly, terms were met.

The biggest regret I have is that I had to make a choice. At the end of the day, I wanted to try the Navion; it meets 100 percent of my criteria and is within my price range. All of my interactions with Navion owners have been helpful and often jovial. They are a loyal bunch but I've not yet had the opportunity to meet many in person. Since we came to terms, I have been fixated on backcountry strips and even my kids are accustomed to watching Navion videos in lieu of bedtime stories. The "195ers," as they call themselves, are a blast. They are a work-hard/play-hard group, also in love with their inanimate possession. Well, okay, it's not fair to call an airplane inanimate. We all know planes move and many of us know their respective plane has a soul. Now I understand how people end up with more planes than they can fly.

As you can tell, I waited to publish this article until after my purchase was complete; I'd have hated for you to get to my Navion before I did!

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Patrick Mathews-Halmrast composed music while airborne with local pilot Fred Remer. Combining his love for landscape with his gifts in music, Mathews-Halmrast created a track while flying in the back of a Bonanza over North Dakota.

Care to learn more or have a listen? Check out PrairiePublic.org, or OneCentillionDollars.com, where swag is also available.

Home to Warbirds

Minot air museum houses extraordinary collection of WWII planes

By Eloise Ogden, Regional Editor



(left) Eloise Ogden/
MDN Several of
the World War II
planes are lined
up in front of the
Dakota Territory Air
Museum in Minot.

The planes are, from the left, “Lope’s Hope
3rd,” “Miss Kitty” and “Little Horse,” all
P-51s, and the British Spitfire. The Minot
museum has the largest collection of World
War II planes in one spot in central United
States.



The largest collection of World War II planes in one spot in central United States is located here in Minot at the Dakota Territory Air Museum.

These warbirds – from a legendary British Spitfire MkIXc that flew 74 missions in World War II including over the beaches of Normandy on D-Day to four P-51s, a C-53, a Canadian Harvard Mk IV and an FM-2P Wildcat.

The planes are owned by Bruce Eames of Houston, Texas, and housed at the Dakota Territory Air Museum in Minot. Minot Aero Center does the maintenance on the planes.

Warren Pietsch, Minot, is the chief pilot of the fleet and also a Dakota Territory Air Museum board member.

An Interstate L-6 Cadet “Grasshopper,” a utility transport, liaison and observer plane used during World War II owned by Cindy Beck of Wahpeton, also is at the museum.

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Warren Pietsch, pilot, with passenger Brinlee Sisk, Dakota Territory Air Museum staff member, prepare to leave the air museum in "Little Horse," a P-51 Mustang, for a flight over Minot on May 8. The flight, presented by the air museum, was done in commemoration of the 75th anniversary of Victory in Europe (V-E) Day and to honor front-line medical workers and other essential workers during the COVID-19 pandemic. "Little Horse" is one of several World War II planes at the air museum.

The collection of warbirds being in Minot got its start when Dr. Hank Reichert of Bismarck, owner of a P-51 Mustang "Dakota Kid II," displayed the plane at the Minot museum.

"Dr. Reichert had allowed us to use 'Dakota Kid' for a number of years," said Pietsch.

When Reichert decided to sell his plane, he asked Pietsch to

sell it for him. "People from Houston saw the ad and came here with the intent of buying that airplane – only that airplane – and to have me fly it in four air shows a year for two years. At the end of that period they were going to donate the plane back to the air museum," Pietsch said.

"They came here, we had lunch and they saw what we were doing for kids' educational programs and for honoring veterans. They thought that was pretty neat," he said.

Pietsch took the Mustang to Houston to fly the first air show that fall. Ed Bosarge of Houston bought 'Dakota Kid' and another plane, a Japanese Zero. Bruce Eames, also of Houston, bought "Little Horse," another P-51, at the same time.

"They got pretty enthused and we had a museum in Houston that we were in. That went on from 2010 until now," Pietsch said. He said the hangar in Houston has been sold and Bosarge has decided to direct his interest elsewhere and has sold all of his planes except one which is being sold. The rest of the airplanes belong to Eames.

The Houston group also contributed along with the city of Minot to building the hangar, said Pietsch, referring to the hangar in Minot that houses the warbirds.

"We did a fundraiser and got half a million dollars from the city of Minot. They told me for every dollar I raised they'd give me two so that's how we built this hangar. They (Houston group) paid for two-thirds of it," Pietsch said. The hangar was dedicated July 4, 2013.

The planes have participated in air shows all over the country.

"We did a lot of air shows – in the Caribbean, Oshkosh... – all the major air shows in the country for the last seven, eight years," Pietsch said, adding, "This collection of airplanes is probably the largest collection of World War II aircraft in one spot in the central U.S."

Along with many air shows, the planes and pilots were in special observances including a 70th anniversary of Victory in Europe (V-E Day) commemoration in Washington, D.C., in May 2015.

When people visit the museum in Minot, Pietsch said they are quite surprised what they see there.

"People are amazed when they come in here – people in the industry and others just never expect to see what they see when they come to Minot and see this museum," Pietsch said. He said the warbirds are part of it. "But the facility is beautiful, the people here – the volunteers and the workers here – do a great job in keeping the place nice and that has helped us maintain this fleet and have the people from Houston willing to leave their airplanes here plus we don't have hurricanes."

All of the World War II planes at the museum are flyable.

"Some of them have actual war history," Pietsch said. "The Spitfire flew 74 missions in World War II. It was flown by the Polish Volunteers in the RAF, and then transferred to the Free French and flew over Normandy Beach during the invasion. It's an extremely historic airplane," he said.

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He said *"Lope's Hope 3rd"* is not the original *"Lope's Hope"* but is painted the colors of the China- Burma-India Theater as is another plane, *"Miss Kitty."*

"Miss Kitty" honors the World War II service of the late John Rosenbaum, a native of Illinois who flew 75 combat missions. *"Lope's Hope 3rd"* honors the late Donald Lopez Sr., World War II ace pilot who flew 101 combat missions and later was deputy director of the National Air and Space Museum in Washington, D.C.

The C-53 *"The Duchess of Dakota,"* was painted to honor the late Murray Lawler, a native of Emmons County who flew C-47s and C-53s during World War II. His wife, Margaret, was the first war bride to arrive in North Dakota in 1946.

The planes are from the years 1939 to 1945.

Pilots for the planes are from all over the country:

- Warren Pietsch of Minot
- Casey Odegard of Kindred
- Bernie Vasquez of Vacaville, California
- U.S. Congressman Sam Graves of Tarkio, Missouri
- Walt Bowe of Sonoma, California
- Alan Miller of Atlanta, Georgia
- Doug Rozendaal of Mason City, Iowa
- Dr. Hank Reichert of Bismarck
- Mike Schiffer of Alma, Mich.
- Mark Murphy of Amsterdam, New York

"I was very fortunate I started doing this in 1992," Pietsch said. *"A lot of the World War II vets were still relatively young and they*

had great stories. Obviously, now we don't have very many left."

"What a great period of time for me to learn from them and for me to have a chance to honor them, to let them sit in the planes and reminisce. It really did a good job of bringing some peace to those guys," he said.

He noted one of the veterans who visited the Minot air museum four years ago especially to see the Spitfire.

"Barry Needham flew two tours in Europe in Spitfires and he got to sit in this airplane and have all his kids around. It was a pretty special deal," Pietsch said. Needham died about three years ago.

"Post-Traumatic Stress Syndrome wasn't named but all those guys had PTSD and these planes helped them a lot. It allowed them to open up to somebody about what they'd seen. So many held it in their whole life – their entire life. Time after time they would be talking to me and afterwards their kids or wife would come over to me and say, 'we never knew, we'd never heard that story.' I think it was a good thing for them and obviously a good thing for us to learn," he said.

Due to the COVID-19 pandemic, Pietsch said events that the warbirds normally would have participated in were canceled this year. But hopes are events again will be held.

Of the Minot museum, Pietsch said, *"It's an amazing addition to the community. I wish more people would take the time and come and see it because it is a really, really good facility with really good displays and not just the airplanes."* He said the museum has many show cases with extensive information.

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Did you know that both the Federal Aviation Administration (FAA) and the Mayo Clinic recently launched aviation podcasts?

The FAA's new podcast, "The Air Up There," is a show for "anyone who is interested in learning more about aviation — whether you're an aviation geek (av geek, for short) like us or just getting started," FAA officials say. The podcast covers all things aviation, from airlines to general aviation to drones.

The Mayo Clinic's podcast, "Clear Approach," aims to provide health information related to FAA medical certification. It is designed

for pilots to ask Aerospace Medicine experts questions about medical conditions and medications pertinent to certification issues. The podcast is hosted by Dr. Greg Vanichkachorn, Senior Associate Consultant in Mayo Clinic's Division of Preventive, Occupational and Aerospace Medicine.

You can listen to the podcasts on popular podcast platforms or online:

The Air Up There:
www.faa.gov/podcasts

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North Dakota Aviation Association

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Mason Douglas Short (July 22, 1970 – August 11, 2020) of Rapid City, SD, died Tuesday, August 11, 2020 at Monument Health Hospital in Rapid City. A Celebration of Life was held on August 16, 2020, at Rimrock Church Meadow.

Mason was born on July 22, 1970 to his parents, William and Joan (Alloway) Short in Appleton, MN. Mason attended Central College in McPherson, KS, where he quickly fell in love with flying and never looked back. In two short years, Mason attained his private and instrument ratings, as well as graduating with an A.S. in Aviation. During their second year at Central, he and Jeannie Dearborn met and fell in love. He proposed and they married between Mason's third and final

years at Wichita State University, where he earned his B.A. in Aviation Management.

During his time in the aviation field, Mason managed three airports, each for four years: Newton City/County Airport, which included the development of the Metro North Flight Support fixed base operation (FBO), the Pierre Regional Airport, and the Rapid City Regional Airport. In 2010, Mason transitioned into his work at KLJ, an engineering and planning firm. In this position, Mason worked as an airport planner and most recently as a Business Development Manager for the aviation department.

Known to live life to the full, Mason invited others to join with him in his deep and curious sense of adventure - whether beside him or individually growing in their own personal areas of interest. He left an indelible mark on so many lives, and he will be greatly missed.

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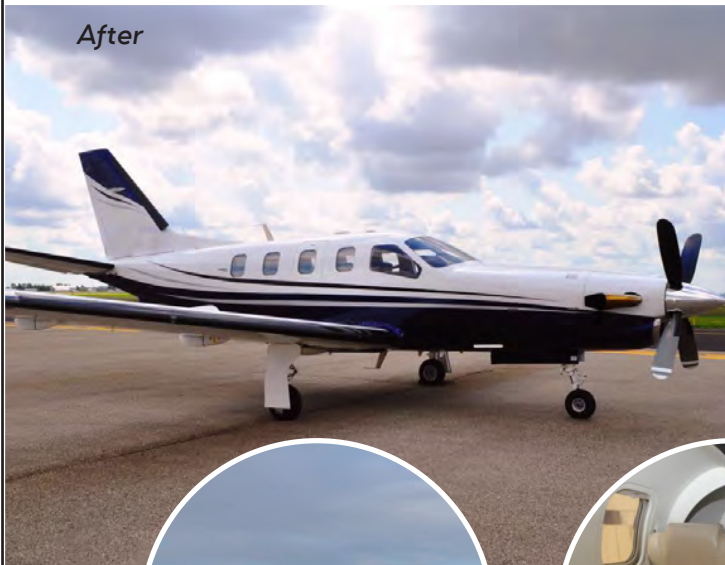



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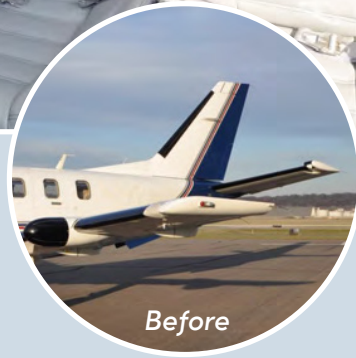
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We Need **YOUR** Help!

The ND Aviation Association needs your help. We are looking for volunteers to help with the inaugural Fly-ND Career Expo, held at the Fargo Air Museum. Originally planned for this October, it has been postponed until 2021. The event is the first of its kind in North Dakota with a mission to introduce and inspire high school 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.

UMAS has been
renamed to
FLY-ND Conference



Save the Date!
March 7-9, 2021